Improving developmental monitoring practices of remote Australian Aboriginal Health Workers: The TRAK study

Dr Anita D’Aprano
MB BS, FRACP

Submitted in total fulfillment of the requirements of the degree of Doctor of Philosophy

October 2013

Menzies School of Health Research
Institute of Advanced Studies
Charles Darwin University
ABSTRACT

The importance of early childhood development (ECD) is undeniable and child health experts internationally recognise that developmental care is vital to improve long-term health and wellbeing outcomes. A key challenge to the provision of quality developmental care in remote Australian Aboriginal communities has been the absence of culturally appropriate, structured developmental screening tools. Also, Aboriginal Health Workers (AHWs), recognised as key staff in this context, and a high proportion of other remote health practitioners, do not have adequate training in the area of ECD.

The TRAK study aimed to design, implement and evaluate a capacity building program in developmental practice for AHWs. This included: a) the cultural adaptation of the Ages and Stages Questionnaire (ASQ-3) for use in remote Aboriginal communities; b) the design and trialing of an ECD training program; and c) the implementation of the culturally adapted ASQ-3 into standard health service practice, in remote Aboriginal health services.

A case study evaluation framework was adopted, utilising mixed methods, including interviews, observations and medical record audits. Two case study sites in the Northern Territory were selected - one remote health centre in a coastal ‘Top End’ community and one in Central Australia. Purposive samples of AHWs, key community informants, and Aboriginal parents, from the two sites, as well as ECD experts were included in the study. All children under 5 years of age, resident in the study communities, were included in an audit of medical records to determine baseline developmental practice of remote health staff.

The study findings demonstrated that the cross cultural adaptation of the ASQ-3 developmental screening tool (the ASQ3-TRAK tool) was considered highly acceptable and relevant to parents, AHWs and ECD experts. The training needs analysis identified gaps in existing knowledge and practice, through self report, practice observation and the medical record audits. The customised training program was delivered successfully and valued by all participants with demonstrated improvements in practitioner skills, knowledge, competence and confidence to identify and manage developmental difficulties in young children and promote child development.
Despite the acceptability and value of the developmental screening tool and the ECD training, the integration of the adapted ASQ-3 into routine health service did not occur as intended. Challenges to the uptake and ongoing use of the adapted tool were identified in three broad themes: leadership and governance, workforce support, and health centre structures.

This study sought to advance understanding of some of the critical factors needed to build the capacity of AHWs and other remote health practitioners in providing quality developmental care to remote-dwelling Aboriginal children. The findings identified key barriers and potential solutions to improving developmental practice in this challenging service context. These include effective and culturally appropriate practitioner training in ECD, the availability of a culturally appropriate developmental screening tool, and service requirements for its routine use. These findings have implications for policy, practice and further research to improve the developmental outcomes of Australian Aboriginal children.
# Table of Contents

**Abstract**

**Table of Contents**

**List of Tables, Boxes and Figures**

**Acknowledgements**

**Declaration**

**List of Abbreviations**

**Chapter 1 Introduction**

1.1 Problem statement

1.2 Research setting

1.3 Thesis aim

1.4 Outline of thesis

**Chapter 2 Background**

Introduction

2.1 Early childhood development

2.2 Developmental screening tools

2.3 Cross-cultural test adaptation

   2.3.1 Cross-cultural adaptation: a definition

   2.3.2 Approaches to test adaptation

   2.3.3 Universalist approach to adaptation

2.4 Building capacity in developmental practice of remote health practitioners

   2.4.1 AHWs as key staff

   2.4.2 Focus on individual capacity building

Summary

**Chapter 3 Research Design**

Introduction

3.1 Study aim

3.2 Design framework - case study evaluation

   3.2.1 Case study design

   3.2.2 Case selection

   3.2.3 Evaluation model

   3.2.4 Methodology

3.3 Research context

3.4 Research methods
CHAPTER 4 CROSS-CULTURAL ADAPTATION OF THE ASQ-3

Introduction 75
4.1 Methodology 75
  4.1.1 Methods 76
  4.1.2 Research participants 78
  4.1.3 Analysis methods 78
  4.1.4 Instrument for adaptation – the ASQ-3 79
  4.1.5 Adaptation procedure: ASQ-3 to ASQ3-TRAK tool 79
4.2 Findings - Adaptation of ASQ-3 88
  4.2.1 Community agreement 88
  4.2.2 Engaging caregivers 89
  4.2.3 Respecting culture 93
  4.2.4 Empowering caregivers 95
4.3 Findings - Cultural appropriateness of the ASQ3-TRAK tool 96
  4.3.1 Acceptability 96
  4.3.2 Value of the ASQ3-TRAK tool 97
  4.3.3 Ease of applying the ASQ3-TRAK tool 99
  4.3.4 Administration of the ASQ3-TRAK tool 101
4.4 Discussion 102
  4.4.1 Community engagement 102
  4.4.2 Adaptation of the ASQ-3 103
  4.4.3 The ASQ3-TRAK tool – providing culturally competent care 104
  4.4.4 Challenges of adaptation 108
Summary 109

CHAPTER 5 TRAK TRAINING NEEDS ANALYSIS

Introduction 111
5.1 Background policy context 112
5.2 Methodology 115
  5.2.1 Data sources 116
  5.2.2 Procedures 116
  5.2.3 Data analysis 118
5.3 Findings 119
  5.3.1 Findings from interviews and observations 119
  5.3.2 Findings from clinical audits 132
5.4 Discussion 142
5.4.1 The ECD practice training needs of AHWs and other health staff in remote health centres 142
5.4.2 Health centre service provision and baseline level of developmental care 144
5.4.3 The barriers to compliance with the current policy supporting developmental monitoring in the NT 148

Summary 151

CHAPTER 6 DESIGN OF TRAK TRAINING PROGRAM 153
Introduction 153
6.1 Adult learning theories 153
6.2 Effective training of adult learners in the remote Aboriginal context 156
   6.2.1 Principles of adult learning 156
   6.2.2 Culturally appropriate training 158
6.3 Program development procedures 162
6.4 Training program content and process 164
   6.4.1 Classroom training 164
   6.4.2 Practical training session 175
   6.4.3 Booster training 176
   6.4.4 Support structures 177
Summary 178

CHAPTER 7 EVALUATION OF THE TRAK PROGRAM - CASE STUDY Y 179
Introduction 179
7.1 Introducing the Yumurrku Health Centre 180
7.2 The story of the TRAK implementation in Yumurrku 184
7.3 Findings - The implementation effort 188
   7.3.1 Participant reactions 189
   7.3.2 Participant learning 191
   7.3.3 Organisational support and change for implementation of the ASQ3-TRAK tool 194
Summary 204

CHAPTER 8 EVALUATION OF THE TRAK PROGRAM - CASE STUDY N 207
Introduction 207
8.1 Introducing the Nhanhala health centre 207
8.2 The story of the TRAK implementation in Nhanhala 212
8.3 Findings - The implementation effort 216
   8.3.1 Participant reactions 216
   8.3.2 Participant learning 218
   8.3.3 Organisational support and change for implementation of the ASQ3-TRAK tool 222
Summary 232
CHAPTER 9  CROSS-CASE SYNTHESIS AND DISCUSSION

Introduction 235
9.1 Implementation of the TRAK Training 235
9.2 The value and relevance of training to AHWs 238
9.3 Factors influencing the implementation of the TRAK Training and the ASQ3-TRAK Tool 244
  9.3.1 Practices and processes influencing the implementation of the TRAK training 245
  9.3.2 Contextual factors necessary for ongoing application of the ASQ3-TRAK tool in routine practice 247
Summary 262

CHAPTER 10  CONCLUSIONS

Introduction 265
10.1 Summary of study findings 265
10.2 Limitations and strengths of the study 268
10.3 Implications of the study 271
  10.3.1 Implications for further research 272
  10.3.2 Recommendations for practice and policy 274
10.4 Conclusion 276

REFERENCES 279

APPENDICES 307
Appendix 1a: Pre-training interview schedule 308
Appendix 1b: Post-training interview schedule 310
Appendix 1c: Parent interview schedule 312
Appendix 1d: Group interview schedule 314
Appendix 2a: Pre-training observation schedule 316
Appendix 2b: Post-training observation schedule 317
Appendix 3: Audit tool 319
Appendix 4a: Staff information 337
Appendix 4b: Community information 339
Appendix 4c: Parent information 341
Appendix 5a: Staff consent form 343
Appendix 5b: Community consent form 345
Appendix 5c: Parent consent form 346
Appendix 6: HU5Ks care plan, 12 months 347
Appendix 7a: ASQ3-TRAK 12-month questionnaire 349
Appendix 7b: ASQ3-TRAK 12-month score sheet 357
Appendix 7c: ASQ3-TRAK 12-month illustrated booklet 358
Appendix 8: Parent Information Sheets 388
Appendix 9: ASQ3-TRAK tool practice guidelines 395
| Appendix 10: | HU5Ks wheel                   | 401 |
| Appendix 11: | Training feedback survey      | 402 |
| Appendix 12: | ASQ-3 12-month questionnaire   | 404 |
LIST OF TABLES, BOXES AND FIGURES

Table 2-1: Developmental screening tools ................................................................. 19

Table 3-1: Demographics of the two communities ................................................... 60

Table 4-1: Data sources .......................................................................................... 78

Table 4-2: 12-month ASQ-3 questionnaire and modifications ............................... 91

Table 5-1: Primary reason for attendance .............................................................. 133

Table 5-2: Child health checks over 12 month period ......................................... 134

Table 5-3: Proportion of children receiving at least one developmental check according to whether other health checks completed .............................................. 135

Table 5-4: Proportion of children receiving at least one developmental check according to whether medical condition present .................................................. 136

Table 5-5: Frequency of scheduled developmental checks ................................... 137

Table 5-6: Staff providing child services ............................................................... 138

Table 5-7: If a developmental check was completed, where was check documented? 139

Table 5-8: If a developmental check was completed, what was documented? .......... 140

Table 5-9: If a developmental problem was identified, what action was taken? ....... 141

Table 5-10: Prevalence of developmental concerns .............................................. 142

Table 6-1: Learning episode and strategies for teachers of adults ....................... 157

Box 2-1: International Test Commission guidelines .............................................. 29

Box 2-2: Brislin’s Guidelines for writing material that is readily translatable .......... 34

Box 4-1: Interview topic guide .............................................................................. 77
ACKNOWLEDGEMENTS

This thesis has been made possible through the support and encouragement of many people.

It is with immense gratitude that I acknowledge the support and contribution of my academic supervisors, Prof Sven Silburn, Dr Vanessa Johnston, Prof Frank Oberklaid and A/Prof Gary Robinson. In particular I would like to thank Sven for his unceasing faith in my ability to undertake and complete this task; Vanessa for her tremendous support especially early on in helping shape the thesis, and for her friendship; Frank for his encouragement and guidance as a fellow paediatrician; and Gary for his insights and for his initial support that enabled me to remain in Darwin and embark on this process in the first place.

I am grateful to the Health Development branch of the Department of Health for supporting this project from its inception, in particular Prof Victor Nossar and Tina Hourigan and child health nurses who participated. Thanks to the ABCD National Partnership Project and Prof Ross Bailie for recognising the study as a partner project and providing input at the early design stage. Lyn Fasoli gave advice and support at different points, along with Bec Farmer and Alison Gadayurr Wunungmurra, and I thank Lyn for her continuing encouragement. Jane Squires and her team were especially helpful in supporting the adaptation of the ASQ-3 and I am grateful for their time and useful advice. I also appreciate the considered and thoughtful guidance David Roennfeldt and Michael Cooke provided for the translations. Emma Johns made a significant contribution as the illustrator and I thank her for her enthusiasm in taking on this work. I would like to thank Yvonne Coleman for her work on the layout of the questionnaires, Fiona Mensah for her input on the quantitative analysis, and Sue Dibbs for her editorial role.

I wish to express my deepest appreciation to my friends and family for their love and support. I especially want to thank Zoe McCallum for her significant contribution and support over chocolate and wine, and my fellow PhD student, Claire Bartlett for her friendship and wisdom and for sharing the trials and tribulations – even via skype. However, a special thanks is reserved for my parents, Finisio and Maria. I am forever
grateful for their unfailing support and encouragement; their unconditional love is an inspiration.

Finally, this project would not have been possible without the involvement of the two communities and I am deeply grateful for their collaboration. I am especially grateful for the generosity of the Aboriginal Health Workers, community members, parents, and other staff who participated in this study. I feel privileged to have had the opportunity to undertake this work alongside the Yolngu and Western Arranta people and to learn from their experience and share in their knowledge.

This PhD was funded by an Australian Postgraduate Award Scholarship. I also gratefully acknowledge the Lowitja Institute and the Northern Territory Research Innovation Board who provided project funding for the study. Without their considerable financial support this study would not have proceeded.
This is to certify that

(i) the thesis comprises only my original work towards the PhD,

(ii) due acknowledgement has been made in the text to all other material used,

(iii) the thesis is less than 100,000 words in length, exclusive of references and appendices.

Signed

Anita D’Aprano

Date
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHW</td>
<td>Aboriginal Health Worker</td>
</tr>
<tr>
<td>AMS</td>
<td>Aboriginal Medical Service</td>
</tr>
<tr>
<td>ANFPP</td>
<td>Australian Nurse Family Partnership Programme</td>
</tr>
<tr>
<td>ASQ-3</td>
<td>Ages and Stages Questionnaire 3</td>
</tr>
<tr>
<td>CBW</td>
<td>Community Based Worker</td>
</tr>
<tr>
<td>CHN</td>
<td>Child Health Nurse</td>
</tr>
<tr>
<td>ECD</td>
<td>Early childhood development</td>
</tr>
<tr>
<td>FaFT</td>
<td>Families as First Teachers</td>
</tr>
<tr>
<td>HU5Ks</td>
<td>Healthy Under Five Kids program</td>
</tr>
<tr>
<td>NACCHO</td>
<td>National Aboriginal Community Controlled Health Organisation</td>
</tr>
<tr>
<td>NT</td>
<td>Northern Territory</td>
</tr>
<tr>
<td>OT</td>
<td>Occupational Therapist</td>
</tr>
<tr>
<td>PCIS</td>
<td>Primary care information service</td>
</tr>
<tr>
<td>RH</td>
<td>Remote Health</td>
</tr>
<tr>
<td>SNAICC</td>
<td>Secretariat of National Aboriginal and Torres Strait Islander Child Care</td>
</tr>
<tr>
<td>SWSBSC</td>
<td>Strong Women Strong Babies Strong Culture</td>
</tr>
<tr>
<td>TRAK</td>
<td>Talking about Raising Aboriginal Kids</td>
</tr>
</tbody>
</table>
CHAPTER 1 INTRODUCTION

1.1 PROBLEM STATEMENT

The importance of early childhood development (ECD) is undeniable. This early childhood period is critical for laying the foundation for future wellbeing, and providing services to promote early child development is considered a global priority (Engle et al., 2011; Marmot et al., 2010; Walker et al., 2011). One aspect of these services is developmental monitoring (sometimes called developmental screening or surveillance), considered by the American Academy of Pediatrics (AAP) (2006) to be a vital role of child health practitioners and similarly recommended in low- and middle-income countries (Engle, Young, & Tamburlini, 2013; Ertem et al., 2008).

Developmental monitoring refers to a longitudinal process to enable early detection of children who may be at risk of developmental delays and furthermore to promote healthy child development. During this process, health practitioners may utilise developmental screening instruments in addition to discussing parental concerns, obtaining a history of risks and making clinical observations. Notably this is not simply a one-off screen; rather it is a process of following a child’s development over time, providing advice and making referrals where necessary (AAP, 2008; Ertem et al., 2008; Glascoe & Dworkin, 1995).

Structured developmental screening tools, known to increase detection of developmental problems, are an important part of developmental monitoring programs (Guevara et al., 2013; Marks, Glascoe, & Macias, 2011). Such programs, incorporating developmental screening tools, have been implemented throughout Australia including in urban settings in the Northern Territory (NT). However, while developmental monitoring is a mandatory component of the scheduled child health checks (the Healthy Under 5 Kids program) in remote Aboriginal communities in the NT, no developmental screening tools have been recommended as part of this program. The reason for this remains the lack of developmental screening tools that are culturally appropriate, reliable and valid for use with remote-dwelling Australian Aboriginal children. Although there are many

---

1 The terms Aboriginal and Indigenous are both used as alternatives to refer collectively to people who identify as being of Aboriginal and/or Torres Strait Islander descent. Throughout this thesis the term Aboriginal will be used with this inclusive reference.
developmental screening tools presently available (AAP, 2006; Ertem et al., 2008; Glascoe, 2000; Squires, Bricker, & Potter, 1997) the majority of these instruments have been developed in the United States, with most validity studies conducted on American populations. While a number of different developmental screening tools are used in Australia, there is little systematic evidence of which are useful and accurate for Australian Aboriginal populations (D'Aprano, Carapetis, & Andrews, 2011).

Furthermore, remote health practitioners - including Aboriginal Health Workers (AHWs) and remote area nurses responsible for delivering developmental services - have little if any child health training. The Healthy Under 5 Kids program (NT Department of Health, 2009) does have a stand-alone, self-directed education package available. However, ensuring that AHWs and nurses within the service are trained to conduct developmental monitoring with appropriate support is not currently a policy of the Remote Health branch of the Department of Health.

Workforce capacity and availability of a culturally appropriate developmental screening tool thus represent a significant gap in the resources necessary to deliver quality developmental services to Australian Aboriginal children.

The overarching purpose of the Talking about Raising Aboriginal Kids (TRAK) study is, therefore, to determine if the adaptation and implementation of a widely used developmental screening tool, and the training of key Aboriginal and non-Aboriginal remote health staff, improves practice in developmental monitoring and in the early identification of children with developmental problems, thereby increasing the proportion of children receiving necessary developmental services. Over the longer term, the TRAK study aims to systematically follow-up these service and practice outcomes.

This thesis is focused on the formative and process evaluation stages of an important component within the larger study: the capacity building program for AHWs in early childhood development practice, including the sustainable incorporation of a culturally adapted developmental screening tool into standard health service practice, in remote Aboriginal health services. Exploration of the barriers and facilitators to empowering AHWs to perform this role in remote health services is a key objective of the thesis.
1.2 RESEARCH SETTING

This study was conducted in two remote Aboriginal communities in the Northern Territory (NT): Yumurrku, in the northernmost section of the Northern Territory (the ‘Top End’), and Nhanhala, in Central Australia. A detailed description of the two communities is provided in chapter three. These communities are broadly characteristic of the numerous small remote Aboriginal communities that are widely dispersed across the NT (Australian Bureau of Statistics, 2013a). This next section is an introduction to the broad setting for the study - the remote Aboriginal context of the Northern Territory.

The Northern Territory of Australia is vast and remote, even by Australian standards, covering an area of 1,349,129 square kilometres. From the NT capital of Darwin, in the Top End, it is 1,500 kilometres by road to Alice Springs, the next largest city, in the centre (see Figure 1-1). Despite its large area, the NT is sparsely populated with a total population of 211,944 (Australian Bureau of Statistics, 2011e) over half of whom live in the greater Darwin area. The other major settlements are Alice Springs, Katherine, Nhulunbuy and Tennant Creek and the population is concentrated along the Stuart Highway from Darwin to Alice Springs.

Figure 1-1: Map of Australia

2 Pseudonyms have been used for all people and place names.
The NT is unique in many ways and its demography is one feature that sets it apart from the other Australian states and territory. A large proportion of the population is comprised of Aboriginal and Torres Strait Islander people. In the 2011 Australian Bureau of Statistics (ABS) census, 56,779 people in the NT identified and were counted as being of Aboriginal and/or Torres Strait Islander origin – just under 27% (ABS, 2011e). This compares with 2.5% of the total population in Australia. Of the population who identify as Aboriginal and/or Torres Strait Islander in the NT, 80% live in rural or remote areas. This is in contrast to the rest of Australia where one-third (33%) of the Aboriginal and Torres Strait Islander population live in capital city areas, and in some states this figure is over 50% (ABS, 2011d).

Across Australia, the Aboriginal and Torres Strait Islander population has a younger age distribution than non-Indigenous Australians, reflecting the higher fertility and lower life expectancy for this population. The median age for Aboriginal and Torres Strait Islander peoples is 21 years compared with 37 years of age for non-Indigenous people (ABS, 2011d). In other words half the population is under 21 years of age. In the Northern Territory, a large proportion (33.2%) of the Aboriginal and Torres Strait Islander population is aged under 15, compared with 19% in the non-Indigenous population (ABS, 2011f).

Of the Aboriginal and Torres Strait Islander peoples living in rural and remote areas, many are living in one of the many remote communities and outstations dispersed across the NT (see Figure 1-2 below). Remote communities vary in size from a few hundred people to a few thousand in the largest. Most communities have a health centre staffed by a combination of Remote Area Nurses, Aboriginal Health Workers and Aboriginal Community Based Workers, with visiting Remote Medical Officers and Specialist staff, depending on the size of the community and the management of the health centre. At the time of the study, 57 communities had health clinics run by the (then) NT Government Department of Health and Families (DHF) and 26 had Aboriginal Medical Services (AMS), non-government Aboriginal run health centres.
Figure 1-2: Remote communities across the NT

Source: Aboriginal Interpreter Service, NT Government
1.3 THESIS AIM

To evaluate the implementation of training in early childhood developmental practice and of a culturally adapted developmental screening tool, as a contribution to capacity building of remote AHWs.

1.4 OUTLINE OF THESIS

The background and rationale for the study is outlined in chapter 2. This chapter offers a synthesis of the existing literature on early childhood development, paying particular attention to developmental monitoring practices in the NT. It also presents the evidence for the selection of the Ages and Stages Questionnaire 3 (ASQ-3) (Squires, Potter, & Bricker, 1999) as the developmental screening tool most appropriate for adaptation for use with Aboriginal children in the remote NT context. This leads into an examination of the cross-cultural adaptation literature and discussion of the adaptation model used in this study. The chapter concludes with a discussion of the reasons for focusing on the role of AHWs in developmental monitoring and the need for building capacity of this key workforce group.

Chapter 3 describes the research design and the methods chosen for this study. A case study evaluation framework was adopted as the study design of choice to understand real-life phenomena and is described together with the rationale for the mixed methods approach. This chapter introduces the research context, including a description of the two communities where the study was conducted, and which is further elaborated in the case studies that follow in chapters 7 and 8.

Chapters 4, 5 and 6 represent the formative evaluation component of the study, detailing the design of the TRAK training program. Chapter 4 outlines the cross-cultural adaptation of the ASQ-3, presenting the detailed steps in this critical process and the findings regarding the cultural acceptability of the adapted ASQ-3. Chapter 5 deals with the training needs analysis, conducted to determine the AHWs’ gaps in skills and knowledge, and confidence (both perceived and observed) in the area of early childhood development and developmental practice in the remote health services. Chapter 6 presents the design of the TRAK training program and how this was informed by the training needs analysis and a review of the literature on adult learning and culturally appropriate training approaches.
Chapters 7, 8 and 9 represent the process evaluation component of the thesis. The implementation of the TRAK training and the adapted ASQ-3 in each context is presented in chapters 7 and 8. The evaluation findings of the training implementation are outlined as case studies, for the two communities respectively. Chapter 9 draws the findings of each case together into a cross-case synthesis and integrates the findings from the two communities in the discussion, examining the quality of the training process and barriers and facilitators to the effective implementation of the adapted ASQ-3.

The thesis concludes in chapter 10, with a summary of the key findings and a discussion of the significance of its contribution to this field. Recommendations are made for practice, policy and future research in developmental monitoring of remote Aboriginal children along with a discussion of the limitations and strengths of the study.
CHAPTER 2 BACKGROUND

INTRODUCTION

The first section of this chapter presents a summary of the evidence regarding the importance of healthy early childhood development for longer-term health, education and wellbeing outcomes. This is followed by an overview of the literature regarding the developmental health of Australian Aboriginal children with particular references to the circumstances of children’s early development in remote NT communities. This section also examines the literature on the importance of early detection of developmental problems and reviews the current state of NT policy and child health practice in this regard. The need for reliable and discriminating developmental screening measures to be validated for culturally appropriate use within this population setting is outlined.

The next section of the chapter reviews the developmental screening tools currently in use in other Australian child health settings and which have mostly been developed through their application in North American and European child populations. This includes a discussion of some of the issues limiting their practical utility and culturally valid use with remote NT Aboriginal children. Reasons for selecting the Ages and Stages Questionnaire-3 (ASQ-3) as the most suitable developmental screening measure potentially amenable for adaptation and use in the remote NT Aboriginal community context are presented.

A review of the literature on approaches to cross-cultural adaptation follows in the chapter’s third section. The sparseness of literature relating to the cross-cultural adaptation of developmental screening tools is highlighted. A number of adaptation approaches are then explored to explain why the specific approach developed by Herdman (1998) was selected for use in this study.

The chapter concludes with a discussion of the reasons for concentrating on AHWs as the key workforce group in this remote Australian Aboriginal context. The importance of capacity building of remote health practitioners, as this study’s focus, is addressed.
2.1 EARLY CHILDHOOD DEVELOPMENT

The importance of the early years

It is now well recognised that experiences during the early childhood period are critical in determining the developmental trajectory into adulthood. A child’s experiences and environment from conception to age five, and particularly in the first three years, have a direct effect on brain development, shaping the neural pathways and brain architecture during what is understood to be ‘sensitive’ periods for brain development (Shonkoff & Phillips, 2000). The effects of early experiences on brain development, to set the foundations for future cognitive, psychosocial and health outcomes, have been known for some time (McCain & Mustard, 1999). More recently, Hertzman and Boyce (2010) have described how social environments and experiences ‘get under the skin’, becoming biologically embedded, to affect the course of human development.

There is now a substantial body of evidence for the effects of brain development in early childhood on health and development across the life span and it is well recognised that investing in early childhood development is necessary to address socioeconomic health inequalities (Hertzman, Li, Mattes, McMurray, & Stanley, 2009; Hertzman & Power, 2004; Marmot et al., 2010; Mustard, 2006; Shonkoff, 2012). The Marmot Review (2010) reported on the evidence that suggests investment in early childhood achieves positive outcomes across the life course and in a range of areas including employment, income and health. While provision of quality early childhood programs benefits all children, there is a disproportionately positive effect on the development of disadvantaged children (Marmot et al., 2010).

Studies evaluating early childhood programs conducted in low-resource countries offer further compelling evidence of improved lifelong outcomes for disadvantaged children (Engle et al., 2007; Engle et al., 2011; Walker, Chang, Powell, & Grantham-McGregor, 2005). Engle and colleagues’ (2011) systematic review of the effectiveness of early child development intervention programs in low- and middle-income countries included 42 effectiveness trials and program assessments. They concluded that interventions can improve early child development, with greatest effects seen from programs of higher quality and for the most vulnerable children.

For these children living in disadvantaged environments, early childhood programs can change their life course and help ensure success and positive outcomes for their families and communities, with long-term economic and social returns to society (Heckman, 2006). However, intervention programs need to begin early in the developmental pathway. Cunha
and Heckman (2006) conclude that while later interventions are also of some benefit, they are considerably less effective than interventions provided in the early years, and the economic returns for investment at older ages is lower. It is undeniable that early childhood offers a ‘critical window of opportunity’ (Engle et al., 2007).

The evidence is clear that the focus for addressing social inequities that lead to developmental disparities needs to be on early childhood. Much is known about what universal and targeted early childhood programs need to provide to better support children’s early development (Closing the Gap Clearinghouse (AIHW AIFS), 2012; Harrison, Goldfeld, Metcalfe, & Moore, 2012; Marmot et al., 2010; Sanson & Stanley, 2010). High-quality education and care programs, qualified educators, and involvement of families are some of the factors linked with improved childhood outcomes. While comprehensive early childhood services are important for all, children with developmental concerns need to be identified early, before problems become entrenched (American Academy of Pediatrics, 2006). In view of the growing evidence about the critical early years, the earlier problems are detected the greater are the opportunities to provide interventions and supportive environments that promote healthy development (Bellman, Byrne, & Sege, 2013).

**Australian Aboriginal children growing up in the Northern Territory**

Many Australian Aboriginal children grow up in disadvantaged communities, exposing them to risks of low birth weight, growth retardation, respiratory illness, ear disease, skin disease and nutritional deficiencies, especially iron deficiency anaemia (AIHW & Commonwealth Department of Health and Ageing, 2009; NT Department of Health, 2012; Zhang, Dempsey, Johnstone, & Guthridge, 2010). Families living in remote communities are more likely to suffer from social adversity, including housing insecurity and overcrowding, financial stress, parental and family dysfunction, maternal depression, and problem alcohol use (Anderson, 2004; ABS, 2011e; Australian Institute of Health and Welfare, 2011b). Excessive adversity early in life can cause prolonged activation of stress response systems, and the resulting ‘toxic stress’ is known to produce physiological changes in the developing brain (Hertzman, 2012; Shonkoff & Richter, 2012). The burden of excessive risk factors and unmitigated toxic stress is known to have debilitating health and wellbeing sequelae and significantly increase the risk of developmental delay (Carter et al., 2010; Delima & Vimpani, 2011; Shonkoff, Richter, van der Gaag, & Bhutta, 2012; Walker et al., 2007).

There is a substantial body of evidence that has consistently shown that the greater the exposure to cumulative risks, the greater the compromise to children’s development and
hence the greater the inequality in future outcomes (Wachs & Rahman, 2013). Walker and colleagues (2011), in reviewing the evidence on risk factors for early child development in low- and middle-income countries, conclude that cumulative exposure places children on a lower lifetime trajectory for cognitive and psychological functioning, educational attainment and subsequent income. The risks that affect remote-dwelling Aboriginal children are not dissimilar to those that affect children in low- and middle-income countries, placing Aboriginal children in a particularly dire situation.

In urban non-Aboriginal populations, up to 20% of children have significant problems in one or more area of development (Boyle, Decouflé, & Yeargin-Allsopp, 1994; Centers for Disease Control and Prevention, 2006; Centre for Community Child Health & Murdoch Childrens Research Institute, 2009; Squires et al., 1999). In a study conducted in low- and middle-income countries, 23% of children aged two to nine years were found to have, or be at risk for, disabilities (Walker et al., 2011). Information about the prevalence of developmental delay and type of disability in Aboriginal children nationally is limited due to the lack of robust data (AIHW, 2012). However, it is presumed that the rates among remote-dwelling Aboriginal children in the NT are higher compared to non-Aboriginal children in view of the developmental adversity they face (AIHW, 2011a; Carson, Guthridge, Li, & Measey, 2006; Silburn, Robinson, Arney, Johnstone, & McGuinness, 2011; Zubrick et al., 2004).

While rates of developmental delay are unknown, there is evidence that Aboriginal children are not faring as well as their non-Aboriginal counterparts (Wake, Sanson, Berthelsen, Hardy, & Misson, 2008). The Australian Early Developmental Index (AEDI) is a population measure that reports findings on the health and development of all young children (CCCH and Telethon Institute for Child Health Research, 2009). Data from the AEDI for 2009 indicate that Aboriginal children are six times more likely to be developmentally vulnerable in the language and cognitive skills domains than non-Aboriginal children in the NT (Silburn, McKenzie, & Moss, 2010). It is also evident that school-aged Aboriginal children have lower rates of attainment in literacy and numeracy than non-Aboriginal children (Penman, 2006; Robinson, Silburn, & Arney, 2011). Almost two-thirds (63.4%) of Aboriginal students in the NT scored below the national minimum standard for reading achievement on the 2012 Year 3 National Assessment Program for Literacy and Numeracy, while non-Aboriginal NT students showed similar results to students in other jurisdictions (Australian Curriculum Assessment and Reporting Authority, 2012).

A number of studies reporting on developmental outcomes for Aboriginal children in settings outside the NT suggest Aboriginal children have poorer outcomes than non-Aboriginal children. Leonard and colleagues (2003) reviewed multiple sources to determine the
prevalence of intellectual disability in Aboriginal children in Western Australia. While we need to acknowledge the limitations of mainstream cognitive tests in assessing children from minority cultures, we cannot ignore the findings: Aboriginal children were more than twice as likely as non-Aboriginal children to have a diagnosis of intellectual disability. Another study examining the early life determinants of childhood intelligence in Brisbane, identified that Aboriginal children scored lower than non-Aboriginal children on cognitive tests (Lawlor et al., 2006). Notably, both these studies concluded that social circumstances and environmental issues were contributing factors to the difference in scores.

In the Longitudinal Study of Australian Children, the score of the typical five year old Aboriginal child from tests of English vocabulary and school readiness was 12 months behind that of a typical non-Aboriginal child (Leigh & Gong, 2008). Notwithstanding the fact that the tests used were likely to disadvantage children who only speak an Aboriginal language, the vast majority (95%) of children in the sample spoke English at home, indicating a significant test score gap. Another Australian study examined predictors of early developmental progress in urban Aboriginal infants using the Griffiths Mental Development Scales, a standardised developmental assessment (McDonald, Comino, Knight, & Webster, 2012). Although the authors report that the infants were mostly developing within the normal range at 12 months, they demonstrated a significant difference in developmental progress in the urban Aboriginal infants compared with the Griffiths standard norms. The 0.4 standard deviation difference is similar to the difference found in the study described above by Leigh and Gong (2008).

Remote-dwelling Aboriginal children are in the most disadvantaged quintiles in the country and these studies confirm that they are undoubtedly among the children in most need of high quality early childhood programs. There is no doubt these children would benefit from programs to address the social determinants of health on a population level. However, this does not need to be at the expense of programs that respond to individual needs. Practitioners providing child health services require the skills, knowledge and tools to address early childhood development, informed by what is now known about the importance of the early years period during which interventions maximise a child’s developmental potential.

**Early detection of developmental problems**

If we are to favourably influence early trajectories of development, reliable methods for the early identification of risk and developmental delay are needed (Shonkoff & Richter, 2012). Early identification of delayed or disordered development needs to be followed by a comprehensive assessment, which can inform specific and appropriate intervention. Given
the importance of the early years, early intervention is crucial. This approach is supported by the American Academy of Pediatrics and also by the Paediatric and Child Health division of the Royal Australasian College of Physicians (AAP, 2006; Royal Australasian College of Physicians, Paediatric and Child Health Division, 2012).

As a first step, the American Academy of Pediatrics (2006) recommends that developmental surveillance should be incorporated at every well-child visit. They define surveillance as a longitudinal, continuous process of recognising children who may be at risk of developmental delays. The process includes five components: eliciting and addressing parents’ concerns about their child’s development; documenting and maintaining a developmental history; making accurate observations of the child; identifying the presence of risk and protective factors; and documenting the process and findings. They also recommend that screening, using standardised developmental screening tests, be periodically included. This is not as a ‘one-off’ screen, removed from routine care, but as part of the ongoing process.

Developmental screening, on its own, does not fulfil the well-accepted criteria for screening processes (Dworkin, 1989). Screening is generally considered appropriate if the condition has a test that is simple, convenient and valid, and the interpretation is straightforward. Screening programs are justified for conditions where the test result is ‘pass/fail’, where it is clear what further action needs to be taken if the test is failed, and where management can be expected to alter the outcomes significantly (CCCH, 2002; Dworkin, 1989). The diverse developmental problems that can occur in early childhood do not lend themselves to a ‘pass/fail’ screening program, presenting a challenge for developmental screening (Rydz et al., 2006).

Nonetheless, the National Health and Medical Research Council review of child health screening and surveillance activities concluded that there was insufficient evidence to make a blanket recommendation for or against developmental screening programs (CCCH, 2002). It recommended that “the identification of children who would benefit from early intervention should not be based solely on the use of developmental screening tests, or limited to inquiry at one point of time” (ibid, p15). The review highlighted that if developmental screening tools are used, they should have adequate psychometric properties; that is, sensitivity and specificity greater than 70%. The American Academy of Pediatrics recommendations are not inconsistent with this National Health and Medical Research Council review; both recommend that accurate developmental screening tools are used as part of surveillance or developmental monitoring.
Developmental monitoring is a term that is now commonly used and incorporates ongoing surveillance supplemented and strengthened by standardised developmental screening tools (AAP, 2008; Dworkin, 1989; Ertem et al., 2008; Glascoe & Dworkin, 1993). It refers to an ongoing process during which health practitioners may utilise developmental screening instruments in addition to discussing parental concerns, obtaining a history of risks and making clinical observations. This process allows for early detection of problems, with subsequent advice and referrals, and also encompasses promotion of healthy child development (Bellman et al., 2013; CCCH, 2002). It provides an opportunity to offer support and anticipatory guidance for those children who are on schedule with their development.

Notwithstanding the limitations of developmental screening programs, the American Academy of Pediatrics does recommend the administration of developmental screening tools as part of developmental surveillance or developmental monitoring. There is growing evidence that suggests early detection of developmental problems is increased by the administration of standardised developmental screening tools. Numerous studies show that clinicians fail to recognise developmental delays in a timely manner without the use of developmental screening tools, missing the majority of children with developmental concerns (Brothers, Glascoe, & Robertshaw, 2008; Glascoe & Dworkin, 1993; Guevara et al., 2013; Hix-Small, Marks, Squires, & Nickel, 2007; Sand et al., 2005).

The literature supports the use of standardised developmental screening tools leading to timelier and more accurate detection of developmental problems (Cappiello & Gahagan, 2009; Hix-Small et al., 2007; Marks, Hix-Small, Clark, & Newman, 2009; Marks et al., 2011). A randomised controlled trial comparing children screened with standardised screening tools with those children screened simply using age-appropriate milestones at well-child visits, found that children screened with the tools were almost twice as likely to be identified with delays (Guevara et al., 2013). Those children screened with tools were also more likely to be referred to early intervention and eligible for early intervention services in a more timely fashion. Hix-Small et al. (2007) found similar results in a study conducted comparing a paediatrician’s developmental impression with the results of the Ages and Stages Questionnaire (ASQ) (Squires et al., 1999) in 12 and 24 month old children. Their study found the ASQ identified more than double the number of children with delays.

Although none of the above studies specifically explored the role of developmental screening tools in the Indigenous context, in a review of early childhood development and developmental delay in Indigenous communities internationally, Cappiello and Gahagan (2009) conclude that Indigenous children would benefit from development screening and evaluation. While some commentators argue that there are many cross-cultural barriers that
need consideration, there is still support for the process in principle (Ball & Le Mare, 2011). The use of structured developmental screening tools, as part of developmental monitoring, is also recommended in low- and middle-income countries, despite limited resources (Abubakar, Holding, Van de Vijver, Bomu, & Van Baar, 2010; Ertem et al., 2008). In fact it can be argued that the need for developmental screening tools is even greater in resource-poor contexts where health care providers may not have the skills and knowledge about early childhood that child health practitioners in high-income countries have. The Guide for Monitoring Child Development is a development screening tool designed for use in low- and middle-income countries to address this lack of health care providers’ early childhood expertise in these settings (Ertem et al., 2008). This is not unlike the situation in remote health services in the NT staffed by AHWs and nurses with limited child health training (Department of Education Employment and Workplace Relations, 2013b; Lenthall et al., 2011).

Despite this lack of skills and training, there remains a strong argument for health practitioners playing a role in promoting and protecting child development in the international literature. Engle and colleagues (2011) assert that health practitioners are ideally placed to be involved in early child development as this might be the best opportunity to reach children younger than three years. Furthermore, a child’s overall wellbeing, which encompasses development, is influenced by many health conditions present from conception through those early years that are best addressed by the health sector (Engle et al., 2013). Finally, interventions to promote child development, such as improving caregiver practices and supporting parents to provide attentive care, also benefit the child’s overall health (Richter, 2004; World Health Organization Department of Child and Adolescent Health and Development, 1999). Thus, it is sound practice that these interventions are incorporated into primary health care services.

**Developmental monitoring in the Northern Territory**

A universal developmental screening program was introduced to urban centres of the Northern Territory in 2009. Child and family nurses are responsible for delivering the program. They began using the Parental Evaluation of Developmental Status (PEDS) (Glascoe, 1997) as a primary screen and the Brigance screen (Glascoe, 2002a) as a secondary screen. This is consistent with other jurisdictions in Australia that all use developmental screening tools as part of a formal developmental monitoring program (S. Goldfeld, personal communication, 2013). However, no similarly structured program, utilising specific instruments, is being undertaken in remote Aboriginal communities in the Northern Territory, (Kruske, Paterson, & Anderson, 2008) and some remote area health centres dedicate little or
no time to family support and specific training in child development. Data from a clinical audit of child health services in Australian Aboriginal communities revealed that only 37% of children aged between 3 months and 5 years had a record of any child developmental service being provided in the previous 12 months (Bailie et al., 2008).

Although no formal universal developmental monitoring program is being delivered in remote settings, the NT Government has put considerable effort into the development of the Healthy Under 5 Kids program (HU5Ks) that was implemented in the 57 NT Government remote health centres in 2009 (Kruske et al., 2008; McKinnon & Chatterji, 2008; NT Department of Health, 2009). HU5Ks is a schedule of ten child health checks provided to all children under five years of age living in remote Aboriginal communities. A care plan for each scheduled visit provides a guide and acts as a prompt to health providers (see Appendix 6). Prior to the introduction of HU5Ks, the Growth Assessment Action program had been in place in the NT; this focused on the growth and nutritional status of Aboriginal children under five. The HU5Ks is an expansion of the Growth Assessment Action program and includes, critically, developmental monitoring.

The HU5Ks care plan includes a few general questions about development in addition to specific age-related developmental pointers (see Appendix 6). Each of the ten care plans also include anticipatory guidance on key topics such as play and communication, recommending activities caregivers can use with children to promote development. The HU5Ks does provide a framework with guidance for follow-up of particular problems identified. However, it does not recommend using any particular developmental screening tools in the remote Aboriginal context. The reason cited for this is the lack of accurate and valid developmental screening tools tested for use with remote Aboriginal families, such that recommendation of one tool above any others has been problematic (Department of Health and Families & Graduate School for Health Practice, 2010). Consequently, families accessing health care at urban health centres in the NT receive developmental monitoring that incorporates developmental screening tools, while Aboriginal families living in remote communities do not.

The lack of availability of appropriate developmental screening tools raises an issue of equity; remote-dwelling Aboriginal children do not have access to comprehensive and best practice care that is afforded to other children in Australia. This gap is a problem this study aims to address.
2.2 DEVELOPMENTAL SCREENING TOOLS

Although there are many developmental screening tools presently available (AAP, 2006; Ertem et al., 2008; Glascoe, 2000; Macy, 2012; Marks et al., 2011; Squires et al., 1997) they vary considerably in their psychometric properties, methods of administration and the training required for their administration, scoring and interpretation. Table 2-1 below includes a list of general developmental screening tools currently in use, describing the tools, comparing their properties and commenting on their suitability for the Australian Aboriginal context. The majority of instruments have been developed in the United States, with most validity studies conducted on American populations.

A number of the developmental screening tools described in Table 2-1 are used in Australia, but there is little systematic evidence on whether these instruments are useful and accurate for Australian Aboriginal populations. The PEDS is being used in two Australian studies: the Longitudinal Study of Australian Children (LSAC) and the Longitudinal Study of Indigenous Children (LSIC). However, to date there are no published reports on the utility of the tool in the Australian Aboriginal population. Other than a single report on the use of the Brigance screens with Australian Aboriginal children in the Northern Territory (D'Aprano et al., 2011), there have been no reported studies examining the psychometric properties and the linguistic and cultural appropriateness for use in remote Australian Aboriginal settings of any developmental screening tools.

Despite a significant proportion of Aboriginal children living in urban centres (ABS, 2011a), there has been very little research examining the developmental needs of urban Aboriginal children. A systematic review of the literature regarding the health, development and wellbeing status of Indigenous children found the majority of studies focused on physical health and that the literature exploring urban Indigenous child development and wellbeing was scarce (Priest, Mackean, Waters, Davis, & Riggs, 2009). One study has been conducted to determine the appropriateness of using a developmental assessment tool, the Griffiths Mental Developmental Scales, with urban Aboriginal children in New South Wales (Bennett, McDonald, Knight, Comino, & Henry, 2010) but none looking at developmental screening tools. Notably, no studies have been published examining the appropriateness of the Griffiths Mental Developmental Scales, or any developmental assessment tool, in the remote Aboriginal context.

The lack of culturally appropriate developmental screening tools is recognised as a problem in other Indigenous populations. In a report examining the health and well-being of Aboriginal
## Table 2-1: Developmental screening tools

**Parents’ Evaluation of Developmental Status (PEDS)**
(Coghlan, King, & Wake, 2003; Glascoe, 1997; Glascoe & Dworkin, 1993; Glascoe & Dworkin, 1995)

<table>
<thead>
<tr>
<th>No. items</th>
<th>Age range</th>
<th>Description</th>
<th>Admin time and Scoring</th>
<th>Use and cultural considerations</th>
<th>Psychometric properties</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0-8 yr</td>
<td>Parental questionnaire; screening and surveillance tool. Elicits parents’ concerns thus promoting family-centredness, collaboration and cultural competence. Two open ended questions and eight questions covering various developmental domains; 4-5th grade reading level. Single response form for all ages; score form guides users; columns for each age range that show which concerns predictive of developmental and behavioural problems.</td>
<td>2-10 minutes to administer and score (depending on whether parents complete or completed by interview).</td>
<td>NT: Was being used as 1st screen by Child and Family Nurses in Darwin/Palmerston Other Australian jurisdictions: 1st screen New South Wales, Victoria, Tasmania, Australian Capital Territory and Western Australia. Longitudinal Study of Indigenous Children and Longitudinal Study of Australian Children using PEDS.</td>
<td>Sensitivity 74-84%, specificity 70-80%. Validation studies; standardised with 771 children from diverse cultural backgrounds. PEDS detects, via unique pattern of concerns, the most common disabilities – Intellectual disability, language impairments, learning disabilities and Autism spectrum disorders with 70-75% accuracy.</td>
<td>Feasibility study in Melbourne (Coghlan 2003) – similar prevalence rates to American population. Widespread use in clinical and research settings in Australia, as a primary screen. Trial in remote Australian Aboriginal Communities (unpublished) – open ended questions not suitable. Child not directly involved. Administration costs low.</td>
</tr>
</tbody>
</table>

**Ages and Stages Questionnaire-3 (ASQ-3)**
(Bricker & Squires, 1999; Skellern et al., 2001; Squires et al., 1997; Squires et al., 1999; Squires, Twombly, Bricker, & Potter, 2009)(S.Goldfeld, personal communication, 2013)

<table>
<thead>
<tr>
<th>No. items</th>
<th>Age range</th>
<th>Description</th>
<th>Admin time and Scoring</th>
<th>Use and cultural considerations</th>
<th>Psychometric properties</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-35</td>
<td>2-60 mo</td>
<td>Parental report and with older children questionnaire prompts parents to elicit children’s skills. Provides simple drawings and directions for eliciting careful responses. Overall reading level is Grade 5 but some questions more challenging and reach the 12th grade level. 19 age-specific questionnaires screening 5 domains – communication, gross motor, fine motor, problem-solving and personal-social; 4-5 pages for each age level.</td>
<td>15 minutes to complete and score.</td>
<td>Psychometric study conducted in Australia. NT use – Children’s Development Team; 1st screen by urban Community Nurses since 2012; Australian Nurse Family Partnership Project (ANFPP) in Alice Springs Other jurisdictions: South Australia state wide 1st screen (including rural and remote Aboriginal clients). 2nd screen in New South</td>
<td>Sensitivity 76-90%. Specificity 76-91%. Well standardised, validated on naturalistic national samples against a range of criterion measures. One of few psychometric studies conducted in Australia (sensitivity 90%) (Skellern, 2001). 3rd edition – Data include completed questionnaires on 18,572 children between 1 and 66</td>
<td>Use by Urban nurses. Children’s Development Team and ANFPP provides useful experience for cross-cultural adaptation and potential for comparative data. Increasing use across Australia. Widespread international use. Good body of literature. Administration costs low. Separate CD-ROM (ASQ Manager) enables storage of results on multiple children thus potential for data aggregation.</td>
</tr>
</tbody>
</table>
### Brigance Screens
(Brigance, 2006; Glascoe, 2002a, 2002b)

<table>
<thead>
<tr>
<th>No. items</th>
<th>Age range</th>
<th>Description</th>
<th>Admin time and Scoring</th>
<th>Use and cultural considerations</th>
<th>Psychometric properties</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-10 items (9 forms)</td>
<td>0-90 mo</td>
<td>Direct elicitation and observation of child (except 0-2 age range). Items screen speech-language, motor, pre-academic skills, personal-social skills and general knowledge. Reading and maths at older ages. Can monitor progress over time, utilising the growth indicator score. Psycho-social risk cutoff scores. 9 forms for each 12 month age range.</td>
<td>15 minutes to administer.</td>
<td>NT – was being used as 2º screen (now using ASQ). 2º screen in New South Wales.</td>
<td>Sensitivity 73-86% Specificity 73-86%</td>
<td>Trialed in remote Australian Aboriginal communities. Found to have many limitations due to cultural relevance and method of administration. Experience of Child and Family nurses suggests more training required than suggested by manual. Need to be very familiar with the tool to use it efficiently but this is true of any tool.</td>
</tr>
</tbody>
</table>

### Bayley Infant Neurodevelopmental Screen (BINS)
(Aylward, 1995; Aylward & Verhulst, 2000)

<table>
<thead>
<tr>
<th>No. items</th>
<th>Age range</th>
<th>Description</th>
<th>Admin time and Scoring</th>
<th>Use and cultural considerations</th>
<th>Psychometric properties</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-12</td>
<td>3-24 mo</td>
<td>Direct elicitation; screens infants at risk for neurological impairment or developmental delay. Assesses neurological function, neurodevelopmental skills and developmental accomplishments. Examiner skill is critical – especially for neurological exam. Includes item sets containing 11 to 13 items selected from the full Bayley Scales and neurological assessments.</td>
<td>15 minutes.</td>
<td>Tool largely used in neonatal follow-up clinics.</td>
<td>Sensitivity 75-86%. Specificity 75-86%. Normed on 1700 children to match 2000 United States census.</td>
<td>Up to 24 months only. Neonatal follow-up of high risk infants. High level of skill required.</td>
</tr>
</tbody>
</table>
### Bayley Scales of Infant and Toddler Development (Bayley-III) Screening Test
(Bayley, 2005)

<table>
<thead>
<tr>
<th>No. items</th>
<th>Age range</th>
<th>Description</th>
<th>Admin time and Scoring</th>
<th>Use and cultural considerations</th>
<th>Psychometric properties</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>136</td>
<td>1-42 mo</td>
<td>Combination of direct elicitation, observation and parental report. Selected items from the full Bayley-III battery. Cognitive, language, and motor domains tested. Added tool Bayley-III Observational Checklist. Lists items that can be easily observed at any time during administration. Can use the checklist to become familiar with items that can be observed outside the standard administration order, saving administration time. Make paper copies or note observed items, then later transfer to master.</td>
<td>20-35 minutes. Skill and experience required to interpret. Risk category; cutoff scores according to age.</td>
<td>Suggested sites for use - early intervention centers, Early Head Start programs, pediatric offices, day care centers — settings where many children are cared for on a regular basis.</td>
<td>Reliability high, test-retest stable and inter-rater reliability very high. Standardised on a sample of 1700 children.</td>
<td>This appears user friendly and is easy to score. Not widely used in Australia. Training required to administer and interpret.</td>
</tr>
</tbody>
</table>

### Battelle Developmental Inventory Screening Test-II (BDIST-II)
(Glascoe & Byrne, 1993; Newborg, 2004)

<table>
<thead>
<tr>
<th>No. items</th>
<th>Age range</th>
<th>Description</th>
<th>Admin time and Scoring</th>
<th>Use and cultural considerations</th>
<th>Psychometric properties</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Birth to 8 yr</td>
<td>Direct elicitation, observation and parent interview. 100 items across 5 domains; Personal-Social, Adaptive, Motor, Communication, and Cognitive ability. Offers choice among cutoff scores (pass/fail) or age equivalent (1, 1.5, 2 SD below the mean).</td>
<td>10-30 minutes (depending on age). Skill and experience required. Training required.</td>
<td>Recommended use as universal screening for academic progress and learning difficulties.</td>
<td>Sensitivity 72-93% Specificity 79-88%. Reliability and validity studies extensive and provide abundant psychometric support. Normed on 2500 children to match 2000 United States Census.</td>
<td>Suggested use by publishers: Use the screening component for early identification of deficits that could later impact academic achievement – as universal screening assessments. Not commonly used in Australia. Requires training, skill and experience.</td>
</tr>
<tr>
<td>Child Development Inventory (CDI)</td>
<td>(Doig, Macias, Saylor, Craver, &amp; Ingram, 1999; Ireton, 1992; Montgomery et al., 1999)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>No. items</strong></td>
<td><strong>Age range</strong></td>
<td><strong>Description</strong></td>
<td><strong>Admin time and Scoring</strong></td>
<td><strong>Use and cultural considerations</strong></td>
<td><strong>Psychometric properties</strong></td>
<td><strong>Comments</strong></td>
</tr>
<tr>
<td>300</td>
<td>18 mo - 6 yr</td>
<td>Parent completed questionnaire; examining 8 domains; social, self-help, gross motor, fine motor, expressive language, language comprehension, letters, and numbers. Results in developmental quotients for different domains.</td>
<td>30-50 minutes. Requires 7th-8th grade reading level – impractical.</td>
<td>Particular useful for screening at-risk children even when applied to a population of low socioeconomic status and low education level.</td>
<td>Sensitivity 80-100%. Specificity 94-96%. Normative data gathered from 568 children who were 95% Caucasian.</td>
<td>Excellent psychometrics. However, 300 items - takes up to 50 minutes to administer; only begins at 18 months. Poor generalisability. Not widely used in Australia.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Child Development Review-Parent Questionnaire (CDR-PQ)</th>
<th>(Ireton, 2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. items</strong></td>
<td><strong>Age range</strong></td>
</tr>
<tr>
<td>6 open ended Questions; 99 items across all ages</td>
<td>18 mo - 5 yr</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Denver-II Developmental Screening Test</th>
<th>(Frankenburg, Dodds, Archer, Shapiro, &amp; Bresnick, 1992; Glascoe et al., 1992)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. items</strong></td>
<td><strong>Age range</strong></td>
</tr>
<tr>
<td>125</td>
<td>Birth - 6 yr</td>
</tr>
</tbody>
</table>

Adapted from the American Academy of Pediatrics, 2006
children in Canada, Ball (2008b) highlights the lack of early childhood screening, monitoring or diagnostic tools validated for use with Canadian Aboriginal children. She argues that the use of culturally inappropriate tools for monitoring and screening has led to serious negative consequences, such as over- and under-recognition of children with developmental challenges; services introduced too late; and undermining Indigenous language and cultural goals for development through an emphasis on the dominant culture and language (Ball & Janyst, 2008). Measuring the impact of programs on Aboriginal children’s development is fraught with difficulty if appropriate instruments to measure the developmental outcomes are not available (Ball, 2008b). Yet, the challenges of adaption have meant that there have been no studies exploring the cultural appropriateness of developmental screening or assessment tools for use in the Canadian Aboriginal population (J. Ball, personal communication, 2013).

In an attempt to address the lack of formal methods for developmental monitoring of children in remote communities in the NT, a trial of two developmental screening tools, the PEDS (Glascoe, 1997) and the Brigance (Glascoe, 2002b), was conducted in three remote Aboriginal communities in the NT (D’Aprano, 2009; D’Aprano et al., 2011). While these United States (US) developed instruments are used widely with non-Aboriginal children in Australia where they have been shown to detect similar prevalence rates of developmental delay to the American population, the pilot assessment of their use with Aboriginal children in remote NT communities suggests that they have poor validity for the reliable identification of children at risk of developmental disorders. The Brigance, a developmental screen administered directly to the child, was found to be of limited utility for reasons of cultural relevance and its specific methods of administration. In contrast to the Brigance, the PEDS is a parental questionnaire. Engaging the parents and caregivers in this context, particularly to answer the PEDS open-ended questions, was challenging.

The trial highlighted a number of biases such as language and cultural relevance, and methods of administration of developmental screening tools designed for use in one culture and used in another. The authors argued that there is a need for a tool that is culturally adapted to address these biases and that would enable children to demonstrate their developmental abilities and level of functioning. Furthermore, the study’s conclusion was that a more suitable tool should include parents and caregivers as active participants, and thus facilitate the partnership considered important to promote a child’s development.

Notwithstanding the limitations of standard developmental screening tools described above, two screening tools were identified as showing promise for use in this context; the Guide for
Monitoring Child Development (GMCD) (Ertem et al., 2008) and the Ages and Stages Questionnaire 3 (ASQ-3)(Squires et al., 1997).

**Guide for Monitoring Child Development**

The GMCD is a developmental monitoring instrument developed in Turkey specifically for use in low- and middle-income countries. Its implementation process includes three components: monitoring child development, promoting child development and managing developmental difficulties that have been identified. The GMCD monitoring component is a practical, brief, family-centred instrument that employs an open-ended interview technique. The training is brief and provides a guide for developing relationships with carers to promote child development. The instrument demonstrates promising psychometric properties, with sensitivity and specificity in the acceptable range for developmental screening tools. A large international validation study is planned to assess its accuracy and reliability.

However, in view of its relatively recent development, there is little experience using the GMCD outside Turkey. Additionally, although the author intends to make the tool freely available (I. Ertem, personal communication, 2009), access to the GMCD is limited until the validation study is completed.

**Ages and Stages Questionnaire-3**

The ASQ-3 was designed to be used as a tool to involve parents and acknowledges that ‘screening systems’ should not rely on one-off screens but should follow children over time. The ASQ-3 uses parent report and prompts for parents to elicit skills in the child. It has also been designed to be self-administered or completed by interview and takes 10-15 minutes to complete. The ASQ-3 has been validated in a large, diverse standarisation sample in the United States and also has acceptable psychometric properties for a developmental screening tool, with sensitivity ranging from 70-90% and specificity 76-91% (Squires et al., 1997).

There is considerable experience with the ASQ-3 in Australia as it is being used in most states and territories (S.Goldfeld, personal communication, 2013)(Nicol, 2006). One validation study with non-Aboriginal children has been reported in Australia (Skellern, Rogers, & O’Callaghan, 2001). More locally, it is being used with Aboriginal families in Alice Springs as part of the Australian Nurse Family Partnership Program (ANFPP) based on Old’s Nurse Family Partnership program in the US (Olds, Sadler, & Kitzman, 2007). To date there are no published reports on the use of the tool in the ANFPP; however, personal communication with the program’s nurse educator suggests a high level of satisfaction both from the nurses and the mothers in the program (J. Finlayson, personal communication, Feb 2011).
The ASQ-3, widely used in the US (Janson & Squires, 2004), has been shown to be applicable to diverse populations. It has now been translated and used successfully in Spain, French-Canadian provinces, Norway, Korea, Taiwan, the Netherlands and Turkey and studies generally support its cross cultural validity. Heo et al. (2008) found that mean scores of children on the Korean translation of the ASQ were generally similar to the US normative sample. In their Dutch study, comparing the 48-month scores with US, Norwegian and Korean samples, Kerstjens et al. (2009) found few cross-country differences. Similar results were found in other adaptations, with minimal variations in results (Campos, Squires, & Ponte, 2011; Dionne, Squires, Leclerc, Peloquin, & McKinnon, 2006; Kapci, Kucuker, & Uslu, 2010; J. Richter & Janson, 2007; Tsai, McClelland, Pratt, & Squires, 2006).

At the time of this study commencing, the GMCD validation study was not yet underway and given the limited experience of the tool and restricted availability, using this tool in the study would have proved difficult. By contrast, there was local experience of the ASQ-3 as well as a considerable international literature. Additionally, the tool possessed the necessary qualities and accessing the tool was straightforward. Therefore the decision was made to proceed with the adaptation of the ASQ-3. Notably since the beginning the study, the ASQ-3 has replaced the PEDS and Brigance as the screening tool used by child and family nurses in urban centres in the NT.

2.3 CROSS-CULTURAL TEST ADAPTATION

While the use of the ASQ-3 in the above populations has demonstrated cross-cultural validity, this is not the same as being culturally independent, as some authors would suggest. ‘Cultural independence’ means that culture does not play a role in influencing practices and beliefs leading to differences in children’s development, and that cultural differences are not relevant to any aspects of the ASQ-3 questionnaire methods. Yet many of the authors who claim the ASQ-3 is culturally independent go on to describe the need for cultural adaptation. Tsai et al. (2006) who make this claim used an expert panel to review the cultural appropriateness of the Taiwan adaptation and they acknowledge that the experts’ training may have reflected Western values and norms. Despite also supporting the view that the ASQ-3 is culturally independent, Kapci et al. (2010) report that they made modifications to the ASQ and argue that variations in language and cultural context should be taken into consideration when adapting developmental screening instruments. Kerstjens et al. (2009) found few cross-country differences in their study, however again, stressed the need for careful adaptation for different cultural settings and languages. According to Janson et al. (2004) and Heo et al.
(2008), attention and consideration must be given to cultural adaptation, and where they found differences did exist, these were attributed to cultural and linguistic differences.

Most of these studies were conducted in Western cultures or high-income nations and an assumption is made that the findings may generalise to other similar settings (Janson & Squires, 2004; Kerstjens et al., 2009). However, we cannot assume that the findings published in the literature generalise to the remote Australian Aboriginal context. To be able to use the ASQ-3 with remote-dwelling Australian Aboriginal families, cultural and linguistic adaptation would be necessary. Although there have been no published studies of the ASQ-3 in Indigenous cultures and there are none currently underway (J. Squires, personal communication, 2011), the feasibility and acceptability of the ASQ-3 across a number of different cultures and language groups is encouraging.

The following section will outline the literature reviewed that informed the cross-cultural adaptation of the ASQ-3 for use in the remote Australian Aboriginal context.

2.3.1 Cross-cultural adaptation: a definition

Cross-cultural adaptation refers to a process that looks at both language and cultural adaptation issues in the process of revising a test for use in another setting. Therefore, the term ‘adaptation’ is quite broad in its definition, encompassing all the activities that should occur in practice when preparing a test that is designed in one language and culture, for use in a second culture (Hambleton, 2005). This includes deciding whether the test measures the same construct in a different language and culture, selecting the translators, making modifications to prepare the test for translation, translating the test, and evaluating the adapted form’s equivalence. Test adaptation is far more than simply a literal translation of the content and there is wide consensus to support this view (Beaton, Bombardier, Guillemin, & Ferraz, 2000; Brislin, 1986; Geisinger, 1994; Hambleton, 2001; Hambleton, 2005).

Adaptation of pre-existing tests is required if we are to ensure suitable and valid tests are available within a different cultural context (Dingwall & Cairney, 2010; Guillemin, Bombardier, & Beaton, 1993). An added advantage of test adaptation is that it enables comparisons between different groups (Sanson-Fisher, Campbell, Perkins, Blunden, & Davis, 2006). This is particularly relevant in the case of comparisons of effective interventions between different cultures (Herdman, Fox-Rushby, & Badia, 1997). We must be mindful however, that without paying due concern to the development of culturally appropriate tests, comparisons across cultural groups are not valid (van de Vijver & Poortinga, 1997). Adaptation also allows for minority groups to be represented, rather than biasing the
dominant culture of the country. Finally, there is a need for measures that can be used for program monitoring and evaluation universally and adapting existing tests is a way of dealing with the lack of available tests in many cultures (Van Widenfelt, Treffers, De Beurs, Siebelink, & Koudijs, 2005). Importantly, this can be a more cost-effective approach than developing new tests (Hambleton, 2005).

### 2.3.2 Approaches to test adaptation

There are many well-established approaches to the adaptation of tests for use in cross-cultural health research (Beaton, Bombardier, Guillemin, & Ferraz, 2007; Brislin, 1986; Eccles, Grimshaw, Walker, Johnston, & Pitts, 2005; Hambleton, 2005; Jones, Lee, Phillips, Zhang, & Jaceldo, 2001; Sousa & Rojjanasrirat, 2011). However, there remains significant variation and lack of consensus in how these approaches should be used (Maneesriwongul & Dixon, 2004).

As early as 1970, Brislin described the process of back translation when using tests in cross-cultural research. In back translation, a bilingual person translates from the source language to the target language. The second step involves another bilingual person blindly translating the target version back to the source. The process can be repeated with different bilingual people translating each step (see Fig 2-1). The researcher then compares the last version with the original source version, checking for concept equivalence. Brislin describes this as ‘decentering’; the process of moving between the languages removes any language as being the centre of attention (Brislin, 1986).

**Figure 2-1: Brislin’s back translation steps**

![Figure 2-1: Brislin’s back translation steps](image)

Critics of this approach argue that when used in isolation, while the translated version may be linguistically correct, this does not ensure equivalence and the end result may be poor quality from a psychological point of view (Hambleton, 2005; Maneesriwongul & Dixon, 2004; van de Vijver & Tanzer, 2004; van de Vijver & Poortinga, 1997). Back translation may not uncover issues of cultural relevance and critical semantic meanings (Baker et al., 2010).
Geisinger (1994) describes an additional potential problem with translators who, conscious that their work will be back translated, use wording that ensures the back translation will be an accurate reproduction of the original, rather than using wording that is more relevant for the target language.

As Brislin (1986) himself points out however, “like any single method or approach, back translation is no panacea” (p. 161) and recommends that multiple techniques should be used. The other techniques Brislin has recommended are the pre-testing, bilingual and committee approaches. He recommends pre-testing as a complementary approach to reveal problems with the target language version when in actual use. In the bilingual technique the original and target language versions are tested with bilingual subjects. In the committee approach, a team of bilingual translators is used to translate the test from the source into the target language. Again, when used independently each technique has its weaknesses, and multiple techniques are generally recommended (Maneesriwongul & Dixon, 2004).

Beaton et al. (2007) have developed guidelines for translating and adapting quality of life questionnaires cross-culturally. They assert that the process is designed to maximize the semantic, idiomatic, experiential and conceptual equivalence between the source and target questionnaires (Beaton et al., 2000). They describe six steps in the cross-cultural adaptation process. Stage I is the initial translation, which is the forward translation and it is recommended that two forward translations are made. Bilingual translators whose mother tongue is the target translation are used, preferably with different backgrounds; one with content knowledge and the other a ‘naïve translator’ with no clinical or medical background. Stage II involves synthesis of the translations, with the two translators reaching a consensus and producing one common translation.

Working from the common translation, Stage III is a back translation using a translator who is blind to the original. Two of these back translations are considered a minimum and the translators should have the source language as their mother tongue. This step in the process is a validity check, focusing on the item content. Stage IV involves an expert committee composed of methodologists, health professionals, language professionals and the translators. The role of the expert committee is to consolidate all the versions and after consensus, develop the prefinal version for field testing. Four areas are the focus of equivalence between the source and target version: semantic equivalence, idiomatic equivalence, experiential equivalence and conceptual equivalence. Consensus should be reached on all items after examining the source and back translated questionnaires and if necessary the translation processes should be repeated for clarification. Stage V of Beaton’s guidelines is the field test of the prefinal version in the target setting. Between 30 and 40 people should be tested and,
after completing the questionnaire, should be interviewed to probe what they thought each item meant. The final stage, stage VI, is a submission of documentation to the developers or coordinating committee for appraisal of the adaptation process.

The third main set of guidelines reported in the literature are those specifically designed for translation and adaptation of psychological and educational tests. These have been developed by an international working group under the auspices of the International Test Commission (ITC) (Hambleton, 2005; International Test Commission, 2010). The ITC guidelines, as listed in Box 2-1, are organised into four sections: context, test development and adaptation, administration, and documentation/score interpretations, with 22 guidelines in total (Hambleton, 2005). The context category addresses concerns about construct equivalence in the language group of interest. The test development and adaptation category addresses concerns in the process of adapting a test and includes guidelines from choosing translators to measurement methods. The administration category includes guidelines addressing the way tests are administered including selecting and training administrators, choosing item formats and establishing time limits. The final category of guidelines concerns documentation and score interpretation. It addresses concerns regarding the documentation of the adaptation process to establish the validity of an adapted test. Each guideline is further described by: 1. rationale for including the guideline, 2. steps for addressing the guideline in practice, 3. a list of common errors, and 4. a set of references.

### Box 2-1: International Test Commission guidelines

<table>
<thead>
<tr>
<th><strong>Context</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1 Effects of cultural differences which are not relevant or important to the main purposes of the study should be minimized to the extent possible.</td>
</tr>
<tr>
<td>C.2 The amount of overlap in the construct measured by the test or instrument in the populations of interest should be assessed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Test Development and Adaptation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>D.1 Test developers/publishers should insure that the adaptation process takes full account of linguistic and cultural differences among the populations for whom adapted versions of the test or instrument are intended.</td>
</tr>
<tr>
<td>D.2 Test developers/publishers should provide evidence that the language use in the directions, rubrics, and items themselves as well as in the handbook are appropriate for all cultural and language populations for whom the test or instrument is intended.</td>
</tr>
<tr>
<td>D.3 Test developers/publishers should provide evidence that the choice of testing techniques, item formats, test conventions, and procedures are familiar to all intended populations.</td>
</tr>
<tr>
<td>D.4 Test developers/publishers should provide evidence that item content and stimulus materials are familiar to all intended populations.</td>
</tr>
<tr>
<td>D.5 Test developers/publishers should implement systematic judgmental evidence, both linguistic and psychological, to improve the accuracy of the adaptation process and compile evidence on the equivalence of all language versions.</td>
</tr>
<tr>
<td>D.6 Test developers/publishers should ensure that the data collection design permits the use of</td>
</tr>
</tbody>
</table>
appropriate statistical techniques to establish item equivalence between the different language versions of the test or instrument.

D.7 Test developers/publishers should apply appropriate statistical techniques to (1) establish the equivalence of the different versions of the test or instrument, and (2) identify problematic components or aspects of the test or instrument which may be inadequate to one or more of the intended populations.

D.8 Test developers/publishers should provide information on the evaluation of validity in all target populations for whom the adapted versions are intended.

D.9 Test developers/publishers should provide statistical evidence of the equivalence of questions for all intended populations.

D.10 Non-equivalent questions between versions intended for different populations should not be used in preparing a common scale or in comparing these populations. However, they may be useful in enhancing content validity of scores reported for each population separately.

Administration

A.1 Test developers and administrators should try to anticipate the types of problems that can be expected, and take appropriate actions to remedy these problems through the preparation of appropriate materials and instructions.

A.2 Test administrators should be sensitive to a number of factors related to the stimulus materials, administration procedures, and response modes that can moderate the validity of the inferences drawn from the scores.

A.3 Those aspects of the environment that influence the administration of a test or instrument should be made as similar as possible across populations of interest.

A.4 Test administration instructions should be in the source and target languages to minimize the influence of unwanted sources of variation across populations.

A.5 The test manual should specify all aspects of the administration that require scrutiny in a new cultural context.

A.6 The administrator should be unobtrusive and the administrator-examinee interaction should be minimized. Explicit rules that are described in the manual for administration should be followed.

Documentation/Score Interpretations

I.1 When a test or instrument is adapted for use in another population, documentation of the changes should be provided, along with evidence of the equivalence.

I.2 Score differences among samples of populations administered the test or instrument should not be taken at face value. The researcher has the responsibility to substantiate the differences with other empirical evidence.

I.3 Comparisons across populations can only be made at the level of invariance that has been established for the scale on which scores are reported.

I.4 The test developer should provide specific information on the ways in which the socio-cultural and ecological contexts of the populations might affect performance, and should suggest procedures to account for these effects in the interpretation of results.

Source: Hambleton, 2005

Finally, Herdman et al.’s approach (1998) is a model developed to examine equivalence between source and target language versions of health-related quality of life measures and adopts a universalist approach. This approach borrows from the field of cross-cultural psychology, the study of human behaviour with the focus on the relationship between human behaviour and culture. Berry and colleagues (2011) provide a clear definition of cross-
cultural psychology as the study of “similarities and differences in individual psychological functioning in various cultural and ethno-cultural groups; of the relationships between psychological variables and socio-cultural, ecological and biological variables; and of ongoing changes in these variables” (p. 5).

Three general theoretical orientations have been proposed to distinguish the various perspectives within cross-cultural psychology (Berry et al., 2011). These different theoretical perspectives from cross-cultural psychology literature inform different approaches to test adaptation (Baker et al., 2010; Herdman et al., 1998). The position of absolutism assumes that across cultures, all psychological phenomena are the same. From this perspective, culture is not thought to play a part in the meaning or demonstration of human qualities and characteristics. Relativism, on the other hand, assumes that culture determines all human behaviour. The position of relativism attempts to understand human behaviour through the lens of the cultural context in which people have developed. Finally, universalism takes the middle ground. It assumes that all people have basic psychological processes in common and that culture influences the development and expression of psychological characteristics. This approach does not assume that psychological phenomena will be the same across cultures and therefore assessment procedures are likely to require adaptation. While the starting point may be the same theory or test, the approach to the use of the test needs to be informed by local cultural knowledge (Berry et al., 2011).

Herdman’s universalist approach challenges the assumption that health-related quality of life is similar across cultures and instead aims to use only aspects of a concept that are truly universal across cultures. From this point of view there is a need to first assess the extent to which a concept is the same across cultures. It is only these universal aspects that are used in a test for measuring a concept. The model defines six types of equivalences: conceptual equivalence to investigate which domains are important to the concept in the target culture and the relationship between them; item equivalence to examine critically the items used to tap those domains as the relevance of items may vary across cultures; semantic equivalence to ensure that any translation which takes place leads to semantically equivalent items; operational equivalence to ensure that the measurement methods used are appropriate to the culture in question; measurement equivalence to examine the outcome of the process in terms of instrument behaviour; and functional equivalence to summarise the process and findings with this final type of equivalence.

Herdman’s universalist approach was used as a guiding framework for the adaptation of the ASQ-3 as this approach aligned with the ethics and values underpinning the study being conducted with Aboriginal people. The adaptation process also borrowed from the other
models to meet the specific needs of this context. It was necessary to look to the other models as a more detailed operationalisation was needed than Herdman’s theoretical framework provides, particularly for the translation process. The following section begins with an outline of the equivalences described in the universalist approach while also explaining how the other approaches informed the final model adopted.

2.3.3 Universalist approach to adaptation

Conceptual equivalence

Conceptual equivalence involves exploring the way different cultures conceptualise a construct, for example, health and quality of life. Conceptual equivalence is achieved when tests have the same relationship to the underlying concept in both cultures, particularly in terms of the nature and emphasis on particular domains that are included. Herdman suggests establishing local perception of the concept, for example, health-related quality of life, firstly by reviewing local literature and publications; secondly, by consulting experts in the target culture and ensuring a broad range of representative opinions, from health professionals, to anthropologists, to linguists and area specialists is necessary; and finally, Herdman recommends including the general population more broadly to explore views on the concept.

Item equivalence

Item equivalence is described as the way in which domains are sampled. The validity of items as measures of a particular domain, and the relevance and acceptability of items may all vary across cultures. An initial qualitative review of the relevance of items is necessary to establish item equivalence. Reviewing available data, employing a more structured approach to elicit ‘expert’ judgements, and accessing the target population itself through various methods, are all approaches to determine alternatives or evidence for removal of items. More sophisticated psychometric methods need to be used to gain a more precise picture, once a pilot version is available.

Semantic equivalence

Semantic equivalence describes the transfer of meaning across languages. Items should achieve a similar effect with respondents in different languages. An important aspect of meaning is to guarantee that an appropriate language level is used for the target population. It is recommended that prior to any translation the key words are clearly understood. Herdman, in contrast to the other authors, does not propose any structured translation procedure. As
such, the ITC (Hambleton, 2005) and Brislin’s (1986) recommendations informed the translation model adopted in this project.

An important first task is to contact the original developers to obtain descriptions of the ideas informing the language. Another important issue to consider is the skill of the translators. Herdman suggests that there is an element of ‘art’ involved and adds that personal recommendations for translators are worth following up. He proposes advising translators of the target audience to ensure the correct register (level of language) and dialect is used. Employing additional translators to comment on the semantic equivalence of the source and target versions, and linguists who are experts in the target language to assess the linguistic quality of the translated items, provides further checks of the quality of translation. Herdman also highlights the importance of protocols in translation meetings and the development of criteria for decision making in meetings.

Ensuring the language used in the original instrument is clearly understandable before the translation begins is a critical step. Brislin (1986) recommends several strategies for producing written material that is easily translatable. Although written with the intention of providing a guide for producing tests in ‘translatable’ English, the guidelines are also useful in the modification of existing tests for translation with a view to improving the quality of adaptations (see Box 2-2).

**Operational equivalence**

Operational equivalence is attained when the results are not affected by format, instructions, mode of administration and measurement methods. Other factors to consider when investigating operational equivalence are different levels of literacy, customs of addressing people, suitability of measurement methods (e.g. the use of closed questions, visual analogue scales, likert scales), and time frame of questioning.

A prior awareness of the potential inappropriateness of some of the operational issues is a significant advantage. However, Herdman also recommends conducting literature reviews relating to instrument use, experience of other researchers in other cultures, literacy rates in the target culture, anthropological and sociological data on cultural norms, and interview and testing of proposed methods with samples of the target population.
Box 2-2: Brislin’s Guidelines for writing material that is readily translatable

| Use short, simple sentences of less than 16 words. |
| Employ the active rather than the passive voice. |
| Repeat nouns instead of using pronouns. |
| Avoid metaphors and colloquialisms. |
| Avoid the subjunctive. |
| Add sentences to provide context for key ideas. |
| Avoid adverbs and prepositions. |
| Avoid possessive forms where possible. |
| Use specific rather than general terms. |
| Avoid words indicating vagueness regarding some event or thing (e.g., probably, maybe, perhaps). |
| Use wording familiar to the translators. |
| Avoid sentences with two different verbs if the verbs suggest two different actions. |

Source: Brislin 1980, in Brislin 1986

**Measurement equivalence**

The aim here is to ensure that psychometric properties of the adapted version are acceptable, specifically that the adapted tests achieve reliability, responsiveness and construct validity. Where the test is scaled to provide scoring norms, there should also be an examination of scoring norms in the target population. The degree of measurement equivalence is defined as the degree to which the psychometric properties of adapted versions of the same instrument are similar.

For this study, full psychometric properties of the adapted ASQ-3 were not examined, as this was beyond the scope of this project. Instead, I concentrated on instrument content and face validity, an initial step in achieving measurement equivalence.

**Functional equivalence**

Herdman’s final type of equivalence highlights that all steps of the process are important in achieving a quality culturally and linguistically equivalent adaptation. Functional equivalence is defined as “the extent to which an instrument does what it is supposed to do equally well in two or more cultures” (1998, p. 331). Assessing functional equivalence is concerned with assessing the degree to which the other types of equivalence have been achieved. This final
Chapter four details how the Herdman approach was applied to the adaptation of the ASQ-3 in this study.

2.4 BUILDING CAPACITY IN DEVELOPMENTAL PRACTICE OF REMOTE HEALTH PRACTITIONERS

This next section details the essential role Aboriginal Health Workers (AHWs) play as remote health practitioners and in particular in the developmental services that are provided to remote-dwelling Aboriginal children. The section goes on to explore the evidence for capacity building as a core health promotion strategy and concluding with an outline of the components of capacity building adopted for use in this project.

2.4.1 AHWs as key staff

AHWs make up the majority of Aboriginal health professionals (ABS and AIHW, 2008). The national peak Aboriginal health body representing Aboriginal Community Controlled Health Services throughout Australia, the National Aboriginal Community Controlled Health Organisation (NACCHO), describes the role of the AHW as:

- Works within an Aboriginal Primary Care framework to achieve better health outcomes and better access to health services for Aboriginal or Torres Strait Islander individuals, families and communities;

- Holds a minimum qualification of Certificate III in Aboriginal or Torres Strait Islander Primary Health Care and;

- Advocates for the delivery of services in accordance with the Cultural Respect Framework (Health Workforce Australia, 2011).

There is some variation in the terms and role descriptions used across Australia. In the Northern Territory, AHW only applies to health workers who have clinical responsibilities. In contrast to other jurisdictions, the Aboriginal Health Workers Board of the Northern Territory regulates the qualifications required, the scope of practice, code of ethics and clinical competency framework for AHWs. The board defines the role of the AHW as being:

… involved in specialist areas of healthcare such as but not limited to, renal dialysis, women’s and men’s health screening, early childhood screening and development,
nutrition, mental health, alcohol and other drugs, health service management and design…and have significant cultural brokerage role in the provision of health care, enabling them not only to be healthcare providers but also to facilitate care provided by other health professionals… (Aboriginal Health Workers Board of the NT, 2008)

Although there is variation in the definition across Australia, there are some common features. AHWs are recognised as critical to meeting the complex needs of their communities (Hearn & Wise, 2004; Larkin, Geia, & Panaretto, 2006; Lloyd, Wise, & Weeramanthri, 2008; Si, Bailie, Togni, d'Abbs, & Robinson, 2006; Tregenza & Abbott, 1995). Briggs describes AHWs as being the ‘backbone of the sector’ (2004). This view is reinforced by policy statements such as the Aboriginal and Torres Strait Islander Health Workforce National Strategic Framework (Standing Committee on Aboriginal and Torres Strait Islander Health, 2002) and a position paper by the National Rural Health Alliance (2006) that describes their role as “central to the successful delivery of …services to Aboriginal and Torres Strait Islander Australians” (p. 6).

In addition to their clinical skills, AHWs in the NT function as interpreters and as cultural brokers with local knowledge, experience and importantly, community connectedness (HWA, 2011). For many families, barriers exist to accessing remote health services, especially as almost all services are staffed by non-Aboriginal nurses and doctors (AIHW, 2009). AHWs provide an interface between Western medicine and Aboriginal culture, overcoming the considerable world view barriers (Devanesen & Maher, 2003) and their presence contributes significantly to creating a culturally safe environment. Cultural safety focuses on practice that enhances cultural identity, and empowers and promotes wellbeing (Walker & Sonn, 2010). This ability to bridge the “cultural chasm” (Devanesen & Maher, 2003) makes AHWs ideally placed to be conducting child health checks and implementing developmental monitoring that is culturally appropriate.

**AHWs’ role in improving care**

AHWs are recognised as playing a critical role in primary health care, including in implementing health promotion (Hearn & Wise, 2004). Tregenza and Abbott (1995), in their report to Nganampa Health Council, *Rhetoric and Reality*, note that better health outcomes are possible when health services include Aboriginal staff. This is a widely held view. Si et al. (2006) demonstrated that involvement of AHWs was associated with improved delivery of diabetes care. Likewise, Nagel and Thompson (2006) found that improvements in mental health services in the Top End of the NT coincided with employing Aboriginal mental health workers. McGrath et al. (2007) highlight the valuable role of AHWs in the provision of
culturally appropriate palliative care. They point out that employing AHWs is an important step to overcoming barriers for Aboriginal patients. There is no doubt that AHWs have the ability to provide quality chronic care and there is evidence emerging that the same applies in the area of child health. Bailie et al.’s (2008) study of delivery of child health services found that almost one-third of all child health services provided in Aboriginal communities in the NT were provided by Aboriginal Health Workers.

**The importance of partnerships**

The lack of stable, strong relationships with non-Aboriginal staff is recognised as being a barrier to AHWs up-skilling and being involved in the delivery of health care programs. Genat et al. (2006) describe that non-Aboriginal staff often have a poor understanding of AHW roles and scope of practice, which can cause tension in relationships and undermine AHWs, a claim supported by the Aboriginal Health Worker Profession Review (NT Department of Health, 2010) and others (Tregenza & Abbott, 1995). This tension is exacerbated by the high turnover of staff supervising AHWs in remote areas, leaving AHWs to deal with inconsistent management styles and approaches, which further prevents them from taking on expanded roles (HWA, 2011; NT Aboriginal Health and Community Services, 2012b). The Health Workforce Australia report on Aboriginal and Torres Strait Islander Health Workers (2011) asserts that AHWs are disempowered and demotivated by the lack of recognition and support, thus limiting their opportunities for role progression. Si et al. (2008) identified the friction in relationships with non-Aboriginal staff as one of the barriers to AHWs’ involvement in chronic illness care. This study argued for improving management practices to enforce the role and contribution of AHWs in chronic illness care. This is a view supported by Lloyd et al. (2008), whose qualitative research also identified that commitment of and support from health service managers was necessary for implementation of a preventable chronic disease strategy. These issues are just as relevant to the implementation of child health programs, and of developmental monitoring specifically, by AHWs in community.

**Lack of ECD training**

Insufficient training has been identified as another obstacle to involving AHWs in various Aboriginal programs, including chronic care (Si et al., 2008), oral health (Walker, Tennant, & Short, 2011) and smoking cessation programs (Hearn et al., 2011). The problem is perhaps even more dramatic in the area of early childhood development. Historically, AHWs have not received any early childhood development training as part of their formal AHW training, and the most recent revision of the Health Industry Training Package is no different. The
Health Industry Training Package is a set of nationally endorsed standards and qualifications used to recognise and assess the skills and knowledge for Aboriginal and/or Torres Strait Islander Primary Health Care Workers (Department of Education Employment and Workplace Relations, 2013b). The training comprises a number of core units and elective units the trainees must complete to receive their Certificate IV qualification. While some of the elective units pertain to children, the HLT40213 training package does not currently include any units, core or elective, that deal with early childhood development.

Despite not receiving training in their entry level qualification, providing developmental services is part of AHWs’ core role in the NT. The NT Healthy Under 5 Kids program (HU5Ks) implemented in 2009 in remote health centres, expanded the existing program to include developmental checks. This is core business for all practitioners, nurse and AHWs in remote health centres. However, achieving AHWs participation in the on-line HU5Ks training has been challenging and rates of AHW participation have not been high. Of the 276 registered AHWs in the NT in 2011 (Aboriginal Health Workers Board of the Northern Territory, 2011), 11 had completed the training (L. Nuttall, personal communication, 2011). It is uncertain what on-the-job training, if any, AHWs receive to be able to competently deliver the child development checks. International studies have concluded that health practitioners require specific training related to developmental monitoring (Ertem et al., 2009); lack of training for AHWs to fulfil this role remains a vital gap.

For AHWs to succeed in this role these barriers need to be addressed by employing adequate workforce capacity building strategies. AHWs require ongoing education and training to ensure the workforce has appropriate skills and capabilities to respond to the needs of their communities (Genat et al., 2006; HWA, 2011; Wise et al., 2012). Building capacity in this area of practice also requires leadership and support in the form of AHW-nurse partnerships, mentoring and role modelling, and from health service managers who are committed to making early child development a priority among competing acute-care demands (Kulunga Research Network, Riddell, Eades, & Maxted, 2010; Scougall, 2008; Si et al., 2008; Watson, Young, & Barnes, 2013).

Capacity building has “emerged as a key strategy for reducing health disparities and promoting public health” (Victorian Health Promotion Foundation, 2004). However, reaching agreement on the meaning and the components of capacity building is not clear cut. This next section will provide an explanation of capacity building as a core health promotion strategy, describing the components that have been adopted for use in this project.
2.4.2 Focus on individual capacity building

Defining capacity building

As with other concepts that evolve over time, capacity building has a number of definitions (Hawe, King, Noort, Jordens, & Lloyd, 2000; Morgan, 1998). Labonte and Laverack (2001) define capacity building as the “increase in community groups’ abilities to define, assess, analyse and act on health (or any other) concerns of importance to their members” (p. 114). As pointed out by Gibbon and colleagues (2002) this definition resembles previous definitions of community development or community empowerment. The Victorian Health Promotion Foundation (2004) concurs, describing capacity building as a new way of describing the familiar concepts of community and workforce development.

There are a number of different ways to conceptualise capacity building with little consensus in the literature on the way various terms - concept, approach, strategy and activity - are used to describe the capacity building process. Crisp et al. (2000) identified four main approaches to capacity building. These include (i) a bottom-up organisational approach, e.g. provision of skills to staff; (ii) a top-down organisational approach that might begin with changing policies or practices; (iii) a partnerships approach that involves strengthening the relationships between organisations; and (iv) a community organising approach in which individual community members are drawn into forming new organisations to improve the health of community members. The Victorian Health Promotion Foundation (2004) outlines levels of capacity building for health promotion at the individual (e.g. training for staff members), community, organisational and system level. Similar to Crisp et al. (2000), this approach can start from the ‘inside’, with the individual, or start with the outer levels until it reaches the individual. In both of these approaches, input at each level is deemed capacity building; however, it is acknowledged that changes at one level will likely impact at another level.

Community capacity building

Some authors describe community capacity building specifically. Community capacity can be defined as an aggregate of individual and community level capabilities that is context dependent (Labonte & Laverack, 2001). Hawe et al. (2000; 1997) present an operational framework of community capacity building consisting of three levels. Level one - health infrastructure and service development - refers to the establishment of minimum requirements in structures, organisation, skills and resources. Level two - program maintenance and sustainability - refers to capacity to continue to deliver a particular program. Finally, level three - problem-solving capability of organisations and communities - refers to capacity of a
more generic kind to identify health issues and develop appropriate mechanisms to address them.

Much of the literature has focused on the dimensions of community capacity building. Labonte and Laverack (2001) describe nine domains of community capacity: participation, leadership, organisational structure, problem assessment, resource mobilization, asking “why?”, links with others, role of the outside agent and program management. They describe capacity building as a higher level construct that shares many ideas with community development, community empowerment and social capital. In contrast to many authors, Labonte and Laverack (2001) argue that the domains should be regarded as ends in themselves, rather than simply as means to achieve program outcomes. Labonte and Laverack (ibid) and others go on to discuss these dimensions as a basis for measurement of community capacity (Hawe et al., 2000).

Evans et al. (2004) looked at community capacity building in relation to early childhood development programs in Africa and include the following dimensions: building relationships, deepening knowledge and understanding through linking theory and practice, identifying and building on what would motivate people to change, creating an enabling environment, ensuring time for reflection and creating systems for monitoring and evaluation. Garlick (as cited in Thompson, Greville, & Param, 2008) identified five elements of community capacity building: knowledge building, leadership, network building, valuing community and their capacity to work together to achieve their own objectives, and supporting the capacity to collect, access and utilise quality information.

**Individual capacity building**

No matter how it is conceptualised, capacity building invariably includes an individual or a skills/knowledge dimension. Crisp et al.’s (2000) ‘bottom-up organisational approach’ focuses on training members of the organisation and core to this approach is that well-trained individuals increase local capacity to sustain programs, decreasing dependence on external funders or organisations. Investing in training local members to provide them with skills and knowledge not only benefits the individual but the broader community. The Victorian Health Promotion Foundation (2009) describes the focus of individual capacity building as being to strengthen the ability of individuals and to provide opportunities to extend those capacities. Skills development and utilisation is a key strategy and includes providing professional development, formal and informal learning, professional support and supervision, and performance management. There is no doubt that capacity building is more than training of individual practitioners (Bastian, 2011), yet the Victorian Health Promotion Foundation
(2004) argues that individual capacity building is the most critical level as it affects the individual’s ability to bring about change not only at an individual level but at a broader population level.

Arguably there is a risk that by placing the dominant focus on training and education of individual practitioners, other levels of capacity building may remain neglected. However, there are instances when capacity building necessarily begins at this level – whether it is called individual capacity building (Victorian Health Promotion Foundation, 2004), bottom-up organisational approach (Crisp, 2000), or health infrastructure and service development (Hawe et al., 2000).

Individual capacity building, that is, training of practitioners, is the main focus of this study. However, the program also includes provision of a culturally appropriate developmental screening tool, practice guidelines and planning for mentoring and support. The program has been designed to be an integrated component of the existing HU5Ks program. The other levels and dimensions of capacity building will be essential to the long-term sustainability of a developmental monitoring program, such as implementing the adapted ASQ-3, and while this is recognised, addressing all those determinants was not within the scope of the thesis. The evaluation does, however, explore specific barriers and facilitators to the implementation of the training program and the adapted ASQ-3, highlighting the other dimensions of capacity building relevant in this context. No doubt these other factors will need to be addressed in the future to further build the community’s capacity to embed and sustain the program, and will be the objective of another body of work informed by this study. Focusing on individual capacity building in this study does not mean a disregard for the other levels but rather seems a legitimate place to start building (Hawe et al., 2000).

**SUMMARY**

This chapter presented the evidence relating to Aboriginal children growing up in the Northern Territory and the significant disadvantage they face. It emphasised the importance of the early years, particularly early detection of development problems and the need for structured developmental screening tools, especially in this context. The chapter reviewed available developmental screening tools and presented the suitability of the ASQ-3 for adaptation in this study. Next the literature that informed the cross-cultural adaptation of the ASQ-3 was presented, detailing Herdman’s universalist approach as the most suitable for the remote Aboriginal context.
The importance of AHWs in the health workforce was outlined. The need for building capacity of this workforce group was discussed and the evidence reviewed in relation to capacity building led to an individual focus for this study. While the other dimensions and levels are undoubtedly important determinants of increasing capacity, when beginning at the individual level it is vital that this component is adequately and thoroughly developed, implemented and evaluated, which this study aims to do. In the next chapter, the research design employed to fulfil the aim of this study will be presented.
CHAPTER 3 RESEARCH DESIGN

INTRODUCTION

This chapter details the research design employed for the study. To fulfill the study aim and answer the evaluation questions, a program theory evaluation approach was used, utilising a case study framework with mixed methods. The first section begins with describing the aim of the study and the specific scope of the thesis. In section two, the design framework that was adopted is outlined. The case study framework is explained, followed by details of the evaluation model and the basis for a mixed method methodology. This is followed by a description of the research context in section three. In section four the research methods employed are described, presenting the rationale for the mixed methods selected and including the data collection process. Finally, in section five, the data analysis procedures for both the qualitative and quantitative data are outlined.

3.1 STUDY AIM

The overarching purpose of the Talking about Raising Aboriginal Kids (TRAK) study is to determine how the adaptation and implementation of a widely used developmental screening tool and the training of key Aboriginal and non-Aboriginal remote health staff can improve practice in developmental monitoring and in the early identification of children with developmental problems. The anticipated longer term outcome of training staff, including in the use of a culturally adapted developmental screening tool, is an increase in the proportion of children receiving developmental services. Over the longer term, the TRAK study aims to systematically follow-up these service and practice outcomes of the program.

This thesis is focused on the formative and process evaluation stages of the capacity building program for AHWs in early childhood development practice, which includes training, providing resources (notably the adapted ASQ-3) and support. The aim, therefore, is to evaluate the design and implementation of the capacity building program for AHWs in early child development practice, including the sustainable incorporation of the culturally adapted ASQ-3 into standard health centre practice, in remote Aboriginal health centres. Exploration of the barriers and facilitators to empowering AHWs to perform this role in remote health centres will be a key objective of the thesis.
3.2 DESIGN FRAMEWORK - CASE STUDY EVALUATION

3.2.1 Case study design

*Explanatory case study design*

To address the thesis aim, rich and detailed data on the program content and context are required in order to provide information necessary to understand program outcomes. To be able to answer these questions, especially under complex and changing conditions, a case study design was considered appropriate (Patton, 2002).

Case study research is an important and distinctive form of inquiry and is the design framework of choice when a ‘how’ or ‘why’ question is being asked about a contemporary phenomenon within a real-world context over which the investigator has little control (Yin, 2009). Stake describes case study as “the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (Stake, 1995, p. xi). In other words, case study is the design of choice when one wants to understand a real-life phenomenon in depth and where the contextual conditions are pertinent to the phenomenon of study (Miles & Huberman 1994; Yin, 2009).

Experimental designs may establish whether a program is effective but are limited in their ability to explain the process; the how and why the intervention worked, or did not work. Case studies can examine such issues and should be considered an adjunct to experimental designs (Yin, 2009). There are other benefits to using case study design. The case study has the flexibility to manage the uncertainty of other real-life complications, such as both the case and the context changing over time, and the blurred boundary between the phenomenon being studied and the context. The strength of the case study also lies in its ability to evaluate interventions where there is no definite single set of outcomes (Yin, 2009).

Yin describes three types of case study: exploratory, descriptive and explanatory (Yin, 2009). The descriptive case study describes an intervention and the real-world context in which it occurred. Exploratory case studies illustrate certain topics, the goal being to develop hypotheses and propositions for further inquiry. The explanatory case study seeks to explain presumed causal links in real-life interventions paying particular attention to the relevant ‘how’ or ‘why’ research questions.

For this study, an explanatory ‘theory testing’ case study design was adopted. The overarching aim of the study was to understand how and why the TRAK program implemented worked (or did not work) and a case study evaluation was considered optimal.
As an evaluation with an underpinning program logic (described below), the TRAK study naturally sits in a theory testing case study framework (Yin, 2012).

**Unit of Analysis**

An embedded multi-case design of two remote health centres was carried out (see Figure 3-1). Although only a ‘two-case’ case study, this is preferable over a single-case design, increasing the likelihood of a quality case study and adding confidence to the findings (Miles & Huberman, 1994; Yin, 2009). The unit of analysis (the ‘case’) was the remote health centre in the context of a remote Aboriginal community in the NT. The health centres were examined as the main unit of analysis with the Aboriginal Health Worker group as the embedded units.

**Figure 3-1: Multiple-case design**

![Multiple-case design diagram](image)

### 3.2.2 Case selection

The selection of cases occurred after initial ‘screening’ (Yin, 2009). Screening entails consulting with people who are knowledgeable about the potential cases and in this situation included consultations with child health nurses from the then Department of Health and Families (Health Development branch) as well as with staff in Program and Policy from the Maternal Child and Youth Health team of the department.

The intention was to include *exemplary* cases in the study (Yin, 2012) and the initial consultations with departmental staff identified several potential communities for
consideration. Exemplary cases means those that had the conditions perceived necessary for the implementation to be successful, based on the assumptions and theories in the program logic (see Fig 3-2). Therefore, to be considered as exemplary, cases had to have the following criteria: health centre support for child development practices and an established commitment to implementing the Healthy Under 5 Kids (HU5Ks) program (NT Department of Health, 2009); a commitment to having AHWs in the key role of providing child health care including developmental monitoring; and, finally, health centre support for AHWs to be primarily involved in the project.

Potential cases were matched in regards to size of the remote community and having government-run health services. Health centres were then approached and preliminary meetings with community members and remote health centre staff were offered. In these consultation meetings I aimed to communicate the rationale for the proposed study and to gain the community’s views on the proposal. I considered it imperative that while they were considered for inclusion according to a set of criteria, the communities also chose to be involved in the study.

Of the six health centres approached, four were able to commit to the project. Two were ultimately included in the study as cases for several reasons. First, including more than two cases would have required resources beyond the scope of the study. Second, I considered it important to include remote health centres from different geographical locations in the Northern Territory to disprove a rival theory that location would impact implementation. Hence, once one remote health centre from both the Top End and Central Australia was selected, no further cases needed to be sought.

Based on the underpinning theoretical framework, the original intention was to select two cases where I might predict analogous results. If the initial proposition was supported, this would then represent the replication design (Yin, 2009) where each case is selected so that it predicts similar results - a literal replication. This is in contrast to a theoretical replication design, where cases are selected so that they predict different results but for foreseeable reasons (Yin, 2009).

While the plan had been to follow a literal replication design (i.e. to select two cases where analogous results might be predicted) this needed to be abandoned and a theoretical replication design adopted instead. This was due to the fact that one of the health centres initially identified as an exemplary case did not in fact meet the criteria; the health centre manager did not agree with the rationale of the study and did not support the AHWs’ involvement. However, after the initial consultations, staff at the health centre and other
members of the community were enthusiastic for the health centre to participate. In keeping with the ethical values that guided this project, rather than deny the community the opportunity to participate in the study, a theoretical replication process was adopted. In other words, only one exemplary case was selected. The conditions that were identified in the program logic as being necessary for the implementation to succeed, were not present in the non-exemplary case. Therefore, it was predicted that there would be different results in the two cases. The selection process was adapted and cases were selected to examine how the implementation varied under different conditions.

The following section outlines the evaluation model adopted. Process evaluations search for explanations of successes, failures and changes in a program. Under real-world conditions, unplanned circumstances and people can shape programs and modify initial plans in significant ways (Patton, 2002). The case study design was adopted to accommodate unexpected situations that would arise in the real-world, complex remote community setting (Birks et al., 2010; Mikhailovich, Morrison, & Arabena 2007; Yin, 2012)

### 3.2.3 Evaluation model

*Evaluation: a reflection on terminology*

Evaluation can be defined as the systematic determination of the quality or value of something. More specifically, it is the systematic assessment of the operation and/or the outcomes of a program, compared to a set of standards; the objective is to contribute to the improvement of the program (Weiss, 1998).

Rossi et al. (2004) describe program evaluation as the use of social research methods to systematically investigate the effectiveness of social intervention programs. Patton (2002) distinguishes between evaluation research that aims to produce knowledge and evaluation that is more action-oriented. I would argue that a combined approach is possible with the aim of evaluation research being to produce knowledge that supports action. With this approach in mind, an evaluation of the activities and implementation of the TRAK program was undertaken.

A number of terms are unique to evaluation research and, unfortunately, the existing evaluation terminology is interpreted differently in different contexts. Before proceeding with details of the evaluation model, I will outline the definitions of the terms that I use in the thesis.
Process-Outcome evaluations

Process evaluation focuses on how a program has been implemented. It focuses on such things as participant involvement, activities, actions taken, staff practices and client actions. It can also assist in understanding the outcome data, by identifying which element of the program was associated with greater or lesser success (Rossi et al., 2004; Weiss, 1998). Importantly, if the program has no impact, the process evaluation is valuable for understanding if it was because of implementation failure or theory failure (Nutbeam & Bauman, 2006).

Outcome evaluation focuses on the results or effects of the program and judges how well the goals have been achieved. Some use the term impact when discussing results or effects and may use it to mean long-term outcomes or effects of the program on the broader community. In outcome evaluation, the emphasis is on what happens to clients/providers after their participation in the program, as a result of the intervention (Weiss, 1998). Outcome evaluations ask whether the desired outcomes were achieved and whether there were any unintended consequences of program implementation (Rossi et al., 2004).

Formative-Summative evaluations

Formative evaluation is conducted early in the implementation of a program or prior to implementation and produces information that is used to help improve or strengthen the design of the program in its developmental phase (Nutbeam & Bauman, 2006). It serves the needs of the developers. Formative evaluation can include needs assessments, implementation evaluations and process evaluations.

Summative evaluation is undertaken after the program is finished and can include outcome and impact evaluations, cost-effectiveness and cost-benefit analyses. It generates information about the effectiveness of the program to decision makers who are considering implementing it. In practice the line between the two often blurs, with summative evaluations sometimes playing a formative role in improving the program (Fitzpatrick, Sanders, & Worthen, 2011).

In summary, the terms formative and summative relate to the intentions of the evaluator in undertaking the study, whether to develop a program (formative) or judge the impact of a program (summative) (Rossi et al., 2004; Scriven, 1991; Weiss, 1998). Process and outcome relate to the phase of the program studied. The following section will outline the objectives of the formative and process evaluation undertaken for this study.
**Program Logic**

The logic model is a useful evaluation tool that facilitates effective program planning, implementation, and evaluation. The *program logic* describes why a program is expected to work. The program logic model illustrates the theory of change underpinning a program: how and why it is expected to work (Rossi et al., 2004). Throughout the thesis, the term program logic will be reserved to describe the theoretical linkages and assumptions made in the logic model, and the term logic model to refer to the visual schematic depicting or describing the program logic (Patton, 2002). It should be noted that when using the term ‘theory’ in the context of program logic this does not necessarily refer to any grand theory. While distinct theories and evidence inform the program logic (as described in the adult learning theory literature section in chapter six), theory in this context simply relates to a logical or plausible method or plan for achieving desired outcomes and associated assumptions about change (Rossi et al., 2004; Weiss, 1998).

The logic model (see Figure 3-2 below), outlines the connections between the planned work and the intended results of the TRAK program (Nutbeam & Bauman, 2006; Rossi et al., 2004; Stern, 2004). The *inputs* (or resources) included human, community, financial and organisational resources and services in place or available. The *activities* are what the program did with the resources; the intentional part of the program implementation used to bring about the intended program. In this case the activities were: the cross-cultural adaptation of the ASQ-3; the design of the TRAK program; the delivery of the training workshop and booster training; and the identification of available support structures. *Outputs* are the direct products of program activities and included levels of service delivered by the program, such as the adapted ASQ-3, the training program devised, and the number of staff trained. *Outcomes* are the specific changes in program participants’ behaviour, knowledge, skills and level of functioning. Program logic is often captured by a series of ‘if-then’ statements, as has been incorporated in this logic model. IF inputs, such as the resources listed, are available, THEN they can be used to accomplish planned activities; IF these planned activities, such as design of training, are accomplished, THEN intended outputs, such as number of staff trained, will be delivered.

The program logic has the advantage of displaying all aspects of the program, which helps ensure that no crucial issues are overlooked. Thus, it helped identify possible effects of both program factors and external factors on intended outcomes of the TRAK program. Making
Figure 3-2: Program logic model

Inputs
In order to accomplish the set of activities the following are necessary:

- Developmental monitoring Tool (ASQ-3) adapted
- Training & support needs identified and training developed
- Booster training provided to AHWs and other staff

Activities
- IF inputs are available, THEN they can be used to accomplish planned activities
- Training in use of ASQ3-TRAK Tool and broader ECD issues provided to AHWs and to Remote Health and Early Childhood staff
- Support structures nominated
- Number of AHWs and EC staff trained
- Number of staff participated in booster training

Outputs
- IF these planned activities are accomplished, THEN intended outputs will be delivered
- Culturally appropriate screening tool available (ASQ3-TRAK Tool)
- TRAK training program available
- Support structures formalised
- Number of AHWs trained
- Number of Remote Health and EC staff trained

Outcomes
- Short
  - IF planned activities are accomplished to extent intended, THEN participants will benefit in certain ways
  - Support structures formalised
  - Improved knowledge and awareness of ECD policies & guidelines and of dev monitoring, among AHWs
  - Remote health centres adopt use of ASQ3-TRAK tool as part of established HUSKs
- Medium
  - Improved skill and confidence in monitoring and promoting child development among AHWs
  - AHWs supported to administer ASQ3-TRAK tool
  - Increased monitoring of early child development by AHWs
- Long
  - IF these benefits to participants are achieved THEN certain changes in community might be expected to occur
  - Increased proportion of children receive developmental monitoring through Remote Health Service
  - Increased proportion of children with potential developmental problems identified
  - Increased proportion of appropriate referrals for developmental delay

Assumptions
- RH supports child development and committed to implementing HUSKs programme
- RH willing to work with research team
- RH services support AHWs
- AHWs aware of HUSKs program and associated careplans
- Training effective
- AHWs willing to participate
- Stakeholders agree that AHWs have a role in providing child health care, including developmental monitoring

External Factors
- Competing clinic demands during implementation may impact on staffs’ availability to participate fully
- Other ECD training and programs
- Community cultural business
- Changeover of staff makes it difficult to develop and maintain the necessary relationships and partnerships

RH Remote Health, ECD Early Childhood Development, EC Early Childhood, AHW Aboriginal Health Worker
provision for the identification and subsequent exploration or measurement of the effects of both these factors on the intended outcomes, strengthens the basis for exploring causal attributions (Funnell, 2000).

There are many advantages to developing the logic model beyond it being a visual representation of how a program will conceivably work. In this study, it was useful when training new staff about the project and approach, and when explaining the project to stakeholders and advisors. Also, it aided in controlling ‘program drift’; unplanned deviations from implementation goals and standards. Periodical review ensured that the activities were consistent with the intended purpose and approach. Finally, it provided a basis for the evaluation design, guiding the development of the formative and process evaluation, and the outcome evaluation to be completed as part of the larger, encompassing project (Rossi et al., 2004; Weiss, 1998).

**TRAK evaluation**

The scope of the thesis includes the formative and process evaluation stages of the project. While some short-term outcomes will be included, the assessment of the TRAK program’s longer term outcomes, including impact on organisation practice, will be the focus of a future body of work.

**Formative evaluation**

The formative evaluation was conducted to improve the program from an early stage. The cross-cultural adaptation of the ASQ-3, followed by a training needs analysis and medical record audit were undertaken to address the following key evaluation questions:

1. What is the logic underpinning the TRAK program?
2. What are the barriers to compliance with current developmental monitoring policy in the NT context?
3. What adaptations of the ASQ-3 are required for its culturally appropriate administration in this context?
4. To what extent is the adapted ASQ-3 culturally appropriate and acceptable?
5. What are the training needs of AHWs in remote health centres, in the area of ECD and developmental monitoring?
6. What is the current baseline level of developmental care provided by the remote health centres and what systems are in place?

**Process evaluation**

The longer term outcomes of the professional development and training are certainly relevant and measurement is necessary. However, it is just as important to know whether the program was implemented as intended and to assess participants’ reactions and learning, prior to determining whether training is successful or not. Thus, the evaluation assessed the reach, dose and fidelity of the implementation of the TRAK program, as key process evaluation components (Linnan & Steckler, 2002). Linnan and Steckler (2002) define ‘reach’ as the extent to which the intended target group participates in an intervention, ‘dose’ as the amount of the intervention delivered, and ‘fidelity’ as the quality of the implementation of the program. In addition to assessing the overall implementation, the initial training outcomes were also evaluated.

An evaluation model developed by Thomas Guskey (2000) was used to guide the training evaluation plan developed for this study. Guskey developed a five-level model for the evaluation of professional development programs in education, influenced by the work of Kirkpatrick (2006). Kirkpatrick proposed that training evaluations address four outcome levels: reactions, learning, behaviour change and organisational impact, and was originally developed for training in business and industry. Guskey (2000) added an additional level, *organisational support and change*, to consider the organisational issues that influence the implementation of programs.

**Level 1, Participant Reaction:** Evaluation on this level measures how participants in the training react to it; the extent to which they find the training to be of adequate quality, relevance and usefulness. Kirkpatrick (2006) refers to this as a measure of customer satisfaction. It is typically measured via evaluation or feedback forms, or interview, and as will be explained further, was adopted for this study.

**Level 2, Participant Learning:** Learning is defined as the extent to which participants improve knowledge and/or skill, and change attitudes as a result of the training program. This level acknowledges that participants must effectively learn the intended information for the program to create the intended change. Learning is typically measured using surveys, knowledge tests, role plays or self-rating (Kirkpatrick & Kirkpatrick, 2007). Kirkpatrick and Kirkpatrick recommend pre- and post-training tests to evaluate increase in knowledge and/or change in attitudes, and performance tests to evaluate increase in skills.
**Level 3, Organisational Support and Change:** This level assesses the extent to which the organisation provided advocacy, support, accommodation, facilitation and recognition for the initiative. This is the level Guskey added to Kirkpatrick’s original model when it became evident that implementation of policies and practices was influenced by organisational factors, and often “broke down” at this level. Interviews, surveys and meeting minutes are typically used to measure this level.

**Level 4, Participant Use of New Knowledge and Skills (Behaviour):** This is the extent to which the participants have effectively applied the information gained: in other words, whether a change in behaviour has occurred because the participant attended the training program. Measures to evaluate behaviour include surveys, observations, work review and interviews, and should be made three to six months after the training (Kirkpatrick & Kirkpatrick, 2007). Ideally, evaluation at this level occurs pre- and post-training, and Kirkpatrick and Kirkpatrick (2007) recommend interviewing key informants to obtain data on behaviour change of participants.

**Level 5, Results or Organisational impact:** This final level deals with demonstrating the overall impact of professional development. Guskey specifies in his model that this level relates to increased student achievement, since his model was developed for the education field, but it is similar to Kirkpatrick and Kirkpatrick’s (2007) broader definition, that is, that the final result that occurs is because of attendance at a training program. Both authors define this as being at an organisational level. In this study it would be, for example, an increased proportion of children receiving developmental checks, and an increased proportion of checks, including the use of a developmental screening tool. Typically, organisational impacts are evaluated six months to three years after training. However, it is acknowledged that it can be difficult to attribute change to training as impacts may be confounded by other factors that affect the organisation.

Importantly, both Guskey (2000) and Kirkpatrick (2006) highlight the risk of overlooking the lower levels to focus on behaviour or overall impact. Each level builds on those that come before, and conclusions cannot be made about the training from the higher level evaluations alone. Reactions to the training may have been positive and the learning outcomes accomplished as planned, but conditions for Level 3 or 4 may not have been present.

A major component of the TRAK program is, in essence, a professional development initiative that aims to have an ultimate impact on staff practice. However, the process of the capacity building program for AHWs in early childhood development practice is the focus of the thesis rather than the outcomes. Therefore the evaluation will focus on Levels 1 to 3 in
this presented model. The three levels correspond with the outputs and short-term outcomes in the program logic and, along with the evaluation literature, guided the key evaluation questions developed for the process evaluation:

1. To what extent was the intervention implemented as planned?
2. What were the barriers and facilitators to implementation of the training and to administration of the adapted ASQ-3?
3. To what extent were staff trained as planned?
4. To what extent was the training useful and relevant to AHWs?
5. What supports and systems were identified as necessary to embed the ASQ3-TRAK Tool in the remote health centre?

### 3.2.4 Methodology

**Mixed methods**

It is important to emphasise that the case study is not a method but a study design and is not necessarily aligned with any single data collection method (Yin, 1981; Simons, 2009). Various methods and methodologies can be employed to undertake case study research.

For this study, a mixed methods case study was undertaken. Quantitative methods are primarily used in research interested in numerical data. Quantitative studies, therefore, measure data and generalise results from a sample to the population of interest. In contrast, qualitative methods are mostly used to generate narrative data, for the purposes of exploring people’s lived experience in their natural setting (Miles & Huberman, 1994). Qualitative studies aim to answer the ‘what’, ‘how’, or ‘why’; to understand more about a phenomenon from the perspective of communities or individuals, rather than measuring it.

Combining the two methods, and taking a mixed methods approach, can strengthen a study and add insights and understanding that might be missed when only a single method is used (Creswell & Clark, 2010). This so-called third methodological movement can yield data that provides “stronger inferences…and opportunity for presenting a greater diversity of divergent views” (Tashakkori & Teddlie, 2003, pp. 14-15). Mixed methods research, by not being confined to a single method or approach, can answer a broader range of research questions and the strengths of one method can be used to minimise the weaknesses of another method (Johnson & Onwuegbuzie, 2004). In an evaluation study such as this, a mixed methods case
A number of typologies have been suggested for classifying different approaches to mixed methods research and to simplify design choices. Some of the classificatory features of such typologies include the purpose of study (e.g. triangulation, complementarity, initiation, development, expansion; (Greene, Caracelli, & Graham, 1989), the theoretical framework of study (Greene & Caracelli, 1997), time orientation (concurrent versus sequential; (Morgan, 1998)), emphasis of approaches (equal status of methods versus dominant status (Johnson & Onwuegbuzie, 2004); (Morgan, 1998)), and stage of integration (Tashakkori & Teddlie, 2003). However, selecting the optimal mixed methods research design remains a challenge, with no less than 35 typologies presented in Tashakkori and Teddlie’s (2003) Handbook of Mixed Methods.

Greene and Caracelli’s (Greene & Caracelli, 1997) typology defines mixed methods designs as either component designs or integrated designs. In component designs (including triangulation, complementarity and expansion designs) methods are implemented as separate aspects and are kept distinct throughout the research. In integrated designs, different methods are combined (includes iterative, embedded, holistic and transformative designs). For this study, qualitative and quantitative research methods were conducted concurrently, and a complementarity design was used which allows for “findings from one dominant method to be enhanced or elaborated through findings from another method” (Caracelli and Greene, 1997 in Tashakkori & Teddlie, 2003). In contrast to triangulation, which seeks corroboration of results from different methods, complementarity seeks clarification of results generated from one method with another (Greene & Caracelli, 1997).

I chose to use qualitative research methods (interviews, observations and group interviews) in this study as I wanted to paint a more comprehensive picture of the process and initial outcomes of the intervention, notably to specifically capture the perceptions and experience of the AHWs and key informants and to witness the developmental monitoring activities in the two communities (Patton, 2002). The dominant methods in this study were qualitative, augmented by an audit of medical records prior to the training. The longer term study of the outcomes of AHW training and use of the adapted ASQ-3 will include an audit of medical records post-training. However, the audit of current developmental practice provided a valuable baseline indicator as documented in health centre records that will enable measurement of change in practice in the longer term study. Using the complementarity
design, the qualitative methods provide important context for understanding these initial audit findings.

**Philosophical orientation: A Pragmatic approach**

Advocates of mixed method research reject an either/or approach to paradigm selection. Johnson and Onwuegbuzie (2004) recommend a “more pluralistic or compatibilist approach” (p. 17). They argue that “mixed methods research should, instead…use a method and philosophy that attempt to fit together the insights provided by qualitative and quantitative research into a workable solution” (p. 16). This pragmatic position is adopted by many as a philosophical underpinning for mixed methods research (Johnson & Onwuegbuzie, 2004; Patton, 2002; Tashakkori & Teddlie, 2010).

Pragmatism is the search for practical answers to questions of interest to the researcher; the research question is paramount. Pragmatists carry out research from within their own personal value systems, these values affecting how and what to study and how to interpret findings (Tashakkori & Teddlie, 2003). Johnson and Onwuegbuzie (2004) argue that pragmatism’s approach to research is explicitly value oriented. This is research occurring in real-life circumstances where definitions of ‘truth’ and ‘reality’ are avoided and instead diverse viewpoints and explanations from within a personal value system are embraced (Teddle & Tashakkori, 2009).

Pragmatism’s eclectic, pluralist approach is particularly appealing in the context of this project as it provides a useful way to gain an understanding of the complex social phenomena being studied. While quantitative methods seek to measure the practice of AHWs and other remote health staff, qualitative methods will provide insights into the possible reasons and the contextual factors which shape and give meaning to this practice.

### 3.3 Research context

As described in chapter one, the study was conducted in two sites: Yumurru in the Top End and Nhanhala in Central Australia.

Both communities are considered ‘very remote’ areas on the Australian Standard Geographical Classification (ASGC) of Remoteness system. The ASGC is a geographic classification system developed by the Australian Bureau of Statistics (ABS) to enable quantitative comparisons between ‘city’ and ‘country’ Australia. The Remoteness Area categories are defined in terms of physical distance from the nearest urban centre and
therefore access to goods and services (ABS, 2011c). The Remoteness Areas categories range from 1 Major Cities, through to 5 Very Remote where there is very little access to goods, services and opportunities for social interaction.

**Yumurrku**

Yumurrku is approximately 660 kilometres east of Darwin situated on the picturesque Gove peninsula at the northeastern corner of Arnhem Land. In 1935 a Methodist mission was established at Yumurrku and members of the 13 clans that owned land in the surrounding area were gradually drawn into the mission (Christie, 2007). The mission lasted until the 1970s when the land council was elected with representatives from the different clans. Today, many people live partly on their clan’s homeland and partly in Yumurrku. The 2011 ABS census reported a population of 843 in Yumurrku, of whom 649 (77%) identified as Aboriginal and Torres Strait Islander (Australian Bureau of Statistics, 2011a). However, that number is reported by locals to fluctuate considerably as people move between the community and their homeland outstations.

*Figure 3-3: Yumurrku coastline*

*Yolngu Matha* is the main language in Yumurrku, but there are 13 different dialects corresponding to the 13 clan groups in the community. *Yolngu* (Aboriginal person) in Yumurrku speak a dialect of one of a number of closely related languages. Language has been strongly maintained in the community and is reflected in the long history of bilingual education which has seen many Yolngu teachers trained and joining the professional workforce (East Arnhem Shire Council, 2012). Despite the missionary history, Yolngu still
celebrate their identity and practice their traditional ‘Law’ or customs such as singing, dancing, ritual performances, talking, hunting, cooking and eating (Christie, 2007).

Yumurrku is recognised as playing a pivotal role in the development of native title rights in Australia. In 1963, the Yumurrku Bark Petitions were sent to the Commonwealth Parliament objecting to the government’s decision to take Yolngu land to be sold for bauxite mining (Aboriginal people of Yirrkala, 1963). Although the petition was unsuccessful, in that the mining rights were granted, it led to the first significant legal case for Aboriginal Land Rights in Australia (Wells, 1982).

Consistent with Aboriginal and Torres Strait Islander people across Australia, Yumurrku has a young age distribution; the median age was 25 in the 2011 census, with a reported 46 children under the age of five years (7.1%). The community is located 18 kilometres from a large mining town of approximately 4000 people, and many staff who work in Yumurrku live in the town. The community has a preschool, primary and secondary school, child care facility, store and a well established community controlled art centre that supports many successful Yolngu artists. Yumurrku is accessible by one daily 70 minute flight from Darwin.

\textbf{Nhanhala}

Nhanhala lies approximately 130 kilometres west of Alice Springs in the hills of the West McDonnell Ranges in Central Australia, the purple landscape made famous by Aboriginal artist Albert Namatjirra. Nhanhala was established as a mission in 1877 by German Lutheran missionaries. The Western Arrarnta\textsuperscript{3} people were drawn into the mission by the power of goods and safety, following their land being claimed for pastoralist settlement (Albrecht, 2002). The mission’s aim was to convert the Aboriginal people to Christianity, therefore ensuring people stayed in the mission to receive Christian gospel instruction was fundamental; providing adequate food was a way of achieving this (ibid).
In the 1970s, the land council was elected, removing the institutional structures and in 1982 the land was handed back to traditional owners. From this time many people moved out of the community to form ‘outstations’ in their chosen area with their kinship groups. Although some 40 outstations were established, many people have returned to live in the community to access services and better living conditions, due to diminishing government support for outstations (Albrecht, 2002).

The missionaries introduced an orthography of the language of the region, Western Arrarnta. However, there are few vernacular texts available and a formal bilingual educational program has never been implemented. Consequently, few people can read in their own language, let alone write in it. Western Arrarnta, however, still remains the first language for Aboriginal people living in Nhanhala. While the language remains strong, cultural traditions are not celebrated in the same way as in many other remote Aboriginal communities. The permanent settlement in the mission led to a transition from a traditional system based on kin and ritual relations to a new local order built on the mission’s authority, including conversion to Christianity and exchange of rations for service. When the mission was established, large numbers of Pitjantjatjara and Luritja people were also driven to the site by the availability of supplies and medical care. Many attribute the loss of Western Arrarnta culture and ‘Law’ to this mixing of language groups.
Nhanhala had a reported population of 623 in the 2011 ABS census (2011b) of whom 537 (86%) identified as Aboriginal and Torres Strait Islander people. This number is likely to be an underestimate of the actual number because so many people move between their outstation and the community. The median age was 22, with 57 children under the age of five years (10.6%).

In addition to the health centre, the community has a preschool and primary school, two community stores, child care facility, cultural centre, night patrol, a police station and shire offices. There is a Lutheran church and many Aboriginal people are practising Lutherans. The community is on route to natural tourist attractions via sealed road from Alice Springs and has many visitors who also stop at the tourist precinct that houses historical buildings and tea rooms. Access to Nhanala, for the purpose of the study, required a 2 hour flight from Darwin to Alice Springs followed by a 90 minute drive to the community.

Both Yumurrku and Nhanhala lie in the lowest quintile of disadvantage as defined by the Socio-Economic Indexes for Areas (SEIFA) (ABS, 2013b). SEIFA provides summary measures derived from the ABS Census to measure different aspects of socio-economic conditions by geographic area, and is ranked from 1, the most disadvantaged (lowest quintile) to 5, the least disadvantaged (highest quintile). Families living in these communities are likely to experience severe financial strain, food and housing insecurity, and overcrowding. Table 3-1 outlines the health services and staff available.

<table>
<thead>
<tr>
<th>Table 3-1: Demographics of the two communities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Yumurrku</td>
</tr>
<tr>
<td>Nhanhala</td>
</tr>
<tr>
<td>Total Pop (n)</td>
</tr>
<tr>
<td>Children aged 0-5 years (n)</td>
</tr>
<tr>
<td>Primary Health Care Service</td>
</tr>
<tr>
<td>Nurse</td>
</tr>
<tr>
<td>AHW³</td>
</tr>
<tr>
<td>CBW⁴</td>
</tr>
<tr>
<td>SW Worker⁵</td>
</tr>
<tr>
<td>FaFT⁶ staff</td>
</tr>
<tr>
<td>SEIFA⁷ quintile</td>
</tr>
<tr>
<td>ASGC⁸ Remoteness Area</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Nhanhala</td>
</tr>
<tr>
<td>Total Pop (n)</td>
</tr>
<tr>
<td>Children aged 0-5 years (n)</td>
</tr>
<tr>
<td>Primary Health Care Service</td>
</tr>
<tr>
<td>Nurse</td>
</tr>
<tr>
<td>AHW³</td>
</tr>
<tr>
<td>CBW⁴</td>
</tr>
<tr>
<td>SW Worker⁵</td>
</tr>
<tr>
<td>FaFT⁶ staff</td>
</tr>
<tr>
<td>SEIFA⁷ quintile</td>
</tr>
<tr>
<td>ASGC⁸ Remoteness Area</td>
</tr>
</tbody>
</table>

¹NT Department of Health, ²Aboriginal Medical Service, ³Aboriginal Health Worker, ⁴Community Based Worker, ⁵Strong Women, ⁶Families as First Teachers, ⁷Socio-Economic Indexes for Areas, ⁸Australian Standard Geographical Classification
3.4 RESEARCH METHODS

The program logic model (see Figure 3-2, page 50) identified the most important variables and relationships to be examined, guiding the evaluation plan and what information should be gathered at each stage of the study (Stern, 2004). Data were collected on these variables and relationships using a variety of qualitative and quantitative methods as outlined below. Figure 3-5 (page 69) illustrates the time points at which the methods were employed.

**Interviews**

The individual interview method is a powerful tool for obtaining rich data on informants’ views, attitudes and meanings that underlie their behaviours (Gray, 2009). The method is considered suitable to be adopted in sensitive research with vulnerable participants and was therefore considered appropriate to this study (Liamputtong, 2007). Moreover, in the context of this study, interviews were likely to be more acceptable to participants than questionnaires or surveys that require a higher level of language and literacy proficiency.

Semi-structured interviews to obtain AHW perspectives of ECD and developmental monitoring practices were conducted at two time points: at baseline, prior to the training intervention, and three to six months after the intervention. The interviews had a pre-determined topic guide (see Appendix 1a and 1b), however they still allowed enough time for the interviewees to develop their own accounts (Bernard, 2011). Interviews were conducted according to the individual’s preference, including having a support person or colleague present if desired (Liamputtong Rice & Ezzy, 1999).

I conducted all interviews with AHWs. This was considered particularly important in this context where trust is a critical factor. Introducing another researcher who is unknown to the informant would potentially have impeded the process. It is important that the informant develops a rapport with the interviewer and does not feel judged, and this was considered to be more likely with an interviewer with whom a trusting relationship had already been developed (Green & Thorogood, 2009).

Prior to the intervention, interviews explored AHWs’ perceptions about: early childhood development, developmental monitoring practices and resources available in the community and through the clinic; their attitudes to this area including confidence in raising child development issues and providing information and advice to parents/carers; and perceptions about organisational support within the health service for implementing developmental monitoring. The obtained interview data also formed part of the training needs analysis and
informed the design of the training and subsequent support offered to AHWs as detailed in chapter six.

Following the training intervention, a subsequent set of interviews explored AHWs’ views of the relevance and usefulness of the training, and their perceptions of the strengths, limitations and acceptability of the adapted ASQ-3. Additionally, these interviews explored barriers and facilitators to incorporating the adapted ASQ-3 into their routine clinical practice in their workplace.

I also conducted semi-structured interviews with other key informants, including health centre managers, nurses and child health nurses, to understand the current policy context, inform the adaptation of the ASQ-3, and explore their perceptions of the barriers and facilitators to developmental practice. A research assistant interviewed parents who participated in the staff training by agreeing to have the adapted ASQ-3 administered as part of their child’s routine child health check. Procedures for this component of the study are described fully in chapter four.

**Group interviews**

Group interviews were conducted with key informants including Aboriginal community based workers\(^4\), Aboriginal community elders, child health nurses and early childhood development experts, using an interview schedule (see Appendix 1c). The findings from the group interviews informed necessary modifications of the ASQ-3 to ensure it would be culturally and linguistically appropriate for administration in the remote Australian Aboriginal communities. Chapter four provides details of the group interviews procedure.

**Direct observations**

Direct observation was selected as a study method for the opportunity it brings to move beyond opinions and participants’ interpretation, to an appraisal of their actions. The observation data from the AHW developmental check was a valuable complement to the interview data in determining training needs, developing support structures for AHWs, evaluating the utility of the adapted ASQ-3, and evaluating the training program.

I observed a selection of child health checks being conducted by AHWs prior to the training sessions. In particular, observation of AHWs performing child health checks in the remote health centres was conducted to obtain data on individual and organisational practice. The

---

\(^4\) Community Based Workers are Aboriginal people employed to work in a non-clinical health and wellbeing capacity within their own communities.
benefits of this direct observation include the opportunity to witness everyday routines and therefore capture facilitators and barriers to performing and recording developmental monitoring (Green & Thorogood, 2009). This provided first-hand experience of activities but also, importantly, of what did not happen in the health centres (Patton, 2002). Following preliminary discussions with the AHWs in the intervention communities, it was also agreed that this would be a useful method to gain an understanding of the capacity and skill level of the AHWs. An observation schedule was developed as a prompt (see Appendix 2a) focusing on the setting, acts, activities, meanings, participation, relationships and time (Gray, 2009). The procedure is described more fully in chapter five.

Three months after completion of the initial training workshop, I conducted structured observations of staff who had completed the training to assess their ability to administer the adapted ASQ-3. The observations were undertaken in the workplace following ‘booster training’ and involved observing the participant during a developmental check. A post-training observation checklist (see Appendix 2b) was used, comprising a number of skills in four areas: completing the tool; scoring the tool; interpreting the score; recording the findings. The participant was scored either as having completed the skill, partially completed the skill, or as having not yet completed the skill.

Although there is potential for bias with this approach, introducing an independent assessor was not feasible. Firstly, considerable time had been spent forming relationships with the AHWs and other staff, before and during the training, and it was for this reason that they co-operated with having an observer present. Introducing an independent observer, or filming the interaction for independent rating, would have been unacceptable in this context and may have jeopardised the observation. Secondly, the resources required for an additional, independent rater were not available to this study. The observation checklist that was developed attempted to minimise any potential bias and furthermore the multiple methods employed challenges the bias that comes from a single method (Crowe et al., 2011; Green & Thorogood, 2009).

I conducted further clinical encounter observations of staff 12 months after training to collect data on change in practice. These data will contribute to the longer term outcome evaluation that is planned to follow the thesis research.

Direct but less formal observations were made throughout field visits, including during formal interviews and group interviews, during the adaptation and translation process of the ASQ-3, during delivery of training and during the System Assessment Tool (SAT) meetings (to be discussed in chapter six). This observational evidence was particularly useful in providing
additional information about the context of each of the case studies, the adaptation of the ASQ-3, and finally the implementation of the AHW training program (Miles & Huberman, 1994; Yin, 2009). The training activities were designed to maximise the potential for observations contributing to the assessment of the learners. This formative assessment was conducted by observing and monitoring the learners as they responded to the trainer’s questions, asked questions, interacted with the training group and participated in the learning activities (HBA Learning Centres, 2010).

**Medical record audit**

Pre-intervention audits of the medical record of every child from birth to five years of age who was resident in the community, were undertaken. Lists of children to include in the audits were generated from health centre records and staff from each health centre assisted in determining which children on the list resided in the community. Children who were not currently resident in the community and children who were not Aboriginal and/or Torres Strait Islander, were excluded.

The aim of the pre-intervention audit was to provide a quantitative baseline of developmental services provided in a 12-month period prior to the intervention. The audit tool was based on the child health audit tool developed by ‘One21Seventy’, the National Centre for Quality Improvement in Indigenous Health (One21Seventy, 2013). The child health audit tool was modified and expanded in an attempt to capture data on who provided the developmental service and, importantly, the quality of the service (see Appendix 3)\(^5\).

The audits were conducted in the two communities where the intervention was delivered, Yumurru and Nhanhala. Similar baseline audits were also conducted in two other communities, which were matched for size, remoteness and available services. These will serve as control communities for the future outcome evaluation study examining the impact of staff training and availability of the adapted ASQ-3 on improving adherence with developmental best practice in the health centres.

**Training feedback survey**

Feedback surveys were completed independently by all staff who participated in training and were returned to a research assistant, allowing anonymity. Although deidentified, the pen and paper survey did ask the participant to nominate their position in the health service. The

---

\(^5\) Box 5-1, page 118, lists the data elements that were audited from medical records in the 12 month period.
survey consisted of 11 items, rated along a 5-point Likert scale, and three open-ended questions. The items assessed the quality, relevance and usefulness of training. The open-ended questions invited comments and recommendations for improving training (Appendix 11).

Pre- and post-training tests were not undertaken to evaluate participants’ learning. Although thought by some to be the gold standard, ‘objective testing’ is not without its problems. There are no standardised assessments or tests for this workforce group in this context, thus it would have been necessary to create a test de novo. The group of learners had varied language, literacy and numeracy skills, even among the AHWs, and it would have been a challenge to design a new test at a level that would accurately test all learners. What may have been far too simple for some learners and consequently may not have detected a change post-training, may still have been too difficult for other learners and may not have accurately measured knowledge pre-training, overestimating the impact of the training.

Another important consideration was the cultural appropriateness of testing. Participants with poor language and literacy skills, who also lacked child health training, may have felt overly scrutinised by being ‘tested’, increasing feelings of anxiety and fear of failure and potentially threatening their engagement with the process and learning. In addition, the time and effort involved in completion of the measures might further negatively influence trainees’ response to training. Instead, as Rogers and Horrock (2010) recommend “observation should be the main tool of evaluation for any teacher of adults” (p. 299).

3.4.2 Research participants

Non-probability samples of key informants, AHWs, Aboriginal parents, experts and staff were selected employing purposive sampling methods in order to gain information-rich sources (Bernard, 2011). Information-rich sources offer greater understanding and insights into the phenomenon being studied, than empirical generalisations (Patton, 2002).

Sample size calculations for the children whose medical records were audited were not relevant as this was a whole of population census, or a complete count.

Aboriginal children

The whole population of Aboriginal children aged under 5 years and resident in the community was included in the medical record audit.
Children, with their parents, were invited to participate in the practical component of the training program, where learners were required to administer the adapted ASQ-3 under supervision. Only children whose age corresponded with the ages that the HU5Ks specified as requiring a developmental check were selected.

**Aboriginal Health Workers**

The whole population of AHWs working in the two health centres was selected. There were a total of 10 AHWs in the two communities, all of whom were invited to participate in the study. As described in the case study framework above, the AHW group was the embedded unit of analysis in the case study. A main objective of this component of the study was to specifically explore AHWs’ experiences and perceptions; as such, ‘critical-case sampling’ was employed (Bernard, 2011). This sampling technique involves cases or sources that are crucial for the project (Liamputtong, 2009).

**Training participants**

In addition to the AHWs, a number of other staff were included in the training, as determined by the health centre and other community experts. Other Health Staff included: nurses and community based workers from the health centre; the Health Development branch child health nurses supporting the health centre; and managers of the AHWs and community based workers. All were invited to participate in the training and subsequent testing of the adapted ASQ-3. *Education Staff* from the Families as First Teachers (FaFT) program in each of the two communities were also invited to participate in the training and testing of the adapted ASQ-3. FaFT is a Department of Education parenting support service for Aboriginal parents of children from birth to three years. It is a program that aims to engage families in quality early childhood education programs to promote family knowledge and early learning. The FaFT liaison officers are local Aboriginal women and both communities identified that there would be value in including the FaFT liaison officer in the training.

**Aboriginal parents**

In both communities, a comprehensive sampling strategy of all parents who participated with their child in the testing of the adapted ASQ-3 was used. All parents were invited to be interviewed regarding their views on acceptability and relevance of the adapted tool.

**Key informants**

Key informants were identified from their role in the health centre, in the community, or in the arena of child health in the NT more broadly, with the aim being to bring a wide range of
views and experiences to the research objectives. I identified the following key informants who were included in the purposive sample and were personally invited to participate. The study topic was of great interest to these groups and I had no difficulty in recruiting them to participate in either the individual or group interviews.

**Aboriginal community experts**

Through community consultations and initial engagement processes, Aboriginal Community Experts were identified and included senior women or elders who had a role in early childhood, were cultural/linguistic experts and/or were leaders in the community. Using expert sampling, this group of key informants was selected and included:

- Senior women (*Strong Women workers*) working on the Strong Women Strong Babies Strong Culture program (Mackerras, 1998), which recognises the traditional cultural approaches to parenting and lifestyle and supports pregnant Aboriginal women and their babies from pregnancy through to early childhood.

- Education staff, including Families as First Teachers (FaFT) liaison officers (FLO).

- AHWs and Aboriginal Community Based Workers

- Community cultural and linguistic experts

**Health practitioners (health centre staff and child health nurses)**

A purposive sample of health centre staff (including nurses and a doctor) and child health nurses was selected to ensure the views of practitioners who had worked or were currently working in the two communities were included. In addition, child health nurses with experience working in other remote communities in the Top End and in Central Australia, and a policy officer (also a nurse) were invited to participate.

Another group of health practitioners included were nurses working on the Australian Nurse Family Partnership Project (ANFPP), being conducted in Alice Springs in the Northern Territory. The project has been using the standard ASQ-3 and nurses working on the project were invited to provide feedback on their experience using the tool with Aboriginal parents at an informal meeting.

**Early Childhood Development experts**

Various ECD experts were invited to participate in individual and group interviews to provide input on possible modifications to the ASQ-3. This purposive expert sample included:
experts in Aboriginal early childhood research; Early Childhood Intervention Advisors with Department of Education Student Services Division; allied health specialists working with the Children’s Development Team of the Department of Health (providing therapy services to urban children); and allied health specialists working with the Remote Intensive Therapy Team (providing therapy services to remote-dwelling children).

These expert groups were selected on the basis of their having varying degrees of experience working with Aboriginal children, working in the remote Aboriginal setting with children with special needs and disabilities, using the ASQ-3, and working with Aboriginal staff in early childhood. The groups also represent all government bodies providing services to young children with developmental concerns or special needs in the Northern Territory. Their engagement in the study was also considered important to the uptake of findings by these government agencies.

**Linguistic experts**

A linguist from the Aboriginal Resource and Development Service (ARDS) was employed to provide advice on aspects of the adaptation of the ASQ-3. Guidance was also sought regarding translators who could be involved in the project. An occupational therapist/cultural linguistic expert provided additional feedback and advice, suggesting modifications that may be necessary for the ASQ-3 being used with the study population.

### 3.4.3 Data collection procedures

Figure 3-5 below demonstrates the time points for the different data collection methods. The following section describes the data collection procedures.

Interviews were conducted face-to-face with informants at the location of their choice, which in most cases was the health centre. Group interviews were conducted at a convenient meeting place, at either their workplace or at Menzies School of Health Research (for interviews conducted in Darwin).

For all interviews, both individual and group, I provided participants with an information sheet (see Appendix 4) and a consent form (see Appendix 5). Written, informed consent was obtained for all interviews, including consent to audio-record the interviews. The duration of the interviews ranged from 40 minutes to 2 hours and 20 minutes. All interviews were audio-recorded with the exception of one group interview for which consent was not given.
Figure 3-5: Data collection methods and timeline

- **June – October 2011**
  - Adaptation of ASQ-3 Questionnaires
  - Training & Support needs identified

- **October 2011**
  - ECD/ASQ-3-TRAK Tool training package developed
  - Supports nominated for training

- **November 2011**
  - Intervention ECD/ASQ-3-TRAK Tool training delivered
  - Observations during training

- **March 2012**
  - Intervention Booster training delivered

- **Nov/Dec 2012**
  - Medical record audit – pre training
  - Medical record audit – post training
  - Individual interviews
  - Group interviews
  - Clinical encounter observations
  - Observations
  - Patient interviews
  - Training feedback survey

Interviews were transcribed verbatim and imported into QSR NVivo qualitative software package to assist with the management of data. Descriptive handwritten field notes were made immediately following the interviews, recording what informants said, observations about the interaction and preliminary interpretation.

Observations of clinical encounters occurred on an agreed day in Nhanhala and on the dedicated child health day in Yumurrku. AHWs had previously been informed and consented to being shadowed. During the clinical encounter and additionally during the course of the day on field visits generally, I jotted down in a notebook what I observed, heard and experienced. I wrote detailed descriptive field notes from these jottings at the end of every day, including diagrams, in an attempt to capture rich, comprehensive data (Gray, 2009). My field notes collected observations of interactions and casual conversations during the course of the project, and so also became a diary where I recorded my reactions and responses to various events and people. As Bernard (2011) points out, this is an important practice in qualitative research as it can help interpret the field notes and highlight interpretations that may be biased by our own perspective. Furthermore, the field notes were an opportunity to record initial interpretation and analysis. Field notes and analytical notes were recorded separately, to distinguish between my observational notes and my analytical notes (Gray, 2009). Hand written field notes were transcribed into NVivo to facilitate coding and analysis.

In addition to field notes I kept a log during every field visit. This was a running account of the plan for how the time in the field was to be spent, and how the time was actually spent. This practice, recommended by Bernard (2011), was a method for thinking about and planning in advance what needed to be achieved in the limited time available, what questions needed to be answered and what data was really necessary. It also became a very clear record of many of the obstacles to collecting data, as repeatedly thwarted attempts are recorded in a way that sometimes may be omitted in field notes; for example, repeatedly trying to contact an informant.

For the audit, data were collected and de-identified on a paper form and then entered into an Access database, designed by a data manager to fit the data collection form (see Appendix 3). Data collection was conducted by me, a research assistant and a continuous quality improvement (CQI) facilitator. The research assistant was a trained registered nurse and teacher and had previously conducted health record audits. The CQI facilitator was also a registered nurse and was familiar with the One21Seventy child health audits, which she used in her CQI role. A one-hour training session was conducted with both individuals and a written protocol was also provided. A sample of audits was checked at the beginning of the
process to ensure all data collectors were interpreting the health record information in the same way.

The training feedback surveys were administered at the completion of the training workshop. The questionnaires were self-administered, and returned to the research assistant who had assisted in the administrative tasks of the training.

3.4.4 Ethical considerations

The project was conducted in accordance with the National Health and Medical Research Council Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research (NHMRC, 2003). The study proposal was presented to and approved by the Menzies School of Health Research Indigenous Reference Group and approval was obtained from the Remote Health branch of the NT Department of Health to conduct research in the selected communities.

Ethics approval was obtained from the Human Research Ethics Committee of the NT Department of Health & Families and Menzies School of Health Research, for research conducted in the Top End, and from the Central Australian Human Research Ethics Committee for research conducted in Central Australia.

This study was committed to taking an approach that aligned with the values at the heart of the NHMRC guidelines: spirit and Integrity, reciprocity, respect, equality, survival and protection, and responsibility. The lengthy consultation process and time invested in developing relationships with Aboriginal community members and stakeholders was in recognition of and respect for Aboriginal cultural values and principles. A key objective was to work with Aboriginal communities who considered ECD a priority and chose to participate in the study, working in a collaborative partnership rather than imposing a research project. For this reason, I was faced with a dilemma when the non-Aboriginal health centre manager did not agree to participate in the study despite a number of Aboriginal community members having already engaged and decided to partner in the project. It was important that the voices of the Aboriginal community members be heard and that they had their wishes respected. For this reason I chose to adapt the design of the project and include Nhanhala as a case study despite not having the support of the health centre manager.
3.5 DATA ANALYSIS PROCEDURES

The complementarity model adopted for this study called for a parallel mixed data analysis strategy (Tashakkori & Teddlie, 2003). Although the two sets of analyses were independent, the interpretations of the phenomena from the two strands were integrated into a ‘meta-inference’ (Teddlie & Tashakkori, 2009). A meta-inference brings the conclusions or interpretations drawn from the separate qualitative and quantitative strands of the study into a synthesised discussion to reflect what was learned from the combination of methods and develops a more complete picture (Creswell & Clark, 2010). Presenting the two complementary sets of findings enables a more complete picture to develop (Plano Clark, Garrett, & Leslie-Pelecky, 2010).

**Interviews and observations**

Preliminary qualitative data analysis commenced at the data collection stage, when field notes were recorded. This initial coding was a way of identifying emerging issues that also needed to be considered in subsequent interviews. As Grbich (2007) points out, this stage is a process of “engagement with the text, not so much as to critique it” (p. 25). This process was also helpful in beginning to categorise the issues emerging from the data into potential themes, which were refined in an iterative manner with the addition of new data from subsequent interviews.

Thematic analysis was undertaken to identify themes across the various respondents’ transcribed interviews. Ryan and Bernard (2003) describe themes as ‘abstract constructs’ that link expressions in texts. They go on to explain that you have found a theme when you can answer “what is this expression an example of?” (p. 87). A combined inductive and deductive approach was taken to identify themes. In an inductive approach, the themes are allowed to emerge or arise from the raw data. With a deductive approach the themes come from a prior theoretical understanding of the phenomenon being studied. They are identified from the literature and are derived from the research objectives (Bazeley, 2009; Ryan & Bernard, 2003).

A number of techniques were used for discovering themes. I began with looking for repetitions in the text. When using this technique, the more an expression occurs, the more significant it is and the more likely it is to be a theme. However, it is not only repetitions that identify themes. Looking for similarities and differences between statements, and within and between transcripts was also used to identify themes. This technique is a way of discerning the dimensions within the text that goes beyond simply chunking segments together. Grounded theorists, who label this process the “constant comparison method” (Glaser &
Strauss, 1967) argue this method maintains a focus on the data, allowing the data to speak for themselves rather than imposing predetermined themes. Looking further into these themes identified by constant comparison also produced subthemes. _Cutting and sorting_ is another method that was used which involves, figuratively, cutting and sorting segments, or items of text, into themes. The coded segments of text can be sorted to maximise difference and produce fine-grained themes (the approach taken by ‘splitters’) or to minimise differences and generate more over-arching themes (‘lumpers’) (Ryan & Bernard, 2010).

The more formal process of thematic analysis commenced once data collection was complete. I again listened to interviews with the transcript, and re-read the transcripts at least twice to enable immersion in the data, or to “live with them” as Bernard describes (2011). Coding was commenced on hard copies of a number of interview transcripts and then completed using the NVivo software. Transcribed field notes were coded using the same procedure. Handwritten interview field notes were not transcribed; instead they were added to ‘memos’ created in NVivo for the source of the interview or for the emerging theme. Memos were used as a way of documenting theoretical insights from the data to assist in making the conceptual leap from raw data to increasing levels of abstraction.

Initially, four interview transcripts were coded to aid in creating a ‘code book’. Codes are simply labels for the segment or item of meaningful text, and at this lower level were more often descriptive. This initial coding is sometimes described as “open coding” (Strauss, 1987) or “lower level coding” (Thomas, 2006). Subsequent interview transcripts were coded using the codebook. However, this was an iterative process and as new codes were created, similar codes were merged to reduce overlap. In this way a hierarchy of codes was developed and modified as coding proceeded. As the analysis progressed, major themes (in other words, higher level or more abstract coding) emerged and a model was ultimately created in which the most important of these major themes were embedded, explaining the links and relationships. Concept mapping (Novak, Gowin, & Kahle, 1984) was utilised to display these relationships as part of the analysis process (Bazeley, 2007; Simons, 2009).

**Audits**

Data entry was conducted by two research assistants under close supervision. The use of compulsory fields, ranges and validation rules assisted in minimising data entry errors. Data cleaning was conducted when data were entered into the database and again before analyses were undertaken. Data were checked using logical checks, frequency tables for categorical data and summaries for continuous data.
Descriptive analysis was undertaken using the statistical package, SPSS version 20. Further details are provided in chapter five.

**SUMMARY**

This chapter has provided a detailed description of the research design used to investigate the research questions of this study. The case study evaluation framework has been described, demonstrating the advantages of using this design to understand real-life phenomena in contexts where we have little control and conditions may change. A mixed method approach was taken to strengthen the study; the quantitative and qualitative strands clarifying and enhancing each other. Finally, the methods of analysis were described, and the approach to combining the findings from the different strands outlined.

The following chapter will illustrate the process undertaken to adapt the ASQ-3, the first of the activities outlined in the program logic model.
CHAPTER 4 CROSS-CULTURAL ADAPTATION OF THE ASQ-3

INTRODUCTION

The purpose of this chapter is to describe the cross-cultural adaptation made to the ASQ-3. As outlined in chapter two, the ASQ-3 is a developmental screening instrument with acceptable psychometric properties that is being used across Australia, including with Aboriginal populations, and has been applied to diverse populations internationally (Squires et al., 1997). Its many suitable properties and its acceptability across different cultures made the ASQ-3 the most relevant and appropriate developmental screening instrument to be adapted for use in the remote Australian Aboriginal context.

This chapter begins the presentation of the formative evaluation work that includes chapters five and six to follow. Within the context of the program logic, these three chapters constitute the first activities phase of the program, which includes the adaptation of the ASQ-3, a training needs analysis, and development of the training.

The aim of the adaptation was to create a culturally and linguistically appropriate developmental screening instrument, acceptable for use in remote Aboriginal communities in the Northern Territory. Section one outlines the adaptation procedures that were followed. Sections two and three present the findings of that process. A discussion of the cross-cultural adaptation of the ASQ-3 and its acceptability follows in the final section.

4.1 METHODOLOGY

As outlined in the research design, the study was conducted in two sites in the Northern Territory. The adaptation of the ASQ-3 was conducted simultaneously in both communities and the presentation of the process and findings are combined for the two settings.
The following formative evaluation questions were addressed:

1. What adaptations of the ASQ-3 are required for its culturally appropriate administration in this context?

2. To what extent is the adapted ASQ-3 culturally appropriate and acceptable to the target population?

4.1.1 Methods

The methods and the rationale for these have previously been discussed in chapter three. In this section I provide details on how the methods were used specifically to collect data relevant for this part of the study.

*Interviews*

Key informants were interviewed to obtain views that would inform the adaptation of the ASQ-3, prior to the training. These semi-structured interviews followed the topic guide designed for the group interviews (see Box 4-1 below). The ASQ-3 questionnaires were used during interviews to facilitate discussion on modifications necessary for the ASQ-3 (see Appendix 12).

Following the training, semi-structured interviews were conducted with AHWs and key informants who participated in the TRAK training program (chapter six). The interviews explored a number of topics; however, for this component of the study the participants’ perspectives on acceptability of the adapted ASQ-3 used during the training were analysed. I conducted all key informant and AHW interviews using an interview protocol (see Appendix 1b).

Structured interviews were also conducted with parents following the testing of the adapted ASQ-3 during the training process. These interviews were conducted by a research assistant experienced in conducting research in this context. I was unable to conduct these interviews as I was supervising the administration of the ASQ3-TRAK tool with the next family. Thus, the same level of rapport was not able to be developed as had been with the AHWs, as the parents were not known to the research assistant. For this reason, I considered that audio-recording the interviews would be a further barrier to engaging parents. The interviews were conducted immediately after the ASQ-3 had been administered in a private area nearby, using a standardised interview protocol (see Appendix 1d).
Group Interviews

Group interviews were conducted with key informants, including Aboriginal community based workers, Aboriginal community experts, child health nurses and early childhood experts, as described in chapter 3.

The aims of the group interviews were to obtain views and beliefs on modifications necessary for the ASQ-3. As with the individual interviews with key informants, the ASQ-3 questionnaires were used as a prompt to address the topics listed in Box 4-1 below and covered by the group interview schedule (see Appendix 1d).

Box 4-1: Interview topic guide

1. Cultural relevance of the items in the ASQ-3.
2. Appropriateness and understanding of each item in relation to Aboriginal children in remote contexts.
3. Other child attributes, competencies and milestones that could be included or substituted.
4. How children’s developmental functioning can best be evaluated in this context.
5. What parents and carers can do to stimulate development to improve outcomes.
6. The perspectives of Aboriginal community experts and early childhood development experts on healthy child development.
7. Data on available services, resources and programs in the community.

Green and Thorogood (2009) have adapted Coreli’s typology of group interviews which includes consensus panel, focus group, natural group and community interview. They describe consensus panels as often being composed of key informants or experts, which aim to seek group consensus or normative reactions. Consensus panels usually deal with narrower, close-ended stimulus material and are typically used for agreeing on clinical protocols or resource prioritisation. These group interviews could be classified as consensus panels (Green & Thorogood, 2009). In this case, the aim was to reach consensus on the overall relevance and modifications necessary to adapt the ASQ-3.

Observations

Observational data were collected both to inform the adaptation of the ASQ-3 and inform the acceptability of the adapted tool. Informal observations recorded in field notes were made throughout the adaptation process, including during the committee group discussions and following consultation and informal interviews with advisors (see flow diagram, Figure 4-1). Observations during a beach picnic in Yumurrku also provided data on local Aboriginal children playing in their natural environment.
During the training, while participants administered the adapted ASQ-3, observations provided important qualitative data on the acceptability of the adapted ASQ-3 to both staff and parents, which complemented the interview data.

4.1.2 Research participants

The research participants have been previously described in detail in the research design chapter. Participants included Aboriginal children and their parents, Aboriginal Health Workers, training participants, and key informants.

<table>
<thead>
<tr>
<th>Table 4-1: Data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adaptation of the ASQ-3</strong></td>
</tr>
<tr>
<td>Interviews</td>
</tr>
<tr>
<td>Group interviews</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Acceptability of the ASQ3-TRAK tool</strong></td>
</tr>
<tr>
<td>Interviews</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Group interviews</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

AHW Aboriginal Health Worker, ECD early childhood development, ANFPP Australian Nurse Family Partnership Project

4.1.3 Analysis methods

The qualitative data analysis procedures explained in section 3.5 in the research design chapter were followed.
4.1.4 Instrument for adaptation – the ASQ-3

The ASQ-3 consists of 21 questionnaires for children from 1 month to 5½ years of age (see Appendix 12). Each questionnaire contains 30 developmental items that are organised into five areas – “Communication”, “Gross Motor”, “Fine Motor”, “Problem Solving” and “Personal-Social”. An “Overall” section addresses general parental concerns. Some of the items are illustrated to aid understanding and the general English reading level of the questionnaires ranges from fourth to sixth grade. For the 30 developmental items, caregivers are asked whether their child can perform the task or behaviour and can answer ‘yes’, ‘sometimes’ or ‘not yet’. The responses are converted to a point value and these are totaled and compared with established screening cutoff points (Squires et al., 1999). The score guides practitioners regarding what action to take, based on whether the score is above the cutoff (no action), close to cutoff (monitor), or below cutoff (further assessment needed).

Of the 21 questionnaires in the ASQ-3, seven questionnaires - the 2, 6, 12, 18, 24, 36, and 48 month - were selected for adaptation. These ages align with the age intervals in the NT Government Healthy Under 5 Kids (HU5Ks) child health checks requiring developmental checks (NT Department of Health, 2009).

4.1.5 Adaptation procedure: ASQ-3 to ASQ3-TRAK tool

Van Widenfelt (2005) and Maneesriwongul and Dixon (2004) have previously identified that often there is very little reported about the adaptation process of an instrument, including its psychometric properties, leaving the reader unable to assess the equivalency of the adapted test compared to the source language. It may be seen as a means to an end and an unimportant step (Baker et al., 2010; Sperber, 2004). However, it is important that the adaptation process is adequately documented to provide evidence about the strength of the adaptation and to establish the validity of an adapted test (Beaton et al., 2000; Guillemin et al., 1993). As Hambleton (2005) highlights, without appropriate documentation of the adaptation process to establish validity in research publications, misinterpretation of scores from tests applied in different languages and diverse cultural groups is likely. Furthermore, accurate and comprehensive reporting of the process facilitates replication.

However, while measurement perspectives of test adaptations are beginning to be reported more completely, some would argue that too much emphasis is being placed on psychometric properties of adaptations at the expense of other aspects of test
equivalence (Bowden & Fox-Rushby, 2003). Bowden and Fox-Rushby (2003), in a review of the translation and adaptation of health-related quality of life measures, found very little reported on conceptual equivalence, item equivalence, semantic equivalence or operational equivalence. While this review drew on the Herdman model of equivalence (1998), the majority of papers still focus on measurement equivalence, in other words psychometric properties. This pre-occupation with scales rather than concepts perhaps reveals an ‘absolutist’ leaning of researchers in the field.

As outlined in chapter two the approach proposed by Herdman et al. (1998) was adopted for this study. The following section presents the procedural steps undertaken to adapt the ASQ-3 for the use of monitoring child development in the context of remote Aboriginal communities. All people and place names used are pseudonyms. Figure 4-1 below provides a diagram of the steps in the process.

Figure 4-1: Adaptation of the ASQ-3

OT occupational therapist, ANFPP Australian Nurse Family Partnership Program, CHNs child health nurses, ECD early childhood development
**Step 1: Agreement with the communities**

The community needs to be involved throughout the process. However, the initial step, according to Herdman’s model, is to obtain community agreement. It is essential that the community value the purpose of the research and agree on the conceptual meanings of the proposed study (Baker et al., 2010). Conceptual equivalence involves exploring the way different cultures conceptualise a construct, in this case, early childhood development. Step 1 involved community consultation in both the Top End and Central communities. Field notes were recorded following all consultation visits. Chapters seven and eight present the community engagement process in more detail.

**Yumurrku**

In Yumurrku, my first visit involved a meeting with the health service and included all the AHWs, Aboriginal community based workers, nurses, driver, reception staff and the health service manager. This was a consultation about early childhood development to gauge community interest in the project.

A subsequent visit involved consultations with a wider range of community members, including senior women or elders who also worked in roles outside the clinic - mental health worker, women’s resource centre manager and Families as First Teachers (FaFT) liaison officer. The aim was to discuss the concept of ECD and the rationale for the study to determine what was of value to the community.

**Nhanhala**

In Nhanhala, the child health AHW was consulted about the purpose of the developmental monitoring tool and rationale for the study. She suggested further discussions with other community members, and subsequent consultations with a key senior community woman and with the FaFT liaison officer, both previously employed as AHWs, were arranged with a similar aim to that described above in Yumurrku.

**Step 2: Consultations and Interviews**

The ASQ-3 was first reviewed by a linguist (see Figure 4-1, step 2a) to help ensure it was in ‘translatable’ English (Brislin, 1986). The linguist’s advice and Brislin’s (1986) guidelines for writing material which is readily translatable (see chapter two), informed further item modification and subsequent translation of the remainder of the questionnaires. While modifications are necessary during such a process, maintaining the meaning of items is critical. This is what Herdman refers to as semantic
equivalence, and the linguist’s input was sought as a method of establishing consistency of meaning across the two versions.

Step 2b involved consulting an occupational therapist who had lived and worked as a teacher/linguist in a community in the same region as Yumurrku. As a bilingual, bicultural person with developmental expertise, she was able to assist in determining the relevance and acceptability of each item, that is, item equivalence. She also contributed to the final translatable English version.

Simultaneously, the ASQ-3 was shown to various child health experts for comment (Steps 2c and 2d), through group and individual interviews. Advice was sought from these informants regarding item equivalence and operational equivalence. Operational equivalence refers to the format, instructions, mode of administration and measurement methods and is attained when these factors do not impact on the final results.

Finally, throughout the process Aboriginal community members, considered expert by the community, were consulted to discuss the relevance and acceptability of the ASQ-3, aiding in the investigation of item, semantic and operational equivalence. In Yumurrku, two group interviews were conducted that included a Strong Women worker, the FaFT liaison worker and the community mental health worker. In Nhanhala, two group interviews were conducted with a combination of the child health AHW, the FaFT liaison officer, a teacher’s aid, a male AHW, a FaFT support worker, a community elder and cultural expert, and the AHW responsible for developing the family wellbeing centre.

To achieve consensus between the Top End and Central Australia, the complete 12 month questionnaire was reviewed in both communities by both Aboriginal and non-Aboriginal informants. Not all questionnaires were able to be reviewed with all groups; however, where items were identified that needed modification, these were reviewed by informants from both communities.

**Step 3: Consultation with ASQ-3 authors**

Prior to the translation, and recommended by Herdman as a critical step to ensure semantic equivalence, the authors of the ASQ-3 were consulted and all modifications were reviewed and discussed. This ensured that the meaning of the items was not lost in the rewrite to translatable English. Communication with the authors occurred throughout the process until consensus was achieved on a version that was ready for translation. This aided the translation process considerably as it provided an
opportunity to clarify the meaning of all items. The authors also reviewed the illustrations (see step 4 below) to ensure the intent of the item was retained.

The authors provided a base translation file that enabled the modified English version, the translated version, and the back translation for each item to be recorded adjacent to the original ASQ-3 text. A column was also created for any general comments or queries for the authors and another column for the comments and decisions made by the authors regarding the modifications. This document not only ensured all data were recorded but it also allowed iterations of an item to be viewed side-by-side across the Excel spreadsheet, facilitating review by the authors.

**Step 4: Illustrating the ASQ-3**

A local artist, with experience working in remote Aboriginal communities as a teacher, was employed to illustrate the modified ASQ-3 with culturally appropriate figures. This involved producing 210 illustrations. The questionnaire, an A4 document, was illustrated with small black and white images and in addition an A5 size booklet was produced with large colour illustrations. The intention was to provide the parents with a visual aide while the questions were being asked (Watson et al., 2013).

**Step 5: Translation process**

The translation followed a similar process in the two communities. A committee approach (Brislin, 1986) was taken, which is considered suitable when the translators have a preference for the target language and a limited number of people are available to complete the back translation (Cha, Kim, & Erlen, 2007).

These were both relevant factors in the two communities in this study. There was a lack of available bilingual people qualified to complete the back translation in both settings. The literature recommends using a bilingual person whose mother tongue is the source language; English in this case (Brislin, 1986; Hambleton, 2005). However, considering the lack of available translators, it became necessary to modify the recommended approach outlined in chapter two. Hence, a bilingual target language native speaker was used to tackle the back translation.

**Yumurrku**

In Yumurrku, a team of translators who were native target language speakers, was selected based on recommendations by the community, as endorsed by Herdman.
Nellie was a retired literacy worker who had been employed in the Literacy Production Centre at the community bilingual school, and worked in the language of instruction at the school, Dhuwaya. Nellie had also worked on a bible translation. Raelene and Diane were both Strong Women workers with knowledge and experience of early childhood development and were fluent in more than one Yolngu language. Diane had also been involved in the adaptation process up to this point. Although neither of the Strong Women were trained translators they had both previously worked on team translations for the health service and community.

A translator who was bilingual and bicultural in Yolngu ways was employed to assist in the translation. Although not familiar with Yumurrku, he had lived in a community in the North East Arnhem region for 20 years where he worked as a linguistic consultant/educator and had also worked as a linguistic consultant for the NT Government in Darwin. There were no translators available locally or in the NT and the linguistic expert was flown in from interstate, on two occasions.

I participated in the committee as an expert in the subject matter. I was present for the entire translation process and was able to be part of the discussions to ensure the meaning of the item was understood before it was translated, and to double check the meaning was retained when the target version was discussed and back translated. An added advantage of being present throughout was that I was able to ensure the translators were reminded of the purpose of the tool and therefore maintain the appropriate register for the translation (Hambleton, 2005; Herdman et al., 1998). The final committee group had varied backgrounds, as recommended by Beaton et al. (2000).

Yolngu Matha is an umbrella term for the languages of the Yolngu and while there can be significant variation between the Yolngu languages, there is generally common mutual intelligibility (Christie, 2007). Dhuwaya, the language of instruction at the primary school, is one of the 13 Yolngu languages spoken in Yumurrku. Community members have different views on which language should be selected for written forms of communication in Yumurrku. However, the translator group agreed that the target language would be Dhuwaya, as this is the most commonly written language in the community and spoken by all children and most young adults. As the translation team members were all fluent and literate in Djambarrpuynu, another Yolngu language, the committee decided the first step in the translation process would be to produce a Djambarrpuynu version.
This first step in the translation process occurred over ten working days, working with the committee in the community. Items were written out on a whiteboard and then read out, in English. As a group we discussed the item, in a mixture of English and Yolngu Matha (each woman speaking in her preferred language), to ensure a shared understanding and further examination for item equivalence. The translators verbally translated the item into Djambarrpuynugu, the linguistic consultant writing that version on the whiteboard. Once complete, the quality of the translation was checked by further discussion among the translators, to ensure it was grammatically correct in the target language and that it was written at the right level for the target audience. An initial back translation took place and was discussed, with my input, to check the semantic equivalence. Additional changes were made if necessary, until there was consensus. This step follows Beaton et al.’s (2000) recommendation of obtaining an expert committee view to come to a consensus on any discrepancy.

Dhuwaya is very similar to Djambarrpuynugu and the second step, translating from Djambarrpuynugu into Dhuwaya, involved minor grammatical changes. Nellie had very strong literacy skills in Dhuwaya and with the linguistic consultant’s assistance (see Fig 4-2) she led this process which took place in the community over two working days. The final step was a partial back translation. Although a number of women were identified only one, a Yolngu teacher who had previously been the principal of the bilingual school, was available for this task. This senior woman had many obligations and her time was limited, therefore she was only able to back translate two questionnaires.
Nhanhala

Similarly, in Nhanhala, the community recommended translators. They suggested a bilingual native English speaker who was a teacher/linguist. He was married to an Arrarnta woman and had lived in the community for over 25 years. Furthermore, he had previously worked on a number of vernacular publications including the Western Arrarnta picture dictionary and had been involved in other translation and interpreting tasks for the school and community. Western Arrarnta, the language of Nhanhala, is spoken by about 1500 people in Central Australia, and is also spoken in six other nearby communities.

Figure 4-3: Translation process in Nhanhala

Kelly, the senior woman who had been a driver of the project, recommended the local translation team that was endorsed by the teacher/linguist. The child health AHW, Margie, who had been extensively involved in the planning for the adaptation of the ASQ-3, and another senior Arrarnta woman who was a retired, trained teacher with experience in team translation work, were both recommended. Other suggestions were made for additional community women to join the translation team. However, their work commitments made it difficult for them to participate.

As in Yumurrku, I participated on the committee as an expert in the subject matter. I was again present for the entire translation, working with the translation team in the community. A similar approach to that taken in Yumurrku was used, in this instance working from a laptop computer. Both the bilingual native speakers had very strong English literacy skills and each also had a hard copy of the modified English ASQ-3 to
read from. Having Margie as part of the translation team was an added advantage that significantly aided the translation process. As a bilingual native target language speaker who was also an expert in the subject matter, her participation ensured item and semantic equivalence were attained, resulting in a quality translation.

The Nhanhala committee also checked the quality of the translation by further discussion among the committee of translators. However, this also occurred in more detail separate to the committee meetings, with the teacher/linguist and the senior Arrarnta teacher reflecting on the grammar and making changes as necessary.

The back translation was shared between a senior Arrarnta woman, who had previously been employed as an AHW and currently worked as the FaFT liaison officer, and the teacher/linguist. The senior Arrarnta woman back translated the 2-month questionnaire, with the teacher/linguist’s support. In view of the considerable assistance the Arrarnta woman required and the time this would take that she was not available to give, this approach was abandoned. Although Western Arrarnta is the first language in Nhanhala, most in the community are not literate in their language, and finding another bilingual person who was both capable and available was not possible. It was decided that the only solution was for the teacher/linguist to complete the back translation.

The rest of the ASQ-3, in its entirety, was back translated by the teacher/linguist. He had been involved in the forward translation, so this was not a back translation as recommended in the literature (Brislin, 1986). However, this approximated the process followed in Yumurrku, with the translation team doing an initial back translation and discussing this with my assistance. Additionally, although he participated in the initial translation, the teacher/linguist completed the back translation ‘blinded’ to the original. We discussed his back translation in detail, and any changes that needed to be made he checked with the senior Arrarnta teacher. The quality and accuracy of the translation were again further checked during this process.

**Step 6: Testing and reviewing the ASQ3-TRAK tool**

The adapted ASQ-3 (ASQ3-TRAK tool) was tested with 24 parents and children. The ASQ3-TRAK tool was administered by the staff who participated in the TRAK training (see chapter six). This testing of the ASQ3-TRAK tool occurred as part of the training and under my supervision, as trainer. Testing aided firstly in determining operational aspects of the administration, such as the time taken to administer the instrument, application of instructions, and use of illustrations. Secondly, although full
psychometric properties of the adapted ASQ-3 were not explored, testing allowed confirmation of instrument content and face validity, an initial step in achieving measurement equivalence.

Following testing, the AHWs and parents who had the ASQ-3 administered were interviewed, to establish operational and initial measurement equivalence. The adapted tool was also reviewed by nurses working on the Australian Nurse Family Partnership Program, for content and face validity. Illustrations were reviewed by ECD research staff, both Aboriginal and non-Aboriginal, for visual literacy to ascertain whether the illustration conveyed the meaning of the item. Written feedback was obtained.

4.2 FINDINGS - ADAPTATION OF ASQ-3

The following section outlines the themes that emerged from analysis of data from individual and group interviews, as well as observational data from field trips. This section includes the modifications made to the ASQ-3 based on these findings, providing a clear picture of how the findings were applied.

4.2.1 Community agreement

The consultation meeting in Yumurrku was to gauge community interest in the project and all the staff, particularly the Aboriginal staff, were enthusiastic about collaborating. Notably, the senior male AHW expressed a need for men to be involved in ECD to improve outcomes for children and felt strongly that parents in the community needed support:

Children follow in parents’ footsteps. If parents take the right path, children follow the right path (Male AHW, Yumurrku)

The Strong Women workers were particularly outspoken, which was somewhat surprising to other staff at the meeting. They stressed that learning starts at home, recognising the important role parents play and the need to support parents, particularly young parents.

There was agreement from AHWs and Strong Women workers that monitoring and promoting child development was relevant and important to them and their community. The women were also clear, however, that while embracing newer, ‘Western’ methods to promote child development was of value, their children first need to be secure in traditional culture:
Need to be strong in Yolngu way first…then learn White way (Strong Women worker, Yumurrku)

The subsequent consultation meeting with senior women reached consensus that the concept of ECD and striving for better developmental outcomes for their children were priorities. The purpose of the developmental monitoring tool was understood and they expressed that this was of value.

In Nhanhala, the child health AHW consulted clearly understood and supported the purpose of the developmental monitoring tool. Subsequent discussions with a key senior community woman led to firm agreement that the concept of developmental monitoring was highly appropriate and that with adaptation, the instrument would be suitable. There was an emphasis here, too, on preserving cultural ways and seeing this project as an opportunity to have ‘both ways’ incorporated and presented to parents and children. Her suggestion was that cultural practices could be shown to young mothers at traditional sites alongside Western approaches to promote child health and wellbeing, including developmental outcomes.

4.2.2 Engaging caregivers

A key finding was the importance of engaging caregivers, and informants suggested a number of modifications to facilitate engagement.

**Length of the questionnaires**

A major concern for informants was the length of the ASQ-3. As described earlier, each ASQ-3 questionnaire has 30 items plus the “Overall” section which has between 8-12 additional questions, depending on the age group. Informants felt that parents would not engage with such a long and wordy instrument and there was a risk that if modifications were not made to the overall number of questions, it would not be completed at all:

Yeah, too much, too much information and it won’t interest me because too much words and you know, no pictures there. (Aboriginal key informant)

The ASQ-3 authors recommended that if the tool needed to be shortened, it was preferable to delete a whole domain rather than a number of questions from each area. Therefore it was decided to omit the “Overall” section. This section asks general questions about the parents’ concerns and health-related issues that may impact on a child’s development. The HU5Ks child health checks includes questions directed at
many of these same general concerns and it was agreed that if this was omitted it would have the least impact on the instrument’s ability to gauge the child’s developmental status.

‘Translatable’ English

In addition to providing a version that was more straightforward for translation into the Aboriginal languages, the modifications suggested by the linguists provided a useful plain language English version. This version could be used by practitioners and/or caregivers who did not speak the target language. Informants considered it would be more likely to engage caregivers with limited English skills than the original ASQ-3.

For example, the introductory paragraph,

On the following pages are questions about activities babies may do. Your baby may have already done some of the activities described here, and there may be some your baby has not yet begun doing. For each item fill in the circle that indicated whether your baby is doing the activity regularly, sometimes, or not yet.

was modified to:

This paper is asking you about your baby and what he can do. For each number, you should choose if the baby can do it Often or Sometimes or Not Yet.

Table 4-2 below provides some further examples of the modifications suggested by the linguist.
Table 4-2: 12-month ASQ-3 questionnaire and modifications

<table>
<thead>
<tr>
<th>Original ASQ-3 questions</th>
<th>Modified questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your baby make two similar sounds, such as “ba-ba”, “da-da” or “ga-ga” (The sounds do not need to mean anything)</td>
<td>Does your baby make 2 sounds that are the same, like, “ba-ba”, or “da-da” or “ga-ga”? (The sounds may not have meaning.)</td>
</tr>
<tr>
<td>While holding onto furniture, does your baby lower herself with control (without falling or flopping down)?</td>
<td>When your baby is holding onto something to help him stand, can he sit slowly without sitting hard or falling?</td>
</tr>
<tr>
<td>After watching you hide a small toy under a piece of paper or cloth, does your baby find it (Be sure the toy is completely hidden)</td>
<td>Hide a small toy under a cloth while your baby is watching. (Make sure he can’t see any part of the toy.) Does your baby find it?</td>
</tr>
<tr>
<td>When you dress your baby, does she lift her foot for her shoe, sock or pant leg?</td>
<td>When you dress your baby, does she lift her foot to help put on her pants?</td>
</tr>
<tr>
<td>Without giving your child help by pointing or using gestures, ask him to “put the book on the table” and “put the shoe under the chair.” Does your child carry out both of these directions correctly?</td>
<td>Without helping by pointing or using your eyes or face, ask you child to &quot;put the book on the table&quot; and &quot;put the shoe under the chair&quot;. Does your child follow both these directions?</td>
</tr>
</tbody>
</table>

Illustrations

During the group interviews with community and Aboriginal ECD experts there was agreement that illustrating each item would improve the tool’s usefulness and enhance communication with the caregiver. Caregivers may not be literate in English or in their native language and it was agreed that offering illustrations would provide an added means for them to understand the questions. The original ASQ-3 has few illustrations and those used depict white children in clothing, or near items of furniture not seen in most remote Aboriginal communities. A local artist was employed to illustrate all 210 items using culturally appropriate and relevant images. Below is an example of the 36-month item illustrated in the Western Arrarnta questionnaire, and the corresponding page from the illustrated booklet (see Appendix 7), demonstrating the use of locally sourced seeds in place of beads.

Figure 4-4: 36-month ASQ3-TRAK questionnaire

2. Katjia ungkwanganhala anga thread-aka kurnama?

2. Can your child string shells or seeds onto string or fishing line?
Not all items were able to be illustrated in a way that clearly communicated the question. For example, most of the communication questions could not easily be conveyed by an illustration, such as the Figure 4-5 Illustration above. Despite this, it was decided to include a picture for every item and a stand-alone booklet was produced that included all items. Informants reported that a booklet that included the illustration and the question, would also potentially engage caregivers. This provided the parent with a version they could refer to but also, importantly, gave them the opportunity to read or look at the question.

1. Does your baby make 2 sounds that are the same, like , “ba-ba”, or “da-da” or “ga-ga”? (The sounds may not mean anything.)
Method of administration

As described earlier, the ASQ-3 is designed to be either self-administered by the parent or administered by interview. There was general consensus among informants that the ASQ3-TRAK tool would be best administered to caregivers by the health practitioners in this context, rather than offering it as a self-administered tool. A number of reasons were provided for this: many caregivers are not literate; caregivers would find it more engaging to have the questionnaire administered by interview; it would encourage a ‘conversation’ about the child; and administering the questionnaire was an opportunity to demonstrate skills the child has, further engaging and encouraging the caregiver by focusing on the child’s strengths.

In the original version, it is assumed that parents will observe their child demonstrating the task in the home environment. However, many of the tasks refer to an activity requiring a specific object, such as banging cups, tipping a sultana out of a plastic bottle or kicking a ball; objects that may not be readily available in homes in this context. To overcome this problem, informants agreed it would be helpful to provide a standard bag of objects with the questionnaires that practitioners could offer to the parent to then demonstrate with the child in the setting of the health centre.

4.2.3 Respecting culture

Another theme that emerged from the adaptation interviews was the importance of respecting the culture of the participating communities. While the study and the tool were embraced, informants described wanting the young children of their communities to be healthy in all developmental domains and succeed in mainstream educational settings, while still being strong in their own cultural ways. The adaptation process endeavoured to be mindful of this concern and meet both needs as described below.

Language

Key informants, both Aboriginal and non-Aboriginal, expressed a strong desire for providing the questionnaire in the local Aboriginal language as well as English, despite many people in community (including some of the AHWs) not being literate in the target language of the community. It was felt that seeing the ASQ3-TRAK tool in their language would “empower” people

It also says you are valuable, your culture is valuable... without language they lose everything (Key informant, Nhanhala)
Many others suggested it would be a way of teaching parents and AHWs to read their language and possibly encouraging people to learn, offering a method for protecting language transmission:

Like if you write it in English then in Arrarnta, people will pick it up, the word.. (AHW, Nhanhala)

This view was supported by other informants who described that promoting the use of their language by including the translation, was a way of preserving culture.

**Relevance and acceptability of items**

There was no doubt for any informants that many of the ASQ-3 items needed to be modified to make the tool relevant and acceptable to the Aboriginal families with which it was intended to be used. Aboriginal informants felt that it was necessary to acknowledge that there are differences among cultures.

The occupational therapist who reviewed the ASQ-3 was able to assist in determining item equivalence, in other words whether items were relevant and acceptable. For example, the following is an item from the 18-month questionnaire:

After watching you draw a line from the top of the paper to the bottom with a crayon (or pencil or pen), does your child copy you by drawing a single line on the paper in any direction? (Mark ‘not yet’ if your child scribbles back and forth.)

The availability of crayons and paper in homes is limited and therefore children may not have had the opportunity to draw on paper, making the relevance of the item questionable. However, commonly in both regions, children would have had exposure to drawing in the sand. Following discussion with community members, consensus was reached and the item was modified to:

Show your child how to draw a line in the sand. Stretch you arm out straight in front of you and draw the line towards you. Watch your child draw a line like yours. Does your child copy you by drawing just one line, in any direction (up, down or across)? You can use crayon or pencil to draw on paper.

This modification was viewed as respecting the cultural difference, while still being considered acceptable by the authors of the ASQ-3 during the consultation process since the meaning of the item was retained.
While some items suggested activities that were considered unfamiliar to most families in this context, the informants still felt many of these items were acceptable. For example, one item enquires about a child’s ability to turn the pages of a book to establish fine motor skills. Most families reportedly do not have books in the home, however this item was judged as being acceptable by Aboriginal informants in both communities as it promotes a desirable activity. Therefore, although initially considered irrelevant as a way of establishing a child’s ability because of the lack of experience with the item, the item was retained. The informants considered that skills could be promoted and culture maintained, side by side. This was considered especially important for skills children needed for later educational success, such as counting and recognising colours, that were not necessarily important traditionally.

4.2.4 Empowering caregivers

*Format of questionnaire*

The importance of providing adequate explanations to aid parents’ understanding of the purpose of the questionnaire was a theme that emerged during interviews. Informants reported that the idea of being asked about a child’s ability to perform certain tasks was a concept that many Aboriginal parents would find foreign. However, explaining the purpose of the questions adequately would more likely engage the parent and they would be more confident to participate:

Yeah, just explain what is the process or what is the reason for you to do that
or to say that to her child because they explain that to her, so she know what it
is (Aboriginal key informant)

Therefore, in addition to the introduction at the beginning of the questionnaire, each area (such as communication, gross motor etc.) had a brief line added, explaining what the questions in that area were examining, to help parents understand why the question was being asked. For example, in the original ASQ-3, only the title – “Communication” - is provided. However, in the ASQ3-TRAK version, an explanation is provided in addition to the title – “Communication: How your child listens, talks and how he lets us know what he's thinking” (See Appendix 7a).

*Parents as co-observers*

Informants suggested that if parents understood the purpose of the questionnaire, and importantly that it was not a test, they would feel less scrutinised and more engaged. It
was noted that encouraging the child to demonstrate the skill could also encourage the parents to become co-observers of the child’s development. This in turn would promote a more collaborative approach through sharing of information.

4.3 FINDINGS - CULTURAL APPROPRIATENESS OF THE ASQ3-TRAK TOOL

This section reports on the findings of parent, AHW and key informant interviews regarding views on the cultural appropriateness of the ASQ3-TRAK tool, complemented by observational data.

4.3.1 Acceptability

*Face validity*

Overall, the ASQ-TRAK tool had very high face validity; the tool was considered appropriate and acceptable by all informants. Parents were positive about the ASQ3-TRAK tool describing it as "good" or "ok" and many volunteered feeling “proud” to see their child’s accomplishments. When prompted, parents described feeling comfortable answering questions about their child’s development and many found it interesting.

AHWs and key informants described the ASQ3-TRAK tool as being suitable for this context. One AHW who had described the HU5Ks developmental questions as something for *Ngapiki* (non-Aboriginal) children pointed out that he thought the format and modified language of the adapted tool was acceptable for both Yolngu and Ngapiki, without any need for further changing. There was a suggestion that the use of a valid tool that had been adapted was more acceptable to the staff, or “trustworthy” as one AHW described it. Another informant described that the tool was “not invasive” and made the parents feel comfortable.

The AHWs described enjoying using the tool and the opportunity to play with the children. Early childhood experts who reviewed the adaptation reported that they considered it was a useful tool, appropriate for the context.

*Language*

There was agreement among the informants that the tool being presented in both English and the local Aboriginal language was appropriate. One AHW acknowledged that the bilingual nature of the tool was a benefit for her as it aided her own
understanding of the questions. Another AHW commented that it made the job much easier, as he could use the tool in his language with the parents.

However, the youngest AHW in Nhanhala, commented that the language in the Western Arrarnta version was a bit “old fashioned” because the translators were older. She acknowledged, however, that they had ensured that it was recorded “properly”. Another AHW from the same community thought the “proper” language should be used and suggested this was an opportunity to promote literacy in Western Arrarnta among younger parents in particular.

Like especially with the young ones, you know, they can sort of see the language as well and learn as well….yeah, it sort of encourages them to…learn more…in their own language. (AHW #5)

Other AHWs agreed that for parents who did not have strong literacy skills, the design of the tool promoted their learning. According to the AHWs, listening to the question while being able to read the English and Language version below the illustration was an excellent way to promote the parents’ literacy skills in both languages.

4.3.2 Value of the ASQ3-TRAK tool

Learning about child development

I didn't know some of the things he could do…I learnt more about what Mikey could do for his age (Parent #1)

A number of parents commented on the value of the tool for learning about their child’s development. This was also observed by the AHWs who described parents being surprised at the skill their child demonstrated. One parent commented that she would like the questionnaire repeated as her child got older as she had found it useful for understanding her child's developmental stage. This view was shared by AHWs who recognised that parents had the opportunity to learn more about their child’s development each time they had a questionnaire administered.

AHWs reported that the process of administering the ASQ3-TRAK tool also supported their own learning, with each administration reinforcing their knowledge of typical child development. AHWs remarked that the tool emphasised the inadequacy of their observations independent of the tool:
…kids that…with my eyes I think is really young [and] I thought he wasn’t able to do…what the picture shows. But they can actually do it. And it gives me a surprise too. (AHW #1)

**Observing children play**

AHWs all identified the benefit of observing the child demonstrate a skill, over relying on parent report alone:

>Mum might say, “Oh, she can do that,” “she does that,” but when you actually get the child to do it, they might do it differently or mightn’t do it or do it better, like that. (AHW #7)

During my observations it was evident that when asked questions about the child’s skills the parent most often gave very brief answers. However, when the child was given the opportunity to demonstrate the skill with a toy from the kit, this invariably elicited reactions from all in the room. It appeared that watching the child play engaged the parents much more and often led to them to elaborate on their child’s skill, generating further discussion.

The AHWs reported that the inclusion of the toy kit (see Appendix 9) was a particularly valuable part of the ASQ3-TRAK tool as they were able to offer the appropriate toy for the activity. One AHW reported that in addition to providing the opportunity to observe the child demonstrate the skills, importantly the toys distracted the child and “stopped them getting bored”, so the parent was able to answer questions more fully.

**Feedback to parents**

The opportunity for feedback was valued by all informants. Many parents welcomed the positive feedback from staff during the administration of the ASQ3-TRAK tool and this was also observed during the supervised sessions:

>Feedback from [the health practitioner] is helpful - it tells me that I'm doing well with my baby. (Parent #10)

Parents identified that it was important for the questions to be asked because if their child was doing well, it indicated that they were doing a good job as parents. Many parents described feeling pride in the skills their child was able to demonstrate and pride in their own parenting skills. One mother, although she did not articulate her feelings, simply remarked "my baby is healthy" with a pleased smile on her face.
The AHWs also perceived that the parents valued the feedback and guidance. One AHW described the benefit of a structured scoring system that provides clear cut-offs and enables specific feedback to be given to the parents, in contrast to the existing system that did not provide any guidance as to what feedback to provide. He was able to reinforce what parents were doing based on observation and cut-off scores and valued being able to show parents the scores demonstrating the fact that their child was developing typically:

And show it to them, yep…and you are able to see their face changing, proud.
(AHW #1)

Other AHWs identified that observing the child demonstrate skills provided the opportunity to give very specific feedback about activities the parents could do in the home to promote the child’s development. They noted that the demonstration facilitated that discussion, as they found it easier to talk about development when observing the child demonstrating the skill. Having structured items and activities to complete in the session also provided modelling for parents, something considered particularly valuable by all the AHWs:

Yeah, and then, you know, just say to them, the Mum, “you can not only do it here but you can do it at home as well you know with your child. Even when you are playing or sitting in the sand…you know, drawing”. (AHW #5)

4.3.3 Ease of applying the ASQ3-TRAK tool

Participants were very positive about using the ASQ3-TRAK tool.

Ease of understanding

Most parents found the questionnaire easy or very easy to understand. Only two parents found it difficult and both had limited English proficiency and had the instrument administered by a health worker who did not speak their language. Some parents explained that although some questions may have been difficult to understand, they were able to ask the health worker or nurse to explain what was meant. Other parents volunteered that they “read the pictures” which helped their understanding. Most parents reported that they understood what they were doing and why. This finding was supported by the AHWs who reported that the structure and simple language made the questions and purpose of the questions very clear and they noted that this helped engage parents. This finding was supported by my observations.
AHWs described that encouraging the parent and child to demonstrate skills also provided parents with a practical and very tangible understanding of the purpose of the questions and the tool. Not only did this engage parents but it was noted that this would be useful for parents to describe to others in the community what could be expected from the checks, as well as potentially passing on knowledge to other parents.

**Ease of use**

The informants, including the AHWs, reported that the adapted tool was easy or straightforward to use. They described it as easy to follow because of its step-by-step nature, and because it was divided into the various developmental sections. The child health-trained staff who participated in the training also perceived that the tool was straightforward for the AHWs to use. The benefit of a structured screening tool, with questions, scoring system and plans was recognised by all the AHWs as being of value to them in their practice with one AHW commenting that “it’s all there”. The reported ease of use was also supported by my own observations.

Only one informant, an AWH, commented on finding the structure of the questions slightly confusing. Some questions ask if the child can complete a task, while others ask the parent to have the child demonstrate the skill. Although she acknowledged that the instructions make it very clear that demonstration of all items should be attempted, she felt it would be simpler if all questions were written in a consistent format.

**Illustrations**

All informants agreed that the illustrations aided the communication and generally approved of the illustrations. All the parents reported that the illustrations were useful, aiding their understanding of the questions and the task required. AHWs also reported that the illustrations assisted them in communicating the idea behind the questions. This finding was supported by my observations. Parents were observed to anticipate some questions from illustrations that clearly communicated the intention of the question.

Parents whose literacy in both English and their first language was strong, also commented that the illustrations were a useful demonstration and guide for them. Most parents found value in being asked the question while also having the illustrations to look at:

> It was good to have pictures but also listen. Useful to have both (Parent #5)
Other parents valued being able to look at illustrations and read the questions themselves:

…helped with understanding and also with Language. (Parent #13)

Parents were also observed to become excited when their child was able to perform a skill exactly as demonstrated in the illustration. The illustrations provided further feedback for the caregiver that the child was “on track”. Informants noted the value of seeing fathers represented in the illustration.

### 4.3.4 Administration of the ASQ3-TRAK tool

Almost all the parents had a very strong opinion about the need for the questions to be asked in private with no-one else present. Only one mother commented that she would feel more comfortable if other mothers were around. Some parents identified that other families, including children, would be a distraction for their child. However, most indicated that it was because they preferred to discuss their child in private and did not want others “eavesdropping”. This finding was supported by AHWs who expressed that a private, quiet location facilitated the process, making it easier to engage the parent and child.

Although the majority of parents found the questionnaire a positive experience, half of those interviewed indicated that they felt the questionnaire was too long. This included parents who described the questionnaire as useful and interesting. A number of reasons were given for why the questionnaire felt too long. Some parents reported that it was because the child showed signs of becoming irritable or distracted. Others identified it was because they themselves were distracted. One mother indicated she was hungry, and another mother indicated she had come to the clinic with her husband who was also being assessed and this was a distraction. Another mother had the younger sibling with her and it was difficult to keep the younger infant settled for the period of time required.

Some AHWs commented that the ASQ3-TRAK tool was long and speculated that this could be a problem with keeping families and children engaged. However, while acknowledging the tool is long, all AHWs reported that all items were necessary and did not endorse shortening it.
4.4 DISCUSSION

4.4.1 Community engagement

The process of engaging the community and building relationships is an essential component of any research project undertaken with Aboriginal people. Other research and policy statements recognise that before implementation of any intervention it is important to engage the community, to gain the acceptance and trust of elders and other community stakeholders, and to build productive relationships (Barnett & Kendall, 2011; NHMRC, 2003). The Lowitja institute's publication *Researching Indigenous health: A practical guide for researchers* (Laycock, with Walker, Harrison & Brands, 2011), promotes a partnership model for ethical Aboriginal research that includes four components: respect, participation, meeting needs and collaboration. It stresses that good relationships need time and without productive relationships, research efforts are unlikely to succeed.

This approach was followed in this study. The first visit to Yumurrku included all staff at the health centre, including non-clinical staff, with varied professional and educational backgrounds and English language skills. I ensured that information was communicated clearly in plain English, taking the time to explain ideas but also allowing time for the group to comment and ask questions and generate ideas. In Nhanhala, an opportunity to meet with the entire health centre was not available. However, equally, time was invested in meeting with key community representatives individually, as identified by advisors and health workers. In both sites the initial aim was to explore whether the study was deemed relevant and welcome by the community; listening to the community was therefore a key step (NHMRC, 2010).

This process naturally took time, with multiple visits. However, this early engagement process was pivotal to the project proceeding as it established the necessary collaborative relationships and allowed time for input into the study design (Stewart, Sanson-Fisher, Eades, & Mealing, 2010). Successfully achieving community agreement with community elders and front line workers, and establishing active and strong community participation was a significant factor in achieving a quality adaptation. Adopting this approach is more likely to result in a product that is transferable into practice (Street, Baum, & Anderson, 2007).
4.4.2 Adaptation of the ASQ-3

There is little doubt that the ASQ-3 needed to be adapted for use in the Australian Aboriginal context. As outlined in the background, the ASQ-3 has been adapted for use in a number of Western and industrialised countries and most studies recommend that modifications need to be made to allow for cultural and linguistic differences. Research conducted in remote Australian Aboriginal communities in the NT concluded that formal, mainstream developmental screening tools are not culturally appropriate for this context (D’Aprano et al., 2011), a view supported by Ball and Janyst’s (2008) work with Canadian Aboriginal children. A qualitative study exploring necessary supports for the Aboriginal child health workforce identified that an essential factor was Indigenous-specific resources that were culturally appropriate (Watson et al., 2013).

This study demonstrated that many items in the ASQ-3 were considered culturally inappropriate or irrelevant for a remote Australian Aboriginal population. The adaptation process followed allowed for item, semantic and operational equivalence to be determined and appropriate modifications made, based on collaboration with numerous informants, to achieve those equivalences. The modifications resulted in a version that was presented in simple, ‘translatable’ English; made more culturally relevant by including items that reflected local experiences; translated following a rigorous process; illustrated with culturally appropriate figures; and shorter. The adapted ASQ-3 also included detailed explanations for parents and instructions for practitioners. The process of wide consultation led to recommendations that practitioners should not only administer the questionnaire by interview but also encourage the child to demonstrate the skill rather than relying on parent report alone. The inclusion of the ‘toy kit’ was another modification that facilitated this.

The modifications made to the ASQ-3 needed to be suitable and relevant for Aboriginal families from geographically diverse communities. A process of ‘decentering’ was adopted, described by Brislin (1986) and Beaton (2000) as a way of avoiding one culture being the ‘centre’ or dominant culture, and instead all versions of the tool are deemed equally important. The importance of this step was recognised by informants and references to items specific to the coastal community that were initially added, were removed and more general items that would be found in all remote Australian Aboriginal communities were included. For example, ‘seeds’ were used instead of ‘shells’, and ‘dog’ replaced ‘crocodile’. This process resulted in a more widely applicable adaptation.
Notwithstanding the fact that modifications were necessary to achieve a more culturally appropriate tool, informants indicated a preference for maintaining some items that on first review had seemed inappropriate. For example, the Aboriginal community experts suggested retaining items that tested skills their children may not have had a chance to master through lack of exposure and experience, such as counting and naming colours, drawing ‘people’, and using scissors. There was a strong desire for children to be raised with a strong cultural identity but rather than replacing the items that were not culturally relevant, informants preferred that children learn the skills necessary to succeed later at school. They viewed the inclusion of these items as an appropriate way of promoting these skills and saw no reason why both traditional approaches and “white ways” of promoting child development could not be presented side by side. This is supported by a qualitative study conducted by Colquhoun and Dockery (2012), which analysed responses to open ended questions on the Longitudinal Study of Indigenous Children. They concluded that Australian Aboriginal parents place great importance on children being strong both in their culture and in achieving success in mainstream educational settings.

Similar findings relating to the need for both traditional knowledge and Western knowledge to be part of clinical care have been reported in mental health and chronic disease research in the Australian Aboriginal context. In a qualitative study exploring mental health promotion, the ‘two-way’ approach, using both Aboriginal and non-Aboriginal approaches to mental health care, was identified as pivotal by Nagel and colleagues (2009). Likewise Cass et al. (2002) highlighted the need to present Western medical knowledge alongside Yolngu knowledge to achieve effective communication with Aboriginal patients with renal disease.

4.4.3 The ASQ3-TRAK tool – providing culturally competent care

Cultural competence is defined as “the knowledge, awareness and skills aimed at providing a service that promotes and advances cultural diversity and recognises the uniqueness of self and others in the communities” (Walker & Sonn, 2010, p. 162). It is a set of congruent behaviours, attitudes and policies that come together to enable effective practices in cross-cultural situations (Dudgeon, Wright, & Coffin, 2010). The process of the adaptation, the final adapted ASQ-3, and the purpose of the adapted ASQ-3 all reflect the key principles of culturally competent service. The adaptation process saw the Aboriginal voices in the community privileged through early and ongoing consultation and engagement of community members as active partners.
The process of translation specifically enabled the community language experts to take the lead in this step and retain ownership of this knowledge. Although I provided subject matter expertise, I did not dictate any other aspect of the process. The bilingual native target language speakers were repositioned to have the power in the process; choosing the language to be used and deciding when they were satisfied with the final product.

The findings from this formative research indicate that there was high face validity of the adapted ASQ-3. Face validity is a subjective measure but is important as a first step to validating a tool (Beaton et al., 2000). The ASQ3-TRAK tool was found to be acceptable, relevant and appropriate to parents, AHWs and key informants including child health nurses. There was a high level of satisfaction among parents and practitioners and overall the adapted version was considered culturally appropriate. Culturally appropriate and acceptable interventions or programs have been identified as being important characteristics of culturally competent care, and likely to affect whether mainstream programs or tools are transferable to Aboriginal community settings (Herceg, 2006; Kruske, 2011). Durey et al. (2012) argue that ensuring culturally appropriate screening, intervention and monitoring tools are developed and used in health care is one approach to providing culturally competent health care for Aboriginal Australians.

An important finding was the value placed on the translation into the local Aboriginal languages. The tool translated in the local Aboriginal language not only improved communication for those families in whom it was used in their first language, but made parents feel valued. The adaptation demonstrates respect for culture by promoting literacy in the Aboriginal language and hence protecting the language (NHMRC, 2006). This is an important contribution. In a literature review of interventions that have demonstrated improved health outcomes of Aboriginal mothers and young children, Herceg (2006) found that respect for Aboriginal people and their culture was one of the factors identified that led to success of the program. Cultural respect is described as a key component of cultural competence in Walker and Sonn’s (2010) guide to working as a culturally competent practitioner. They go on to state that cultural respect means providing a safe environment for Aboriginal people accessing health care. This view is endorsed by the Secretariat of National Aboriginal and Torres Strait Islander Child Care (SNAICC, 2012) who describe respect for cultural identity, including language and tradition, as a key area of cultural competence service practice in early childhood education and care service.
The adapted tool was described as making parents feel secure in its content, design and use. The use of culturally appropriate illustrations was welcomed by all, and even those parents who were literate in both English and the Aboriginal language, described the illustrations as useful. This finding was supported by observations of parents who were noted to understand many questions from simply looking at the illustration, demonstrating the high visual literacy of the illustrations. The illustrations were large, engaging diagrams, usually self explanatory; and reflective of contemporary communities, including fathers in many items. These are strategies other researchers have recommended to improve communication of interventions and health promotion messages (Blinkhorn & Gittani, 2009; Baunach et al., 2012; Leshabari, Koniz-Booher, Astrom, de Paoli, & Moland, 2006). There is evidence from studies in the Aboriginal context that supports the development of Indigenous specific resources for use in the health context (Watson et al., 2013) and using culturally specific illustrations in health promotion materials in remote Aboriginal communities has been well received (Baunach et al., 2012).

The method of administering the questionnaire to the parents by interview and encouraging the child to demonstrate the skill was an essential modification that aligned with a culturally competent approach. This resulted in creating an opportunity for dialogue with the parents and invited them to ‘co-observe’ the child, rather than setting up a potentially intimidating test-like scenario. Parents were subsequently more engaged and this provided opportunities to give feedback and encouragement by highlighting the child’s and the parent’s strengths. Focusing on strengths was identified as being important for promoting cultural safety when working with Aboriginal families and children in Canada (Ball, 2008a). Ball (2008a) defines cultural safety as the outcome of culturally competent care provided by health practitioners. In the Indigenous Child Project, which examined the views of Canadian Aboriginal people regarding developmental monitoring, screening and assessment, feedback from participants revealed that professionals should engage in conversations with primary carers and reinforce their skills in observing and supporting the child’s development (Ball & Le Mare, 2011). This also highlights the importance of working with Aboriginal families in partnerships that has been reported to improve access and overall service delivery (SNAICC, 2012).

A surprise finding was parents’ preference for having the tool administered in private. Parents displayed a clear preference for confidentially and also recognised that children would be less distracted and better able to focus in private. Privacy and confidentiality
were also found to be important for Canadian Aboriginal parents when discussing child development (Ball & Le Mare, 2011). There is limited research examining access and utilisation of child health services in the remote Australian Aboriginal context, however data on antenatal services support this finding. A recent Australian study using a mixed methods approach examining NT Aboriginal women’s experience of care through an antenatal clinic found that the women were dissatisfied with the lack of privacy to discuss confidential matters and staff reported that the lack of space hampered their ability to properly engage with women and their families (Kildea, Stapleton, Murphy, Low, & Gibbons, 2012). Similarly in this study, AHWs had a preference for administering the ASQ3-TRAK tool in a quiet, private location.

The major concern of AHWs and interviewed parents was the time required for the ASQ3-TRAK tool’s administration. Although the ASQ3-TRAK tool had less questions overall than the ASQ-3, the tool still took considerable time to administer, adding at least half an hour to the HU5Ks child health check. Some parents expressed the view that the use of the tool made the time of the health check too long. This finding is perhaps not surprising in view of most parents not being prepared for the additional time the child health check was going to take with the added comprehensive developmental check. Informants recognised that parents were more likely to become impatient to leave if unaware of the duration of the check and suggested that informing parents adequately beforehand would help overcome this. Parents identified that there were distracting factors that made it difficult to maintain focus for this time, including the child or parent being hungry or tired, or having attended with another family member waiting for them. The parents also recognised that these factors related to their being unprepared for a longer consultation. One mother, who felt the questionnaire took too long because her child became irritable, suggested that the morning would have been a preferable time for the questionnaire to be administered, when her child was more alert.

The guidelines that accompany the questionnaire now give specific instructions to deal with the factors that may interfere with the parent’s or the child’s ability to focus, such as ensuring the child is fed and well rested. This is not only to ensure the child demonstrates the best of his or her abilities but also so as to maintain the child’s interest and hence the parent’s engagement. The guidelines were also amended to suggest offering the parent a cup of tea or snack for longer consultations. Strategies to ensure the child’s interest and therefore the parent’s interest is maintained have therefore been incorporated into the guidelines and the training to optimise participation.
4.4.4 Challenges of adaptation

A major difficulty in the translation step of cross-cultural adaptation is the accessibility and availability of qualified bilingual translators who have knowledge of the original and target languages, cultures and the area of research. The back translation models suggest multiple bilingual translators should work independently in a blind, back and forth design. However, this approach in the context of this study posed considerable challenges that would be common to many remote Aboriginal communities. First, the complexity of translation in Aboriginal languages with multiple dialects is a circumstance not common to most other cultures and selecting the target language for the adapted ASQ-3 in Yumurrku did create some tension. While Dhuwaya was the agreed target language, some in the community felt the tool should have been translated into other Yolngu languages. However, the committee did not consider this feasible and, furthermore creating a quality translation in all 13 languages was beyond the financial and time constraints of this study.

Second, there was a scarcity of qualified bilingual people available to complete the work in this context. This had implications for the back translation step as there were no other bilingual people who were native English speakers identified and/or available. Hence, the back translation step was modified and a bilingual target language speaker was used. However, this was not without its difficulties as highlighted in the procedures, again due to the lack of capable people available to do the work. Although there were concessions made to the model of adaptation adopted, these compromises reflect the real world challenges of conducting research in this complex context (Stewart et al., 2010). Without the willingness for flexibility, the whole study would have been threatened.

Finally, working in partnership with the community and respecting their views was a major consideration throughout the process. The target language translators in both communities were not comfortable working independently, preferring to work with colleagues who were known and trusted, and with the assistance of a bilingual native English speaker. This was an important and conscious modification that aligned with the collaborative approach underpinning the study and recommended by national policies addressing research with Aboriginal communities (NHMRC, 2003).
SUMMARY

This chapter has illustrated the steps involved in the adaptation process followed by a detailed description of how these methods were employed to establish equivalence between the ASQ-3 and the adaptation, the ASQ3-TRAK tool. This formative evaluation in two remote Aboriginal communities confirmed that modification of the ASQ-3 was necessary and that the rigorous process followed was essential to produce an adaptation that was acceptable and considered culturally appropriate. The adaptation process was time and resource intensive. However, investing this time and effort with the various informants who collaborated in the process ensured concepts were considered from many viewpoints, leading to an adaptation with greater equivalence.

The benefits of collaborating with colleagues from the target culture cannot be overstated and engaging the communities as partners in the adaptation was perhaps the most critical step, resulting in a tool with greater applicability. The concept of cultural competence was fundamental to the adaptation process and needs to inform the cross-cultural adaptation of instruments in this context. The subsequent training in the use of the ASQ3-TRAK tool was undertaken endeavoring to protect the cultural safety of Aboriginal parents and children.
CHAPTER 5 TRAK TRAINING NEEDS ANALYSIS

INTRODUCTION

This and the following chapter report on the training components of the formative evaluation. This chapter focuses on the training needs analysis and chapter six on the design of the TRAK training.

The first section of this chapter provides the policy context for developmental monitoring in the remote setting in the NT. Section two details the methodology used for the training needs analysis. Interviews and observations with AHWs and key informants were conducted to elicit attitudes and views on training needs in the area of ECD, to identify perceived gaps in skills and knowledge, and to explore barriers related to delivering developmental services in remote health services. A medical record audit was also undertaken in the two sites to determine the baseline developmental monitoring practice in remote health centres. Findings from the qualitative and the quantitative methods are presented in section three and lastly, in section four, the interpretations of the findings are integrated in the discussion.

The broad aim of this part of the study was to determine the baseline capacity for developmental monitoring in remote health centres and to determine the training needs of the AHWs.

The following evaluation questions were addressed:

1. What are the training needs of AHWs in remote health centres, relating to early child development practice?

2. What is the current baseline level of developmental care provided by the health centre and what systems are in place?

3. What are the barriers to compliance within the current policy context to support developmental monitoring?
5.1 BACKGROUND POLICY CONTEXT

**Healthy Under 5 Kids Program**

In the last few years the NT Government has put considerable effort into the development of their Healthy Under 5 Kids program (HU5Ks) that has been implemented in all 57 NT Government remote health centres (Kruske et al., 2008; McKinnon & Chatterji, 2008; NT Department of Health, 2009). HU5Ks is a schedule of ten child health checks provided to all children less than five years of age living in remote Aboriginal communities. A care plan for each scheduled visit provides a guide and acts as a prompt to health providers (see Appendix 6).

The objective of the HU5Ks program is to improve and foster the clinical interactions between parents/caregivers, and the primary health care team (NT Department of Health, 2013). Through the child health checks practitioners are encouraged specifically to:

- assess growth and development, as well as general physical and psychosocial wellbeing;
- discuss any concerns the parent/caregiver may have and provide advice and education (including anticipatory guidance regarding play and communication);
- identify children and/or families who may need support;
- administer childhood vaccinations; and
- detect and provide treatment for health or developmental problems, and refer appropriately as required.

Prior to the introduction of HU5Ks, the Growth Assessment Action program had been in place in the NT, which focused on the growth and nutritional status of children under five. The HU5Ks is an expansion of the Growth Assessment Action program to include, critically, developmental monitoring and consequently requiring a greater skill set among practitioners.

Fig 5-1 below is an example of a paper HU5Ks care plan, displaying the developmental section. The same general questions are repeated at each scheduled check, while the

---

6 The remaining 26 remote health centres are Aboriginal community controlled health centres.
Developmental pointers are specific to each age. The anticipatory guidance is the section in black, which practitioners are expected to provide to all caregivers when completing the check. The purpose of anticipatory guidance is to choose relevant topics, given at the appropriate time, that will promote development or reduce the risk of poor outcomes. The HU5Ks program has selected key, relevant topics to introduce at various ages across the child’s first few years of life. Most of the infant and small child’s developmental needs can be met through activities designed around play and communication (Engle, 2011; Ertem et al., 2006; Richter, 2004). The HU5K assessment forms make suggestions around the type of play activities to recommend to parents.

Figure 5-1: Paper HU5Ks 12 month form – developmental questions

<table>
<thead>
<tr>
<th>Problems identified at previous check</th>
<th>Significant illnesses in last 6 months?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any current concerns (e.g., general health, crying, sleeping)</td>
<td></td>
</tr>
<tr>
<td>Any concerns about hearing?</td>
<td>Yes</td>
</tr>
<tr>
<td>Any concerns about vision?</td>
<td>Yes</td>
</tr>
<tr>
<td>Any concerns about general development?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**DEVELOPMENTAL POINTERS**

One year olds should be mobile - crawling, bottom shuffling, starting to walk with support. They should be able to pick up small objects (e.g., not solid food with fingers) and manipulate objects well. They should be starting to talk, saying single words with meaning and understanding simple instructional words (e.g., food, drink, cry).

If any of the following are observed OR the family is concerned TICK the box and refer to the doctor for review:

- Not sitting without support
- Not putting to stand
- Not understanding simple spoken words
- Not developed pincer grasp
- Family concerns

**COMMUNICATE** Ask your child simple questions. Respond to your child’s attempts to talk. Play games. Ask child to wave bye-bye.

**INJURY PREVENTION** Now your child is becoming more mobile, watch closely around the campfire - keep safe from injuries and burns. Watch closely around water - keep safe from drowning.

**HYGIENE** Keep child’s face and hands clean to stop germs from pass affected ears and runny noses. Use tissues to clean ears and nose if necessary. Teach your child to brush teeth or shower at least every second day.

**PLAY** Allow child to explore safely - always supervise.

**NUTRITION** Start family foods - 3 meals and 2 snacks. Refer to NT infant feeding guidelines as shown in "A story about feeding babies".

The Remote Health branch of the Department of Health provides clinical and acute care services through remote area health centres and delivery of the HU5Ks program is core business for those health centres (NT Department of Health, 2013). This means therefore that the HU5Ks is the responsibility of remote area nurses and AHWs working in remote health centres. If the child health check, or part of it, is completed by a medical practitioner, a Medicare rebate can be claimed as this qualifies as the Federally-funded Health Assessment of Aboriginal and/or Torres Strait Islanders (Department of Health and Ageing, 2013).
Support for child and youth health programs, including support for the delivery of the HU5Ks, is provided by the Health Development branch of the NT Department of Health. Child health nurses from the Health Development branch provide practical support and guidance regarding the HU5Ks program. In addition, they provide assistance with maintenance of child health-related recall, education and health promotion about growth and nutrition, training and support for community based child health AHWs⁸, and encourage clinical staff to undertake the HU5Ks training. A stand-alone, self-directed education package is available to support staff delivering the HU5Ks program. This online package takes approximately 20 hours to complete.

**Electronic health records in the remote context**

Primary Care Information Service (PCIS) is the NT Government’s main clinical information technology system for electronic health records. At the time of this study, only three NT Government health centres were still using a paper-based medical record system. Following completion of a check, all interventions are expected to be documented in the electronic health record on the HU5Ks care plan and, if appropriate, within the progress notes. For every attendance at a health centre, a ‘visit’ section appears on the PCIS system, which contains the field for progress notes. The care plan needs to be accessed separately (the ‘assess’ icon is circled in Fig 5-2 below), and appears as an additional event to the ‘visit’ event on PICS.

---

⁷ Medicare is Australia's publicly funded universal health care system.

⁸ At the time of the study there were three dedicated child health AHWs employed by the Health Development branch in the NT.
Once a HU5ks care plan is initiated on PCIS, the scheduled child health checks are incorporated in the electronic recall system. The PCIS recall system is a planning tool and reminder system for ongoing care of clients. When a child is commenced on a HU5ks care plan, the appropriate recall items display on the child’s electronic health record providing a recall schedule for each child health check.

5.2 METHODOLOGY

The purpose of a training needs analysis is to determine the learning needs of a target population and is a crucial part of medical education interventions that lead to change in practice (Grant, 2002). Six learning needs have been described: perceived learning needs are the needs articulated by learners; normative needs are discrepancies between standards established by experts and learners’ current performance; prescribed needs are defined by educators and experts; expressed needs are learners’ needs expressed through their actions; comparative needs are identified by comparing discrepancies between two
similar groups of learners; and *unperceived* needs are what learners don’t know that they
don’t know (Grant, 2002; Ratnapalan & Hilliard, 2002).

The training needs analysis is a problem-solving process that aims to identify and
comprehend gaps in learning and performance through data collection and negotiation
(Gupta, Sleezer, & Russ-Eft, 2007). Applying systematic consultation, the training
needs analysis also helps identify obstacles that may not be solved by training, such as
policies and procedures that need to be corrected, and conditions under which the
training needs to occur.

A training needs analysis has additional advantages. It is an opportunity to introduce a
new program and potentially achieve buy-in with potential trainees, thereby increasing
motivation (Hauer & Quill, 2011). A training needs analysis also serves as a basis for
evaluating the effectiveness of the training program, as it can provide a baseline for
comparison on completion of the training (Davidson, 2005; Lin et al., 2012).

There are numerous ways of classifying needs assessments, and competency-based
needs assessment developed by Gupta and colleagues (2007) is an approach that was
particularly appealing for use in this context, as it supported the objectives of this study.
The competency-based needs assessment seeks to identify the knowledge, skills,
attitudes and behaviors necessary for people to perform efficiently in their jobs. The
benefits of this approach, in addition to identifying competencies, is that it can help
manage proficiency levels and can be used to design standardised training, resulting in
higher levels of performance (Gupta et al., 2007).

The following section will outline how the methods described in the Research Design
chapter were utilised specifically for the needs analysis.

### 5.2.1 Data sources

Data sources have previously been described in detail in chapter three. For the purpose
of the needs analysis, AHWs and key informants participated in interviews for the
qualitative component, and medical records were reviewed for the audit.

### 5.2.2 Procedures

There are a number of techniques for collecting data for a training needs analysis.
Generally, these fall into one of four methods: survey, observation, interview or
document review (Barbazette, 2006). In this study, a mix of qualitative (interviews and
observations) and quantitative (audit) methods were undertaken as this best addressed the questions, as outlined earlier in chapter three.

**Interviews**

The procedure for the interviews followed that outlined in the research design chapter. The training needs analysis formed part of the pre-intervention interviews conducted to answer the overall research questions. A pre-determined topic guide was used (see Appendix 1a) and I conducted all the interviews between June and November 2011.

The intention of the interviews was to gain an understanding of the informants’ perceptions on gaps; in the knowledge and confidence of AHWs in this area, and in organisational services and support for implementing developmental monitoring. The interviews aimed to understand the AHWs’ attitude to the perceived need for change and whether training was in fact perceived to be required. A needs analysis often reveals the need for well-targeted training areas and the objective was to determine how informants felt these could be addressed.

Interviews offer the further benefit of the opportunity to build credibility with interviewees by asking questions and listening responsively to their answers. I was able to build personal relationships with potential trainees, which was important to the success of the subsequent training. Staff who become personally involved are more likely to commit to the efforts of the needs analyst/trainer (Barbazette, 2006).

**Observations**

I conducted observations of AHWs performing child health checks in the two remote health centres to obtain data on individual and organisational practice prior to the training being delivered. The observations occurred between June and November 2011. Using this method, I evaluated the AHWs performance through first-hand observation of the staff member at work, in the role of *non-participant observer* (Bernard, 2011). I was present during the consultation, watching and listening, but was in no way involved in the work or the process.

A key advantage of using direct observation is that one gains first-hand knowledge and understanding of the job being performed (Green & Thorogood, 2009). Through witnessing everyday routines I was able to note the strengths and weaknesses of the workers, as well as other issues in the health centres that were acting as facilitators or barriers to performing and recording developmental monitoring practices. This provided valuable information about strengths to build on and areas for improvement.
A pre-determined guide (see Appendix 2a) was used as a prompt to the observations. Detailed field notes were recorded immediately after the sessions. As was negotiated with the AHWs, I provided individual feedback and answered any questions following completion of the observation.

**Audits**

As outlined in chapter three pre-training audits of the medical record of every child between birth and five years of age (0-59 months) who resided in the community, were conducted in the two sites. The aim of the pre-intervention audit was to provide a quantitative baseline of developmental services provided in the 12 month period prior to the intervention.

Audits were undertaken between November and December 2011. Box 5-1 lists the data elements that were audited from medical records for the 12 month period (see Appendix 3 for the full audit).

**Box 5-1: Data elements audited from medical records**

1. Recorder’s role or position.
2. Number of total health centre attendances and primary reason for attendance.
3. Number of attendances where a developmental service was provided.
4. Record of developmental monitoring service provided including:
   - Enquiry about development;
   - Observation of development;
   - Advice provided (including anticipatory guidance);
   - Referral for assessment due to concerns; and
   - Follow up of known disorder or delay.
5. Identification of developmental delay or disorder.
6. Other child health outcomes as per HU5Ks guidelines (i.e. immunisations, growth parameters, respiratory checks and haemoglobin).
7. Evidence of diagnosis of chronic illnesses or congenital problems.

**5.2.3 Data analysis**

*Interviews and Observations*

The analysis procedure has been detailed in chapter three.
Quantitative analysis was undertaken using the statistical package, SPSS, version 20. Univariate analysis was conducted to describe the baseline characteristics of the two communities’ child health centres, focusing on the developmental services provided in a 12 month period. Results from the two communities were not compared statistically, as the purpose was to obtain a baseline to inform training in the two communities.

This was followed by examination of the bivariate association within each community of developmental checks having been completed and a number of other variables which may have influenced this such as: other health checks that are part of the child health check; chronic medical conditions; and number of overall attendances. This was an important first step in understanding the importance placed on developmental checks in relation to the AHWs assessing other aspects of child health.

A chi-squared goodness of fit test was applied to compare the difference in services provided by AHWs in each community.

5.3 FINDINGS

5.3.1 Findings from interviews and observations

The qualitative methods in this training needs analysis aimed to collect data on the training needs of AHWs in remote settings and to identify barriers to ECD service delivery in health centres.

In total, eight AHWs participated in the interviews; four of six AHWs in Nhanhala and all four AHWs in Yumurrku. Of the two Nhanhala AHWs who did not participate, one was a men’s health AHW and the other worked between an outstation and Nhanhala, and was rarely available. The AHWs ranged in age from 27 through to 48 years of age and of the group, two were male and six were female. Although only two of the AHWs spoke English as their first language, all were proficient in their use of English. Certificate IV qualifications were held by four of the AHWs, certificate III by three and basic skills qualification by one. I observed five AHWs during clinical encounters. Five key informants participated in semi-structured interviews.

The findings from the analysis of the qualitative data were categorised into four broad conceptual themes, each with subthemes: workforce capacity (training, support, training for all practitioners, building knowledge, skills and confidence); organisational capacity
(leadership and management, partnerships, specialised workforce); technical support (instruments, information computer technology); and delivery system design (child health program, client access to care, competing demands, physical infrastructure).

The findings will be presented separately from other research literature to firstly keep the perspectives of the AHWs and key informants as the focus and secondly to be able to integrate the qualitative and quantitative findings into a meta-inference in the discussion (Tashakkori & Teddlie, 2010). Presenting the complementary sets of findings or interpretations in a meta-inference in the discussion enables a more complete picture to develop (Plano Clark et al., 2010).

**Workforce capacity**

**Building capacity needs training**

While AHWs in Yumurrku were familiar with the HU5Ks program and were using the care plans regularly, none had undertaken the formal on-line training available. They had all been shown the HU5Ks program “on-the-job” by colleagues. Despite their familiarity with the program and their use of it, the participants acknowledged that training in the developmental aspects of the HU5Ks was necessary. Those confident in doing child health checks generally found the developmental section on the HU5Ks form challenging, as evidenced by both self-report and observation. There was uncertainty about how to ask the questions, how to record answers and how to give advice to parents.

In Nhanhala, only one of the four AHWs, the child health AHW, was familiar with the HU5Ks program. The remaining three AHWs knew that the child health AHW conducted child health checks and described that they sometimes helped her but did not know the name of the program and were not certain of what it entailed in addition to medical health checks. Only one clinical encounter was observed in Nhanhala, as AHWs were not providing care to children on the day the observations were planned, and no child health checks were performed on that day. None of the AHWs, in either community, were aware of the online HU5Ks training package.

Overall there was consensus from AHWs and key informants interviewed that training was a necessary part of improving the developmental service to children. AHWs identified that there were gaps in their prior training, describing they had received no child health training either as part of AHW training, or subsequently. They
acknowledged that they would benefit from having some training, ranging from early child development through to child health and acute paediatrics more broadly.

It was not only gaps in the AHWs’ skills and knowledge that were identified. Key informants, working as child health nurses with the Health Development branch, described that nurses who work in remote health centres have varied skill sets, but rarely child health skills. The key informant who worked in policy development described the difficulty in recruiting child health staff across the NT, particularly in remote settings. There was agreement that nurses would also benefit from further training.

Some informants expressed ambivalence about training. One AHW began the interview suggesting that she did not require further training. However, as the interview proceeded, she described more specific training needs in early child development, eventually acknowledging gaps in her confidence to be able to give advice to parents about promoting early childhood development. Another AHW, while agreeing that training would be beneficial, thought at most an afternoon in-service would be sufficient and more intensive training should be offered to a select few staff.

The AHWs all agreed that some form of practical training that involved on-the-job training would be beneficial.

…like for us, Aboriginal people, we learn by looking and doing and seeing… ‘cause you know, you don’t learn much by sitting in the classroom … AHW #5)

While for many, on-the-job instruction had been their training experience for gaining expertise in a particular area of primary health care, there was consensus that beginning with classroom teaching was desirable. One of AHWs expressed the need for everyone to sit down together and have time to understand the training. Only one AHW expressed a desire to have training for AHWs separate from nurses, specifically nurses who had child health training. Otherwise, AHWs were generally very supportive of all health centre staff and other early childhood staff completing the training together

Building capacity needs ongoing support

Another theme that emerged was that support in the workplace needs to go hand-in-hand with training. Many key informants described training and support for AHWs as being inextricably linked. Ongoing support was necessary to consolidate learning and to enable the AHWs to build confidence through practical experience. A number of key
informants described that support should be readily available “on tap”, and withdrawn slowly as the AHW became more confident and independent. Without the support, key informants described that AHWs are at risk of giving up the task and letting others “take over”. Key informants felt it was insufficient to have occasional visits by a support person, but rather that an on-site “mentor” who could work side by side as needed and would provide reassurance and feedback, was necessary.

In Yumurrku, the health centre nurse who was child health-trained was utilised in this way, with AHWs all describing they felt they could approach her for advice and guidance. Key informants agreed that ideally a child health nurse would provide this support, because of the necessary expertise. However, it was recognised that the support person needs to have the right personality to be a mentor; to negotiate the relationships, and as one AHW identified, build trust.

The child health-trained nurse in Yumurrku had been working as a child health nurse with the Health Development branch at the time of the implementation of the HU5Ks program. In her subsequent role in Yumurrku, she was then able to continue to support staff effectively to implement the HU5Ks program. In contrast, in Nhanhala, the maternal child health nurse did not have child health training and neither she nor the child health AHW had completed the on-line HU5Ks training available. There had been variable support from the Health Development branch for the staff using the PCIS version of HU5Ks, since the child health nurse position responsible for this role had only been filled intermittently.

**Training for all practitioners**

Most respondents agreed that all practitioners in the health centre should participate in training. A senior AHW noted that training would be valuable for all staff in the health centre to discuss together how they could approach child health to “to come up with their own story that they can tell the mother”. One key informant suggested that all staff doing the training would result in improved working relationships:

> So if we were doing that kind of training together it would give us an opportunity to learn the same thing and to talk it over and to develop better working relationships I think. (Key informant #7)

AHWs in Nhanhala, although not normally involved in child health checks, expressed that it should be the responsibility of all AHWs rather than being left to one AHW and felt they would all benefit from training to become more involved:
All AHWs should know what we're looking for...and also to support family and the child. And maybe get other family involved too. (AHW #6)

Another AHW initially suggested that training the one staff member who held the child health portfolio in the health centre would be sufficient, rather than training the whole group. However, through the course of the interview he reflected on the practicalities and acknowledged that training one staff member would not be adequate, putting an unreasonable burden on that one person and ultimately concluded that all health centre staff should be trained.

Key informants acknowledged the benefits of involving AHWs and community based workers in child health because of their knowledge of families in the community and the important relationships they have that exist outside of the clinic:

I really believe that a health worker’s role is important in our role with the community…because of the language and the different levels of socialising at many families and getting that information because there’s that cultural broker [role], you know? (Aboriginal key informant #8)

In addition to this cultural brokerage role, AHWs were recognised as having knowledge about child development in this context that should be built on.

Not everyone, however, was in agreement about who should be trained. Informal discussions with one manager revealed that she considered it preferable not to include nurses in the training as this would blur the lines of responsibility. She felt AHWs and community based workers (including Strong Women workers) should complete the training together, and an in-service would be adequate for nurses to inform them of the work for which AHWs should be primarily trained.

Building knowledge, skills and confidence through training

To be willing to change, people have to understand it; have to believe in it and see the benefits before they’re going to invest time in it. (Key informant #6)

Some of the AHWs were able to provide very specific feedback about the gaps in their knowledge, skills and confidence. This corresponded with what key informants thought was necessary to include in training. Generally, respondents volunteered that they thought it would be beneficial to learn about normal developmental milestones, to improve their understanding of skills they should expect from children at different ages. Another gap identified by respondents was the need to understand specific disorders,
such as Foetal Alcohol Spectrum Disorder, and risk factors for poor developmental outcomes. The AHWs who had less experience of child health checks were less able to be specific but nonetheless were in general agreement:

Maybe a little bit of training in the developmental milestones of a child…so if you’ve got a little bit of knowledge you can notice if there is anything wrong.

(AHW #2)

In addition to AHWs’ perceptions, the analysis revealed further gaps in their knowledge. The interview process provided me with an understanding of the misconceptions that existed among some AHW; that is, the unperceived learning needs. One AHW, although agreeing that some training would be useful, revealed through the interview that he did not see the need for checking children’s development in a formal, structured way. It was his view that parents would bring problems to the attention of the staff, or alternatively, problems would not go unnoticed by staff “looking” at the child.

Another AHW, although highly competent, admitted she was unaware of the reason for including developmental checks in the HU5Ks. During the clinical encounter, the AHW was observed to skip the developmental section to begin with the medical checks, stating she would return to it. The AHW then returned to complete the developmental check, when all other components of the HU5Ks had been completed, including immunisations. She did not appear mindful of the benefit of completing the developmental section before proceeding to potentially upsetting or invasive procedures, which in this case left the child crying and the parent disengaged from further consultation.

The clinical encounters provided an opportunity to observe the AHWs’ practice and glean further information about their learning needs, namely the expressed needs of the AHWs. As described earlier, it was evident from the observations of staff in Yumurru, that they were confident in the medical components of the HU5Ks check. Only one AHW appeared to be aware of the value of observing children and there was little interaction or playing with children observed, even though it was natural for AHWs to do so outside of the clinical environment. Although one of the key informants did identify the need to understand the multitude of factors that can impact on a child’s development, there was a vital gap identified during the observations. Anaemia is a commonly screened for and treated condition and the practice was observed during most of the clinical encounters. Yet the AHWs were not aware of the important link between anaemia/iron deficiency, and child development and behaviour.
One key informant who worked in policy, expressed that it would be useful to train AHWs in how to intervene with simple but effective strategies that could be put in place for children with developmental delays. She felt staff need to know simple messages to give parents. However, some AHWs admitted that they lacked the skills and confidence to give parents advice, such as the anticipatory guidance that is already a component of the HU5Ks care plan. This lack of confidence, as mentioned above, was also observed in the clinical encounters. As identified by one AHW, without the knowledge and experience in child health, staff will lack confidence to perform child health checks:

‘Cause yeah…if you don’t know how to deal with kids, you know, you feel uncomfortable to do it. (AHW #7)

Another suggested that if the materials were in plain language that she could understand, she would feel confident to advise parents, confident in the knowledge that they could understand her.

Although one of the senior AHWs identified that developmental monitoring was essential and a shared responsibility, he acknowledged during the clinical encounter observation, that he found the checks difficult and only did them because he was made to. One AHW reported that she would be quite happy to do all the medical parts of the HU5Ks check and leave the developmental check to the Strong Women worker. Another AHW admitted the problem for him was that he did not like child health. These findings regarding attitude were supported by the observations that suggested the developmental checks were an “extra” task, left until all other components of the child health check were completed.

Only one AHW questioned the relevance and need of a developmental monitoring program for Aboriginal children. This was based on the misconception that this was unique to Aboriginal children and not offered to non-Aboriginal children in urban centres.

Organisational capacity

Leadership and management in the health service

The HU5Ks checks were being delivered in Yumurrku, according to one key informant, because there was strong management directive. Yumurrku had a dedicated ‘Kids’ Day’, when on one day of the week, only children would be seen for well child checks or acute health care needs and unless an emergency, any adults presenting were asked to return the next day. AHWs were all expected to participate equally in ‘Kids’ Day’ along
with other staff, they were constantly reminded to complete the child health checks, and child health was considered a priority.

This management directive did not exist in Nhanhala. However, one AHW felt change was possible in Nhanhala:

I think we can if we have a strong person to stand there… and keep asking other strong people to come and stand with them. If they stand strong, no worries, you’ll have people believing you. (AHW #8)

Yet the leaders in Nhanhala, in both the health centre and the Aboriginal Medical Service, who were passionate about child health and saw it as a priority, seemed powerless to make changes. One of these described “getting burnt out” and was tired of saying the same thing over and over to new people. Another key informant, an Aboriginal leader in the community, described feeling anger and a sense of betrayal at the opposition they faced from the health centre manager. According to informants, the health centre manager made decisions for all the staff at the health centre that did not meet the need of the community or necessarily comply with the Remote Health policy. The key informant who worked in policy suggested that a higher level plan was needed to which all health centre managers adhered, to eliminate the individual preferences.

One senior AHW felt strongly that managers should consult AHWs about proposed changes, for example the introduction of the HU5Ks program. Key informants agreed, pointing out that, particularly when a new manager begins in a health centre, engaging the staff is fundamental. Both AHWs and key informants agreed that this needs to happen slowly and it can take time for staff to adopt new programs and implement change.

The importance of partnerships

Informants all reported the importance of AHW-nurse relationships. One AHW described that, in the past, nurses and AHWs used to work side by side. This is reportedly in contrast to the current process that has new nurses come in and out of community and deliver care without involving AHWs and without becoming informed of the AHWs’ skills and expertise. A common view from both key informants and some AHWs was that while nurses needed to show greater respect towards AHWs, AHWs also needed to be assertive and speak up, to become more involved. One key informant described that AHWs in Nhanhala were disempowered by the health centre manager who did not acknowledge the skills and expertise they have. Consequently, they would wait to be told what to do and do nothing until asked. A senior AHW suggested AHWs
were leaving the workforce in other communities due to the poor working relationships between nurses and AHWs. In Yumurrku, AHWs and key informants described functional AHW-nurse relationships. The AHWs felt confident to ask questions of the nurse who held the child health portfolio, and of other staff in the health centre.

The poor relationships resulted in a number of barriers, according to key informants in Nhanhala. They reported that if AHWs felt supported to complete the developmental checks they would be more inclined to do them. However, AHWs expressed concern that the nurse will take over if the AHW has a question and the AHW will then “lose face” with the family. Key informants described that in the absence of a close working partnership with the nurse, AHWs do not have a colleague to defer to in situations where they are unable to discuss problems detected, due to kinship rules or other cultural reasons.

**Specialised Workforce**

Although there was agreement that all staff in the health centres should be trained and involved in child health, the need for a specialised workforce was identified. Some key informants felt it would be ideal to have dedicated child health AHWs or community based workers, and child health-trained nurses in every community. Staff with more specialised skill sets could provide the leadership and mentorship and ensure the programs were run more effectively. However, even where positions do exist, they are not always able to be filled. In Nhanhala, the MCHN is not child health-trained, the Strong Women positions are not filled and the Health Development child health nurse position has been difficult to fill. This recruitment problem is not unique to Nhanhala, as acknowledged by the policy key informant.

**Technical support**

**Instruments**

The lack of an appropriate developmental tool was recognised by key informants as being a gap. Informants described that the HU5Ks was an improvement, but it is only a guide that does not provide a systematic way for checking development. One Aboriginal key informant suggested a culturally relevant tool was needed – one that asked the right questions:

> Kids might have hunting skills or multitasking skills but we’re not asking about those skills. (Aboriginal key informant #10)
Although some prompts were included in the paper form used in Yumurrku, AHWs were observed to struggle with the language of the developmental pointers in the HU5Ks care plan and found it difficult to convert the pointers into questions for the caregivers. AHWs admitted to being unaware of the meaning of some terms, such as ‘pincer grip’, and reported being confused by ambiguous wording in the care plan (for example, tick the box if the child is not able to perform the skill). The anticipatory guidance in the HU5Ks form was described by one AHW as being for ‘Ngapiki’ (non-Aboriginal people). The wording of the anticipatory guidance seemed culturally inappropriate to some (for example, PLAY: Allow child to explore safely - always supervise), due to different child rearing practices between Aboriginal and non-Aboriginal carers (Cole & Summerfield, 2005).

AHWs were critical that there was no indication in the HU5Ks care plan of the normal range for a milestone (for example at what age an infant should start rolling). The HU5Ks care plan did point out ‘red flags’ that needed definite action, however AHWs found the language difficult to follow. Child health trained key informants also observed that although staff asked developmental questions, they did not always identify that the milestones or behaviours they had elicited were problematic because it wasn’t specified in the care plan. There was consensus among the AHWs who did use the HU5Ks that a more straightforward tool and materials that were simpler to understand would be useful.

*Information Computer Technology system*

Key informants reported that the electronic HU5Ks care plans were difficult for practitioners to fill in. The key informant who had been involved in the design and implementation of the HU5Ks described that the paper care plans had been designed to be followed in a particular order, to act as a prompt and guide for staff, and as a recording system. However, the paper system did not translate well to PCIS and the ICT system was not able to be manipulated in a way that would support importing the HU5Ks forms in the desired way. The system was also difficult to navigate and rather than being intuitive, was described as “arduous”. A lot of very skilled and competent staff were reported, by the Health Development child health nurses, to be documenting the child health checks incorrectly, essentially neglecting to fill out the HU5Ks care plans due to the design of the system.
Delivery system design

Child health program

In Nhanhala, staff described the difficulty of conducting a child health program without a dedicated program day. This was something that had been implemented in the past, reportedly successfully and although all staff approved of that approach, it was not supported by the current health centre manager. Staff viewed it as the only way to quarantine time for child health that is otherwise consumed by acute care needs. As discussed earlier, in Yumurrku, one day a week was a dedicated child health day. Key informants remarked that child health needs to be viewed as a priority and the implementation of a program day was also seen as an important step in achieving the primary health care goals for children.

One of the key informants described the health centre approach as “higgledy piggledy” in Nhanhala, reacting to whatever problem presented, not maximising the available resources due to a lack of systematic recalls. Despite having PCIS, the recall system relied on a practitioner to firstly enter data in the care plan to generate the recalls, then to manually generate a recall list on a daily or weekly basis. In Yumurrku, a paper-based system was used. This too had challenges as it relied on individuals to record the next recall in a diary after every visit. It fell to one practitioner who took responsibility for it, but who questioned the sustainability of this approach.

Client access to care

Informants identified the importance of adequately informing parents about their child’s health care. It was acknowledged that this practice was not done well. In Nhanhala, parents were described as not understanding the need for well child checks or immunisations and therefore only attending the clinic when their children were sick. In Yumurrku, parents were reportedly beginning to understand that the child health checks, as part of the HU5Ks, happened regularly and they were generally happy to attend and wait to have the check completed. The AHWs described that parents were initially reluctant but this has changed over time. However, they also described a lack of communication with parents that could be improved. For example, parents were often picked up by the clinic driver without knowing why they had been brought to the clinic.

There was consensus among AHWs and key informants that better communication with parents was necessary, especially around developmental checks, to improve engagement with the process. The AHWs in Yumurrku perceived one of the reasons that this
communication problem arose was the lack of materials in plain language (such as the HU5Ks care plans) that parents could understand. Most AHWs reported that they did not have the time to explain it fully and some wondered if there were parents who answered the developmental questions without understanding what they were being asked. It was explained that parents will often not admit to not understanding, so it can be difficult to determine if the message has been conveyed. It was agreed by all that it would be preferable to have the questions in the parents’ language, presented by staff who speak the same language.

Informants suggested that some form of outreach – whether in an indoor non-clinical environment, in an external community setting or in the home – would be a valuable alternative to providing care exclusively in the clinic, especially for well child checks. It was acknowledged that some parents would prefer to come to the clinic but that parents need to be given the choice about where to receive care. Key informants and AHWs both highlighted the importance of including and respecting the significant elder, usually the child’s grandmother or aunt, in the young parents’ lives. They described that it is crucial to include them as they are often the “right” person to be giving guidance and education.

While there was consensus that parents needed to be informed and supported to adhere to the child health checks, there were comments from AHWs in Yumurruku that they thought parents needed to have more autonomy and be allowed to be agents for their child’s health. It was felt that the health centre treated all parents in the same often patronising way; as being irresponsible parents who needed to be reminded repeatedly to attend for child health checks and then “rounded up”. This attitude, it was reported, turned some parents away.

In Nhanhala however, an AHW criticised the parents in her community for not taking independent responsibility to get their children to the clinic for immunisations, independently. Attempts to notify parents of their child’s checks that were due, by putting lists up at the two stores, the resource centre and the health centre reception, failed to improve attendance for child health checks. The AHWs described that some parents will repeatedly have excuses for not attending or waiting to complete a child health check.

Transport was identified as an issue impacting parents’ access to the clinic in Nhanhala. The health centre had neither a vehicle with appropriate child restraints, nor a driver, which prohibited the health centre from picking up parents and children. Nonetheless, key informants and AHWs in Nhanhala reported that many parents would still “make
excuses” at times when transport was available and still not attend. This was in contrast to Yumurrku, which had a bus and a driver.

**Competing demands**

Key Informants described that a challenge for primary health care practitioners was to simultaneously and successfully manage the spectrum of programs in addition to child health. Furthermore, the acute problems that patients present with often take precedence, and the checks that are often outstanding, are not attended to. As one nurse described, they are too busy “putting out fires” leaving no time for prevention. The AHWs shared this view:

> Probably ‘cause they’re too busy with the people, you know, just walking in sick and that seems to take up most of their time. (AHW #5)

It was particularly evident in Nhanhala, where informants reported that acute care took priority over ‘well’ checks and where no child health checks were observed during field visits.

**Physical infrastructure**

In Yumurrku, the kids’ room\(^9\) was often used by multiple practitioners simultaneously. It was observed that the door was never closed and staff would walk in and out of the room during a colleague’s consultation to obtain supplies. In Nhanhala, the kids’ room was a thoroughfare through to the doctor’s room. The door was always open and being next to the reception area, any patient attending the clinic had a view into the room on approaching the reception window.

Most staff indicated that the rooms used for child health checks lacked privacy and this impacted on their ability to ask more difficult questions about social and emotional wellbeing. Some AHWs thought that parents did not feel comfortable with other parents listening. Staff reported that the over-crowding (with people and furniture) prevented them from checking hearing and observing developmental skills. One AHW reported that when in a previous system child health checks had been more private, more fathers were involved. At the very least, respondents indicated that they were constantly interrupted in both settings. Most indicated that doing developmental checks away from

---

\(^9\)The clinic room used for consultation with children was referred to as the kids’ room in both communities.
the clinic, in a space more conducive to having private discussions and for children to demonstrate their skills, should be an option.

5.3.2 Findings from clinical audits

In total, 151 audits were completed: 80 in Yumurrku and 71 in Nhanhala. Figure 5-3 shows a positively skewed distribution of the attendances for each child in Yumurrku. The median number of attendances was 10 (interquartile range, IQR 5-15). The minimum number of attendances was one and there were three outliers, one of whom had 57 attendances. Nhanhala had a similar distribution, with a median of 9 (interquartile range, IQR 5-13). The minimum number of attendances was one and the maximum was 26.

The audit collected data on the primary reason for attendance at the clinic. Many episodes of care attended to more than one medical issue and in these cases the main reason for attendance was recorded. So, for example, if a child attended for an injury but during the visit was opportunistically immunised, ‘acute care’ was recorded as the reason for attendance. Table 5-1 lists the frequency of reason for attendance in each community. As would be expected, acute care was the most common reason for
attendance in both communities, followed by child health checks. The audit revealed that increasing attendances did not correlate with increasing complexity of problems. The children presenting most frequently had a similar distribution of reason for attendance.

Table 5-1: Primary reason for attendance

<table>
<thead>
<tr>
<th>Reason for Attendance</th>
<th>Yumurrku Frequency (%)</th>
<th>Nhanhala Frequency (%)</th>
<th>Combined Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute care</td>
<td>539 (53.4)</td>
<td>457 (61.8)</td>
<td>996 (56.9)</td>
</tr>
<tr>
<td>Child Health Checks</td>
<td>245 (24.3)</td>
<td>128 (17.3)</td>
<td>373 (21.3)</td>
</tr>
<tr>
<td>Other reasons</td>
<td>42 (4.2)</td>
<td>87 (11.8)</td>
<td>129 (7.4)</td>
</tr>
<tr>
<td>Growth Faltering</td>
<td>93 (9.2)</td>
<td>16 (2.2)</td>
<td>109 (6.2)</td>
</tr>
<tr>
<td>Immunisations</td>
<td>38 (3.8)</td>
<td>49 (6.6)</td>
<td>87 (5.0)</td>
</tr>
<tr>
<td>Chronic Resp Illness</td>
<td>52 (5.1)</td>
<td>2 (.3)</td>
<td>54 (3.1)</td>
</tr>
<tr>
<td>Total</td>
<td>1010 (100)</td>
<td>739 (100)</td>
<td>1749 (100)</td>
</tr>
</tbody>
</table>

Child Health Checks

Child health checks consist of ‘well child checks’ addressing growth, immunisations, general physical wellbeing, psychological and social wellbeing, as well as development. They enable the prevention, early detection and intervention of common conditions that cause significant morbidity. The weight and height check, respiratory examination, haemoglobin check and immunisations all form part of a child health check. The One21Seventy child health audit, on which the audit for this study was based, considers at least one weight measurement, height measurement, respiratory examination and haemoglobin check (Hb) in a 12 month period as a minimum level of care. These same checks were used in the adapted audit tool for this study. Immunisations being up to date for the period of the audit was also required to meet the threshold of a minimum level of care delivered. The audit collected data on parameters that reflected whether these services were provided, regardless of the primary reason for attendance at the health centre.

In addition, this audit specifically collected data about developmental checks, which may have been completed as part of the scheduled HU5Ks developmental checks at 2 months, 6 months, 12 months, 18 months, 24 months, 36 months and 48 months, or any other developmental check performed outside of the HU5Ks schedule, including paediatric or allied health review. Table 5-2 below shows the proportion of children who received the minimum level of prescribed health checks in the 12 months. The haemoglobin is only checked in children older than 6 months, and immunisations are not
due at every check, therefore the total numbers differ for these two variables. The proportion of children who received at least one developmental check (including both scheduled and unscheduled) for the 12 month period, was examined to compare with other medical checks being completed.

<table>
<thead>
<tr>
<th></th>
<th>Yumurrku Frequency (%)</th>
<th>Nhanhala Frequency (%)</th>
<th>Combined Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight checked</td>
<td>79 (98.8)</td>
<td>71 (100)</td>
<td>150 (99.3)</td>
</tr>
<tr>
<td>Length or height checked</td>
<td>76 (95.0)</td>
<td>61 (85.9)</td>
<td>137 (90.7)</td>
</tr>
<tr>
<td>Respiratory examination checked</td>
<td>70 (87.5)</td>
<td>56 (78.9)</td>
<td>126 (83.4)</td>
</tr>
<tr>
<td>Haemoglobin checked in children &gt; 6months</td>
<td>64 (86.5)</td>
<td>53 (80.3)</td>
<td>117 (83.6)</td>
</tr>
<tr>
<td>Immunisations up to date</td>
<td>50 (75.8)</td>
<td>31 (63.3)</td>
<td>81 (70.4)</td>
</tr>
<tr>
<td>At least one developmental check per child, completed in 12 months</td>
<td>63 (78.8)</td>
<td>42 (59.2)</td>
<td>105 (69.5)</td>
</tr>
</tbody>
</table>

Weight was the most consistently completed examination and was checked in almost every child in both communities at least once in the 12 month period. In Yumurrku, developmental checks were completed (78.8%) as frequently as haemoglobin checks (80%) and immunisations (75.8), but less consistently than respiratory examinations or height checks. In Nhanhala, the proportion of children who had immunisations and developmental checks was lower than for all other checks; 63.3% were recorded as having immunisations up to date and 59.2% as receiving at least one developmental check.

**Relationship between child health checks and developmental checks**

As explained above, a child health check includes assessment of growth, general wellbeing and development. Table 5-3 below shows results of analysis examining the relationship between having any one of the child health check components completed and having a developmental check. There is a significant relationship between having
height or haemoglobin measured, and having a development check. In the sample of 151 children, having height checked and haemoglobin checked was more likely to be associated with having a developmental check. Of the 137 children who had their height checked, 75% had a developmental check, compared with 14.3% of the 14 children who did not have a height checked, $\chi^2 (1, n = 151) = 2.59, p < .01$. Of the 117 children who had their haemoglobin checked, 72.6% had a developmental check, compared with 43.5% of the 23 children who did not have a haemoglobin check, $\chi^2 (1, n = 140) = 7.5, p = .01$.

Table 5-3: Proportion of children receiving at least one developmental check according to whether other health checks completed

<table>
<thead>
<tr>
<th>Health Status</th>
<th>Number of children (%)</th>
<th>Dev check (%)</th>
<th>P-value (chi-squared)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight checked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>150 (99.3)</td>
<td>105 (70.0)</td>
<td>.13</td>
</tr>
<tr>
<td>No</td>
<td>1 (.7)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Height checked</td>
<td></td>
<td></td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Yes</td>
<td>137 (90.7)</td>
<td>103 (75.2)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>14 (9.3)</td>
<td>2 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Respiratory exam completed</td>
<td></td>
<td></td>
<td>.1</td>
</tr>
<tr>
<td>Yes</td>
<td>126 (83.4)</td>
<td>91 (72.2)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>25 (16.6)</td>
<td>14 (56.0)</td>
<td></td>
</tr>
<tr>
<td>Haemoglobin check</td>
<td>N=140</td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>Yes</td>
<td>117 (83.6)</td>
<td>85 (72.6)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>23 (16.4)</td>
<td>10 (43.5)</td>
<td></td>
</tr>
<tr>
<td>immunisations up to date (IUTD)</td>
<td>N=115</td>
<td></td>
<td>.11</td>
</tr>
<tr>
<td>Yes</td>
<td>81 (70.4)</td>
<td>66 (81.5)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>34 (29.6)</td>
<td>23 (67.6)</td>
<td></td>
</tr>
</tbody>
</table>

Relationship between medical conditions and developmental checks

There was no relationship identified between the presence of a chronic medical condition and having at least one developmental check (Table 5-4). In other words, the likelihood of having a developmental check was not dependent on the presence of a medical condition.
Table 5-4: Proportion of children receiving at least one developmental check according to whether medical condition present

<table>
<thead>
<tr>
<th>Medical condition</th>
<th>Number of children (%)</th>
<th>Dev check (%)</th>
<th>P-value (chi-squared)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Growth Faltering</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>31 (20.5)</td>
<td>25 (80.6)</td>
<td>.13</td>
</tr>
<tr>
<td>No</td>
<td>120 (79.5)</td>
<td>80 (66.7)</td>
<td></td>
</tr>
<tr>
<td><strong>Anaemia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>49 (41.9)</td>
<td>37 (75.5)</td>
<td>.1</td>
</tr>
<tr>
<td>No</td>
<td>68 (58.1)</td>
<td>48 (70.6)</td>
<td></td>
</tr>
<tr>
<td><strong>Chronic respiratory disease</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (4.0)</td>
<td>6 (100)</td>
<td>.56</td>
</tr>
<tr>
<td>No</td>
<td>145 (96)</td>
<td>99 (68.3)</td>
<td></td>
</tr>
</tbody>
</table>

Relationship between attendances and developmental checks

There was a demonstrated relationship between children attending the health centre and the likelihood of those children receiving at least one of the scheduled developmental checks in the 12 month period. Children who had more attendances at the health centre were more likely to have had at least one development check. This difference was found to be significant on the Mann-Whitney U test, with a p-value <.01.

Figure 5-4: Relationship between attendance and developmental check
Frequency of developmental checks

Depending on the age of the child, the HU5Ks program determines that they may have required either one, two or three developmental checks in the 12 month period. Table 5-5 below shows the proportion of children who received none of the scheduled checks (None), part of the schedule (Partial), or the complete schedule (Complete) as prescribed. In Yumurrku, 57.5% of children received all the developmental checks scheduled for the 12 month period. In Nhanhala, the figure was 35.2%.

Table 5-5: Frequency of scheduled developmental checks

<table>
<thead>
<tr>
<th>Scheduled developmental checks completed</th>
<th>Yumurrku Frequency (%) (n=80)</th>
<th>Nhanhala Frequency (%) (n=71)</th>
<th>Combined Frequency (%) (n=151)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>18 (22.5)</td>
<td>31 (43.7)</td>
<td>49 (32.5)</td>
</tr>
<tr>
<td>Partial</td>
<td>16 (20.0)</td>
<td>15 (21.1)</td>
<td>31 (20.5)</td>
</tr>
<tr>
<td>Complete</td>
<td>46 (57.5)</td>
<td>25 (35.2)</td>
<td>71 (47)</td>
</tr>
</tbody>
</table>

Staff members responsible for checks

Table 5-6 presents data on the child services provided and the staff who delivered the service. All child attendances combines all the attendances in the 12 month period (including acute presentations); child health checks includes only those attendances where this was indicated as the main reason for attendance; and development checks includes any visit where a development check was performed regardless of reason for attendance. As Table 5-6 shows, nurses (including Remote Area Nurses, Child Health Nurses and Midwives) were responsible for seeing around half of children for child health checks in both communities. Of the 373 child health check attendances, nurses were responsible for conducting 53.9% of those checks in Yumurrku and 59.4% in Nhanhala. AHWs were responsible for 29% and 31.3% of child health checks in Yumurrku and Nhanhala respectively.
Table 5-6: Staff providing child services

<table>
<thead>
<tr>
<th>Services provided</th>
<th>All child attendances</th>
<th>Child Health Checks</th>
<th>Dev Checks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yumurrku Freq (%)</td>
<td>Nhanhala Freq (%)</td>
<td>Yumurrku Freq (%)</td>
</tr>
<tr>
<td>AHW</td>
<td>385 (38.1)</td>
<td>132 (17.9)</td>
<td>71 (29.0)</td>
</tr>
<tr>
<td>Nurse</td>
<td>444 (44.0)</td>
<td>534 (72.3)</td>
<td>132 (53.9)</td>
</tr>
<tr>
<td>Other*</td>
<td>180 (17.8)</td>
<td>73 (9.9)</td>
<td>42 (17.1)</td>
</tr>
</tbody>
</table>

*Other includes GP, Paediatrician, Allied Health Professional and medical student

In Yumurrku, AHWs were responsible for seeing 38.1% of all child attendances (Table 5-6). In the same time period, they delivered 29% of all child checks and then 23.2% of developmental checks. Nurses, however, saw 44% of all attendances, 53.9% of child health checks and 60.6% of developmental checks in Yumurrku. In other words AHWs were responsible for more of the acute child presentations and less for the well child checks.

A chi-square goodness of fit test indicated there was no significant difference in the proportion of children in Yumurrku who had developmental checks administered by AHWs (23.2%) as compared with the proportion of children who had child health checks completed by AHWs (29%), $\chi^2 (2, n = 99) = 1.98, p = .372$. However, when the proportion of children receiving developmental checks from AHWs (23.2%) was compared with the proportion of children seen by AHWs in total (38.1%), there was a significant difference, $\chi^2 (2, n = 99) = 12.07, p < .01$.

In Nhanhala, 17.9% of all child attendances were seen by AHWs. The proportion of attendances seen by AHWs for child health checks was 31.3%. However, developmental checks were conducted by AHWs in approximately one-fifth of clinical encounters (22.4%). There was no significant difference in the proportion of children who had developmental checks by AHWs (22.4%) when compared with either the proportion of children who had child health checks administered by AHWs (31%), $\chi^2 (2, n = 59) = 3.08, p = .21$; or when compared with the total proportion of children seen by the AHWs (17.9%), $\chi^2 (2, n = 59) = 1.75, p = .42$. The majority of developmental checks in both communities were completed by nurses (see Table 5-6).
**Documentation of developmental checks**

Documentation of developmental checks varied across the two communities. Table 5-7 below shows where the developmental check was documented in the health record. Yumurrku had only paper records at the time of the audit and 92.9% of all the checks were recorded on the paper care plan specifically designed to record the developmental component of the child health check (HU5Ks care plan). Additionally, some developmental notes were documented in the progress notes with a proportion using both. Only electronic records were used in Nhanhala and very few developmental checks (8.6%) were recorded on the electronic HU5Ks care plan. The majority were recorded in the PCIS ‘visit’ section (89.7%), which includes a checklist with some of the items of the formal care plan.

| Table 5-7: If a developmental check was completed, where was check documented? |
|-------------------------------------------------|------------------|------------------|
| | Yumurrku | Nhanhala |
| | Frequency (%) | (n=99) | Frequency (%) | (n=59) |
| **Electronic record of developmental check** | | | |
| HU5Ks Care Plan (Assessment form) | n/a | 5 (8.6) |
| PCIS ‘visit’ | n/a | 52 (89.7) |
| Progress notes | n/a | 26 (44.8) |
| Documents | n/a | 3 (5.2) |
| **Paper record of developmental check** | | | |
| HU5Ks Care Plan (Assessment form) | 92 (92.9) | n/a |
| Progress notes | 15 (15.2) | n/a |

Table 5-8 describes what was documented if a developmental check was completed and what the developmental check consisted of. In both the electronic and paper forms, there are ‘yes/no’ tick boxes to check, indicating simply whether developmental concerns were elicited and whether anticipatory guidance was provided (see Appendix 6). For example, the form includes tick box items such as “do parents have any developmental concerns?” (paper form), “any concerns about development?” (electronic form), and “has anticipatory guidance been provided?” (both). Where there was evidence of a developmental check, the majority of records included the yes/no tick...
boxes being checked; 92.9% in Yumurrku and 81.4% in Nhanhala. Staff completing the
development checks in Yumurrku also documented their overall clinical impression
more so than in Nhanhala (80.8% compared to 31%). Anticipatory guidance was
recorded as having been given in 80.8% of developmental checks in Yumurrku
compared to only 8.5% of checks in Nhanhala. A column with combined results has
not been included in Table 5-8, in view of such discrepant figures.

Table 5-8: If a developmental check was completed, what
was documented?

<table>
<thead>
<tr>
<th></th>
<th>Yumurrku</th>
<th>Nhanhala</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
</tr>
<tr>
<td>(n=99)</td>
<td>(n=59)</td>
<td></td>
</tr>
<tr>
<td>Tick boxes checked on paper or electronic form</td>
<td>92 (92.9)</td>
<td>48 (81.4)</td>
</tr>
<tr>
<td>Parent report of milestones</td>
<td>16 (16.2)</td>
<td>2 (3.4)</td>
</tr>
<tr>
<td>Observation of milestones by staff</td>
<td>20 (20.2)</td>
<td>11 (19.0)</td>
</tr>
<tr>
<td>Clinical impression</td>
<td>80 (80.8)</td>
<td>18 (31.0)</td>
</tr>
<tr>
<td>Screening tool used</td>
<td>1 (1.0)</td>
<td>0</td>
</tr>
<tr>
<td>Anticipatory guidance provided</td>
<td>80 (80.8)</td>
<td>5 (8.5)</td>
</tr>
<tr>
<td>Developmental concerns identified</td>
<td>24 (24.2)</td>
<td>4 (6.8)</td>
</tr>
</tbody>
</table>

While the tick boxes were checked, indicating that some form of assessment had been
made, there was very little information about how this information was elicited in either
community. Parent report of milestones, and observation of milestones by the staff
member, were not frequently recorded in either community, as Table 5-8 shows. In
Yumurrku, 16.2% of medical records documented parents’ report and 20.2%
documented staff observations of developmental milestones, while in Nhanhala, 3.4%
showed documentation of parents’ report and 19% documented observations made
during the consultation. Across both communities the use of a developmental screening
tool was only documented in one developmental check.

Only ten medical records of the 151 audited had documentation of the developmental
check in the progress notes without it being recorded either on the paper HU5Ks
assessment form (Yumurrku) or the electronic service item (Nhanhala). These were all
developmental checks that fell outside the scheduled checks that are prescribed for each age group and hence do not have a specific form.

Table 5-9: If a developmental problem was identified, what action was taken?

<table>
<thead>
<tr>
<th></th>
<th>Yumurrku Frequency (%) (n=24)</th>
<th>Nhanhala Frequency* (n=4)</th>
<th>Combined Frequency (%) (n=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific developmental advice provided</td>
<td>4 (16.7)</td>
<td>1</td>
<td>5 (17.9)</td>
</tr>
<tr>
<td>Play and Communication advice provided</td>
<td>14 (60.1)</td>
<td>0</td>
<td>14 (53.8)</td>
</tr>
<tr>
<td>Referral made</td>
<td>14 (60.1)</td>
<td>1</td>
<td>15 (55.6)</td>
</tr>
<tr>
<td>Plan for review</td>
<td>8 (33.3)</td>
<td>1</td>
<td>9 (32.1)</td>
</tr>
<tr>
<td>Report following referral (where appropriate)</td>
<td>5 (31.3)</td>
<td>0</td>
<td>5 (31.3)</td>
</tr>
</tbody>
</table>

*Percentages were not included because of small numbers

Table 5-9 shows the action taken when a developmental problem was identified. Yumurrku documented that play and communication advice was provided, and referrals made, in 60% of records where a developmental issue was noted, however there was little evidence of any specific developmental advice provided. Notably, only one-third of children had a planned review documented. In Nhanhala there were only four records that documented that a developmental problem had been identified, therefore it is difficult to comment. However, these four records contained very little documentation about any intervention.

Prevalence of developmental concerns

The prevalence of developmental problems reported earlier in Table 5-8 (developmental concerns identified) is the figure based on all medical records. Therefore this may in some instances include the same children more than once. It also includes children seen by the health professionals who may have seen the child on referral for the developmental problem.
To obtain a more accurate indication of children who had a developmental problem identified by a screening process, only developmental checks conducted by AHWs and Nurses were considered and only those records where the problem was identified for the first time. Table 5-10 reports the prevalence of developmental problems based on that data. The prevalence is 20.4% in Yumurrku and 5.9% in Nhanhala.

| Table 5-10: Prevalence of developmental concerns |
|----------------------------------|-----------------|-----------------|
|                                  | Yumurrku         | Nhanhala        |
|                                  | Frequency (%)    | Frequency (%)   |
| All developmental concerns      | 24 (24.2)        | 4 (6.8)         |
| documented (includes all staff) | (n=99)           | (n=59)          |
| Developmental concerns          | 17 (20.4)        | 3 (5.9)         |
| identified by AHWs and Nurses    | (n=83)           | (n=51)          |
| in individual children          |                 |                 |

5.4 DISCUSSION

5.4.1 The ECD practice training needs of AHWs and other health staff in remote health centres

There are definite gaps in the formal training provided to AHWs. The background literature in chapter two has highlighted the paucity of training in early childhood development (ECD) and developmental monitoring for the AHW workforce group. The Health Industry Training Package for Aboriginal and Torres Strait Islander Primary Health Care Workers (Department of Education, Employment and Workplace Relations, 2013b) does not include any units addressing this critical area and evidence suggests that AHWs have not participated in the on-line HU5Ks training in large numbers. In 2011, 11 of the 276 registered AHWs in the NT had completed the HU5Ks training (L.Nuttal, personal correspondence, 2011). This is consistent with findings from this study showing that none of the AHWs were aware of the HU5Ks training. Although the AHWs in Yumurrku were provided with support and on-the-ground training in the HU5Ks program, they still reported difficulties completing the developmental check; difficulties that were also observed during clinical encounters. Hence, there is no formal ECD training for AHWs, they are not accessing the available HU5Ks training, and on-
the-job training, if provided, is not adequate for AHWs to be able to competently and confidently perform developmental checks.

The perceived learning needs of AHWs (Lin et al., 2012) included knowledge, skills and confidence in ECD practice. Most informants clearly expressed the need for some basic knowledge around typical developmental milestones and specific developmental disorders. Discrepancies between the current performance - observed during the clinical encounter observations and elicited during the interviews - and expected performance were also identified. These *normative* needs included knowledge about common and important risk factors for developmental problems, such as iron deficiency anaemia, and the skills required for checking a child’s development. It was crucial to identify these gaps and to consequently address them in the training.

However, the AHWs also expressed some attitudes that revealed a degree of ambivalence towards the need for change. In Yumurrku, where the AHWs had experience conducting child health checks and attempting developmental checks, some suggested the Strong Women workers could take responsibility for the developmental checks. It is not uncommon to defer to others or wish others would take responsibility when practitioners lack the skill or confidence in a particular task. In a study by Watson et al. (2013) examining the role of Aboriginal and Torres Strait Islander child health workers, respondents identified that they involve other service providers when they lack confidence in their own practice. It is likely that the attitude of some of the AHWs in this study was the result of lacking the skills and knowledge to perform the developmental checks with confidence. Understanding this *unperceived* need was important to be able to better address it in the training.

The findings from the qualitative data indicate that AHWs in both communities generally do not feel confident completing developmental checks, documenting the data or providing anticipatory guidance and advice. As discussed above, even those AHWs adhering to the HU5Ks program admit to being challenged. AHWs acknowledged finding the language of the anticipatory guidance culturally inappropriate. This suggests that many of the children whose records indicate that a developmental check has been completed, and that advice has been provided, may not be receiving optimal developmental care. The audit data supports this; although over 80% of tick boxes were checked, indicating a developmental check was completed, there was little detail indicating how this assessment was made. It is possible that some staff may be checking the boxes but not actually providing the anticipatory guidance.
Although AHWs were identified as playing a key role in the health centre by key informants, nurses were responsible for the large majority of child health checks and developmental checks in both communities, as evidenced by the audits. This needs to be taken into account when considering training needs, especially in view of the lack of child health expertise among remote area nurses; only 11% of remote area nurse had child health qualifications in a 2008 study (Lenthall et al., 2011). Only one nurse in the two communities involved in the study had completed the HU5Ks training at the time of the needs analysis and this was in her previous role as a child health nurse. It is difficult to be certain of the proportion of remote area nurses who have completed the HU5Ks training. However, there are approximately 180 Remote Health remote area nurse positions in the NT and in 2011, 83 remote area nurses had completed the HU5Ks training (L.Brown and B.Brooke, personal correspondence, 2013; L. Nuttall, personal correspondence, 2011). In view of the high turnover of nursing staff, it is likely that this number fluctuates considerably but it is reasonable to assume based on these figures, that fewer than half the remote area nurses working in the NT at the time had completed the training. These data would reinforce the need for training in ECD among nursing staff in remote health centres.

The process of the training needs analysis provided added benefits, beyond determining the training needs. While some informants seemed somewhat reluctant to admit gaps in their knowledge or confidence and initially minimised the need for training, they ultimately agreed that training would be beneficial. The interview provided time for reflection that led informants to draw their own conclusions about their training needs. There is no doubt that the interviews acted to engage the AHWs in the training. Even those who were initially enthusiastic were encouraged by the interview process to think more about their own objectives for the training, ultimately leading to improved motivation (Hauer & Quill, 2011). One AHW who, at the beginning of the interview was quite reluctant, willingly signed all components of the consent form at the end of the interview and stated she would be willing to attend the training despite being on leave. Relationship building is a known benefit of training needs analyses and in the absence of such a process, there would have been a greater risk of finding staff resistant to change and reluctant to participate in the training (Barbazette, 2006).

5.4.2 Health centre service provision and baseline level of developmental care

Although both communities had a high median number of child attendances, the number was not as high as has been previously reported. Bar-Zeev et al.’s (2012) study
examining health centre utilisation of remote-dwelling Aboriginal infants (up to 12 months of age) reported extremely high rates, with a mean of 28 presentations per year. Similarly Kearns and colleagues (2013) found the median number of presentations in the first year of life of infants living in remote communities of the NT was 21. In a review of medical records of older children, aged 0 to 4.75 years, in two remote health centres in the NT, Clucas et al. (2008) found a slightly lower frequency of attendances; the median number of attendances per child per year was 16. The median number of attendances was 10 and 9 in the two study communities; this is nevertheless a high frequency of presentations for medical care and subsequently a large workload experienced by these services.

It is well documented that there is a high burden of disease among Aboriginal people and other researchers have identified that Aboriginal Medical Services deal with greater complexity of consultations when compared with urban general practice (Larkins et al., 2006; Thomas, Heller, & Hunt, 1998). The complexity of many presentations to remote health centres can demand time and human resources, adding to a significant workload (Bar-Zeev et al., 2012). Over half the presentations in the 12 month audit period of this study were for acute care. Informants also identified the challenge of balancing acute care needs with primary health care, acknowledging that acute care was inevitably prioritised, especially in the absence of a dedicated child health program day. It is reasonable to expect that children presenting most often, would have more complex problems that could distract from developmental checks. In fact, the children who presented more often were more likely to have had at least one developmental check.

In Yumurru there was no significant difference between the proportion of children receiving child health checks from AHWs, and the proportion receiving developmental checks from AHWs. Therefore, if AHWs were providing the child health check they were likely to provide the developmental check. Interestingly in Nhanhala only 17.9% of all child attendances were seen by AHWs, while the proportion of children seen by AHWs for their child health check was much higher at 31.3%. This significant difference could be explained by the skill level of different staff in the health centre in Nhanhala. Nhanhala has a child health AHW who does not provide any acute care to children and only sees children for child health checks. Therefore the figure of 31.3% most likely represents her involvement in child health checks.

Studies of developmental services provided in Australian remote health services are scarce. Data from another clinical audit study of child health centres in Australian Aboriginal communities revealed that only 37% of children aged between three months
and five years had a record of a developmental service being provided in the previous 12 months (Bailie et al., 2008). This figure is considerably lower than this study has found. In Yumurrku, 78.8% of children had at least one development check and while the proportion in Nhanhala (59.2%) was not as high as Yumurrku, it was still considerably higher than Bailie et al.’s (2008) study.

The difference in these two studies may be a product of the specific changes made to the child health audit tool for the purpose of this study, designed to search more comprehensively for any developmental services being delivered and, consequently, captured more instances of service. It is also possible that the introduction of the HU5Ks program, between Bailie’s group’s study in 2007 (2008) and this audit, had a bearing on the higher proportion of children having a record of a developmental check. Nevertheless, while this study’s results are an apparent improvement on previous reports, the records suggest that a third of children across the two communities still went without at least one scheduled developmental check of any description for the 12 month period. The proportion of children receiving developmental care is far from best practice and importantly, gives no indication of the quality of the developmental checks.

Documentation remains an important part of practice, as a record of developmental care provided (Bailie et al., 2011). The audit findings reveal that paper HU5Ks care plans were completed more thoroughly than the electronic HU5Ks care plans. Of the electronic records that had evidence of a developmental check, less than 9% were documented in the care plan, while 93% of paper records had documentation in the care plan. As explained by informants, the electronic health care record, PCIS, posed challenges to documenting data accurately and comprehensively, which may explain this discrepancy. This finding is consistent with reports in the literature that identify poor computer literacy, little training in the computer systems in place, and a lack of support for staff in Aboriginal Medical Services (Peiris et al., 2012). There is a need to have forms that are straightforward to use and that prompt and guide appropriate developmental checks. Moreover, an information computer technology system that has adequate infrastructure and staff support is necessary to facilitate accurate recording of data (Clifford, Shakeshaft, & Deans, 2012).

From the audit, this study found that 20% of children were detected with developmental problems in Yumurrku and 6% in Nhanhala, using unstructured surveillance. However, it remains unclear how assessments of developmental status were made, given the paucity of relevant training and the lack of skill and confidence demonstrated. One of the AHWs commented that he believed problems would be picked up simply by looking
at the child. Yet, if left to rely on practitioners’ informal clinical judgement to discriminate children with and without developmental delays, prior research has shown that the large majority of children with delays will not be identified (Glascoe & Dworkin, 1993; Hix-Small et al., 2007). Even more concerning is that this finding is not exclusive to general clinicians but applies to child health-trained practitioners. Hix-Small and colleagues (2007) reported that the large majority (68%) of children found to have delays confirmed by the ASQ at 12 months of age, were considered to be developing typically by paediatricians.

Another striking finding was that use of a developmental screening tool was only documented in one developmental check across both communities. There are numerous studies showing that the use of structured tools dramatically increases early detection of developmental problems (Guevara et al., 2013; Hix-Small et al., 2007; Marks et al., 2009; Marks et al., 2011). A randomised controlled trial by Guevara and colleagues (2013) showed that children who participated in a screening program that utilised structured screening tools were more likely to be identified with developmental delays, referred to early intervention and to be eligible for services in a more timely manner than children who received unstructured surveillance alone. This would suggest the figures from this study may be an under-representation, and developmental problems remain undetected in these two populations. The American Academy of Pediatrics (2006) recommends the use of developmental screening tools and states “early identification of developmental disorders is critical to the wellbeing of children and their families” (p. 405). Access to appropriate, quality developmental monitoring is a right of all children, including remote-dwelling Aboriginal children.

In Yumurrku, while 20% of children were identified as having developmental concerns, 60% of these had a referral made, but only 16% had documentation of any specific advice given. This may be a reflection of incomplete documentation as the forms (paper and electronic) did not include any tick boxes for specific advice and therefore practitioners would have been required to make an entry in the progress notes. This could quite possibly be a deterrent for many practitioners and feasibly, the medical record findings may be an underestimate of the true service delivered. However, failure to document the developmental service delivered is itself inadequate care, as it presents a considerable barrier to continuity of care, especially in areas of high staff turnover (Bailie et al., 2011).
Notably, only a third of children identified with developmental problems had a review arranged; a practice that would be expected in every child in whom a developmental problem was detected. It could reasonably be assumed that this would be documented if arranged, as it would have required action. Furthermore, in addition to collecting this data from the clinician’s entry at the time of the developmental check, the record was also reviewed for subsequent evidence of a review, so it is likely that the figure is reasonably accurate. This apparent lack of follow-up, particularly of social problems for remote-dwelling Aboriginal children, has previously been highlighted as a shortcoming of primary health care systems in remote communities (Bailie et al., 2008). The need for effective systems for follow-up, however, applies equally to any setting where screening and surveillance are implemented, including urban paediatric clinics (King et al., 2010). Without a system for ensuring appropriate follow-up has taken place, the benefits to children and families are diminished.

5.4.3 The barriers to compliance with the current policy supporting developmental monitoring in the NT

As discussed in section one of this chapter, the NT Government implemented the HU5Ks program in 2010 across its remote Aboriginal health centres. This new program, building on the previous Growth Assessment Action program, consists of ten child health checks and has been expanded to include developmental checks and anticipatory guidance. It is core business for remote health centres and is essentially the responsibility of nurses and AHWs to deliver. Remarkably, the findings revealed that in Nhanhala, the AHWs (with the exception of the child health AHW) were not familiar with the HU5Ks program. This poses a significant barrier to AHWs complying with the specific HU5Ks policy (NT Department of Health, 2009).

A commonly described barrier to AHW participation in health service provision is the absence of strong nurse-AHW partnerships (Genat et al., 2006; Si et al., 2008; Tregenza & Abbott, 1995). The significance of these working relationships was a common theme throughout the interviews with all informants. AHWs in Nhanhala, most of whom have been in the role for over 15 years, lamented the loss of the strong working relationships that they report used to exist between nurses and AHWs. Conversely in Yumurrku, informants all commented on the value of the working relationships between AHWs, nurses and Strong Women workers, recognising the benefit to their patients. It is therefore not surprising that AHWs and key informants indicated a preference for training to include all health centre staff. Nurses, it was perceived, would not only
benefit from participating in the TRAK training to be better equipped to deliver the 
developmental services themselves; the training would promote and build stronger 
partnerships between the AHWs and nurses.

Ensuring nurses are trained in ECD practices, in addition to AHWs, may go some way to 
addressing the identified need for ongoing support and training in the workplace. It is 
well recognised that, although a critical component, initial training comprises only one 
part of building workforce capacity, with support for AHWs in their workplace being 
another significant factor (Hinton & Nagel, 2012; Kulunga Research Network et al., 
highlights the value of mentoring, role modeling and the buddy system as strategies for 
improving training outcomes for Indigenous staff, in a report exploring measures for 
strengthening Indigenous families and communities. Previous qualitative research has 
also identified the need for support from practitioners with the appropriate skills and 
expertise (Genat et al., 2006). There were similar findings in this study, with key 
informants being clear that strong support following the training was necessary for the 
sustainable implementation of the training in the workplace. This study also identified 
that those support people would preferably be highly skilled professionals.

While there is no doubt that there were problems with PCIS that made documentation 
more problematic, there were other issues in Nhanhala, as identified in the qualitative 
findings, which may have impacted on the adherence to accurate documentation 
procedures. The lack of training has already been mentioned but this could be viewed as 
a lack of appropriate support to implement the HU5Ks program. As previously 
described, the Health Development branch is responsible for providing training and 
support of health centre staff, specifically for child health programs. However, the child 
health nurse position, with the responsibility of providing this support, remained vacant 
for most of the period of the audit. Although Nhanhala had a child health AHW and 
maternal child health nurse, neither of them were trained or adequately supported in 
using PCIS to complete the checks. Staff require appropriate support to use the systems 
in place if expected to successfully implement programs (Higgins, Murphy, Worcester, 
& Daffey, 2012; Peiris et al., 2012; Watson et al., 2013).

Improving Aboriginal clients’ access to health services is the subject of much research. 
Peiris et al. (2012) have reported on the need for transport, welcoming physical spaces 
and for the health service to function as a community space in order to overcome some 
of the barriers to access in Aboriginal Medical Services. A study by Kruske et al. (2006) 
examining the provision of maternity services to Aboriginal and Torres Strait Islander
women, focused on the need to attend to the cultural needs to improve care. Genat and colleagues (2006), in *Aboriginal Healthworkers*, argue that a client-centred holistic practice results in accessible and culturally appropriate care. Improving access embodies culturally safe care, or culturally competent care (Walker & Sonn, 2010), and this was a major theme that emerged in this study.

A lack of culturally appropriate materials, and the necessary skill to communicate the message, was a barrier to providing culturally competent care (Jennings, Spurling, & Askew, 2013). It was perceived that parents’ reluctance to wait for a complete check was fuelled by not having a clear understanding of the purpose. So while AHWs were critical of some parents, all informants acknowledged the need to better prepare parents and inform them adequately about the importance of a developmental check for their child. This finding is supported by Canadian research that reported an essential step before proceeding with developmental screening, monitoring or assessment, is obtaining Aboriginal parents’ *informed* consent (Ball & Le Mare, 2011).

Informants in this study also acknowledged the service needed to provide a space that was appropriate and respectfully private for the developmental check. Considering conducting the developmental checks away from the health centre at a location where the parents felt comfortable and secure supports a client-centred approach (Ball & Le Mare, 2011; Herceg, 2006) and is an essential component of culturally safe care (Kildea et al., 2012; Walker & Sonn, 2010). Most informants strongly endorsed some form of outreach service which respects families’ preference. The need for community-based services was also strongly supported by staff at an urban Aboriginal Medical Service, in a qualitative study that explored barriers and enablers to adult health checks (Jennings et al., 2013).

The compounding of barriers described in this needs analysis is an important finding. Many barriers, for example, the lack of specific training, lack of mentors, inconsistent managerial support and priorities, high turnover of staff, electronic health system challenges and inadequate work space are experienced concurrently and staff indicated that while focusing on addressing one issue, another would arise to thwart their efforts often resulting in staff feeling burnt-out and resigned. Intervening to change all the barriers to ECD service delivery in the health centre was beyond the scope of the study however it is important that they are acknowledged and that their impact is not ignored.
The starting point of this needs analysis was the desire to effect change. Given this, it was important to explore how the change was perceived by the AHWs who were going to experience it.

The needs analysis highlighted the need for training in early childhood development and developmental monitoring. Evidence from qualitative findings, complemented by evidence from audits, revealed areas for targeting training for AHWs and other health centre staff alike and provided valuable information about recording systems and how they could be improved. The qualitative component also revealed many barriers to implementing child health and specifically the HU5Ks program, and developmental monitoring that will not be solved by training alone. These findings point to the elements and content required for a training program and the following chapter will discuss how these needs were addressed in the tailored program that was ultimately developed.
CHAPTER 6 DESIGN OF TRAK TRAINING PROGRAM

INTRODUCTION

Following on from the training needs analysis, this chapter reports on the development of the content and framework of the TRAK training program. The training focuses on early childhood development and the use of the adapted ASQ-3. The inadequacy of training for AHWs in this important area has been described in the background and previous chapters, and the training was deliberately directed at the needs of AHWs in the remote Australian Aboriginal context to address this gap. In this stage of the program logic, I have developed the training program identified as essential to produce the anticipated outcomes.

As a first step in the development of a training framework, literature from the adult training field and literature on culturally sensitive training is reviewed to identify factors that contribute to the development of competencies and effective transfer of training to the workplace in this context. The training, as a vital activity, is the focus of the chapter and a detailed account is provided of the training program that was developed, based on literature reviews, the results of the training needs analysis and existing professional expertise. Each session’s objectives - the competencies that practitioners were anticipated to demonstrate following training - and the program content and structure, are described to present a comprehensive picture of the TRAK training program designed.

6.1 ADULT LEARNING THEORIES

The focus of the intervention in this study is on individual capacity building, in particular the knowledge, skills, attitude and behaviour dimensions that contribute to capacity building. Hence, it is necessary to explore the adult learning theories that provide a theoretical underpinning to the training intervention for remote practitioners. The following section will report on the literature from the adult learning field, focusing on three theories drawn upon in the design of training for adult learners in the remote Aboriginal context.
According to Rogers and Horrocks (2010) learning theories can be categorised around four elements: learner-based theories, context-based theories, knowledge-based theories and process-based theories. Process-based theories rely on critical reflection on experience and Knowles’ andragogy, outlined below, can be described as a process model (Knowles, Holton, & Swanson, 2011).

**Knowles’ Andragogy**

Andragogy is a theory of adult learning that holds a set of assumptions about how adults learn (Knowles et al., 2011). This theory emphasises the value of the process of learning. It uses approaches to learning that are problem-based and collaborative rather than didactic, and also stresses equality between the teacher and learner. This is in contrast to pedagogy, the theory of young learning. The pedagogical model is teacher-directed and assigns the teacher full responsibility for all decision making about the learning content, method, timing, and evaluation, with learners playing a more submissive role. This distinction has become less dichotomous with acknowledgement that there exists more a continuum of approaches and that many of the assumptions about how adults learn can also be applied to the teaching of children (Knowles et al., 2011; Merriam, Caffarella, & Baumgartner, 2007).

Knowles proposed six assumptions that underlie andragogy, which he viewed as fundamental to designing learning activities for adults. First, adults need to know why they need to learn something. Adults need to know what is in it for them; how this new knowledge will solve a problem or be immediately applied. Therefore the first task of an adult educator is to help adult learners become aware of why particular knowledge is important and valuable. It is much more potent when learners discover this for themselves, in real or simulated experiences.

The second assumption is self concept. Self concept refers to an adult becoming more self-directed and independent as he/she matures. Typically, adults want to choose what, when and how they learn. Yet they can revert to a more dependent style of learning based on past experience, creating a psychological conflict. Adult educators need to help some learners transition from the dependent to the self-directed style by providing more choices for learners and providing a collaborative learning environment that fosters mutual respect.

Third, experience. Adult learners enter new learning experiences with a wealth of life experiences. This means that for many situations, the greatest resources for learning reside within the adult learners themselves. It also means that adult groups are often
more heterogeneous than a group of young learners, and greater emphasis needs to be placed on individualisation of strategies. However, with greater experience can come entrenched habits and biases, and adult educators may need to help adult learners examine and open their minds to new approaches.

Fourth, *readiness to learn depends on need*. Whether or not an adult is ready to learn depends on what they need to know in order to cope with life situations effectively. Life situations that compel adults to learn include such things as learning to care for a child who has been diagnosed with a disease, or workers taking on supervisor training when they have mastered the work they will be supervising and are ready for more responsibility. There are ways to induce readiness. Fifth, *problem centered focus*. Adults need to see the immediate application of learning. Therefore, they seek learning opportunities that will help them perform tasks or enable them to solve problems confronting them in their life situations. They learn more effectively when new knowledge, skills, values and attitudes are presented in the context of real-life situations.

The final assumption is *internal motivation*. Adults will seek learning opportunities due to some external motivators, but are more responsive to internal motivators, for example the desire for increased job satisfaction, self-esteem and better quality of life.

**Kolb’s experiential learning theory**

Kolb (1984) is another educational theorist whose experiential learning theory also sits within the body of process-based theories. Building upon earlier work by John Dewey and Kurt Lewin (Action Research), Kolb’s theory presents a cyclical model of learning, consisting of four stages. First, concrete experience (“DO”): an engagement with direct experience; second, reflective observation (“OBSERVE”): observing and reflecting on experiences so they can be viewed from different perspectives; third, abstract conceptualisation (“THINK”): analysing experiences to create new ideas and concepts; and last, active experimentation (“PLAN”): using these new ideas and concepts in actual practice. Learning can begin at any stage, but must follow each step in the cycle.

Kolb describes that these four stages suggest four distinct learning styles. Each stage of the cycle calls for a different learning approach, appealing to different kinds of people. *Activists* learn better when provided with practical applications of concepts and theories (i.e. through concrete experience); *reflectors* learn better when allowed to observe and collect a wide range of information (i.e. through critical reflection); *theorists* learn better when presented with sound logical theories to consider (i.e. through abstract conceptualisation); and *experimenters* learn better when provided with ‘hands-on’
experiences (i.e. through active experimentation) (Merriam et al., 2007; Rogers & Horrocks, 2010). Although individuals develop a preferred learning style, all learners tend to use all styles at different stages of learning (Rogers & Horrocks, 2010).

**Summary**

Each theory or model has its critics, especially the dominant adult learning theories. Merriam et al. (2007) argues that Knowles’ andragogy model is limiting and not applicable to all situations of adult learning, in particular, different cultural groups. Others criticise it for being simply a description of the adult learner, rather than a theory (Rogers & Horrocks, 2010). Kolb’s learning cycle has also been criticised for being too normative and prescriptive (Rogers & Horrocks, 2010).

The intention is not to suggest that any of these theories should be viewed as the way in which adults learn. There is no one theory or model of adult learning that explains the process of learning in all situations or what is known about adult learners (Merriam et al., 2007). These theories have been drawn upon to inform the development and delivery of the TRAK training in remote Aboriginal communities while recognising that different learning styles may be found among different groups and cultures.

Increasingly there is agreement that learning is an interaction between the individual, the socio-cultural context, the learning process and the type of learning task (Merriam et al., 2007; Rogers & Horrocks, 2010). Therefore the next section describes strategies that have been recommended for adult learners, based on a mixed approach, followed by an analysis of the literature examining training in the Aboriginal context.

### 6.2 EFFECTIVE TRAINING OF ADULT LEARNERS IN THE REMOTE ABORIGINAL CONTEXT

#### 6.2.1 Principles of adult learning

There are many different elements that need to be incorporated into learning and, as argued above, no one theory can claim universality. Although there is no consensus about learning and no one theory that is ‘right’, there is value in drawing on the theories when designing adult learning activities. Informed by these theories, teachers can build on how adults learn, and hopefully, develop more effective strategies for teaching adults. Theories shape the instructional approach taken and an effective training environment
should take into account the assumptions about adult learners and should accommodate individual learners’ different learning styles.

Drawing on the adult learning approaches, Rogers and Horrocks (2010) suggest building on the natural learning processes (learning episodes) that occur in an informal way for adult learners, throughout their lives. They argue that teaching adults should go beyond this informal process and enhance the adult learner’s natural learning by helping them become more conscious of their learning. Table 6-1 describes the characteristics of the learning episode and the strategies that can be applied to meet these objectives for adult learners.

Table 6-1: Learning episode and strategies for teachers of adults

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Episodic; not continuous</td>
<td>Rely on short bursts of learning activity.</td>
</tr>
<tr>
<td></td>
<td>Break material into manageable units; hook each one on to the other items of learning.</td>
</tr>
<tr>
<td>2. Problem-centred; immediate goals based on needs and intentions; concrete situations; immediate application; short term</td>
<td>Make relevant to learners’ needs.</td>
</tr>
<tr>
<td></td>
<td>Be aware of learners’ intentions.</td>
</tr>
<tr>
<td></td>
<td>Learners to set goals.</td>
</tr>
<tr>
<td></td>
<td>Start where they are at, not necessarily at beginning.</td>
</tr>
<tr>
<td></td>
<td>Do activity now, not prepare for it in the future.</td>
</tr>
<tr>
<td>3. Informal learning</td>
<td>Be aware of different learning styles; buildup conscious learning styles.</td>
</tr>
<tr>
<td>• Analogical thinking; use of existing knowledge and experience</td>
<td>Relate new material to existing experience and knowledge.</td>
</tr>
<tr>
<td>• Trial and error</td>
<td>Be sensitive to range and use of experience.</td>
</tr>
<tr>
<td>• Meaningful wholes</td>
<td>Discovery learning; learners to be active recipients.</td>
</tr>
<tr>
<td></td>
<td>Need for reinforcement; build in feedback.</td>
</tr>
<tr>
<td></td>
<td>Need for practice.</td>
</tr>
<tr>
<td></td>
<td>Move from simplified wholes to more complex wholes.</td>
</tr>
<tr>
<td></td>
<td>Help learners to build up units to create wholes; select out essential units from non-essential.</td>
</tr>
<tr>
<td></td>
<td>Rely on understanding for retention, not memory.</td>
</tr>
<tr>
<td></td>
<td>Use of demonstration.</td>
</tr>
<tr>
<td>4. Lack of interest in general principles</td>
<td>Move from concrete to general; encourage questioning of general principle; build up relationships.</td>
</tr>
<tr>
<td>• Stops when need is met</td>
<td>Encourage further learning.</td>
</tr>
</tbody>
</table>

Adapted from Rogers and Horrocks, 2011, p. 150
These various principles were incorporated into the design of the TRAK training program and will be detailed later in this chapter. The following section reviews literature on principles of training specific to this learning environment with AHWs.

### 6.2.2 Culturally appropriate training

There is considerable evidence recommending that ‘culturally appropriate training’ is necessary for the Aboriginal health workforce, specifically to address the issues around recruitment and retention of AHWs (Health Workforce Australia, 2011; National Aboriginal and Torres Strait Islander Health Council, 2008; National Rural Health Alliance, 2006; NT Department of Health, 2010). However, it is not immediately clear from these documents what qualifies as culturally appropriate training.

To answer this question, Miller (2005) undertook a systematic review of qualitative research on good practice in culturally appropriate Vocational Education and Training (VET) and Adult and Community Education (ACE) for Indigenous Australians. The study identified seven critical factors necessary for the achievement of positive outcomes: community ownership and involvement; Indigenous identities, cultures, knowledge and value; true partnerships; flexibility in course design, content and delivery; quality staff and committed advocacy; student support services; and funding and sustainability. The review concluded that the single most important principle is Aboriginal community ownership and involvement in the training, from beginning to end. Similarly, a qualitative study in the ‘VET in School’ sector found that community links and partnerships was one of five key principles that impact on the success of VET programs for Indigenous students (Helme, 2005). The other principles identified by Helme (2005) include: focus on individual needs; supportive school environment; engaging and relevant curriculum; and links with other education and training providers. Helme argues that school environments that affirmed Indigenous cultural values and identities were fundamental to good practice.

Similar findings have come from other research, identifying the importance of a learning environment that takes into account the knowledge, values, history and experience of Aboriginal people, to encourage participation in educational courses (National Aboriginal and Torres Strait Islander Health Council, 2008). Sometimes expressed as ‘both ways’ training, this approach values the learner’s cultural knowledge and incorporates the Indigenous perspective alongside the mainstream course content. Activities that employ a two-way exchange, allowing communication to go in both directions are more likely to be accepted by the users (Miller et al., 2008). Dockery
(2013), investigating the different dimensions of ‘cultural attachment’ through factor analysis of items in the 2008 National Aboriginal and Torres Strait Islander Social Survey, found that a stronger cultural attachment is associated with more successful participation in education and training. This effect is believed to operate through encouraging a strong sense of self identity. Thus, as Miller (2005) asserts, training that reaffirms Aboriginal students’ own identities, cultures and histories is necessary for those learners to achieve greater participation in education and training, and therefore better outcomes.

The recognition of culture and identity is closely aligned with community ownership of training. Miller (2005) declares that the more control and authority a community has in its training, the more successful the training will be. This is echoed by Kral and Falk (2004), in their case study report of the implementation of a culturally appropriate health service in a remote Aboriginal community. They identified that for education to be successful, it must include community goals and aspirations. This includes training that is driven by and embedded in, ‘community business’. Similarly, in a qualitative study exploring the community’s perspective on the delivery of a VET program in a remote NT community, Anderson (2009) found that community involvement and ownership were the most important factors in VET practice. The community needs to be involved in ongoing negotiations about the content and delivery of training.

Regardless of how the training is ultimately developed, for new information to be acceptable to Aboriginal learners, the process of how the information is delivered may be more important than the content (National Aboriginal and Torres Strait Islander Health Council, 2008; Trudgen, 2000). Helme’s (2005) study emphasised that the process is a significant determinant of student retention and educational outcomes for Indigenous VET students. Evidence from the VET literature suggests that flexibility of delivery methods is required to meet the local needs and contexts (Kral & Falk, 2004; Miller, 2005). Other studies examining training of AHWs also found the need for customisation of methods. Hinton and Nagel (2012) describe a number of techniques used in their ‘Yarning about Mental Health’ training workshops, such as audio, pictorial and interactive methods that were necessary to accommodate different learning styles. Davidson et al. (2008) highlighted the importance of process, identifying that group sessions and experiential learning scenarios were preferred by AHWs in a cardiovascular disease education program, and action learning, their preferred learning style.

The importance of training that is relevant and applicable to real life situations was identified by Tregenza and Abbott (1995) as an important factor in AHW training. They
stressed the importance of observation and practice as the basis of learning. Similarly, Davidson et al. (2008) found experiential site-based learning was the preferred approach in the AHW education program. Workplace, hands-on, practical course delivery was also identified in the VET and Adult and Community Education contexts as leading to improved outcomes. Almost all students described the experiential nature of VET being the key aspect that appealed (Helme, 2005) and Miller’s (2005) systematic review identified it as critical in certain professions, such as AHW training. This review found that experiential learning that was workplace based was a particularly effective strategy in achieving positive outcomes for Indigenous students.

Joint training for AHWs and nursing staff who work together has been supported by AHWs in a number of studies. Walker et al. (2011) reported that Indigenous Health Workers welcomed the opportunity to train with nurses in a study examining factors influencing their oral health role. Despite a degree of racial tension to begin with, King et al. (2007) found that AHWs who participated in Diabetes Educator training valued the training with nurses for its opportunity to share information and discuss needs specific to Aboriginal people. There were positive comments from participants about the benefits of having a mix of Indigenous and non-Indigenous participants in the ‘Yarning about Mental Health’ training workshops, reported by Hinton and Nagel (2012).

There are many potential barriers to training for AHWs, and flexibility in the delivery of training needs to be considered to ensure training is accessible (HWA, 2011; Miller, 2005). Living remotely can disadvantage AHWs who need to travel to urban centres to attend training, and attention has been drawn to this issue repeatedly over the years (Tregenza & Abbott, 1995). Family and community commitments that require their presence in their communities can impact on AHWs ability to attend blocks of training outside of community (Felton-Busch, Solomon, & McBain, 2009). Equally there are concerns for AHWs being isolated from family. Providing alternative study modes and study locations (such as delivering training locally), and repeating training courses at intervals are among strategies recommended to address these barriers (National Rural Health Alliance, 2006; NT Department of Health, 2010). Walker et al. (2011) demonstrated support for community-based training as did Hinton and Nagel (2012), who offered training workshops of varying lengths in either urban centres or remote communities. In the evaluation of the delivery of a VET program, Anderson (2009) found that a flexible and customised approach that responded to the cultural and family priorities of participants was a priority for the remote Aboriginal community members.
Miller (2005) reports that lack of the requisite English literacy and numeracy skills are the most frequently cited barriers to achieving outcomes in VET courses. Many remote AHWs speak English as a second, third or fourth language. They may come from non-literate home backgrounds and may have had minimal secondary schooling with consequently poor English language, literacy and numeracy skills (Kral & Falk, 2004; National Aboriginal and Torres Strait Islander Health Council, 2008). There is evidence to suggest that there is a higher proportion of AHWs completing the Certificate III training than the Certificate IV due to students not having the necessary language, literacy and numeracy skills to achieve the higher qualification (NT Department of Health, 2010). These factors need to be taken into account when delivering training. It is necessary to recognise that many AHWs, while highly experienced and capable health practitioners are English as a Second Language (ESL) learners and specific language skills need to be used by trainers to ensure effective communication (Every & Young, 2002). Learners who are proficient in English may still have literacy difficulties which need to be accommodated. Strategies that have been used by trainers to address these literacy challenges include: employing tutors, classroom demonstrations, large font for written resources, use of large, colourful pictures, and use of flow charts (Every et al., 2002).

A challenge, therefore, is to meet the needs of a group of learners who not only have varied experiences and prior knowledge between them as adult learners, but also potentially have very different English language and literacy skills, and different learning styles. It is as equally important to be flexible in the process adopted, as in the program content delivered, to accommodate the range of learner styles and baseline knowledge, while also recognising and supporting the diverse Aboriginal cultures and identities. Individualising training to address specific needs becomes a necessary and critical factor for achieving positive outcomes in the training. As highlighted by Miller (2005), all the factors known to improve the experiences and outcomes of training for Aboriginal students need to be present: “all factors all of the time” (p. 9).

The literature reviewed provides a useful guide to an approach that could be adopted for an effective training program in ECD for AHWs and other remote health staff. Together with information obtained from the needs analysis, key concepts and training strategies were distilled from the literature for inclusion in the two and a half day TRAK training workshop. The next section presents the general procedures followed and the training content and process are then described in detail in the final section.
6.3 PROGRAM DEVELOPMENT PROCEDURES

In addition to the training needs analysis reported in chapter five, a number of other resources and consultations were used to develop the training program content and further develop the process. I consulted with two early childhood experts with a long history of training in children’s services and early childhood education in the remote Aboriginal context. The HU5Ks education package (Department of Health and Families & Graduate School for Health Practice, 2010) was a valuable resource and I drew on my own expertise as a paediatrician. Additionally, I completed the Certificate IV in training and assessment (HBA Learning Centres, 2010) in 2011 to better equip me to design and implement the training. Through this training and assessment training, I was able to draw on a relevant unit from the VET community services unit of competency, Support the development of children (CHCFC301A) (Department of Education and Workplace Training, 2013a), to inform the objectives of the TRAK program.

It was evident from the needs analysis that most of the AHWs, and a number of likely other participants, were English as a second language (ESL) learners. Consistent with findings from the literature examining culturally appropriate training, the TRAK training employed the strategies suggested to meet this need. No power point slides were used in the workshop: instead posters were created using large font pre-printed cards; pictures were used wherever possible; and a demonstration and role plays were incorporated into the training.

The preference for practical training was a key theme that emerged from the training needs analysis. Training with a problem-centred focus that is relevant to the learner’s needs and has immediate application is more effective, according to Knowles (2011) and is a strategy recommended by Rogers and Horrocks (2010). Importantly, it is also supported by the evidence in the cultural literature. The training aimed to highlight the aspect of the clinical work it was addressing and supplementing, throughout the two day workshop. A major component of the training was practical hands-on experience of using the adapted ASQ, underpinned by Kolb’s experiential learning theory.

It was clear the participants would bring a wealth of experience to the workshops and it was anticipated that there would be a mix of disciplines and child health experience in the groups. This can be a resource for the whole group, as highlighted by Knowles’ assumptions. It can also be a challenge for the educator who needs to have strategies to meet all learners’ needs. Adults who come to learning with a great deal of experience can also have firm habits and attitudes that may not be adaptive to the content or the learning environment. The needs analysis identified that some of the AHWs were
ambivalent about their role in performing developmental checks and their practice suggested that it was not considered as important as other aspects of the child health check. Although the training was going to be offered to all staff at the health centre, AHWs remained the focus. Therefore, it was important to take time to ensure that AHWs understood why they were undertaking this training, ensuring the “unfreezing” step in the change process occurred (Lewin, 1947).

Although the first two days of the training were in a ‘classroom’, the training involved no didactic teaching methods. Interactive activities, small break-out groups and audio-visual materials were utilised. Sufficient time was allocated for discussion and for participants to be able to tell stories. Material was provided in ‘chunks’ and the sessions were planned so as not to overload the learner (Rogers & Horrocks, 2010).

As discussed in chapter three, formative assessment is an essential part of training evaluation. The design of the training and the groups’ small size facilitated the monitoring of each learner’s progress during the session. A specific feature of the training design was to incorporate opportunities to assess each participant’s ability to achieve the learning objectives. In other words, learners were provided with opportunities to demonstrate that learning had taken place (Rogers & Horrocks, 2010). Including activities that required completion in the classroom such as role plays, enabled observations of individuals’ abilities (Kirkpatrick & Kirkpatrick, 2006). Ample time was provided for learners to acquire the skill and demonstrate this to either myself or the research assistant as we moved around the group providing input.

The importance of acknowledging the participants’ knowledge and experience in this context goes beyond Knowles’ assumption underlying adult learning. Recognising the knowledge and values of the Aboriginal participants began before the training, with the process of consultation and adaptation of the ASQ-3. Furthermore, while change was needed, the training program was guided by the input of leaders in the community. Showing respect to these women and recognising the value of their experience and knowledge was essential to the process and enhanced engagement of other Aboriginal participants. Consequently, in recognition of their significant knowledge and consistent with the spirit of knowledge exchange (Laycock et al., 2011), Aboriginal leaders in both communities were approached to be co-facilitators in the training and this was fully endorsed by their managers.

Ultimately the women nominated and approached were not able to co-facilitate due to family obligations and stresses, or illness. I facilitated all training workshops and employed a research assistant who was not local to assist with the logistics of the
training and to perform some data collection. Although I planned to recruit a local Aboriginal research assistant in each site and secured funding for this role, this was unsuccessful due to difficulty recruiting.

### 6.4 TRAINING PROGRAM CONTENT AND PROCESS

The following section provides a detailed presentation of the session plans of the TRAK training through the classroom training, the practical workplace training, the booster training, and identifying support structures.

**Figure 6-1: TRAK training process**

<table>
<thead>
<tr>
<th>Training Workshop</th>
<th>Booster Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom training</td>
<td>Practical workplace training</td>
</tr>
<tr>
<td>Day 1 and 2</td>
<td>Day 3</td>
</tr>
<tr>
<td></td>
<td>At 3 months</td>
</tr>
</tbody>
</table>

#### 6.4.1 Classroom training

**DAY 1: Session 1 - Principles of growth and development**

**Objective**

By the end of the session, the participants were expected to have introductory knowledge of child development for children aged 0 to 5 years, including simple developmental theory.

**Content and Training Strategies**

**Introduction to workshop**

A significant portion of the first session was dedicated to the introduction, ensuring all participants were familiar with each other, and with the facilitator. As had been outlined in the previous section, clarifying why this group had been brought together and what their expectations were as learners was an important step in the training and necessary...
for engagement (Knowles et al., 2011; Rogers & Horrocks, 2010). As goals and objectives were identified they were applied to a poster and left on the wall for the duration of the workshop.

Following the introduction, participants were invited to share stories about their own childhood, about children they knew or about their communities, not only as an ice-breaker activity but to acknowledge their prior experience.

**Principles of growth and development**

The nine principles of growth and development were introduced in this next section. This set of principles characterises the pattern and process of growth and development. Although there are individual differences, the principles and characteristics of development demonstrate universal patterns and it was agreed by the ECD experts that this was a useful place to begin when training in early childhood development and aligned with information presented in the HU5Ks education package.

**Box 6-1: Principles of child growth and development**

| 1.  | Growth and development is orderly and sequential. |
| 2.  | Growth and development is related to, and dependent on, the environment. |
| 3.  | Growth and development occurs in a cephalo-caudal (head to toe) direction. |
| 4.  | Growth and development occur in a proximo-distal (inside out) direction. |
| 5.  | The pace of growth and development is specific for each child. |
| 6.  | Growth and development become increasingly differentiated. |
| 7.  | Growth and development become increasingly integrated. |
| 8.  | Certain periods are critical during growth and development. |
| 9.  | Growth and development are continuous and influenced by many factors. |

Adapted from Sheridan, 2007

Consistent with recommendations to include audio-visual materials, a short trailer for the film *BABIES* (Balmes, 2010) was shown. The documentary simultaneously follows four babies from Mongolia to Namibia to San Francisco to Tokyo for the first 12 months of their lives. *BABIES* demonstrates the earliest stages of the growth and development
of children and was used to generate discussion about what participants saw as unique and universal in the lives of these four children. This activity again drew on learners’ prior experience and knowledge, and encouraged active learning. The discussion introduced the first two growth and development principles (see Box 6-1 above) and the principles, on laminated cards, were applied to a poster. This process was repeated as participants continued to identify the principles through subsequent activities, continually reinforcing their learning.

Another resource that was referred to repeatedly, and was commenced as an activity to identify the nine principles, was the Developmental Milestones Trajectories. Participants were divided into pairs and each pair given ten illustrations of gross motor actions being performed by children aged from 2 months to 59 months. The task involved ordering the actions in the sequence that they would be achieved, from youngest to oldest. Each couple then took turns to pin one illustration on the poster, generating a group discussion to ensure consensus. This activity specifically illustrated principles 3 to 7 (see Box 6-1), which were discussed and applied to the growth and development poster. It also required participants to be active in their learning and was consistent with learning through trial and error, in a safe environment (Rogers & Horrocks, 2010).

To reinforce the concept of the universality of the principles while acknowledging individual uniqueness, a portion of a DVD, First Day (Australian Children's Television Foundation, 1998), was shown. The audio-visual material was intended to aid in breaking up or ‘chunking’ material into manageable bits and to engage participants. The First Day documentary follows 11 young Australian children from varied cultural backgrounds in the weeks leading up to and including their first day of school. The children were from urban, rural and remote parts of Australia, including a remote Aboriginal community in the Northern Territory. This was intended to generate further discussion and participants were invited to share personal experiences.

**Session 2 – Risk factors and Early brain development**

**Objective**

At the completion of session 2, participants were expected to have:

1. Introductory knowledge of child development for children aged 0 to 5 years, including early brain development and importance of the early years for subsequent educational success.
2. Knowledge of risk factors for poor early childhood development and potential long-term impacts.

3. An awareness of the cumulative effects of multiple risk and protective factors and the developmental implications of the balance between them

**Content and Training Strategies**

**Risk and Resilience**

Again, the strategy used in this session was a group discussion to generate the information rather than didactic teaching. As general ‘themes’ were identified for protective factors, such as family, physical factors, home, financial factors, community and education, pictures representing the themes were applied to a poster. A scribe then wrote the protective factors under each theme as they emerged through the group discussion. The same process was followed for risk factors, using the same pictures for each theme. The third part of this activity, which was another whiteboard activity, involved a discussion about the impacts of the risk factors, emphasising the cumulative effect. Participants were invited to share stories of experiences they had or observations they had made, in particular about families who had overcome risk factors. This final part of the activity aimed to assist participants to build on knowledge they may have regarding risk factors and to create a more complex understanding (Rogers & Horrocks, 2010).

**Early brain development**

An understanding of the significance of early childhood development and the impact of experiences in the early years was a necessary component of the training. However, explaining early brain development is a challenging task. Relying on strategies that involved story telling and relating new material to existing experience, an attempt was made to show participants how neural pathways and networks are created.

Sitting in a circle on the ground, around a large sheet of white paper, participants were invited to share a story about hunting for bush tucker. On the sheet of paper a picture of bush tucker, relevant to the area, was glued in one corner and two pictures, one of a young infant smiling back up at her mother and another of a young child taking his first steps, were glued in another corner. The story teller was prompted to describe how they learnt where to find bush tucker in their community, who showed them the way, how they found the way and how they knew where to find the path. As they described details
of the path being well known and well trodden, from generations of elders showing their family, strips of transparencies printed with rows of foot prints were laid down on the sheet toward the bush tucker, one on top of the other, creating a thick ‘pathway’. As they described that going to this place repeatedly made the path clearer, more transparencies were laid down.

Next, we discussed what would happen if the path to the bush tucker were not used for some time. As we discussed the path becoming overgrown and harder to find, the transparencies were removed one at time, leaving a less dense ‘pathway’. The participants acknowledged they would still know the way, but the path would be harder to find.

Finally, we used the metaphor of the paths to explain the synaptic connections that are created as children develop new skills, such as walking and smiling. I explained that connections between brain cells are created with astonishing speed in the first three years of life, and as I explained that more and more connections are made as children learn and practise new things, strips of transparencies with rows of neurons were laid down towards the pictures of the children, creating a dense ‘pathway’ to these activities. We discussed that just like the path to the bush tucker, neural pathways that are used remain strong, but the ones that are not used, are pared back - removing some of the layers of neurons to demonstrate the parallel with the overgrown bush tucker path that becomes harder to find. This significance of laying down these pathways for activities such as affection and smiling, and attachment, early in life, was stressed.

Session 3 – Developmental milestones

Objective

By the end of the session, participants were expected to have basic knowledge of the fundamental milestones for physical, social and cognitive development.

Content and Training Strategies

This session again began with a film. Talking twins (Twin Mama Rama, 2011) is a short video posted on YouTube of young twins mimicking each other’s attempts at language, while also demonstrating many other developmental skills. The participants were asked to view the film and identify skills they observed. These skills were able to be classified into the following developmental domains: communication, gross motor skills, fine motor skills, problem solving and personal social skills. The film was used to generate
discussion about the different developmental domains that are conceptualised. These particular domains were selected as they are the domains that are used in the ASQ-3. Cards with the domains printed on them were applied to the Developmental Milestones Trajectories poster in a column on the left hand side. Along the top row, illustrations representing children at 2, 6, 12, 18, 24, 36 and 48 months were also applied.

After naming the different domains identified in the film, the group was again divided into pairs and provided with a pile of illustrations of children performing skills at different ages. This time each pair was given a different developmental domain that they needed to sort in order of age. The pair was then invited to place their domain’s trajectory on the poster, in the order that they had chosen. As a group, we reached consensus about the age each milestone would be achieved. Once all the milestones were on the poster in the appropriate domain and age, the principles of growth and development were reinforced, consolidating learning.

This session ended with another DVD, The Ages and Stages of Play and Learning (ASPL) – Cuddles and Smiles (Rural Health Support Education and Training Series). ASPL is a series of family education videos for Aboriginal communities, consisting of five videos addressing specific ages and a general parenting video. The videos discuss the role parents and families play in providing early learning activities for children from birth to five years. This set of videos was chosen because of its cultural appropriateness and as a way of reinforcing the role that AHWs can play in supporting Aboriginal parents by giving simple advice about play activities.

**Session 4 – Developmental Monitoring**

**Objective**

By the end of the session, participants were expected to have an understanding of the importance of undertaking child health screening and surveillance and in particular the importance of child development monitoring, as is set out in the Health Under 5 Kids program.

**Content and Training Strategies**

**Developmental Monitoring**

This was the final session of Day 1. As a way of introducing developmental monitoring, participants were asked to think about an adult well-person check. The discussion aimed
to generate a list of the various components of an adult check that are consistent with surveillance or monitoring as defined by the National Health Medical Research Council (CCCH, 2002), and these were again put on a poster. Surveillance for the prevention and complications of heart disease was discussed, as chronic disease programs have been implemented in health centres for some time and many had personal experience of these checks as patients.

Participants were then asked to reflect on child health checks and what constituted surveillance, aiming to generate the following: measurement of physical growth; monitoring of developmental progress; administration of screening tests; prevention of disease (e.g. immunisations); provision of information to support parents; health education; and eliciting and responding to parental concerns (CCCH, 2002). This list completed the poster.

This led into a discussion about the need for monitoring development, connecting it to the earlier session on early brain development and to the ASPL video that was screened. Further reflection was invited on why some parents were more engaged than others and the role AHWs could play in this. Links between the developmental monitoring and the HU5Ks program were made and participants were provided with the HU5Ks wheel, drawing attention to the visits that required a developmental check (see Appendix 10).

The last activity of the day was another ASPL video, looking at play activities for children 8-18 months. The day was completed with each participant sharing either something they had learnt or something they had found enjoyable about the training day.

**Debriefing at the end of Day 1**

An important process of the classroom training was debriefing at the end of each day. I discussed the sessions with the research assistant, reviewing my performance and the participants’ progress. We discussed in detail the subject matter; presentation and communication skills; the structure of the learning program – the pace, level, relevance; clear signposting of each objective; the nature of the learning materials; and the learning activities devised. We discussed and recorded each individual learner’s progress: whether they were participating actively and contributing equally; whether they appeared to have achieved the learning objectives; and what could be altered to encourage greater contribution. This process of self-appraisal heightened my awareness of the learners’ needs and led to changes, where possible, to produce an environment conducive to learning.
**DAY 2: Session 5 – Introducing the ASQ3-TRAK tool**

**Objective**

By the end of the session, the participants were expected to have begun to develop an understanding of the process for observing and recording issues of concern/difficulty in physical, cognitive, social, emotional and psychological development of children, using the adapted ASQ-3.

**Content and Training Strategies**

**Recap**

It was important to begin the day allowing enough time to recap Day 1, to reinforce learning and ensure participants’ goals were being met. Participants were invited to comment on Day 1 and to share any stories this had generated. The principles of child growth and development, and the Developmental Milestones poster, which were both still hanging from Day 1, were reviewed. As an ice-breaker activity a true-false exercise was included. Cards with printed statements about child development that were either true or false were divided among pairs. After some time to discuss among themselves, the pairs, one at a time came up to put the cards on a poster in either the ‘true’ or ‘false’ column. Again, each statement was discussed with the group to achieve consensus and address any misconceptions or questions.

**Whose role is it anyway?**

As discussed in chapter two, AHWs are considered key staff in remote health services and the focus in this study was on their role and the particular skills that they have. It was essential that participants, in particular AHWs, understood why they were doing the training and how this was relevant to them and their work. Barriers to undertaking developmental monitoring and giving developmental advice were discussed as well as possible solutions. This was followed by one of the ASPL videos, *An introduction to health staff*, which reinforced the role AHWs can play in developmental monitoring. This component reinforced one of the aims described in session one, which was to address attitudes AHWs may have to developmental checks.
Introducing the adapted ASQ-3 – the ASQ3-TRAK tool

A discussion about screening and surveillance, in the context of child development, led into an explanation of the ASQ-3 and how it came to be adapted. It was highlighted that the seven questionnaires chosen for adaptation match the seven ages at which HU5Ks checks require a developmental check. Throughout the training, reference was made to the HU5Ks program and how the training and the tool fit into the program. The ASQ3-TRAK tool was shown to participants and the five developmental domains that had been introduced on Day 1 and corresponded with the ASQ-3 domains, were pointed out in the questionnaire.

Session 6 – Demonstrating the ASQ3-TRAK tool

Objective

By the end of the session, participants were expected to have become familiar with the ASQ3-TRAK tool example - 6 month questionnaire - to further develop their knowledge of the process for observing, recording and reporting issues of concern or difficulty in physical, cognitive and social development of children

They were expected to understand how to administer the questionnaire and record observations, in preparation for the practical session on Day 3.

Content and Training Strategies

Demonstration

A valuable strategy for training in this context, as identified by informants and the literature, is demonstration (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Rogers & Horrocks, 2010; Tregenza & Abbott, 1995). I demonstrated administering a 6 month questionnaire, with a mother and her 6 month old baby in the classroom setting. The participants were provided with a 6 month questionnaire and recorded the results independently while observing (see Appendix 7a for sample of adapted ASQ-3).

Following the demonstration, the participants were divided into pairs and each took a turn at role playing being the practitioner and the mother. This was to familiarise themselves with how to introduce the tool and each section, consistent with strategies discussed in the literature.
**Scoring the tool**

Having followed the demonstration and ticked the responses on their own copy of the questionnaire, participants were taken through scoring each domain and transferring the totals to the score sheet. They were left to do this independently, with support provided if required. The score sheet for each age group has cut-offs for each domain, and the score can either be above the cut-off (white area = on schedule), close to the cut-off (grey area = monitor) or below the cut-off (black area = requires further assessment) (see Appendix 7b).

**Session 7 – Scoring the ASQ3-TRAK tool**

**Objective**

By the end of the session, participants were expected to have practised scoring a mock questionnaire.

**Content and Training Strategies**

A clinical case history of ‘Johnny’, a 26 month old boy, was presented and a mock ASQ3-TRAK questionnaire was provided to each participant, with the questions already ticked. In pairs, participants were then left to score the questionnaire and transfer the individual scores to the score sheet. There was potentially varying literacy and numeracy skills and allowing sufficient time for all participants to feel confident in scoring the questionnaires was important.

**Session 8 – Interpreting the ASQ3-TRAK tool**

**Objective**

By the end of the session, participants were expected to have become aware of the process for reporting issues of concern/difficulty in physical, cognitive and social development of children, including providing advice to caregivers.

**Content and Training Strategies**

An important aspect of the ASQ-3 is scoring the questionnaire and then taking action, depending on which of the three categories the child falls into. A whiteboard activity (again on a poster with laminated cards) was used to work through the options for each category. For each of the ‘white’, ‘grey’ and ‘lack’ areas, a number of issues to consider
were discussed and brainstormed: what it means clinically, what advice to give, what resources could be drawn upon in the community, what follow-up was necessary, whether referral was needed, and what programs (such as FaFT) might be beneficial. This was determined by what was available and relevant in the community.

We then returned to ‘Johnny’ who scored in the grey area for a number of domains, and discussed what action should be taken specifically for this child, using the matrix we had developed. An additional resource that was developed in conjunction with the adaptation was introduced.

*Parent Information Sheets* (see Appendix 8) were developed as a resource that align with the play and communication advice in the HU5Ks. This anticipatory guidance in the HU5Ks is based on the WHO/UNICEF *Care for Child Development* program (Engle, 2011; WHO, 2012). The Parent Information Sheets were produced as A4 sheets, and contained the simple messages and illustrations that corresponded with the ASQ3-TRAK tool, one for each age group represented in the questionnaires. These were appropriate and relevant to use when providing anticipatory guidance to parents. The benefits of play and communication advice were discussed using the case study as a concrete example of the potential outcomes and in the context of the training from Day 1.

An important issue identified in the needs analysis was the need for accurate documentation. A template for how to document the developmental checks using the ASQ3-TRAK tool was provided for the two different systems in the two communities, determined by the group discussion.

The last of the ASPL videos, *Stepping out*, was shown before the conclusion of the training day. This last video shows a delightful interaction between a young boy and his father out bush. The father is guiding and teaching the boy in a positive and nurturing way and provided modeling for the way in which practitioners could encourage parents in the community. In concluding the classroom training, the process for the practical session - the final part of the workshop - was discussed. Participants were again asked to describe something they enjoyed or learnt and finally, evaluation forms were provided to all participants to be returned to the research assistant over the following week.

**Debriefing at the end of Day 2**

At the end of the second day of classroom training, we again held a debriefing meeting to review my performance and the participants’ progress. Suggestions for improvements
were recorded for future workshops. However, this appraisal provided further feedback that was able to be incorporated into the subsequent practical sessions.

6.4.2 Practical training session

Session 9 – Practising administering the ASQ3-TRAK tool

Objective

By the end of the session, the participant was expected to have gained skill and confidence in administering the ASQ3-TRAK tool including observing, recording and reporting developmental milestones and parental concerns. They were also expected to consolidate their skills and confidence in providing anticipatory guidance.

Content and Training Strategies

The practical session took place in the participant’s usual work place (either the health centre or the FaFT setting) in the week of the classroom training. Children who were due a developmental check were asked to attend and invited to participate in this part of the study. The participant was observed and coached while administering the ASQ3-TRAK tool, and also coached in the scoring, feedback to parents and documenting in the medical record. This approach is consistent with what was indicated as a preferred learning style by participants and with recommendations in the literature for adult learners and AHWs (Rogers & Horrocks, 2010; Tregenza & Abbott, 1995; Fixsen et al., 2005; O’Brien et al., 2008)

Guidelines

As an adjunct to the training, practice guidelines were produced in a laminated booklet form and provided with the adapted ASQ-3 to the health centre (see Appendix 9). The Guide to using the ASQ3-TRAK Tool was reviewed with each participant during the practical training session.

The guidelines consisted of five parts:

1. Completing the Tool

This offered important hints for practitioners to remember, that would facilitate the delivery and aid engagement. The points included had all been discussed in the training
and were simply reminders to practitioners. A specific point was made to remind practitioners to complete the tool in a quiet, private place where possible.

2. Scoring the Tool

A reminder of the score for each individual item was provided and a sample of the score sheet was included with a summary of the scoring system.

3. Interpreting the score

A copy of the matrix that was produced in the classroom training, providing guidance for what action to take depending on the score, was reproduced in the guide.

4. Recording the findings

The section reproduced what was covered in the training regarding documentation in the medical record.

5. Materials

A reminder of the different materials required was included in the guidelines. The materials included the questionnaires, the score sheets, the parent information sheets and a list of the toys to use with the tool.

6.4.3 Booster training

Three months following the initial classroom training, participants were offered a one-on-one ‘booster’ session in their community. The booster session aimed to reinforce knowledge, skills and confidence gained in the initial workshop and to further encourage positive attitudes towards developmental checks. This component of training was employed to address drift, the tendency for new clinical skills to be lost over time and return to pre-training levels (McHugh & Barlow, 2010). Furthermore, face-to-face visits have been shown to improve care delivered to patients. A 2008 Cochrane review that examined ‘educational outreach visits’, described as face-to-face visits by a trained person in the health professionals’ own workplace, demonstrated that this form of education has positive outcomes and can be effective in improving health professional practice (O’Brien et al., 2008). Academic detailing has also been shown to improve developmental screening practices in paediatric settings (Honigfeld, Chandhok, & Spiegelman, 2012).

The booster began with a recap session which involved reviewing the critical elements of the developmental check and included administering the adapted ASQ-3, scoring and
documenting the process, and providing anticipatory guidance, as outlined in the ASQ3-TRAK guidelines (see Appendix 9). This was conducted with each participant individually using the guidelines and the ASQ3-TRAK itself. This recap was followed by another practical session in the participants’ workplace. The participants were supervised administering the ASQ3-TRAK and provided with coaching during the consultation and with feedback afterwards.

### 6.4.4 Support structures

There is little dispute that support is necessary for effective transfer of training for AHWs to their workplace (Genat et al., 2006; Higgins et al., 2012; Johnson, Jackson, Guillaume, Meier, & Goyder, 2011; Walker et al., 2011; Watson et al., 2013). This is further endorsed by the implementation science research that emphasises the need for ‘coaching’ following training, to consolidate skills acquired (Fixsen et al., 2005). This was highlighted by the training needs analysis (chapter five), where a key theme was the importance of providing ongoing support and mentoring to AHWs as part of training. Many of the key informants, some of whom subsequently participated in the training, also acknowledged this and were employed in roles where they could feasibly provide this support.

Although this information regarding readily available support was identified during the needs analysis, as an activity of the program logic it was important to nominate the supports available in each community to ensure it took place. Furthermore, informants in the training needs analysis acknowledged that there were broader issues, beyond training and support of the AHWs, which could facilitate the ASQ3-TRAK tool being used. Consequently, a Systems Assessment discussion was conducted in each community immediately following the initial training workshop, using the Systems Assessment Tool (SAT), a One21Seventy\(^\text{10}\) clinical quality improvement tool used to collect information about a health centre’s systems that are necessary to support good clinical care generally (Schierhout, Brands, & Bailie, 2010). The SAT discussion aimed to identify what supports were in place and what additional supports could be harnessed, and what systemic issues could be addressed to increase the likelihood of the sustainable implementation of the ASQ3-TRAK tool.

---

\(^{10}\) One21Seventy is the National Centre for Quality Improvement in Indigenous Health that provides practical tools and processes to help primary health care providers carry out continuous quality improvement.
The facilitated SAT discussions were held over three hours with clinical and education staff, including front-line workers and managerial staff. The systems assessed included: delivery system design; self-management support; decision support and clinical information systems; external linkages; and organisational influence and integration. In addition to the discussion and recorded comments, the SAT includes a scoring system which gives a quantitative measure that reflects how well developed the systems are perceived to be by the staff participating. This is a consensus score and normally the results are brought together with the One21Seventy clinical audit results for an action planning workshop (Schierhout et al., 2010).

Conducting a SAT is a time-consuming and intensive process and since this SAT was focusing on a narrow area, child health and in particular the developmental checks, the discussion, scoring and action planning took place concurrently. The specific actions were documented in the minutes of the meeting and circulated to the participants.

**SUMMARY**

The design of the training process and content of the TRAK training program were guided in the first place by the information obtained from AHWs and key informants in the training needs analysis reported in chapter five. This information, combined with consultation with experts led to the decision to focus on principles of ECD, principles of developmental monitoring, and the use of the adapted ASQ-3. The close examination of the adult learning literature provided a useful guide to an approach that could be adopted for an effective training program, in early child development and developmental monitoring for AHWs and other remote health staff. This was supplemented by a thorough examination of the evidence for strategies to enhance culturally appropriate training.

The project’s theory of change anticipated that development of training content and style responsive to the needs identified in the training needs analysis, and delivery of this program, would result in outcomes of increased clinical competence and confidence. The program aimed to enhance practical clinical relevance to trainees by demonstration and one-on-one supervised practical session. The implementation and results of the training evaluation are reported in chapters seven and eight.
CHAPTER 7 EVALUATION OF THE TRAK PROGRAM - CASE STUDY Y

INTRODUCTION

As discussed in chapter three, case study is the design framework of choice when contextual conditions are critical to the phenomenon being studied. Two case studies are presented in the following two chapters to illustrate the complexity of undertaking research and implementing new innovations in this environment. A detailed introduction to each of the case studies – the health centre – is presented in section one to provide a vivid and real picture of the context of the study. The aim is to illustrate the challenging and complex circumstances unique to the remote Australian Aboriginal context.

Section two outlines the implementation of the TRAK program and the issues faced when conducting the research in the particular community. Section three presents findings of the process evaluation of the TRAK training program based on the Guskey (2000) model introduced in chapter three. Guskey describes a five level model that includes: (1) participant reaction; (2) participant learning; (3) organisational support and change; (4) participant use of new knowledge and skills; and (5) results or organisational impact. For this study the focus is on levels 1-3. Levels 4 and 5, the practice outcomes, will be addressed in the follow-up study to the thesis.

The case study chapters focus on the initial analysis of the findings. Chapter nine will discuss the interpretation of the findings, in the context of the remote health community, in greater detail. This cross-case synthesis will compare the two case studies, discussing why the implementation occurred the way it did and exploring factors that are either common or unique to each case study.

The implications for further research in this important area and recommendations for future work will follow in the conclusion to the thesis in chapter ten.
7.1 INTRODUCING THE YUMURRKU HEALTH CENTRE

In chapter one, the NT context was outlined, followed by a more detailed examination of the demographics of the two communities in chapter three, introducing the context for the cases. This section will provide a description of the Yumurrku health centre as the case study. The community name and all person’s names used in the following section are pseudonyms.

The health centre setting

The Yumurrku health centre is an NT Government-run primary health service based in the community servicing Yolngu who live in Yumurrku, visitors from other communities, and people visiting from outlying homelands. The Homelands Health Unit also provides primary health care services, with a number of purpose-built clinics situated on the homelands.

The health centre is open to patients five days a week; however, is closed at lunch time and on Thursday afternoons for staff in-services. On presenting to the clinic the administrative officer or a clinical staff member will log patients who then wait to be seen by an AHW or nurse, whoever is available first. There are no appointments although the health centre creates a daily ‘recall’ list, which lists patients who need to be seen for follow-up of a medical issue or for a routine check. The patients are usually picked up by the health centre driver on the day and transported to the clinic. After hours, patients are expected to attend the services in the nearby town, 18 kilometres away, as there is no after-hours service provided by the health centre.

The health centre is an open and accommodating space. The external, covered waiting area looks into the main waiting area of the clinic through glass doors and windows. The internal waiting area is bright and colourful, with artwork on the walls and brochures and reading material available on a stand. The waiting area is separated from the reception/general working area by a glass partition and glass door. The door remains open at all times, and the glass partition creates an open and welcoming feel. The five clinical rooms are all entered from the waiting area and staff are constantly passing through. A separate staff tea room and the health centre manager’s office are positioned off the main reception/ general work area.

The health centre has a dedicated kids’ room. It is a larger room, compared to other clinical rooms in the centre, and has two doors, and therefore is sometimes used as a thoroughfare. The kids’ room is brightly decorated with posters and decals on the walls,
mobiles hanging from the ceiling, a plastic table and chairs, and a large interactive play centre with mirrors and counting beads. The room has clinical items necessary for child health, such as baby scales, a stadiometer, a small examination couch/change table and other supplies that may be needed for children, such as nappies. It also has a large section with general supplies and equipment that may be required for any aged patient and consequently practitioners often need to come into the kids’ room to access this equipment while a consultation is in progress. On ‘Kids’ Day’ sandwiches and fruit are provided in the waiting room, and toys are available, such as a large pedal car. On this program day, Families as First Teachers (FaFT)\textsuperscript{11} also set up a play group on a mat in the external waiting area.

**The key actors**

The health centre is staffed by the health centre manager, two remote area nurses, four AHWs, a driver, a part-time doctor and an administrative officer. The health centre and staff are managed by the Remote Health branch of the NT Department of Health and answer to an *Area Service Manager*, responsible for a number of health centres in the region. The two Strong Women workers, who are managed by the Health Development branch, and a Mental Health community based worker, managed by the Mental Health branch, also sit within the health centre and although not officially managed by Remote Health, are considered part of the team.

The Yumurrku health centre has been relatively stable with little staff turnover, including non-Aboriginal workforce stability. The manager, Sarah, came to the position in 2008, from a position with the Health Development branch where she worked as an outreach midwife and she brought with her a strong primary health care approach. Tracey, one of the nurses, also came from the Health Development branch where she had worked as the child health nurse, at a similar time as Sarah. As a result there is a strong interest and focus on child health. The third nurse has worked and lived in the region for some time. The doctors visit the health centre one to two days a week and come from the nearby town; they are the least consistent of the team.

The health centre employs four AHWs who have varying levels of experience and connection to the community. A senior male Yolgnu health worker, originally from another East Arnhem community, has worked in the Yumurrku health centre for four years. Another male AHW spent some time growing up in Yumurrku but also lived in

\textsuperscript{11} FaFT, described in chapter three, is a Department of Education parenting support service for Aboriginal parents of children 0-3 years.
different urban centres before returning to the region and has now worked at the health centre for 11 years. He does not speak Yolgnu Matha but has a good understanding of the language. Management expresses much respect for the two senior AHWs and they play an important role in the delivery of effective services. Another AHW from a community outside the region moved to Yumurrku when she married a local man, so Yolngu Matha is not her first language. She has been working at the health centre for three years, however she and her family move between her homelands and Yumurrku. The fourth AHW is a relieving AHW, originally from Darwin, who would like to work permanently at the Yumurrku health centre. Her first language is English and she speaks no Yolngu Matha. Another Yolgnu AHW was on family leave for much of the time of the study. The remaining Aboriginal staff member, a traditional owner, works as the driver and has been a long-standing employee of the health centre.

Raelene and Diane are the two Strong Women workers\(^\text{12}\). Raelene is a senior woman in the community who has been in the respected role for some time. Diane, a traditional owner, has joined her more recently. The women work alongside the nurses and AHWs but they also continue their work informally out of hours - when they chat with mothers in the waiting room, when they see families at the shop, or when taking part in other social gatherings. Mary, also a senior woman and traditional owner, is the mental health worker, often involved in the care of mothers’ mental wellbeing. All three women are highly respected. They are often called upon to be involved in committees and on special projects because of their skill and expertise, and good standing within the community. These women are recognised as essential to the care of maternal and child health by all staff in the health centre.

The FaFT team work closely with the health centre in promoting early learning and engaging families in promoting overall child health. The FaFT building is across the road from the health centre and once a week, on ‘Kids’ Day’, the FaFT playgroup is run from the health centre. The FaFT family educator and the Aboriginal FaFT liaison officer have worked together since the beginning of the program in 2010. The FaFT liaison officer is a committed and respected worker.

\(^{12}\) The Strong Women Strong Babies Strong Culture program recognises the traditional cultural approaches to parenting and lifestyle and supports pregnant Aboriginal women and their babies from pregnancy through to early childhood.
Gaining access and support for study

The Yumurrku health centre, and the community more broadly, were all very enthusiastic about this project from the outset. On first contacting the health centre at the suggestion of the Health Development branch, I was invited to speak to the whole clinic – including the male AHWs, the Strong Women workers, and the driver – together. At the suggestion of the nurse, I arranged this consultation visit for a Thursday afternoon when the clinic is closed so that all staff would be available. Sarah, the health centre manager, had strongly encouraged everyone to attend the meeting.

This first visit to the Yumurrku health centre was in December 2009 and I met most of the team, including the health centre manager, the two nurses, three of the four AHWs, the two Strong Women workers, the ear health worker and the driver. This was a pivotal discussion and the senior AHW remarked that the Strong Women workers spoke up in a way that they normally do not do in a large group. This meeting was the beginning of the engagement process.

Following the initial consultation, the health centre agreed to participate in the study; however, the health centre manager suggested I consult more closely with other community members on my next visit. This next visit in October 2010 involved further meetings with senior Aboriginal women in the community. Raelene, the Strong Women worker, decided who should attend and with Mary the mental health worker, the FaFT liaison officer, and the Women’s Centre manager, we met to discuss the rationale for the study and how to approach the adaptation. We clarified the study plan, decided on a timeline that suited the community, and discussed who should be involved. They were eager for the study to be everyone’s business.

I had no difficulty obtaining official support from Sarah, the health centre manager, as she was guided by the community who had been consulted and informed, and who had agreed to endorse the study. This enabled approval to be granted from the Remote Health branch without obstruction. Sarah was encouraging of the AHWs meeting with me and ensured they were available to discuss the project and how they might be involved. Importantly, this consultation with the AHWs informed the project design. The Health Development branch was also supportive of the project and the regional manager offered in kind support; for example providing me with use of their car on field visits to Yumurrku. They were also very supportive of their staff – the Strong Women workers and the visiting child health nurse – to be fully involved in the training and subsequent implementation. The Strong Women workers’ coordinator chose to fly out
for the two-day training to support the Strong Women workers in the training and subsequent implementation and was supportive of Raelene taking leave from the department to work on this project as co-facilitator when this was proposed.

I again visited the Yumurrku health centre in March 2011 for further planning before commencing formal data collection in June 2011. As discussed in chapter four, the community engagement that was achieved with community leaders, different managers and on-the-ground staff was essential to developing the project and to its smooth operation. Strong partnerships were established with the health centre and my visits were always based around the health centre. I was welcomed into the health centre and used the staff tea room or dentists’ room if available, as a base for my visit. I consulted the health centre before any visits and ensured the field trips did not coincide with community or sorry business, or overlap with too many other visitors or programs. The importance of establishing and maintaining relationships will be discussed further in chapter nine.

7.2 THE STORY OF THE TRAK IMPLEMENTATION IN YUMURRKU

Classroom training

In November 2011, two workshops were delivered over a two-week period in Yumurrku. Offering two workshops enabled the health centre to release staff in a staggered way, and ensured as many staff as possible participated with less impact on the health service and fewer backfill issues. This was appreciated and fully endorsed by Sarah, the health centre manager, who essentially selected the participants to participate for each workshop.

In the first training workshop the five participants included Diane the Strong Women worker, Mary the Aboriginal Community Based Worker (mental health worker), Tracey the nurse from the health centre, the Health Development branch child health nurse, and the Strong Women coordinator, who was also from the Health Development branch. The intention had been to have AHWs participate in both workshops and to have the child health-trained staff divided between the two workshops as well. However, on the day the training began, three of the four AHWs were on leave. The second workshop

---

13 ‘Sorry business’ is an Aboriginal English term that refers to funeral and mourning practices.
was delivered the following week and two of the AHWs and Aboriginal FaFT liaison officer were available. The remaining two AHWs were still on family leave as was Raelene, the second Strong Women worker. The remaining nurse was also still on leave in the second week.

A third training workshop was held in March 2012, three months after the first. The health centre manager, Sarah, considered it crucial that as many of the staff as possible participate in the training, especially all the AHWs. This workshop included the senior male AHW, two remaining nurses, the FaFT educator, and a newly employed Aboriginal FaFT liaison officer. The health centre manager had intended to participate but was away, and the fourth AHW was still on leave.

During the training needs analysis, described in chapter five, most AHWs agreed that it would be preferable that training involve all disciplines together. However, one AHW did express that she had previously experienced unease when completing training with staff who have prior knowledge of the training content. My own previous experience of training groups that involved participants of different disciplinary, cultural and educational backgrounds also alerted me to the potential complexity of the dynamics of a mixed group. This was a dilemma faced in the first workshop where there were two nurses with child health training, and in the third session a FaFT educator who was a teacher, participating in the training with AHWs and community based workers. Although there was some attempt to address this potential issue by selecting the participants, ultimately, the staff who were available participated, leaving the group membership to chance.

Hence the first workshop involved bringing together the most knowledgeable and experienced staff in the area of ECD (child health nurses) with the least formally educated and least experienced (community based workers and a mental health worker). Notably the first workshop did not include any AHWs for whom the training had been predominantly designed. However, I maintained the objectives as developed and outlined in chapter six, as the focus of the study was on building the capacity of Aboriginal staff in ECD. This approach could have potentially alienated the participants who came to the training with significant prior knowledge and skills, so I therefore enlisted a number of strategies to manage the mixed nature of the group. First, I attempted to involve the nurses as co-experts in early childhood development and drew on them to provide their experiences where relevant. Second, considerable effort had gone into finding and developing materials that were new and interesting, and kept both the beginner and advanced learner engaged (Rogers & Horrocks, 2010), such as
interactive activities and audio-visual materials. Last, the use of sub-groups is considered a key element in any teacher’s tool box and in this case, the more advanced members were teamed up with beginners in the group in activities that involved pairs (Rogers & Horrocks, 2010). For example the sorting of milestones activities (described in chapter 6) encouraged peer learning and gave participants the opportunity to express their views with one another before presenting their conclusions to the group. Good relationships between participants are an important aspect of a group process and the training built on the strong working relationships that already existed between participants.

It can be difficult providing the space and time for the quieter participants who may take time to think about concepts and share a point, while managing those participants who have more verbal facility or are faster thinkers. This was also the situation in the third workshop in Yumurrku. Balancing these two considerations is challenging and requires tact (HBA Learning Centres, 2010; Rogers & Horrocks, 2010). It is important to ensure participation of all learners yet there can be risk associated with trying to draw individuals in. As the facilitator it was important to encourage contribution without placing participants in a position of feeling embarrassed or ‘shame’ particularly if they did not know the answer or had nothing to share at that time. This was undoubtedly facilitated by the relationships that I had established with most of the participants prior to commencing the training, however it also required specific strategies that supported learners who may not have strong language and literacy skills or are naturally quieter (HBA Learning Centres, 2010). Gentle tactics were used to limit the input of the more vocal members without putting pressure on any individuals to contribute, such as “Let’s hear what others have to say first” or “I know this might be basic for you Kylie and Tracey, but perhaps others can tell us what they think?”.

To encourage the quieter and more measured participants required close observation of their body language (Rogers & Horrocks, 2010); any time there was a physical cue that indicated they looked as if they were ready to comment, I invited them to share by commenting, for example “It looked like you were about to say something then Mary. Was there anything you wanted to share about that?” Another tactic used to persuade the quieter members was to paraphrase something they said outside the group, later in the presence of the group and invite further comment “Mary was telling me in the break

---

14 The meaning of ‘shame’ in Aboriginal English extends to include embarrassment from situations people may not feel comfortable with and is often due to receiving attention.
that she noticed...Did I get that right Mary?”. These strategies are part of developing a conducive learning environment (HBA Learning Centres, 2010)

A conducive learning environment also includes the physical environment. I had little control over the spaces that were available for use however every effort was made to establish a positive learning environment. Participants’ seating was arranged in a way that encouraged face-to-face exchanges and to facilitate paired group work that promoted effective learning. A screen for the video materials was at the front of the room however walls were used to hang posters and white boards were moved around, aiming to change the focus of attention from the ‘front’ of the room and instead have multiple focus points.

**Practical training sessions**

The classroom training had been delivered on a Monday and Tuesday in all three workshops, leaving the remainder of the week to complete the practical training sessions, as described in section 6.4.2.

The practical training sessions took place at the health centre or at the FaFT room. The nurse who held the child health portfolio assisted in identifying children of eligible ages to have the ASQ3-TRAK tool administered. This corresponded with children who required a HU5Ks check and the aim was to have the training participants complete the developmental check and a colleague to complete the remainder of the check. The FaFT staff invited attendees at the playgroup to participate. In both cases the caregivers were consented to participate by the research team after being provided with an information sheet (see Appendices 4c and 5c).

**Booster training**

As described in the previous chapter, booster training was offered in the workplace three months after the initial training. In Yumurrku, none of the clinical staff who completed the initial training were available to participate in the booster in the week that it was offered, for various reasons. A number of staff were either on extended family leave, no longer in the positions they had held when they participated in the training, or unable to be released because the health centre was short staffed or because of other commitments.
Conducting the Systems Assessment and identifying necessary supports

The Systems Assessment meeting in Yumurrku was conducted at the completion of the second week of training, at the end of November 2011. The three hour meeting was held over lunch in the community with an external facilitator familiar with the Systems Assessment Tool (SAT). As described in chapter six, the One21Seventy (One21Seventy, 2013) tool was used to generate discussion and collect information about the Yumurrku health centre’s systems known to be important for supporting quality clinical care. This meeting aimed specifically to identify the supports necessary for the effective implementation of the TRAK training and the ASQ3-TRAK tool.

Staff from the health sector, including both clinical and management staff, and the education sector were invited to attend. Those in attendance were Tracey the nurse who held the child health portfolio, Mary the Aboriginal community based worker, the Strong Women worker coordinator, the Health Development child health nurse, the Health Development regional manager, the Health Development ear health coordinator, the FaFT educator, the FaFT liaison officer, and the TRAK project research assistant. All the training participants were invited to the SAT meeting and it was outlined in the training schedule, however neither of the two AHWs who had completed the training prior to the SAT meeting being conducted attended. Sarah, the health centre manager had been called to an urgent meeting and could not attend. The Area Service Manager had agreed to attend but was not present.

The facilitator gave a very brief overview of the Systems Assessment and using the SAT to guide discussion, the five systems - delivery system design; self-management support; decision support and clinical information systems; external linkages; and organisational influence and integration - were scored.

7.3 Findings - The implementation effort

In total, 13 participants took part in three training workshops in Yumurrku and of these, eight were Aboriginal. Three of the four AHWs employed at the health centre participated. Of the total 13 participants, 11 completed the practical training. Twelve of the 13 participants completed a feedback survey, described in chapter three (see Appendix 11).
Three to six months following training the initial training, I conducted semi-structured interviews with the two AHWs who had completed the training and remained at the health centre, and with three key informants. No participants were available to take part in the booster training offered. A total of 11 field trips were made to Yumurrku and 37 days were spent in the field over a three year period.

Guskey’s (2000) five level model for the evaluation of professional development programs in education was used to guide the evaluation for this study. The following section details how each of the first three levels of the Guskey model were applied, describing the quality and level of the implementation of the TRAK training and of the ASQ3-TRAK tool.

### 7.3.1 Participant reactions

The first level of evaluation, participant reactions, assesses how participants in the TRAK training program reacted to the training.

In Yumurrku, all participants had a positive response to the training, with generally high levels of satisfaction reported. All 12 participants who completed the feedback survey strongly agreed or agreed that the workshop was relevant to their work. Responses to the open-ended questions provided positive comments about the materials used, the content of the training, and the process employed; in particular the practical demonstration and role plays.

Most respondents commented that they would change nothing about the training, or left that box blank. Only one respondent commented that the venue could be changed. Overall, it was considered valuable training:

> This would give me more knowledge to share with other [staff] about what signs to look for in the development of the young children and babies.

(Training participant)

Informal feedback to the health centre manager from participants supported this finding, with one of the AHWs commenting: "I thought it was going to be crap! But it was really good actually”. In interviews, AHWs also reported high satisfaction with the training, supporting the finding that participants found the training valuable:
I mean if you wanted to go over everything with a magnifying glass, you could probably always change something. But…I think it’s pretty deadly¹⁵ - it worked out pretty well… (AHW #2)

Further support for the high level of satisfaction was the attendance figures. There were no withdrawals from the training and those who attended completed 100% of the classroom training. Furthermore, while it was a challenge to start at the designated time on Day 1 of the training, suggesting some resistance, all participants attended at the agreed starting time on Day 2. Despite the Aboriginal participants acknowledging feeling nervous, awkward or embarrassed during the practical sessions, they all completed the practical sessions and did not display avoidant behaviour. While challenging for them, the participants saw the value in completing the practical training and one of the participants made time for a second practice on a separate day to consolidate her learning.

The training approach was reportedly suitable for the context. While the intervention was developed with AHWs in mind, the feedback surveys demonstrated it was equally acceptable to non-Aboriginal participants. All respondents indicated on the feedback survey that they strongly agreed or agreed that the design of the training - duration of training, level of difficulty, delivery methods and materials - was appropriate and interview data supported this finding. Training was described as “straightforward” by one AHW and considered very successful because he was able to apply the training in the practical session without any difficulty. The child health-trained nurses who participated in the training thought the structure and design of the training, including role plays and practical workplace components, was suitable for the Aboriginal staff. They described that “hands-on training, on the ground, is good” because it is “geared at how they learn”. There was consensus that conducting the training in a shorter period of time would have felt rushed and AHWs considered the pace suitable for learners of varied literacy skills.

Informants agreed it was worthwhile to have a mix of staff participating in the training and suggested that childcare staff and other staff who worked with children in the community should also complete the training to increase their awareness of what to observe, even if not completing the assessments. Although the ASQ-3 does not strictly require training to be able to administer it, especially for those practitioners trained in ECD, the child health-trained key informants reported that it was preferable to learn to

¹⁵ ‘Deadly’ is an Aboriginal English word for ‘fantastic’, ‘great’ or ‘awesome’.
use the tool formally, through participating in the training with the other health centre staff.

7.3.2 Participant learning

To achieve the intended outcomes of the training program participants must effectively acquire the new skills and knowledge, and change in attitudes. The second level of evaluation, participant learning, aims to evaluate the extent to which change occurs.

*Improvement in knowledge and skill*

AHWs’ self report indicated there was an improvement in knowledge and skill. The AHWs pointed out that they learnt about typical developmental milestones. This finding was confirmed by the feedback survey, where knowledge acquisition in this area was reported. Furthermore, all respondents reported on the feedback survey that they strongly agreed or agreed that following the training they had a greater understanding of ECD policies and guidelines (such as HU5Ks) and of services available to promote child development in their community. The key informants who participated in the training were both child health-trained, and although they reported there was no new knowledge obtained about early childhood development from the training, they both acknowledged that the training reinforced their prior learning, “which is always good”.

The AHWs described that the training, in addition to learning to use the tool, provided them with the skills to communicate with parents and to know what to look for when assessing children. One AHW expressed that the training improved his skill in being able to complete developmental checks, making it “easier” for him. Another skill identified by an AHW was learning how to enter data correctly on the new electronic health record system, Communicare.

As has been established, formative assessment is an important evaluation tool. I was able to gauge learners’ performance through observation and reflect on this at the end of training in the debriefing sessions. The following illustrates how one AHW demonstrated his understanding. When discussing the scoring and implications of the scores in the classroom training, he explained to the group:

> Children in the grey zone are like being at the fork in a river. Children can go down one river or another. But we want children to go up the good river. Not the river with the crocodile. If they get guidance and good advice, they’ll go up that good river. (AHW #1)
The practical sessions were another opportunity to assess participants’ learning and acquisition of skills by observing them administer the tool in the workplace. Observing whether an activity completed in the classroom can be transferred to the workplace is an important indicator of learning. All participants demonstrated that they had acquired the new skill and were capable of administering the ASQ3-TRAK tool. They were able to explain the developmental check, administer the tool with the toys, score the ASQ3-TRAK tool and provide feedback to caregivers, including providing the parent information sheets.

One of the AHWs demonstrated an exceptionally high level of competence in the way he administered the tool. He was observed to be very capable in his interaction with the caregiver, his skill at normalising the activity, and his ability to communicate the questions and findings with the caregiver. He incorporated the more subtle components of developmental checks that were discussed in training and appeared relaxed and confident, despite being awkward and uncertain in the pre-training clinical observation.

Through the process of the practice, another AHW demonstrated a high level of understanding of the purpose of the activity. For her first practice, she used the kids’ room at the health centre. After struggling to complete the developmental check and finding the kids’ room busy and distracting, unprompted, the AHW moved to another, more private, clinical room for the next practice. She was able to conduct the check more confidently and reported that this was “much better”. This change in the AHWs’ behaviour demonstrated learning. Likewise, the FaFT worker moved from one location because the child and caregiver were being distracted, to a less noisy area, choosing not to start the ASQ3-TRAK tool until she was confident of having the appropriate environment conducive to achieving the best outcome. This demonstrates an ability to apply what was discussed in the classroom training.

*Change in attitude*

In administering the ASQ3-TRAK tool, AHWs were observed to be confident and assured in their ability. This is consistent with the feedback surveys; eleven of the twelve respondents *strongly agreed* or *agreed* that the training increased their confidence in enquiring about development, providing simple advice and picking up developmental problems. The interview data further supported this finding. The AHWs reported that the training made them feel more confident to complete developmental checks. Using a tool with structured, clear steps and a guide for action to take if problems were detected, added to their confidence:
Yeah...It’s changed. So the change is, I feel confident. I can get the parents and kids and ask those questions...and if I find any problems in there I write it in a note. So, yeah...I feel confident with that area… (AHW #1)

Furthermore, the knowledge that the ASQ3-TRAK tool was a specifically designed developmental screening tool that had been culturally adapted, also increased their confidence:

…rather than asking a few stupid questions in among a check-up, you actually are asking important questions. (AHW #2)

There were other attitude changes reported. One AHW, pre-training, had expressed that he believed a culturally appropriate tool and training was unnecessary and that Aboriginal people were capable of seeking attention if they had a concern. However, his attitude shifted markedly to seeing the value of the tool in revealing skills the parents may not be aware of, and of picking up problems that the practitioner may not detect by “just looking” at the child. He reported that he now understood the importance of child development and realised it was more involved than he thought, welcoming the structured input:

And you could see the value in [the ASQ3-TRAK tool]...of doing it with the children. Where before I didn’t - I sort of thought just me looking at them and making an assessment myself...was good enough… (AHW #2)

This view was shared by the other AHW who had assumed that he could judge what the child was capable of doing by simply looking at the child. However, he remarked that he was astonished at the skills that children were able to demonstrate and what the tool could pick up. In other words, he had been underestimating the child’s skills.

_Behavioural intention_

Critically, the training altered the AHWs’ awareness and their intention to complete the development checks. There was a more positive attitude towards the process:

Yeah. I mean it’s changed our way of thinking as in we know it’s an important part of the check-up now. At least we’re thinking about it, even if we’re not doing it all the time. (AHW #2)

Following the training, all respondents _strongly agreed or agreed_ that they would feel able to use the ASQ3-TRAK tool in their work.
7.3.3 Organisational support and change for implementation of the ASQ3-TRAK tool

Level 3 of Guskey’s evaluation model assesses the extent to which the organisation provided support, accommodation, facilitation, and recognition for the initiative. The following section outlines where there was support for the implementation of the TRAK training and the ASQ3-TRAK tool and where the necessary changes did occur. Importantly, it also presents the findings of the barriers that existed to providing support and instituting change.

Data for these findings were collected at two time points: immediately after the training workshop during the Systems Assessment discussion, and three to six months after training during individual interviews. The findings are categorised into the following themes: workforce stability, child health delivery system, improving access to care, competing demands, infrastructure, leadership, partnerships, and ongoing training and support.

**Workforce stability**

The Yumurrku health centre had enjoyed a period of relative stability in the time leading up to the study commencing. However, over the period of the study, the health centre was observed to undergo major changes that had significant impact on the health centre’s capacity to implement the ASQ3-TRAK tool.

First, in October 2011 an electronic health record system, Communicare, was introduced, just prior to the training being delivered. This created some anxiety among staff as the system was not without its challenges or shortcomings and it took considerable time to train staff. Training and support was considered insufficient and key informants felt it slowed staff down significantly.

Second, and probably most importantly, was the change in governance of the health centre. In December 2011 the staff were informed that the health service was to be handed over to the community controlled Aboriginal Medical Service (AMS). Although this was something that was known would eventuate, the official decision for the handover was announced quite suddenly. According to the health centre staff, there was little consultation with the community about how and when this should happen and staff were given little time to prepare for the transition. The transition period from the NT Government to the AMS was described as a very unsettled time that impacted on staff
morale and the mood of the clinic. From the time of the announcement the team felt very unsettled:

There’s been so much uncertainty since then…it’s really been like someone’s thrown a bomb in the team and it’s not that people are distressed about [the AMS] I don’t think. It’s change, and not knowing. The team has actually disintegrated almost because we had the three [AHWs leave]…well R has been up at Galiwinku and we had J and C leave for absolutely legitimate reasons, needing to leave. (Key informant #3)

One key informant described feeling unsupported and unmotivated during this time. Staff felt betrayed and upset by the decision and the way it was managed. A number of staff felt uncertain of the future, as their positions were not guaranteed and in their view insufficient information was provided about their options and the security of their employment. Others discussed their reluctance and in some cases refusal to work for the AMS, and declared they intended to leave the health service once the AMS took over. However, just before the handover, one AHW reported, “if we don’t…fight against each other and let it happen, it should be good”. The handover eventually occurred in July 2012.

Third, a number of key staff changes occurred in this time. One AHW who participated in the training left to return to her homelands soon after the training. For a number of reasons, the senior Strong Women worker resigned. Some time later she took a position with FaFT replacing the FaFT liaison officer who had participated in the TRAK training and who had left the community for family reasons. The Health Development child health nurse left her position soon after completing the training in November 2011. Although a replacement was found by April 2012, she was not formally child health-trained and was not able to provide much support as is discussed later in this chapter.

**Building delivery systems to support child health**

In the Yumurrku health centre, a structured child health program, including a dedicated program day, had existed for some years. Informants reported that this was expanded when the health centre manager and the child health-trained nurse commenced in their roles. The system changed from having ‘stations’ that children would move through (such as weight, ears, skin) to taking a more ‘holistic’ approach with one practitioner completing the whole check. The key informants described that the change was a slow process that required acknowledging and reinforcing staff’s prior efforts, while introducing a different approach. Simultaneously, the health centre introduced the
HU5Ks program incrementally, broadening what practitioners were expected to do as part of a child health check. The implementation of the HU5Ks was reported by one key informant to succeed because of the health centre manager’s endorsement, who expected all staff to participate, and because the nurse who held the child health portfolio was child health-trained. The nurse drove the implementation, with the health centre manager’s encouragement, and was able to provide on-the-job support and guidance to health centre staff, consistently, over an extended period of time.

All informants appreciated the dedicated program day, ‘Kids’ Day’. A holistic approach to child and family health was promoted by seeing women for antenatal care and by encouraging fathers to attend on ‘Kids’ Day’. All valued the opportunity to work with the Strong Women workers to talk to families. Although it was described that it took some time for staff to accept that the program took priority on that day, staff were reported to have “embraced it”.

At the SAT meeting, participants discussed that monitoring child development was ‘core business’ for the health centre and they felt confident that the existing system at the health centre would incorporate the ASQ3-TRAK tool. Since the tool was aligned with the HU5Ks, they described that it would be integrated into the process, which highlights when children are due their developmental check. Despite their confidence and enthusiasm, this did not appear to happen.

Although informants described the seemingly straightforward integration of the tool into the existing system at the SAT meeting, there was acknowledgement by all informants that incorporating the ASQ3-TRAK tool as part of the child health check increased the time necessary for the check, which was a notable barrier. Informants discussed the possibility of separating the ASQ3-TRAK tool from the rest of the child health checks; however, while there may have been advantages to this approach, the key informants did not feel this was a solution as it detracted from the holistic approach to child health. Being able to plan for a longer consultation time would make the ASQ3-TRAK tool assessment more manageable, yet an appointment system was not considered to be appropriate or feasible in this context.

While the child health-trained key informants believed that separating the components of the child health check was not ideal, one of the AHWs suggested not only separating the ASQ3-TRAK tool from the child health check, but taking it out of the health centre. He believed combining the whole check would lead to rushing the ASQ3-TRAK tool whereas as part of an outreach service, there would be adequate time. He stated that “if
you’re going to do it…you might as well do it properly”. He suggested that the outreach role could be rotated among different staff, working alongside the Strong Women workers or FaFT workers. This approach was welcomed by the health centre manager who concluded that the health centre staff needed to reach consensus on the approach.

There was consensus among the key informants that every health centre would benefit from having a child health nurse. Nurses working remotely often have acute care training and one participant expressed that while nurses may be willing to pick up the child health portfolio “they possibly don’t really understand it”. The health centre manager stressed the importance of the child health portfolio being held and driven by one person. Her view was that it was critical to the success of any child health program:

I think it’s an important thing for everyone to have a knowledge of …every program [but] there needs to be a leader in the program in the health centre…that’s why I would push if there was one thing I could push, it would be to have a child health nurse in every community, a dedicated child health nurse, because I think you need someone. Like every program, you get so overwhelmed with all the different programs within a health centre that I think you need a leader in each program. (Key informant #3)

When informants were interviewed following the training, a system to incorporate the ASQ3-TRAK tool into the health centre practice had not been developed. However, all informants remained enthusiastic, discussing possible options.

**Improving access to care**

Informants identified a number of factors that they believed would improve families’ access to the health service and therefore to the ASQ3-TRAK assessment. All informants acknowledged the value of the Strong Women workers and, at the SAT meeting and in interviews, informants reported that the Strong Women workers helped families access care by improving communication between health practitioners and families, and by engaging families. The Strong Women coordinator saw their role facilitating the developmental checks as pivotal, leading to her participation in the TRAK training and the SAT meeting. The AHWs reported that having food available and the FaFT play group at the health centre on ‘Kids’ Day’ was a support to families, that encouraged them to attend the health centre.

Informants described other ways of overcoming barriers to engaging parents in the ASQ3-TRAk tool. The availability of the tool in Yolgnu Matha was considered by all to
be a valuable part of the process that made parents feel comfortable. The questionnaires were considered “relevant” by AHWs and they believed this would increase the acceptability of the tool and the process to parents. Ensuring parents understood the purpose of the developmental check and the ASQ3-TRAK tool was agreed by all informants to be necessary if parents were to engage with the process. This was described as a gradual process that required constant attention if parents were to realise that developmental checks were as important as other aspects of care:

If you can get them to think [the developmental check] is just as important, they’ll want a full check-up. To know everything’s all right. (AHW #2)

One AHW went as far as suggesting that parents would benefit from completing the training, to fully understand the rationale for the developmental checks. He believed this might address caregivers’ impatience. It was agreed by all that if more staff who worked with families and children outside the health centre had an understanding of the developmental check, parents would be more supported. Therefore, it was suggested that these staff should participate in the TRAK training.

As mentioned, AHWs believed offering an outreach service would improve access to developmental checks. One AHW considered this a more family-centred approach, providing the service to families at a time when it suited them rather than when it suited the health centre, and in an environment of their choice. The key informants recognised that the health centre may not be the ideal venue for conducting the ASQ3-TRAK developmental checks and were willing to consider other approaches that may better meet the needs of families and children, indeed offering more holistic care.

Having male AHWs involved in conducting developmental checks was “a fantastic model for the community” that encouraged fathers in the community to become involved in this aspect of the child’s care.

Competing demands: Child health a priority but at what cost?

The Yumurrku health centre had made a firm commitment to a child health program, as well as other program days, in an effort to develop the primary health care role of the health centre and ensure quality care was provided. Informants reported however, that to perform the primary health care role well takes considerable time. In health centres that show this commitment to primary health care, a lot is expected from health staff. One key informant reported that “we are expecting too much of the staff on the ground”
to perform their primary health care role and in addition provide acute care services. This tension is particularly challenging when the health centre is short staffed. Higher level management supported the focus on primary health care but did not resource the health centre appropriately according to informants. Informants describe that they feel they are already working to maximum capacity but when short-staffed they are required to work harder, to maintain programs, risking “burn out”:

…and because that’s where I’ve felt I’ve really burnt to a frazzle in the last couple of years, is that the more primary healthcare you do, the more work you create in a lot of ways. (Key informant #3)

Informants reported that at those times when the centre had been particularly short-staffed it was unfeasible to keep a room full of children waiting while performing a comprehensive developmental check on one child. One of the AHWs admitted that he would get through all other components of a check first and think “we’ll worry about [the developmental check] later”; however, it then would not get done. Child health checks were performed but the developmental checks were left, because the health centre was busy:

What has stopped me doing it is just [being] short-staffed here and just… didn’t get around to it because it was just busy. (Key informant #1)

Busyness, pretty much, in the clinic. And I suppose the - just doing the things that we’re comfortable with and not prioritising the things that maybe are important but that we’re not so familiar with. (AHW #2)

There was not only pressure from the community to see waiting patients, but staff perceived criticism from colleagues at times. Informants reported that some staff considered it unfair for one staff member to spend an extended period with one child completing a comprehensive child health check, while others were left seeing the remainder of children waiting. Staffing issues impacted on staff’s time in other ways. High turnover resulted in informants needing to spend time orientating and supporting new staff, taking them away from other core tasks.

**Infrastructure necessary for delivery of care**

Having the tool readily available was an important consideration for informants. The ASQ3-TRAK questionnaires, the illustrated booklet, the parent information sheets and the toy kit were supplied to health centre, with the practice guidelines. However, following the training, the materials remained in the training room for two months.
key informant explained that the clinic had been short-staffed and in a state of flux, so there had been no time to retrieve them. While this was by no means the only obstacle to performing the developmental checks, it was a significant issue, particularly immediately following the training. The AHWs remarked that it would have been helpful to have the ASQ3-TRAK tool “in front” of them, as a reminder. One AHW suggested there should be a copy of the tool and the toys in every consultation room so that it was accessible when needed.

The electronic health record, Communicare, had been introduced the month before the training was delivered and when interviewed some months later, informants reported that they were still learning how to use the system efficiently. However, informants believed that incorporating an electronic version of the ASQ3-TRAK tool into Communicare would improve compliance. It was thought this would generate an automated system that therefore would not have to rely on individuals remembering to use the ASQ3-TRAK tool. Communicare creates a reminder, or a ‘recall’ when a child health check is due. The recall remains on the child’s electronic record until the check is completed and the recall is deleted. Informants also believed this ‘flag’ would ensure the checks were completed.

The space available to conduct developmental checks was another factor that influenced the use of the ASQ3-TRAK tool, and that had already been identified in the training needs analysis (chapter five) as an important factor that hindered the delivery of care. The SAT discussion addressed the need to conduct the developmental checks in a private setting, to maintain caregivers’ privacy and avoid distractions for the child. The group discussed the possibility of securing a room that was not used as a thoroughfare. Informants reported that multiple families were often seen simultaneously in the kids’ room and it was difficult to conduct almost any part of the child health check, but particularly the developmental check. All informants agreed that a quiet, private space was necessary, preferably a room that could allow for two clinicians, multiple carers and floor space. The ‘Kids Room’ did not facilitate this, creating a barrier to conducting the ASQ3-TRAK checks.

Leadership within the health centre

The Yumurruku health centre manager was committed to the primary health care role of the health centre. She actively encouraged staff to complete further training that would enhance that role, particularly post graduate studies in remote health. Informants described being reminded and prompted to complete thorough health checks by the
health centre manager who appreciated the time taken to deliver comprehensive primary health care:

You can have someone that’s done ten consults and you can have someone that’s done one consult. It doesn’t mean the person who’s done the ten consults to the one consult has worked a lot harder…it’s how well you do that consult.

(Key informant #3)

As described above, child health was considered a vital role of the primary health care team and prioritised by the health centre manager. Key informants attributed the success of the HU5Ks implementation in Yumurrku to the health centre manager’s commitment, including supporting the nurse driving child health by allowing her to spend more time on her portfolio than many other managers would. The health centre manager reported that many of her colleagues did not share her views and failed to understand the complexity of completing comprehensive checks. She described that consequently, many do not make allowances for the time that child health checks need:

I’ve had said to me that…‘You only need 10 minutes to do the child health check’…‘they talk about all that rubbish that people are not interested in it’…There’s different attitudes. Those attitudes nowadays to me shouldn’t necessarily be acceptable. I think there should be…performance management… (Key informant #3)

Although considered necessary, the ASQ3-TRAK tool did increase the time taken to complete a child health check, which, as identified earlier, could be problematic for staff in a busy health centre. One key informant believed that it was necessary for health centre managers to recognise and support the increased time it would take. Similar to the shift that occurred regarding child health checks initially, she felt the health centre manager needed to aid the cultural shift that would be needed to permit staff to take the time for a developmental check.

Informants described that following training, stricter rules from the health centre regarding completing the ASQ3-TRAK tool may have ensured they were completed. One AHW reported that “if you get a boss saying you have to do it…then you’ve got the management behind it – you know what I mean?”. It was likened to the expectation that a sexual health screen would be conducted as part of the adult health check. It was felt there was not the same level of expectation for the developmental health check. However, key informants recognised that change took time in remote health centres.
Partnerships in the health centre

Partnerships within the health centre, and between the health centre and other agencies, were recognised as being important factors to support the implementation of the ASQ3-TRAK tool. Informants identified there were benefits in all staff completing the training, even for those staff who had child health training as it provided an opportunity to have a shared understanding which would result in staff being better able to support each other to conduct the ASQ3-TRAK assessments. A key informant reported that building the team by training all staff would also encourage team decisions about how to approach the developmental checks.

One of the AHWs identified that completing the training with FaFT staff strengthened the relationship with FaFT and could lead to health and education staff conducting the developmental checks together. Informants suggested that other staff who work with children and families in the community, such as child care staff and safety wellbeing officers, would also benefit from the training. Even if they did not complete the checks, informants recognised that other staff having knowledge and understanding of the process and of the ASQ3-TRAK tool, would enhance the relationships the health centre staff had with them and facilitate managing children with developmental problems.

The existing relationship between the health centre and FaFT in Yumurrku was quite strong and had been formalised by a memorandum of understanding. They already had what they considered a “team approach” with FaFT. This partnership had a dual objective; it encouraged families attending the health centre with young children to consider joining the playgroup, and families participating in the FaFT program to attend the health centre for child health checks. Despite the already strong working partnership, the SAT discussion identified that regular, structured meetings to formalise the information sharing between the organisations would be beneficial to improve communication about children with developmental concerns. During the interview with key informants four months following the SAT meeting, they reported that one meeting had taken place.

Although there had been little opportunity to do so, informants expressed a preference for administering the ASQ3-TRAK tool in pairs. It was acknowledged that the Strong Women workers and clinical staff already worked closely together in the health centre, with benefits to the families and the staff. Informants recognised that each clinician has different strengths that would complement the other and enhance the process. The suggestion for working together was not limited to AHWs, nurses and Strong Women.
workers but included other community based workers and FaFT staff. Key informants acknowledged, during the SAT meeting and during individual interviews following training, the need to decide on an approach and clarify the role FaFT would play.

**Ongoing training and support**

The initial TRAK training workshops were fully endorsed by the health centre manager and she acknowledged the need to ensure key Aboriginal staff and core health centre staff were trained thus facilitating the third training workshop.

Informants all agreed that ongoing support following the training was necessary to be able to embed the ASQ3-TRAK tool in the health centre. One AHW described that offering training in isolation was not uncommon in this context yet Yolngu staff needed ongoing support to practise their new skills and build confidence. During the SAT meeting, informants acknowledged the essential role of the Health Development child health nurse in providing support to staff who had participated in training and educating new staff. This responsibility was endorsed by the Health Development regional manager, also present at the SAT meeting. The child health nurse, one of the key informants, identified that her position involved working side-by-side staff in the health centre and she acknowledged that her role should involve providing ongoing support and mentorship to staff to complete developmental checks using the ASQ3-TRAK tool:

> I ideally would think that the child health person in our team could be someone who could do that training and provide that stuff on the ground… (Key informant #4)

However, soon after the training, the child health nurse moved to another position within the Health Development branch and although she continued to provide some support to the Yumurrku health centre until a new child health nurse was appointed, informants reported that there was no practical support provided relating to conducting the developmental checks. When the new Health Development child health nurse did commence, she was not formally child health-trained, had not undertaken the HU5Ks training and was not trained in the ASQ3-TRAK tool. Consequently, the health centre staff did not receive any support or ongoing training around the developmental checks from the Health Development branch.

The health centre manager agreed that the Health Development child health nurse needed to be responsible for providing formal training and ongoing mentorship. However, she identified that support for staff needed to include frequent reminders to
perform the developmental check, ideally by a support person who was available on the ground, such as the holder of the child health portfolio. The health centre manager also emphasised that a health centre staff member needed to provide “refresher” training to staff who had already participated in training, and take new staff through the ASQ3-TRAK tool in addition to the other aspects of the child health program. It was her view that the staff member with the child health portfolio should be responsible for the day-to-day program support, such as reminding staff to complete checks, but also for ongoing training and support of new staff. She suggested that ideally there would be a nurse and AHW sharing the portfolio, which had been the case at the Yumurrku health centre. At the time of their interviews, the health centre manager and the nurse with the child health portfolio agreed that the staff who shared the child health portfolio would hold an ASQ3-TRAK tool ‘refresher’ in-service for all the health centre staff.

Informants did describe feeling supported by other staff in the health centre who had completed the training. One AHW highlighted the value of being able to conduct the ASQ3-TRAK tool with the Strong Women worker who had also participated in the training, which further increased his confidence. Another AHW suggested the AHWs could be a support to the FaFT workers who had completed the training. Despite declaring the importance of ongoing support, both AHWs reported that they still felt confident to demonstrate how to use the ASQ3-TRAK tool, some months after completing the training and not having used the tool very often.

Training of new staff was not straightforward according to key informants. Orientating new staff was recognised as being a time-consuming and labour-intensive task. One participant acknowledged that when orientating nurses who were only going to be working at the health centre for six to eight weeks, she did not think it was worth the investment to inform them of the ASQ3-TRAK tool.

**SUMMARY**

This chapter has presented a summary of the Yumurrku health centre case study, providing the context for the implementation of the TRAK training and the ASQ3-TRAK tool in this setting.

The evaluation findings in Yumurrku suggested that participant reactions to the training were positive. The training was well attended and all informants found the training relevant to their work and appropriate in its methods. Participant knowledge, skills and
confidence in their ability to check child development, detect problems and provide advice to parents were found to improve following the training.

Although there was significant support for the TRAK training in Yumurrku, the health centre staff were challenged to apply the ASQ3-TRAK tool in their work. Factors identified as influencing the implementation of the ASQ3-TRAK tool included the major upheaval to the health centre’s functioning as a consequence of the change in governance resulting in significant loss of staff morale and motivation. The health centre that had previously seen very little staff turnover with strong working relationships and strong leadership, had lost those supports that were predicted to enable the implementation of the innovation.

Despite the challenges, informants spoke positively about ways of overcoming barriers that had been hindering the implementation. The team appeared positive and eager to implement the ASQ3-TRAK tool.

The findings of this and the following case study, including the barriers and facilitators to implementation, will be discussed in detail in the cross-case synthesis in chapter nine.
CHAPTER 8 EVALUATION OF THE TRAK PROGRAM - CASE STUDY N

INTRODUCTION

As introduced in the previous chapter, the case study is presented to illustrate the complexity of undertaking research and implementing new innovations in the remote Australian Aboriginal context. This chapter therefore follows the same outline as chapter seven. Section one introduces the Nhanhala health centre as the case study. This provides the context of this study and illustrates the challenging circumstances, unique to this setting.

Section two outlines the implementation of the TRAK program and the issues faced when conducting the research in this community. Section three presents findings of the process evaluation of the TRAK training program based on the Guskey (2000) model introduced in chapter three and presented in detail in the previous chapter.

This chapter focuses on the initial analysis of the findings and exploration of the barriers and facilitators to the implementation.

8.1 INTRODUCING THE NHANHALA HEALTH CENTRE

In chapter one, the NT context was introduced and chapter three provided more detail on the demographics of the two communities involved in the study, providing the context for the cases. In this section, I go on to describe the ‘case’, that is, the Nhanhala health centre, and the challenges that needed to be overcome for inclusion in the study. The community name and all person’s names used are pseudonyms.

The health centre setting

Nhanhala has a Remote Health-run primary health centre as well as a community controlled Aboriginal Medical Service (AMS). The health centre provides primary health care to the community and to the 40 or so outstations. The AMS is responsible for providing care alongside the health centre, primarily outreach and support, and co-ordinates community programs, such as chronic diseases, men’s and women’s health
programs, mental health and specialist renal services. The AMS employs a health service manager, a number of health providers, an administrative officer and driver.

The Nhanhala health centre is open five days a week from 8am until 5pm and is closed over lunchtimes and, like most Remote Health clinics, on Thursday afternoons for staff professional development. A staff member is usually rostered to sit at reception and logs patients onto the electronic system as they present. The health centre operates on a walk-in basis, that is, there are no appointments and patients generally request whether they wish to be seen by an AHW, a nurse or the doctor. Patients who are required to attend for follow-up may be picked up by clinical staff as at the time there is no driver. The health centre does provide an after-hours on-call service for emergencies and staff are rotated through an on-call roster. The general working area is at the back of the clinic, beyond the clinical rooms. This large open space also functions as the staff tea room and the health centre manager’s ‘office’.

Approaching the health centre from the patient entrance, there is a single heavy door in a wide panel that has small barred windows. The waiting room is long and narrow, and other than a bench seat, is bare. Two glass partition windows divide the waiting room from the small reception office and although transparent, much of the partitions are covered in posters and flyers, obscuring any view in or out. A door to the left of the glass partition leads into the emergency room and is used as the thoroughfare into two other clinical rooms. Another door to the right of the partition leads directly into the kids’ room, which is also entered via a second door from the reception office. The doctor’s office is adjacent to the kids’ room and is entered via that room. Thus, the kids’ room has three doors and is used as a thoroughfare. A clinical room used by the chronic disease nurse lies at the end of the waiting area.

The kids’ room is a brightly lit room and has decals on some of the walls and a mobile hanging from the ceiling. A cot is used as the examination couch and change table. The baby scales sit in this room and the cupboards are stocked with general supplies and other supplies that are sometimes needed or provided to caregivers, such as packaged infant food or nappies.

**The key actors**

The health centre staff includes a health centre manager, six AHWs, four remote area nurses, a midwife and, for three days a week, a doctor. The health centre employs a health centre manager who answers to the Area Service Manager of the Remote Health
branch of the NT Department of Health. The AMS employs the doctor as well as a maternal child health nurse, Gloria, and a chronic diseases nurse who often work from the health centre. The Health Development branch of the Department of Health employs a child health AHW, Margie, who works from the health centre. Therefore staff working together in the health centre are managed by three different departments or organisations.

Part way through the consultation process in September 2010, a new health centre manager commenced in the role. He had moved to Nanhala a year earlier and was working as a nurse at the health centre when the manager’s position became available. The other nursing positions are filled by staff who have been in the community for a few months; two permanent nurses and an agency nurse who planned to be in the community for a few months only.

AHWs are all from the community and speak Western Arrarnta. The child health AHW, Margie, has no direct supervisor in the community as her manager sits in Alice Springs. Margie is a senior woman in the community who assumes the chair of the AMS board over the course of the project. She is on numerous committees and is often called upon for her opinion and involvement in matters of importance to the community. Two of the female AHWs have worked in the health centre for over 15 years, and a third is the youngest of the group but has worked in the health centre since completing her training four years earlier. A senior male AHW works in the men’s clinic with a trainee AHW. Kelly was an AHW with many years experience and now works at the AMS on the development of a family wellbeing centre. She has a grand vision for the community and is committed to maternal and child health. Although originally an East Arrernte woman, Kelly married into the community.

Staff from the FaFT program play a significant role in working with parents of children under 3 years. The program’s aim is to promote early learning and so there exists a major overlap with the aims of the HU5Ks developmental checks. The program is run from the family room at the rear of the AMS offices. The FaFT family educator is a non-Aboriginal early childhood trained teacher. The FaFT liaison officer, Hannah, is a senior Aboriginal woman who was previously employed as an AHW. Hannah is fluent and literate in both Western Arrarrnta and English and with Margie and Kelly, is one of the women involved in the adaptation of the ASQ-3, including the translation.
Gaining access and support for the study

The Health Development branch suggested I approach the Nhanhala health centre to participate in the study. Those consulted thought it would meet the requirement of an ‘exemplary case’ (Yin, 2009). That is, a case that had an established commitment to implementing the HU5Ks program with health centre support for child development, with a commitment to having AHWs in the key role of providing child health care including developmental monitoring, and health centre support for AHWs to be primarily involved in the project. The health centre had been one of the pilot sites for the NT Government’s Healthy Under 5 Kids (HU5Ks) program, had one of the few child health AHWs employed in the NT and, at the time of recommendation, had a supportive health centre manager and an enthusiastic and capable Health Development child health nurse supporting the staff.

On my first visit to Nhanhala health centre in February 2010 I met with Margie, the child health AHW, and the then AMS maternal child health nurse who left that position soon after. I did not meet the health centre manager and I had no discussions with any Remote Health staff. Margie recommended involving a number of key women from the community in this project, including Kelly at the AMS. The then management at the AMS considered this project a good fit with their new program of health delivery and endorsed the project. They took the proposal to the AMS board, of which Kelly was the chair at the time, and Marion was a member. I returned to Nhanhala in July 2010 and spent two days with Kelly discussing and developing the project. At this stage, the AMS and the Health Development branch were fully supportive of the project proceeding with their staff. Attempts to meet with the health centre manager were unsuccessful however; he was again away on that July visit and was not available for a teleconference meeting in September 2010 arranged by the Remote Health branch to discuss the project.

By my next visit in October 2010, Leslie had been appointed as the new health centre manager. I intended to use the meeting to explain the project; however, before I could begin Leslie expressed that he thought Nhanhala health centre should not be involved. He did not believe the AHWs were in a position to take on more training as they were “barely performing the essential duties they are already trained to do”. Furthermore, he didn’t see that child development was the domain of the health centre and viewed this as the responsibility of the Health Development child health nurse and the AMS maternal child health nurse. Margie, Kelly and Gloria all felt very strongly that the AHWs should have been consulted and allowed to choose whether or not they were involved. The AHWs in particular felt disrespected and sidelined by management. The three women
began planning ways of proceeding with the project without the health centre manager’s involvement or endorsement.

Although I had the support of community elders and AHWs, the AMS, the Health Development branch manager and child health nurse, and support in principle from the Remote Health branch who oversaw management of the Nhanhala health centre, I did not have the support of the Nhanhala health centre manager. This had a number of implications. Although another health centre could have been selected, the process had moved too far in Nhanhala to withdraw. The rest of the community felt very strongly about proceeding and felt we should not “give up”. I felt I had an ethical responsibility to the community to proceed.

The Health Development child health nurse supporting staff at the Nhanhala health centre persisted in trying to engage Leslie in the study. In March 2011, she arranged a meeting with AMS and Health Development practitioners who agreed there was value in the Nhanhala health centre’s involvement, in the hope that Leslie might see the potential benefits and reconsider. Although Leslie maintained his view, his manager, the Area Service Manager, was persuaded by the discussion with the group and suggested a compromise. Approval for one AHW to participate in the training was granted. However, not long after the announcement I was informed that the AHW was moving from the Nhanhala health centre to work at a nearby outstation and wasn’t going to be able to participate after all.

In June 2011, I made my first trip to Nhanhala to begin planning the cross-cultural adaptation of the ASQ-3. I had arranged a meeting with Leslie during that visit to discuss procedures for the subsequent training and review plans for proceeding since the AHW was no longer available. However, Leslie reneged on the agreement to allow one AHW to participate, returning to his previous reasons and expressed that the views of the other community members were not relevant to the management of the health centre.

However, with the support of Kelly and Margie, and of the AMS manager, the project was proceeding and a group of seven community members gathered to discuss the adaptation. The AMS manager had demonstrated in-principle and practical support for the study and its aims. When I visited Nhanhala, leading up to and during the training, I based myself at the AMS office where I was offered office space and where the AMS family room was made available for meetings. Equally, the Health Development branch’s support of Margie participating in the adaptation and the training, and Margie’s
dedicated involvement in the translation process, was further confirmation of the commitment to the project.

I proceeded with plans to deliver training in November 2011 to non-Remote Health staff (that is, Health Development and the AMS clinical staff and FaFT staff) despite the obstacles and always remaining hopeful that others may come on board. In early August 2011, the Nhanhala health centre suddenly gave approval for the study to be conducted. Although there was official agreement, I had to proceed without the genuine support of the health centre manager. This was the Area Service Manager’s directive; Leslie’s views about the study had not changed.

However, more changes were afoot. By October 2011 Leslie was no longer working at the Nhanhala health centre and one of the health centre nurses had stepped into the acting health centre manager. She was in the position to make the decisions about the project and she fully supported all the AHWs participating in the study. Although the acting health centre manager was on board, managing the health centre and staffing issues was their priority, so theoretical support did not necessarily translate into practical direction for staff.

8.2 THE STORY OF THE TRAK IMPLEMENTATION IN Nhanhala

Classroom training

One training workshop was delivered in Nhanhala, in November 2011. Two workshops had initially been planned, to reduce the impact of staff absences on the health centre. However, this plan needed to be reviewed in view of the circumstances leading up to the intended workshops. Firstly, although the acting health centre manager was supportive, a research project was not the priority for a service that was reacting to immediate needs. Secondly, this period saw two of the health workers on extended leave due to prolonged sorry business following a suicide death in the community. It was not possible to meet with the AHWs during this period as there are strict community rules regarding when people are permitted to return to work and take part in other, regular activities. This period of bereavement lasted until the funeral was conducted, which was the week before the planned start of training. In view of these circumstances and the uncertainty of AHW availability, the first training workshop was cancelled and the two workshops were consolidated into one, to increase the chance of achieving a quorum of participants.
The training workshop included the four AHWs who had been interviewed for the training needs analysis, Gloria the maternal child health nurse from the AMS, and the Aboriginal FaFT liaison officer, Hannah. Although some of the participants were working in child health or early childhood education, none had any formal training. The Area Service Manager, who was also the regional AHW support person, had intended to participate but did not attend. The week of the training, the health centre was staffed by one permanent nurse and two agency nurses and the acting health centre manager did not feel the health centre had the capacity for any nurses to attend the training. However, an in-service was provided to the nursing staff at the health centre the week of the training. The acting health centre manager did express her desire to see all the health centre staff trained and the possibility of delivering another training workshop was discussed.

Training in Nhanhala took place in the ‘family room’ at the AMS grounds which was normally used for the FaFT program. Similar to the process in Yumurrku, a conducive learning environment was promoted first, by arranging seating so that all participants were sitting around a table, which encouraged face-to-face exchanges. Second, by encouraging the focus of attention to move from one single point in the training room to different points, achieved by alternating between a whiteboard and posters created in the training and hung on the walls, further promoted the learning environment.

The training schedule had been provided to the acting health centre manager and copies had been left at the workplace for all the health workers who had been selected to participate. The training schedule indicated that the training would commence at 9am and provided details of the venue and a detailed program. On the morning of the first day of training I met Tracey in the AMS office at 8am, where she acknowledged the training and indicated she would send AHWs over. However, by the designated starting time none of the clinical staff had arrived. Although a late start, all the AHWs arrived together at 10.30am and training began. The beginning of Day 2 was dramatically different. All participants were at the training venue, ready to start, by 9am.

On Day 1 of the workshop, all participants were Aboriginal and had very similar training and background. The maternal child health nurse had been unavailable on Day 1, but attended on Day 2. This posed a slight dilemma, as the group had already ‘formed’ on Day 1, through ice-breaker activities and sharing of stories as well as through the shared learning that creates a bond. Although the maternal child health nurse was well known to all the learners, she had not been part of that learning. However, excluding her from the remainder of the training did not seem an option that would serve the group in the
long run as she could provide support for them to implement the training in the workplace. Accordingly, she participated.

As discussed in the previous chapter, quieter participants can find it difficult to contribute in group learning environments. It was noted that on Day 1 all members of the group participated, however, on Day 2 the group dynamic changed and some members seemed to participate less freely. The same strategies described in chapter seven were used to encourage the quieter participants, although there was a sense that some of the AHWs no longer felt as comfortable or confident to share openly. This was not so significant to the individual learners’ progress, as on Day 2 there were more practical demonstration and role-play activities, and less discussion.

**Practical training sessions**

The classroom training had been delivered on a Monday and Tuesday, leaving the remainder of the week to complete the practical sessions, which took place in the AMS family room, normally used for the FaFT program. All six participants completed the practical training sessions, completing either one or two developmental checks each, using the ASQ3-TRAK tool. In total, seven children and their caregivers participated in the practical training.

The maternal child health nurse and the child health AHW assisted in identifying children who were in the eligible age range for the developmental check, through the health centre records. In addition, caregivers who were attending the FaFT program were invited to participate if their child was in the appropriate age range. The participants invited the caregivers to participate and the research team obtained written informed consent from the caregivers.

**Booster training**

The booster session was delivered in the workplace, three months after the training workshop. It aimed to reinforce knowledge, skills and confidence gained in the initial classroom training and to further encourage positive attitudes towards developmental checks. Three of the participants who attended the training workshop were available to participate in the booster training, which was conducted at the Nhanhala health service in March 2012 over five days. They included two AHWs and the maternal child health nurse. The remaining participants were unavailable.
During the booster training the ASQ3-TRAK was administered to six children. Recruiting families to participate in the booster training was a testing experience. Firstly, in a community the size of Nhanhala, with approximately 71 children under the age of five years, there are only small numbers of children who require one of the seven developmental checks at any one time. Secondly, although caregivers agreed to attend they were then unavailable at the agreed time, or would remain elusive. Staff spent considerable time driving around the community looking for those families who had agreed to attend. The staff participating in the booster training described that they faced a similar challenge on a daily basis, when attempting to engage parents in attending for well child checks.

The booster training recap was conducted with each participant individually. Using the ASQ3-TRAK tool itself and the ASQ3-TRAK guidelines (see Appendix 9), the elements of the tool and the process were discussed. The participants were supervised while administering the instrument in the health centre and provided with coaching during the consultation and with feedback afterwards. Following this practice session, the three participants each conducted a second developmental check. This second administration of the ASQ3-TRAK was observed without coaching, using a structured observation checklist to assess the developmental check conducted by the trainee (See Appendix 2b).

Conducting the System Assessment and identifying necessary supports

As described in chapter six, the One21Seventy Systems Assessment Tool (SAT) was used to generate discussion and collect information about the health centre’s systems known to be important for supporting quality clinical care, but particularly to identify support for the effective transfer of the training to the workplace. The Systems Assessment discussion in Nhanhala was conducted two weeks after the training was completed, in early December 2011, a date agreed on with the acting health centre manager, who was eager to participate. The three hour meeting was held over lunch in the community and the same facilitator participated in both community Systems Assessments.

Staff from the health sector, including both government and AMS, and both clinical and management staff, and from the education sector were invited to attend. However, despite their enthusiasm, neither of the health service managers, nor the Area Service Manager attended. Those in attendance were another acting health centre manager (a relieving nurse); Gloria, the AMS maternal child health nurse; Margie; the child health
AHW; the Health Development regional manager; the Health Development ear health coordinator; the FaFT liaison officer; the FaFT educator; and the TRAK project research assistant. All the training participants were invited to attend; however, only the child health AHW attended the SAT meeting.

The facilitator gave a very brief overview of the Systems Assessment and using the Systems Assessment Tool to guide discussion, the five systems were scored as outlined in the previous case study.

8.3 Findings - The implementation effort

In Nhanhala, six staff participated in the one training workshop delivered. Of these participants, five were Aboriginal staff - four AHWs and one FaFT worker. Of the six AHWs practising at the health centre, four participated in the training program. All six participants completed the practical training. Five participants returned the completed feedback survey.

The post-training semi-structured interviews included all four AHWs and one key informant. I conducted all interviews, three to six months following the training workshop. Repeated attempts to interview the health centre manager were unsuccessful. The Health Development branch child health nurse position remained unfilled for a significant period of the study, and when one was appointed she visited the community infrequently and hence was not interviewed.

Three participants from the initial training were available to take part in the booster training. I undertook observations of the participants during the booster training.

The following section details how each of the first three levels of the Guskey (2000) model for evaluation of professional development was applied to guide the evaluation of this study. It describes the quality and level of the implementation of the TRAK training and of the ASQ3-TRAK tool.

8.3.1 Participant reactions

Participants reacted positively to the training and reported high levels of satisfaction in Nhanhala. All five respondents who completed the feedback survey strongly agreed or agreed that the workshop was relevant to their work. The open-ended questions on the training feedback survey elicited positive comments and there were no suggestions made
for improving the training. The responses to the question “What was the best part of the training?” related to content about developmental milestones, process of sharing stories, the guided step-by-step approach and practical demonstration:

I enjoyed the training; it brings me back to knowing and watching for the child development in my work. And delivery of the training was great…I learnt a lot. (Training participant)

AHWs also gave positive feedback about the training in the interviews. All reported they found the training interesting and welcomed learning how to use a worthwhile tool that helped assess children. There was excitement expressed regarding learning about the importance of the early years and some respondents seemed moved to discover the difference caregivers can make in children’s lives. All the AHWs reported that the training was enjoyable and specifically enjoyed having parents and children involved.

These findings were supported by the high level of attendance. All participants who attended on Day 1 completed the training, attending all sessions of the training workshop including the practical session, thereby achieving 100% completion. Notably, while the AHWs all came to the training over one hour late on Day 1, on Day 2 all participants were at the training room at the agreed starting time, indicating satisfaction with the first day’s training. Participants were observed to be engaged during the workshop, albeit with some activities more than others, however the fact that there were no withdrawals over the training suggests a high level of satisfaction.

Participants all gave feedback that they were very satisfied with the training methods. All five respondents indicated on the feedback survey that they strongly agreed or agreed that the design of the training (level of difficulty, duration of training, delivery methods and materials) was appropriate. Interviews supported this finding. Notably, AHWs described the training approach as being appropriate and relevant. They valued the different modes employed and in particular appreciated the interactive and practical activities, one AHW describing that “seeing and doing is a better way of learning”.

There was consensus that the practical training, including the booster training, helped to reinforce learning and to build confidence:

I think the more you do things like that, you know, it’s better. It sort of sets in.

(AHW #5)

All participants welcomed the practical sessions and were happy to be supervised in the practical session, with the exception of the youngest AHW. She described feeling
nervous and did not enjoy being watched closely during the practical session. She expressed some ambivalence, acknowledging that it was a useful way to learn but felt self-conscious in front of the caregiver, as if being in the position of learner made her lose face with the caregiver. Despite this, she completed three checks in total and notably none of the participants avoided this component of the training.

The AHWs reported that they felt comfortable doing the training with staff from different disciplinary backgrounds. My observation of the group on Day 2 suggested that the entrance of the nurse altered the dynamic and some of the AHWs did not participate as freely. However, this may have been a result of this member not having become part of the ‘group’ from the initial forming of the group on Day 1. In other words, any extra person joining the group on Day 2 may have had a similar effect regardless of their disciplinary background. Nevertheless, the AHWs all reported that not only did they feel the group membership was appropriate but that more staff could have been included, such as child care and early childhood staff.

The AHWs identified that more community members completing the TRAK training would ensure they all had the same “basic knowledge”. They considered there was value for all staff to improve their knowledge and awareness about early childhood and the importance of monitoring, even if not conducting child health checks regularly. There would be benefit of FaFT and child care staff to have the understanding to be able to promote the developmental checks to parents and caregivers in the community. AHWs all agreed that it was especially important that the nurses, including the health centre manager, all complete the training. This would ensure all health centre staff understood the purpose of the ASQ3-TRAK and there would be greater likelihood of staff supporting each other to complete it.

### 8.3.2 Participant learning

Level 2 of the Guskey model aims to evaluate the extent to which the change in skills, knowledge and attitude occurs. The training feedback surveys, observations of training participants and interviews with AHWs and the key informants, provided data regarding participant learning.

#### Knowledge and skills

Interviews were conducted three to six months after the training and all informants, except the child health AHW, reported that the training improved their knowledge.
Most talked about the ASQ3-TRAK tool and the training as adding to their understanding of child development and how to monitor children:

I’ve learnt heaps! Yeah… from doing it and from you. (Key informant #5)

Most of the AHWs acknowledged that they knew little about typical child development before completing the training. Even those with young children and grandchildren described learning new information about development and the impact the child’s environment can have on their developmental and long-term outcomes. The training led them to reflect on their own children’s and grandchildren’s early experiences.

The AHWs noted that the training provided them with the knowledge necessary to be able to communicate with caregivers. The training, along with the tool, provided them with the skills to enquire about the child’s development and to provide advice in a way that the caregivers would understand. Understanding the importance of early childhood development and of early brain development aided their ability.

One of the AHWs described an appreciation for the importance of communicating sensitively with caregivers about their child’s development, particularly in those situations where a child has developmental problems. The AHWs recognised that the tool can be used not only to demonstrate skills the child has acquired, but also to demonstrate activities caregivers can practise at home with their child to promote development:

It’s good to talk to mother and show her the tools, what the child can do. While we’re doing that… we can explain it to mum. This is ‘cause some mums don’t know… She might go back and do the same with the child at home… plus they can teach other parents or young mothers that don’t really understand. (AHW #6)

The training increased participants’ awareness of the HU5Ks program and other child health services. Four of the five respondents reported on the training feedback survey that they strongly agreed or agreed that after the training they had a greater understanding of ECD policies and guidelines, such as HU5Ks. Following the training AHWs were able to discuss the HU5Ks program, whereas prior to the training they were not able to name the HU5Ks program and were unaware that it included a developmental check. While all respondents (including all the AHWs) on the feedback survey agreed that they had a greater understanding of services available to promote
child development, in the interviews some AHWs admitted that they were still not entirely clear on services available and what services such as the FaFT program offered.

As described in chapter six, opportunities to assess each participant’s ability to achieve the learning objectives were also incorporated into the training. A number of activities built on knowledge, reinforcing the same principle. For example, Day 2 began with a true/false activity as an ice breaker that reinforced learning from Day 1. The group engaged with the activity and participants demonstrated that they had acquired and retained learning from the previous day.

I observed further demonstration of skills acquired during the practical session. This session, completed as part of the initial workshop, was a training session and not a formal assessment, as I was providing coaching and guiding. However, all participants demonstrated that they had acquired the desired skill and were capable of administering the ASQ3-TRAK. They were able to explain the developmental check, administer the tool with the toys, score the ASQ3-TRAK and provide feedback to caregivers including providing the anticipatory guidance handout.

Two of the three participants who were available to complete the Booster Training had used the ASQ3-TRAK in their workplace since the initial training. They both demonstrated a very high level of skill in their first practice after reviewing the materials and guidelines one-on-one, requiring little prompting. They displayed a sophisticated and confident approach conducting the check, demonstrating a commitment to the children and families. The third participant, who admitted to being quite nervous, did not appear as confident and needed some prompting during the coaching session. Debriefing following the practice revealed that the two participants with some experience using the tool were able to reflect on their practice and offer an accurate self appraisal of areas for improvement. The third participant demonstrated less insight into how the session could have been improved.

The booster session was designed to reinforce the training but also provided an opportunity for assessment of the participants’ skills. The three participants underwent formal assessment, using the structured observation check list during a developmental check using the ASQ3-TRAK. All three participants demonstrated a high level of skill, with improvements found between the practice and the assessment of all participants, but particularly in the participant who had the least experience with the tool. Almost all

---

16 See chapter three for a description of the checklist and Appendix 2b for an example.
skills were either completed or partially completed and the tasks that were overlooked were minor omissions. No difficulties were encountered with the scoring, interpreting or recording.

Change in attitudes

A consistent report from all participants was that the training increased their confidence. The respondents all strongly agreed or agreed that the training increased their confidence in enquiring about child development, and picking up developmental problems, while four of the five strongly agreed or agreed that they felt more confident providing simple advice, with one respondent reporting she felt neutral. The interviews confirmed these findings. AHWs described feeling more confident in dealing with children and importantly, more confident to provide advice to parents about promoting child development. One AHW reported quite emphatically that learning about simple activities that can promote a child’s development in all domains increased her confidence generally, and more specifically:

[The training] made me more confident in being a mother! (AHW #8)

The child health AHW who claimed there was no increase in her knowledge did describe that the training built her confidence by reinforcing that her practice was appropriate. She repeated this view a number of times and felt this emphasised the importance of her role:

Yeah, it makes me feel “oh, I am doing the right thing”. (AHW #5)

The training led some participants to change their attitude to child health generally, becoming much more interested. One of the AHWs expressed that having done the training she was now more interested in working with children and interested to take on the child health portfolio. She reported that she was interested in doing HU5Ks assessments – something she was unable to name in the pre-training interview. This finding was supported by the maternal child health nurse’s report. Another AHW described being more interested in assisting the child health AHW and maternal child health nurse to complete child health checks, following the training.

Behavioural intention

One AHW commented that she felt she was likely to use the ASQ3-TRAK tool because she no longer felt “nervous” after having completed the training and being familiar with the tool. All respondents indicated that they strongly agreed or agreed that they felt
they could use the ASQ3-TRAK tool in their work. AHWs felt they were able to explain confidently to the caregivers why the ASQ3-TRAK was necessary, how to administer the questionnaire and how to give the caregiver feedback. They were now able to pass this important information on to caregivers confidently and with authority and one AHW projected a pride in this role:

…after the training, I felt – even though I don’t usually see kids – felt more…confident about talking to them about their kids and just telling what’s normal and what’s not. (AHW #7)

The key informant’s comment perhaps sums up the attitude following the training:

Gee, we can’t not do this! (Key informant #5)

8.3.3 Organisational support and change for implementation of the ASQ3-TRAK tool

As in the previous chapter, the following section outlines where there was support for the implementation of the TRAK training and the ASQ3-TRAK and where the necessary changes did occur. It also presents the participants’ perceptions of the barriers that existed to providing support and instituting change.

Data for these findings were collected at two time points: first, immediately after the training workshop during the Systems Assessment discussion; and second, three to six months after training during individual interviews. The findings are categorised into the same themes as in chapter seven: workforce stability; child health delivery system; improving access to care; competing demands; infrastructure; leadership; partnerships; and ongoing training and support.

**Workforce stability**

Considerable staff changes took place in the Nhanhala health centre. Just prior to the training being delivered, in November 2011, the health centre manager left the health centre and over the next 12 months there were a number of acting health centre managers who remained for periods of a few weeks only. One of the remote area nurses stepped into the acting health centre manager position for a few months, but then returned to working as a nurse until she left in March 2012. During this period, the other permanent nurse also left and consequently the health centre was staffed by agency nurses, some of whom had worked in the Nhanhala health centre previously, but no permanent nurses were working in the clinic. By November 2012, when I returned for
my last field visit, a permanent health centre manager had been appointed, although she was on leave and yet another acting manager was in the position for a month.

The AHWs remained constant, although often not able to be at work. Sorry business took its toll over this period. Margie, the child health AHW and Gloria, the maternal child health nurse, were also constants in the community however other departures left unfilled gaps at the AMS and the community. Kelly, the champion of the project, left the AMS before the training was delivered due to a serious medical illness. Although she eventually returned home from hospital, she never returned to work. The AMS manager also left the community just as the training was about to be delivered and his position was not permanently filled for over a year, covered intermittently by acting managers. Changes in the structure of the Health Development branch resulted in the child health nurse, who had been an enthusiastic supporter of the study, no longer working as the child health nurse providing services to Nhanhala. The position remained vacant for more than a year.

**Building delivery systems to support child health**

During interviews, informants reported that there was no structure provided in the Nhanhala health centre that guided practice. For example, the health centre did not assign portfolios to staff, and there were no ‘program’ days for any areas of primary health, such as child health, women’s health or chronic disease. This was considered a weakness in the system and all informants described their preference for structure. Although there were attempts to create patient recall lists and post them around the community, this seemed to have little effect and one informant described the system as “haphazard…what comes through the door, gets seen”.

The preference for a ‘Kids’ Day’ was an issue that arose repeatedly from the SAT discussion. The practitioner group was engaged in adopting this and felt it would lead to a more systematic approach to conducting the ASQ3-TRAK assessments and to follow-up children on the recall list who missed their child health checks. In interviews, informants also repeatedly expressed their wish for a ‘Kids’ Day’ to be reintroduced. A designated program day had been practised in the past and in addition to creating order, it was considered a useful way to support staff to up-skill by focusing on one particular area. However, despite the many perceived advantages identified to operating a ‘Kids’ Day’ once a week, six months post-training it had not yet been implemented.
Although recall lists were generated, families did not always attend and follow-up was inconsistent. At the SAT meeting, staff discussed the importance of monitoring whether children’s checks were complete; in other words the need for an efficient recall system. The maternal child health nurse suggested creating a calendar, which included all children under five years, that could serve as an instant visual guide of checks due in any given month. On returning to the community three months following the SAT meeting this calendar had been created and was being used in the kids’ room. It required regular updating, since any new births needed to be added to the list in addition to missed recalls. However, the list was easy to use.

Soon after the training, the maternal child health nurse and child health AHW reported that a new AMS family centre was being built across the road from the health centre. Their plan was to transfer some components of child health to the family centre, such as all developmental checks and much of the child health check that did not require invasive medical treatment. The families would be sent over to the health centre to have any medical issues addressed and for immunisations or medication.

Despite reporting on considerable obstacles to performing developmental checks, all AHWs repeatedly asserted that child health, including developmental checks, is “everyone’s business”. Staff remained adamant that the necessary structures would be implemented that would facilitate the checks. Staff maintained that they would get the ‘Kids’ Day’ up and running by continuing to “push away at it”. Informants were noted to remain committed to using the tool, one key informant stating:

> We have to do it. So much effort has gone into it. When you've done so much work...we have to do it. It'd be such a waste. Then...someone else comes along in 5 years and re-invents the wheel. (Key informant #5)

**Improving access to care**

Despite creating the calendar system for easily identifying children who were due for checks, informants reported that this had not seemed to increase the likelihood of seeing children and families for child health checks:

> No, we’re not getting them in like we should be getting them in. (Key informant #5)

Informants all agreed that parents needed to be engaged to attend for the developmental check. AHWs considered it their duty to help parents understand the purpose of the ASQ3-TRAK tool and how long it was going to take. Without preparing parents,
informants thought there was a greater risk of parents being deterred by the length of time necessary to complete the developmental check. Some considered an appointment system might be useful. This would give the practitioners the opportunity to better communicate to parents what to expect from a comprehensive child health check that included the developmental check, while also enabling the practitioner to plan for the check.

One informant suggested that involving staff outside the health centre would aid in engaging parents. Providing the TRAK training to all staff, not only clinical staff, who work with children and their families in the community would inform them about the nature and purpose of the developmental checks and in turn they could promote the checks to the families. Another suggested inviting all caregivers to attend the development check, so that they would understand the importance by being involved and subsequently would be more likely to support their family members to attend for the checks.

The SAT discussion highlighted the value to the community of including the local Arrarnta people in the development of the ASQ3-TRAK tool. The translation of the questionnaire into Western Arrarnta was important and the group felt this engaged parents through showing respect for their identity and culture, a view that was reinforced in interviews. However, it was reported that the health centre did not always show respect for community members.

AHWs reported that patients were discouraged from attending the health centre by the attitude projected by the centre and the manner of some staff. Informants reported that non-Aboriginal staff often made “mistakes”; showing a lack of sensitivity to the cultural needs of the Aboriginal patients. One informant observed that staff were left unchecked and patients rarely spoke up:

Because I don’t think the people themselves, the Aboriginal people themselves, are strong enough to tell us off and say, “You mustn’t do that again.” (Key informant #5)

The key informant believed that there was insufficient effort dedicated to cultural competence training for remote health staff by the NT Department of Health, and few resources, if any, invested to ensure the health centre was culturally safe.

Respecting privacy was another factor identified as necessary for improving families’ access to care. This issue arose at the SAT meeting and the action planned included
ensuring privacy whenever possible when using the ASQ3-TRAK tool, such as simply keeping the door to the kids’ room closed. The need for privacy was again reiterated in the interviews. One informant considered this a simple right that would be afforded any patients and Aboriginal patients in community should not be any different.

**Competing demands: Child health not a priority**

Acute care was reported to take precedence in the health centre. AHWs reported that they did not feel able to participate in primary health care programs, such as child health checks, because of the expectation from health centre managers that they should focus on “sick people”. This expectation was often compounded by the patients themselves who insisted on being seen by certain AHWs, even though that AHW might have been unavailable to provide acute care if focusing on other areas of primary health care. AHWs did not feel they had the authority to refuse patients since it was not endorsed by the health centre:

> I’m trying to do nutrition for people and the kids too, but it’s hard for me to focus on one thing…It’s the people…“I need you now” or “I need to see you for sores” or “I gotta see you for certain things”. (AHW #6)

One AHW reported that the health centre had become busier and patients appeared sicker. The pressure to see these sick patients waiting made it difficult to spend time doing a lengthy child health check. One AHW reported that she often felt pulled in different directions, “constantly disturbed and grabbed”, making it difficult to attend to developmental checks that require focus.

In circumstances where health centre staff did recognise the importance of primary health care, most reportedly concentrated on chronic disease, renal disease and mental health, with preventive child health low on their priority list. Child health checks and often acute paediatric care was reportedly left to the maternal child health nurse and the child health AHW. The maternal child health nurse described that she was often dealing with acute illness despite having a non-clinical role. Implementing a ‘Kids’ Day’ was seen by informants as a way of elevating the importance of child health:

> And all the staff have got to be onside. It doesn’t mean the whole staff to concentrate on kids, it just means kids are a priority…They’re never a priority, and they should be. (Key informant #5)
Infrastructure necessary for delivery of care

Availability of appropriate rooms was an issue in the health centre. Informants all expressed that it was not uncommon for there to be no available consultation rooms; “everyone’s sort of fighting for space and makes it hard”. There was only the one kids’ room that was often in use, occasionally to see adults, making it particularly difficult to plan for a child health check. The child health informants reported that space would no longer be a problem with the availability of the AMS family centre. The family centre had a number of smaller consultation rooms, as well as a large, central family room that could function as a waiting room for other family members and an area for children to play. The key informant reported that the family centre would provide greater privacy for families, the space would be quieter, and the staff would not be interrupted to attend to acutely unwell children as often happened in the health centre.

Another issue identified at the SAT meeting, was the storage and maintenance of the ASQ3-TRAK materials. The group discussed that the materials needed to be kept in an accessible location and in particular the toy kit needed to be maintained. On next visiting the health centre, the ASQ3-TRAK was being stored in a cupboard in the kids’ room, which was very clearly labelled.

The SAT discussion identified that documenting developmental assessments and advice on the electronic record, PCIS, can sometimes be overlooked. As a solution, informants suggested incorporating the ASQ3-TRAK tool into the electronic health record, with mandatory fields acting as prompts. Adding the tool to the electronic health system was beyond the scope of this study. However, even if possible, as pointed out by the AHWs, they often completed the electronic health record after the patient had departed, hence the prompts would have been of little use as they would have appeared after the consultation had finished. To address this issue, the ASQ3-TRAK guidelines were designed to support and instruct staff in documenting the developmental check accurately.

Leadership within the health centre

The informants describe that many health centre managers did not embrace the primary health care role of the health centre. The AMS, the Health Development branch, and the AHWs all seemed very clear and agreed that the health centre had responsibility for providing primary health care, including all aspects of the child health checks. However, some health centre managers reportedly believed the AMS and the Health Development team should be responsible for delivering preventive care, education and
health promotion. Informants reported that some health centre managers had prohibited them from doing any outreach, had disregarded their requests for program days, and had opposed suggestions for a system of allocating portfolios to remote area nurse or AHWs. In turn, informants described that child health checks were left to the child health AHW and the maternal child health nurse rather than being shared by all health centre staff. Although the child health AHW’s role was to support the health centre staff and promote child health, she described that this role was not endorsed by the managers. Health centre staff were not directed or encouraged to perform the child health checks, let alone developmental checks.

Despite the expectation that child health checks were the domain of the child health AHW and the maternal child health nurse, these staff reported that they did not have the authority to make any decisions about the child health program. Therefore, although all informants repeatedly reported that they would welcome a ‘Kids’ Day’, where all staff could participate in child health checks with support, this was not able to be implemented by the child health staff. This was largely ascribed to the lack of support and direction from the health centre manager.

This lack of progress was also attributed to the constantly changing health centre managers. The key informant described that each new manager “always knows better than the last one”, bringing a different plan and changes to the health centre. Moreover, she described that they rarely listened to the AHWs and in some cases AHWs were not permitted to question the health centre manager’s decision. One AHW described:

[Every new manager has] different ideas and doesn’t work with us. We keep telling them and like now, we brought that up – probably last couple of months, three months ago – “Oh, this is what we used to do, have kids’ day on Tuesday,” (AHW #7)

This ever-changing direction and lack of respectful engagement left AHWs feeling uncertain and apathetic. One described that they “lose interest” and another, that workers become “slack”. This sentiment was not isolated to the AHWs. One key informant described the atmosphere at the health centre as being uninspiring to the point that “going into the clinic, sometimes, you just honestly don’t want to be in there…we just do not want to be in there!” . When combined with the many other obstacles faced, this left them with a feeling of resignation, one informant reporting there were times when she thought “oh, forget this, I can’t be bothered”.

228
A key informant also noted the apparent apathy in AHWs, describing that this related to the health centre manager’s attitude:

The seriousness of their work is not – sometimes I feel like it’s not there…It all depends on who’s in charge of the clinic, how serious people are in their work, how they behave in their work. Like, if you’re working for a tyrant then you operate under fear. (Key informant #5)

The key informant reported that AHWs were not given responsibility for any particular area, or delegated portfolios which exacerbated this indifference. Health centre managers did not support the AHWs in the roles or expertise they had, reported one AHW. Therefore, despite the AHW having an interest and training in a particular area, patients were able to request to see the nurse or doctor, bypassing the AHW. Alternatively, patients could demand to see a particular AHW even if that AHW was supposed to be focusing on a specific portfolio. The lack of boundaries and clear direction from management to all the health centre staff about roles and responsibilities left the AHWs feeling uncertain and often like “giving up”.

The same informants who were critical of managers’ lack of consultation, acknowledged that they themselves needed to speak up in a more assertive manner:

I reckon, just put in place this is what we do in the clinic and we don’t want anything changed unless we want to change it, ‘cause this is our clinic. (AHW #7)

It was agreed however, that this was even more difficult when health centre managers were changing frequently. One AHW who wanted to be more involved in child health recognised she should probably let the health centre manager know this plan. However, she felt defeated by having to repeatedly inform new acting health centre managers and justify that decision to managers who had their own plans.

**Partnerships in the health centre**

Participants considered the nursing staff participating in the training with the AHWs a useful approach to improving working relationships between them. The AHWs reported that this would ensure all practitioners were familiar with the program and would eliminate the need to explain it to the nurses after the training. Sharing information with nurses is not straightforward, as explained by one AHW, as they do not always welcome receiving clinical guidance from the AHWs:
Some think “oh you’re only a health worker and how do you know” and stuff like that. Like you feel, you know, the way they look at you… (AHW #5)

This lack of respect was observed by the key informant who described that working relationships between nurses and AHWs were no longer partnerships, as she claimed they used to be. Nurses no longer worked alongside AHWs when asked for guidance but instead, she observed, nurses “take over” resulting in de-skilling of AHWs. She went on to report that nurses did not listen to the AHWs and often, intentionally or not, undermined them.

The high turnover of staff adds to the complexity of relationships within the health centre. New staff were not made aware of skills and expertise that AHWs had. It was left to the AHWs to inform them, and they reported that the constant changing of staff and needing to orientate them takes its toll:

> It’s just really hard to explain it over and over. It’s like repeating it, to explain where things are, what you’ve got to do, where you’ve got to go, cultural background and all that…And then you have to look after them. If they need your help you’ve got to help them…It’s draining, yeah…it feels like shit, sorry, it does! You have to explain it to them…you have to repeat yourself. (AHW #8)

Other partnerships were also considered important and extended beyond those within the health sector. All the AHWs suggested it would be useful to involve early childhood and child care staff in the TRAK training. Promoting these partnerships was considered important, as they were all working with young children to achieve the same aim. The SAT discussion involved both health and education staff and participants recognised that the health centre-FaFT partnership was essential to ensure optimal care for young children. Although the group suggested a memorandum of understanding between the health centre, the AMS and FaFT, to clarify how the three could best work together to enhance follow-up of child health checks and in particular, developmental checks, this did not occur.

**Ongoing training and support**

The SAT discussion led to an agreement that all health centre staff should have access to the TRAK training. Informants in post-training interviews also all agreed that nurses at the health centre should be trained. They indicated that nurses completing the training would support the uptake of the training and the tool in the health centre. In this way staff could support each other; “the more people know how to do it, the better”.
The SAT discussion also addressed the need for ongoing support and education to sustain the implementation of the ASQ3-TRAK in the health centre. The Health Development branch was identified as the natural lead organisation to provide this role. Although there was no Health Development child health nurse employed at the time of the SAT meeting, the position was recognised as being responsible for ongoing training and support. As the provider of the original training I was a resource for the community; however, it was recognised that I would not be able to provide on the ground support and this would need to be accessed locally. The child health AHW and the maternal child health nurse, were identified as leaders in the health centre and were seen to have a role in providing ongoing support. Providing ‘booster training’ in the workplace was seen as within their scope of practice and an acceptable approach for staff.

When interviewed four months following the workshop, one informant identified that not having used the skills acquired, she no longer felt as confident as she did immediately after the training. Although the child health AHW and the maternal child health nurse had been identified as leaders who could provide ongoing support to other health centre staff, this had not been realised. This was attributed by all to the lack of a child health day that would have provided the structure for all staff to participate in child health checks with support and guidance from child health staff.

The child health AHW’s position specifically included education and training of primary health care staff and a recent discussion with her manager had identified that this was a role she was happy to adopt. The child health AHW and maternal child health nurse both agreed that they had a role in ensuring new staff were orientated to the new tool and this was supported by their managers. Both suggested that other staff could sit in and observe them using the tool, to learn how to use it. At the SAT meeting I agreed to provide further training workshops as deemed necessary by the health centre. Despite offering to deliver a second training workshop three months after the first, this proposal was not taken up.

It was not clear from whom or where the maternal child health nurse and the child health AHW received support. They supported each other, however they were from different disciplinary backgrounds, had different roles, and different line managers. Furthermore, the AMS was without a manager for a large part of the study, and the child health AHW’s manager was in Alice Springs, so there was little direct supervision. Although a Health Development child health nurse was eventually appointed, the informants reported that they received little support from this resource. It was a challenge for the maternal child health nurse:
You know, when you don’t have a peer around, sometimes it makes life…I don’t know…I get a bit pissed off … (Key informant #5)

**SUMMARY**

This chapter has presented a summary of the Nanhala health centre case study, highlighting the challenges and complexity of the context in which the implementation of the TRAK training and the ASQ3-TRAK tool was undertaken.

There was a persistent lack of support for the TRAK training from the manager of the Nanhala health centre initially. However, strong partnerships with other community members and the eventual change of manager led to the successful implementation of the TRAK training. Evaluation findings demonstrated that the training was well received and attended, and all participants considered it appropriate and relevant. Training was associated with improvements in skills, knowledge and confidence in the area of child development, detecting developmental problems and providing advice to parents.

The evaluation illustrated a number of factors that influenced the effective implementation of the HU5Ks and consequently for the sustainable integration of the ASQ3-TRAK tool. The obstacles were numerous. Frequent changes in management and high turnover of staff created instability with constantly changing routines and structure. This also resulted in lack of leadership and loss of AHW-nurse relationships pivotal to the health centre’s functioning and to the successful implementation of programs. There was a lack of integration of services, with little consensus regarding the roles of the health centre and AMS in Nanhala. Some managers openly questioned the health centre’s role in primary health care and hence in child health checks that were part of the HU5Ks program, with a consequently poorly implemented HU5Ks program. AHWs felt undermined by the attitudes of many health centre managers and nursing staff and in addition to other factors at play in the health centre, this resulted in apathy among the AHWs at times.

Although faced with many obstacles, staff remained committed to the implementation of the ASQ3-TRAK tool as part of the child health checks and looked for ways of overcoming barriers. Nanhala suffered extremely high turnover of non-Aboriginal staff, however the AHWs who participated in training were all still working in the health centre six months following training.
The following chapter will synthesise the findings of the two case studies, including the barriers and facilitators to implementation, leading into the concluding chapter where implications of this study will be discussed.
CHAPTER 9 CROSS-CASE SYNTHESIS AND DISCUSSION

INTRODUCTION

This chapter provides a synthesis and discussion of the findings from both study sites. The conclusions will follow in the final chapter.

Section one examines the findings of the implementation evaluation specifically investigating whether the TRAK training was implemented as planned and considers the reach, dose and fidelity of the implementation of the TRAK training program. Section two expands the discussion to consider the extent to which the training was found to be useful and relevant by the AHWs and evaluates the short-term outcomes of the training.

The last section of this chapter reviews the context of the implementation in the two settings and discusses some of the barriers and facilitators that were identified as influencing the training and the ongoing use of the ASQ3-TRAK tool as part of routine practice in the health centres. Key factors found to be necessary for the successful implementation of the ASQ3-TRAK tool as a developmental screening tool with this population are presented and discussed.

9.1 IMPLEMENTATION OF THE TRAK TRAINING

Interventions or capacity building initiatives that have demonstrated efficacy will not produce the desired effect if it is not implemented as intended. The process evaluation therefore places particular emphasis on exploring how the TRAK training and the ASQ3-TRAK tool were implemented in this challenging practice setting.

Reach of training

Reach concerns the degree to which the intended audience participates in the intervention (Linnan & Steckler, 2002). In both the study communities, AHWs were trained as planned. In Yumurrku, three of the four AHWs participated in training and in Nhanhala, four of the six AHWs were trained. The major difference in the implementation in the two communities was that three training workshops were
delivered in Yumurrku and only one in Nhanhala. Consequently in Yumurrku, ten staff in addition to the AHWs were also trained, compared to only two in Nhanhala. Three workshops were delivered as a result of the Yumurrku health centre manager’s support and leadership; she initiated delivery of the third workshop to ensure the senior AHW was able to participate in training.

In Nhanhala, the project commenced at a time when the then health centre manager did not actively support the project, and the acting health centre managers who followed did not have the capacity to consider training and ongoing support, compromising the reach of the training; this will be discussed further in the next section.

**Dose**

The TRAK training had excellent attendance in both communities. All AHWs who commenced the training completed it, which involved attending all sessions of the two day classroom training and the practical workplace session. With the exception of a participant in a managerial role, and the FaFT liaison officer who was a last minute addition, the remaining 16 participants who commenced the training also completed all sessions. As described by Linnan and Steckler (2002) the amount of the intervention delivered - the dose delivered - is one of the key process evaluation components. In the case of this study, the intended dose for the initial workshop was received by all participants and notably no incentives were provided.

Attendance at booster training was not as high, with three of the six participants who took part in the initial training in Nhanhala available to participate in the booster training, and none from Yumurrku. The booster was offered as a single supplementary training session. Ideally, the provision of booster training in the workplace would seek to involve all staff and require the trainer being available to attend the workplace at short notice to fit within busy work schedules. While it would have been desirable to maximise opportunities for participants to attend booster training, this was not possible within the funding and time parameters of the study and was not considered sustainable in the longer term. Moreover, there were staff identified in the health centres who could take on responsibility for providing booster training in the future. For example, the child health-trained nurse in Yumurrku had agreed at the time of the booster training visit that she could be responsible for working with staff to offer further ‘coaching’, as part of their Thursday afternoon in-service sessions. Likewise in Nhanhala, the maternal child health nurse and the child health AHW, who had both completed the booster training and had previously been identified as support staff, suggested they could take the other
AHWs through further practical training. However, despite their best intentions, this did not eventuate; the reasons for this will be discussed later in this chapter.

**Fidelity**

Fidelity refers to the quality of the implementation (Linnan & Steckler, 2002). In both communities, the classroom training was delivered precisely as detailed in the lesson and session plans devised, and as outlined in chapter six. Considerable time was spent designing and planning the training and in particular anticipating potential obstacles to successful delivery that enhanced the fidelity. Miller (2005) argues that insufficient time for adequate planning and delivery is a major problem for training providers, students and the communities in the Aboriginal context. A critical component in this training, therefore, was to ensure that the delivery was not hurried. If the training had been compressed to be delivered in one long day, this would have required a more didactic approach, which would not have provided the flexibility necessary to accommodate the learning needs of the participants in this context. Potential issues, such as late starts, participants coming and going and needing to be brought up to speed with the rest of the group, technological problems in remote settings, and needing to find volunteers for the demonstration activity were all considerations that needed to be factored in to the time allocated to ensure that the content was able to be covered adequately in two days.

As the developer of the training program, maintaining fidelity to the program objectives was conceivably not as difficult for me as it may have been for another trainer. However, the training was designed to be able to be delivered independently of the developer. This was addressed first by the development of detailed session plans and a comprehensive facilitator handbook providing the details for the content of each session. Second, specific training materials were designed to support the training. The training support materials consisted of teaching aids but also, importantly, the ASQ3-TRAK tool. This included the seven questionnaires, the corresponding illustrated booklet, the toy kit, the parent information sheets and the TRAK administration guidelines. The health centre and FaFT team in each community were provided with the complete set of ASQ3-TRAK tool materials.
9.2 THE VALUE AND RELEVANCE OF TRAINING TO AHWs

Participant satisfaction

This section focuses on participant reactions and learning arising from the training (Guskey, 2000; Kirkpatrick & Kirkpatrick, 2006). Attendance is an important indicator of satisfaction in any training program (Rogers & Horrocks, 2010) and all participants attended enthusiastically on Day 2, arriving at the agreed starting time, despite appearing somewhat reluctant at the beginning of Day 1 of training by arriving late. This would suggest a high level of satisfaction with the training on Day 1. Furthermore, the AHWs did not avoid the practical training sessions in the workplace, as they could easily have done. As one AHW commented about the training, “I thought it would be crap…but it was really good actually!”

Across both communities, AHWs reported that the training was highly relevant and useful to their work. This is perhaps not surprising as the training was designed to meet the perceived needs that AHWs identified in the training needs analysis (chapter five). The AHWs were all involved in the needs analysis and, as discussed, this process engaged them in the training, possibly contributing to their overall positive reactions to the training. However, other participants, including FaFT workers, community based workers and nurses, who were not involved in the needs analysis, also found the training valuable. Furthermore, all participants seemed equally hesitant to attend on the first day of training and all eagerly attended on the second day, irrespective of their participation in the needs analysis interviews, suggesting their enthusiasm was a reflection of the training.

There was a difference identified between Yumurrku and Nhanhala in the needs analysis that may have predicted a different reaction to the training. AHWs in Yumurrku were noted to perform child health and developmental checks more frequently than AHWs in Nhanhala. This was self-reported and also observed in clinical encounters. However, despite AHWs in Nhanhala having little involvement in child health and developmental checks, they valued the training equally.

Participants across all workshops valued the design of the training, and delivery methods used were appropriate and interesting, in particular the practical, ‘hands-on’ components. The findings from the feedback survey and interviews suggested the training methods successfully met the needs of learners with varying levels of competency, from different disciplinary backgrounds, and with varying English
language and literacy proficiency, in both communities. This was reported not only by AHWs but also by the community based workers, their manager, FaFT workers and child health-trained staff who participated in the training. This reflects the level of planning and time that was invested in developing the training. Furthermore, it emphasises the efficacy of referring to current evidence with regards to adult education and of my training in adult education. Anticipation of the varied learning needs and styles enabled the training to be tailored to be appropriate for the specific requirements of each group.

**Impact of training on knowledge, skills and attitudes**

An important finding in this study was that the training was demonstrated to have an impact on participant learning, including knowledge, skills and confidence, evaluated through training feedback surveys, interview and observation. AHWs demonstrated improvements in knowledge about early child development and services, and informants in both communities had greater understanding of typical developmental milestones. In Nhanhala, the AHWs were moved to learn the influence caregivers can have on a child’s life and described being motivated to help caregivers understand this. In Yumurrku the senior AHW clearly expressed an understanding of screening and early intervention to change a child’s developmental trajectory, as demonstrated by his river metaphor.

Participants were all observed to have acquired the necessary skills to independently administer the ASQ3-TRAK tool in their work environment. The practical component was an integral part of the TRAK training, as suggested in the training needs analysis by informants. Hands-on practical training is consistent with recommendations from the literature regarding culturally appropriate professional development methods in this context (Davidson et al., 2008; Helme, 2005; Miller, 2005; Tregenza & Abbott, 1995). The participants’ feedback and interviews endorsed this as one of the most beneficial aspects of this training approach. This finding was supported by my observations, across both communities. Examining influences on healthcare professionals’ behaviour, Eccles (2005) describes how the most successful behavioural methods provide intrinsic rewards if the behaviour is performed appropriately. Providing opportunities for role plays in the training and then practice in the workplace, was intended to give the participants an experience of success, which acts as a powerful reward. The practical session’s value in enhancing the learning experience, building learner’s confidence and providing opportunity for assessment of learning is undeniable (Kolb, 1984).
In this study, the particular focus in the workplace practice sessions on skill development was informed by the gap identified in the training needs analysis. The benefit of the practical workplace session can be viewed not only as a preferred learning method but also as an approach to improve longer term outcomes. There is substantial evidence that suggests face-to-face visits (sometimes called educational outreach visits, academic detailing or practice coaching) in health professionals’ workplace can be effective in improving practice. A US study evaluating paediatric developmental screening practice demonstrated that academic detailing had an impact on paediatricians’ behaviour, resulting in increased screening rates (Honigfeld et al., 2012). A Cochrane review (O’Brien et al., 2008) on the effects of educational outreach visits on health professional practice found that even without additional interventions, such face-to-face visits can be effective in improving practice. The authors of this review noted a great deal of variation across interventions and although less common, some visits emphasised developing skills through practice. This process was thought to facilitate change in service contexts where lack of skills is a barrier to change. Practising key skills has been identified in numerous experimental studies as a core component of effective training (Fixsen, Blase, Naoom, & Wallace, 2009) and identified as assisting in translation of policy into practice (Higgins et al., 2012).

O’Brien and colleagues’ (2008) systematic review was unable to determine the optimum number of such workplace visits but suggested interventions that include multiple visits or sustained efforts may be more effective and efficient. Soumerai and Avorn’s (1990) work on academic detailing to improve clinical decision making identified eight principles in this approach, the last of which is providing positive reinforcement of improved practices in follow-up visits. This is consistent with the booster training that was offered in both communities. As already detailed in chapter six, the booster training was an opportunity to provide the participants with positive reinforcement for the skills they had acquired at the initial training, three months earlier. The booster training was well received by the staff who participated and they were able to demonstrate they had been able to maintain a satisfactory level of competence, in that they were able to competently administer the ASQ3-TRAK tool independently. Unfortunately, participant exposure to the booster training was not as high as intended due to staff turnover and other factors discussed in the following section.

Qualitative studies of barriers to staff conducting adult health checks in Aboriginal Medical Services have found lack of confidence to be a key factor (Jennings et al., 2013). This has also been identified as a barrier to implementing screening and brief
interventions for alcohol misuse (Johnson et al., 2011). The training needs analysis (chapter five) in this study also found that confidence regarding child development and conducting development checks was low. Thus, an important focus of the training evaluation was to determine if levels of confidence had improved. All AHWs, including the child health AHW, described that the training and the use of the ASQ3-TRAK tool led to greater confidence to enquire about child development, detect developmental problems and provide advice to parents. Across both communities the training, and learning to use the ASQ3-TRAK tool, improved AHWs’ communication skills regarding child development. Notably, this was found among AHWs who had been routinely conducting child health checks prior to the training and those who had not.

Prior to the training, AHWs in Yumurrku who were observed performing child health checks were noted to be awkward when completing the developmental section. They all struggled with the language of the HU5Ks and at times appeared embarrassed or awkward when giving anticipatory guidance. There was little if any interaction with the children and the whole process was described as “hard”. However, the same AHWs demonstrated a marked difference in their skill and confidence when observed to administer the ASQ3-TRAK tool during the training. The AHWs were able to engage comfortably with the caregiver and child and ask the questions without any sign of difficulty, and appeared at ease. They were also able to take decisive action when required and this improved confidence was attributed to the training.

The AHWs in Nhanhala were not observed completing developmental checks as part of the training needs analysis because, in effect, they were not delivering child health checks routinely. However, in view of the lack of training and experience it is plausible that they would have been as equally challenged, if not more so, than their colleagues in Yumurrku. Nevertheless, during the practical sessions the AHWs also appeared relaxed and comfortable using the ASQ3-TRAK tool and carried out the whole process confidently and competently. Furthermore, the study demonstrated that the training appeared to have an impact on AHWs’ awareness of and understanding for the rationale of the HU5Ks checks. These AHWs expressed an interest in becoming more involved with child health checks, with one AHW reporting that she would like to take on the child health portfolio.

This improved confidence may also relate to the value AHWs placed on the adapted tool. In Yumurrku, one AHW contrasted the ASQ3-TRAK tool favourably with the HU5Ks’ questions on development when he remarked:
Rather than asking a few stupid questions in among a check-up, you actually are asking important questions (AHW #2)

Informants generally considered the tool to be worthwhile and it was thought to have merit because of the rigorous adaptation process that included extensive community involvement. In Nhanhala, where it was more consistently administered in the local language by the AHWs, the ASQ3-TRAK tool aided their understanding, which in turn fostered their confidence. As discussed in chapter four, the AHWs and other informants considered the tool culturally appropriate, which is an important factor in engaging the staff and increasing their confidence in the process (Herceg, 2006).

**Impact of training on behavioural intention**

Beliefs, attitudes and knowledge are social cognitive factors central to the determinants of health behaviour (Conner & Norman, 2005). These cognitive factors are the focus of a number of widely used health behaviour models, because they shape behaviour and are amenable to change. A number of authors have explored socio-cognitive models to better understand the factors that influence clinical practice of health care professionals (Godin, Belanger-Gravel, Eccles, & Grimshaw, 2008; Eccles et al., 2012; Grimshaw et al., 2007). Socio-cognitive models propose that the strength of an individual’s intention (or motivation) to engage in a behaviour will determine the behavioural performance. This is supported by a number of studies focusing on behaviour of health care professionals (Eccles et al., 2005; Godin et al., 2008; Sassen, Kok, & Vanhees, 2011).

The changes in attitude, skill and knowledge seen in this current study are consistent with many socio-cognitive models that use the intention construct. As described by the different theorists, there are various determinants of intention, and thus subsequent behaviour. These include attitude, confidence in ability, skills and knowledge, factors which the training addressed.

While the training did not focus solely on improving knowledge, it must be acknowledged that knowledge is itself an important behavioural determinant. In a survey examining practitioners’ provision of healthy lifestyle advice, Ashby and colleagues (2012) adopted a modified theory of planned behaviour. They found that practitioners’ belief in their capability was a key determinant of their action. In addition, when lack of knowledge was combined with lack of clear roles, it reduced the behaviour further. Likewise, Cane et al. (2012), using an integrative theoretical framework developed for behaviour change research, identified that lack of knowledge is a potential barrier to a number of health professional behaviours. A recent evaluation of a training
program for primary health care practitioners, including AHWs, in chronic disease self-management identified that lack of knowledge was one of the principal barriers to practice change (Higgins et al., 2012). The results of this study similarly found lack of knowledge of early child development and developmental services, and associated lack of assessment skills, were fundamental barriers to providing developmental services in the remote Aboriginal context.

Following the training, the AHWs and other participants in this study demonstrated behavioural intention and self-efficacy, which are considered the two best predictors of subsequent health behaviour (Eccles et al., 2005). However, there are other factors that also influence the behaviour. As indicated in the integrated model developed by the major theorists of social cognition models, environmental constraints also influence behaviour (Conner & Norman, 2005). Barriers can obstruct the behaviour even though the intention to engage in the behaviour is positive. In a meta-analysis examining whether behavioural intentions engender behaviour change, Webb and Sheeran (2006) also found that intentions have less impact on behaviour when participants lack control over the desired behaviour. Exploring these environmental and system barriers to action was an essential part of this study and will be discussed further in the following section.

**Demarcation of interprofessional roles**

This study found that AHWs across both communities valued training with staff from varied disciplinary backgrounds. Indeed, in both settings, AHWs suggested the training should be extended to include other early childhood education and child care workers to ensure that all staff working with families and children had the same basic knowledge. There is evidence to suggest that overcoming health professional demarcations improves practice. Asbhy (2012) found that broad education to break down strict demarcation led staff to regard practice as ‘interprofessional’ and resulted in improved health professional behaviour.

Similarly, participants welcomed the developmental practice role being shared between male and female staff. In Yumurrku, two of the three AHWs who completed the training were male. While the rearing of children is traditionally regarded as ‘women’s business’, especially in the first year of life, in many Aboriginal communities (Kruske et al., 2012; Secretariat of National Aboriginal and Islander Child Care, 2011) there was no suggestion that the task of developmental monitoring should be left to the female health practitioners. It was agreed that involving Strong Women workers would enhance the process, but this was considered relevant for nurses and AHWs regardless of gender. In
effect, the senior male AHWs’ strong advocacy for men’s involvement in improving child development outcomes, voice in the very first consultation in Yumurrku, was one of the reasons the project had proceeded in Yumurrku. As he stated, men needed to be positive role models because “…children follow in parents’ footsteps…if parents take the right path, children follow the right path.”

Having male AHWs involved was seen as role modeling for the community that was important for improving fathers’ confidence and involvement in child rearing. In Nhanhala, where no male staff participated, AHWs recommended that male AHWs should also be involved in the training and practice.

9.3 FACTORS INFLUENCING THE IMPLEMENTATION OF THE TRAK TRAINING AND THE ASQ3-TRAK TOOL

This next section presents the barriers and facilitators to the implementation of the training and to what is required to embed the ASQ3-TRAK tool into routine practice of health centres. A number of prior assumptions were listed in the program logic (see Figure 3-2, page 50). These included factors related to the program, the people, and the context, hypothesised to be necessary for the implementation of the TRAK training and tool to be successful. These assumptions included: that the system and health centres management were committed to implementing the HU5Ks program and considered child development a priority; the health centres would be engaged in the research; the health centres supported and valued the AHW role; that AHWs would be familiar with the HU5Ks program; AHWs would be interested in participating; and that stakeholders would agree that AHWs have a primary role in providing developmental services. Most of these assumptions were not met in Nhanhala from the outset, particularly the routine delivery of HU5Ks checks, despite being deemed core business. While this constraint was apparent from the earliest stage of the study, and was confirmed by the training needs analysis, as explained in chapter three, a number of community leaders were committed to the project and were eager to participate. Thus, despite knowing that many of the pre-conditions assumed necessary for success were not fully present, we decided to proceed in Nhanhala out of an ethical responsibility to the community. The two case studies therefore had somewhat differing contexts and sets of factors influencing the training and ASQ3-TRAK implementation, despite the communities having many similarities.
9.3.1 Practices and processes influencing the implementation of the TRAK training

The role of the gatekeeper

As anticipated, health service management had a major influence on the implementation of the training. The system for approving research projects within the NT Department of Health leaves the health centre manager with significant power and, as described in the previous chapter, this process effectively stalled the project in Nhanhala until there was a change in staff. This management decision process is not consistent with recommendations by Tregenza and Abbot (1995) and the NT AHW Profession Review (NT Department of Health, 2010) that health services take a consultative and collective decision making approach. Neither does it align with Henry et al.’s (2004) Indigenous Research Reform Agenda that asserts there should be increased levels of Indigenous community control over all aspects of research projects. Aboriginal staff and the community’s wishes were not considered in the management decision and this approach, surprisingly, was not questioned by higher level management.

In contrast, the Yumurrku health centre manager’s support in facilitating the implementation of the training went beyond simply approving the project. Not only did the health centre manager support the study, she actively provided direction to staff and assisted in engaging them in the process. The active support facilitated the delivery of three training workshops and consequently a broader reach. Without this same level of support from the Nhanhala health centre manager, staff were not able to be engaged in the entire process. Although the plan had been to deliver two workshops in Nhanhala, the initial obstacles to the program presented by the health centre manager impacted on the implementation. Despite the subsequent acting health centre manager being supportive, she was not in a position to address the best approach to maximise the training delivery plan. Therefore the AHWs, who were the focus of the study, participated in the training but other remote health practitioners were not able to be included as intended.

The strength of research partnerships

As discussed in chapter four and in the case studies, the study was able to proceed in Nhanhala despite not having the health centre manager’s support initially. This was possible because of the strength of the relationships I developed with other senior
community members. An important finding from the field trips conducted over almost two years in each of the communities was the benefit of time and repeated visits to establish and maintain trusting relationships with staff and key participants, including community leaders (Dudgeon et al., 2010). The relationships that developed into partnerships were equally as important in Yumurrku, despite existing health centre manager support. Without developing rapport and engaging the community, the adaptation of the ASQ-3 would not have proceeded and the training would have been unlikely to succeed. Research efforts in Aboriginal communities are not likely to succeed without strong, productive relationships (Laycock et al., 2011) and sufficient time invested in this process.

Throughout the study I maintained regular email, telephone and face-to-face communication with participants and managers, both local and central, and ensured that other events taking place in the health centre and the community were taken into account in any plans. This required considerable perseverance and flexibility to implement the training. Demonstrating respect for community members, staff and management, and for the responsibilities they were often burdened with, was also equally important (Street, Baum, & Anderson, 2009; Wand & Eades, 2008). This observation is echoed in a report exploring the way researchers operate and conduct research with Indigenous communities (Franks et al., 2002) and is the foundation of national policy documents on conducting research with Aboriginal people (NHMRC, 2003, 2010).

**Credibility of the trainer and quality of training**

Another important factor that may have facilitated the implementation of the training was the expertise that I brought to the study as a developmental paediatrician. This enabled me to be trusted as a content expert with direct experience and therefore as having credibility as a trainer. Evidence suggests that the person delivering the intervention is an important driver (Fixsen et al., 2005). In the Olds’ (2007) Nurse-Family Partnership program, outcomes have been found to be better for the groups allocated to nurses versus the group allocated to paraprofessionals, because nurses were perceived as more competent. However, in the Cochrane review of health educational outreach visits, the importance of the type of visitor remained unclear (O’Brien et al., 2008). My professional position provided credibility that enabled me to engage with all disciplines, including trained child health nurses. That said, I would not advocate the necessity of all future training being implemented by a developmental paediatrician. Given the nature of the training, other child health-trained practitioners, such as child
health nurses, have sufficient knowledge and experience to be content experts and conduct training in this practice setting.

The quality of the training undoubtedly influenced the implementation process of the training. I drew upon adult learning theories (Knowles et al., 2011; Kolb, 1984) and literature exploring the strategies for effective training in the remote Aboriginal context (chapter six) was considered carefully, and informed the design and implementation of the TRAK training program. Moreover, the process of conducting the needs analysis identified the expectations of the learners and the deficiencies in current practice. Needs assessments are recognised as being crucial in educational processes that lead to health practice change. In this study, in addition to the information obtained, the needs analysis assisted with the engagement of the learners (Grant, 2002; Hauer & Quill, 2011).

While acknowledging that training alone will not improve practice, a synthesis of implementation research literature concluded that effective training is a vital, ‘core’ component of all effective interventions (Fixsen et al., 2005). Fixsen and colleagues (2005) assert that effective training workshops consist of presenting information, providing demonstrations and ensuring participants have the opportunity to practice key skills. Medical education commentators acknowledge that better outcomes can be expected with well-designed educational interventions and quality teaching, even with reluctant learners (Murdoch-Eaton, 2013). In this context the TRAK training satisfied all these factors.

### 9.3.2 Contextual factors necessary for ongoing application of the ASQ3-TRAK tool in routine practice

The TRAK program provided training, a culturally appropriate developmental screening tool, and practice guidelines to improve knowledge, skills and confidence of AHWs and other remote health staff to support them in delivering comprehensive developmental monitoring as part of the existing HU5Ks program. Despite widespread acceptability of the ASQ3-TRAK tool, the perceived relevance and value of the training, and high levels of enthusiasm and motivation among participants, there were other factors present that hindered the optimum, ongoing application of the tool.

This study identified a set of service circumstances that are necessary prerequisites for the successful and sustainable implementation of the ASQ3-TRAK tool with resultant integration into routine service delivery. The three themes identified were: leadership and governance in remote health practice; support for the remote health workforce; and
structures in the health centre (see Figure 9-1 below). All three components need to be integrated in a multi-level approach over the long-term to achieve successful implementation of new practices such as the routine use of the ASQ3-TRAK tool in the remote health centres (Fixsen et al., 2005).

This multi-level approach is also consistent with the literature examining clinical quality improvement practice in both mainstream and Aboriginal health care settings (Gardner et al., 2011; Gardner, Dowden, Togni, & Bailie, 2010; Kaplan, Provost, Froehle, & Margolis, 2012; Urbis, 2009; Wise, Angus, Harris, & Parker, 2013). Kaplan and colleagues (2012) present a conceptual model based on a recent systematic review of business and health literature (Kaplan et al., 2010), designed to understand the contextual factors affecting the success of quality improvement programs in health care. The clinical quality improvement model provides a useful framework for exploring the barriers and facilitators to the introduction of the ASQ3-TRAK tool, as a new innovation. The following section discusses how the interdependent contextual factors at the leadership, structural and workforce level influenced this service reform.

Figure 9-1: Contextual factors influencing integration of the ASQ3-TRAK tool into routine care
Leadership and governance in remote health practice to support the ASQ3-TRAK process

There is widespread evidence for the need for strong, stable and consistent leadership and management directive in Aboriginal primary health care services (Graff, Springer, Bitar, Gee, & Arredondo, 2010; Health Workforce Australia, PriceWaterhouseCoopers, & Shannon Consulting Services, 2011; Panaretto et al., 2010) and specifically in quality improvement initiatives (Gardner et al., 2011; Kaplan et al., 2012; Wise et al., 2013). This view was supported by this study’s findings across both communities. Leadership in, and commitment to, primary health care from management was required, for example in establishing child health program days, implementing child health checks, and ensuring adherence to systems and guidelines. Other research examining the barriers to provision of adult health checks in an Aboriginal Medical Service, recommended that strong leadership that promotes preventive care, including well-checks, is needed (Jennings et al., 2013). The demonstration of such leadership was seen in Yumurrku, where the health centre manager introduced a comprehensive child health program day and prioritised child health. All practitioners were encouraged to participate equally on ‘Kids’ Day’ and adults were not seen unless an emergency. These processes were introduced incrementally, which is an attribute recognised in effective leaders in quality improvement programs (Gardner et al., 2010).

In Nhanhala there was confusion about roles in part due to the fact that the three separate organisations (the Remote Health branch, the Health Development branch and the AMS) managed the staff, with lack of clarity regarding responsibility and authority for child health. In Yumurrku, while there was only a government-run health service, the health centre did have staff from different departments working from within the health centre. They were included in the Remote Health-run health centre and functioned effectively as part of the primary health care team, led by the health centre manager. All staff were clear about their roles within the health centre.

Essentially, for most of the time leading up to the training implementation, Nhanhala did not have a health centre manager who adopted the primary health care philosophy. This philosophical difference was never reconciled and left staff feeling disrespected and ultimately resigned. Although this manager eventually moved on, the acting managers, in caretaker mode, were unable to provide leadership but instead needed to focus on maintaining administrative processes. They were limited in their capacity to implement a comprehensive primary health care model when only relieving for weeks at a time. This perpetuated an acute care focus that is not aligned with the AHWs’ preferred model.
of care (Health Workforce Australia et al., 2011), nor with the National Aboriginal Community Controlled Health Organisation’s 10-point plan for improved health outcomes (NACCHO, 2013). The focus on acute care was a significant barrier in this study and the need to ensure health centre managers have a primary health care orientation is paramount to the success of the ASQ3-TRAK process.

Although Nhanhala had a workforce, with a child health AHW and maternal child health nurse, there was no clear structure or systemisation of the child health program, and therefore no structure or system for the ASQ3-TRAK tool to be implemented in the health centre. Roles and responsibilities of the child health AHW and maternal child health nurse, who were not Remote Health staff, were not clear and they were not afforded authority in the health centre, leading to staff frustration and inertia. When staff driving quality improvement initiatives are given authority to make decisions, the process has been found to be more likely to succeed (Urbis Keys Young, 2006). In Nhanhala, the absence of agreement and clear direction on how staff from the AMS, the Health Development branch and the health centre could work together was a barrier to improving the child health checks and developmental care provided to children.

The lack of role identification and designated positions has been found to be an obstacle to changing health professional behaviour and improving health care practice elsewhere (Ashby et al., 2012; Wise et al., 2013). It is the responsibility of health centre managers to provide coordination of the roles and responsibilities of staff from different disciplinary backgrounds, especially if different departments are involved (Mills et al., 2010). Following on from this, they need to be able to communicate this to the health care teams so that roles are clearly understood and staff can effectively implement innovations to improve practice delivery (Wise et al., 2013). The NT AHW Professional Review (2010) has recommended that management ensure nurses understand the role of AHWs as a strategy to improve workplace practice.

Although all participants appreciated the value and importance of the ASQ3-TRAK tool, perceived lack of time was an issue and some participants felt judged by their colleagues if they spent too long with one patient, creating a barrier to delivery of care. Similarly, in a study exploring implementation and sustainability of skills gained in early childhood development training, insufficient time being allocated for developmental monitoring was a key barrier identified (Ertem et al., 2009). It is important for health centre managers to truly understand the purpose of the developmental check and to appreciate the time taken to complete the ASQ3-TRAK tool, as highlighted by key informants in Yumurrku. Furthermore, health centre managers need to be involved in
addressing system factors that may lead to integration of the tool and the practice into routine health centre care. In recognition of this need, in another context, a workshop for managers to encourage their support for a practice intervention was added to the training program in an Aboriginal-specific smoking cessation intervention (Wise et al., 2012).

Studies exploring implementation of interventions in primary health care settings concluded that without strong leadership, in words and in action, sustainability of any program was unlikely (Graff et al., 2010). This study found that informants wanted solid leadership. To support the implementation of the ASQ3-TRAK tool, informants suggested “stricter rules” were necessary. An explicit requirement from the health centre manager that the checks should be completed, would mean that staff would be more likely to complete them. In Yumurrku, one of the key strengths that resulted in successful implementation of the HU5Ks program was strong leadership supporting child health checks. The health centre manager’s midwifery background, and the health centre nurse’s child health training, established a health centre commitment to child health and the implementation of the ASQ3-TRAK tool. However, the health centre’s instability, resulting in staff feeling overwhelmed and unmotivated at the time of implementation, meant the clinic expectation that developmental checks must be completed was absent.

Strong leadership is not sufficient on its own and needs to exist within an effective governance structure that includes policy frameworks and practice guidelines. Policy support has been identified as one of the most critically important factors for uptake of quality improvement initiatives in Aboriginal primary health care services (Wise et al., 2013). Ideally, developmental checks should be key performance indicators that health centres report against. Currently, developmental screening and child development outcomes are not included in the Aboriginal key performance indicators that are reported to the Commonwealth government on a six monthly basis (NT Department of Health, 2009). Inclusion of routine developmental checks as a key performance indicator would provide the health centre managers with the higher level mandate to provide the necessary prompting and monitoring of staff practice. Establishing a centralised plan with policies to support practice would also address the issues associated with high turnover of managers who all bring with them new approaches. This was a problem Nhanhala faced throughout the course of the study and is not uncommon to remote communities, leading to ever-changing plans for how the health centre should be run.
Supporting the commitment to the integration of the ASQ3-TRAK tool into routine care requires an adequate workforce, which is a significant issue in the NT. Workforce issues plague remote health services with high turnover of non-Aboriginal staff, recruitment difficulties and difficulties backfilling positions (DEEWR, 2013c; Garnett et al., 2008; Voit & Carson, 2012; Weymouth et al., 2007). These factors often leave health centres effectively short staffed and struggling to deliver acute care services, let alone preventive health care programs. The audits, conducted as part of the needs analysis, revealed that developmental checks were not being delivered consistently, as per the HU5Ks schedule. Qualitative findings from both settings in this study confirmed that child health checks are sacrificed when there are competing priorities and that this was a key barrier to completing developmental checks. In Yumurrku, a key informant reported that there were inadequate staffing levels to adopt a comprehensive primary health care model and to deliver this care consistently. They strove to deliver quality primary health care and achieved good results but with chronic staff shortages the cost was staff burnout. Furthermore, the effort required to achieve those results in Yumurrku was not acknowledged by regional managers.

Staff being overwhelmed by the workload is a feature of remote health services reported in other studies examining child health care services in this context (Bar-Zeev, Kruske, Barclay, Bar-Zeev, & Kildea, 2013). Building human infrastructure is not a panacea. However, it is imperative that government reviews the capacity of remote health services to improve the core numbers of health centre staff and address workload issues. This would also ensure that relief staff are available, and would support health centres to release staff for professional development and workplace training - an important strategy for improving quality of care and addressing continuing professional development for AHWs (Aboriginal and Torres Strait Islander Health Workforce Working Group, 2011; National Aboriginal and Torres Strait Islander Health Council, 2008; National Indigenous Health Equality Council, 2010).

**Support for the remote health workforce – the importance of partnerships, champions and maintaining skills**

It is well recognised that AHW-nurse partnerships within remote health centres are an essential factor for optimal provision of care (Genat et al., 2006; Stamp et al., 2008; Tregenza & Abbott, 1995). Findings of the training needs analysis in chapter five highlighted that the absence of strong AHW-nurse partnerships presents a significant barrier to delivery of care by AHWs. The post-training findings from both communities emphasised this point further. In Yumurrku, the strength of the working relationships...
between the Strong Women workers and the other practitioners was also recognised as very beneficial, and informants considered working with them to administer the ASQ3-TRAK tool to be a preferable approach that would support the staff to implement the tool. Although the Strong Women Strong Babies Strong Culture program is available in Central Australia, Nhanhala did not have any Strong Women workers. Recruitment to this program is an issue across the NT (NT Aboriginal Health and Community Services, 2012a). However, the addition of Strong Women workers could be a further support to the health centre staff in the endeavour to provide quality child health services, including developmental monitoring (Bar-Zeev et al., 2013).

Informants in both communities had no doubt that joint training for both nurses and AHWs was valuable in building relationships and encouraging a team approach to the implementation of the ASQ3-TRAK tool. The importance of understanding one another’s roles has been identified as a factor influencing the ability of nurses and AHWs to work as a team (Health Workforce Australia et al., 2011; Stamp et al., 2008). This team culture had been successfully established in Yumurrku, where AHWs were respected as highly skilled and capable colleagues. In contrast, AHW-nurse partnerships were a significant challenge in Nhanhala, particularly because of the high turnover of staff. However, the difficulties were also attributed to the perceived lack of respect shown by some health centre managers who were reported not to value the role of AHWs and undermined them (Health Workforce Australia et al., 2011).

A lack of respect for AHWs’ traditional and cultural knowledge was recognised as an issue in remote health services by Tregenza and Abbot (1995) and is confirmed by the NT AHW Profession Review (NT Department of Health, 2010), that argues cultural differences between AHWs and Western management styles create significant difficulties for AHWs in their workplace. A qualitative study exploring factors that constitute support for Aboriginal child health workers found that participants expressed a desire to be considered equal to other team members and to be respected in their role (Watson et al., 2013). It is understandable that the AHWs’ performance is negatively impacted when working in environments where little respect for the role of the AHW is shown, and where racism, culturally inappropriate behaviour and bullying are experienced (Health Workforce Australia et al., 2011; NT Department of Health, 2010). There is a need to ensure health centre managers have the knowledge and expertise to create a culturally safe and positive environment that enables AHWs and nurses to work together. While AHWs may need to make their skills known to new staff, this can only be done in an environment where AHWs are respected and feel empowered; providing
tailored and timely cultural competence training to non-Aboriginal staff is one way to begin to address this key issue (Health Workforce Australia et al., 2011; Walker & Sonn, 2010).

Relationships with partners outside the health centre are also an important factor in supporting remote health staff in their role. Collaboration between health and other sectors such as education and community services is an important strategy to address issues that are system wide, such as child development (Australian Department of Health and Ageing, 2013). Across both communities, establishing community partnerships with FaFT and child care workers was also recognised to be of value to the health centre’s developmental practice. In Yumurrku, this relationship with FaFT was already quite strong. There was a suggestion in Yumurrku that an outreach service could involve the FaFT worker who had participated in the training, which would add to the capacity of the health centre and maintain skills through mutual support. Although a decision was made at the SAT meeting to have regular, formal meetings to discuss children about whom staff were concerned, this had resulted in one meeting only. The reasons cited for this were the closure of FaFT over school holidays and the significant change to the governance of the health centre in early 2012, which was experienced as having a destabilizing effect by a number of staff.

The FaFT team did not have such a strong relationship with the Nhanhala health centre. However, the FaFT workers were keen to be involved and there was potential for a partnership to be developed between the health centre, FaFT and the AMS. Yet, with the constant turnover of health centre managers, operationalising this partnership, which was an issue raised at the SAT meeting, was not a priority for the acting health centre managers in ‘caretaker’ mode. Nevertheless, cultivating these partnerships is important, as promoting interprofessional roles and responsibilities can overcome professional demarcations that hinder practice, and intersectoral collaboration can strengthen the delivery of services (Ashby et al., 2012; Australian Department of Health and Ageing, 2013; Robinson, 2011). This intersectoral approach to supporting improved developmental monitoring aligns with the whole-of-government initiative being led by the NT Department of Education to integrate child and families services, including the setting up of Indigenous child and family centres (Department of Education, 2013).

Training and ongoing support for all staff is an essential part of the process when implementing any new initiative to build capacity (Kulunga Research Network et al., 2010; Wise et al., 2012). Ongoing support or ‘coaching’ is a continuation of training and has been recommended to be undertaken as a core responsibility of health centres.
(NT Department of Health, 2010). It is widely understood to be an important component of implementation of practice, and necessary to consolidate newly learned skills in any arena (Fixsen et al., 2005; Graff et al., 2010). A qualitative study exploring the role of Indigenous oral health workers recommended specific staff be designated in the support role for the health workers (Walker et al., 2011). The NT Department of Health’s Health Development branch employs child health nurses to provide support to Remote Health staff in the area of child health and undertaking the HU5Ks checks. The Health Development branch, in both regions, endorsed this study and supported the child health nurse having a key role in providing ongoing support and training, a policy confirmed during the SAT meetings. However, recruitment and retention to these positions is generally challenging and, effectively, there was no external child health support for either of the remote health centres, due to the vacant positions being difficult to fill, and successful applicants having limited child health training.

The needs analysis and SAT meetings identified local clinical champions who could provide ongoing support to staff in both communities. In Yumurrku, the nurse with the child health portfolio was child health-trained and certainly capable of providing guidance and ongoing training. However, she was not as available as anticipated following the training, due to the change in health centre governance. The Yumurrku health centre began a very unsettled period following the announcement, shortly after the training, that the health centre was being handed over to the AMS. This had a major impact on the functioning of the staff and the health service and resulted in what the health centre manager described as “disintegration”. Disillusionment and lack of motivation led to many staff taking extended leave, and the usually high functioning Yumurrku health centre almost came to a standstill. In Nhanhala, the child health AHW and the maternal child health nurse were both identified as able to provide support but this did not eventuate. The frequent changes in management in the Nhanhala health centre created such instability that the health centre seemed unable to move beyond a reactive mode. In both communities, the staff identified as support staff were not able to effectively incorporate the ASQ3-TRAK tool into their own practice, let alone support other staff, without their own support processes to draw on. A practice or initiative cannot be expected to succeed without stability in the workplace, and ongoing and consistent support to reinforce skill development and build confidence (Urbis, 2009; Wise et al., 2013).

Ongoing support is necessary to engage staff in changing behaviour. In studies examining health professionals’ behaviour using socio-cognitive models, incentives
have been explored as behaviour-changing strategies. Eccles et al. (2005) noted that the most consistently successful behavioural methods involve contingent consequences, such as rewards. A monetary incentive was considered a useful method for encouraging health centre managers to remind staff to complete the developmental check using the ASQ3-TRAK tool. AHWs in Yumurrku were strongly encouraged by management to complete sexual health screens that generated payments above the Medicare rebate. This approach has been used in paediatric settings in the US, where providers using formal screening tools are reimbursed for screening (Honigfeld et al., 2012). In both high- and middle-income countries, a lack of financial incentives has been identified as a significant barrier to implementation of developmental screening and brief intervention for other chronic conditions (Ertem et al., 2009; Johnson et al., 2011).

In Australia there is a Medicare-funded health assessment for all Aboriginal and Torres Strait Islander people and the guidelines recommend that, for children, a medical history should include developmental questions and that, if indicated, the examination should include a developmental assessment “to determine whether age appropriate milestones have been achieved” (Department of Health and Ageing, 2013). Although this monetary incentive does exist, this annual service can only be claimed by a general practitioner and the uptake of the health assessments in the NT has been low. In 2011 2,529 children aged 0-4 had a health assessment by a general practitioner (Medicare Australia, 2013) which equates to only 14.7% of the 0-4 population in the NT at that time (ABS, 2011a).

There are a number of problems with this policy. First, many remote communities only have a visiting Remote Medical Officer for whom it would be a challenge to conduct health assessments on the entire population (Kelaher, Dunt, Thomas, & Anderson, 2005), including developmental checks on children, annually. The health assessment can be commenced by an AHW or nurse however the doctor must complete it, which extends the time taken to complete the already lengthy assessment. Second, even if uptake could be improved, there is considerable evidence that practitioners are much less effective at detecting developmental problems when relying on clinical judgment alone compared to when a developmental screening tool is used (Guevara et al., 2013; Marks et al., 2011). The health assessment guidelines recommend clinical assessment as part of monitoring but do not suggest the use of any developmental screening tool, which is not consistent with best practice (AAP, 2006). Finally, the exclusion of AHWs as practitioners able to claim this service does not demonstrate any acknowledgement of the significant role AHWs play in providing primary health care, and specifically developmental care, as previously discussed. I would argue that it would be reasonable,
and certainly more feasible, if the health assessment were broken down into various components and if AHWs could claim the Medicare service for providing developmental services that included the ASQ3-TRAK tool or any other structured screening tool.

Incentives to support staff in adopting practice change is a useful strategy that could be considered alongside building the workforce capacity. A common finding among the two communities was the view that all health centre staff should undergo TRAK training not only to improve working relationships but also to better support the implementation of the program. This finding is supported by prior research that recommended the whole primary health care team participate in training to support the Indigenous health workers in their oral health role (Walker et al., 2011). A skilled workforce group across disciplines and management levels has been identified as one of the most important factors associated with successful uptake of quality improvement processes (Wise et al., 2013). However, maintaining a core of staff who are trained remains a challenge due to high turnover of staff in remote health centres (Garnett et al., 2008). The training achieved a broad reach in Yumurrku, yet only three health practitioners who were trained remained at the health centre six months following training. While the health centre had previously been relatively stable, the handover to the AMS had caused considerable unrest and the remaining trained staff were not certain about continuing on at the service. Their departure would have left a significant gap in the health centre’s capacity.

In Nhanhala, none of the nursing staff had been trained and notably, four months after the training, all nursing staff in the health centre were new, with yet another acting health centre manager. However, all the AHWs and the maternal child health nurse who had participated in the training remained in the community. Overcoming the multiple problems generated by staff turnover is not straightforward. With such high turnover of both core staff and external support staff, the remaining health centre practitioners have the huge responsibility of orientating new staff (who are often temporary) as well as training new staff and supporting colleagues in specialised programs. There is a marked impact on staff morale and on the ability to provide services due to effective staff shortages (Gardner et al., 2010; Panaretto et al., 2010).

As anticipated, the AHWs who participated in the training were almost all still employed in the two health centres, while there had been turnover of the non-Aboriginal staff. The high turnover of non-Aboriginal staff, so often seen in remote communities (Garnett et al., 2008), was a major consideration during planning that led to focusing on building capacity of AHWs as the most consistent workforce. More importantly, building
capacity of AHWs was aimed at empowering AHWs to hold this knowledge and expertise in recognition of their valuable role in the health centre (National Rural Health Alliance, 2006; Tregenza & Abbott, 1995). However, for AHWs to be empowered to use their knowledge and make decisions about developmental services, it is critical that the workplace enables this. This was a key factor that emerged as a barrier to the ASQ3-TRAK implementation. The findings in this study confirm that AHWs wished to have a voice in the health centre and greater involvement in decision making; however, the environment did not support their active participation. This is closely related to the issue of workplace dynamics discussed earlier in this section and again returns us to the issue of leadership. Leadership is required to support AHWs and to create an enabling workplace where they feel empowered and culturally secure if we wish to see their capacity utilised (Health Workforce Australia et al., 2011; O'Donoghue, 2000).

While it is important that AHWs remain the focus, there is no doubt that ongoing training to maintain the skills of a core group of both nurses and AHWs is necessary to support the AHWs and avoid the risk of overburdening this workforce group and causing burnout (National Indigenous Health Equality Council, 2010). More frequent training workshops to train local and support staff (such as the child health nurses) needs to be considered (Urbis, 2009).

Structures in the health centre to promote quality developmental practice

A dedicated child health day was universally described as a necessary component of a child health system. In Yumurru, where a ‘Kids’ Day’ was routine, it was highly valued and all staff were committed to it. In Nhanhala, where it was no longer part of the routine, all staff were enthusiastic about re-instating it. AHWs in Nhanhala sought structure and they perceived a child health program day would improve the workplace environment by creating boundaries to contain the many tasks of the health centre and thus improve delivery of the HU5Ks program. This is consistent with the literature exploring facilitators to Aboriginal health checks that suggests dedicated health check days may increase uptake by embedding the well-person checks in clinic processes (DiGiacomo, Abbott, Davison, Moore, & Davidson, 2010; Jennings et al., 2013). Furthermore, the NT AHW profession review (2010) recommended that health services should redesign the work in their centres to address the preferences and skill set of AHWs and other health centre staff.
Findings from this study suggest that staff prefer the allocation of portfolios, both in Nhanhala and in Yumurrku. In Yumurrku the child health-trained nurse held the child health portfolio and was the driver for that program, with the responsibility of leading the process and ensuring recalls were followed up. This was viewed as critical to the success of the HU5Ks program in Yumurrku. However, despite the existence of systems, with the instability in the Yumurrku health centre and with the loss of the driver, as previously described, the health centre did not have the capacity to implement the ASQ3-TRAK tool. Furthermore, although the structure of the child health day and system of portfolios made a definite difference to the Yumurrku health centre’s ability to conduct child health checks and implement the HU5Ks program, it did not of itself ensure the ongoing use of the ASQ3-TRAK tool. A dedicated child health day and a clinical champion driving child health within the health centre remain one component of the overall framework for successful implementation. Although these structures to guide practice are necessary, stability in the health centre, along with strong directive from management and a policy framework to support this, are also vital (Wise et al., 2013). Incorporating the tool into the child health check is a further innovation, and successful implementation requires a long-term, multi-level approach (Ertem et al., 2009; Fixsen et al., 2005).

To improve uptake of and access to the ASQ3-TRAK tool, moving the developmental check away from the health centre was raised as a possibility in both communities. In Yumurrku, an outreach service was suggested, while in Nhanhala, the AMS family centre had been built and plans were underway to move aspects of the child health check, such as the developmental check, to the new premises. This was not suggested as an alternative to a child health day, but instead as part of a dedicated program day. This proposal would see specific attention given to the developmental check and adequate time to perform it correctly. The need for outreach is supported by Jennings et al. (2013) and DiGiacomo et al. (2010) who identified outreach as an important enabler to improving the uptake of adult Aboriginal health checks. Similarly, a study exploring implementation of developmental monitoring practices in middle-income countries suggested it may be more realistic to address child development during home visits (Ertem et al., 2009).

An outreach service would also address an issue that all informants across both communities raised; the time taken to complete the ASQ3-TRAK. The length of well-person checks and the time they take to complete are recognised constraints to delivery of the service, and the busyness of clinics compounds this factor (DiGiacomo et al.,
Although Jennings et al. (2013) reported that shortening the health check was one strategy recommended for increasing the uptake, this was not suggested by any informants in this study. Instead, they strongly advocated for maintaining the tool’s format and focusing on engaging parents as part of the solution. Providing an outreach service, or conducting the developmental service away from the primary health centre, was described in both communities as a way of focusing on the child health checks to better engage parents in the need for the longer consultation and consistent with obtaining informed consent (Ball & Le Mare, 2011). It would help increase awareness and acceptance of the check by taking a more family-centred approach (Herceg, 2006), a finding also reported by other research in AMSs (DiGiacomo et al., 2010; Jennings et al., 2013). However, effective outreach needs to be supported by appropriate systems and infrastructure.

In both settings, informants strongly recommended incorporating the ASQ3-TRAK tool into the electronic health record. Not only would this then prompt staff to complete the developmental check as part of the HU5Ks check, it would also automatically record the results. Moreover, this would make the ASQ3-TRAK tool available to all staff simultaneously, overcoming the issue of access to the hard copy of the tool. However, this would not be without problems. First, as raised in the needs analysis in chapter five, computer literacy can be a problem for remote health staff and, as shown by the Nhanhala medical record audits, staff had difficulty negotiating PCIS to accurately complete the HU5Ks care plans. Second, an electronic flag does not guarantee the check is completed; recalls can easily be ignored, again as shown by the medical record audits. Finally, one of the strengths of the ASQ3-TRAK tool, identified in chapter four, was the process of engaging the child and the caregiver. Needing to complete a ‘form’ on the computer screen is a distraction that could take the practitioner’s attention away from the interaction with the family. A system that facilitates the use of the tool and documentation of results while still maintaining the family-centred focus, such as a tablet that is linked to the electronic record, could be explored.

Another infrastructure issue that arose in both the training needs analysis and the post-training interviews was the lack of an appropriate space to conduct the developmental checks. The kids’ rooms in both health centres were busy, noisy rooms that were used as thoroughfares. It was not uncommon for multiple consultations to be conducted simultaneously in the Yumurrku kids’ room. Consequently, it was challenging to engage a caregiver and child to demonstrate developmental skills due to the numerous distractions. A noteworthy finding from the parents’ interviews was their strong
preference for the developmental checks to be conducted in private. This was an unexpected finding as there was an assumption among informants that child health issues do not necessarily require privacy. While this is not the only barrier, respecting the privacy of parents and their children is an important factor that needs to be addressed in an attempt to engage families to undergo developmental checks. Providing an adequate space is imperative, whether this is securing another clinical room for the developmental checks or conducting the checks out of the health centre.

One last structural factor that is important in the ongoing use of the ASQ3-TRAK tool is specific quality improvement strategies. Clinical quality improvement approaches that include clinical audits to provide feedback to staff and health services about their service delivery have been found to be effective in improving professional practices (Jamtvedt, Young, Kristoffersen, Thomson, O'Brien, & Oxman, 2003). There has been considerable interest in using these methods in Aboriginal primary health care with voluntary uptake of clinical quality improvement projects in this sector (Bailie, Sibthorpe, Gardner, & Si, 2008). In recent years, the NT Department of Health has implemented a clinical quality improvement process across all remote Aboriginal health centres, including Yumurrku and Nhanhala (Bailie et al., 2010). The One21Seventy (2013) suite of audit tools, including the child health audit tool and the Systems Assessment Tool, has been used as part of this process to assess and improve systems for delivery of best practice care.

The audit tool that was adapted for the purpose of this study could feasibly be incorporated into efforts to improve the implementation of the ASQ3-TRAK tool and monitor developmental services as part of the existing clinical quality improvement initiatives. Specifically, the plan-do-study-act quality improvement cycle can be applied to any practice (Gillam & Siriwardena, 2013). The audit would reflect adherence to best practice in relation to development services for children under five. Providing this feedback to the health service and practitioners would enable ongoing assessment of the system to support developmental practice, with the ultimate aim being to improve the developmental care delivered to children in these communities. The health centres are supported by clinical quality improvement coordinators who assist in undertaking the quality cycles, and could reasonably lead this process with the child health nurses.

The effects of audit and feedback alone are generally small to moderate (Jamtvedt, Young, Kristoffersen, O'Brien, & Oxman, 2006). Much depends on the methods of feedback (Foy et al., 2005) and, when integrated within an overall quality improvement framework, effects are more promising (Gardner et al., 2011). Although the research
findings are equivocal, there is some evidence to suggest that multifaceted quality interventions are most effective (Jamtvedt et al., 2006; O'Brien et al., 2008). Grimshaw et al. (2004) suggest that multi-faceted interventions designed to address specific barriers are more likely to be effective than single interventions. Other studies that sought to understand why particular quality improvement interventions work suggest that contextual factors, as described in this section, are highly relevant and need to be considered in interventions (Gardner et al., 2010; Kaplan et al., 2012). Thus, to be most effective, audit and feedback relating to developmental care would need to be integrated into a broad quality improvement system that considers implementation strategies relevant to the specific barriers and facilitators of change in that context (Grimshaw, Thomas, MacLennan, Fraser, & Ramsay, 2004).

**SUMMARY**

The TRAK training program was intended to reach and provide training to AHWs and non-Aboriginal health practitioners in two study sites. The program focused on capacity building of the AHWs, designed to improve knowledge, skills and confidence in the area of ECD and in the use of the ASQ3-TRAK tool, as part of the existing schedule of child health checks.

The evaluation findings demonstrated that early and ongoing community engagement facilitated the implementation of the TRAK training in both settings, despite the differences in support received from health centre managers. The design and delivery of the program took the Aboriginal context into consideration and the evaluation demonstrated it was culturally appropriate and of high quality. Implementation proceeded as planned and the training reached the AHWs, its intended audience, with high exposure. The success of the implementation was testament to the will of the community members with whom strong relationships were formed. The training met the needs of a diverse group of participants and, notably, AHWs considered the training to be appropriate, relevant and useful to them in their workplace.

The training led to improvements in skills and knowledge, and confidence of participants to communicate with caregivers about their child’s development, detect developmental problems and provide advice to caregivers. The AHWs demonstrated strong behavioural intention to use the ASQ3-TRAK tool as part of their practice. It is reasonable to conclude that positive initial outcomes are a result of strong and successful implementation of the TRAK training program. Findings from this study were similar to
other findings that have demonstrated that culturally appropriate training and resources can improve AHWs’ knowledge, skills, self-efficacy, competencies and confidence (Nagel, Hinton, & Griffin, 2012; Wise et al., 2012). While acknowledging that training by itself is not an effective approach to implementation of a new practice or sufficient for capacity building, most authors agree that it is a significant component of any intervention. The TRAK training needs to be part of the overall integrated effort to improve developmental practice that incorporates the ASQ3-TRAK tool.

The evaluation simultaneously highlighted the significant challenges and the opportunities for improvement in the implementation of the TRAK training, and the implementation of the ASQ3-TRAK tool. Despite the presence of a number of factors perceived to support the implementation, the change in governance to community control significantly disrupted the stability the Yumurrku health centre had enjoyed. These external factors resulted in ‘disintegration’ of the health centre, with low staff morale and many staff departures. With the loss of the cohesive, stable team and without the embedded structures, such as IT integration of the tool, policy driving the practice and adequate external workforce support, the implementation of a new innovation was not possible. In Nhanhala, there was never strong leadership supporting the process. Changing management and high turnover of staff had a major impact on the child health services provided, resulting in a lack of integration and coordination of services. Moreover, AHWs did not feel respected and valued in this workplace. As such, this was not an environment in which a new innovation could easily be implemented.

Despite the AHWs and other participants in both communities remaining motivated, enthusiastic and committed to implementing the ASQ3-TRAK tool, there was reportedly little uptake into routine health service in either study site. The factors operating at the leadership, workforce and structural level discussed in this section were mutually reinforcing, producing a set of circumstances that did not facilitate the desired change. However, a better understanding of these factors has provided an opportunity to identify those that can be modified and thereby produce a set of circumstances that may enable the capacity building strategies for AHWs and other remote health staff to be integrated into routine service in the future (Gardner et al., 2010).
CHAPTER 10 CONCLUSIONS

INTRODUCTION

The findings of different components of this evaluation study have been discussed in the preceding chapters and demonstrate that the study addresses an important research gap, providing evidence about what is required to build the capacity of remote AHWs in the field of developmental practice. This chapter provides a summary of the study with an integration of the key results and a discussion of the significance of the findings of the study in the first section. Limitations and strengths of the study are discussed in section two. Recommendations for practice, policy and further research arising from this study are provided in section three, and finally, section four concludes the thesis.

10.1 SUMMARY OF STUDY FINDINGS

The broad aim of the TRAK study is to improve the developmental monitoring practice of remote health practitioners, particularly AHWs. To contribute to achieving this overarching aim, this thesis focused on the formative and process evaluation of the capacity building program for AHWs. Thus for this study, I evaluated the implementation of a specifically designed training program and of the adapted ASQ-3 that aimed to build the individual capacity of AHWs and other remote health practitioners to better equip them to deliver developmental services.

Prior to this study, there had been no developmental screening tools adapted or designed for use in remote Aboriginal Australia. This study addressed this important gap leading to the development of a culturally appropriate developmental screening tool for use in this high need context. The adaptation process, adopting Herdman’s (1998) universalist model, required considerable time and resources. This was the first study to use such comprehensive methods for the cross-cultural adaptation of any developmental instrument in the Australian Aboriginal context, and demonstrates the value of investing in the process. The success of the adaptation process, and subsequently the adapted tool, rested on the collaborative approach that respected local knowledge and opinions, and enabled and promoted Aboriginal community participation (Laycock et al., 2011).
Following the rigorous adaptation and translation process, face validity of the adapted ASQ-3 was confirmed through testing with families, AHWs and other remote health staff, and early childhood staff. The ASQ3-TRAK tool was judged culturally appropriate and relevant, and perceived to be a valuable tool to support practitioners’ developmental practice in the remote health centre. This is an important finding and confirms previous research that highlighted the need for culturally appropriate programs and tools to ensure culturally competent care for Australian Aboriginal people (Durey, 2010; Herceg, 2006).

A further valuable contribution of this study was the finding that the TRAK training can be undertaken effectively with AHWs and other remote health and education staff to build capacity in developmental monitoring practice. The TRAK training followed a robust design; it adopted techniques focusing on skill development and providing opportunities to rehearse skills through role plays and practical workplace sessions. Multiple qualitative methods confirmed that the mode of delivery, which employed a combined group and one-to-one format, is an effective and valued training approach in the Aboriginal context. The training workshop improved practitioners’ skills, knowledge, competence and confidence to identify and manage developmental difficulties in young children and promote child development, as evidenced on both self report and observation. In view of the paucity of early childhood development training accessible to AHWs and other remote health staff, this is a particularly important finding, as developmental monitoring is part of core Remote Health business. Further, effective training is a critical component of any practice improvement intervention and it is important to establish that the TRAK training led to positive learning outcomes.

A number of elements were identified as contributing to the successful implementation of the TRAK training in both communities, ensuring adequate reach of AHWs and optimising participant satisfaction. First, the study involved early and ongoing consultation with community representatives that led to effective partnerships. Second, AHWs were recognised as key staff in the context and the training was designed with their needs in mind. Third, training resources and materials, including the adaptation of the ASQ-3, were developed in conjunction with community partners, and being particularly mindful of cultural issues. Fourth, the training was informed by adult learning theories, and the literature pertaining to culturally appropriate strategies was utilised to enhance the learning experience and ensure quality and relevant training. Fifth, strong and stable leadership that prioritised child health and practice improvement
initiatives resulted in a greater number of staff participating in training. Finally, adequate time was allowed for the development and delivery of the training.

Despite the benefits and value of both the TRAK training and the ASQ3-TRAK tool, the uptake of the tool was not straightforward. While the ASQ3-TRAK tool filled an identified gap and aligned with the scheduled developmental checks that are part of the existing HU5Ks child health program, the integration of the tool into routine health service practice in the two study communities did not occur as intended. Challenges to the ongoing use of the ASQ3-TRAK tool were identified in three broad themes: leadership and governance, workforce support, and health centre structures. The many factors within these themes are inter-dependent and therefore, while some factors that were identified as necessary to facilitate the implementation were present, without the other components, ongoing successful implementation was not possible.

Of the many challenges, three factors emerged as key influences on the implementation of the training and the ongoing use of the ASQ3-TRAK tool. First, workplace stability was a major issue that disrupted both health centres and had a significant impact on the otherwise high-functioning Yumurrku health centre. This is not a factor that can easily be addressed and certainly not by individual health centres. However, if practice improvement initiatives are to succeed, policies directed at this issue need to be a focus for government (Wise et al., 2013). Second, the lack of a culturally safe workplace where AHWs felt respected and thus empowered had a considerable influence on the success of the program. This has been recognised as a problem for over two decades and cannot be ignored (Josif & Elderton, 1992; Tregenza & Abbott, 1995). Strategies to address AHW-nurse relationships, such as quality cultural competence training, need to be employed as a priority (Health Workforce Australia et al., 2011). Last, leadership that adopted a comprehensive primary health care approach, incorporating capacity building and quality improvement programs, was critical to the process. The sector requires leadership at all levels to recognise the relevance of the primary health care model and re-orientate health centres away from the acute care model. This means employing policy frameworks and key performance indicators that guide practice and to which all health centre managers are accountable. However, it also means ensuring health centre managers are engaged and aligned with the primary health care philosophy (Gardner et al., 2011; Jennings et al., 2013).

The study makes a further contribution by providing important data on these barriers, thus providing opportunities for addressing the barriers in future studies and improving
the implementation of the ASQ3-TRAK tool, to successfully embed it in remote Aboriginal health services.

### 10.2 Limitations and Strengths of the Study

This study has a number of possible limitations. The first is that only two case studies were included in this study, potentially limiting the generalisability of the study results. Furthermore, the embedded unit of analysis – the AHWs – yielded a small sample size. However, the intention of the case study design to evaluate the implementation of the training and the ASQ3-TRAK tool was not to achieve statistical generalisation and make inferences about the population. Instead the aim of the case study was analytic generalisation, that is, to develop and generalise theories (Miles & Huberman, 1994; Yin, 2009). The two case studies build on the learning theories applied to the training intervention, and the lessons learned add to knowledge of implementation processes for innovations in remote Aboriginal health centres (Grimshaw et al., 2007; Patton, 2002). Additionally, the rich description of the two case studies enhances the potential generalisability as it offers the opportunity for the reader to determine the fit between the case study and the context to which they may wish to generalise (Miles & Huberman, 1994; Ward-Schofield, 1993).

Multiple-case sampling, even if only two cases or a small number of embedded cases, adds confidence to the findings and encourages broader applicability (Miles & Huberman, 1994). The case studies selected, using purposeful sampling, have broad relevance. Many of the circumstances that were revealed for AHWs working in the two remote Aboriginal communities are common to other communities across the NT (Josif & Elderton, 1992; NT Department of Health, 2010; Tregenza & Abbott, 1995), increasing transferability of findings from this study to other settings. Further, the adaptation of the ASQ-3 extended beyond the two communities to include consultations with numerous experts in early childhood development in an attempt to gather broad and diverse views and ultimately achieve consensus on the modified version in ‘translatable’ English. The objective was to achieve a modified version that would be relevant in remote Aboriginal communities across the NT. Seeking widespread consultation and feedback from informants outside the two communities was a way of increasing applicability and transferability (Miles & Huberman, 1994).

The second limitation is that I was responsible for almost all aspects of the study, including the design and delivery of the training, and the evaluation of the
implementation, which introduces potential bias in the data collection. Acting as the evaluator of the program that I both developed and implemented brings with it the risk of being unable to maintain a neutral stance. Although utilising multiple researchers to conduct different aspects of the study may have addressed this bias, this was neither an ideal nor a practical solution in this context.

Introducing a researcher who was unknown to participants and who did not have any relationship with them would have threatened the quality of the interviews with the AHWs, and of my direct observations of their practice. An important strength of the study was the relationships I formed with participants. In view of a history of negative experiences of Aboriginal people at the hands of researchers (Street et al., 2007), trust is an essential component of successful, productive relationships in research with Aboriginal communities (Brands & Gooda, 2006; Kingsley, Phillips, Townsend, & Henderson-Wilson, 2010; NHMRC, 2003). Participants are more likely to be frank in interviews when they have developed a sound relationship with the researcher (Patton, 2002). Additionally, the presence of an independent observer to rate participants’ performances may have created tension and anxiety that would have impacted negatively on their ability. This was not in keeping with participants’ preference and the collaborative approach taken for this study.

When a research assistant who was a stranger to the community but experienced in working in remote communities, was introduced to conduct parent interviews, the lack of familiarity influenced the engagement of the parents and appeared to be a barrier to collecting data. Although a local Aboriginal research assistant was sought in both communities, and despite having secured funding for the position, this was not achieved due to a shortage of available people. Employing additional staff to be involved from the beginning of the study to develop these relationships required resources beyond the scope of the study.

The design of the study did attempt to address the potential bias. The multiple methods employed succeeded in collecting data from different perspectives to clarify results and challenge the bias that comes from a single method (Crowe et al., 2011; Green & Thorogood, 2009). Data obtained from self-report were complemented by observational and audit data. Additionally, using interview schedules and structured observation checklists, and transcribing interviews verbatim, were further strategies employed to minimise this bias (Gray, 2009). Notably, informants, including AHWs, did not shy away from giving thoughtful and considered views in the interviews that did not always
reflect positively on the implementation, suggesting they did not fear engendering disfavour.

The third possible limitation is that objective assessment of training did not include a knowledge test pre- and post-training. A detailed discussion is provided in chapter three but to summarise, testing in this context may not be culturally appropriate. Participants had varying levels of English language and literacy proficiency and an overly intrusive method such as a test (Patton, 2002) could have threatened the engagement with the process, while not necessarily accurately recording their knowledge. No valid and reliable measure exists therefore using a test designed for this purpose would have introduced measurement error. However, objective assessment was included in the design of the study. A ‘performance test’, recommended by Kirkpatrick and Kirkpatrick (2007) to evaluate increase in skills, was part of the evaluation. The formal observations of the practical administration of the ASQ3-TRAK tool, post-booster training, were a performance test that assessed the participants’ competency.

A final potential criticism of this study is that full psychometric properties of the ASQ3-TRAK were not examined. It is acknowledged that reliability and validity of the adapted tool cannot be assumed and ultimately it is desirable that the psychometric properties of the adapted version are equivalent to the original ASQ-3. While this is an important step, it is a significant undertaking and was beyond the scope of this study.

Although a number of limitations have been discussed, this study has significant strengths. First, the integration of both quantitative and qualitative methods aided in the understanding of the intervention, particularly in the Australian Aboriginal context. Mixed methods research is becoming increasingly popular as an accessible research approach that gives “breadth and depth of understanding and corroboration” (Johnson, Onwuegbuzie, & Turner, 2007, p. 123). This mixed methods approach has been recognised as necessary to address developmental health and wellbeing of children in Australia broadly (Vimpani, Patton, & Hayes, 2002) and the methodology is consistent with reforms recommended for Indigenous research (Henry et al., 2004). Not only were mixed methods employed, but multiple qualitative methods including observation, individual and group interviews, as well as multiple sources, were used. Obtaining multiple perspectives is referred to as triangulation (Patton, 2002), but rather than trying to find a consistent version of the data, as triangulation is sometimes defined, it was important for clarifying and improving understanding of the adaptation requirements, training needs, and impact of training and implementation of the ASQ3-TRAK tool (Green & Thorogood, 2009).
Second, the value of focusing and reporting on the process evaluation, particularly in health education and behaviour change interventions, has been emphasised by many (Grimshaw, Eccles, Walker, & Thomas, 2002; O'Brien et al., 2008; Young et al., 2008). Similarly, in the field of implementation, authors argue for detailed descriptions of interventions to be published to improve the opportunity for replication and introduction of successful programs (McCalman et al., 2012; Michie, Fixsen, Grimshaw, & Eccles, 2009). The process evaluation for this study has been able to not only tell us what went on with the TRAK program and how it was developed, but why it deviated from initial plans and expectations. This provides valuable information that cannot be provided by focusing solely on outcomes. As Patton (2002) suggests, “pure pre-post outcomes evaluation is the ‘empty box’ approach to evaluation” (p. 161).

Finally, a major strength of this study was the concerted effort made to consult the Aboriginal community representatives from the initial stages and to subsequently involve them in all aspects of the study, including research dissemination (Bond, 2009; McAullay, Griew, & Anderson, 2002; NHMRC, 2003; Street et al., 2009). Considerable attention and time was given to establishing and maintaining the partnerships throughout the life of the study, a critical component of successful research efforts in Aboriginal communities (Dudgeon et al., 2010). Respect for local Aboriginal expertise and knowledge underpinned the adaptation process, which involved comprehensive consultation and rigorous methods to ensure a quality adaptation (Franks et al., 2002; Henry et al., 2004). Similar to the adaptation process, the training was also a consultative process. The training was principally informed by the needs analysis that included interviews and clinical encounter observations with AHWs, as well as the medical record audit. This process was respectful of staff needs and preferences, and was an important engagement strategy for participants in the training. This collaborative approach to developing research arguably “supports community empowerment, capacity building and improved infrastructure” (Street et al., 2007, p. 377).

### 10.3 Implications of the Study

Recommendations for further research and for policy and practice arising from this study are presented in the following section.
10.3.1 Implications for further research

This study has addressed an important knowledge gap with regard to developmental monitoring practice in remote Aboriginal community contexts. This points to the need for further work in a number of areas. There is still a need to build the evidence base for practice and policy in developmental care provided to Aboriginal children in remote Aboriginal communities. Many authors agree that the research focus for Aboriginal health should be on the health of children as this is key to improving health, economic and social outcomes (Eades et al., 2010; Eades & Stanley, 2013; Priest et al., 2009). Similarly, the recently released National Aboriginal and Torres Strait Islander health plan (Australian Department of Health and Ageing, 2013) has recognised the significance of healthy early childhood development and has recommended an expanded focus on services to improve developmental outcomes.

The TRAK study was designed to extend beyond the PhD and as described in the introduction, my planned post-doctoral research will aim to follow-up the service and practice outcomes of the implementation of the TRAK training and the ASQ3-TRAK tool over the longer term. Data from an audit conducted 12 months after the training and introduction of the tool, will be analysed to review changes in practice. This quantitative evaluation will supplement the findings from this study regarding outcomes of the AHW training and of the ASQ3-TRAK tool implementation and further the knowledge generated in this area. Audit data from two control communities will also be analysed. These data will assist in designing future and much-needed intervention studies (NHMRC, 2010).

Internationally, there has been too little emphasis on intervention research (Hawe, Samis, Di Ruggiero, & Shoveller, 2011; Milat, King, Rissel, Bauman, & Redman, 2012; Sanson-Fisher, Campbell, Htun, Bailey, & Millar, 2008) and the same criticism has been made of the paucity of data that explores the impact of interventions in the Australian Aboriginal context (Eades et al., 2010; Stewart et al., 2010). There has been a call for intervention research to find ‘real world’ solutions to reduce health disparities for disadvantaged groups (Milat et al., 2012; Pyatak et al., 2013). National policy documents have recently given greater focus to addressing this challenge. For example, the NHMRC Road Map II (NHMRC, 2010) has set intervention research as a priority for Aboriginal health research to improve understanding of both changes needed and the means to produce the changes to improve health outcomes.
Several reviews in recent years have shown that the vast majority of Aboriginal health research outputs have been descriptive (Eades et al., 2010; Sanson-Fisher et al., 2006; Stewart et al., 2010). The cost, complexity and increased time required to complete intervention studies, compared to descriptive studies, are some of the reasons suggested for this (Sanson-Fisher et al., 2008). These factors need to be considered and this study underscores the need for sufficient time and financial resources, and strong partnerships to adequately undertake further research investigating larger scale intervention and dissemination. To successfully address the barriers to implementation identified in this study, further research needs to build on the approach taken in this study and include communities and practitioners while involving policy makers more closely (Eades & Stanley, 2013; NHMRC, 2010).

This study was conducted in two sites and while important and valuable findings were generated from the two case studies, future studies that test new strategies in a larger number of sites would add value. There would be benefit in a replication study that specifically addressed some of the barriers identified by focusing on the recommendations made in this study. This would be an important contribution to build evidence and increase knowledge of the requirements necessary to implement interventions and deliver quality developmental services in remote Aboriginal health services. This knowledge will assist in further dissemination of the TRAK training and the ASQ3-TRAK tool, and is consistent with the sort of research commentators are calling for.

Exploring the value of the tool in other remote Aboriginal settings will require the ASQ3-TRAK tool to be translated into the Aboriginal languages of those communities. This study established that the practice of involving community representatives in the translation process was an important collaborative exercise that legitimised the tool and engaged health practitioners to adopt its use. The bilingual nature of the tool facilitated the AHWs’ confidence and use of the tool and therefore the engagement of the parents, consistent with culturally competent care. Thus, further research using the ASQ3-TRAK would benefit from the tool being translated into the local language.

As discussed in the previous section, full psychometric properties of the ASQ3-TRAK tool should be explored. If the tool is to be disseminated widely, we require evidence not only of its utility, which has been established, but also reliability and validity. Further research is needed that includes a validation study of the ASQ3-TRAK tool with scoring norms established for the remote Aboriginal population. The development of the ASQ3-TRAK tool is a significant step forward, however research needs to continue
to further improve its use and value in the routine developmental screening process in this population. A useful extension of this research would therefore include the systematic incorporation of the TRAK training and the ASQ3-TRAK tool within the HU5Ks program and support processes, as a trial of the effectiveness, reliability and validity of the adapted ASQ-3. This is a body of work that I plan to carry forward through a program of post-doctoral research.

While remote-dwelling Aboriginal Australians experience the greatest disadvantage (Vos, Barker, Stanley, & Lopez, 2007) urban Aboriginal people account for a significant proportion of the health gap between Aboriginal and non-Aboriginal Australians because of much greater numbers living in urban centres (ABS, 2011e). Despite this, there is little evidence that addresses the health and development needs of urban Aboriginal children (Priest et al., 2009). The value and sustainability of the ASQ3-TRAK tool as a developmental screening tool for use with urban Aboriginal families should be explored in future research into the developmental monitoring of urban Aboriginal children.

10.3.2 Recommendations for practice and policy

While further research is necessary and planned, there are implications of the study findings that can inform current policy and practice. Most of the recommendations that flow from the study findings are specific to improving the developmental practice of AHWs. These are outlined below, together with some broader recommendations of relevance to the overall context of workforce development and remote health services more generally. These recommendations are equally applicable and relevant to other primary health care program areas.

Leadership and governance in the remote health practice

1. Managers undergo training to ensure there is an understanding and appreciation of the primary health care model and therefore the rationale for the developmental check and the resources required to complete the ASQ3-TRAK tool, including time.

2. Department of Health together with the Health Development branch to develop centralised regional plans with clear policies and guidelines to support practice. Provide an explicit requirement that developmental checks should be completed.
3. Incorporate the ASQ3-TRAK tool into policy frameworks and provide practice guidelines to support its integration into routine care. This could include policies on intersectoral collaboration to deliver integrated child services that incorporates developmental monitoring.

4. Consider including routine developmental checks as a key performance indicator. This would provide health centre managers with a higher level mandate to provide the necessary prompting and monitoring of staff practice.

5. Introduce changes incrementally and ensure staff are engaged in the process of practice change.

6. Provide coordination of the roles and responsibilities of staff from different disciplinary backgrounds to better enable staff to effectively implement innovations to improve practice delivery.

7. Explore policies and practices to promote remote health workforce stability

Support for the workforce

8. Promote a culturally safe and positive environment that enables AHWs and nurses to work together productively. Health centre managers and nurses require adequate cultural competence training to create an environment where AHWs are respected and feel empowered.

9. Provide biannual local TRAK training workshops and quarterly booster sessions to maintain the skills of a core group of both nurses and AHWs, and external support staff such as Health Development child health nurses.

10. Provide ongoing support and regular training workshops through the Health Development child health nurse.

11. Include an elective unit on the topic of early childhood development in the Certificate IV in Aboriginal and/or Torres Strait Islander Primary Health Care Practice training. Contextualising the unit to include the TRAK training would allow this training to be accredited towards the Certificate IV for the HLT07A qualification.

12. Involve Strong Women workers to support the health centre staff to engage caregivers and provide quality developmental monitoring.
13. Promote interprofessional and intersectoral relationships between health practitioners and FaFT staff to facilitate developmental practice.

14. Consider introducing a monetary incentive as a method for further encouraging health centre staff to complete the developmental check using the ASQ3-TRAK tool.

**Structures in the health centre**

15. Encourage child health program days and allocation of child health portfolios across all health centres. Consider introducing a regional plan that directs health centres to adopt these processes consistently.

16. Provide an adequate space that both respects families’ privacy and is conducive to conducting developmental checks.

17. Include an outreach service to deliver developmental care, in addition to centre-based care, that is led by the child health nurse and involves both health centre practitioners and FaFT staff.

18. Explore the possibility of an electronic form of the screening tool (such as a tablet) that is linked to the electronic record to facilitate the use of the tool and documentation of results while still maintaining the family-centred focus.

19. Consider expanding the One21Seventy child health audit tool to include items that capture the use of the ASQ3-TRAK tool for those health centres that have introduced it. The audit tool that was adapted for the purpose of this study could feasibly be introduced as another stand-alone audit tool to be incorporated into quality improvement efforts.

**10.4 Conclusion**

The aim of this thesis has been to contribute towards generating evidence and understanding of how to effectively build the capacity of AHWs and other remote health practitioners to provide quality developmental care to remote-dwelling Australian Aboriginal children.

Adopting a rigorous and comprehensive cross-cultural adaptation process of the ASQ-3 resulted in a culturally and linguistically appropriate, highly acceptable and valuable
developmental screening tool being available for use in remote Aboriginal communities. This study established that AHWs and other remote staff can be effectively trained in early child development principles and become competent in administering the ASQ3-TRAK tool. The positive results were an outcome of the high quality and relevance of the culturally appropriate TRAK training program.

However, implementation of a system of developmental care cannot rely on the TRAK training or the ASQ3-TRAK tool alone. In addition to these two crucial capacity building components, other facets of the system need to be addressed concurrently. Policy and health service planning needs to ensure that an integrated, multi-level approach is available for the ASQ3-TRAK tool being embedded in core business, as a component of the HU5Ks program and to become part of routine care. This study has identified factors that need to be implemented over the long-term to support the application of the TRAK training and the ASQ3-TRAK tool.

The training and the ASQ3-TRAK tool need to be part of an overall integrated effort of implementation of developmental practice that includes adequate leadership and governance in remote health services, support for the remote health workforce, particularly AHWs, and health service structures to better support delivery of care. This approach is more likely to provide the circumstances to support the initiative and increase the likelihood of successful and ongoing use of the tool.

Key recommendations to arise from this study include addressing workforce stability, enabling culturally safe workplaces that empower AHWs, and promoting the importance of the primary health care model of care among remote health centre managers. The knowledge generated by this study provides opportunities to improve implementation of the initiative in this challenging context.

This thesis sought to address a significant gap in a priority area; promoting the development and wellbeing of Australian Aboriginal children. Extending the research in this area and disseminating the TRAK training and ASQ3-TRAK tool to other remote Aboriginal communities will be an important next step. This is especially so in view of the continuing health inequalities facing this population and the overwhelming evidence supporting investment in early childhood development for longer term outcomes in health, education and wellbeing.


Ball, J., & Le Mare, L. (2011). Lessons from community: University partnerships with First Nations. In H. Goelman, J. Pivik & M. Guhn (Eds.), *New Approaches to*


Centre for Community Child Health, & Murdoch Childrens Research Institute. (2009). *Study to examine the feasibility of developing a national tool to check child health and development during the childhood period 18 months to 3 years of age. Final report*. Melbourne.


Delima, J., & Vimpani, G. (2011). The neurobiological effects of childhood maltreatment: An often overlooked narrative related to the long-term effects of


290


Standing Committee on Aboriginal and Torres Strait Islander Health. (2002). *Aboriginal and Torres Strait Islander health workforce national strategic framework*. Canberra.: Australian Health Ministers’ Advisory Council.


Urbis Keys Young. (2006). *Evaluation of the continuous improvement projects (CIP) for the early detection and management of chronic disease for Aboriginal and Torres Strait Islander people*. Canberra: Office for Aboriginal and Torres Strait Islander Health (OATSIH).


Wise, M., Massi, L., Rose, M., Nancarrow, H., Conigrave, K., Bauman, A., & Hearn, S. (2012). Developing and implementing a state-wide Aboriginal health promotion...


APPENDICES
APPENDIX 1A: PRE-TRAINING INTERVIEW SCHEDULE

<table>
<thead>
<tr>
<th>Resources</th>
<th>Availability</th>
<th>contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Info statements</td>
<td>Hard and on USB</td>
<td></td>
</tr>
<tr>
<td>Consent forms</td>
<td>Hard and on USB</td>
<td></td>
</tr>
<tr>
<td>Room/space</td>
<td>N - AMS Y - Renal Room?</td>
<td>Kathy/Marion Sue/Tina</td>
</tr>
<tr>
<td>Tea/coffee</td>
<td>X 2 iPhone and digital recorder</td>
<td>Claire</td>
</tr>
<tr>
<td>Audio recorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note book</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1 1/2 hours</td>
<td></td>
</tr>
</tbody>
</table>

**Record**
Date Place Interviewer Participant
Demographics of interviewee - Age range - Gender - Quals - Languages spoken - Addit training in ECD (HUSKs training?)

**Introduction**
Thankyou for your time.....
Recap aim
Explain time, confidentiality (again)....
You (Interviewee) can ask questions and also can stop interview at any time....

**ECD services in community**
Can you tell me a little about the services for young children available in the community?
- For example through the clinic, school or other?
- What can you tell me about it?
- Would you know how to get kids enrolled?
- Who would you go to if you wanted to know more?

Might need to ask more specific questions, such as when would you refer to the DMO; what happens if you/others are worried about development; what if a child has a disability - who provides service

**HUSKs**
Do you know about the HUSKs? What can you tell me about it? Have you or anyone in the clinic had training in it? What’s your experience of using the HUSKs? (may lead into general discussion about development – what’s it’s relevance in Yolngu or Aranda)

**Current developmental service - Confidence**
At the moment whose job is it to monitor kids’ development?
- To do the HUSKs check?
- What’s AHWs role in this? What’s your role?
- Who decides this? What do you think about this?
- Who should be involved/responsible?

**Current developmental service - Knowledge**
When kids are seen in the clinic, how do we know they need to have a developmental check? How do practitioners know what needs to be done? How do AHWs know? And you?
<table>
<thead>
<tr>
<th>Confidence</th>
<th>Barriers/ Facilitators + Needs anal</th>
<th>Org bar/fac</th>
<th>Attitudes Cult perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prioritising ECD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can you tell me about doing development checks on kids? (easy/hard/fun/worrying??)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What makes it hard/easy?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What would make it easier/harder?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• How has your training (AHW or on the job) prepared you for this?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What other training would be helpful/useful</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploring the importance of ECD and how it’s prioritised against other factors –acute care, time, parents’ views on importance. Could use scenarios to explore. If child comes in with cut on foot, and due for 12 month developmental check, what could you do? Likely to provide socially desirable response. What makes is harder to fit in? What would make it easier? What usually happens? Is there anything that could be done differently?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supports</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there anyone you can go to for support/advice to do developmental checks?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What support do they provide?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Is there anyone else whose support you would find helpful?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Perspectives on healthy child development</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can you tell me what child development means in Yolngu/Aranda? We look for milestones in the Balanda way “Can a 1 year old walk yet?” – are there milestones in the Yolngu way</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Are there things you expect a 1 year old to be doing? When should we be worried?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# APPENDIX 1B: POST-TRAINING INTERVIEW SCHEDULE

![TRAK Study Logo]

Talking about Raising Aboriginal Kids

## Post-Training Interview Schedule March 2012

<table>
<thead>
<tr>
<th>Record</th>
<th>Date</th>
<th>Place</th>
<th>Interviewer</th>
<th>Interviewee</th>
</tr>
</thead>
</table>

**Introduction**
- Thankyou for your time.....
- Recap aim
- Explain time, confidentiality (again)....
- You (Interviewee) can ask questions and also can stop interview at any time....

**Training**
- If you think about the training – the workshop, the practice and the booster - what did you like about it? What didn’t you like about it?
- How did you find the classroom session? How did you find the practice sessions? The ones we did last year...the ones we did this time? What did you like/dislike?
- What did you get out of the training? Did anything surprise you?
- What could have been done differently? Would you have changed anything?
- If you think back to who was in the group (H AHWs and FLO D1, MCHN D2) (Y AHWs and FLO W2), what did you like/not like about that? Do you think anyone else should have done the training?
- After doing the training, what do you think changed for you? In your understanding or the way you think about things? In the way you do things?
- Did the training make any difference to you? If yes, how/why? If no, what could have been done differently so that you could have got more out of it?

| To what extent were staff trained as planned? |
| Knowledge/Confidence? |
| Support |
| Knowledge/Attitude... Perceived impact on practice |
| Confidence |
## Post-Training Interview Schedule  March 2012

<table>
<thead>
<tr>
<th>(If not yielding anything may need to ask more leading questions...)</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the training make any difference to how confident you feel to do a developmental check? If more confident, which part of the training helped the most? If not, what could have or could still help that?</td>
<td>Knowledge of ECD policies and services</td>
</tr>
<tr>
<td>(may need to prompt for change in knowledge of policies.</td>
<td></td>
</tr>
<tr>
<td>Did the training make any difference to what you know about the HUSKs?...about other ECD services? Like FaFT?</td>
<td></td>
</tr>
</tbody>
</table>

### Tool

- **Tell me how you feel about using the ASQ3-TRAK Tool. What do you like/not like about it?**
- **How do you think parents find it?**
- **What do you think about the number of questions? And how long it takes?**

### Perceived impact on practice

- **Since doing the training, has anything changed in the clinic around child health checks?**
- **Can you tell me if anything has changed in what you do when you see kids? What has helped and what has made it difficult to change your practice?**
- **Has the ASQ3-TRAK tool been used in the clinic since training? Who has used it? Why do think that is? What has helped and what has made it difficult for you and others to use the tool?**
- **What do you think would help you to make better use of the ASQ3-TRAK tool?**

### Barriers/facilitators

- **Need to ask about context...**
  - **What’s changed since first interview?**
  - **What’s been the impact of this on your position in the clinic?**
  - **.....on your role in delivering ECD**
  - **.....on the general ability of clinic to deliver ECD? Different/Better/Worse?**

---

For any questions or concerns please contact Dr Anita D’Aprano 08 8922 8995 anita.daprano@menzies.edu.au
APPENDIX 1C: Parent interview schedule

TRAK Study Training Parent Interview Schedule

Date: ___________________ Interviewer’s Name: ___________________

1. Age
   15-19, 20-24, 25-29, 30-34, 35-39, 40-45, other____________________

2. Children
   1  2  3  4  >4

3. Birth order

4. Schooling
   Highest level of schooling completed
   VET? Diploma? Degree? Other?

5. How did you find the ASQ-3_TRAK questionnaire?

Prompts:
   Interesting?
   Fun?
   Scary?
   Shamed?
   Bored?
   Comfortable?
   Proud

6. How long did the questionnaire take?
   Prompt: Do you think it was
   Too long? Just right? Too short?

7. Were the questions asked in English or Western Arramta?

8. Ease of understanding
   How easy was it to understand the questionnaire?
   Very easy  Easy  Difficult  Very difficult
9. Were there many questions which are hard to understand? (prompt around language or content?)

10. Were there many words which are hard to understand? What did you think of the words/language used?

11. Privacy
   Where did the AHW ask the questions?

   Was it private enough?

   Prompt: What about if other people were around, would that bother/shame you? Or would it make you feel more comfortable?

12. Did the AHWs use the pictures? What did you think of the picture?
    Prompt: Did the pictures help you understand the questions?

13. Any other comments?

Thank you for your time
APPENDIX 1D: GROUP INTERVIEW SCHEDULE

<table>
<thead>
<tr>
<th>Resources</th>
<th>Availability</th>
<th>contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>room/space</td>
<td>Ntaria – WAHAC</td>
<td>Kathy/Marion</td>
</tr>
<tr>
<td></td>
<td>Yirkala – FaFT space?</td>
<td>Sue/Tina</td>
</tr>
<tr>
<td>tea/coffee</td>
<td>X 2 iPhone and digital recorder</td>
<td></td>
</tr>
<tr>
<td>co-facilitator</td>
<td></td>
<td>Kathy Ritjili</td>
</tr>
<tr>
<td>audio recorder</td>
<td></td>
<td>Claire</td>
</tr>
<tr>
<td>scribe</td>
<td>??RA</td>
<td></td>
</tr>
<tr>
<td>white board</td>
<td>1-2 hour discussion time</td>
<td></td>
</tr>
<tr>
<td>butcher paper</td>
<td>15 min tea break –flexible with time to allow informal discussion?</td>
<td></td>
</tr>
<tr>
<td>time available</td>
<td>In plain language</td>
<td></td>
</tr>
<tr>
<td>questionnaires</td>
<td>On large A3 sheet to be able to make edit in session</td>
<td></td>
</tr>
<tr>
<td>advice handout</td>
<td>In plain language</td>
<td></td>
</tr>
<tr>
<td>sample diagrams (from CCD??)</td>
<td>Enlarged on A4 sheets to be able to edit in session</td>
<td></td>
</tr>
</tbody>
</table>

To discuss adding to the questionnaire, literally cut and paste
To add to advice information

Ask Bonnie and Anne Kimberley - ASQ

<table>
<thead>
<tr>
<th>Date</th>
<th>Place/Circumstances</th>
<th>Facilitator/s</th>
</tr>
</thead>
</table>

**Introduction**
- Who am I
- Why we're here (overall aim of project and specific aim of group)
- Why group has been chosen
- What we're going to do, how long's it going to take
- Ground rules - confidentiality - No right or wrong answers - respect others' views

Ice-breaker - tea? - activity? Let Ritjili or Kathy lead?

5 min

Introduce ASQ
Read over one or 2 age group set of questions to familiarise group with questionnaire style—take it in turns to read one domain each till whole thing read out loud or give 10 minutes to read to self (be led by Ritj and Kathy on this)
1. use 12 month and 3 year
2. use 18 month and 4 year
3. use 2 and 6 month

15 - 25 min (reading and some discussion)

Then discuss:
Specific (looking at examples of items)
- Cultural relevance of the items in the ASQ?
- Appropriateness and understanding of each item for Aboriginal children in remote contexts?
- What other child attributes, competencies and milestones could be included or substituted?

45 min (depending on size of group – table exercise or white board)
TRAK Study: Talking about Raising Aboriginal Kids
ASQ ADAPTATION Group Interview Schedule

<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How can children’s development be evaluated or assessed in this context?</td>
</tr>
<tr>
<td>• What can parents and carers do to stimulate development?</td>
</tr>
<tr>
<td>• What does healthy child development mean? What does “delayed development” mean?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Available services, resources and programs in the community?</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-15 min White board</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Morning/afternoon Tea or lunch?</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-20 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>List of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

For any questions or concerns please contact Dr Anita D’Aprano 08 8922 6995 anita.daprano@menzies.edu.au

menzies
school of health research

315
### APPENDIX 2A: PRE-TRAINING OBSERVATION SCHEDULE

| Setttings: Layout, description of whole site (incl lighting, smell, sound, objects, weather/temp) |
| Acts: Brief actions of individuals |
| Activities: Various actions of people in setting; acts of longer durations; events |
| Meanings: Verbal accounts...used to define; emotions in particular contexts |
| Participation: Holistic involvement of participants |
| Relationships: Who is involved (Actors) and with whom |
| Time: Time sequence |

| Introduction to AHW |
| Thankyou for your time..... |
| Recap aim |
| Explain time, confidentiality (again).... |
| You can ask questions and also can stop at any time.... |
| Introduction to patient |
| Explain my presence is about observing AHW |
| Waiting room – how do patients wait? On Kids’ day vs other days? What do they do while they wait? |
| AHW waiting – what do they do while they wait? |
| Who decides the patient to be seen by the AHW? |
| Consulting room – where did consultation take place? |
| Who is involved? And with whom? (AHW to patient, to other staff?) |
| Where were people sitting? Draw a picture |
| Duration of consultation |
| Start: | Finish: |
| What is communicated to patient – before entering consultation – during consultation |
| Language spoken |
| Progress notes made at time? |
| What was process of interview? What goes on? What was done? (reason for child presenting?) |
| What resources were used? |
| What was observed? Who did what? (looking, touching, moving, talking, listening, pausing) |
| How are decisions made? |
| What do staff say is their reason for doing things a certain way? |

---

For any questions or concerns please contact Dr Anita D’Aprano 08 8922 6995 anita.daprano@menzies.edu.au

---

[Image: Menzies School of Health Research logo]
### APPENDIX 2B: POST-TRAINING OBSERVATION SCHEDULE

#### Observation of ASQ3-TRAK Tool

**1. Completing the Tool**

<table>
<thead>
<tr>
<th>Skill</th>
<th>Yes</th>
<th>Partially</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chooses correct age Questionnaire</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Prepares - Reads the questionnaire through first. Gets out all the toys that might be needed</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Introduces the Questionnaire - Explains to the caregivers what they’re going to do and why. (Reads the front sheet (the part in grey) or uses own words)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Introduces each new section before asking questions. For example, explains COMMUNICATION then asks the questions</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Once toys needed are selected, lets the child play with the toys. The child may end up doing what we want to see, without even asking.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Tries to get the child to do the activities first, but if the caregiver says that child usually does it at home, ok to tick “yes”</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Asks the parents to show the child the task or to play the game with the child.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Allows enough time for the question to be asked in Language if using an interpreter/strong woman worker.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Uses the picture booklet</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Makes caregiver feel comfortable, develops rapport</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Makes child feel comfortable, makes it a game/fun</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Offers encouragement and positive reinforcement to caregiver/child during the administration of the ASQ3-TRAK.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**2. Scoring the Tool**

<table>
<thead>
<tr>
<th>Skill</th>
<th>Yes</th>
<th>Partially</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ticks the boxes as questions asked</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Totals the score</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Fills in the summary score sheet</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
### Observation of ASQ3-TRAK Tool

#### 3. Interpreting the score

<table>
<thead>
<tr>
<th>Skill</th>
<th>Yes</th>
<th>Partially</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interprets score correctly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeds back to caregiver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provides appropriate advice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arranges appropriate follow up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provides Parent Information Sheets to all caregivers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4. Recording the findings

<table>
<thead>
<tr>
<th>Skill</th>
<th>Yes</th>
<th>Partially</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Records 1. ASQ3 TRAK completed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records 2. Developmental milestones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records 3. Advice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records 4. Referral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records 5. Follow up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records in appropriate place</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCIS – Progress notes and Assessment form</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicare – Comments box in child health tab</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 5. Comments

---

[Logo: TRAK study]

Talking about Raising Aboriginal Kids
### APPENDIX 3: AUDIT TOOL

**TRAK STUDY – AUDIT TOOL**

#### Section One: General Information

1. **Client ID**
   - [ ] __ __ __
   - **Each audit must have a separate ID number**

2. **Date of Audit**
   - [ ] / / 
   - **Either PRE-Audit or POST-Audit**

3. **Baseline Audit**
   - [ ] 1-Yes 0-No
   - **Indicate the DATE RANGE audit will need to cover, eg Sep 21 2010-Sep 21 2011**

4. **Post Audit**
   - [ ] 1-Yes 0-No
   - **Indicate the AGE RANGE audit will cover, eg 2 months – 14 months**

5. **Audit date range**
   - //
   - [ ] __ __ months

6. **Date of birth**
   - [ ] __ __
   - [ ] 

7. **Age at date of Audit**
   - [ ] 
   - [ ] 

8. **Audit age range**
   - [ ] Male 1  
   - Female 2

#### Section Two: Attendance at health centre (*if more space required, see last page*)

2.1 **Dates of attendance in previous 12 months**

2.2 **Describe reason for attendance**

2.3 **First seen by**

<table>
<thead>
<tr>
<th>Key</th>
<th>2.2 &quot;Reason for attendance&quot; key</th>
<th>2.3 &quot;First seen by&quot; key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acute care (incl follow up)</td>
<td>Aboriginal Health Worker</td>
</tr>
<tr>
<td>2</td>
<td>Immunisation</td>
<td>Remote Area Nurse</td>
</tr>
<tr>
<td>3</td>
<td>Child Health Check</td>
<td>Child Health Nurse</td>
</tr>
<tr>
<td>4</td>
<td>Growth faltering/FTT</td>
<td>Outreach Midwife</td>
</tr>
<tr>
<td>5</td>
<td>Chronic Respiratory Illness</td>
<td>Public Health Nurse</td>
</tr>
<tr>
<td>6</td>
<td>Other (specify)</td>
<td>General Practitioner</td>
</tr>
<tr>
<td>7</td>
<td>Specialist</td>
<td>Specialist</td>
</tr>
<tr>
<td>8</td>
<td>Allied health professional</td>
<td>Other (specify)</td>
</tr>
<tr>
<td>9</td>
<td>Other (specify)</td>
<td>Not stated</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.4 **Medical record paper**

| 1   | Medical record paper |
| 2   | Medical record computer |
| 3   | Medical record paper AND computer |

S 2011
TRAK Study – Audit Tool

2.5 If the client has NOT attended within 12 months is there any record of an unsuccessful follow up attempt since last attendance

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Yes</td>
<td>0-No</td>
<td>9-N/A</td>
</tr>
</tbody>
</table>

Section Four: Scheduled Immunisations

Please record all immunisations as given or not given OR N/A (not applicable if the child has not reached the specified age.

<table>
<thead>
<tr>
<th>4.1 Birth</th>
<th>Hep B</th>
<th>1</th>
<th>0</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BCG</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2 2 MONTHS</th>
<th>DPTa/ Hib/ Hep B/ IPV</th>
<th>1</th>
<th>0</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7vPCV</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Rotavirus</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.3 4 MONTHS</th>
<th>DPTa/ Hib/ Hep B/ IPV</th>
<th>1</th>
<th>0</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7vPCV</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Rotavirus</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.4 6 MONTHS</th>
<th>DPTa/ Hib/ Hep B/ IPV</th>
<th>1</th>
<th>0</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7vPCV</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.5 12 MONTHS</th>
<th>Hib</th>
<th>1</th>
<th>0</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MMR</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>MenCCV</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Hep A</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.6 18 MONTHS</th>
<th>VZV</th>
<th>1</th>
<th>0</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7vPCV</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Hep A</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.7 4 YEARS</th>
<th>DPTa / IPV</th>
<th>1</th>
<th>0</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MMR</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

Section Five: Other Child Health Services

<table>
<thead>
<tr>
<th>Check RESULTS section</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Date</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Weight checked at least once in the last 12 months?</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
<td>kg</td>
</tr>
<tr>
<td>Paper medical record</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>most recent when not acutely unwell</td>
</tr>
<tr>
<td>Computer medical record</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
<td>kg</td>
</tr>
</tbody>
</table>

V4_2
## Section Six: Audit of scheduled developmental services

Is there a record of each of the following services having been provided in the last 12 months?

Please record all checks as completed / not completed OR N/A (not applicable) if the child was not the appropriate age in the last 12 months.

### 6.0 2 MONTH

<table>
<thead>
<tr>
<th>UNDER 5’s ASSESSMENT (must be completed on Paper Care Plan or PCIS Assessment)</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Age when check completed</th>
<th>Date when check completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEVELOPMENTAL “CHECK” (birth – 4 months)</td>
<td>1</td>
<td>0</td>
<td>9</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

Be sure the check falls within the audit age range

**IF DEVELOPMENTAL CHECK present, what has been completed?**

<table>
<thead>
<tr>
<th>Person completing check</th>
<th>Aboriginal Health Worker</th>
<th>Nurse</th>
<th>Other(specific)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Where was development check documented?</th>
<th>Paper HUSKs care plan</th>
<th>Paper record progress notes</th>
<th>PCIS US’s “Assessment”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
### TRAK Study – Audit Tool

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3</td>
<td>Boxes ticked or circled?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.4</td>
<td>Record of Parent report of milestones?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.5</td>
<td>Record of milestones observed by practitioner?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.6</td>
<td>Record of practitioners’ clinical impression?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.7</td>
<td>Record of developmental screening tool used? (for example, PEDS, Brigance, ASQ-3)</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.8</td>
<td>Record of anticipatory guidance (PLAY and COMMUNICATION) provided?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.9</td>
<td>Any identified concerns about development (parents’ or practitioners’)?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**IF DEVELOPMENTAL CONCERNS identified, what action taken?**

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.10</td>
<td>Record of advice or brief intervention provided?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.11</td>
<td>Record of PLAY and COMMUNICATION advice?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.12</td>
<td>Record of referral for developmental concerns?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**If YES, to whom?**

- General Practitioner: 1
- Paediatrician: 2
- Allied Health Specialist (specify): 3
- Program (specify): 4
- Other (specify): 5

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.13</td>
<td>Record of plan to review?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6.14</td>
<td>Record of developmental assessment report following referral?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
### TRAK Study – Audit Tool

#### 7.0 6 MONTH

**UNDER 5’s ASSESSMENT**
(must be completed on Paper Care Plan or PCIS Assessment)

**DEVELOPMENTAL "CHECK"**
(5mths 0 days – 11 months)

Be sure the check falls within the audit age range

IF DEVELOPMENTAL CHECK present, what has been completed?

<table>
<thead>
<tr>
<th>Person completing check</th>
<th>Aboriginal Health Worker</th>
<th>Nurse</th>
<th>Other (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete for each section below</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Where was development check documented?</th>
<th>Paper HUSKs care plan</th>
<th>Paper record progress notes</th>
<th>PCIS U5’s “Assessment”</th>
<th>PCIS “Service Item/Visit Event”</th>
<th>PCIS “Documents”</th>
<th>PCIS progress notes</th>
<th>Other (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Record which practitioner documented in each section

#### 7.3 Boxes ticked or circled?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 7.4 Record of Parent report of milestones?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 7.5 Record of milestones observed by practitioner?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 7.6 Record of practitioners’ clinical impression?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 7.7 Record of developmental screening tool used?
(for example, PEDS, Brigance, ASQ-3)

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 7.8 Record of anticipatory guidance (PLAY and COMMUNICATION) provided?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>(only record anticipatory guidance relating to Play and Communication)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

#### 7.9 Any identified concerns about development (parents’ or practitioners’)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

IF DEVELOPMENTAL CONCERNS identified, what action taken?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

| Record of advice or brief intervention provided? | 1 | 0 | 9 |

| Record of PLAY and COMMUNICATION advice? | 1 | 0 | 9 |

| Record of referral for developmental needs | 1 | 0 | 9 |
### TRAK Study – Audit Tool

<table>
<thead>
<tr>
<th>Concerns?</th>
<th>If YES, to whom?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Practitioner</td>
</tr>
<tr>
<td></td>
<td>Paediatrician</td>
</tr>
<tr>
<td></td>
<td>Allied Health Specialist (specify)</td>
</tr>
<tr>
<td></td>
<td>Program (specify)</td>
</tr>
<tr>
<td></td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7.13</th>
<th>Record of plan to review?</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.14</td>
<td>Record of developmental assessment report following referral?</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Concerns?</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.13</td>
<td>Record of plan to review?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8.14</td>
<td>Record of developmental assessment report following referral?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
### 9.0 18 MONTH

**UNDER 5’s ASSESSMENT**
(must be completed on Paper Care Plan or PCIS Assessment)

**DEVELOPMENTAL CHECK**
(17 mths 0 days – 23 months)

*Be sure the check falls within the audit age range*

#### IF DEVELOPMENTAL CHECK present, what has been completed?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Age when check completed</th>
<th>Date when check completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Person completing check**
Complete for each section below

- Aboriginal Health Worker
- Nurse
- Other (specify)

**Where was development check documented?**
- Paper HU5Ks care plan
- Paper record progress notes
- PCIS U5’s “Assessment”
- PCIS “Service Item/Visit Event”
- PCIS “Documents”
- PCIS progress notes
- Other (specify)

**Boxes ticked or circled?**
- Record of Parent report of milestones?
- Record of milestones observed by practitioner?
- Record of practitioners’ clinical impression?
- Record of developmental screening tool used? (for example, PEDS, Brigance, ASQ-3)

**Record of anticipatory guidance (PLAY and COMMUNICATION) provided?**

**Any identified concerns about development (parents’ or practitioners’)?**

**IF DEVELOPMENTAL CONCERNS identified, what action taken?**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

**Record of advice or brief intervention provided?**

**Record of PLAY and COMMUNICATION advice?**

**Record of referral for developmental**
### TRAK Study – Audit Tool

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record of plan to review?</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Record of developmental assessment report following referral?</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

If YES, to whom?

- General Practitioner: 1
- Paediatrician: 2
- Allied Health Specialist (specify): 3
- Program (specify): 4
- Other (specify): 5
### TRAK Study – Audit Tool

#### 10.0 24 MONTH / 2 YEAR

<table>
<thead>
<tr>
<th>UNDER 5’s ASSESSMENT</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Age</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>(must be completed on Paper Care Plan or PCIS Assessment)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEVELOPMENTAL CHECK</td>
<td>1</td>
<td>0</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(23 mths – 2 yrs 11 months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be sure the check falls within the audit age range</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### IF DEVELOPMENTAL CHECK present, what has been completed?

<table>
<thead>
<tr>
<th>Person completing check</th>
<th>Aboriginal Health Worker</th>
<th>Nurse</th>
<th>Other (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete for each section below</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Where was development check documented?</th>
<th>Paper HU5Ks care plan</th>
<th>Paper record progress notes</th>
<th>PCIS U5’s “Assessment”</th>
<th>PCIS “Service Item/Visit Event”</th>
<th>PCIS “Documents”</th>
<th>PCIS progress notes</th>
<th>Other (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

#### 6.5.1 Which one?

<table>
<thead>
<tr>
<th>IF YES, 6.5.1 Which one?</th>
<th>Record which practitioner documented in each section, if different from above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Record which practitioner documented in each section, if different from above</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boxes ticked or circled?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record of Parent report of milestones?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Record of milestones observed by practitioner?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Record of practitioners’ clinical impression?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Record of developmental screening tool used?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>(for example, PEDS, Brigance, ASQ-3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Record of anticipatory guidance (PLAY and COMMUNICATION) provided?

<table>
<thead>
<tr>
<th>1-Yes</th>
<th>0-No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(only record anticipatory guidance relating to Play and Communication)</td>
<td></td>
</tr>
</tbody>
</table>

#### Any identified concerns about development (parents’ or practitioners’)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

#### IF DEVELOPMENTAL CONCERNS identified, what action taken?

<table>
<thead>
<tr>
<th>Record of advice or brief intervention provided?</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record of PLAY and COMMUNICATION advice?</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Record of referral for developmental</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>10.13</td>
<td>Record of plan to review?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>1.0</td>
<td>Record of developmental assessment report following referral?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1.0</td>
<td>Record of developmental assessment report following referral?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
# TRAK Study – Audit Tool

## 11.0 36 MONTH / 3 YEARS

### UNDER 5’s ASSESSMENT
(must be completed on Paper Care Plan or PCIS Assessment)

#### DEVELOPMENTAL CHECK
(2 yrs 11 mths – 3 yrs 11 months)

Be sure the check falls within the audit age range

**IF DEVELOPMENTAL CHECK present, what has been completed?**

<table>
<thead>
<tr>
<th>Person completing check</th>
<th>Aboriginal Health Worker</th>
<th>Nurse</th>
<th>Other(specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Where was development check documented?</th>
<th>Paper HUSK’s care plan</th>
<th>Paper record progress notes</th>
<th>PCIS U5’s “Assessment”</th>
<th>PCIS “Service Item/Visit Event”</th>
<th>PCIS “Documents”</th>
<th>PCIS progress notes</th>
<th>Other(specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Record which practitioner documented in each section

<table>
<thead>
<tr>
<th>Boxes ticked or circled?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Record of Parent report of milestones?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Record of milestones observed by practitioner?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Record of practitioners’ clinical impression?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Record of developmental screening tool used? (for example, PEDS, Brigance, ASQ-3)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

If YES, 6.5.1 Which one?

<table>
<thead>
<tr>
<th>6.5.2 Was score recorded?</th>
<th>1-Yes</th>
<th>0-No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Record which practitioner documented in each section, if different from above

### 6.8.1 Record of anticipatory guidance (PLAY and COMMUNICATION) provided?

1-Yes 0-No

(only record anticipatory guidance relating to Play and Communication)

### 11.9 Any identified concerns about development (parents' or practitioners')?

1-Yes 0-No

### IF DEVELOPMENTAL CONCERNS identified, what action taken?

<table>
<thead>
<tr>
<th>Record of advice or brief intervention provided?</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Record of PLAY and COMMUNICATION advice?</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Record of referral for developmental</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>
### TRAK Study – Audit Tool

**Concerns?**

If YES, to whom?

- General Practitioner: 1
- Paediatrician: 2
- Allied Health Specialist (specify): 3
- Program (specify): 4
- Other (specify): 5

<table>
<thead>
<tr>
<th>11.13</th>
<th>Record of plan to review?</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11.14</th>
<th>Record of developmental assessment report following referral?</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>
### 12.0 
**48 MONTH / 4 YEAR**

#### UNDER 5's ASSESSMENT
(must be completed on Paper Care Plan or PCIS Assessment)

#### DEVELOPMENTAL CHECK
(3 yrs 11 mths – 4 yrs 11 months)

*Be sure the check falls within the audit age range*

**IF DEVELOPMENTAL CHECK present, what has been completed?**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Age when check completed</th>
<th>Date when check completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person completing check</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete for each section below</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal Health Worker</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where was development check documented?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper HUSKs care plan</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper record progress notes</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCIS U5’s “Assessment”</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCIS “Service Item/Visit Event”</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCIS “Documents”</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCIS progress notes</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Record which practitioner documented in each section, if different from above**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boxes ticked or circled?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record of Parent report of milestones?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record of milestones observed by practitioner?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record of practitioners’ clinical impression?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record of developmental screening tool used? (for example, PEDS, Brigance, ASQ-3)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record of anticipatory guidance (PLAY and COMMUNICATION) provided?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any identified concerns about development (parents’ or practitioner’s)?</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**IF DEVELOPMENTAL CONCERNS identified, what action taken?**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record of advice or brief intervention provided?</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>12.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record of PLAY and COMMUNICATION advice?</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>12.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record of referral for developmental</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Record of plan to review?</td>
<td>Record of developmental assessment report following referral?</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>12.13</td>
<td>Yes</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12.14</td>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>
## TRAK Study – Audit Tool

### 13.0 OTHER RECORD OF DEVELOPMENTAL CHECK
(4 month or 9 month care plan, other)

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Age</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>9</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

### IF DEVELOPMENTAL CHECK present, what has been completed?

#### 13.01 Person completing check
- Aboriginal Health Worker
- Nurse
- Other (specify)

#### 13.2 Where was development check documented?
- Paper HU5Ks care plan
- Paper record progress notes
- PCIS U5’s “Assessment”
- PCIS “Service Item/Visit Event”
- PCIS “Documents”
- PCIS progress notes
- Other (specify)

#### 13.3 Boxes ticked or circled?
- Yes
- No

#### 13.4 Record of Parent report of milestones?
- Yes
- No

#### 13.5 Record of milestones observed by practitioner?
- Yes
- No

#### 13.6 Record of practitioners’ clinical impression?
- Yes
- No

#### 13.7 Record of developmental screening tool used?
- Yes
- No

(For example, PEDS, Brigance, ASQ-3)

#### 13.8 Record of anticipatory guidance (PLAY and COMMUNICATION) provided?
- Yes
- No

(Only record anticipatory guidance relating to Play and Communication)

#### 13.9 Any identified concerns about development (parents’ or practitioners’)?
- Yes
- No

### IF DEVELOPMENTAL CONCERNS identified, what action taken?

#### 13.10 Record of advice or brief intervention provided?
- Yes
- No

#### 13.11 Record of PLAY and COMMUNICATION advice?
- Yes
- No

#### 13.12 Record of referral for developmental concerns?
- Yes
- No

If YES, to whom?
- General Practitioner
- Paediatrician
### Section Two: Attendance at health centre  

**2.1 Dates of attendance in previous 12 months**

**2.2 Describe reason for attendance**

<table>
<thead>
<tr>
<th>Key</th>
<th>2.3 First seen by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute care (incl follow up)</td>
<td>1</td>
</tr>
<tr>
<td>Immunisation</td>
<td>2</td>
</tr>
<tr>
<td>Child Health Check</td>
<td>3</td>
</tr>
<tr>
<td>Growth faltering/FTT</td>
<td>4</td>
</tr>
<tr>
<td>Chronic Respiratory Illness</td>
<td>5</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>6</td>
</tr>
</tbody>
</table>

**2.3 “First seen by” key**

<table>
<thead>
<tr>
<th>Key</th>
<th>2.2 “Reason for attendance” key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal Health Worker</td>
<td>1</td>
</tr>
<tr>
<td>Remote Area Nurse</td>
<td>2</td>
</tr>
<tr>
<td>Child Health Nurse</td>
<td>3</td>
</tr>
<tr>
<td>Outreach Midwife</td>
<td>4</td>
</tr>
<tr>
<td>Public Health Nurse</td>
<td>5</td>
</tr>
<tr>
<td>General Practitioner</td>
<td>6</td>
</tr>
<tr>
<td>Specialist</td>
<td>7</td>
</tr>
<tr>
<td>Allied health professional</td>
<td>8</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>9</td>
</tr>
<tr>
<td>Not stated</td>
<td>10</td>
</tr>
</tbody>
</table>
APPENDIX 4A: STAFF INFORMATION

AHW Information Statement
This is for you to keep
You are invited to participate in the TRAK Study: Talking about Raising Aboriginal Kids

What do we want to do?
We want to come up with a developmental checking tool - TRAK ASQ - that is culturally appropriate. We also want to come up with early childhood development training that is useful for AHWs. We will then see if these things make a difference to how AHWs work with children in the clinic.

How are we going to do it?
1. We would like to talk to health staff and community members in groups or individually. We will look through the ASQ, a developmental tool that already exists and see what’s good about it; what needs to be changed. We’ll use this information to come up with a culturally appropriate TRAK ASQ.

2. We would like to train Aboriginal Health Workers on child development and how to use the TRAK ASQ with parents and their young children. This will involve talking to parents about their child’s development.

3. We will then talk to AHWs, watch them work and look through health records to see if the TRAK ASQ and the training and support makes a difference to the work AHWs do and the understanding they have.

Why do we want to do it?
The first few years in a kid’s life are really important in deciding the path their life will take. It’s important that we make sure young kids get the best start and that they have healthy development. In other parts of Australia, there are tests to see if kids are on track with their development. But there are no tests that are any good for checking if Aboriginal kids are on track. We think it’s fair that Aboriginal kids have the same quality of care as other Australian kids. So, we want to make sure there is a test for Aboriginal kids too. We think it’s important that health workers get training and support to be able to work with parents to keep their kids healthy and on track.

What else will you need to do?
1. Interview – We would like to talk to you BEFORE the training. This is to help us understand what you would like to learn about child development, what your practice is now and some of the things that help or make it more difficult to monitor how kids are going. AFTER the training we would like to talk to you again. This is to help us understand how useful the training was, how easy or hard it was to use the TRAK ASQ and how things may have changed.

2. Observation – We would like to watch you work, BEFORE the training, so we can learn how you do things and what new things you might need to know about child development. Other AHWs have told us they think it is a good idea for us to watch them work. We would like to observe you in the clinic AFTER the training as well, to see how things have changed or stayed the same.

It is important that you read this information so you can understand what this research project is about. The research assistant will talk to you about the study and answer any questions you may have.

Once you understand what the research is about and if you agree to take part in it, we will ask you to sign a consent form. Signing the consent form means you understand what the research is about and that you agree to take part. If you change your mind about taking part, you can stop at any stage. It will all be confidential.

menzies
school of health research

PO Box 41094, DARWIN NT 0831 | John Matthews Building (Building 58), Royal Darwin Hospital Campus, Ricklands Drive, DARWIN NT 0801 Phone: 08 8922 8194 | Facsimile: 08 8922 1187 | Web: www.menzies.edu.au | Email: info@menzies.edu.au
Who will we be seeing?
All AHWs will be invited to participate in the training and to share their ideas on child development.

Some parents of children from birth to 5 years will be asked to join in the training for the AHWs.

Other community members will be asked to share their views on the developmental tool that we will adapt.

What are the expected benefits of being involved?
Health Worker - You will have the chance to receive training in using the TRAK Tool and learning more about child development.

Community benefits – This is a very important study that may give us a way of monitoring Aboriginal children’s development and making sure they’re on track. This will be something all Aboriginal Health Workers can use in remote communities when they see kids and their carers. This study will also give us information about what’s working well and what could be done differently to help kids’ development in communities.

How will we find out about the results of the project?
We will be talking to you about the TRAK ASQ while we are conducting the project. When we finish, we will return to the community and present the findings. We also plan to write about the study and publish the findings in journals so that we can share our findings with others in Australia and internationally. The findings will all be confidential and no names of people or places will be used.

Questions?
Please contact us if you have questions, concerns or would like more information

Dr Anita D’Aprano (chief investigator)
Menzies School of Health Research
Ph: (08) 8922 6966
Fax: (08) 8927 5197
Email: Anita.daprano@menzies.edu.au

Prof Sven Silburn (supervisor)
Menzies School of Health Research
Ph: (08) 8922 7897
Fax: (08) 8927 5197
Email: sven.silburn@menzies.edu.au

This project has been approved by the Human Research Ethics Committee of NT Department of Health and Families and Menzies School of Health Research and by the Central Australian Human Research Ethics Committee

Concerns or Complaints
If you have any concerns or complaints regarding the ethical conduct of the study, you can contact

Top End:
Ethics Administration
Human Research Ethics Committee of the NT Department of Health and Families and Menzies School of Health Research
Ph: (08) 89227022
ethics@menzies.edu.au

Central Australia:
Secretariat Support
Central Australian Human Research Ethics Committee
C/- Centre for Remote Health
Ph: (08) 8951 4746
cahrec@flinders.edu.au
Appendix 4B: Community Information

Community Information Statement
This is for you to keep

You are invited to participate in the
TRAK Study: Talking about Raising Aboriginal Kids

What do we want to do?
We want to come up with a developmental checking tool – TRAK-ASQ – that is culturally appropriate. We also want to come up with early childhood development training that is useful for AHWs. We will then see if these things make a difference to how AHWs work with children in the clinic.

How are we going to do it?
1. We would like to talk to health staff and community members in groups or individually. We will look through the ASQ, a developmental tool that already exists and see what’s good about it; what needs to be changed. We’ll use this information to come up with a culturally appropriate TRAK-ASQ. We’ll also talk about what to include in training about early child development.

2. We would like to train Aboriginal Health Workers on child development and how to use the TRAK-ASQ with parents and their young children. This will involve talking to parents about their child’s development.

3. We will then talk to AHWs, watch them work and look through health records to see if the TRAK-ASQ and the training and support makes a difference to the work AHWs do and the understanding they have.

Why do we want to do it?
The first few years in a kid’s life are really important in deciding the path their life will take. It’s important that we make sure young kids get the best start and that they have healthy development. In other parts of Australia, there are tests to see if kids are on track with their development. But there are no tests that are any good for checking if Aboriginal kids are on track. We think it’s fair that Aboriginal kids have the same quality of care as other Australian kids. So, we want to make sure there is a test for Aboriginal kids too. We think it’s important that health workers get training and support to be able to work with parents to keep their kids healthy and on track.

What else will you need to do?
We will not need you to do anything else except take part in the interviews.

It is important that you read this information so you can understand what this research project is about. The research assistant will talk to you about the study and answer any questions you may have.

Once you understand what the research is about and if you agree to take part in it, we will ask you to sign a consent form. Signing the consent form means you understand what the research is about and that you agree to take part. If you change your mind about taking part, you can stop at any stage.

Who will we be seeing?
All AHWs will be invited to participate in the training and to share their ideas on child development.

Some parents of children from birth to 5 years will be asked to join in the training for the AHWs.

Other community members will be asked to share their views on the developmental tool that we will adapt.

Menzies School of Health Research
PO Box 41096, CASGRAINA NT 0811
John Aitken Building (Building S1), Royal Darwin Hospital Campus, Rocklands Drive, CASGRAINA NT 0810
Phone: 08 8922 8196 Fax: 08 8927 5187 Web: www.menzies.edu.au Email: info@menzies.edu.au
What are the expected benefits of being involved?

Health Staff or Community member - You will have the chance to make sure the TRAK-ASQ is useful for your community. You will be able to share your ideas on how things could be done differently.

Community benefits – This is a very important study that may give us a way of monitoring Aboriginal children’s development and making sure they’re on track. This will be something all Aboriginal Health Workers can use in remote communities when they see kids and their carers. This study will also give us information about what’s working well and what could be done differently to help kids’ development in communities.

How will we find out about the results of the project?
We will be talking to you about the TRAK-ASQ while we are conducting the project. When we finish, we will return to the community and present the findings. We also plan to write about the study and publish the findings in journals so that we can share our findings with others in Australia and internationally. The findings will all be confidential and no names of people or places will be used.

Questions?
Please contact us if you have questions, concerns or would like more information

Dr Anita D’Aprano (chief investigator)
Menzies School of Health Research
Ph: (08) 8922 6995
Fax: (08) 8927 5197
Email: Anita.daprano@menzies.edu.au

Prof Sven Silburn (supervisor)

Menzies School of Health Research
Ph: (08) 8922 7897
Fax: (08) 8927 5197
Email: sven.silburn@menzies.edu.au

This project has been approved by the Human Research Ethics Committee of NT Department of Health and Families and Menzies School of Health Research and by the Central Australian Human Research Ethics Committee.

Concerns or Complaints
If you have any concerns or complaints regarding the ethical conduct of the study, you can contact:

Top End:
Ethics Administration
Human Research Ethics Committee of the NT Department of Health and Families and Menzies School of Health Research
Ph: (08) 89227922
ethics@menzies.edu.au

Central Australia:
Secretariat Support
Central Australian Human Research Ethics Committee
C/- Centre for Remote Health
Ph: (08) 8951 4746
cahrec@flinders.edu.au
APPENDIX 4C: PARENT INFORMATION

Parent Information Statement
This is for you to keep

You are invited to participate in the project
TRAK Study: Talking about Raising Aboriginal Kids

What do we want to do?
We want a good way of checking if young Aboriginal kids are on track with their “development”. Development means how kids use their hands and feet, talk/understand and learn new things. We want to come up with a new developmental check – the ASQ-3_TRAK tool – that is culturally appropriate. We also want to come up with a useful way of training Aboriginal Health Workers about kids’ development and how to use the ASQ-3_TRAK.

How are we going to do it?
The clinic Aboriginal Health Worker (AHW) will talk to you and ask you some questions about your kid’s development. This is to test out the ASQ-3_TRAK, a short questionnaire. These questions ask what you think - how your child is going and what they can do. It will take about 20-25 minutes and you will need to bring your child too.

This is part of the AHW training, to learn how to use the ASQ-3_TRAK. They will need to have the trainer sit in and watch.

Why do we want to do it?
The first few years in a kid’s life are really important. Things that happen early on can decide the path life will take. It’s important that we make sure young kids get the best start and that they have healthy development. In other parts of Australia, there are tests to see if kids are on track with their development. But there are no tests that are any good for checking if Aboriginal kids are on track. We think it’s fair that Aboriginal kids have the same quality of care as other Australian kids. So, we want to make sure there is a test for Aboriginal kids too. We think it’s important that health workers get training and support to be able to work with parents to keep their kids on track.

What else will you need to do?
When the AHW has finished talking to you, we would like to talk to you, the parents/carers, about the ASQ-3_TRAK. We will ask you what you think about the questions in the ASQ-3_TRAK (were they easy or hard to understand? Did they make sense?) and this will help us improve the ASQ-3_TRAK.

There are no other tests or examinations.

It is important that you read this information so you can understand what this research project is about. The research assistant or chief researcher will talk to you about the study and answer any questions you may have.

Once you understand what the research is about and if you agree to take part in it, you will be asked to sign a consent form. Signing the consent form means you understand what the research is about and that you agree for your child to take part. If you change your mind about taking part, you can stop at any stage. We will not keep any of your information.

Who will we be seeing?
To help with the training of AHWs we will be asking the parents of children from birth to 5 years who live in the community to join in.

What are the expected benefits of being involved?
Child benefits - You will have the chance to talk about any worries or concerns you may have about how your child is doing, with the Clinic Aboriginal Health Worker. If needed, they will be able to refer you to the doctor.

Community benefits – This is a very important study that may give us a way of monitoring Aboriginal children’s development and making
Parent Information Statement
This is for you to keep

You are invited to participate in the project
TRAK Study: Talking about Raising Aboriginal Kids

Sure they’re on track. This will be something all Aboriginal Health Workers can use in remote communities when they see kids and their carers.

The Aboriginal Health Workers who take part in the project will also have the chance for extra training in child development which will be a benefit for the community.

How will we find out about the results of the project?
We will be talking to you about the TRAK ASQ while we are doing the project. When we finish, we will return and talk to the community about the findings. We also plan to write about the study in journals so that we can share our findings with others in Australia and internationally. The findings will all be confidential and no names of people or places will be used.

This project has been approved by the Human Research Ethics Committee of NT Department of Health and Families and Menzies School of Health Research and by the Central Australian Human Research Ethics Committee

Concerns or Complaints
If you have any concerns or complaints regarding the ethical conduct of the study, you are invited to contact

Top End:
Ethics Administration
Human Research Ethics Committee of the NT Department of Health and Families and Menzies School of Health Research
Ph: (08) 89227022
ethics@menzies.edu.au

Central Australia:
Secretariat Support
Central Australian Human Research Ethics Committee
C/- Centre for Remote Health
Ph: (08) 8951 4746
cahrec@finders.edu.au

Questions?
Please feel free to contact us if you have questions or concerns or would like more information

Dr Anita D’Aprano (chief investigator)
Menzies School of Health Research
Ph: (08) 8922 6905
Fax: (08) 8927 5197
Email: Anita.daprano@menzies.edu.au

Prof Sven Silburn (supervisor)
Menzies School of Health Research
Ph: (08) 8922 7897
Fax: (08) 8927 5197
Email: sven.silburn@menzies.edu.au
### AHW CONSENT FORM

**TRAK Study: Talking about Raising Aboriginal Kids**

This form means you can say “No” if you do not want to take part.

Please read the Information Statement before signing this form.

<table>
<thead>
<tr>
<th>If you are happy to be in this project, we ask that you agree to the following:</th>
<th>Tick a box</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEFORE Training – Interview, Focus Group, Observation</strong></td>
<td></td>
</tr>
<tr>
<td>1. I agree to take part in a focus group interview to talk about the developmental screening instrument will be adapted (the ASQ).</td>
<td>No</td>
</tr>
<tr>
<td>I understand this will involve giving you feedback on how relevant and appropriate the ASQ is, what needs to be changed or added.</td>
<td></td>
</tr>
<tr>
<td>2. I agree to take part in an interview BEFORE the training, to talk about the Healthy Under 5 Kids program and my role in child health checks.</td>
<td>No</td>
</tr>
<tr>
<td>I understand this is confidential but will help to develop the training for AHWS</td>
<td></td>
</tr>
<tr>
<td>3. I agree to have the researcher observe me in the clinic BEFORE the training.</td>
<td>No</td>
</tr>
<tr>
<td>I understand this is to see how things work in the clinic and to help develop the training for AHWS by understanding what’s needed.</td>
<td></td>
</tr>
<tr>
<td>4. I agree to the interviews being audio-taped for research purposes</td>
<td>No</td>
</tr>
</tbody>
</table>

| **TRAINING** | |
| 5. I agree to take part in training to learn about early childhood development and how to use the TRAK ASQ. | No |
| I understand this will include classroom and clinic training. The clinic training will involve talking with children and parents, with the trainer present. | |
| 6. I agree to complete a feedback survey about the training and how useful it is. | No |
| I understand this is anonymous and will be used to improve the training | |

For any questions or concerns please contact Dr Anita D’Aprano 08 8922 6995 anita.daprano@menzies.edu.au

---

**Menzies School of Health Research**

**Discovery for a Healthy Tomorrow**
# AHW Consent Form

TRAK Study: Talking about Raising Aboriginal Kids

## After Training

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. I agree to take part in an interview <em>after</em> the training.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand this is to talk about how my way of doing child health checks may have changed, if the TRAK-ASQ has been useful and other things that may have helped or made it difficult to do child health checks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I agree to have the researcher observe me in the clinic <em>after</em> the training.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand this is to see how things may have changed in the clinic.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I agree to the interviews being audio-taped for research purposes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All the information you give us will be confidential and no names will appear next to any personal information.

*I understand that I do not have to be in the study if I don’t want to and I can stop at any stage.*

**Name (print):**

**Signed** ____________________________ **Date** ____________

**Witness signature** ____________________________ **Date** ____________

**Name (print):** ____________________________ **Date** ____________

**Interpreter (If used):**

I ____________________________________ have translated the above information explaining the nature of the procedures to be carried out. I ____________________________________ indicated that they understood the explanation.

**Signed** ____________________________ **Date** ____________

For any questions or concerns please contact Dr Anita D’Aprano 08 8922 6995 ana.daprano@menzies.edu.au

[Image: menzies.png]
# Appendix 5B: Community Consent Form

**Community Consent Form**

**TRAK Study: Talking about Raising Aboriginal Kids**

This form means you can say "No" if you do not want to take part.

Please read the Information Statement before signing this form.

<table>
<thead>
<tr>
<th>If you are happy to be in this project, we ask that you agree to the following:</th>
<th>Tick a box</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I agree to take part in a focus group interview to talk about the developmental screening instrument that will be adapted (the ASQ). I understand this will involve giving you feedback on how relevant and appropriate the ASQ is, what needs to be changed or added.</td>
<td>Yes No</td>
</tr>
<tr>
<td>2. I agree to take part in a focus group interview to talk about what’s needed in an early childhood development training package for AHWS.</td>
<td>Yes No</td>
</tr>
<tr>
<td>3. I agree to take part in an interview to talk about child development practice in remote Aboriginal communities I understand this information will be confidential and will not be published in an identifiable manner</td>
<td>Yes No</td>
</tr>
<tr>
<td>4. I agree to the interviews being audio-taped for research purposes</td>
<td>Yes No</td>
</tr>
</tbody>
</table>

All the information you give us will be confidential and no names will appear next to any personal information.

I understand that I do not have to be in the study if I don’t want to and I can stop at any stage.

**Name (print):**

Signed ___________________________ Date _____________

**Witness signature:**

**Name (print):**

Signed ___________________________ Date _____________

Interpreter (if used):

I ___________________________ have translated the above information explaining the nature of the procedures to be carried out indicated that they understood the explanation.

Signed ___________________________ Date _____________

For any questions or concerns please contact Dr Anita D’Aprano 08 8922 6995 anita.daprano@menzies.edu.au

menzies
school of health research

Discovery for a healthy tomorrow

345
APPENDIX 5C: PARENT CONSENT FORM

PARENT Consent Form
TRAK Study: Talking about Raising Aboriginal Kids

Please read the Information Statement before signing this form.

All the information you give us will be kept private. Your name or your child’s name will not appear next to any private information.

If you are happy to be in this project, we ask that you agree to the following:

<table>
<thead>
<tr>
<th>Tick a box</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Yes</td>
</tr>
<tr>
<td>□ No</td>
</tr>
</tbody>
</table>

I understand the clinic Aboriginal Health Worker will be using a questionnaire called the ASQ-3 TRAK tool, and that I need to have my child with me.

2. I agree to talk to the Menzies researchers, about how easy or hard the ASQ-3_TRAK tool questions were to answer.

I understand this is to try to improve the ASQ-3_TRAK tool.

I understand that I do not have to be in the study if I don’t want to and I can stop at any stage.

Child’s Name: ____________________________
Parent/Carer’s Name (print): _______________
Signed ____________________________
Date _______________

Witness signature ____________________________
Name (print): ____________________________
Date _______________

Interpreter (if used):
I ___________________________________________ have translated the above information explaining the nature of the procedures to be carried out.
___________________________________________ indicated that they understood the explanation.
Signed ____________________________
Date _______________

For any questions or concerns please contact Dr Anita D’Aprano 08 8922 6996 anita.dapranof@menzies.edu.au

menzies
school of health research

discovery for a healthy tomorrow
<table>
<thead>
<tr>
<th>Discussion points are in a black box. Tick as completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name</td>
</tr>
<tr>
<td>Surname</td>
</tr>
<tr>
<td>DOB / Age</td>
</tr>
<tr>
<td>Problems Identified at previous check</td>
</tr>
<tr>
<td>Any current concerns (ask about general health, crying, sleeping)</td>
</tr>
<tr>
<td>Any concerns about hearing? Yes No</td>
</tr>
<tr>
<td>Any concerns about vision? Yes No</td>
</tr>
<tr>
<td>Any concerns about general development? Yes No</td>
</tr>
<tr>
<td>DEVELOPMENTAL POINTERS</td>
</tr>
<tr>
<td>One year olds should be mobile - crawling, bottom stuffing, starting to walk with support. They should be able to pick up small objects (eg. eat solid food with fingers) and manipulate objects well. They should be starting to talk; saying simple words with meaning and understanding simple instructional words (eg. food, drink, car).</td>
</tr>
<tr>
<td>If any of the following are observed OR the family is concerned TICK the box and refer to the doctor for review</td>
</tr>
<tr>
<td>Not sitting without support No interest in people</td>
</tr>
<tr>
<td>Not pulling to stand Not developed pincer grasp</td>
</tr>
<tr>
<td>Comments about development</td>
</tr>
<tr>
<td>Is the child attending playgroup/early childhood development activities on a regular basis? Yes No</td>
</tr>
<tr>
<td>COMMUNICATE Ask your child simple questions. Respond to your child's attempts to talk. Play games. Ask child to wave bye-bye. Read books with your child and talk about the pictures</td>
</tr>
<tr>
<td>INJURY PREVENTION Now your child is becoming more mobile, watch closely around the campfire - keep safe from injuries and burns. Watch closely around water - keep safe from drowning</td>
</tr>
<tr>
<td>HYGIENE Keep child's face and hands clean to stop germs spreading from pus infected ears and runny noses. Use tissue paper to clean ears and nose or shower at least every second day</td>
</tr>
<tr>
<td>PLAY Allow child to explore safely - always supervise</td>
</tr>
<tr>
<td>NUTRITION Start family meals - 3 meals and 2 snacks. Refer to NT infant feeding guidelines as shown in &quot;A story about feeding babies&quot;</td>
</tr>
<tr>
<td>Is the child eating solids regularly? Yes No</td>
</tr>
<tr>
<td>Since this time yesterday has the baby had</td>
</tr>
<tr>
<td>Breast milk</td>
</tr>
<tr>
<td>Formula</td>
</tr>
<tr>
<td>Other milk</td>
</tr>
<tr>
<td>Other (soda)</td>
</tr>
<tr>
<td>Other food</td>
</tr>
<tr>
<td>Nutrient</td>
</tr>
<tr>
<td>Home</td>
</tr>
<tr>
<td>12 Month Assessment</td>
</tr>
</tbody>
</table>

**APPENDIX 6: HU5KS CARE PLAN, 12 MONTHS**
### Under 5s Program

#### 12 Month Examination

<table>
<thead>
<tr>
<th>Weight gain satisfactory?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Plan needed?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**12 month immunisation given?**
- Yes
- Already
- This visit (Record on immunisation sheet)
- Unable to give - place on recall

**Routine de-worm?**
- Yes
- No

#### Oral health

- "lift the lip" note colour and check
- Gum: Healthy, Bleeding, Abscess
- Teeth: Healthy, White spots, Caries
- Dental referral required: Yes
- Dental referral urgent: Yes

#### Rear
- NAD: No
- AOM: Abscess
- AOM w Perf.: Perforation
- CDOM: Chronic Discharging Otitis Medialis
- OME: Otitis Media
- Dry Perf.: Dry Perforation
- Otitis Ext: Extensive Otitis

#### Left
- NAD: No
- AOM: Abscess
- AOM w Perf.: Perforation
- CDOM: Chronic Discharging Otitis Medialis
- OME: Otitis Media
- Dry Perf.: Dry Perforation
- Otitis Ext: Extensive Otitis

#### Treatment

#### Skin

- Clear
- Scabies
- Sores
- Ringworm
- Other (specify)

#### CVS

- Heart Sounds: Normal, Abnormal

#### General appearance and comments

**Chest**
- Persistent cough > 4 weeks
- Recurrent prolonged wet cough
- 2 episodes hospitalisation - resp. illness in last 12 months
- 3 episodes hospitalisation - resp. illness since birth

**ORAL HEALTH** Remember to clean teeth twice a day - Consider low fluoride toothpaste if water is not fluoridated

**EAR HEALTH** It's good to start to teach the child how to blow their nose. Nose blowing helps to keep ears clear and helps stop germs spreading to other babies in the family. Encourage carers to use tissue spears for pus affected ears. Throw tissues into a bin and wash your hands after doing this.

### Action and follow up

Make a note on the 18 month form of any problems that need follow up.

<table>
<thead>
<tr>
<th>Issue or problem</th>
<th>Referral or action made</th>
<th>Referred to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MO Paed Other (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MO Paed Other (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MO Paed Other (specify)</td>
<td></td>
</tr>
</tbody>
</table>

**General appearance and comments**

- Prompt for 18 month check
- Medicare claim 708 completed
- Weekly recall if omoems and engage community supports (eg SWIBSC, community liaison, family workers)

**Name of person completing check**

**Signature**

**AHW RN DR Date**

---

### DEPARTMENT OF HEALTH AND FAMILIES
APPENDIX 7A: ASQ3-TRAK 12-MONTH QUESTIONNAIRE

Date ASQ completed: ____________________

Place ASQ Completed: O Clinic O FaFT O Child Care O WAHAC O Other ____________

Please file in Medical Records. If completed outside of clinic, please give copy to Clinic.

Baby’s information

Baby’s name: ____________ UR Number: ____________ Baby’s gender: O Male O Female

Baby’s date of birth: ____________ Was the baby more than 3 weeks premature? O Yes O No

If yes, number of weeks premature: _______

Age at administration: ___months ___days. If premature, adjusted age: ___months ___days.

Persons completing questionnaire

Caregiver: O Mother O Father O Grandmother O Aunt O Other relative ____________

Staff member: O AHW O Nurse O FaFT O Child care provider O Other (specify) ____________

Caregiver

Dhiyalami djirrarru yukurru ngarr dharun dhawirka’yunami malanynh nhokalaru yothuwaluyuwuy.


This paper asks many questions about your baby. It asks what your baby does, what they say, what they think and what they feel. The paper also has instructions for your baby to follow. Some instructions ask you to sit still and say nothing so you baby can listen and think. For other questions, help your baby feel comfortable and happy so we can see things your baby does easily and things your baby has difficulty doing. We want to see if your baby is on track.

For each number, you should choose if your baby can do it YES or SOMETIMES or NOT YET.

Staff member – Important points to remember

- Try each activity with the baby before marking the response
- Everyone should make the baby think that doing what this paper wants is a game
- Babies will show us all they can do after they have slept and eaten food. When they are tired and hungry, they will not want to do what we ask

This is a translation of the Ages & Stages Questionnaires®, Third Edition (ASQ-3™): A Parent-Completed Child Monitoring System, by Jane Squires, Ph.D., and Diane Bricker, Ph.D. Originally published in the United States of America by Paul H. Brookes Publishing Co., Inc. Copyright © 2009 by Paul H. Brookes Publishing Co., Inc. Ages & Stages Questionnaires® is a registered trademark and ASQ-3 and the ASQ-3 logo are trademarks of Paul H. Brookes Publishing Co., Inc.
COMMUNICATION

How your child listens, talks and how he lets us know what he’s thinking

Dhiyanu njurrnyu-malanyguy nhåma nhuru yothu nhaltnj
ñayi gurra mákirí-wíthun, nhaltnj ñayi gurra wânja, ga
nhaltnj ñayi gurra guyanj.

1. Wanhana njuhl nhuru yothu wanjí mårma’ nunjhi bili rirrákay rrambânjikurjú,
balanya nhakuna “ba-ba”, “díja-tjá”, “da-da”.
   Yes  Sometimes  Not yet
   O    O       O       _

1. Does your baby make 2 sounds that are the same, like,
“ba-ba”, or “da-da” or “ga-ga”? (The sounds may not mean anything.)

2. Nunjhi nhe yurrwa wanjí bitijan, “nhe gøŋ jurr’yunjmi”
nhå nhuru yothu njuhl bili goŋ jurruyun, yurrú
nåliríjuy nhayi yurrú mårngithi.
   Yes  Sometimes  Not yet
   O    O       O       _

2. If you say “clap your hands” does your baby like to
clap hands to play, even before you show him?

3. Nunjhi nhe yurrwa wanjí yothuyuwa, dhårurk
wekama,
wanhana njuhl nhayi nhuru dhåruruku mårthu?
Mak nhe yurrwa wanjí bitijan nhakuna “lii jwekurjú,
“marrtjí lii” wo “gunha’yu”.
   Yes  Sometimes  Not yet
   O    O       O       _

3. If you say to your baby, “Come here” or “Give it to me” or “Put it back”, will your baby understand and
do what you ask? Don’t point to help her don’t use
your eyes to show the way.

4. Wanhana njuhl nhuru yothu wanjí lurrkun’ mayalí’mi
rirrákay balanya nhakuna “mimi”, “ama-amaj”,
“atjatjá”.
   Yes  Sometimes  Not yet
   O    O       O       _

4. Does your baby say three words that have a
meaning? For example he might say “ama-amaj” for
Mum, “bapa” for Dad, or “ata” for food or “ama” for
milk.
## COMMUNICATION

5. Njunhi nye yurruru dhā-wirrka'yun nhuju yothunha, dhrāukthu yana, wanhana gurra ṅorrna nula nhā giri', wanhana ṅuli ṅayi nhāŋyu-nharu ṅuriki giri'wu?  
<table>
<thead>
<tr>
<th>Yes</th>
<th>Sometimes</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
   Make sure that thing is there when you ask. Tick "yes" if your baby knows one thing or more.

6. Njunhi nhuru yothu gurra djāthi nula nhāku, wanhana ṅuli ṅayi gondhi milkuŋu nhuju dhunupamiŋuŋu?  
<table>
<thead>
<tr>
<th>Yes</th>
<th>Sometimes</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
   6. When your baby wants something, does he point to it to tell you?

## GROSS MOTOR

How your child uses his arms and legs

Dhiyang ṅurrurrayu yuyurrra nhāma nhuju yothuna nhaltjan ṅayi ṅunhri wanyu djāma, wambaluŋu ga rumbalyu nhanukaya.

1. Mak nhuru yothu gurra dhārra ga warganydjya goŋ Ṉayi gurra mulka dharpa ga wiripuya goŋ Ṉayi gurra goŋ-djarrryun nula nhāku nhāṯthunawu.  
<table>
<thead>
<tr>
<th>Yes</th>
<th>Sometimes</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
   1. When your baby is holding onto something to help him stand, will he bend down, pick up a toy from the ground then stand up again?

2. Njunhi Ṉayi gurra yothu nhuju djiŋgaryun, yurruru gondja Ṉayi gurra naŋ'yun dharpayi, gungga'yunmi nhāṯthun, wanhana Ṉuli Ṉayi nhini gāna, laŋjukuruŋu galkinyamiriŋu?  
<table>
<thead>
<tr>
<th>Yes</th>
<th>Sometimes</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
   2. When your baby is holding onto something to help him stand, can he sit slowiy without sitting hard or falling?
GROSS MOTOR

3. Mak nhuru yothu gurra mampithi marrji-maritjinyawu. 
Wanhanu nyili nayi marritji-marritji yurrru wanyanydu goyndhu nayi gurra mulka nyili nh3 yolinjuna wo dharpana, gungayunawu nhangu?

3. Does your baby walk beside chairs or beside people sitting on the ground, holding on with just one hand?

4. Nyunhi nye yurrru djingaryunmama nhuruway nhe yothuna, yurrru marritji-goyndhu nhe yurrru mulka nanyi marritji yurrru gungayunam ni agtuthun, wanhanu nyili nayi marritji-marritji ga banyu nayi yurrru djalikthun wo ga7mamama nhangu djaliki marpondana?

4. When you are holding both of your baby’s hands so he can balance himself, does he start walking without failing or tripping over?

5. Wanhanu nyili nhuru yothu mampiti marritjinyawu ganga, yurrru nhe gurra banyu mampi nhangu wanyanyu goy.
(Wo mak nhuru yothu bilina mampiti marritjinyawu ganyanyu.)

5. When you hold just one hand so your baby can balance himself, does she take a few steps forward?

6. Wanhanu nyili nhuru yothu gangathi bala djingaryunyana gana, bala djaliki-wapthuna lurkunu’mi?

6. Does your baby stand up by himself and take a few steps forward?

FINES MOTOR

How your child uses her hands and fingers

Dhiyaruyu yurruru malanyurryu yurrura nhama nhuru yothuna nhaltjan nayi yurrura djama gongthu.

1. Wanhanu nyili nhokaya yothuyi latjukuru ni aytthu wanyanydu goyndhu yutjwala raki wo wurrki, bitjan bili nhakunu nyokuyu nyili ni aytthun natha nhanyuyu nayi. Banyh dini nayi yurru lurkunu’mi guyana ni aytthunawu.

1. Does your baby pick up a piece of grass between his thumb and first finger? He can take one or two tries.
## FINE MOTOR

**12 months**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Sometimes</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Does your baby pick up a piece of biscuit or a suitana, with the tips of her thumb and a finger? She can rest her hand on the table while doing this.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Does your baby put down a small toy, without dropping it, and then take his hand off the toy?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Does your baby pick up a piece of biscuit with the tips of her thumb and a finger, without resting her hand on the table?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Maybe he just drops the ball on the ground in front of him. Then tick &quot;not yet&quot; for this question.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. You can lift a page for him to grab.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If Fine Motor Q 4 is ticked “yes” or “sometimes”, tick Fine Motor Q 2 as “yes”.

---

*Fine Motor Total*
PROBLEM SOLVING
How your child thinks about things and works out problems

Dhiyaŋuyu ṅurruyu malanyŋuyu gurra nhāma nhūŋuyu yothuna nhātjan ṅaye yurrı yothuna guyaŋa, ga dhukarrwu jarruma nula nhāku marranhawu ga djāmawu nhanukalaruyuyu ṅaye.

1. Ṉunjhi ṅuli nhokaya yothuyu gurra mukla ṅula nhā moolgana nyumukugnyu girir’, mārma’yu gondhu, wanhana ṅuli ṅaye ṣũthu-wutthu ṅurunjyjī nyumukugnyu’thu girir’yu?
   Yes  Sometimas  Not yet
   0   0   0   0
1. If your baby holds a cup or small toy in each hand, does he clasp them together?

2. Ṉunjhi ṅuli nhokaya yothuyu nhūŋuyu yurtjwala girir’ wo Ṉatha djinawa’yi buthułu’yu (nhakuna gapupuy buthułu’), wanhana ṅuli ṅaye birtka’yu ṅaye yurrı dhawatmama?
   Yes  Sometimas  Not yet
   0   0   0   0
2. Does your baby try to get a piece of biscuit or sultana that is inside a clear water bottle?

3. Ṉunjhi nhe yurrı djulj’mbama ṅula nhā nyumukugnyu girir’ nhanukaya yothuyaya, ṅoyyi gayan’thayi, yurrı milimay nhanukaya, wanhana ṅuli ṅaye ṣalj’manu ṅunjhiyiyu girir’?
   Yes  Sometimas  Not yet
   0   0   0   0
3. Hide a small toy under a cloth while your baby is watching. Make sure he can’t see any part of the toy. Does your baby find it?

4. Ṉunjhi nhe yurrı gurrunhan wangany nyumukugnyu’ guŋda rupa’yi, wanhana ṅuli nhokaya yothuyu biyaku bili guŋda gurrunhuyu rupa’yi? (Guŋhawu ṅaye yurrı bājguk ṣālkumma ṅunjhiyiyu guŋda.)
   Yes  Sometimas  Not yet
   0   0   0   0
4. When you put a small stone into a bowl or pannikin, does your baby copy you and put in a stone? She might not drop the stone, but still hold it inside the bowl.

5. Ṉunjhi nhe yurrı gurrunhan mārma’ guŋda galgi-galgi bala rupa’yi, wanhana ṅuli nhokaya yothuyu wananguru nhuna?
   Yes  Sometimas  Not yet
   0   0   0   0
5. Can your baby drop two small stones, one then the other, into a bowl or basket? You can show him how to do it first.

Agas & Stages Questionnaires®, Third Edition (ASQ-3™), Squires & Bricker, © 2009 Paul H. Brookes Publishing Co. Translated with permission
TRAK Study: Talking about Raising Aboriginal Kids, Anita D’Aprano, Menzies School of Health Research
Yolngu Matha Pilot v2011.0, Translated by Michael Cooke, Dunduway Wunnguru, Manybarr Canambarr, Dipiltinga Manika, Yalmay Yunupingu
Illustrations by Emma Long
Problem Solving

6. Njunhi nye yuru birkka yana wukimi munathayi nyumukujinyi thu dharpayu, milimay nhanukaya yothuwaya, wanyaha nuli nayi wanyangunjo nhuna?

   - Yes
   - Sometimes
   - Not yet

6. Scribe up and down in the sand with a stick while your baby watches you. Does your baby copy you by scribbling?
   You can use pencil/crayon and paper.

If Problem Solving Q 5 is marked "yes" or "sometimes," mark Problem Solving Q 4 as "yes."

Problem Solving Total

PERSONAL SOCIAL

How your child acts with other people, how she behaves

Dhiyanju nurruyu malanyuyu yukuurra nhama nhuru yothuna nhaltjan nayi yukuurra romru nhina ga naja'yun nhanukaya gurrutumiwaya ga lundumiruwaya.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Sometimes</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Njunhi nye yuru wara-djarryn nula nhaku nhai nayi yurruru nhokaya yothuwyu wekama, wanyaha nuli nayi wekurru nhokaya? (Gunuwayi nayi yurruru baqak dliikuma wo wiripuya nayi yurruru gunha'yuna.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Njunhi nuli nhe girri' nherran yothuwaya nhokalanjuwaya, wanyaha nuli nayi gungaiyun nhuna gon-djarrryu djatkyuyu?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Njunhi nye yuru wara-djarryn nula nhaku gimri'wu, wanyaha nuli nayi yothuwyu nhokaya wekurru ga gutjpurrry nayi nulyi nhokaya gondhi?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Njunhi nuli nhe girri' nherran nhanukaya yothuwaya, wanyaha nuli nayi nhuna gungaiyu yothuwyu, juku-garrwarhi, marr nayi yurruru nherran girri?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ages & Stages Questionnaires®, Third Edition (ASQ-3™), Squires & Bricker, © 2009 Paul H. Brookes Publishing Co. Translated with permission
TRAK Study: Talking about Raising Aboriginal Kids, Anita D'Aprano, Menzies School of Health Research
Yolngu Matha Pilot v2011.0, Translated by Michael Cook, Dundwyre Wunungmurra, Manybarr Ganambarr, Dipilnga Marka, Yalmay Yunupingu
Illustrations by Emma Long
### PERSONAL SOCIAL

5. Wanhana nyuli nhe ga nhuru yothu rrmbarsi nyalzyu butpuyu, ga nyayi yothuyu yurruru gutiparr'yun wo jur'yun butpuj nhokaya marr nhe yurruru gutiparr'yun wo jur'yun butpuj nhanukaya roninyama?

   - [ ] Yes
   - [ ] Sometimes
   - [ ] Not yet

   Does your baby roll or throw a ball back to you, so that you can roll or throw it back to him?

6. Wanhana nyuli nhokaya yothuyu wulkuju duliduli yana bini nyayi yuwal-nunha yothu?

   - [ ] Yes
   - [ ] Sometimes
   - [ ] Not yet

   Does your baby hug a doll or stuffed toy?

---

**Personal Social Total**

---

*Agas & Stages Questionnaires®, Third Edition (ASQ-3™), Squires & Bricker. © 2009 Paul H. Brookes Publishing Co. Translated with permission
TRAK Study: Talking about Raising Aboriginal Kids, Anita D’Aparen, Monies School of Health Research
Yolngu Metha Pilot v2011.0, Translated by Michael Cooke, Dundaway Wunngumra, Manybarr Garambarr, Dipilnga Marika, Yalmay Yunupingu Illustrations by Emma Long*
APPENDIX 7B: ASQ3-TRAK 12-MONTH SCORE SHEET

### 12 Month ASQ-3 - Information Summary

**ASQ-3 TRAK Pilot v 2011**

- **Baby’s name:**
- **Baby’s ID #:**
- **Administering program/provider:** Clinic Child care FaFT WAHAC Other
- **Date ASQ completed:**
- **Date of birth:**
- **Was age adjusted for prematurity when selecting questionnaire?** Yes No

#### SCORING AND TRANSFER TOTALS TO CHART BELOW:

See *ASQ-3 User’s Guide* for details, including how to adjust scores if item responses are missing. Score each item (YES = 10, SOMETIMES = 5, NOT YET = 0). Add item scores, and record each area total. In the chart below, transfer the total scores, and fill in the circles corresponding with the total scores.

<table>
<thead>
<tr>
<th>Area</th>
<th>Cutoff</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>15.64</td>
<td>0 5 10 15 20 25 30 45 55 60</td>
</tr>
<tr>
<td>Gross Motor</td>
<td>21.49</td>
<td>0 5 10 15 20 25 30 45 55 60</td>
</tr>
<tr>
<td>Fine Motor</td>
<td>34.50</td>
<td>0 5 10 15 20 25 30 45 55 60</td>
</tr>
<tr>
<td>Problem solving</td>
<td>27.32</td>
<td>0 5 10 15 20 25 30 45 55 60</td>
</tr>
<tr>
<td>Personal-Social</td>
<td>21.73</td>
<td>0 5 10 15 20 25 30 45 55 60</td>
</tr>
</tbody>
</table>

#### 2. *12 Month ASQ SCORE INTERPRETATION AND RECOMMENDATION FOR FOLLOW-UP:

If the baby’s total score is in the area, it is above the cutoff, and the baby’s development appears to be on schedule. If the baby’s total score is in the area, it is close to the cutoff. Provide learning activities and monitor. If the baby’s total score is in the area, it is below the cutoff. Further assessment with a professional may be needed.

When determining appropriate follow-up, you must consider:
- total area scores,
- other considerations, such as opportunities to practice skills,
- Child Health Check (Healthy Under 5 Kids or other) to make sure any concerns for health, vision, hearing have been considered

#### 3. FOLLOW-UP ACTION TAKEN:

- Provide handout and rescreen in _____ months.
- Share results with primary health care provider (clinic).
- Refer for (circle all that apply) hearing, vision.
- Refer to primary health care provider or other community agency (specify reason):
- Refer to early intervention/early childhood special education.
- No further action taken at this time.
- Other (specify):

---

Ages & Stages Questionnaires®, Third Edition (ASQ-3™) Squires & Bricker © 2009 Paul H. Brookes Publishing Co. Adapted with permission TRAK Study: Talking about raising Aboriginal kids Pilot 2011.0, Anita D’Aprano, Memries School of Health Research
APPENDIX 7C: ASQ3-TRAK 12-MONTH ILLUSTRATED BOOKLET

Communication


1. Does your baby make 2 sounds that are the same, like, “ba-ba”, or “da-da” or “ga-ga”? (The sounds may not mean anything.)
Communication

5. Njunhi nhe yurru dhā-wirrka’yun nhunju yothunha, dhraukthu yana, wanhana gurra ḋorra ḋula nhā girri’, wanhana ḋuli ḋayi nh āgu’-nhaju ḋuriki girri’wu?

5. If you ask, “Where is the ball (or cup or dog etc)?” does your baby look at that thing?
Communication

3. Njunhi nhe yurrwa waŋa yothuwaya, dhäruk wekama, wanhana njuli ŋayi nhunu dhärukku malthu?
Mak nhe yurrwa waŋa bitjan nhakuna “lili wekuŋu”, “marrtji lili” wo “gunha’yu”.

3. If you say to your baby, “Come here” or “Give it to me” or “Put it back”, will your baby understand and do what you ask? Don’t point to help her don’t use your eyes to show the way.
"ama"

Communication

4. Wanhana ŋuli nhunũ yothu wani Ļurrkun’ mayali’imi rirrakay balanya nhakuna "mimi", "ama-ama", "atjatja".

4. Does your baby say three words that have a meaning? For example he might say "ama-ama" for Mum, "bapa" for Dad, or "ata" for food or "ama" for milk.
5.  También se puede decir “Where is the ball (or cup or dog etc)?” ¿Observas que tu hijo/a mira en dirección a ese objeto?
Communication

6. Njunhi nhuju yothu gurra djaléhi nula nhaku, wanhana nuli nayi gondhu milkuru nhuju dhunupamiyanju?

6. When your baby wants something, does he point to it to tell you?
12 months

Fine Motor

1. Wanhana ɲuli nhokaya yothuyu latjukurʉ ɲatthu wanganyndhu gordhu yutjuwala raki wo wurrrki, bitjan bili nhakunu nyokayu ɲuli ɲatthun ɲatha nnangjuway ɲayi. Baydhi ɲayi yurru ɬurrukun’i guyanja ɲatthunawu.

1. Does your baby pick up a piece of grass between his thumb and first finger? He can take one or two tries.
Fine Motor

2. Wanhaju nuli nhokaya yothyu nəthu wängany yutjuwala nathla djinpir'nyuyu?
Gunnhayu nhanju yurrugu goŋdja gurra gandawyyn nula nhānu,
yāna nayi yurrugu djinpir'nyuyu nātthun.

2. Does your baby pick up a piece of biscuit or a sultana, with the tips of her thumb and a finger? She can rest her hand on the table while doing this.
Fine Motor

3. Wanhana ŋuli nhokaya yothuyu gurruru latjukuru wangany nyumukuŋiny girri’ (balanya bitjan toy), bala beŋuya ñayi yurru goŋ-yupthuna?

3. Does your baby put down a small toy, without dropping it, and then take his hand off the toy?
Fine Motor

4. Wanhana ṣuli nhokaya yothuyu wapmaram wangany yutjuwala ṣatha djir’irŋuyu goňdhu, mārr bāŋyu nhanju yurru wana ṣorra ṣula nhāŋju.

4. Does your baby pick up a piece of biscuit with the tips of her thumb and a finger, without resting her hand on the table?
Fine Motor

5. Wanhana stuba nhokaya yothuyu gutjparr’yu nyumukuŋiny’ butpul gumurrri nhanukaya. yurrru yaka ḋayi guñnharra-yupthun butpul nhanukaya goŋŋu.

5. Does your baby throw a small ball away, in front of himself?
Fine Motor

6. Wanhana ɲuli nhokaya yothuyu gungɑ’yu nhuna, ɲayi yurrų bil’-piłmaŋu djorra’ mala book-ɲu?

6. Does your baby help turn the pages of a book?
Gross Motor

1. Mak nhuru yothu Gurra dharra ga waranganydja goŋ ŋayi Gurra mulka dharpa ga wiripuya goŋ ŋayi Gurra goŋ-djarryun Ṽula nähku Ṽatthunawu. Wanhana Ṽuli ŋayi balapthu ga Ṽatthu Ṽula Ṽhä munatha’nu, bala djingaryu goŋ-girri’inìna?

1. When your baby is holding onto something to help him stand, will he bend down, pick up a toy from the ground then stand up again?

TRAK Study: Talking about raising Aboriginal kids
Aunji D’Arms, Matilda School of Health Research
Yolno Matika pilu X611
Michael Chinuk, Waddagawa Women’s, Manybar Gunamburr, Jigalinga Matika, Yolno Yumupungu

Ages & Stages Questionnaires, Third Edition (ASQ-3™), Ages & Stages
© 2007 Paul E. Brookes Publishing Co. All rights reserved.
Gross Motor

2. ņunhi ńayi gurra yoθu nnuŋu ddingaryun. yurru gongcja ńayi gurra ṣal’yun dharpayi, gung’a’yunami ṣatthun, wanhana ṣuli ńayi nhini gana. latjukuŋu galkinyamiriw?

2. When your baby is holding onto something to help him stand, can he sit slowly without sitting hard or falling?
3. Does your baby walk beside chairs or beside people sitting on the ground, holding on with just one hand?
4. Njunhi nhe yurru djiangaryunmama nhunuway nhe yothuna, yurru maarmay’ gondhu nhe yurru mulka nanya maar nayi yurru guunga’yunami nathun, wanhana nuli nayi marrtji-marrtji ga banyu nayi yurru dan galkthun wo ga’tmamama nhanju djalkiri mandana?

4. When you are holding both of your baby’s hands so he can balance himself, does he start walking without falling or tripping over?
5. When you hold just one hand so your baby can balance herself, does she take a few steps forward?
6. Does your baby stand up by himself and take a few steps forward?
Problem Solving

1. Njunhi njili nhokaya yothuyu gurra mulka njula nhä man ñana nyumukunjiny girri’, märma’yu goňdhu, wanhana njili ñayi wuţthu-wuţthu ñuruńiyi nyumukunjiny’nu giri’yu?

1. If your baby holds a cup or small toy in each hand, does he clap them together?
Problem Solving

2. Njunhi njuli nhokaya yothuyu nharu yutjuwa’la girri’ wo natha djinawa’yi buthulu’yi (nhakuna gapupuy buthulu), wanhana njuli nayi birrka’yu nayi yurru dhawa’tmama?

2. Does your baby try to get a piece of biscuit or sultana that is inside a clear water bottle?
Problem Solving

3. Njunhi nhe yurrur djulul’ mama nula nha nyumukuny girri’ nhanukaya yotheuwaya, nyoyi gayan’thayi, yurrur milmay nhanukaya, wanhana nuli nyayi malg’mamu nunhiy girri’?

3. Hide a small toy under a cloth while your baby is watching. Make sure he can’t see any part of the toy. Does your baby find it?
Problem Solving

4. Njunhi nhe yurru gurrunhan wanyang nyumukupiny’ gunda rupa’yi, wanhana nuli nhokaya yothuyu biyaku bili gunda gurrunhuyu rupa’yi? (Gunhaya nhayi yurru badak dalkuma nunhiyi gunda.)

4. When you put a small stone into a bowl or pannikin, does your baby copy you and put in a stone? She might not drop the stone, but still hold it inside the bowl.
Problem Solving

5. Njunhi nhe yurru gurrunhan màrrma’ gunda galki-galki bala rupa’yī, wanhana njuli nhokaya yothuyu wanaŋgunu nhuna?

5. Can your baby drop two small stones, one then the other, into a bowl or basket? You can show him how to do it first.
6. Nunhi ne yurru birrka yana wukirri munatha’yi nyumukunjiny’thu dharpayu, milmay nhanukaya yothuwaya, wanhana nji nji wananguru nhuna?

6. Scribble up and down in the sand with a stick while your baby watches you. Does your baby copy you by scribbling? You can use pencil/crayon and paper.
Personal Social

1. Ɲunjhi nhe yurrù wása-djarryun ďula nhäku nhä ɲayi yurrù nhokaya yothuyu wekama, wanhana ďuli ɲayi wekuŋu nhokaya? (Guhnayi ɲayi yurrù baŋak ñläkuma wo wiripuya ɲayi yurrù gunha’yuna.)

1. When you hold out your hand and ask for your baby’s toy, does he offer it to you? He doesn’t need to drop it.
Personal Social

2. Njunhi njuli nhe girri’ nherran yotuwaya nhokalanuwaya, wanhana njuli nayi gunga’yun nhuna goŋ-dajjryu djātkyu?

2. When you dress your baby, does she help by pushing her arm through the sleeve?
Personal Social

3. When you hold out your hand and ask for your baby’s toy, does he drop it in your hand?
Personal Social

4. Njunhi nuli nhe girri’ nherran nhanukaya yothuwaya, wanhana nuli nayi nhuna guanga’yu yothuyu, luku-garrwarthi, marr nayi yurru nherran girri’?

4. When you dress your baby, does she lift her foot to help put on her trousers?
Personal Social

5. Wanhana ŋuli nhe ga nhunũ yothu rrambaŋi nala’yu butpulyu,
gagulj ngali yothuyu yuru gutjparr’yun wo ɗur’yun butpul
nhokaya
mār nhe yuru gutjparr’yun wo ɗur’yun butpul nhanukaya
roŋinymama?

5. Does your baby roll or throw a ball back to you, so that you can
roll or throw it back to him?
Personal Social

6. Wanhana ŋuli nhokaya yothuyu wálkurú duliduli yana bini ŋayi yuwalk-ŋunha yothu?

6. Does your baby hug a doll or stuffed toy?
APPENDIX 8: PARENT INFORMATION SHEETS

2 months up to 6 months

PLAY:
Let your baby see, hear, feel and move. Let your baby touch you.
Show your baby colourful things and let your baby reach for them.

COMMUNICATE:
Look into your baby’s eyes. Smile and laugh with your baby. Get a conversation going by copying your baby’s sounds and facial movements.

TRAK Study: Talking about Raising Aboriginal Kids
Anita O’Grady, Mam Lisa School of Health Research 2011

Care for Child Development
6 months up to 12 months

**PLAY:**

Give your child safe household things to handle and drop.

Hide a child’s favourite toy under a cloth or box. See if the child can find it.

**COMMUNICATE:**

Respond to your baby’s sounds and interests. Call the child’s name, and see your child respond.

Tell your child the names of things and people. Show your child how to say things with hands, like “bye bye”.

TRAK Study: Talking about Raising Aboriginal Kids
Anita D’Agrano, Menzies School of Health Research
Illustrations by Emma Long 2011

World Health Organization
UNICEF
12 months up to 18 months

PLAY:

Give your child things to stack up, and to put into containers and take out.

COMMUNICATE:

Ask your child simple questions. When your child tries to talk, respond.
Show and talk to your child about nature, pictures and things.

TRAK Study: Talking about Raising Aboriginal Kids
Anita D’Epinay, Menzies School of Health Research
Illustrations by Emma Long 2011

World Health Organization
UNICEF

Care for Child Development
18 months up to 2 years

**PLAY:**

Give your child things to stack up, and to put into containers and take out.

**COMMUNICATE:**

Ask your child simple questions. When your child tries to talk, respond. Show and talk to your child about nature, pictures and things.

TRAK Study: Talking about Raising Aboriginal Kids
Anita D’Ippolito, Menzies School of Health Research
Illustrations by Emma Long 2011

Care for Child Development
2 Years up to 3 Years

PLAY:
Help your child count, name and compare things.

Make simple toys.

COMMUNICATE:
Encourage your child to talk and answer your child’s questions.

Teach your child stories, songs, and games. Talk about pictures or books.
3 years up to 4 years

PLAY:
Help your child count, name and compare things.
Make simple toys.

COMMUNICATE:
Encourage your child to talk and answer your child's questions.
Teach your child stories, songs, and games. Talk about pictures or books.
4 years up to 5 years

PLAY:
Help your child count, name and compare things.
Make simple toys.

COMMUNICATE:
Encourage your child to talk and answer your child’s questions.
Teach your child stories, songs, and games.
Talk about pictures or books.

TRAK Study: Talking about Raising Aboriginal Kids
Anita Y’Agneau, Menzies School of Health Research
Illustrations by Emma Long 2011

World Health Organization
UNICEF

Care for Child Development
APPENDIX 9: ASQ3-TRAK TOOL PRACTICE GUIDELINES

Guide to using the ASQ3-TRAK Tool

Talking about Raising Aboriginal Kids
A guide for using the ASQ3 TRAK Tool

1. Completing the Tool

1.1 Things to remember

- **Introduce the Questionnaire.** Explain to the caregivers what you are going to do and why. Read the front sheet (the part in grey) or use your own words.
- **Introduce each new section** before asking questions. For example, explain COMMUNICATION then ask the questions.
- Explain to caregivers: **this is for ALL children.** All children in the community and all children in Australia.
- **Make sure baby has been fed and is well rested.** They will find it harder to do the things we ask if they are tired or hungry. This is the same for the caregivers.
- **Prepare.** Read the questionnaire through first. Get out all the toys you might need.
- Once you’ve got the toys you’ll need, **let the child play with the toys.** The child may end up doing what you want to see, without even asking. This is not a test.
- **Make it a game** as much as possible. Most of the things we ask can be fun. Remember this is not a test.
- **Try to get the child to do the activities,** but if the caregiver says that child usually does it at home, tick “yes”. Try not to force the child.
- Make sure you **allow enough time** for the question to be asked in Language if you are using an interpreter. If Strong Women are available in your community, involve them as much as possible.
- **You don’t have to ask the questions in the order they appear in the questionnaire.** For older kids, start with the questions you think they might find easiest or that they will enjoy most. Maybe start with the GROSS MOTOR questions?
- As much as possible, **ask the parents to show the child** the task or to play the game with the child.

1.2 Where to complete the tool

Most parents have told us they prefer the questions to be asked in private. They prefer it when other families are not around.

Staff have also told us they prefer to complete the tool in private without other staff coming in and out of the room and disturbing them.

We have found that doing it in private is also less distracting for the child.

Where possible, take the caregivers to a quiet room, away from other clinic or FaFT business. This is important if we find some areas of concern that we then need to talk to the family about.
A guide for using the ASQ3 TRAK Tool

2. Scoring the Tool
Every Questionnaire should have a Summary Score Sheet. This guides the scoring and interpreting of scores.

Yes = 10
Sometimes = 5
Not Yet = 0

- Score each question then add up the total. Each domain is out of 60.
- Add the total to the Summary Score Sheet, then colour the corresponding circle

<table>
<thead>
<tr>
<th>Area</th>
<th>Cutoff</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>29.65</td>
<td>0 5 10 15 20 25 30 35 40 45 50 55 60</td>
</tr>
<tr>
<td>Gross Motor</td>
<td>22.25</td>
<td></td>
</tr>
<tr>
<td>Fine Motor</td>
<td>25.14</td>
<td></td>
</tr>
<tr>
<td>Problem solving</td>
<td>27.72</td>
<td></td>
</tr>
<tr>
<td>Personal-Social</td>
<td>25.34</td>
<td></td>
</tr>
</tbody>
</table>

(Please note, the 24 month questionnaire has 2 questions we have had to leave out. This affects the scoring. The total score needs to be adjusted.)

3. Interpreting the score

ASQ SCORE INTERPRETATION AND RECOMMENDATION FOR FOLLOW-UP:
If the baby’s total score is in the area, it is above the cutoff, and the baby’s development appears to be on schedule. If the baby’s total score is in the grey area, it is close to the cutoff. Provide learning activities and monitor. If the baby’s total score is in the black area, it is below the cutoff. Further assessment with a professional may be needed.

See table below
## A guide for using the ASQ3 TRAK Tool

<table>
<thead>
<tr>
<th>White area</th>
<th>Grey area</th>
<th>Black area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What’s it mean?</strong></td>
<td>“On Track”</td>
<td>On Schedule</td>
</tr>
<tr>
<td><strong>Advice?</strong></td>
<td>Ok…</td>
<td>Close to cutoff</td>
</tr>
<tr>
<td></td>
<td>• Well done</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Anticipatory guidance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resources?</strong></td>
<td>Notes in HU5s</td>
<td>Notes in HU5s</td>
</tr>
<tr>
<td></td>
<td>Parent Information Sheets (see 5.3 below)</td>
<td>Parent Information Sheets (see 5.3 below)</td>
</tr>
<tr>
<td></td>
<td>FaFT materials</td>
<td>FaFT materials</td>
</tr>
<tr>
<td></td>
<td>Strong Women Workers</td>
<td>Strong Women Workers</td>
</tr>
<tr>
<td><strong>Follow Up?</strong></td>
<td>Routine Review</td>
<td>Early review, 73 months</td>
</tr>
<tr>
<td><strong>Referral?</strong></td>
<td>No need</td>
<td>Not at this stage but can discuss with colleagues</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Programme?</strong></td>
<td>FaFT</td>
<td>FaFT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**TRAK study**

Talking about Raising Aboriginal Kids
A guide for using the ASQ3 TRAK Tool

4. Recording the findings
It is important that we record the developmental check in the child’s medical record.

Until the Electronic Records System is modified, it is important to write notes.

4.1 What do I record?

1. ASQ3 TRAK completed. Hard copy (scanned/in patient’s file)
2. Developmental milestones - on schedule OR
   - close to cut off OR
   - below cut off
3. Advice - PLAY and COMMUNICATE advice given, verbal and written
   - (list any specific advice given)
4. Referral - not needed OR
   - (list specific referral made)
5. Follow up - routine OR
   - within 3 months (if close to cut off) OR
   - within 1 month (if below cut off)

4.2 Where do I record the notes?
In PCIS – enter in progress notes. You must also fill in the Healthy Under 5s “Assessment” form. Click on Assessment in the menu bar along the top of the page. Fill in the tick boxes for the Healthy Under 5s Assessment.

In Communicare – enter in comments box. Click on the “child health tab”; then click the relevant age assessment. A comments box will appear. You must also fill in the tick boxes below.
A guide for using the ASQ3 TRAK Tool

5. Materials

5.1 Questionnaires
There is a Master Copy of the Questionnaire, with copies of each in the clinic. There are specific questionnaires for:

- 2 months
- 6 months
- 12 months
- 18 months
- 24 months (2 years)
- 36 months (3 years)
- 48 months (4 years)

If more copies of the questionnaire are needed, make copies from the Master Copy.

5.2 Summary Score Sheets
Each age group has its own Summary Score Sheet. Be sure that the correct age score sheet is used.

5.3 Parent Information Sheets
There are Parent Information Sheets for each age group we will be checking. This information is based on the Care for Child Development Programme and matches the Anticipatory Guidance on Play and Communicate in the Health Under 5s Assessment.

Copies of the PIS will be available. Please offer one to each caregiver.

5.4 Toys
A Toy Kit has been provided to the clinic. This is a collection of toys that will assist in checking a child's ability. Any similar toy or item can be used.

This is a list of items/toys in the Toy Kit:

1. Rattle or small toy
2. Sultanas
3. Mirror
4. Book for turning pages
5. Book for looking at simple pictures
6. Large ball
7. Small ball
8. Blocks
9. Crayons
10. Plastic water bottle
11. Baby doll
12. Plastic cups x2
13. Plastic jar with screw top lid
14. Beads and shoe lace
15. Garment with buttons
16. Garment with zip
17. Child safe scissors
18. Puzzle - picture cut into 6 pieces
19. Comb
APPENDIX 10: HU5KS WHEEL

Healthy Kids - Under 5s Program

www.nt.gov.au/health

Healthy School Aged kids

Healthy Families help babies and children grow up well

Fathers are important in families

Mother’s health is important

Babies older than 6 months need solid food AND breastmilk

10 months

12 months

9 months

8 weeks

4 months

3 years

2 years

4 years

5th Assessment

6th Assessment

7th Assessment

8th Assessment

9th Assessment

10th Assessment

START - 1st visit

Immunisation Saves Lives

Babies need ONLY breast milk until they are 6 months old,

= Medical assessment = Medicare 239 - can be done in partnership with G.M.O.

DEPARTMENT OF HEALTH AND FAMILIES
Appendix 11: Training feedback survey

TRAK Study Training Feedback Survey
Nov 2011

Trainer: Dr Anita D’Aprano

Dates: □ Nov 14/15 □ Nov 21/22

AHW RAN FaFT SW worker Other (specify)

Thank you for taking time to complete this TRAK Study Training survey. Your feedback will help us meet your needs for training in the use of this tool. Your help is much appreciated.

1. The workshop (training in child development and the ASQ-3_TRAK tool) was relevant to my work

   Strongly Agree Agree Neutral Disagree Strongly Disagree

2. The workshop overall was the right level of difficulty - I understood the ideas we discussed but it still extended my knowledge.

   Strongly Agree Agree Neutral Disagree Strongly Disagree

3. The workshop was the right length.

   Strongly Agree Agree Neutral Disagree Strongly Disagree

4. The TRAK Training manual helped my learning

   Strongly Agree Agree Neutral Disagree Strongly Disagree

5. The delivery methods (discussion, dvds, small group work, demonstration) were useful to help my learning.

   Strongly Agree Agree Neutral Disagree Strongly Disagree

6. The training has increased my confidence in asking caregivers about their child’s development.

   Strongly Agree Agree Neutral Disagree Strongly Disagree
7. The training has increased my confidence in giving simple advice to caregivers about child development.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

8. The training has increased my confidence in picking up developmental problems.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

9. Following the training I feel I will be able to use the ASQ-3 TRAK tool in my work.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

10. Following the training I have greater understanding of policies and guidelines (such as Healthy Under 5s)
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

11. Following the training I have greater understanding of services available to promote child development
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

12. What was the best part of the training?

   

13. What would you change about the training?

   

   Additional Comments

   

Thank you for your time
APPENDIX 12: ASQ-3 12-MONTH QUESTIONNAIRE

Ages & Stages
Questionnaires®

12
Month Questionnaire

11 months 0 days through 12 months 30 days

Please provide the following information. Use black or blue ink only and print legibly when completing this form.

Date ASQ completed: ________________________________

Baby’s information

Baby’s first name: __________________________________
Middle initial: ________________________________
Baby’s last name: __________________________________
Baby’s date of birth: ________________________________

If baby was born 3 or more weeks prematurely, # of weeks premature: ________________________________

Baby’s gender: ○ Male ○ Female

Person filling out questionnaire

First name: __________________________________
Middle initial: ________________________________
Last name: __________________________________

Relationship to baby: ○ Parent ○ Guardian ○ Foster parent ○ Other: ________________________________

Street address: __________________________________

City: ________________________________
State/Province: ________________________________
ZIP/Postal code: ________________________________

Country: ________________________________

Hoping telephone number: ________________________________
Other telephone number: ________________________________

E-mail address: __________________________________

Names of people assisting in questionnaire completion: ________________________________

Program Information

Baby ID #: ________________________________
Age at administration in months and days: ________________________________

Program ID #: ________________________________
If premature, adjusted age in months and days: ________________________________

Program name: ________________________________
## COMMUNICATION

1. Does your baby make two similar sounds, such as “ba-ba,” “da-da,” or “ga-ga”? (The sounds do not need to mean anything.)
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0

2. If you ask your baby to, does he play at least one nursery game even if you don’t show him the activity yourself [such as “bye-bye,” “Peek-a-boo,” “clap your hands,” “So Big”]?  
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0

3. Does your baby follow one simple command, such as “Come here,” “Give it to me,” or “Put it back,” without using gestures?
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0

4. Does your baby say three words, such as “Mama,” “Dada,” and “Baba”? (A “word” is a sound or sounds your baby says consistently to mean someone or something.)
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0

5. When you ask, “Where is the ball (hat, shoe, etc.)?” does your baby look at the object? (Mark “yes” if she knows one object.)
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0

6. When your baby wants something, does he tell you by pointing to it?
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0

**COMMUNICATION TOTAL**

## GROSS MOTOR

1. While holding onto furniture, does your baby bend down and pick up a toy from the floor and then return to a standing position?
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0

2. While holding onto furniture, does your baby lower herself with control (without falling or hopping down)?
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0

3. Does your baby walk beside furniture while holding on with only one hand?
   - Yes: 0
   - Sometimes: 0
   - Not Yet: 0
**GROSS MOTOR (continued)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Sometimes</th>
<th>Not Yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. If you hold both hands just to balance your baby, does he take several steps without tripping or falling? (If your baby already walks alone, mark “yes” for this item.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. When you hold one hand just to balance your baby, does she take several steps forward? (If your baby already walks alone, mark “yes” for this item.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Does your baby stand up in the middle of the floor by himself and take several steps forward?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GROSS MOTOR TOTAL**

---

**FINE MOTOR**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Sometimes</th>
<th>Not Yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. After one or two tries, does your baby pick up a piece of string with his first finger and thumb? (The string may be attached to a toy.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Does your baby pick up a crumb or Cheerio with the tips of her thumb and a finger? She may rest her arm or hand on the table while doing it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Does your baby put a small toy down, without dropping it, and then take his hand off the toy?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Without resting her arm or hand on the table, does your baby pick up a crumb or Cheerio with the tips of her thumb and a finger?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Does your baby throw a small ball with a forward arm motion? (If he simply drops the ball, mark “not yet” for this item.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Does your baby help turn the pages of a book? (You may lift a page for him to grasp.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FINE MOTOR TOTAL**

*If Fine Motor Item 4 is marked “yes” or “sometimes,” mark Fine Motor Item 2 “yes.”"
PROBLEM SOLVING

1. When holding a small toy in each hand, does your baby clap the toys together (like "Pat-a-cake")?
   - Yes
   - Sometimes
   - Not Yet

2. Does your baby poke at or try to get a crumb or Cheerio that is inside a clear bottle (such as a plastic soda-pop bottle or baby bottle)?
   - Yes
   - Sometimes
   - Not Yet

3. After watching you hide a small toy under a piece of paper or cloth, does your baby find it? (Be sure the toy is completely hidden.)
   - Yes
   - Sometimes
   - Not Yet

4. If you put a small toy into a bowl or box, does your baby copy you by putting in a toy, although she may not let go of it? (If she already let go of the toy into a bowl or box, mark "yes" for this item.)
   - Yes
   - Sometimes
   - Not Yet

5. Does your baby drop two small toys, one after the other, into a container like a bowl or box? (You may show him how to do it.)
   - Yes
   - Sometimes
   - Not Yet

6. After you scribble back and forth on paper with a crayon (or a pencil or pen), does your baby copy you by scribbling? (If she already scribbles on her own, mark "yes" for this item.)
   - Yes
   - Sometimes
   - Not Yet

PROBLEM SOLVING TOTAL

*If Problem Solving Item 5 is marked "yes" or "sometimes," mark Problem Solving Item 4 "yes."

PERSONAL-SOCIAL

1. When you hold out your hand and ask for his toy, does your baby offer it to you even if he doesn't let go of it? (If he already lets go of the toy into your hand, mark "yes" for this item.)
   - Yes
   - Sometimes
   - Not Yet

2. When you dress your baby, does she push her arm through a sleeve once her arm is started in the hole of the sleeve?
   - Yes
   - Sometimes
   - Not Yet

3. When you hold out your hand and ask for his toy, does your baby let go of it into your hand?
   - Yes
   - Sometimes
   - Not Yet

4. When you dress your baby, does she lift her foot for her shoe, sock, or pant leg?
   - Yes
   - Sometimes
   - Not Yet

5. Does your baby roll or throw a ball back to you so that you can return it to him?
   - Yes
   - Sometimes
   - Not Yet

6. Does your baby play with a doll or stuffed animal by hugging it?
   - Yes
   - Sometimes
   - Not Yet

PERSONAL-SOCIAL TOTAL
OVERALL
Parents and providers may use the space below for additional comments.

1. Does your baby use both hands and both legs equally well? If no, explain: □ YES □ NO

2. Does your baby play with sounds or seem to make words? If no, explain: □ YES □ NO

3. When your baby is standing, are her feet flat on the surface most of the time? If no, explain: □ YES □ NO

4. Do you have concerns that your baby is too quiet or does not make sounds like other babies do? If yes, explain: □ YES □ NO

5. Does either parent have a family history of childhood deafness or hearing impairment? If yes, explain: □ YES □ NO
OVERALL (continued)

6. Do you have concerns about your baby's vision? If yes, explain:
   ○ YES ○ NO

7. Has your baby had any medical problems in the last several months? If yes, explain:
   ○ YES ○ NO

8. Do you have any concerns about your baby's behavior? If yes, explain:
   ○ YES ○ NO

9. Does anything about your baby worry you? If yes, explain:
   ○ YES ○ NO
1. **SCORE AND TRANSFER TOTALS TO CHART BELOW:** See ASQ-3 User's Guide for details, including how to adjust scores if item responses are missing. Score each item (YES = 10, SOMETIMES = 5, NOT YET = 0). Add item scores, and record each area total. In the chart below, transfer the total scores, and fill in the circles corresponding with the total scores.

<table>
<thead>
<tr>
<th>Area</th>
<th>Cutoff</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>15.64</td>
<td></td>
</tr>
<tr>
<td>Gross Motor</td>
<td>21.49</td>
<td></td>
</tr>
<tr>
<td>Fine Motor</td>
<td>34.50</td>
<td></td>
</tr>
<tr>
<td>Problem Solving</td>
<td>27.32</td>
<td></td>
</tr>
<tr>
<td>Personal Social</td>
<td>21.73</td>
<td></td>
</tr>
</tbody>
</table>


1. Uses both hands and both legs equally well? **Yes** **NO**
   Comments:

2. Plays with sounds or seems to make words? **Yes** **NO**
   Comments:

3. Feet are flat on the surface most of the time? **Yes** **NO**
   Comments:

4. Concerns about not making sounds? **YES** **No**
   Comments:

5. Family history of hearing impairment? **YES** **No**
   Comments:

3. **ASQ SCORE INTERPRETATION AND RECOMMENDATION FOR FOLLOW-UP:** You must consider total area scores, overall responses, and other considerations, such as opportunities to practice skills, to determine appropriate follow-up.

   - If the baby's total score is in the **area**, it is above the cutoff, and the baby's development appears to be on schedule.
   - If the baby's total score is in the **area**, it is close to the cutoff. Provide learning activities and monitor.
   - If the baby's total score is in the **area**, it is below the cutoff. Further assessment with a professional may be needed.

4. **FOLLOW-UP ACTION TAKEN:** Check all that apply.
   - Provide activities and rescreen in ____ months.
   - Share results with primary health care provider.
   - Refer for (circle all that apply) hearing, vision, and/or behavioral screening.
   - Refer to primary health care provider or other community agency (specify reason): ___________________________________________________________________
   - Refer to early intervention/early childhood special education.
   - No further action taken at this time
   - Other (specify): ___________________________________________________________________

5. **OPTIONAL:** Transfer item responses

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Motor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Motor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem Solving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*ASQ III* Ages & Stages Questionnaires®, Third Edition (ASQ-3™). Squires & Bricker © 2009 Paul H. Brookes Publishing Co. All rights reserved.