

# **MATERNITY SERVICES REVIEW**

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## **NORTHERN TERRITORY**

December 2007

This Review was undertaken by independent consultants Banskott Health Consulting. It is being used by the Department of Health and Community Services to inform the reform of maternity services in the Northern Territory. However the views and opinions expressed within the report are those of the authors only and are not endorsed by the Department.

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## INTRODUCTION

The Banscott Consulting Team undertook a review of Maternity Services in the Northern Territory (NT) at the request of the Northern Territory Government. The report has been finalised by taking into account the comments, opinions and advice provided by members of an Expert Reference Group (ERG) and stakeholders interviewed by the Consultants.

Maternity services within the scope of this project encompass ante-, peri- and postnatal care, provided either by specialist or generalist health professionals. While any specific service model recommendations from this project will focus on government (NT or Australian) funded service providers, they will be relevant to assess all maternity services currently provided in the NT. Similarly, the development of a service framework would also acknowledge the breadth of maternity service providers in the Territory.

The conduct of this review took place in a climate of opposing views and mixed emotions, but with a considerable amount of good will.

Consumers, a large percentage of midwives and some obstetricians have fully participated in the process, in the hope that, unlike previous reviews, the recommendations from this review will be implemented.

However, there exists a fundamental underlying problem in the Top End and that is an almost total disconnect between obstetricians and midwives in their approach to maternity services.

There is absolutely no question that both professional groups have, as their aim, the best outcomes for mother and baby. Sadly their views on how to achieve that are almost diametrically opposed, and although there has been collaboration on some issues, the understanding, respect and trust between professionals, necessary to provide best client-centred care, is missing.

This is recognised by all of the consumer groups, most of the midwives and very few of the medical staff.

Maternity services that meet the needs of all women cannot be provided without significant input from both obstetricians and midwives. Unless this problem is dealt with seriously and as a priority, the ability to introduce an optimal client-centred, truly integrated model of maternity care, will be severely compromised.

The following Terms of Reference are addressed to the extent that the funds available and the time provided has allowed. In particular it has not been possible to address the funding options required by 8 below.

### Terms of Reference

The terms of reference for this project were to:

1. Map the scope of existing maternity services providers in the NT, including whether these are in the public, private or not-for-profit sector; their service scope, delivery model, location and workforce; and if there are service gaps or duplication.
2. Conduct a desktop audit of relevant NT maternity services policy, reviews, research and reports, demography and maternity service utilisation, outcome and cost data.
3. Compare existing NT maternity services to current and emerging national and international models of and guidelines for maternity service delivery, giving consideration to the NT's population profile and the challenges of providing health

services in the NT, and in particular the issues facing Aboriginal people living in remote areas.

4. Identify other relevant NT or national health, community services or other sector initiatives which may impact on the delivery of maternity services in the NT.
5. Examine the continuity of care and service interface (including the transfer of relevant information) between different components of maternity services used by a given client, and between maternity services *per se* and other health and community services used by these clients; and in particular, child health and family and children's services.
6. Conduct consultations with key stakeholders to clarify NT maternity services issues, perceived needs and challenges, and canvas options for future services.
7. Develop a framework of the services required to optimise the accessibility, safety, effectiveness and efficiency of maternity services for Territorians, including consideration of factors required for its sustainability e.g. funding streams, governance, workforce and collaborative interfaces between services.
8. Develop sustainable models of government funded maternity services and options for their implementation in the NT that fit with the abovementioned framework. This developmental work should consider and provide advice for two scenarios: firstly, assuming existing funding and hence the requirement or otherwise for resource redistribution; and secondly, identification and distribution of any additional monies.

## SUMMARY AND CONCLUSIONS

The summary and conclusions outline what we believe to be the barriers to progress, the issues for resolution and the recommendations necessary to implement a sustainable maternity services framework which meets the needs of NT women. Many of the recommendations in this report are capable of implementation from within existing budget allocations. Implementation of the overall report should not be allowed to be delayed while additional needed funds are being sought.

### Barriers to Progress

- A significant number of women have cultural differences which predispose them to be suspicious of a system which makes insufficient attempt to offer choices or basic pregnancy information, or to establish client satisfaction with the services provided. Under the existing system, frequent late presentation for initial antenatal visits and multiple handover points for care both within and between services results in a lack of continuity of care and often (even if inadvertent) barriers to service access. The result is poor pregnancy management and less than satisfactory outcomes for mothers and/or babies.
- An overall system which is highly fragmented, suffers from overlaps in service delivery, incompatible patient record systems, and absence of information sharing and data collection for audit purposes either at a service delivery or system level.
- Since 1992 reports into maternity services have pointed to the absence of reliable hard data to permit any effective review at a service or system level, a position which is unacceptable in an effective health system.
- The current model of clinical services is highly medicalised with more urgent high risk presentations in hospital than need be the case in a more integrated system of care. The strains on the system have reduced communication, led to poor clinical governance and a lack of multi-disciplinary review processes and audit of outcomes. An over medicalised model can lead to professional and organisational insularity. A successful maternity service will provide a range of choices acceptable to pregnant women within a context of high quality clinical care.

- Such a history has produced an understandable lack of leadership at a system level and many highly professional and well-intentioned individuals find themselves in a setting which inhibits objective assessment, discourages innovation and re-enforces the *status quo*.
- The absence of a systematic approach to staff recruitment, retention or training at all levels of the workforce has resulted in:
  - a large number of overseas trained doctors (OTDs) in consultant positions with sometimes dissimilar approaches to clinical care and their own cultural expectations about outcomes
  - a longstanding shortage of generalist proceduralists and training support at regional hospitals throughout the NT with pressures threatening the retention of those who are there.
  - an endemic shortage of midwives practicing in the NT and inadequate support for those who are
  - a shortage of AHW and skills training in many communities
  - transport and accommodation for women travelling from remote areas to access clinical services that are inappropriately organised to meet requirements
  - inadequate education and pregnancy information services.

### Issues for Resolution

1. Strategies to ensure that proposals in this report do not suffer the same fate as its predecessors over the past decade with lip service paid to any recommendations involving systemic change.
2. Strategies to achieve a unity of purpose and encourage a more professional and integrated system, involving all maternity care services, with a primary focus on patient care, which is inclusive, participatory and client friendly.
3. How to improve referral mechanisms for transfer between midwives, GPs, DMOs and obstetricians, and to ensure outreach services are as accessible as possible to potential clients.
4. How to ensure better information services are provided to women about pregnancy generally and to extend some choice or an understanding about the way their pregnancy is to be managed, whether they are in a low or a high risk category.
5. What steps can be taken to improve clinical services and governance across the NT, particularly at the Royal Darwin Hospital (RDH), with an absence of multi-disciplinary review and audit of outcomes and an apparent failure to recognise the need for such a review process; a lack of hard data such as infection rates and adverse incident rates and no timely analysis of maternal and perinatal mortality and morbidity data; issues related to specialists in training with several reports containing outstanding recommendations relating to supervision, rostering and clinical workload.
6. The incorporation of homebirth midwives into the Community Midwife Program (CMP) and the steps to be taken to make midwifery services a more integral part of maternity services.
7. How to improve basic record keeping and data collection at a service delivery level for audit and outcome analysis and ensure there is service feedback. Little or no priority is accorded to these activities and incentives may need to be considered to improve compliance. Data supplied to the consultants' for pregnancy outcomes is for 2003–04, now almost four years old, however publication of the NT midwives data collection has not occurred since 2002, with only minimal NT data available through the Australian Mothers and Babies report (2005, just released).
8. How to improve patient information systems in a setting where remote health clinics, Aboriginal Medical Service (AMS) and hospitals each maintain different patient

information systems which are unlinked to provide data sharing with obvious implications for patients who frequently move through various components of the system, and to their caregivers. It is of vital importance where clientele are unable to provide accurate histories themselves and has potential to allow wrong decisions about care to be made.

9. What steps can be taken to improve recruitment and training of medical staff and midwives and to ensure all professional staff are inducted into maternity services as a whole with particular reference to training which provides for the cultural safety of women in their care.
10. What steps need to be taken to ensure the development and implementation of a program of regular continuing education for all staff working in maternity services with particular attention to those working in remote areas.
11. Decisions need to be made about who is responsible for providing travel assistance, escorts and accommodation for women from remote areas in both emergency and non-emergency situations.
12. What steps need to be taken to improve infrastructure generally and particularly for the proposed Group Midwifery Practice (GMP) such as offices, vehicles and office support.
13. Whether a service plan and a business plan with identified outcomes and timelines should be developed to measure progress or otherwise.

## **PRIORITY RECOMMENDATIONS**

**A1.** An integrated system of maternity services should be introduced into the Northern Territory covering all government funded services for antenatal, birthing services and postnatal care. The model of care should recognise that pregnancy is a normal process, that women have a right to choose who cares for them and where they have their baby, and patient care should be inclusive and participatory and provide continuity of care for high risk and low risk women as detailed in the framework below.

**A2.** Director of Maternity Care Services should be appointed, reporting directly to the CEO of DHCS and supported, at least initially, by a Territory wide Advisory Committee.

**A3.** The Director of Maternity Care Services to be responsible for implementing an integrated system of maternity services across the Northern Territory. Primary responsibilities would include:

- development of policies and protocols
- appointment of a business manager to assist progress and oversight the development of a service plan and a business plan with identified outcomes and timelines
- overall budget management
- coordination of data systems
- oversee recruitment of medical and midwifery staff
- supervision of medical training programs
- oversee clinical governance
- co-ordination of specialists' visits to remote communities
- liaison with service providers, specialists and primary care including MSOAP

**A4.** Agreement should be reached between the NT DHCS, Aboriginal Community Controlled Health Services and other maternity health services on protocols and guidelines for services to support an integrated system e.g. ACM/RANZCOG.

**A5.** The development of an integrated patient record system and improved data collection and information sharing. A linked patient information system needs to be established as a priority across all services to ensure that patients who frequently move through various

services and their caregivers are given the best chance of appropriate diagnosis and care. This should take account of current developments for the e-health NT shared Electronic Medical Record system currently being developed. It should also be supplemented and supported by hand held record systems particularly in remote areas.

**A6.** GMPs need to be established immediately in Darwin and Alice Springs as an integral part of maternity services incorporating home birthing services.

**A7.** Obstetric services at RDH need to be restructured so that they are able to become both an integral and pivotal part of an integrated maternity services system. Priority initiatives are detailed in the framework below.

## **RECOMMENDATIONS**

### **Clinical Services**

**B1.** Obstetric practice to move from a medical model to a more inclusive participatory, integrated and client-friendly model of care, based on continuity of care and carer.

**B2.** Initial antenatal consultation to be by self-referral to a midwife or General Practitioner (GP)/District Medical Officer (DMO).

**B3.** Collaborative referral mechanisms which ensure ease of transfer between midwives/GPs/DMOs/obstetricians to be agreed and implemented.

**B4.** For low risk women:

- a. Whenever feasible, care should be provided as close to home as possible.
- b. GMP incorporating home birth, to be implemented in Central Australia based at Alice Springs.
- c. The Community Midwife Practice in Darwin to be expanded to include the home birth service and become a GMP, with the administrative centre in the new Birth Centre at RDH.
- d. The development of protocols that allow low risk women to make a decision about place of birth at any stage of the pregnancy.
- e. A pilot of birthing at Tennant Creek Hospital to be conducted to provide for women of the Barkly Region. The pilot to have stipulated outcome measures particularly with reference to the safety for mother and baby and be reviewed at 6, 12 and 18 months.
- f. A pilot of birthing 'on country' to be conducted in one or two of the communities (e.g. Maningrida, and/or Wadeye). The pilot to have stipulated outcome measures particularly with reference to the safety for mother and baby and be reviewed at 6, 12 and 18 months. If successful the program should be continued within the community and extended to other communities assessed as being suitable for the program.

**B5.** For high risk women:

- a. The high risk clinics at RDH and Alice Springs Hospital (ASH) to be further developed so that the medical team includes obstetricians and physicians with a specific interest in high risk pregnancy, easy access to anaesthetists and paediatricians providing neonatal care.
- b. These high risk clinics to be multidisciplinary and include as part of the team a designated midwife and an Aboriginal Health Worker (AHW).
- c. The high risk clinic team to be involved in the inpatient care as well as the outpatient management of high risk women to ensure continuity of care.
- d. The high risk clinics to be held at a time during the week which allows expedient access to other diagnostic services so that assessment can be completed and

women from rural and remote areas are not absent from their homes for longer than necessary.

**B6.** One of the positions in large communities and/or zones to be designated as a midwife position to be responsible for the provision of antenatal and postnatal care in the community/zone.

**B7.** AHWs should be 'teamed' with the designated midwife positions in both the remote areas and the GMPs in Alice Springs and Darwin to ensure the cultural safety of Aboriginal women.

**B8.** Arrangements for the provision of antenatal education should be examined to ensure access to education for all women.

**B9.** Patient held records be employed and the staff and women be educated in their effective use.

**B10.** The appointment of a Territory-wide Advisory Committee to provide advice and support to the Director at least in the initial stages of implementation of the new model.

### **Clinical Governance**

**B11.** The Northern Territory Government to institute a statutory requirement for the reporting of maternal deaths (including those associated with an anaesthetic) and perinatal mortality.

**B12.** Maternal and perinatal morbidity and mortality data to be analysed and reported in a timely manner, at hospital and NT level, to facilitate the discussion and improvement in patient safety and quality of service provision and improved outcomes.

**B13.** The data collected by the Midwives Notification System should be reviewed to ensure that it is relevant and will provide information about outcomes and clinical management for mother and baby and to guide decision-making about service delivery. The data should be analysed, its accuracy assessed, and remedied if necessary, and made available at least annually immediately following the completion of the year.

**B14.** A congenital malformations register be implemented.

**B15.** As a matter of urgency, measures to be taken to improve the medical culture and professional relationships both within the Division of Maternal and Child Health at RDH and externally e.g. the establishment of a health Collaborative Peer Group or other team building program.

**B16.** Formal credentialing procedures to be implemented for all professional staff.

**B17.** All incidents in the already identified reporting criteria be entered into the Australian Incident Management System (AIMS) system.

**B18.** All reportable incidents must be investigated, discussed widely in a multidisciplinary setting and actions for improvement documented, implemented and monitored.

**B19.** Hospital-based monthly perinatal mortality and morbidity meetings involving all professionals—obstetricians, midwives, paediatricians, AHWs and staff in training with the aim of assessing gaps in care and improving systems.

**B20.** A standardised system for collecting hospital-acquired infection rates to be developed and implemented as a matter of priority. The information should be reported to hospital departments and measures put in place to address problems identified.

### **Workforce and Education**

**B21.** The RANZCOG training positions to be fully accredited and filled with RANZCOG trainees at RDH and ASH.



**B22.** The employment of medical staff to be an open process with all medical positions advertised and Australian graduates employed where they meet selection criteria.

**B23.** GPs/DMOs undertaking maternity care preferably should have DRANZCOG and if not should seek the early advice of specialist obstetricians.

**B24.** A midwifery leadership position at Professorial level should be established with appointment a priority.

**B25.** Designated full-time midwifery educator positions should be established at RDH and ASH, and midwives with experience in education should be appointed at Katherine and Gove, and Tennant Creek when birthing trial commences.

**B26.** Professional staff to be inducted into the maternity service as a whole, with particular reference to training which provides cultural safety for women in their care. This applies to all staff including those on short term contracts.

**B27.** Develop and implement a program of regular continuing education and upskilling for staff, with particular attention to those working in remote areas including rotation periods to the major centres. Account should be taken of a recent paper, developed in the Top End, with a suggested approach to the specific problems confronting GP obstetricians and GP anaesthetists.

**B28.** Selection criteria for staff working in remote communities should emphasise experience in community settings, acknowledging the need for emergency skills training e.g. Maternity Emergency Care Course (MEC), and Advanced Life Support in Obstetrics (ALSO).

**B29.** The recruitment of midwives is a priority and advertising must emphasise the implementation of the new model of care.

**B30.** Recruitment strategies should focus on midwives currently registered and living in the NT, but not practicing midwifery, to return to employment in maternity services.

**B31.** Encourage the recruitment of AHWs to work with midwives providing maternity services.

**B32.** Specific training to be provided for AHWs involved in working in maternity services.

**B33.** The demand for entry into the GMPs should be monitored to ensure resources to meet the demand.

**B34.** Contracts for the midwives working in the GMPs should be flexible enough to accommodate the work practices. This should include annualised hours and salary.

### **Record keeping and information systems**

**B35.** Development of linked data systems to aid the analysis of maternal and perinatal mortality and morbidity along the lines of the WA-linked data system. Consideration could be given to sub-contracting the data analysis and reporting from another jurisdiction.

**B36.** As a matter of urgency a steering committee be formed to sort out the problems with the antenatal record, both hard copy and computer-based, and to develop a system that provides complete information about the woman's history and current pregnancy care.

**B37.** Any new data system should include an assessment of the potential for the eHealth NT Shared Electronic Medical Record to link service providers, scheduling and activity data which meets the need of maternity services.

### **Travel and Accommodation**

**B38.** A decision must be made about who is responsible for providing travel assistance, escorts and accommodation for women from remote areas in both emergency and non-

emergency situations. We note that at the time of writing the Senate Review of Patient Assistance Travel Schemes has been released.

**B39.** All remote women transferring for antenatal/birthing care should have the option of an appropriate carer/escort.

**B40.** Accommodation for women should be provided as close as possible to the hospital, or preferably as part of the hospital, for the safety and protection of the women.

**B41.** It is imperative that alternate, more appropriate and humane arrangements for the transport of women from Tennant Creek and the Barkly Region to and from Alice Springs, are urgently implemented.

### **Infrastructure**

**B42.** A birth centre to be built on the grounds of ASH in accordance with government policy.

**B43.** Operational and capital funding for the birth centre in ASH to be sought in the next Budget.

**B44.** Funding for offices, vehicles and office support for the outreach midwives to be provided.

**B45.** The purchase of ultrasound machines for the use of designated and outreach midwives for dating scans in remote communities.

**B46.** Space for maternity care in remote communities to be provided either in Clinics or the Womens' Centre.

**B47.** Antenatal clinics at ASH and RDH to be remodeled to allow private and client-friendly space for consultations, adequate to accommodate the numbers of patients being seen.

**B48.** The GMPs at Darwin and Alice Springs be provided with appropriate infrastructure such as offices, vehicle and office support.

**B49.** The Casuarina clinic site to be retained for use by the Darwin GMP.

**B50.** The suitability of the currently available hostels for women should be urgently reviewed, particularly with respect to siting and security, and recommendations implemented.

### **Education for women**

**B51.** Appropriate sexual and reproductive health education should be offered to all women and should commence in upper primary school, including information about the impact on pregnancy of nutrition, alcohol and drug use. This is a preventive priority in a setting where currently around 20% of women have their first antenatal visit in the third trimester

**B52.** All pregnant women should have access to appropriate education about pregnancy, birth and parenting skills. It is understood a review of Childbirth Education is currently underway.

**B53.** Information should be provided about service options, and the potential impact on maternal and child health, to all women who are, are planning to or might become pregnant in the near future.

## **BACKGROUND**

Since 1992, there have been at least six major reviews into Maternity Services in the NT plus several others dealing with various aspects of maternity services. Some of these have not been made public. While many of the recommendations from these reviews have been implemented, there has been no system-wide approach when determining which

recommendations will be implemented or the process of implementation. Consistent features of these reports have been:

- the desire to improve the integration of care to Aboriginal women from remote communities
- to provide both Aboriginal and non-Aboriginal women, who are low risk, with a midwife-led model of care
- concerns about the model and outcomes of care at RDH
- concerns about the teaching and supervision of obstetric specialists in training
- the need for collection and analysis of perinatal data, review of the findings and implementation of changes as a consequence of the findings of the reviews
- the need for review of incidents and implementation of changes as a consequence of the lessons learnt
- that women are not asked about their satisfaction with the services provided, their experience or their outcomes.

This Review was initiated, at least in part, due to persistent representation from three consumer groups: Childbirth Education Association, NT Branch of Maternity Coalition and the Homebirth Support Group.

The main interest of these groups is in models of care that provide women with continuity of care and carer, and choice of birth place as close to home as possible, with particular emphasis on access to midwife led services. For at least 20 years non-Aboriginal women across Australia have expressed their dissatisfaction with models of care that lack continuity of care, do not involve them in decision making and what many view as unnecessary medical intervention. These views are very different from many of their mothers and grandmothers.

Similarly, many senior Aboriginal women have expressed concern about the loss of traditional birthing and traditional practices that protect mother and baby. Models of care in many parts of Australia have changed to take account of these views. However, it appears that, like the rest of the population, the expectations of young Aboriginal women may be different from their forebears leading to some tensions between the generations. Birthing practices have changed and continue to change for all women and the skill is to know how to marry the best of the options. Finding the balance between maintaining the culture and using the best that health services can provide to ensure safety for mother and baby is the challenge. For those who wish to follow the traditions of smoking the baby or burial of the placenta 'in country' the system should be able to accommodate these practices easily.

To a lesser extent it is a similar problem for immigrant ethnic communities in Australia to maintain a balance between the culture of their ancestry and functioning in modern Australia.

## **CONSULTATIONS**

The BANSKOTT review team has been supported by an ERG (see Appendix A for membership and roles and responsibilities). The consultation process has involved face-to-face meetings and telephone consultations with stakeholders involved in maternity services provision across the NT (See Appendix B) and members of the ERG. It included visits to Katherine and Gove, as well as Darwin and Alice Springs, and meetings with midwives at a study day run by the College of Midwives and participants in the MEC course that was run in Katherine. Due to the time parameters of the project brief, there was insufficient

time to conduct face-to-face consultations with stakeholders in many remote communities. Unfortunately a planned visit to Tennant Creek was cancelled due to circumstances outside our control.

Copies of previous reviews and reports (see list in Appendix C) were made available to the Consultants, although access to many of these was difficult.

## **DEMOGRAPHY AND COMMUNITY CHARACTERISTICS**

The NT encompasses a vast geographic area of approximately 1 353 201 square kilometres which spans in a north-south direction from the Arafura Sea to the Pitjantjatjara Lands in South Australia, and in an east-west direction from the Queensland border to the West Australian border.

In 2006, the population of the NT was estimated to be 210 674, of whom 56 056 were identified as being Aboriginal people (27%). Forty-seven percent of the population was female (97 471), with 26 590 (27%) identified as being Aboriginal women<sup>1</sup>.

The NT has a comparatively young population, with a mean age of 29.0 years versus the national average of 35.2 years. More of the NT's Aboriginal population are young people than the non-Aboriginal population—the median age of the NT Aboriginal and Torres Strait Islander (ATSI) population was reported to be 22 years (significantly lower, by 14 years, than that of the general population of Australia).

A significant proportion of the NT population are resident in the greater Darwin area (Darwin, Palmerston, East Arm, Litchfield; approximately 116 081) and Alice Springs (approximately 26 194). However, the majority of Aboriginal people live in remote or very remote locations (81%) whereas only 32% of non-Aboriginal people live in these locations.

### **Aboriginal Languages of the Northern Territory**

There are more than 100 different traditional languages spoken in the NT, and there is a wide variation in the number of speakers of each of the languages, ranging from as many as 3000 to as few as 50. Several versions of Kriol are also spoken. Many of the traditional speakers have a poor knowledge and understanding of English.

### **Health Issues and Burden of Disease**

Aboriginal people in the NT have been reported to have a burden of disease 2.5 times higher than the non-Aboriginal population. The ten leading causes of disease burden are: cardiovascular disease; unintentional injuries; acute respiratory disease; mental disorders (including substance abuse); chronic respiratory disease; diabetes mellitus; malignant neoplasms; neonatal disorders; intentional injuries; and nervous system and sensory organs.

Of the chronic diseases listed above, diabetes, heart disease particularly valvular heart disease, and renal disease in women have the most effect on pregnancy and its outcomes.

No data was available about the prevalence of Foetal Alcohol Syndrome or alcohol or other drug use by pregnant women, although concern is frequently expressed about the level of use and the subsequent impact on the babies.

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<sup>1</sup> Data sourced from Health Gains Planning, DHCS 2007

### **Pregnancy Outcomes in the NT**

Maternal and perinatal mortality rates in Australia, as in other parts of the developed world, have been reduced significantly over the past few decades. The NT has the highest maternal and perinatal maternity rates in Australia contributed to by the underlying burden of disease, significant poverty and poor living conditions, and the difficulties of service provision to small remote communities with vast distances between them.

The age specific fertility rate in 2003 was 2.6 for Aboriginal women and 1.9 for non-Aboriginal. This figure hides a huge problem of infertility for Aboriginal women which is inadequately investigated (and therefore unidentified) and for which there is little meaningful treatment available in the remote communities.

At 38% of all births, the NT has the highest proportion of births to Aboriginal women in Australia. The women have their babies at a younger age, have a significantly higher rate of multiparity, attend for antenatal care later in pregnancy but have labour induced less often and have a lower caesarean section rate 25.3 vs. 31.5% in the NT in 2005.

The stillbirth rate at 14 per thousand for Aboriginal women is the highest in the country whilst the live born are more often preterm and the babies, at any gestation, require more resuscitation at birth.

The tables on the following pages provide more detail.

**Number of mothers and babies in 2003**

<b>Ethnicity</b>	<b>Mothers</b>	<b>Babies</b>
Aboriginal	1394	1402
Non-Aboriginal	2225	2259
Total NT	3619	3661
% Aboriginal	38.4	38.2

The above data indicates that in 2003 approximately 38% of all births in the NT were to Aboriginal women.

**Maternal age at birth of baby in 2003**

<b>Maternal Age</b>	<b>Aboriginal</b>	<b>%</b>	<b>Non-Aboriginal</b>	<b>%</b>
<15	13	1.0	0	0
15–17	185	13.9	45	2.0
18–19	184	13.8	80	3.6
20–24	428	32.1	358	16.3
25–34	445	33.4	1324	60.3
35–44	79	5.9	385	17.5
<b>Total</b>	<b>1334</b>	<b>100</b>	<b>2197</b>	<b>100</b>

Over 28% of Aboriginal women giving birth are less than 19 years of age compared with 5.6% of non-Aboriginal women whereas only 5.9% are more than 35 years of age, compared with 17.5%. The high proportion (14.9% of Aboriginal women less than 17 years) is particularly noteworthy.

**Maternal age of first time mothers in 2003**

<b>Maternal Age of First time Mothers</b>	<b>Aboriginal</b>	<b>%</b>	<b>Non-Aboriginal</b>	<b>%</b>
<15	13	3.1	0	0
15–17	158	38.0	41	4.3
18–19	89	21.4	63	6.7
20–24	110	26.4	195	20.7
25–34	42	10.1	531	56.3
35–44	4	1.0	114	12.1
<b>All Ages</b>	<b>416</b>	<b>100.0</b>	<b>944</b>	<b>100.0</b>

Sixty two and a half per cent of Aboriginal women having their first babies are less than 19 years of age, with the greatest number of deliveries occurring in the 15–17 year age group. By comparison, in the non-Aboriginal women the greatest number of first deliveries occurs in the 25–34 year age group. Age at first delivery is also affected by place of residence with non-urban being younger than urban women. This has implications for sexual and reproductive health education, the level of support required by these women during their pregnancy and in the perinatal period and potential implications in relation to the outcome of the pregnancy.

**Parity by Aboriginal status 2003**

Parity	Aboriginal	%	Non-Aboriginal	%
0	416	31.2	944	43
1-2	562	42.1	1062	48.3
3+	355	26.6	186	8.5
Not stated	1		5	
<b>Total</b>	<b>1334</b>		<b>2197</b>	

The 2003 data shows that a greater proportion of non-Aboriginal women are having their first baby whereas a greater proportion of Aboriginal women are having their third or more baby.

**Duration of Pregnancy at First Visit in 2003**

	Aboriginal	%	Non-Aboriginal	%	Total	%
First trimester	413	35.4	1089	53.5	1502	46.9
Second trimester	525	45.0	810	39.8	1335	41.7
Third trimester	229	19.6	136	6.7	365	11.4
All known gestation	1167	100.0	2035	100.0	3202	100.0
Gestation not stated	119		141		260	
<b>Total</b>	<b>1286</b>		<b>2176</b>		<b>3462</b>	

Just over one-third of Aboriginal women have their first antenatal visit in the first trimester and almost 20% do not attend until the third trimester whereas over 50% of non-Aboriginal women attend early and only about 7% attend on the third trimester for the first time.

Labour is more commonly spontaneous in Aboriginal women 70.5% compared to 59.3% and there are less elective caesarean sections (11.3% compared to 15.9%). The methods of induction are similar. The fetal presentation at birth is similar for both groups. Less Aboriginal women have assisted delivery and the caesarean section rate is 25.1% for Aboriginal women and 29.3% for non-Aboriginal. Almost 30% of the caesarean sections in Aboriginal women were performed for fetal distress and nearly 36% for previous caesarean section. The numbers for non-Aboriginal women are 17% and 30% respectively.

Aboriginal women have twice the post partum haemorrhage (PPH) rate of non-Aboriginal women (10.3% and 5.3% respectively) with higher rates of anaemia (a preventable condition) in pregnancy also.

**Babies**

Outcome	Aboriginal	%	Non-Aboriginal	%
Livebirth	1382	98.6	2239	99.1
Stillbirth	20	1.4	20	0.9
<b>Plurality</b>				
Singletons	1386		2191	
Twins	16		68	
<b>Total</b>	<b>1402</b>		<b>2259</b>	

The stillbirth rate of 14 per thousand for Aboriginal babies is the highest in the country. The livebirths have overrepresentation of preterm delivery (1.4% compared with 0.2% less than 28 weeks, and 14.1% compared with 7.5% between 28 and 36 weeks for Aboriginal and non-Aboriginal respectively).

Resuscitation	Aboriginal	%	Non-Aboriginal	%
Bag and mask ventilation	147	11.1	189	8.5
Ventilation plus ETT and ECM	8	0.6	4	0.2
Intubation and ventilation	32	2.4	17	0.8
Others	25	1.9	40	1.8
Oxygen	400	30.2	467	21.1
<b>Total no. livebirths</b>	<b>1323</b>	<b>100.0</b>	<b>2212</b>	<b>100.0</b>

Aboriginal babies required more resuscitation than non-Aboriginal babies with 46.2% requiring some form of resuscitation compared with 32.4% of non-Aboriginal babies. More Aboriginal babies required more advanced forms of resuscitation by ventilation by intubation or bag and mask (14.1% compared to 11.5%). This is reflected in the five minute Apgar scores for the babies with 96.7% of Aboriginal babies having scores in the normal range of 7–10 compared with 98.3% non-Aboriginal.

## CURRENT MATERNITY SERVICES IN THE NORTHERN TERRITORY

The following description of maternity services in the NT was conducted as a desk top exercise and is necessarily brief. It is acknowledged that the system is extremely complex and no description such as this can hope to adequately reflect all the nuances of the system or all the individual effort that is made on behalf of particular women to ensure the most favourable outcome. Emphasis has been placed on those parts of the system that we were advised had more particular problems and on the clearly identified need for a more integrated system with a focus on the woman as the central player.

Maternity services are provided by the Northern Territory Government, Commonwealth Government, medical practitioners acting in a private capacity, Non-Government Organisations (NGOs) and the private sector. The following is a breakdown of the major players:

- the provision of maternity services funded by the Northern Territory Government involves several divisions/departments of the DHCS such as Acute Care, Remote Health, Maternal and Child Health, Community Health and Health Development within Public Health
- the Commonwealth Government funds the Medical Specialist Outreach Program
- clinics in remote areas and within the five major urban regions are run by a combination of authorities including the DHCS, Aboriginal Medical Services, and independent Aboriginal corporations
- Commonwealth Government through Medicare for general and specialist practitioners acting in a private capacity
- Commonwealth Government for projects which are time limited and unsustainable without on-going funding e.g. Healthy for Life Project
- associated organisations such as Childbirth Education Association, Family Planning and various NGOs managing hostels
- Darwin Private Hospital.



The current Northern Territory Government has introduced a number of initiatives to enhance the health and wellbeing of mothers and their newborn babies, such as the community midwifery program and birthing centre at RDH, the home birth services in both Alice Springs and Darwin and the Maternal and Child Health Strategy. However, the current lack of maternity service integration and consequent discontinuities in services for women and their babies mean that despite an increase in investment of more than a million dollars per annum for these initiatives, many women and their babies, particularly Aboriginal women, are unable to access these services and do not receive the level of care required.

Because of the multiple players, the provision of services is complex, with overlap of roles and functions, and contradictions. The motives of all are worthy but with no overall integration, identified gaps are dealt with on an *ad hoc* basis.

Each provider group has an identified role, but is frequently unaware of the other services available. This applies both to the various departments/divisions within the NT Health Department and to those organisations external to the Department.

Recruitment and retention of professional staff with the appropriate training, knowledge and skills, and the maintenance of that knowledge and skills, is an ongoing problem. We are aware of a recent paper with a suggested approach to this problem for GP obstetricians and anaesthetists.

### **Urban**

Antenatal care is provided by GPs, obstetricians and midwives in hospitals, the Community Midwife Practice and Home Birth Midwives. Aboriginal Medical Services provide antenatal as well as postnatal care.

### **Hospital Services**

The tertiary referral hospitals for the NT are at RDH and ASH. Both of these hospitals run antenatal clinics each day of the week. Both have midwives clinics and more recently RDH has opened a birth centre. RDH operates a high risk pregnancy clinic and ASH has a clinic especially for diabetic pregnant women. Both hospitals have registrars in training, junior medical staff and midwifery students. Each hospital currently has its full complement of obstetricians although this is not achieved without some difficulty with recruitment. Each runs outreach clinics with some external assistance. Neither hospital has a full complement of midwives on staff.

### **Home Birth Services**

Changes to the *Health Practitioners Act 2004* required all health professionals to have indemnity insurance in order to practice. Independent midwives are unable to obtain insurance. Community lobbying led to establishment of a publicly funded service. Heather Hancock was appointed in December 2004 to develop a Home Birth Service in Alice Springs and Darwin under the auspices of the public health services, in the Community Health Branch of the NT DHCS. This service is managed by a joint appointment with the Graduate School of Health Practice, Institute of Advanced Studies at Charles Darwin University. In this way government indemnity is provided to the home birth midwives.

Since then the service has continued but with increasing difficulty. The service in Darwin was established with midwives employed on a casual basis, with no access to birth the women at RDH should that be required and with no infrastructure.

The number of home births is small, insufficient to provide a reasonable income for the midwives. At Alice Springs, the midwives are also employed at ASH but RDH has chosen

not to employ these midwives. Added to this, if the home birth midwife believes that one of her clients needs to be seen by an obstetrician, the midwife is not allowed to directly refer the woman. This means that the woman must go back to her GP to obtain a referral to see a specialist in the antenatal clinic. We were informed that unsatisfactory and clinically unsafe delays may result. Similarly, for any woman who develops a problem postnatally, there is no way of expediting their progress through the Emergency Department at RDH if they need assessment or admission.

Increasing frustration of the midwives at their inability to provide an appropriate service, lack of cooperation and resignations threatened to close the service. In June 2007, the remaining home birth midwives were put on six month part-time contracts waiting the outcome of this review. The contracts were due to expire on 26 December 2007 but at the time of writing the Consultants understand the midwives have been offered an extension until June 2008.

The service is continuing, but under less than satisfactory conditions. The midwives have no office, have only just been given a place for storage of equipment and drugs (in the Casuarina Community Care Centre), no access to government vehicles and so must use their own cars. The impression is that this is a service tolerated at best. The midwives feel isolated and that the service is not valued or important, except to the women who choose to birth at home. Unless changes result from this review, it is expected that the Home Birth Service will cease when the current contracts expire.

#### **Early Discharge Program, Darwin**

Until July 2007, there has been no early discharge service established in Darwin with the care of women who request discharge being provided by the child and family health nurses from the Community Health Branch and operate out of Palmerston and Casuarina Community Care Centres. This has long created tension with the acute services wanting to discharge women from four hours postnatally (a domiciliary service is provided in Alice Springs from the acute care services) and Community Health branch having to prioritise this work over their child health work with short staffing in both areas exacerbating the problem. Both services state they have never received funding to operate an early discharge service.

With the rollout of a new model of service delivery for the child and family health service in July 2007, the Home Birth Service was requested, and agreed, to take over the early discharge program from 0–5 days. This commenced immediately and enabled the midwives to be offered contracts as they were placed against vacant child and family health nurse positions. This was to be an interim arrangement until this review was complete and recommendations could be implemented. In August, the Division of Maternal and Child Health of RDH believed that the service was still not meeting the needs of early discharge and contracted a nursing agency to provide early discharge services from 0–3 days for women experiencing normal birth and 0–5 days if they had a caesarean birth. The Community Health Branch, the child and family health managers, and the Home Birth Service early discharge service were not included in the discussions even though they were providing early discharge services. Neither the home birth early discharge service nor the new agency service has been funded appropriately which has resulted in some women seeing four different midwives before the child health nurse visit on day five. Communication between the providers is a concern with discharge summaries from the hospital to community health often missing the previous 24 hours of care attended to by the agency staff.

**Community Midwives Practice (CMP) Darwin**

The CMP in Darwin consists of five midwives who provide care to low risk pregnant women. Until recently they functioned from an off-site clinic in the Casuarina Shopping Centre which is a very convenient location for women.

Entry to the CMP is determined by the obstetricians in the antenatal clinic at RDH. This entails a consultation with a GP for referral to the antenatal clinic at RDH before they can access the program. The cost for low income women is prohibitive as the Consultants have been told that the great majority of GPs do not bulk bill. There can be an eight week wait for an appointment at the obstetric clinic which delays referral to the CMP and many women will not access antenatal care in this time. Midwives provide the antenatal care and then deliver the women in the delivery area at RDH or now at the birth centre. There is a waiting list for access to this program with women booking in at 12 weeks of pregnancy being put on a waiting list with 10 women before them.

After many years of planning, RDH has opened a Birth Centre located on the ground floor of the Hospital. It commenced operation in September 2007. The Birth Centre is run by the midwives in the CMP. As there are no plans to increase the number of midwives in the CMP, this much needed and long awaited facility will not enable more women to access the facility or the CMP. CMP women may now choose to deliver in either the Birth Centre or the hospital.

The CMP will run their clinics out of the Birth Centre. At the time of writing, it is not known if the off-site clinic space will be retained long term. It is currently being used to see the women postnatally and negotiations between acute care services and the Home Birth Service about possible joint sharing of the rooms have commenced.

This model is outlined in a report by Heather Hancock, which was the result of a feasibility study for a Community Midwifery Program at ASH. The outcome of this study was a proposal for the development of a Midwifery Group Practice which is supported by midwives, obstetricians and management.

**Midwives Clinic Alice Springs**

The ASH runs a Midwives Clinic. The clinic functions out of the out-of-hours GP surgery which is on the grounds of the Hospital as there is inadequate space in the antenatal clinic. The clinic midwives form part of the staff of the maternity ward of ASH. Antenatal care is provided in the clinic and the midwives birth the women in the delivery suite of the Hospital.

Birth Centres at Darwin and Alice Springs were a commitment of the previous Minister of Health but as yet there are no plans for the construction of a birth centre for Alice Springs.

**Congress Alukara Alice Springs**

Congress Alukara provides antenatal and postnatal care and women's health services for Aboriginal women in Alice Springs and for some women from remote communities. Women have been birthed at Alukara in the past. More recently, the midwives from Alukara have birthed the women at ASH but this ceased in 2006 following an incident. Currently women receive antenatal care at Alukara and are delivered at ASH by ASH staff with the Alukara midwife sometimes in attendance. A specialist obstetrician from ASH conducts clinics at Alukara.

### **Remote**

District hospitals operate at Gove, Katherine and Tennant Creek. Gove and Katherine provide care including birthing services for low risk women. Darwin Private Hospital provides private obstetric services.

Antenatal care is provided in the communities by clinic staff, consisting of RANs, some of whom may be midwives, AHWs, GPs or visiting DMOs, supported by outreach midwives and the obstetricians attached to the visiting Medical Specialists' Outreach Assistance Program (MSOAP). Further support is provided by the obstetric staff at RDH and ASH. Many of the remote clinics do not always have midwives which, under the current NT law, makes the delivery of antenatal care very difficult. Due to a lack of midwife specific positions some communities will have midwives who spend a large amount of their time doing remote nursing duties and nearby communities without midwives will rely on an outreach service from the urban areas which are much further away. In the past two years there have been outreach midwives based in Darwin and Alice Springs who provide support to remote communities with an emphasis on those without midwives.

Some non-Aboriginal women access antenatal care through the community clinics, others have all antenatal care in the nearest centre with others choosing to move interstate to birth near family.

Current policy is for all women to birth in hospital therefore all women are transferred to the nearest centre, Darwin, Katherine, Gove or Alice Springs at 38 weeks gestation or earlier if the pregnancy is deemed to be high risk. A few Aboriginal women choose to birth on country and a few deliver prior to planned transfer.

The timing of the high risk clinic RDH on Friday afternoon is unsuitable for women coming in from remote areas as tests are not arranged until the following Monday. This creates difficulties particularly for the Aboriginal women required to stay over the weekend with no support, frequently no money and often unsatisfactory accommodation at one of the hostels. Even if the women do not require tests on the Monday, there are difficulties. For example, women from Katherine travel to Darwin by Greyhound bus on Thursday for the Friday clinic. Transport between bus terminal and hostel is provided by Mission Australia. This service runs Monday to Friday but not out-of-hours or at weekends. To enable the women to return to Katherine and their families on Saturday, Wurlijang Aboriginal Health Services provides taxi vouchers for transport from the hostel to catch the bus. Other communities have flights only twice a week also requiring extended stays in town.

Women from the Barkly region are all transferred to Alice Springs. The ability for women to birth at Tennant Creek ceased about 18 months ago due to an absence of medical support including anaesthetic backup. There is now only one midwife in Tennant Creek who provides some antenatal care.

This creates immense hardship for the women of the Barkly. Unless medically indicated otherwise, women catch the Greyhound bus to Alice Springs for sit down, a journey of approximately 8 hours. Following the birth, the women return the same way only this time caring for a newborn baby. The Greyhound bus reaches Tennant Creek at 1 or 2 am. For women from more remote communities such as Elliott, they then face more hours of driving provided someone from the community is there to meet them. No accommodation arrangements are in place for these women.

Antenatal care for low risk women in Gove is provided by midwives and the women have medical review only after the results of the morphology scan are known and then again at 41 weeks gestation if undelivered. This has allowed the doctors to spend more time with the high risk women. A recent review of mode of delivery at Gove has shown an 11% emergency caesarean section rate.

Outreach services have been inconsistent in the Top End since the resignation of the outreach obstetrician and gynaecologist. An attempt has been made to continue the services to the larger communities. The roster includes the obstetricians from RDH supported by two of the private obstetricians. They are assisted by an Outreach registrar. Thirty single day visits were undertaken in 2006 and 38 in 2007. Visits by the RDH staff have been cancelled as the clinical demands at RDH take priority.

Home birth is not available in remote areas; and in Katherine five non-Aboriginal women are believed to have delivered at home without professional support. The Consultants have been advised that this is due to dissatisfaction with the service at the hospital in the last 12 months since the retirement of long term GPs. In Nhulunby, the hospital-based service is women-centred and no issues were raised with us about the service.

#### **Aeromedical Services**

These services operate out of Darwin and Alice Springs, with planes and crew also based at Katherine and Nhulunby, and provide emergency backup to the remote areas. Immediate availability is at times a problem.

We have been advised that Air North has just implemented a policy not allowing neonates less than 8 days of age to travel on the plane. This will result in delays for women living in Arnhem or East Arnhem.

#### **Childbirth Education**

Child birth education is not readily accessible to the majority of women in the NT, although it is widely accepted that good antenatal care and education gives women confidence, improves the birth experience and assists with early parenting.

There are very limited child birth educators in the public system. The outreach midwives provide some education in the communities that they visit but it is quite *ad hoc* and very variable. The midwives in the hospitals also provide some antenatal classes but access to these classes is limited and the conduct of classes often depends on staffing levels and work load in the maternity units. The Childbirth Education Association (CEA) receives a grant from the DHCS to conduct classes in Darwin and Alice Springs but the grant has not been increased for several years. In addition it is frequently difficult for CEA to find midwives to take the classes. A couple of the home birth midwives supplement their income by taking these classes for the CEA.

The exception to this situation is Defence personnel who have access to classes conducted by a physiotherapist.

We have been informed that a review of childbirth education is currently underway—Childbirth Education and Maternity Care Project under the Maternal, Child and Youth Health Program.

#### **Hostels**

These are critical to the provision of services for women who must leave their home for a part of their antenatal care and/or for birth. The Consultants were advised that there were a number of problems with the hostels. These include the location; distance from the hospitals, this is particularly a problem in Darwin; access, especially out-of-hours; and lack

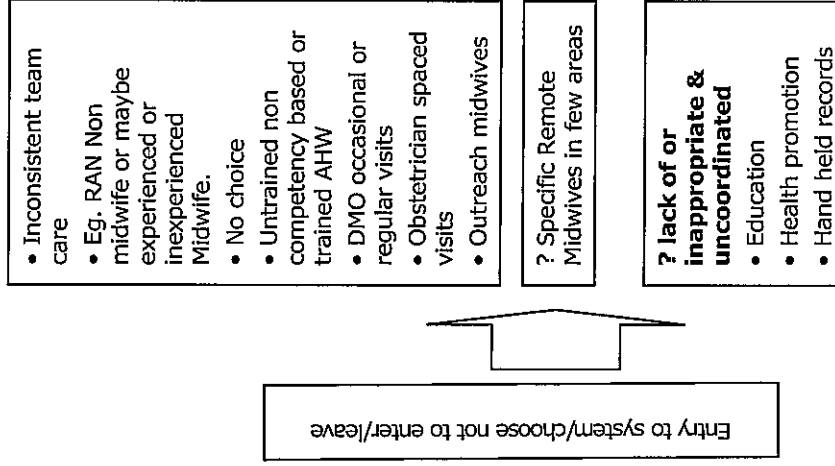
of security for the women. At Katherine the hostel is located in the hospital grounds and this functions well, and the model adopted in Gove where the 'hostel' accommodation is a part of the hospital, was regarded favourably by many.

### **Description**

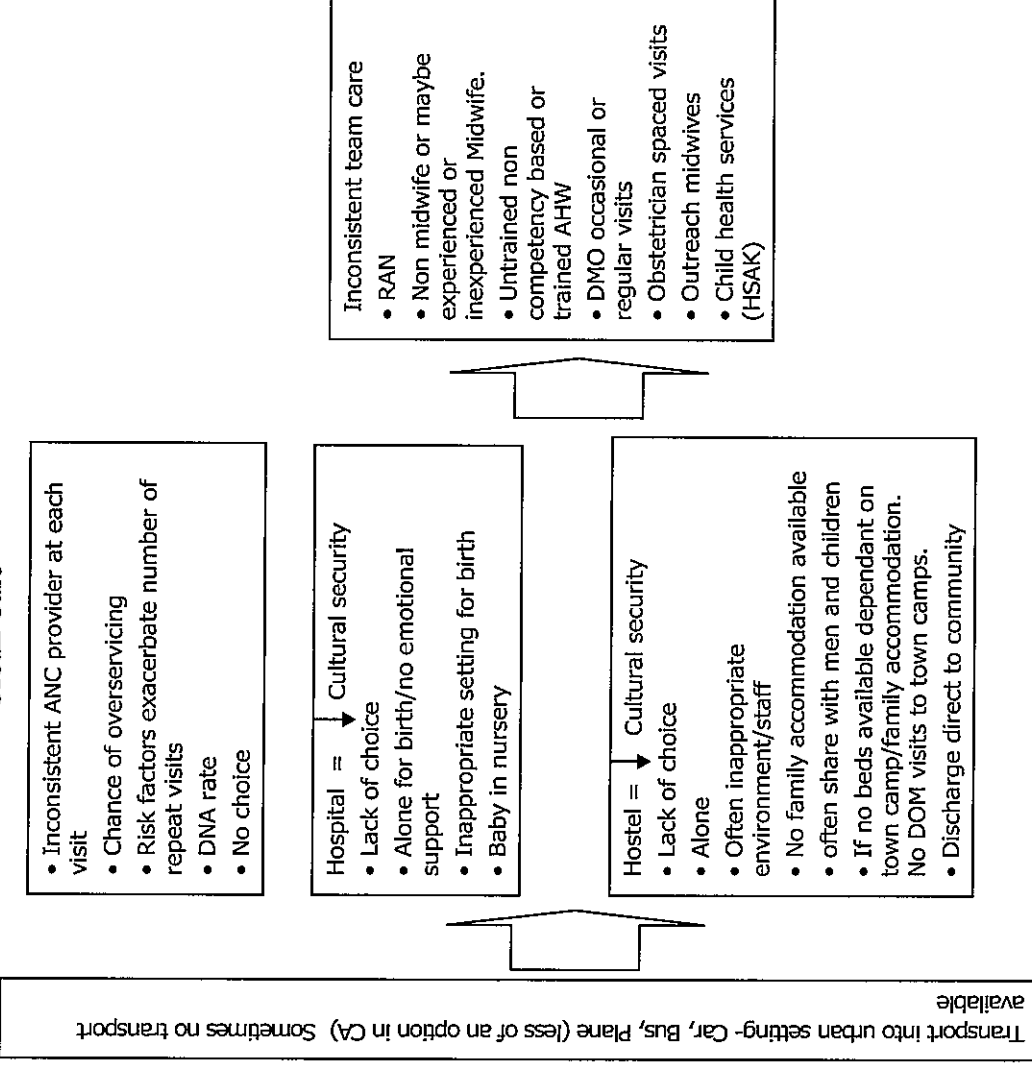
A mapping exercise was performed by the Charles Darwin University as Stage 1 of an NHMRC funded project, 'A Healthier Start to Life', and their work has been used to develop the diagrams on the following two pages, with input from members of the ERG. It attempts to map the complexity of the points of entry, and multiple alternate routes of progression, through the system.

# Mapping the journey of a woman from a remote area engaging with maternity services in the NT

## Remote Community



## Urban Care







## ISSUES

A number of issues were raised during the consultation phase with key stakeholders, namely:

- delivery of clinical services including audit
- workforce particularly the lack of Aboriginal workforce in midwifery and medical positions
- organisation of transport and accommodation to support clinical services
- information technology and information sharing
- funding.

These issues have been discussed throughout the report. Some additional comments on particular aspects are detailed below.

### Delivery of Clinical Services

The organisation and delivery of maternity services is fragmented at best and adversarial at worst. It is generally accepted that there is a high proportion of unmet need amongst the Aboriginal population, although there is no accurate way of assessing the quantum of this.

During the consultation process, we were advised that there were a number of concerns about the maternity services at RDH. These concerns were voiced by a wide number of people with varied involvement in the service. The concerns do not appear to come from just a small number of dissatisfied individuals and have, in fact, been the subject of a number of reviews at RDH.

Concerns were voiced around:

1. less than satisfactory outcomes for mother and baby e.g. high rate of PPH and, in some cases, poor management of pregnancies and labour, failed trial of ventouse, infected caesarean section wounds to name but a few
2. the highly medicalised culture of the service but paradoxically lack of clinical leadership and poor communication
3. poor clinical governance with lack of multi-disciplinary clinical review and audit of outcomes and an apparent failure to recognise the necessity for multidisciplinary review process
4. issues related to specialists in training and our attention was drawn to the RANZCOG reports of 2004, 2005, with many recommendations related to supervision, rostering and clinical workload still not acted upon.
5. an apparent lack of reliable hard data such as infection rates and adverse incident rates
6. no concerted attempt to determine client satisfaction with the services provided
7. termination of pregnancy which has been the subject of two reviews and a long list of recommendations, some of which have been implemented.

Other than the anecdotal reports mentioned above, hard data to support the claims was difficult to find. This should not be seen as negating the concerns but more a reflection of the lack of real clinical information available to enable proper management and review of the service and outcomes for women and their babies. Specific information about infection rates was not available and the AIMS reports do not reflect the anecdotal reports received about failed trial of ventouse, PPH etc. AIMS reporting is not being conducted in all acute services. On one recent internal audit only 40% of sentinel incidents were reported. The information available, however, is sufficiently concerning to warrant further urgent investigation. The existence or otherwise of problems at RDH should however not delay the implementation of the other recommendations in this report.

Women frequently move through various components of the service, e.g. remote health clinics, AMS, and hospitals, each has a different patient information system, none of which is linked to provide for data sharing. While acknowledging there are confidentiality issues to be dealt with, that should not be an excuse for maintaining the *status quo*.

Meaningful information has been extremely difficult to access even for the most basic data in relation to incident reports and infection rates and there has been no evidence of commitment to changing this situation which is unacceptable in any effective health system. Some 'clean' data for 2003 and 2004 was provided, while only 'raw' data was supplied for many important pregnancy outcomes for the year 2003 and is now four years old. The question has to be asked 'what information is being used for concurrent clinical audit?' The most recent data for the NT mothers and babies report was published in 2002. If this information is available, why wasn't it been made available to us for the review or does it actually mean that no audit is undertaken?

Concerns have also been expressed to us about the increasing number of women seeking vaginal birth at home following caesarean section for a previous baby. The driving forces, we were advised, are reluctance by obstetricians to conduct a trial of labour in a hospital setting, the general desire to escape the medical model of care and having no other option for continuity of midwifery care. The increased risk to mother and baby by attempting a home birth is this situation, which is not well supported by the health service as a whole, clearly concerns the health professionals involved in advising these women. There is some debate over whether or not midwives should attend these births. There is a conflict between a perceived duty of care for the woman and fetus and their professional vulnerability.

### **Workforce**

- The large number of consultant positions held by OTDs who do not know—at least initially—the Australian system of healthcare, come from different cultures with sometimes dissimilar approaches to women and to clinical care, particularly in relation to childbearing, and with different expectations about outcomes.
- The lack of openness about appointments of medical staff leading to potential claims of nepotism and a perceived potential for management to exert undue control over the activities of the appointees for fear of their visa status.
- RANZCOG training positions not filled by Australian trainees leading to short term appointments and return of the incumbent to their country of origin for continuing specialist practice instead of filling vacant positions in Australia.
- An endemic shortage of GP obstetricians (and anaesthetists), particularly in the remote hospitals providing birthing services
- An endemic shortage of midwives practicing midwifery in the NT.
- Problems related to AHW availability and skills in many communities.

### **Risks implicit in the current service**

- Late presentation for the first antenatal visit resulting in poor dating of pregnancies with a consequent failure to access many care options, and contributing to poor decisions about management of the pregnancy.
- Multiple handover points for care within and between service providers resulting in lack of continuity of care, delays and at times any care at all.
- Lack of information available to care givers due to multiple record systems using both hard copy and multiple computer-based systems. Variable use of soft and hard copy and generally little history available on computer systems. This is particularly important

where the clientele is unable to provide accurate histories themselves and has potential to allow wrong decisions about care to be made.

- Lack of easy access to the results of investigations performed in multiple laboratories may again result in wrong care decisions.
- Potential for less than satisfactory outcomes for high risk women due to the concerns about the standards and outcome of care in the larger tertiary hospital.
- Women failing to have care for a variety of reasons including late attendance, 'absconding', delays in obtaining appointments, location and insecurity of hostel accommodation etc.
- Lack of access to care by the appropriate healthcare professional

## PROPOSAL FOR AN INTEGRATED MATERNITY SERVICE

We are putting forward a proposal to attempt to address the issues that were raised during the project. The problems in attempting to implement an integrated maternity service in the NT due to the generally small communities and the distances involved, the climate, the co-existing health problems for a large section of the community as well as the problems specific to the pregnancy care are legion. In addition, we are concerned that this review report will be given lip service only and that no meaningful or sustainable change will occur as a result of the recommendations that have been made. This concern is based on the fragmented and limited implementation that has occurred for recommendations from previous reports and reviews and a failure to recognise that some hard decisions need to be made and changes implemented.

A checklist of factors affecting the assessment of this proposal for the future direction of the Maternity Services in the NT is presented in the following table. These factors should also be used to assess implementation plans and outcomes in the future.

FACTOR	INTERPRETATION
<b>Access</b>	Is access to services improved by the option?
<b>Equity</b>	Will the option result in more equitable distribution of resources and services for the residents of the NT?
<b>Clinical Integrity</b>	Does the proposal make sense from a clinical perspective? Are the core clinical services configured in an appropriate way to ensure support for the planned services?
<b>Clinical Governance</b>	Are systems in place to monitor the outcomes of the women and their babies? Are guidelines, protocols and systems the same across the NT?
<b>Continuum of Care/Substitution</b>	Are the services designed to offer a 'seamless' transition from the community/primary care sectors to the acute streams of care?
<b>Linkages</b>	Will the proposal promote service linkages between individual services in the NT and between professionals?
<b>Workforce, workplace culture and linkages</b>	Will the option enhance the ability to recruit and maintain a skilled workforce? Will workplace culture be affected and enhanced?
<b>Capital Cost and Functionality</b>	Are the capital resources available to complete the option under consideration? What functional enhancement does the capital proposal offer?
<b>Logistics and Feasibility</b>	Is the proposal feasible, practical and able to be operationalised and achieved within a reasonable timeframe?

### **Principles of Service Delivery**

The following principles have been developed as the overarching architecture for the Maternity Services Framework:

1. The safety of the mother and fetus/newborn is paramount
2. A single maternity service spanning antenatal, birthing services and postnatal care
3. Women should have access to information about pregnancy and its more common complications
4. Women should have access to information about options for care to enable them to make informed choices about the provider and the location of care
5. Along the continuum of low to high risk the appropriate professional skills should be available to provide the care required
6. There should be continuity of care and carer where possible
7. Aboriginal women are entitled to expect the retention of traditional practices, where feasible, combined with the best evidence-based care.

### **Supporting Literature for the Proposed Model**

Several models of care have been reviewed in the literature. A comprehensive summary can be found in the extensive literature review undertaken as part of the statewide obstetric review in Western Australia in 2002–2003. See Appendix D and Appendix E for the Canadian Inuit experience which has several similarities to the experience of the Australian Aborigine.

### **The Maternity Services Framework**

The framework incorporates a model of care that recognises that pregnancy is a normal process and that women have the right to choose who cares for them and where they have their baby. Systems are included for those who are high risk by virtue of pre-existing medical problems or who develop complications during the pregnancy and require higher levels of care. The higher prevalence of pre-existing medical problems in Aboriginal women may inhibit their ability to be cared for as part of the low risk stream of care. However, they should not be denied the opportunity for continuity of care and carer wherever logistically possible and there is strong evidence from randomised controlled trials that providing continuity in a suitable environment may reduce the need for some interventions. Women classified as high risk do better if continuity of midwife care is maintained in partnership with obstetrician and/or physician. The determination of risk for the pregnancy should be made using established screening criteria and incorporating the risks identified by the women themselves. In particular, Aboriginal women may identify cultural and spiritual risks that are not usually incorporated into screening criteria. Guidelines for the development of protocols must be agreed. At the time of writing the Australian College of Midwives Incorporated Guidelines are being reviewed jointly with obstetricians who are Fellows of RANZCOG. It would seem sensible for the NT to adopt these guidelines together with the Women's Business Manual, also currently being reviewed.

Essential components of the care are well-defined protocols for the management of low risk pregnancy, for the conditions that constitute high risk pregnancy and for obstetric emergencies. The protocols will also identify those who must move from low risk to high risk and the referral process involved.

Two pathways for care have been developed—one for women at low risk and the other for women at high risk. Women may be designated as low risk at the beginning of pregnancy, and if complications occur at any stage during the pregnancy or birth, their care will be

transferred to the high risk stream. Women should be able to transfer seamlessly between the two streams, continuing to receive care from their nominated midwife if they have one.

It has to be acknowledged that while a woman may be designated as low or high risk by taking into account her history, current health status and the progress of the pregnancy, the situation may change rapidly and with little warning, to become a maternity emergency. It is for this reason that low risk birthing options should have available specialist support services within a reasonable timeframe.

Women choosing homebirth or birth centre care should be aware of the possible requirement to transfer to hospital care.

In many places the patient held record is an essential part of care and facilitates movement between different parts of the system. A trial of patient-held records was undertaken ten years ago in Maningrida and was very successful. Hand held records would be particularly useful for Aboriginal women who are extremely mobile and who frequently are unable to provide clear information about themselves to health professionals.

The importance of AHW in provision of cultural safety for Aboriginal women should not be underestimated. Ideally Aboriginal women would receive care from a midwife and AHW working together as a team.

The option for maternity care including delivery in the private system is an essential component of the framework.

#### **Urban**

This part of the model has applicability to Darwin, Alice Springs, Katherine and Gove.

##### *Low risk women*

For low risk women there are several options for care. They are:

- midwives with occasional input from GPs or obstetrician
- shared care between midwives, GPs and obstetricians
- antenatal and postnatal care provided by GPs, birthing care by midwives/obstetricians/junior medical staff in the public system
- all care provided by midwives/obstetricians/junior medical staff in the public system
- all care provided by midwives/obstetricians in the private system.

There are several options for place of birth:

- home
- birth centre
- hospital.

The proposed framework introduces the opportunity for the care of low risk women to be provided by midwives as the lead practitioner with continuity of carer being a primary focus. This will be done through the establishment of GMP in Alice Springs, and possibly Katherine and Gove, and expanding the CMP in Darwin which will enable women who are low risk to have a primary midwife carer together with the ability to elect to birth at home, in a birth centre or in the hospital under the care of the midwife. Women electing to be cared for in this model should have a medical assessment on their second antenatal visit, at least a medical case review at 36 weeks and a medical assessment at 41 weeks gestation. The medical assessment should be provided by a GP or obstetrician depending on the woman's wishes and/or medical requirement at the time. Linkages will be in place to provide timely referral and transfer of care if necessary to obstetricians should problems arise during the pregnancy. A similar model could be trialled in Tennant Creek. The proposed CMP for ASH should be implemented.

Under this model, care will continue postnatally for up to six weeks and incorporate the current early discharge program. For ease of transition and ongoing support early involvement of Child and Family Health Services (C&FHS) should occur. An essential part of the team is an AHW who will provide liaison and care for Aboriginal women when they come to town for investigations or for sit down. Women at high social and emotional risk should be considered for referral to C&FHS prior to delivery.

#### *High risk women*

For high risk women there are also several options for care:

- all care provided by midwives/obstetricians/junior medical staff in the public system
- all care provided by midwives/obstetricians in the private system
- shared care between obstetrician and GP/DMO with delivery by midwives/obstetricians/junior medical staff in the public system
- midwives in collaboration with obstetricians.

Women who are assessed as high risk will be referred to an obstetrician or the high risk clinic at RDH or ASH for development of a management plan for the pregnancy. In some situations it may be appropriate for shared care to continue with defined points for review by the obstetrician or high risk team. Any change in condition of mother or fetus would require earlier review. Ideally women who enter high risk teams should receive continuity of carer from both the midwifery and medical staff. Post discharge care should incorporate all the aspects referred to for low risk women with any additional services required as a consequence of their high risk pregnancy and/or delivery.

#### **Remote**

##### *Low risk women*

For low risk women there are several options for care:

- designated midwives working in a team with an AHW with occasional input from GPs/DMOs or obstetricians
- shared care between midwife/AHW team and GPs/DMOs and obstetricians.

There are several options for place of birth:

- home/on country/community health centre, trial only
- birth centre (in Darwin or Alice Springs)
- hospital (Gove, Katherine, Alice Springs, Tennant Creek or Darwin).

The proposal is for women to have access to designated midwives in the communities. These positions are essential given the legislative framework that exists in the NT governing nursing and midwifery practice. Care may be provided by a resident midwife in the larger communities or a midwife visiting several communities e.g. a zone in Central Australia. These midwives will work with an AHW who has undertaken training in maternity care. The midwives will also work in conjunction with GP/DMO and liaise with the outreach midwives and the midwives in the group practices (referred to above) when women are transferred for sit down. The AMS/NGOs should be encouraged to adopt the same protocols for care and for referral of pregnant women.

It is imperative that all women in remote areas have access to a dating ultrasound scan in the first 20 weeks of pregnancy (RANZCOG policy). These dating scans should be performed by the designated midwives who have undertaken specific training for this purpose. Morphology scans may be performed between 18 and 24 weeks gestation and are only performed in the larger centres. The designated midwife is responsible for coordinating the timing of the scan and on the same day after the scan has been performed, an antenatal visit at the hospital clinic. The designated midwife positions need to be the lynch pin between town and the clinic and in order to provide continuity of care and carer,

the incorporation of the designated midwife positions into the community group practice should be given serious consideration.

In order to make the service appear more a normal part of the life process and less 'medicalised' the use of the Women's Centres in the remote communities could be considered for antenatal education and routine antenatal care.

If a woman develops risk factors during the pregnancy she will be referred to the visiting outreach obstetrician if the timing of the visit is appropriate or to the high risk clinic/obstetrician at ASH or RDH or to a private obstetrician.

#### *High risk women*

Once a woman has been determined to have a high risk pregnancy she will be referred to an obstetrician either a visiting outreach obstetrician or if the timing of the visit is not appropriate, to an obstetrician in Darwin or Alice Springs to develop a plan of management. This plan may require on-going care by the obstetrician in the town or shared care in the community. The AHW attached to the high risk clinic will be an essential part of the care team.

Clinical protocols defining the care to be provided and the common points of referral need to be developed.

All high risk women deliver in a hospital however, depending on the clinical problem, they may still be eligible for early discharge or earlier discharge with visiting midwife support at home/hostel and early involvement of C&FHS.

#### **Workforce**

For many in the current workforce the implementation of the Framework will require a major shift in philosophy, attitude, work practices and the development of trust and respect between professional groups.

We consider the appointment of a Director to be of the highest priority to the success and functioning of the Maternity Service. The primary responsibilities of the position would be:

- to assist with recruitment of medical and midwifery staff
- to implement strategies for retention of staff
- overall management of the budget
- supervision of medical training program
- to coordinate the data systems
- clinical governance
- to coordinate specialists' visits to remote communities
- to liaise with all service providers, specialist and primary care including MSOAP
- to develop policies and protocols
  - define the relationship between different professional staff
  - define the relationship with the Birthing Centre and the existing community midwifery program (including homebirth and EDP)
  - for high risk clinic and service
  - for delivery suite
    - management of normal labour
    - management of women with common high risk problems
    - assisted vaginal birth
    - trial of ventouse
    - indications and preparation for caesarean section

- care of the newborn etc.
- The appointment of a Territory wide Advisory Committee to assist the Director should also be given priority.
- Development of policies and procedures to improve recruitment and retention for all professional groups in the providing maternity services.

Leadership in midwifery is going to be critical in the implementation of the recommendations and ongoing changes, and therefore an NT wide midwifery leadership position is considered essential.

#### **Technology and Data Collection**

Recognition by the Department and hospital management that up-to-date and accurate clinical data is vital for effective care and management.

There are a number of aspects to be considered when determining appropriate data collection and data systems, including:

- full range of clinical information, including procedures
- clinic and/or appointment attendance record
- capacity to share information between visiting obstetricians and the staff obstetricians and the referring GP/DMO and all relevant health professionals
- capacity to flag and notify obstetricians of patients requiring review and/or who did not attend and therefore require reappointment
- security of information collected
- process to ensure consent for use and sharing of data
- user-friendly database.

We have been advised that the eHealth NT Shared Electronic Medical Record, currently being implemented, will fix the existing problems.

The project aims to register all of the Aboriginal population. Once fully implemented, the system will provide access to clinical information by all providers.

To date 15 000 people have been registered and 45 sites are connected and participating in the Shared Electronic Medical Record. The aim is to have 30 000 registered by June 2008 with the remainder of the 54 000 of the Aboriginal population, registered by June 2009.

#### **Finance and Budgeting**

While a number of the recommendations will require additional funding, many will not and it is important to start implementation with the resources currently available.

We have been unable to accurately establish the amount currently being spent on maternity services in the various parts of the DHCS budget. Assuming the overall thrust of the recommendations are accepted then it will be necessary to identify all expenditure on maternity services and for these funds to be transferred to the proposed Maternity Service.

It is critical that funds be found for the designated midwife positions within the proposed framework and that these positions be filled as a priority. This rearrangement will make a major difference to the maternity care provided to women. It can be expected to assist in attracting midwives back to positions which are currently vacant or against which registered or enrolled nurses are employed rather than midwives. The possibility remains that when existing midwives have been transferred to the designated midwife positions, and as additional midwives become available, additional funds may be required.



We have not been able to establish detailed priorities for funding other than we see it as essential that funds are made available for the position of Director of NT Maternity Services, the Business Manager and the NT-wide midwifery leadership position. Recommendations such as the remodeling of the antenatal clinics at both ASH and RDH and a Birth Centre in Alice Springs will need to compete for priority within the overall DHCS Budget

#### **Reporting Structure**

At present various components of maternity services report to different departments within DHCS:

- Hospital services and CMP in Darwin report to Acute Services
- Home Birth Services reports to Community Health
- Outreach midwives to Health Development within Public Health

There is a diversity of opinion about where the reporting lines should be.

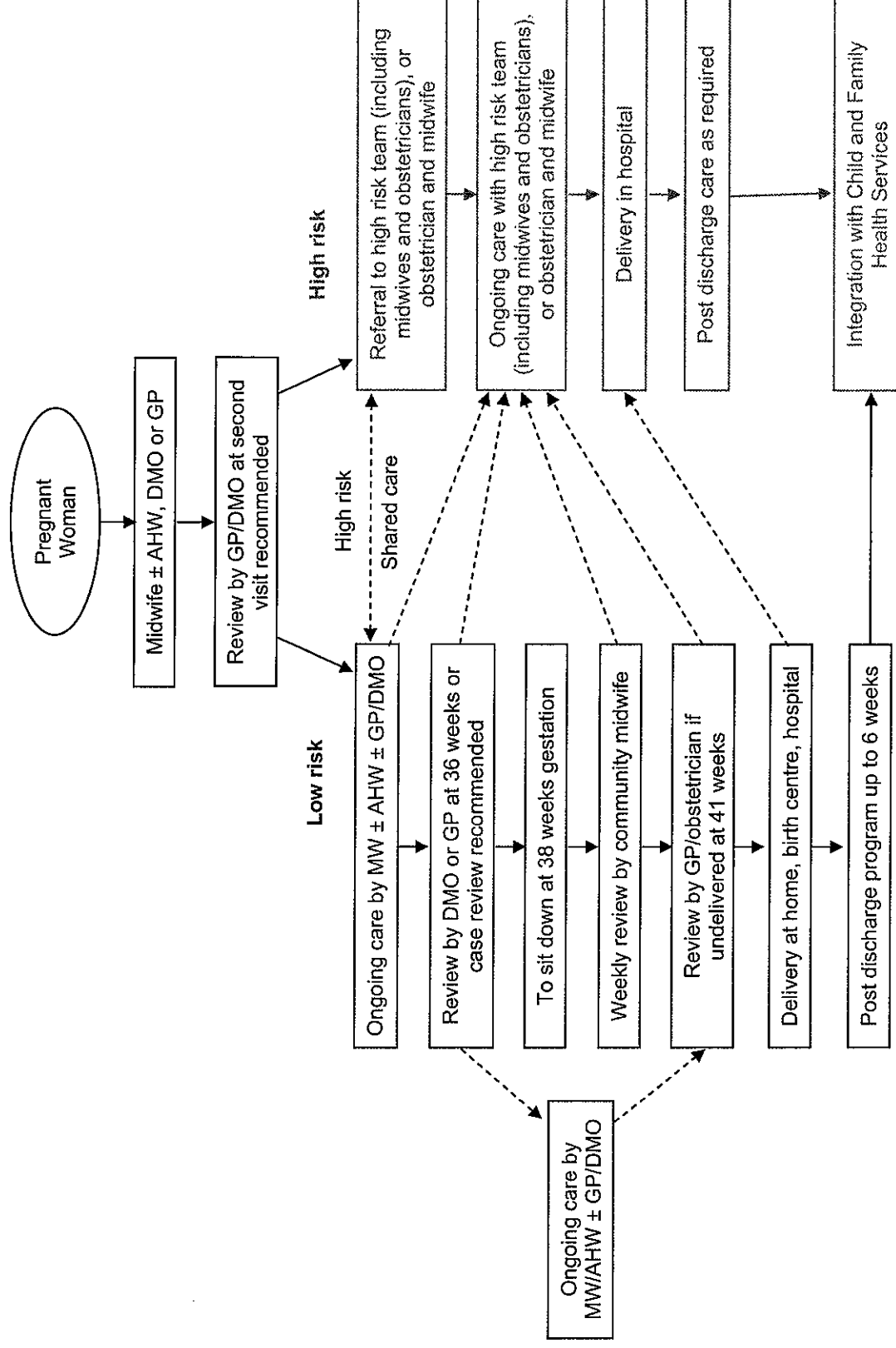
Consumers and probably the majority of midwives support maternity services reporting through Community Health. The rationale for this is that pregnancy is a natural process and not a disease. Experience has left the perception that having maternity services in Acute Care leads to a medical model of care for everyone and increases the incidence of medical intervention. There is also concern that funds would be diverted away from the community and into acute care.

Obstetricians, on the other hand, cite the need for many women to rapidly access acute and emergency care and the ongoing acute care requirements for high risk women and those with underlying medical conditions. They are particularly concerned because of the high proportion of women with underlying medical problems and the high incidence of pregnancy complications. Considerable resources are required to provide the level of care required.

There are pros and cons for both positions; however, the structure needs to facilitate the implementation of the proposed framework for a fully integrated model of care.

This lends itself to Maternity Services functioning as a single program with a single budget with all aspects of maternity services managed as a continuum of care, responsible to a designated Director or Program Manager who reports directly to the CEO of DHCS.

# Integrated Model of Public System Midwifery-Led Care—General Principles of Care Pathways



## APPENDIX A. Expert reference roles and responsibilities and membership

### Roles and Responsibilities

The NT Maternity Services Project ERG will provide expert content advice for DHCS' Consultants undertaking an assessment of maternity services currently provided in the NT and their subsequent recommendations for an integrated maternity service framework and related options by:

- providing information, including reports, data, and any relevant literature, that will assist the Consultants in their understanding of both the content and context of maternity services provision in the NT
- identifying existing and potential linkages with other projects, strategies and initiatives that may facilitate the completion of the project, and to prevent duplication of work
- identifying existing and potential risks that may impact on the completion of the project and develop appropriate strategies to minimise these risks
- providing timely comments on draft papers and reports developed as part of this project
- facilitating input from and feedback to relevant stakeholder groups.

### Membership

Membership of the group will be on the basis of expert knowledge and skills in the area of maternity services in the NT. The group will be chaired by the Assistant Secretary, Strategy and Quality, DHCS.

Organisation	Personnel	Position
Department of Health and Community Services (DHCS)	Chair: Tarun Weeramanthri	Assistant Secretary, Strategy and Quality
The Childbirth Education Association Darwin Inc	Jo Sangster	President
RANZCOG Representative	Dr Christopher Hughes	Obstetrician
Graduate School for Health Practice, Institute of Advanced Studies, CDU	Professor Lesley Barclay	Professor
Royal Darwin Hospital	Dr Martha Finn	Obstetrician Head of Maternity
Alice Springs Hospital	Dr Simon Kane	Obstetrician Head of Maternity
The Maternity Coalition Inc	Samantha Phelan	Executive Officer
Alice Springs Homebirth Group	Megan Hoy	Coordinator
Royal Darwin Hospital	Erna Cripps	Clinical Nurse Manager Birthing
Katherine Hospital	Ms Fiona Kajewski	CNM Maternity Services
Darwin Home Birth program	Dr Penny Ramsey	General Practitioner
Yirrkala Health Centre	Sharon Weymouth	Manager
Top End Division of General Practice	Dr Leonie Katekar	CEO

<b>Organisation</b>	<b>Personnel</b>	<b>Position</b>
CA Division of PHC	Sue Korner	CEO
GPPHCNT	Dr Jim Thurley	Medical Advisor
Women's Health Education	Julie Wright	Aboriginal Health Worker
AMSANT	Stephanie Bell	CEO Federal Australian Aboriginal Congress
AMSANT	Paula Arnol	CEO Danila Dilba
Health Consumers of Remote and Rural Australia	Di Walsh	NT Representative
Healthy for Life, NT OATSIH	Cate Kildea	Program Manager
Northern Territory, FACSIA	Deidre McNally	Deputy State Manager
Australian College of Midwives NT Branch	Jenny Cameron	President
Management Cttee, Childbirth Education Association	Ruth Apelt	Coordinator
DHCS	A/Professor Sue Kildea	Health Services Development CDU, & Manager Home Birthing
DHCS	Ms Sharon Haste	Child Health/Wellbeing Project Officer
DHCS	Dr Barbara Paterson	Director Maternal, Youth and Child Health
DHCS	Greg Rickard	PNC, Director of Clinical Learning
DHCS	Peter PangQuee	PAHW, Snr Policy Officer Workforce Strategy
DHCS	Maureen O'Meara	Senior Policy Officer, Aboriginal Health Policy
DHCS	Maira Stronach	Manager, Child Youth & Family Health Services

**APPENDIX B. List of Interviewees**

<b>Title</b>	<b>Name</b>		<b>Position</b>	<b>Organisation</b>
Ms	Donna	Ah Chee	Deputy Director	Central Australian Aboriginal Congress
Ms	Sheryl	Alexander	Central Australian Outreach Midwife; Maternal, Youth and Child Health Health Services	DHCS
Ms	Ruth	Apelt	Coordinator, Management Committee	Childbirth Education Association, Alice Springs
Dr	David	Ashbridge	CEO	DHCS
Prof	Lesley	Barclay	Professor, Health Services Development and Co-Director, Graduate School for Health Practice, Institute of Advanced Studies	Charles Darwin University
Ms	Stephanie	Bell	Director	Central Australian Aboriginal Congress
Dr	John	Boffa	Public Health Medical Officer	Central Australian Aboriginal Congress
Dr	Jackie	Boyle <sup>2</sup>	Obstetrician, Darwin	Private practice
Ms	Lesley	Brown	Clinical Midwife Consultant, Clinical Learning, People and Services	DHCS
Ms	Kelly	Brown	AHW, ASH	DHCS
Ms	Julia	Burke		Alice Springs Home Birth Support Group
Ms	Robyn	Cahill	CEO	Darwin Private Hospital
Ms	Jenny	Cameron	President, Australian College of Midwives NT Branch	Darwin
Mr	Peter	Campos	Assistant Secretary, Acute Care	DHCS
Dr	Henry	Cho	Obstetrician, Department Obstetrics and Gynaecology, RDH	DHCS
Ms	Jenny	Cleary	Assistant Secretary, Health Services	DHCS
Dr	Tamsin	Cockayne	Director Medical Services, Gove District Hospital	DHCS
Ms	Erna	Cripps	Co-Director, Maternal and Child Health, RDH	DHCS
Dr	Tanya	Davies	Medical Advisor	AMSANT
Capt	Robin	Davies	Health Systems Manager	Army Health Services NT/K
Ms	Jane	Davies	Senior Policy Officer, FACS Community Services	DHCS

<sup>2</sup> Also provides Outreach Services for DHCS remote areas

<b>Title</b>	<b>Name</b>		<b>Position</b>	<b>Organisation</b>
Ms		Djapirri		Yirrkala traditional healing centre
Prof	Ken	Donald	Director Medical Services	RDH
Ms	Michelle	Dowden	Project Officer, ABCD Maternal Health Project	Menzies School of Health Research
Mr	Kane	Ellis	Director of Clinical Services	Danila Dilba
Lt Col	Di	Elson	Senior Health Officer	Army Health Services, NT/K
Ms	Michelle	Everson-Rose	A/Deputy Director, DHCS Remote Health	DHCS
Ms	Penny	Fielding	Executive Director, Central Australian Coordination Strategy and Quality	DHCS
Dr	Martha	Finn	Obstetrician and Head of Department, Obstetrics & Gynaecology, RDH	DHCS
Ms	Meribeth	Fletcher	Director, Acute Care Policy & Services Development	DHCS
Dr	Kerryn	Gijsbers	General Practitioner, Darwin	
Ms	Jenny	Gilbert	CNM, Birth Suite, RDH	DHCS
Mr	Doug	Gilchrist	General Manager, Gove District Hospital	DHCS
Ms	Glenda	Gleeson	Central Australian Outreach Midwife; Maternal, Youth and Child Health, Health Services	DHCS
Dr	Brad	Gray	Director of Medical Services	Wurli Wurlijang Aboriginal Health Services
Ms	Di	Halloran	Senior Project Officer, Child Youth & Family Health Services, Health Services	DHCS
Dr	Heather	Hancock	Senior Lecturer in Midwifery; Independent Midwifery Consultant, Uni of SA	
Ms	Sharon	Haste	Child Health/Wellbeing Project Officer, Health Services	DHCS
Ms	Pauline	Hateley	RN, Katherine Community Health Centre, Community Health, Health Services	DHCS
Ms	Eyvette	Hawthorne	AHW	Danila Dilba
Dr	Alan	Hewson	Obstetrician	Newcastle
A/Prof	Shane	Houston	Assistant Secretary, System Performance and Aboriginal Policy	DHCS
Dr	Christopher	Hughes	Obstetrician, RANZCOG Representative	RANZCOG
Ms	Fiona	Kajewski	Manager, Maternity Services Katherine Hospital	DHCS
Dr	Simon	Kane	Obstetrician and Head of Department, Obstetrics & Gynaecology, ASH	DHCS

<b>Title</b>	<b>Name</b>		<b>Position</b>	<b>Organisation</b>
Dr	Leonie	Katekar	CEO	Top End Division of GPs
Ms	Lesley	Kemmis	Program Director, Community Health	DHCS
Dr	Charles	Kilburn	Co-Director, Maternal and Child Health, RDH	DHCS
Dr	Sue	Kildea	Associate Professor of Midwifery, Graduate School for Health Practice, Institute of Advanced Studies; Homebirth Services Coordinator	Charles Darwin University DHCS
Ms	Anna	Latz		Alice Springs Home Birth Support Group
Ms	Marlene	Liddle	Strong Women, Strong Babies Coordinator, Maternal, Youth and Child Health, Health Services	DHCS
Ms	Jane	Lloyd	Director, Darwin Office	Centacare
Mr	Tony	Lyle		Mt Gillen Hostel, Alice Springs
	Margaret	Lyle		Mt Gillen Hostel, Alice Springs
Ms	Wendy	Mackay	Deputy Director, Remote Health, Health Services	DHCS
Ms	Sandy	McElligott	Remote Women's Health Educator, Central Australia Health Services	DHCS
Ms	Sonya	McNellee	Perinatal Data Business Analyst, Acute Care Information Systems, Information Services	DHCS
Dr	Andrew	Miller	Obstetrician	Private Practice, Darwin
Dr	Jenny	Mitchell <sup>3</sup>	Obstetrician, Darwin	Private practice
Ms	Sue	Moran	Coordinator Health, Promoting School Nurses; Manager, Katherine Community Health Centre, Community Health, Health Services	DHCS
Ms	Karen	Mulligan	Manager, Quality Improvement Unit, Strategy and Quality	DHCS
Ms	Jo	Murray	Executive Director, Government Relations and Strategic Policy, Strategy and Quality	DHCS
Dr	Len	Notaras	General Manager	RDH
Ms	Maureen	O'Meara	Senior Policy Officer, Aboriginal Health Policy,	DHCS

<sup>3</sup> Also provides Outreach Services for DHCS remote areas

Maternity Services Review in the Northern Territory Report

Title	Name		Position	Organisation
			System Performance and Aboriginal Policy	
Mr	Dane	Outen	Ultrasonographer, Gove District Hospital	DHCS
Mr	Peter	PangQuee	PAHW, Senior Policy Officer, Workforce Strategy, People and Services	DHCS
Ms	Penny	Parker	Quality Manager, Acute Care	DHCS
Dr	Barbara	Paterson	Director Maternal, Youth and Child Health, Health Services	DHCS
Ms	Samantha	Phelan	President	The Maternity Coalition Inc
Ms	Robyn	Pitt	Women's Health Coordinator	Nganampa Health
Ms	Annie	Popelier	Midwife	Laynhapuy Homelands Health
Ms	Sally	Putland	Manager, Maternity Services, Gove District Hospital	DHCS
Mr	Greg	Rickard	PNC, Director of Clinical Learning, People and Services	DHCS
Ms	Karen	Rosas	Child and Maternal Health Coordinator	Wurli Wurlijang Aboriginal Health Services
Ms	Jo	Sangster	President	The Childbirth Education Association Darwin Inc
Mr	Robyn	Smith	General Manager, Katherine Hospital	DHCS
Ms	Maira	Stronach	Manager, Child Youth & Family Health Services, Health Services	DHCS
Ms	Vicki	Taylor	General Manager, ASH	DHCS
Ms	Bronwen	Taylor	Nursing Director Clinical, ASH	DHCS
Dr	Sujatha	Thomas	Obstetrician, Department Obstetrics & Gynaecology, RDH	DHCS
Ms	Julie	Thrift	CNM, Maternity Unit	Darwin Private Hospital
Ms	Cat	Waite	Physiotherapist	Army Health Services, NT/K
Dr	Rosy	Warden	Director, Strategic Health Policy, Strategy and Quality	DHCS
Dr	Tony	Watson	Director, Medical and Clinical Services, Katherine Hospital	DHCS
Ms	Desley	Williams	Top End Outreach Midwife Maternal, Youth and Child	DHCS



<b>Title</b>	<b>Name</b>		<b>Position</b>	<b>Organisation</b>
			Health, Health Services	
Ms	Georgie	Wood		Miwatj Aboriginal Health
Dr	Jo	Wright	Senior District Medical Officer, Remote Heath, Health Services	DHCS
Ms	Helen	Wuttke	RN, Katherine Community Health Centre, Community Health, Health Services	DHCS

## APPENDIX C. DHCS Maternity Services Reports and Discussion Papers 1992–2007

Year	Title	Author
1992	Review of birthing services in the Northern Territory of Australia	Cynthia Croft
1996	The 1992 review of birthing services in the Northern Territory Implementation Status Report October 1996	Women's Health Unit DHCS
1997	Evaluation of the Alternative Birthing Services Program in the Northern Territory	Women's Health Unit DHCS
1998	And the Women Said....	Sue Kildea, Women's Health Unit DHCS
1998	Women's Business Meeting, Darwin, 2–3 Nov, Report and Recommendations. Darwin (funded by WHSU)	Biluru Butji Binnilutlum Medical Service, Danila Dilba
2002	Antenatal care in remote areas of the NT. A review of service delivery	Chris Evans, Women's Health Strategy Unit
2002	How can routine antenatal care protocols and practice in the Northern Territory be improved? A discussion paper July 2002	Jenny Hunt
2003	Review of proposed Integration of Community Midwifery Programme into the Royal Darwin Hospital Maternity Service	Jeremy Oats
2004	Pregnancy care and problems for women giving birth at the Royal Darwin Hospital	Jenny Hunt
2004	Rural health education, support and training. Final Report: overcoming isolation through knowledge and support networks	Sue Kildea & Lesley Barclay
2004	Towards an integrated maternity services framework: a discussion paper	Kim Johnstone & Sharon Haste, Women's Health Strategy Unit, DHCS
2004	Overview of services provided by the Department of Obstetrics and Gynaecology, Royal Darwin Hospital	Alan Hewson
2004	SA/NT Integrated Training Program Review—findings in relation to the NT training site (Royal Darwin Hospital)	RANZCOG
2005	Follow-up Integrated Training Program Review of Royal Darwin Hospital report	RANZCOG
2006	Follow up review of STOP services	Alan Hewson
2006	Report of the organisation-wide survey for the ACHS Evaluation and Quality Improvement Program—Alice Springs Hospital	ACHS
2006	Report of the periodic review for the ACHS Evaluation and Quality Improvement Program—Royal Darwin Hospital	ACHS

2006	Report of the organisation-wide survey for the ACHS Evaluation and Quality Improvement Program—Gove District Hospital	ACHS
2006	Report of the periodic review for the ACHS Evaluation and Quality Improvement Program—Katherine Hospital	ACHS
2006	Report of the periodic review for the ACHS Evaluation and Quality Improvement Program—Tennant Creek Hospital	ACHS
2006	Survey of provision of maternity services in remote communities of the Northern Territory September 2005–March 2006	Remote Outreach Midwives, DHCS
2006	Report of the development of the Home Birth Service for the Northern Territory Department of Health & Community Services, Community Health Branch	Heather Hancock Community Health, DHCS
2006	Internal report (draft) Issues arising during development of the Home Birth Service	Heather Hancock Community Health, DHCS
2006	A new model for practice/service delivery package for 0 to 5 year old children and their families—report and recommendations for change and development (draft)	Heather Hancock Community Health, DHCS
2006	Report compiled by Professor AD Hewson AM April 2006—no appendices provided	Alan Hewson
2007	Surgical and medical termination of pregnancy audit 2001–2005, Royal Darwin Hospital	Martha Finn Yvonne Cunningham Martha Davies
2007	Confidential report to Dr Len Notaras, Superintendent, Royal Darwin Hospital following visit to Darwin from 28 February 2007 to 3 March 2007	Alan Hewson

## **APPENDIX D. Supporting Literature for the Proposed Model**

A literature review of different models of care was undertaken as part of the statewide obstetric service review in Western Australia in 2002–2003. The review should be read in detail but the significant findings were:

- That the outcomes for mother and baby being birthed at home with a qualified midwife were no different as long as the pregnancy was uncomplicated and the gestation was between 37–41 weeks at the onset of labour and there was a single fetus presenting by the vertex. Babies should not be birthed at home if the mother had had a previous caesarean section or a medical complication such as hypertension or diabetes.
- Very similar restrictions applied to who may birth within a birth centre and similar outcomes were observed in birthing centres compared to home birth.
- In general about 1% could be expected to be referred to hospital before labour, between 2 and 13% in labour, between 1 and 6% after labour for maternal reasons and about 1% for neonatal reasons.
- Continuity of care midwifery models were more acceptable to the women.
- Even women with high risk pregnancy requiring frequent antenatal assessment, especially those with lower socioeconomic status, have improved perinatal outcomes and require fewer days in hospital when a significant proportion of their antenatal care is delivered in the home by advanced midwife practitioners.
- ATSI women have been shown to have better antenatal attendance and greater satisfaction in integrated community-based antenatal care programs.
- Early discharge (within 48 hours for healthy women with term infants) is not associated with increase in adverse outcomes for mother or baby.
- A program for early discharge for women with gestational diabetes or pregnancy-induced hypertension is not associated with any increase in adverse outcomes providing the women are well educated about the possible complications and they receive intensive home visiting by a qualified midwife.
- There is some evidence that telemedicine and electronic obstetric records may improve communication between health professionals.

## APPENDIX E. Canadian Inuit Experience

Inuit have had significant social change very similar to the experience of the Australian Aborigine. 2001 demographics include:

- high Inuit population growth rate—12% between 1996 and 2001
- a young Inuit population with 50% under 20 years of age
- 39% under the age of 15
- life expectancy is 10 years shorter than the non-Inuit.

The identified risks are also similar:

- teen pregnancy rates are high with the rate up to four times higher than the rest of Canada in 2000
- Inuit youth commit suicide at rates at least six times the national average
- a similar pattern to the burden of disease.

The erosion of traditional community supports is prevalent and the need to reinforce traditional parenting skills has been identified as an important step to attempt to improve health outcomes. Women are seen as essential to any effort to bring about positive change. 'It is the women who suffer most but ironically they are the best primary agents for bringing positive change'.

Several projects related to maternity services have been undertaken in remote Canada. Nunavik is a very remote community in northern Canada with a population of about 10 000 and covering approximately 5000 square kilometres of tundra. From the 1950s, women in Nunavik were transferred to South Quebec to give birth about three weeks before the birth was expected. Since 1986 women have had the opportunity to give birth in Povungnituk, Nunavik in a midwifery-led interdisciplinary model of care. Also the training of student midwives in antenatal and postnatal care began in 1993 in Povungnituk.

Inukjuak, a small community of 1600 people in Nunavik, was included in the project in 1998.

Low risk births take place in birthing centres in these two villages. There is no possibility for caesarean section or transfer during birth, in either of the communities. Women can be transferred in pregnancy or post partum to the small hospital in Povungnituk (no operative facilities but it does have transfusion facilities) or to a specialist obstetrical unit in Montreal.

A five-year retrospective survey of the perinatal care in Inukjuak was conducted. The findings were:

- of the 182 women from Inukjuak who gave birth, 132 (72.5%) gave birth in their own community
- four and a half per cent of women or/and newborn were evacuated for reasons related to birth
- the rate of premature birth is 3.3% of all pregnant women from Inukjuak
- the perinatal mortality rate is 0.5% of all babies born to women from Inukjuak and 0.7% of all babies born in Inukjuak.

The population is to a certain degree a 'high risk' population. Almost 100% of the population smoke and although it is a 'dry' community there are alcohol-related problems, problems connected to domestic violence, and problems connected to child abuse and neglect in addition to health problems. First time mothers are young with 25% being under 20 years of age.

The reasons for the program's success are believed to be:

- the multidisciplinary approach
- a system of education of Inuit women, which is of a high level and is decentralised
- the work of the Perinatal Committee.

This Perinatal Committee consists of midwives, nurses, and doctors. At weekly meetings the Committee does an 'audit' on every pregnant woman reaching 32 weeks' gestation. A joint decision and recommendations for each woman are made and followed.

The number of women referred during the pregnancy to give birth in Montreal has been quite stable, between one and four a year. The percentage of women giving birth in Inukjuak has gone from 44.4% in 1998 to 79% in 2002, with the year 2000 having the highest number of women giving birth in Inukjuak (86%). The jump from 44.4% in 1998 to 74% in 1999 was largely due to nulliparous women being able to deliver in Inukjuak for the first time. In 2002 no women went to Povungnituk by choice. Over the years, several women have had more than one child in Inukjuak and most women prefer to stay in Inukjuak to give birth, even at times when the recommendation is to go to Povungnituk.

Thirty six women gave birth in Povungnituk and 14 women gave birth in Montreal during the five-year period. The main reasons for referral to Povungnituk are: a history of PPH, choice, no senior midwife in Inukjuak and pre-eclampsia/hypertension. The main reasons for referral to Montreal are: pre-eclampsia/hypertension, twins, vaginal birth after caesarean section, abruptio placenta, history of cervical tear, stillbirth, breech, hyperthyroidism, pulmonary stenosis.

In all, 4.5% of the mothers and babies had to have a medical evacuation (Medevac) during pregnancy or immediately after birth (woman or baby). The two main reasons for transfer/medevacs were post partum bleeding and premature labour and birth.

PPH or a history of PPH is the most common reason for referrals to Povungnituk, and the second most common reason for Medevac.

The premature birth rate among the women from Inukjuak is 3.3%. The intervention rate is extremely low: one caesarean section among the women transferred to Montreal (0.5% in total) and one vacuum extraction among the women giving birth in Inukjuak (0.7%). There were no episiotomies among the women giving birth in Inukjuak.

There has been one perinatal death: An unexpected premature birth at home of a 1250 g infant at 29 weeks. The perinatal mortality rate of all births by women from Inukjuak is 5 per thousand births and of the women giving birth in Inukjuak it is 7 per thousand births.

The success of the above and similar projects has been such that it is now recommended that midwives in remote and rural communities should be the primary care givers for all pregnant women in the communities.

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## APPENDIX F. Glossary of Terms

AHW	Aboriginal Health Worker
AIMS	Australian Incident Management System
ALSO	Advanced Life Support in Obstetrics
AMS	Aboriginal Medical Service
ASH	Alice Springs Hospital
ATSI	Aboriginal and Torres Strait Islander
C&FHS	Child and Family Health Services
CEA	Childbirth Education Association
CMBS	Commonwealth Medical Benefit Scheme
CMP	Community Midwife Program
DMO	District Medical Officer
DRANZCOG	Diploma of the Royal Australian and New Zealand College of Obstetrics and Gynaecology
ERG	Expert Reference Group
GMP	Group Midwifery Practice
GP	General Practitioner
MEC	Maternity Emergency Care Course
MSOAP	Medical Specialists Outreach Assistance Program
NGO	Non Government Organisation
NT	Northern Territory
OTD	Overseas Trained Doctor
PPH	post partum haemorrhage
RANZCOG	Royal Australian and New Zealand College of Obstetrics and Gynaecology
RDH	Royal Darwin Hospital

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