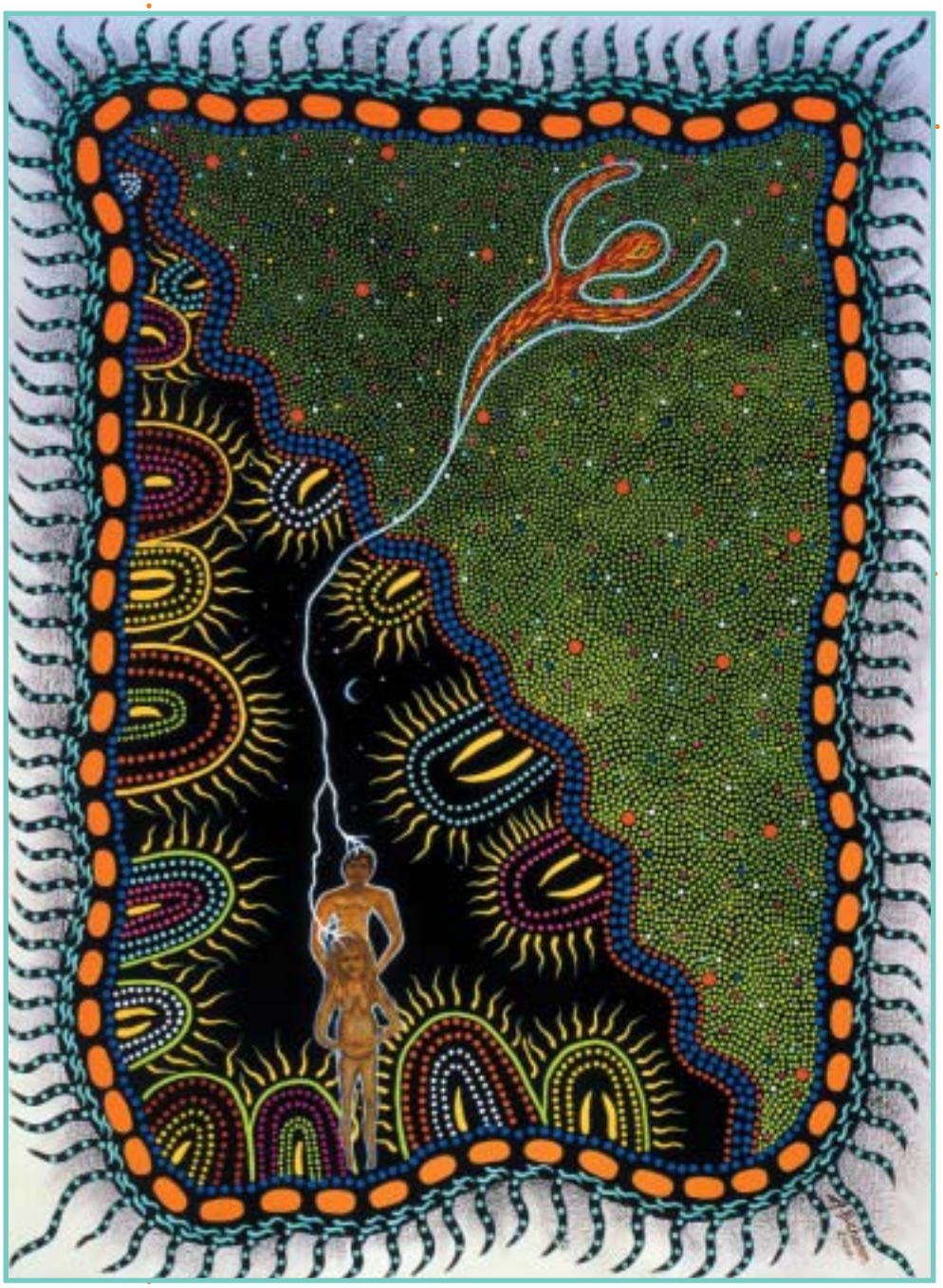
The NSW Aboriginal Perinatal Health Report



A report into the preventable risk factors associated with Aboriginal perinatal mortality and morbidity and strategies to improve Aboriginal perinatal health.

NSW HEALTH
Working as a Team

Constant Connection – Cover Artwork by Alison Buchanan

'Keeping in touch with our ancestor spirits is the only way to relax our body and minds. When connected, fresh food should always be in abundance, the fresh food makes us feel fresh and alive. If we stay connected no stress will affect the newborn baby and the baby will develop to its full potential. Constant connection is full of love for all.'

– Alison Buchanan

The term Aboriginal is used in this report to refer to both Aboriginal and Torres Strait Islander people.

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Foreword

NSW Health is pleased to release the *NSW Aboriginal Perinatal Health Report*. This report provides a detailed analysis of the risk factors associated with the high Aboriginal perinatal mortality rate in NSW and programs which have demonstrated effectiveness in improving perinatal health.

Importantly, the report provides a strategic framework for NSW Health, the Aboriginal community controlled health sector and related agencies to work in partnership to improve Aboriginal maternal and infant health across NSW.

The *NSW Aboriginal Perinatal Health Report* incorporates and builds on the recommendations of two key NSW Health policies: the *NSW Aboriginal Health Strategic Plan* and the *NSW Maternity Services Framework*.

To significantly improve Aboriginal maternal, perinatal and infant health, NSW Health needs to address two key issues. First, the system must improve Aboriginal women's access to appropriate antenatal, intra-partum, postnatal and infant health services and second, work with Aboriginal communities and the Aboriginal community controlled sector to support Aboriginal women and their families in improving their overall health and wellbeing.

The *NSW Aboriginal Perinatal Health Report* has informed the development and implementation of significant Aboriginal maternal and infant health initiatives across NSW. This includes the *NSW Aboriginal Maternal and Health Strategy* and targeted funds for initiatives in rural, remote and metropolitan areas.

The over-riding social issues of education, employment and providing young Aboriginal people with options and choices in life commensurate with the rest of the Australian population, will significantly impact on the ability of health care providers to achieve improved health outcomes for Aboriginal mothers and their babies.

Therefore, NSW Health will continue to work in partnership at an inter-departmental level to address the social and economic determinants of health for Aboriginal people in keeping with the *Strategic Directions for Health 2000-2005*.

Robyn Kruk
Director-General

Background

The origins of this report date back to 1998 when the then Minister for Health and Minister for Aboriginal Affairs, Dr Andrew Refshauge, requested a project to address the high rate of Aboriginal perinatal mortality in NSW. A meeting of key stakeholders was convened by the Aboriginal Health Branch of the NSW Department of Health to identify the relevant issues and the Aboriginal Perinatal Mortality Project developed from this point.

Purpose

The objectives of the Aboriginal Perinatal Mortality Project were to:

- identify factors which contribute to Aboriginal perinatal mortality and morbidity
- identify practices which have successfully contributed to the reduction of perinatal mortality rates in indigenous communities
- develop models of care which will reduce Aboriginal perinatal mortality rates.

The *NSW Aboriginal Perinatal Health Report* was produced as a result of this project. The report provides the following chapters:

- a framework for the *NSW Aboriginal Maternal and Infant Health Strategy*
- risk factors associated with Aboriginal perinatal mortality and morbidity
- practices which have improved the risk factors associated with perinatal mortality and morbidity
- health services for Aboriginal women
- issues affecting service delivery for Aboriginal women.

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Executive summary

To improve Aboriginal perinatal health in NSW three things are needed:

1. Strong, cohesive Aboriginal communities with raised living standards
2. Empowered Aboriginal women
3. Accessible and appropriate maternal health services.

Due to the complex mix of social, behavioural and medical risk factors that cause Aboriginal perinatal mortality and morbidity, long-term strategies are essential. There is no easy or quick fix to this health problem.

Improving the health of Aboriginal people is a key goal of the NSW Department of Health's *Strategic Directions for Health 1998-2003* document. It is therefore recommended that the *Aboriginal Maternal and Infant Health Strategy framework* provided in this report be developed and implemented through the Aboriginal Health Partnerships between the NSW Department of Health and Aboriginal Community Controlled Health Services at both Area and State level.

Aboriginal perinatal statistics

In 2000 the NSW Aboriginal perinatal mortality rate was 17.9 per 1,000 births compared to the non-Aboriginal rate of 9.7 per 1,000. Low birthweight (less than 2500 gm) due to preterm birth or intra-uterine growth retardation, is a key risk factor for perinatal mortality and morbidity. In 2000 the percentage of low birthweight Aboriginal babies was 11.9%. This was almost twice the non-Aboriginal rate of 6.4% (NSW Department of Health 2001).

Risk factors associated with Aboriginal perinatal mortality and morbidity

The risk factors associated with low birthweight, considered a major determinant of excess perinatal mortality and morbidity, are complex and exacerbated by the poor health status of many Aboriginal women (NSW Department of Health 1994). The four key risk factors are:

1. Under-utilisation of antenatal and postnatal services

Due to the inappropriateness of many services, large numbers of Aboriginal women do not access mainstream antenatal services until late in pregnancy (after 20 weeks) and attend irregularly thereafter. These are often the women who are most vulnerable and 'at risk', eg adolescent mothers, IV drug users, victims of family violence and itinerant women.

Despite efforts to improve the use of antenatal services by Aboriginal women, in 2000 almost one quarter of Aboriginal women (22.4%) presented late in pregnancy for their first antenatal visit compared with 13% of non-Aboriginal women (NSW Department of Health 2001). Postnatal services are also frequently under-utilised by Aboriginal women.

2. High adolescent birth rate

Adolescent mothers have an increased risk of premature births and low birthweight babies and are also more likely to have a medical or obstetric complication (Fraser et al.1995, Zang and Chan 1991, Akinbami et al. 2000). Recent studies indicate that the risks of preterm birth and neonatal mortality are higher among younger adolescents (ie 13-15), than those aged 16-17 (Olausson et al. 1999).

Many adolescent mothers experience social disadvantage and low self-esteem which is associated with increased risk-taking behaviours of smoking and alcohol and drug use during pregnancy (Zang and Chan, 1991).

In 2000, 21.8% of Aboriginal births were to adolescent mothers (12-19 years). This was almost four times the non-Aboriginal rate of 4.5% (NSW Department of Health 2001).

Anecdotal evidence indicates that many of these pregnancies are to young adolescents.

3. Lack of empowerment (lack of control over life events)

Studies conducted with Aboriginal women in rural NSW identify low self-esteem and stress as the two health issues Aboriginal women were most concerned about (Central West Public Health Unit 1997, New England Area Health Service 1997). The disempowerment experienced by many Aboriginal women (and their families) stems from a combination of historical and social factors (*National Aboriginal Health Strategy* 1989).

Aboriginal kinship traditions have been substantially eroded, largely as a result of the 'stolen generation' and Aboriginal women often fall victim to abuse and violence because of the disharmony evident in many communities. Aboriginal women's low self-esteem is associated with a high rate of behavioural risk factors during pregnancy such as smoking and drug and alcohol use. These factors are associated with low birthweight babies.

Smoking is the number one preventable risk factor for low birthweight babies and in 2000, 55.9% of Aboriginal women in NSW smoked during pregnancy. This was over three times the non-Aboriginal rate of 17.4% (NSW Department of Health 2001).

4. Social, economic and political factors affecting Aboriginal women (and families)

To have healthy Aboriginal babies, Aboriginal women must be healthy, both physically and emotionally. The poor reproductive health of many Aboriginal women and the high number of at-risk pregnancies can be related to the poverty, alienation and social disruption evident in many Aboriginal communities (*National Aboriginal Health Strategy 1989*, Plunkett et al. 1996).

Health care providers across NSW readily acknowledge the often overwhelming constraints placed on the effectiveness of their services, given the poverty and dire circumstances of many Aboriginal women.

How can Aboriginal maternal and perinatal health be improved?

A long-term, multi-faceted approach is needed to develop and implement the strategic framework provided in this report through the Aboriginal health partnerships.

Increase in the use of antenatal and postnatal services by Aboriginal women

Maternity services

To improve Aboriginal maternal and perinatal health, it is critical that Area Health Services and Aboriginal Community Controlled Health Services work in partnership at the local level to improve service access for Aboriginal women.

To improve the appropriateness of mainstream services for Aboriginal women, services should incorporate the following elements of successfully targeted programs:

- a team approach to care involving midwives, Aboriginal health workers, specialists and general practitioners
- a transport service
- a flexible and non-judgemental approach to care
- sensitivity to the underlying social and economic circumstances of many Aboriginal women which can result in non-attendance (McDonald and Morero 1996, Jarrett et al. 1998, Daruk Aboriginal Medical Service and Western Sydney Public Health Unit 1998, Macquarie Area Health Service 1998, New England Health 1998, NSW Department of Health 1998a).

Midwife/Aboriginal health worker programs

Considerable time is needed to bring about a systemic change where more Aboriginal women feel able to use mainstream services. Until these changes occur, specifically targeted programs for Aboriginal women should be developed through the local Aboriginal health partnerships. These programs require sustainable funding to support continuity of care and Aboriginal community involvement.

Targeted programs increase the use of services by Aboriginal women and improve health outcomes for mothers and babies. These programs employ midwife/Aboriginal health worker teams who work in collaboration with medical practitioners to provide: individualised, family centred care, outreach and home visiting services, transport and referral to specialists.

To improve the effectiveness of these programs and increase recruitment and continuity of service, the important areas of Aboriginal health worker training and workforce support for midwives and Aboriginal health workers (particularly in rural and remote areas) need to be addressed.

In addition, Area Health Services and Aboriginal Community Controlled Health Services need to determine the most appropriate way to improve liaison between Aboriginal women and health care providers at a local level. For example, several Area Health Services employ Aboriginal maternal and child health liaison workers to work alongside midwives in hospital and community health settings to provide both liaison and clinical services.

Decrease in the young adolescent birth rate

Specifically tailored antenatal services and educational programs for adolescents increase the use of antenatal services and reduce adolescent pregnancy rates (Lee and Grubbs 1995, Howell et al. 1999).

Culturally appropriate educational programs on sexually transmitted diseases, pregnancy prevention and the longterm effects of adolescent parenting should be developed, with a focus on young adolescents (13-15). Adolescent health services need to be enhanced, particularly in rural and remote areas of NSW.

Empowerment of Aboriginal women (and families)

Community peer education programs with Aboriginal women improve perinatal health by improving the health and wellbeing of women (and their families) through empowerment. Empowerment in this sense refers to the development of health knowledge, leadership skills and increased participation in decision making.

Peer education programs provide supportive networks for women (and families) and provide links into community resource information and available health services. To enhance the well-being of Aboriginal families, it is critical that Aboriginal men are also included in empowerment programs. Programs of this nature are required throughout NSW.

Improved social, economic and political conditions for Aboriginal women (and families)

Health services can address the service delivery factors affecting Aboriginal perinatal mortality, however to fully improve Aboriginal maternal and perinatal health, broad social and economic improvements are required for Aboriginal communities (*National Aboriginal Health Strategy* 1989). A primary health care approach is needed which looks beyond the health sector and the medical causes of illness.

1. Improvement in Aboriginal women's educational status and increased employment levels in Aboriginal communities are critical to improving health and well-being. NSW Health should take an advocacy role at both an Area and Central Office level to improve the structural factors impacting on Aboriginal families.
2. Community development projects address structural factors and aim to achieve social change by empowering communities to have more control over the factors which cause ill-health. Additional Aboriginal community development projects should be developed through the local Aboriginal Health Partnerships in all NSW Area Health Services in collaboration with other government and non-government agencies.

Conclusion

To achieve improved Aboriginal perinatal mortality rates comparable to those of indigenous populations in New Zealand and the USA, it is critical that Aboriginal maternal and perinatal health is identified as a priority health issue. To effectively address the risk factors associated with Aboriginal perinatal mortality and morbidity, an integrated and collaborative approach between NSW Health, Aboriginal Community Controlled Health Services and other key agencies is required.

Healthy Aboriginal mothers and babies is a fundamental prerequisite for Aboriginal children gaining a healthy start in life. To improve health outcomes, the *NSW Aboriginal Maternal and Infant Health Strategy framework*, as described in this report, should be developed and implemented across all NSW Area Health Services. This framework encompasses the *NSW Aboriginal Health Strategic Plan* (NSW Department of Health 1999b) and the *NSW Framework for Maternity Services* (NSW Department of Health 2000b).

For the strategy to succeed, as much emphasis should be placed on establishing community development projects with Aboriginal women and their families, as on improving Aboriginal women's access to health services. Creative public health strategies are required to improve the self-esteem of Aboriginal women.

By taking a community development approach to the broad issues which affect Aboriginal families, NSW Health, in partnership with Aboriginal Community Controlled Health Services, will achieve significant improvements in the health of Aboriginal women and their babies in the longterm.

Methods

The conclusions and structure of the *NSW Aboriginal Perinatal Health Report* are based on the analysis and synthesis of data gathered through the following methods:

- Semi-structured interviews with service providers in all NSW Area Health Services who provide maternal and infant health care for Aboriginal women. This included: obstetricians, paediatricians, general practitioners, midwives, Aboriginal health workers, women's health nurses, Aboriginal medical service staff and allied health service providers and also included some Aboriginal community members.
- A systematic evaluation of the national and international literature including a Medline search of published papers on programs which have demonstrated improvements in perinatal morbidity and mortality for indigenous and other cultural groups (ie Hispanic and Afro-American women in the USA).
- Reviews of published and unpublished reports.
- Analysis of the NSW Midwives Data Collection on Aboriginal mothers and babies.
- In-depth review by the NSW Maternal and Perinatal Committee of 32 Aboriginal perinatal deaths in NSW in 1998.
- Observation in the field.

Consultations took place from June to August 1999. The data collection focussed on service providers, however in addition, a wide range of reports which document the views of Aboriginal women were reviewed. Qualitative data were analysed through a content analysis where data were categorised according to the broad themes that emerged, then further classified and broken down into definitive sub-categories and coded. The validity of the data was strengthened through triangulation (cross-referencing) of data sources (Patton 1990).

Study limitation

There is little Level I – IV evidence (Appendix 1) in the literature demonstrating the effectiveness of indigenous health programs in reducing perinatal mortality. Of the published studies found, references to perinatal mortality were rare and instead, neonatal mortality and/or infant mortality were usually measured. The report therefore, draws on evidence from studies which examine perinatal, neonatal and/or infant mortality.

Future directions

NSW Department of Health will oversee the implementation of the report's strategic framework and report annually on the health system's progress in improving Aboriginal maternal and infant health.

Framework for improving Aboriginal perinatal health in NSW

1

Policy context

The need to improve Aboriginal maternal and perinatal health outcomes is highlighted in the following reports:

- *National Aboriginal Health Strategy* (National Aboriginal Health Strategy Working Party 1989)
- *Ensuring Progress in Aboriginal Health*. A policy for the NSW Department of Health system (NSW Department of Health 1999a)
- *NSW Aboriginal Health Strategic Plan* (NSW Department of Health 1999b)
- *The Start of Good Health: improving the health of children in NSW* (NSW Department of Health 1999c)
- *NSW Framework for Maternity Services* (NSW Department of Health 2000b).

These reports also identify the link between socio-economic factors and health status, the poor health status of Aboriginal people when compared to the non-Aboriginal population and the need for more equitable access to appropriate health services for Aboriginal people.

The NSW Aboriginal Health Strategic Plan

The plan identifies maternal, infant and child health as a key priority area. Specific strategies to improve the health of Aboriginal mothers and children are detailed in the strategic plan and include: outreach midwifery services, home visiting services to provide support for Aboriginal families, improved access to paediatric services and strategies to address the causes of Aboriginal perinatal mortality.

The NSW Framework for Maternity Services

The framework recommends several strategies to improve Aboriginal maternal and infant health. These include the provision of more culturally sensitive services for Aboriginal women, opportunities to increase the number of Aboriginal health workers, nurses, midwives and general practitioners and greater involvement of Aboriginal women in decision making through community development programs.

The Start of Good Health: improving the health of children in NSW

This report recognises that Aboriginal people's health disadvantages begin early in life. The report identifies Aboriginal child health as a priority health issue that requires special attention in the planning and delivery of services.

The NSW Government is committed to a whole-of-government approach to the delivery of health services and has placed significant priority on agencies working collaboratively to achieve better health outcomes. Examples of recent whole-of-government initiatives aimed at integrated service delivery include Families First, Child Protection, the Regional Coordination Program and the Aboriginal Environmental Health Infrastructure.

Families First

Families First is a coordinated strategy sponsored by the NSW Government to increase the effectiveness of early intervention and prevention services in helping families raise healthy, well-adjusted children. Families First focuses on providing support and assistance to families who have children under eight years of age and has a particular focus on the first three years of life.

Families First links early intervention services, prevention services and community development programs to form a comprehensive network to support parents and carers raising children and help solve problems early. The aims of Families First are to:

- support parents who are expecting or caring for a new baby
- support parents who are caring for infants and young children
- assist families who need extra support
- strengthen the connections between communities and families.

Implementing Families First is the combined responsibility of Area Health Services, the NSW Departments of Community Services, Ageing and Disability, Education and Training, Housing and non-Government agencies funded by the NSW Government to support families.

The Office of Children and Young People in the Cabinet Office is coordinating the implementation of Families First across 11 Area Health Services. Families First has been implemented in the following Area Health Services: South West Sydney, Mid North Coast, Northern Rivers, Central Sydney, Hunter, Macquarie, Far West, New England, Southern, Central Coast, Mid Western and Wentworth.

Aboriginal families

Families First recognises that many Aboriginal women and their families do not access mainstream services because they are either geographically isolated and/or services are culturally inappropriate. Initiatives being developed through Families First aim to support Aboriginal women during pregnancy by providing services at home and in community settings and developing more appropriate service models for Aboriginal families in consultation with local communities.

For example, in August 1999 Families First developed a new antenatal service at Kempsey called the Young Parents Program, for pregnant adolescents who do not access Kempsey Hospital for antenatal care. An antenatal home visiting program for Aboriginal families in Macarthur has been established through a partnership arrangement between Tharawal Aboriginal Medical Service, South Western Sydney Area Health Service and the Centre for Health Equity Training Research and Evaluation.

Other services available for Aboriginal families through Families First include:

- an early childhood nurse at Tabulam (Northern Rivers) who visits fortnightly to provide ante-natal education and health care for new babies and pre-schoolers
- playgroups for families in Kingscliff, South Tweed Heads (fortnightly), Baryulgil and Malabugilmah (Northern Rivers) and Bellbrook (Mid North Coast) two days per week to help families identify what their children need and how to stimulate their learning
- three Aboriginal family support workers for families who need individual help and support at Casino and Tweed Valley (Northern Rivers) and Nambucca (Mid North Coast).

There is a clear synergy between the goals of Families First and the Aboriginal Perinatal Mortality Project and the recommendations of the *NSW Aboriginal Perinatal Health Report* need to be integrated into Families First strategies.

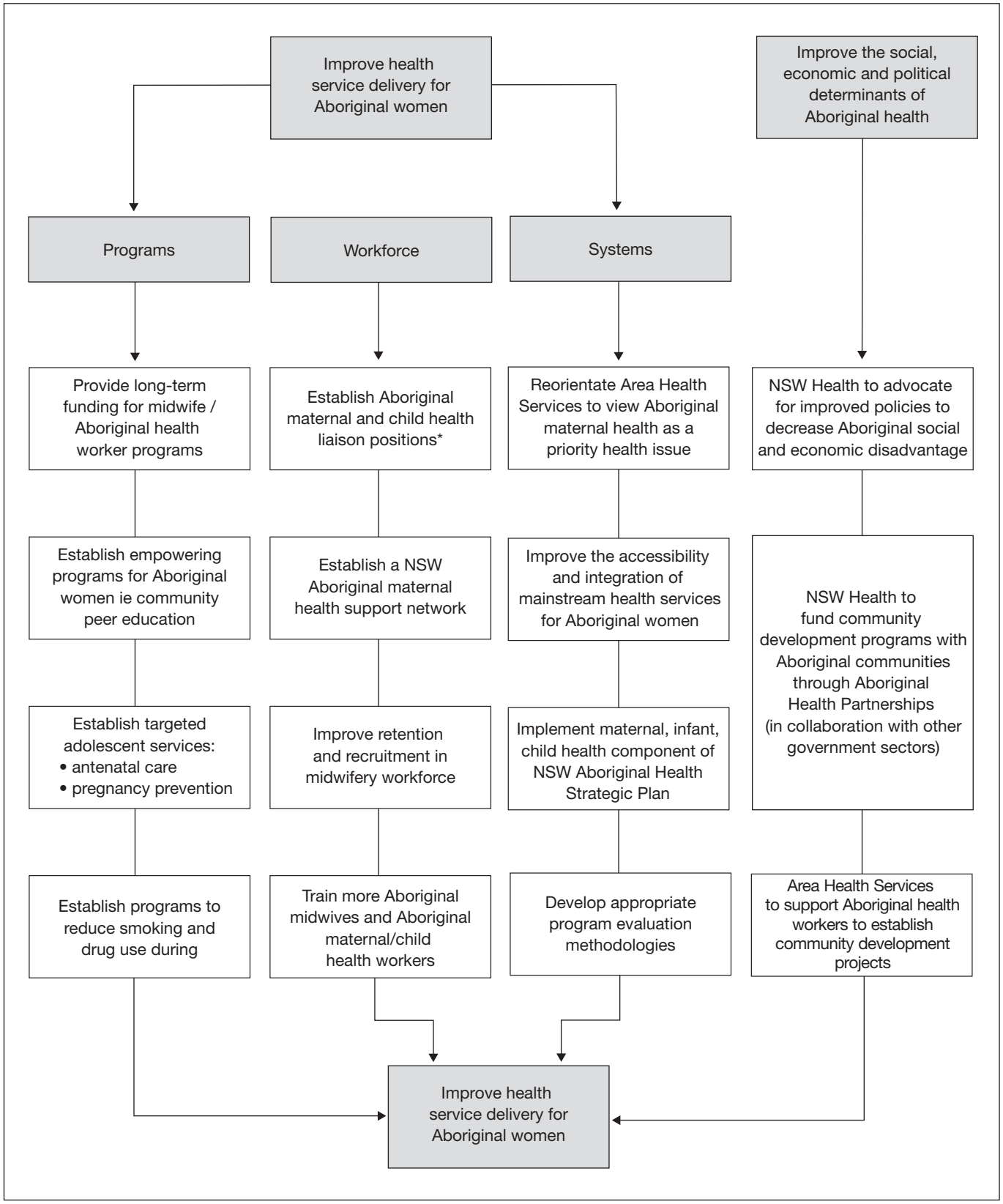
Commonwealth review

The Senate Committee Review (1999) into the provision of antenatal care services and childbirth practices in Australia found that one of the key barriers to improving services for Aboriginal women and babies is that:

> ***"culturally appropriate services which have been shown to improve outcomes for indigenous mothers and babies have not been widely adopted and in some cases are threatened by funding cuts"***
> (Senate Community Affairs References Committee 1999 p.1)

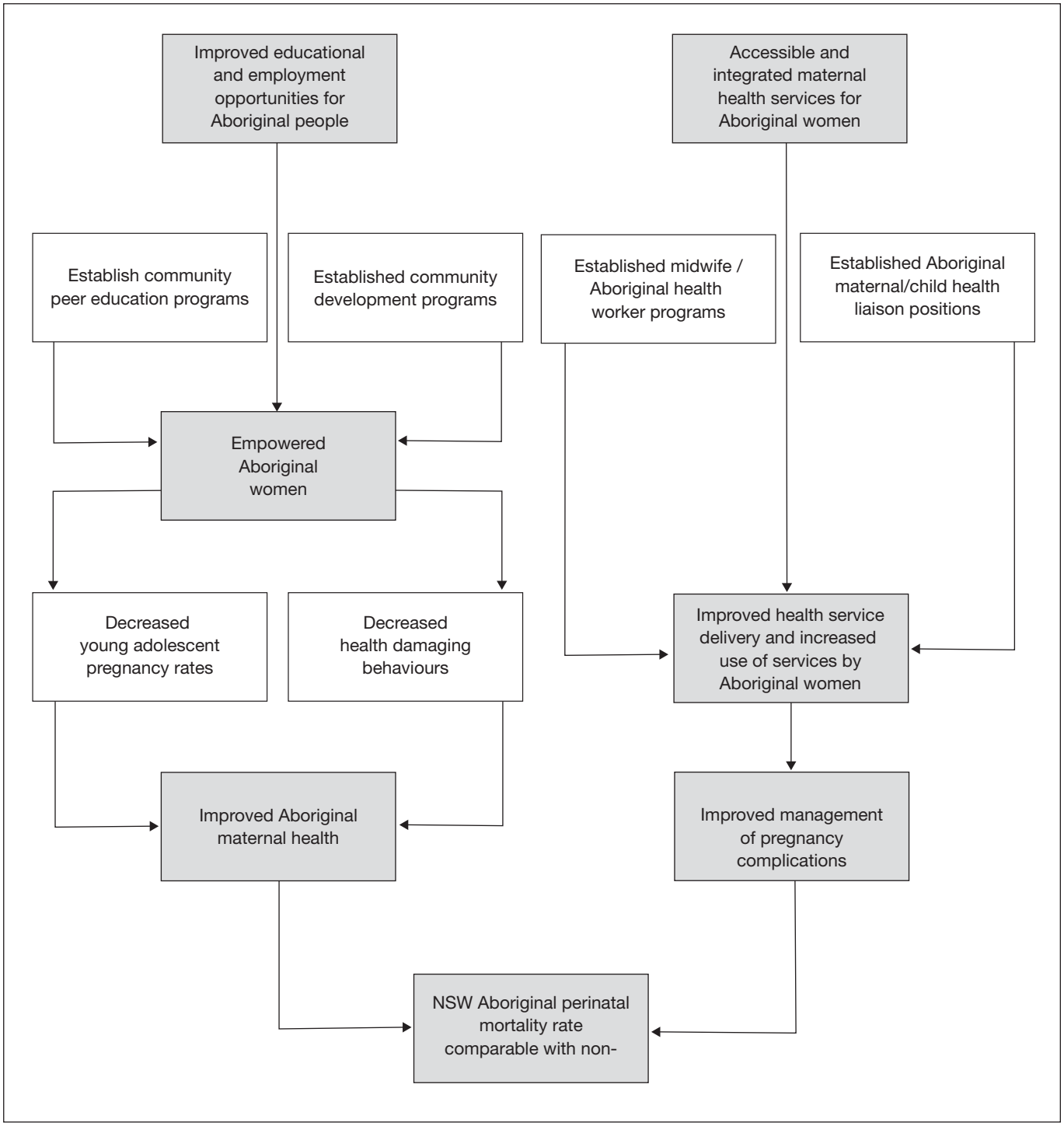
The Committee recommended that the Office of Aboriginal and Torres Strait Islander Health should provide recurrent funding to ensure continuity for existing antenatal programs for Aboriginal women and to establish new programs (incorporating the critical elements of effective programs) in areas of need.

Figure 1. NSW Aboriginal Maternal and Infant Health Strategy Framework



*This role can be undertaken by Aboriginal health workers employed through the midwife/Aboriginal health worker programs.

Figure 2. Vision for NSW Aboriginal maternal and infant health



*This role can be undertaken by Aboriginal health workers employed through the midwife/Aboriginal health worker programs.

Timeframe for strategies to improve Aboriginal perinatal health

Short-term goals

1. Implement the recommendations of this report within the context of the Maternal, Infant and Child Health component of the *NSW Aboriginal Health Strategic Plan*.
2. Establish additional midwife/Aboriginal health worker programs and provide sustainability for the programs already established.
3. Establish additional Aboriginal maternal/child health worker liaison positions.
4. Develop empowering community peer education programs for Aboriginal women.
5. Develop appropriate program evaluation methodologies.
6. Develop a support network for NSW midwives and Aboriginal health workers who provide Aboriginal maternal health services (particularly in remote areas).

Intermediate goals

1. Improve the accessibility of mainstream maternal health services for Aboriginal women.
2. Improve the coordination of all maternal health services for Aboriginal women.
3. Develop an accredited maternal and child health training program for Aboriginal health workers (which can articulate with midwifery training).
4. Address retention and recruitment issues in midwifery workforce.
5. Train more Aboriginal midwives.
6. Establish additional adolescent specific antenatal and postnatal services.
7. Develop educational programs, such as:
   - an 'Aboriginal-friendly' resource on pregnancy, birth and infant health
   - a young adolescent pregnancy prevention program
   - a substance abuse, alcohol and smoking reduction program.

Long-term goals

Strengthen Aboriginal communities by:

- improving educational and employment opportunities for Aboriginal people
- establishing community development projects with Aboriginal communities.

Prerequisites for effective maternal health services for Aboriginal women

- Effective partnerships between mainstream services and Aboriginal Community Controlled Health Services (ACCHSs).
- Mainstream services that are accessible and appropriate for Aboriginal women and encompass the following elements:
  - flexibility (particularly with regard to appointment times)
  - a non-judgemental approach (critical for vulnerable and 'at risk' women)
  - respect for Aboriginal culture
  - a family orientation
  - sensitivity to Aboriginal women's social and economic circumstances which can cause non-attendance
  - clear explanations of medical conditions and hospital procedures.
- Active participation of local Aboriginal women (and the Aboriginal community) in the development and evaluation of Aboriginal maternal health services.
- Long-term, identified funding for targeted Aboriginal maternal and infant health initiatives.
- Effective partnerships between obstetricians, neonatalogists, paediatricians, general practitioners, midwives and Aboriginal health workers.
- Effective partnerships between hospital maternity units and community-based midwife/Aboriginal health worker programs.
- Aboriginal cultural awareness training for all maternal health care providers.

- An appropriate monitoring and evaluation methodology to measure maternal and perinatal services and health outcomes, as well as the more intangible community development aspects of programs.
- Continuity of service by appropriately skilled midwives and Aboriginal health workers.
- Adequate infrastructure and support to encourage continuity of service by midwives and Aboriginal health workers. This should include the following elements:
  - strong links between ACCHS maternal health programs and hospital-based maternity services
  - incentives for midwives to work in remote areas to combat professional isolation and loneliness, eg housing, community support, ongoing training
  - appropriate links to professional midwifery practice
  - support for midwives to work more autonomously
  - support network for midwives, eg 24 hour hotline, ready access to professional support
  - Aboriginal health workers appropriately trained in maternal and child health
  - statewide package for midwives to provide ongoing training for Aboriginal health workers.

Program staff also require flexible work hours, replacement staff for sick leave, holiday relief, appropriate pay levels for added responsibility and appropriate infrastructure, eg car, phone, desk, computer.

Programs required to improve Aboriginal perinatal mortality and morbidity

Maternal health programs

- midwife/Aboriginal health worker teams
- Aboriginal maternal and child health liaison workers
- adolescent specific maternal health services.

Community development programs

- community peer education programs for Aboriginal women
- Aboriginal community development projects driven by the local Aboriginal Health Partnerships which go beyond, but include, the health sphere.

Educational programs

- an 'Aboriginal friendly' resource kit on pregnancy, birth and infant health
- a program to address pregnancy prevention in young adolescents (community and school based)
- a smoking reduction program and a substance abuse program.

Workforce and training programs

- programs to improve the skills of rural and remote midwives and Aboriginal health workers and scholarships to train more Aboriginal midwives
- an accredited maternal/child health course for Aboriginal health workers.

Rationale for long-term funding

For community education programs and community development style health programs to produce improved health outcomes, a long-term approach is required (McFarlane and Fehir 1994). These programs depend on building trust with communities, setting up interventions and evaluating and refining these interventions, all of which takes many years (Harris et al. 1999).

The focus of community peer education programs and the midwife/Aboriginal health worker programs is on developing 'capacity' for Aboriginal women. Capacity in this sense refers to increasing Aboriginal women's health knowledge and skills, developing supportive networks and increasing women's opportunities to participate in decision-making (Shiell and Hawe 1996).

The impact on health outcomes takes longer to demonstrate because time is needed to create the pre-conditions necessary for individual and community empowerment (Shiell and Hawe 1996). Given the long-term nature of programs to improve Aboriginal maternal and perinatal health, it is vital that the funding base for these programs is also long-term.

Evaluation of Aboriginal health programs

There is a clear need for health programs to have an evaluation component built into their budgets and for evaluation methodologies to be developed which are more appropriate for Aboriginal health. Evaluations should examine the variables which relate to the community development aspects of programs for Aboriginal people, such as:

- the amount of community consultation undertaken
- the sustainability of programs
- the individual and community 'capacity' achieved through the programs
- the program's role in providing social support for women and families (Jan et al. 1999).

If a program's aim is to improve the sense of community cohesion and community competence, then these factors should be measured in the evaluation (Shiell and Hawe 1996). Evaluation strategies are needed which can combine both quantitative and qualitative methodologies to examine the broader social, political and cultural issues which affect Aboriginal people (Jan et al. 1999).

To satisfactorily monitor the effectiveness of strategies to improve Aboriginal perinatal health, it is critical that more sensitive outcome measures than mortality are developed and that data collection methods are improved.

Strategies to improve the risk factors associated with Aboriginal perinatal mortality and morbidity

1. Under-utilisation of antenatal and postnatal services.
2. High adolescent birth rate.
3. Disempowerment of Aboriginal women.
4. Social, economic and political factors.

Under-utilisation of antenatal and postnatal services

Strategy 1

Develop effective partnerships between mainstream services and Aboriginal Community Controlled Health Services to improve access for Aboriginal women.

Strategy 2

Improve the accessibility of mainstream maternal health services for Aboriginal women by reorientating services to reflect the elements demonstrated in successful programs.

Strategy 3

Provide consistency of funding for targeted midwife/Aboriginal health worker programs.

Strategy 4

Establish additional Aboriginal maternal and child health worker liaison positions attached to maternity units and/or community health centres.

Strategy 5

Improve the integration of maternal health services for Aboriginal women by developing appropriate linkage points in each centre and country town. These linkage points can be provided through the:

- midwife/Aboriginal health worker teams
- Aboriginal maternal and child health worker liaison positions
- Aboriginal community peer education workers.

Strategy 6

Establish educational programs:

- develop a 'culture of antenatal care' for Aboriginal women to increase awareness about the value of antenatal care
- develop an 'Aboriginal friendly' educational resource on pregnancy, birth and infant care
- develop a smoking reduction program and a program for substance abuse.

Figure 3. Strategies to address under-utilisation of antenatal and postnatal services

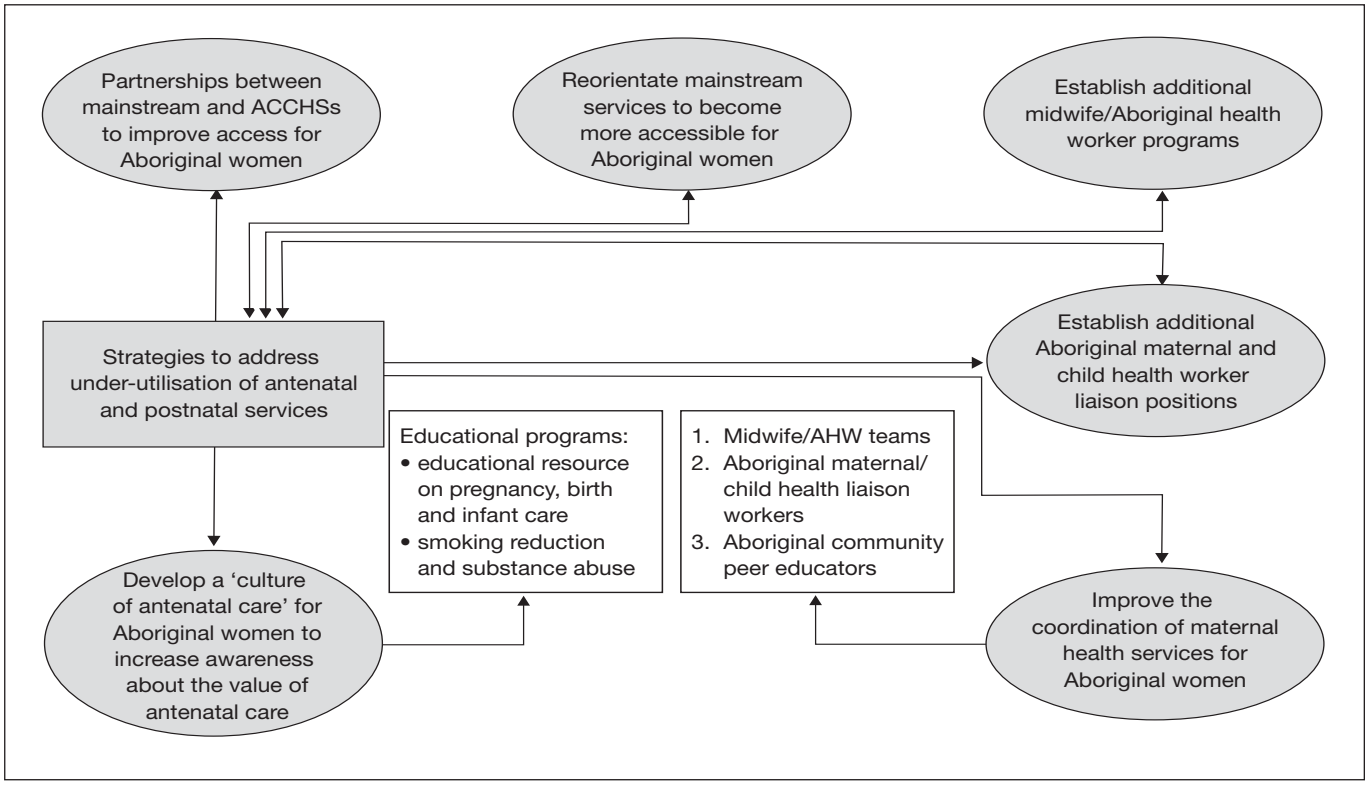
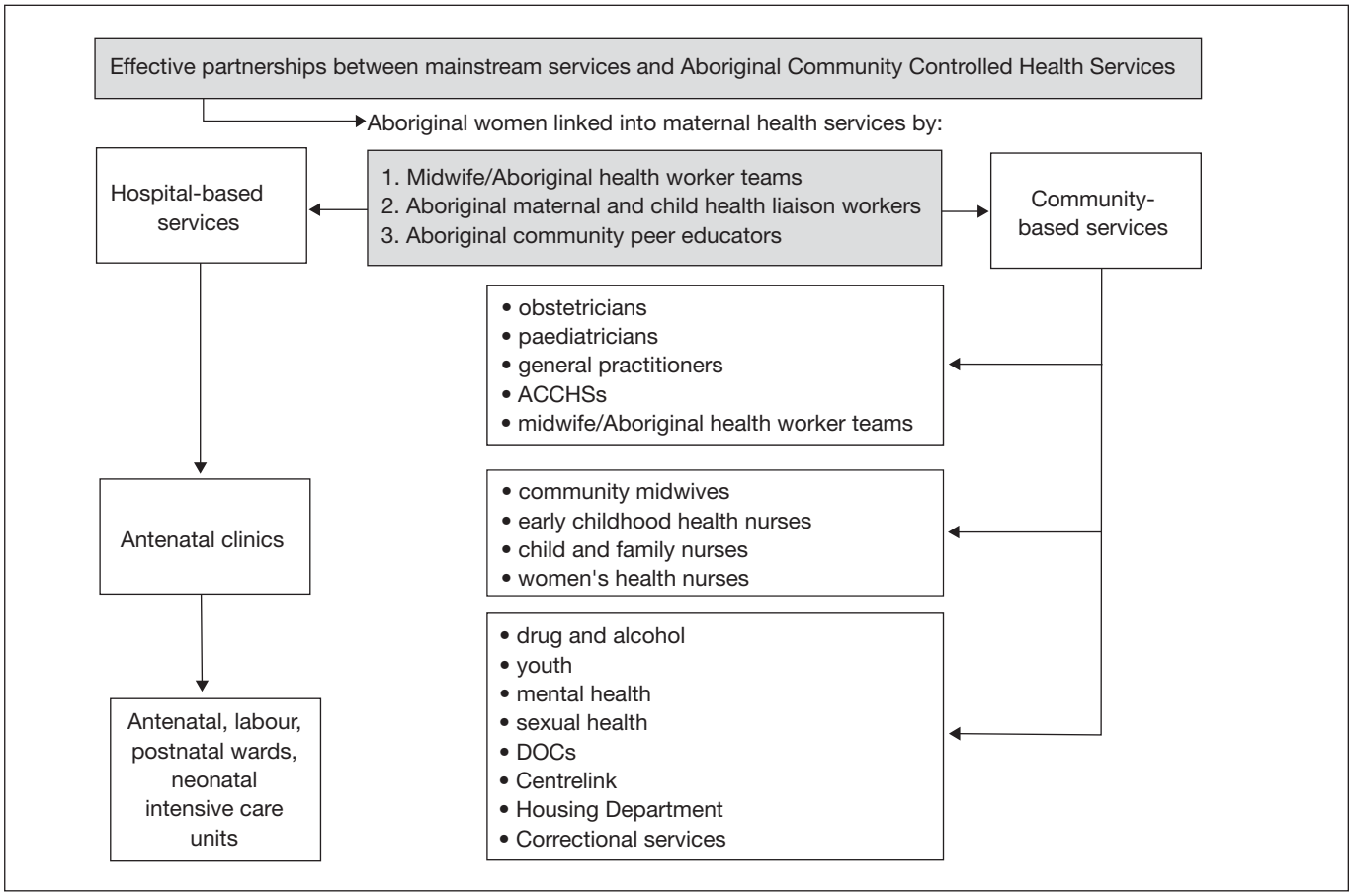


Figure 4. Framework for improved service integration



High adolescent birth rate

Strategy 1

Enhance adolescent pregnancy services in rural and remote areas.

Strategy 2

Enhance pregnancy prevention programs for young adolescents.

Disempowerment of Aboriginal women

Strategy

Develop community peer education programs with Aboriginal women in all NSW Area Health Services.

Social, economic and political factors

Strategy 1

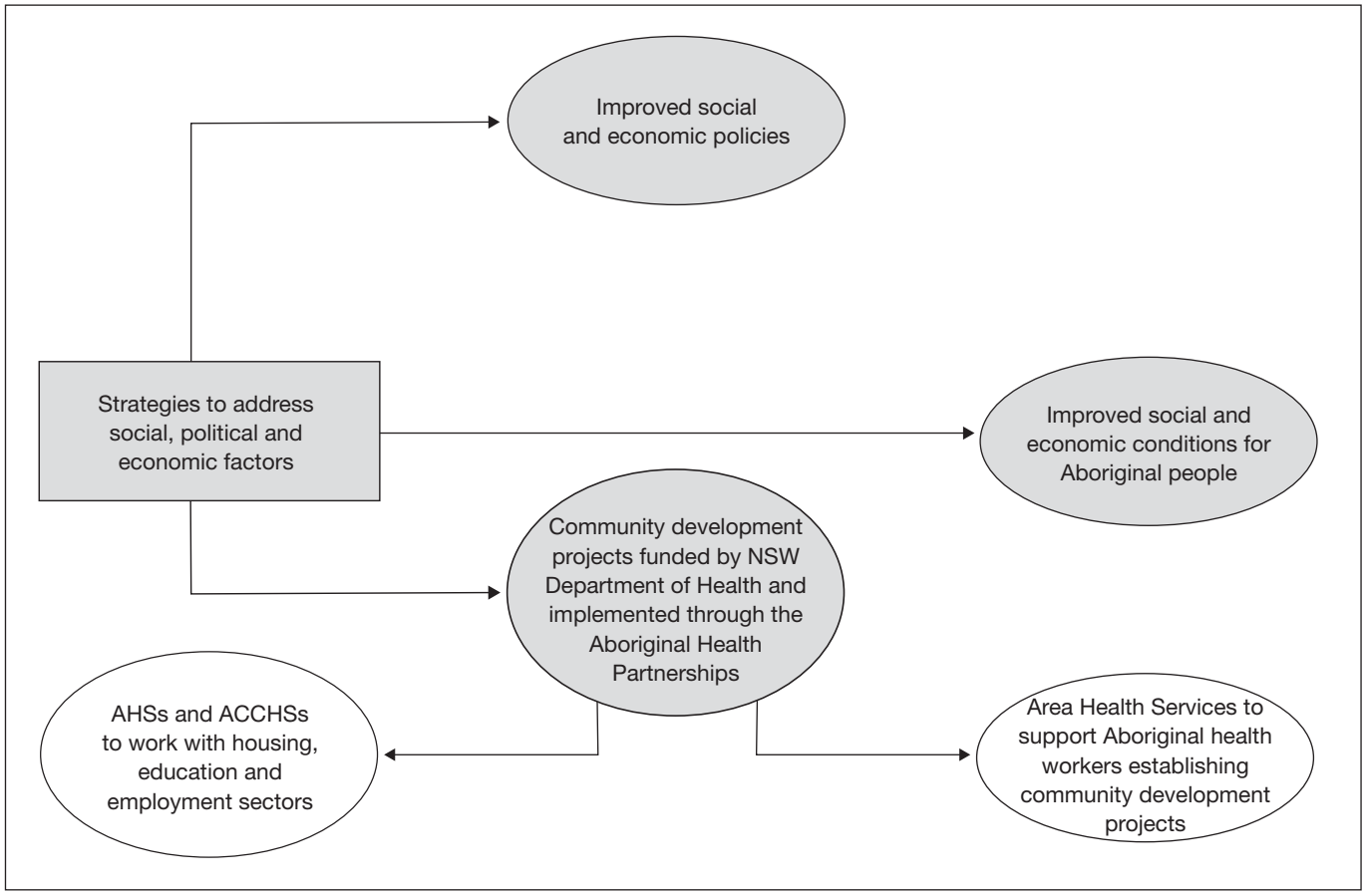
NSW Department of Health to liaise with education, employment and housing sectors to improve economic, social and educational policies for the Aboriginal population.

Strategy 2

NSW Department of Health to fund Aboriginal community development projects through the Aboriginal Health Partnerships.

- Area Health Services and Aboriginal Community Controlled Health Services to work with local housing, education and employment sectors to establish additional community development projects.
- Area Health Services to support Aboriginal health workers with community development skills to establish community development projects.

Figure 5. Strategies to address social, economic and political factors



2 Risk factors associated with Aboriginal perinatal mortality and morbidity

Perinatal mortality

Perinatal mortality

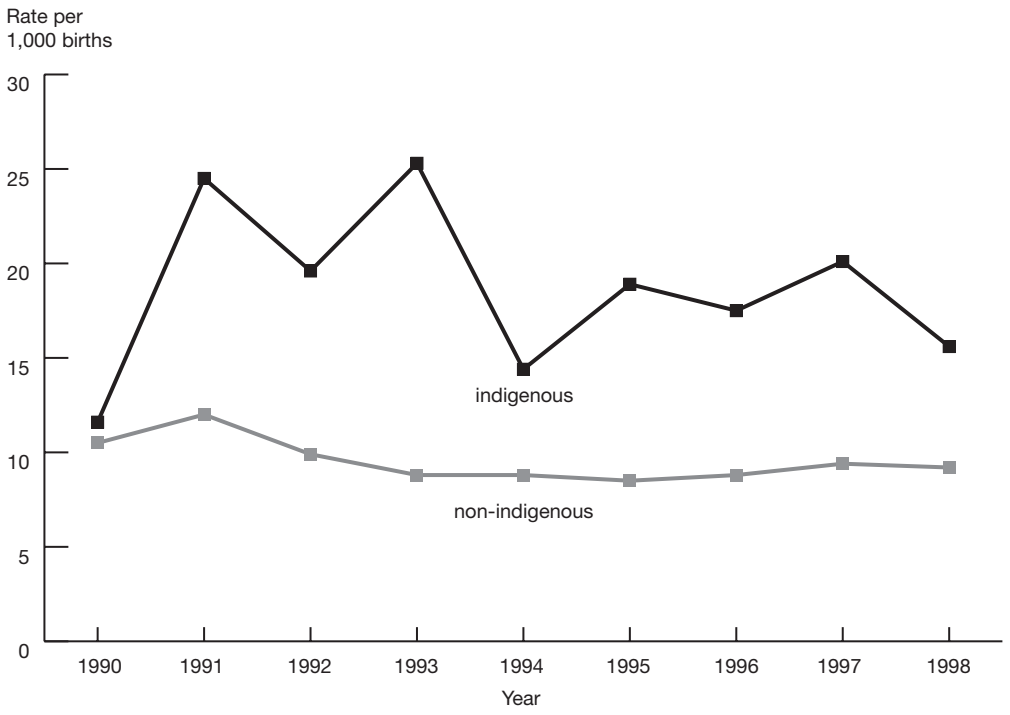
Perinatal mortality includes a stillbirth or neonatal death.

A stillbirth is the complete expulsion of a product of conception of at least 20 weeks gestation or 400 grams birthweight, without a heartbeat.

A neonatal death is the death of a liveborn infant within 28 days of birth.

Perinatal mortality is a key indicator of a population's health status and is affected by the standard of living and the level of health care provided (NSW Department of Health 1994). In 2000 there were 2,122 births to Aboriginal women in NSW (2.4% of all births) and 38 perinatal deaths, giving an Aboriginal perinatal mortality rate of 17.9 per 1,000. This was almost twice the NSW non-Aboriginal rate of 9.7 (NSW Department of Health 2001).

Figure 6. Perinatal deaths by mother's indigenous status, NSW 1990 to 1998



Note: Deaths within 28 days of birth were classified as perinatal deaths. Infants of at least 400 grams birth-weight or where birthweight is not available, at least 20 weeks gestation were included. Births for which the mother's indigenous status was not stated were classified as non-indigenous.

Source: NSW Midwives Data Collection and ABS perinatal mortality data (HOIST). Epidemiology and Surveillance Branch, NSW Department of Health.

Over the last decade there have been large year to year variations and some improvement in the NSW Aboriginal perinatal mortality – Figure 6 on p.16 (NSW Department of Health 2000a). The national Aboriginal perinatal death rate was 20.7 per 1,000 in the 1996-98 period (Edwards and Madden 2001).

The NSW Aboriginal perinatal rates between Area Health Services appear to indicate marked variations (Table 1). However, most of these rates were based on small numbers and should be interpreted cautiously. On the other hand, it is possible that at least some of the variation may reflect true differences.

The high indigenous perinatal mortality rates in NSW (and Australia) are not found in New Zealand or the USA. For example, in 1993 the perinatal mortality rate for New Zealand Maoris was 5.6 per 1,000 which was less than the New Zealand overall figure of 6.1 per 1,000 (New Zealand Health Information Service 1996). The New Zealand definition of perinatal mortality refers to the period from 28 weeks gestation to seven days after birth.

In the USA between 1992-94 the neonatal mortality rate for Native Americans (including Alaska) was 5.2 per 1,000 compared with 5.3 for the USA overall (US Department of Health and Human Services 1997). In New Zealand and the USA public health measures are aimed at decreasing indigenous infant deaths (post neonatal period) rather than on perinatal mortality.

Table 1. Aboriginal population, births and perinatal deaths by Area Health Service of residence, NSW 2000.

Area Health Service	Aboriginal Population 1996	Number of Aboriginal Births 1996-2000	Aboriginal Perinatal Deaths 1996-2000 (PMR/1000)*	
Central Sydney	4,636	338	10	(29.6)
Northern Sydney	1,798	44	1	(22.7)
Western Sydney	8,278	664	8	(12.0)
Wentworth	4,605	307	6	(19.5)
South Western Sydney	9,344	485	6	(12.4)
Central Coast	3,665	231	3	(13.0)
Hunter	9,199	568	16	(28.2)
Illawarra	6,159	590	11	(18.6)
South Eastern Sydney	4,984	197	3	(15.2)
Northern Rivers	6,964	783	14	(17.9)
Mid North Coast	7,751	959	10	(10.4)
New England	11,123	1,295	20	(15.4)
Macquarie	8,401	1,048	15	(14.3)
Mid Western	5,506	580	14	(24.1)
Far West	7,014	809	20	(24.7)
Greater Murray	6,351	572	6	(10.5)
Southern	3,653	292	2	(6.8)
Not Stated/Other	84	1		(11.9)
Total NSW	**109,430**	**9,846**	**166**	**(16.9)**

(ABS 1996, HOIST MDC Data 1996,1997, 1998, 1999, 2000)

*Perinatal mortality rate per 1,000 population

Statistics on risk factors associated with Aboriginal perinatal mortality and morbidity

Low birthweight

Studies indicate that low birthweight is the major determinant of excess mortality and morbidity in Aboriginal babies (NSW Department of Health 1994). Low birthweight is also a key indicator of a population's health status and the maternal environment (Bhatia and Anderson 1995). In 2000 the percentage of low birthweight Aboriginal babies in NSW was 11.9%. This was almost twice the overall NSW figure of 6.4% – Table 2 p. 20 (NSW Department of Health 2001).

The two perinatal complications most commonly associated with low birthweight are prematurity and intra-uterine growth retardation (small-for-gestational-age) (NSW Department of Health 1994). In 2000 the rate of premature Aboriginal babies was 11.6% which was about one and a half times higher than the NSW overall rate of 7.3% (NSW Department of Health 2001).

The risk factors associated with prematurity are:

- maternal age (women under 20 and over 35 at highest risk)
- parity and marital status (with married/de-facto women at lowest risk)
- first antenatal visit after 12 weeks gestation
- previous spontaneous abortion, induced abortion and stillbirth or neonatal death.

The risk factors associated with intra-uterine growth retardation are:

- maternal age, parity (number of births) and marital status (with married/de-facto multiparous women over 20 years at lowest risk)
- socio-economic status
- first antenatal visit after 12 weeks gestation
- Aboriginality (NSW Department of Health 1994 p.44).

Low birthweight is believed to be associated with the origins of many chronic diseases. For example, the Barker hypothesis links low birthweight babies and small infants to the development of type 2 diabetes and cardiovascular disease later in life (Barker et al.1993). In Aboriginal populations low birthweight has also been linked to end stage renal disease (Hoy et al.1998 Spencer et al.1998).

Under-utilisation of antenatal services

Early and regular access to culturally appropriate antenatal care is a key component of recommendations to improve Aboriginal maternal and infant health (Shearman 1989, *National Aboriginal Health Strategy 1989*, NSW Department of Health 1994, NH&MRC 1996).

In 2000 NSW Midwives Data Collection (MDC) showed that over 25.9% of Aboriginal women presented after 20 weeks for their first antenatal visit compared with 13% of non-Aboriginal women (NSW Department of Health 2001). Late antenatal visits ranged from 10% to 59% across all Area Health Services (Table 2 p.20).

The MDC did not show a statistical association between perinatal deaths and the time of first antenatal visit. However, when the NSW Maternal and Perinatal Committee reviewed each of the 32 Aboriginal perinatal deaths that occurred in 1998, it was found that over one third of mothers had either no antenatal care or fewer than two visits (see 'Review of Aboriginal deaths 1998' p.21).

Lack of appropriate antenatal care can therefore be viewed as a contributing factor to Aboriginal perinatal morbidity and mortality. Other contributing factors are the poor overall health of Aboriginal women associated with social and economic disadvantage and the high adolescent pregnancy rate associated with high rates of health damaging behaviours such as smoking, alcohol and drug use and poor nutrition.

High adolescent birth rate

Studies indicate that adolescent mothers (12-19 years) have an increased risk of prematurity (particularly with repeat pregnancies), low birthweight babies and infants who die during the first year of life (Fraser et al.1995, Akinbami et al. 2000).

Certain characteristics distinguish adolescent pregnancies from that of other pregnant women. Adolescent mothers are a vulnerable group who often come from a deprived socio-economic background and experience low self-esteem. This is associated with increased risk-taking behaviours of smoking and alcohol and drug use during pregnancy and low birthweight babies (Zang and Chan 1991, Adelson et al.1992, Fraser et al. 1995).

Adolescents are also more likely to have a medical or obstetric complication and the heavy episodic alcohol consumption of some adolescents can lead to fetal alcohol syndrome (Zang and Chan 1991, Allard-Hendren 2000). Studies indicate that lack of antenatal care and socio-demographic factors contribute to the poor health outcomes in adolescent births (Zang and Chan 1991, Adelson et al.1992, Fraser et al. 1995).

Births to adolescents are very high in the Aboriginal population and in 2000 the rate was 21.8% in NSW. This was almost four times the non-Aboriginal rate of 4.5% (NSW Department of Health 2001). Single motherhood associated with entrenched poverty is a significant health issue, particularly for adolescents, and between 1986-91 single mothers accounted for 56% of all Aboriginal births in NSW (NSW Department of Health 1994).

Smoking in pregnancy

Smoking during pregnancy is the single most important preventable risk factor for low birthweight babies (NSW Department of Health 1994). Smoking in pregnancy doubles the proportion of low birthweight babies and decreases mean birthweight by an average of 200 gm (Hacker 1999). Australian studies have found that babies of mothers who smoke during pregnancy have a higher rate of perinatal mortality (20-24%), antepartum haemorrhage and preterm delivery and are 17% more likely to be admitted to a neonatal intensive care unit (English and Eskenazi 1992, Wong and Bauman 1997). A South Australian study found that maternal smoking was the attributable risk factor in 48% of Aboriginal small-for-gestational age babies (59% for babies of Aboriginal teenagers) vs 21% non-Aboriginal and for preterm births it was 20% vs 11% non-Aboriginal (Chan et al. 2001).

In 2000, 59.9% of Aboriginal women smoked during pregnancy compared with 17.4% for NSW overall. Depending on the Area Health Service, between 31.9% and 71% of Aboriginal women smoked during the second half of pregnancy. This is the period when the greatest harm is done to mother and baby (NSW Department of Health 2001).

Table 2. Risk factors associated with Aboriginal perinatal mortality and morbidity by Area Health Service of residence, NSW 2000.

Area Health Service	Low birthweight 2000		Premature babies 2000		Smokers in second half of pregnancy 2000		First antenatal visit after 20 weeks 2000	
	No.	%	No.	%	No.	%	No.	%
Central Sydney	7	10.1	8	11.6	22	31.9	25	36.2
Northern Sydney	-	-	-	-	-	-	-	-
Western Sydney	23	16.8	21	15.3	86	64.2	59	44.0
Wentworth	5	7.7	7	10.8	26	40.6	20	31.3
South Western Sydney	10	10.1	14	14.1	52	52.5	44	44.4
Central Coast	10	13.7	11	15.1	33	45.8	10	13.9
Hunter	20	12.7	22	14.0	84	53.8	38	24.4
Illawarra	12	8.7	18	13.0	60	43.5	37	26.8
South Eastern Sydney	-	-	-	–	16	45.7	11	31.4
Northern Rivers	20	11.4	22	12.5	96	54.9	52	29.7
Mid North Coast	19	8.7	16	7.3	125	57.3	32	14.7
New England	26	10.1	27	10.5	135	52.9	46	18.0
Macquarie	30	13.5	18	8.1	107	48.2	57	25.7
Mid Western	24	19.4	23	18.5	73	58.9	27	21.8
Far West	17	11.8	14	9.7	89	62.2	43	30.1
Greater Murray	11	9.9	12	10.8	69	64.5	24	22.4
Southern	8	11.6	7	10.1	49	71.0	15	21.7
Not Stated/Other	-	-	-	-	-	-	-	-
Total NSW	**252**	**11.9**	**247**	**11.6**	**1130**	**55.9**	**546**	**25.9**

Note: Information not shown for Area Health Services where the number of mothers is fewer than five in a group. Babies for which gestational age was less than 37 weeks were classified as premature births. Babies with birthweight less than 2,500 grams were classified as low birth-weight.

Source: *NSW Midwives Data Collection 2000* (HOIST). Epidemiology and Surveillance Branch, NSW Department of Health.

Review of Aboriginal perinatal deaths 1987-90

The NSW Aboriginal perinatal mortality between 1987-90 was 23.5 per 1,000. This was 1.9 times higher than for non-Aboriginal births. A review of data from 120 Aboriginal perinatal death certificates in NSW during this period, identified extreme prematurity as the single most common cause of perinatal mortality (19%). Twenty three percent (23%) of perinatal deaths were associated with maternal complications of pregnancy and 17% with maternal conditions (which could be unrelated to pregnancy). These were mostly hypertensive disorders.

The review also found that Aboriginal women were seven times more likely than non-Aboriginal women to have had less than two antenatal visits during pregnancy and 27% were adolescents, compared with 5% for NSW overall (NSW Department of Health 1994).

Review of Aboriginal perinatal deaths 1998

The NSW Maternal and Perinatal Committee reviewed all 32 Aboriginal perinatal deaths reported to the Midwives Data Collection in 1998. The following information is based on this review.

Nineteen (59%) of the 32 Aboriginal perinatal deaths were stillbirths and 13 (41%) were neonatal deaths. This compares with overall NSW figures of 73% stillbirths and 27% neonatal deaths. The larger proportion of Aboriginal neonatal deaths is probably due to those infants born with extreme prematurity at 20-27 weeks' gestation.

Gestational age	Stillbirths	Neonatal deaths	Total
20-27	6	8	14
28-31	3	1	4
32-36	5	1	6
37-41	5	3	8
Total	**19**	**13**	**32**

There was no, or little (two or fewer visits) antenatal care in 11 (34%) of the deaths. Antenatal care was not recorded in an additional seven records, therefore the true proportion of women who did not have antenatal care could have been as high as 56%.

Cause of perinatal death	Number of deaths	% of deaths
Unexplained death in utero	8	25
Antepartum/post partum haemorrhage, placental abruption	7	22
Birth defects	6	20
Infection*	3	9
Premature ruptured membranes /preterm labour	3	9
Intrapartum asphyxia	2	6
Placental infarction	1	3
Undetermined	1	3
Termination of pregnancy for maternal renal disease	1	3
Total	**32**	**100**

*In addition, two other cases were associated with infection.

In general, Aboriginal women have a higher number of births at a younger age. Of the 32 perinatal deaths, five (16%) occurred in women under the age of 20. Gestational diabetes or diabetes mellitus were associated with five (16%) of the deaths. A further two women were stated to be 'very obese'.

The majority of births to Aboriginal women (63%) and perinatal deaths (69%) occurred in rural areas. The Aboriginal perinatal mortality rates were slightly higher in rural areas but not statistically different. The urban perinatal death rate was 13.2 per 1000 (10.6 per 1000 excluding birth defects) and the rural rate was 17.0 per 1000 (13.9 per 1000 excluding birth defects).

Child Death Review Report 1999-2000

In 1999-2000, 52 Aboriginal children died which was 6.4% of all child deaths in this period. Over two thirds of these children were under 12 months of age and over half of these deaths were from natural causes due to conditions originating in the perinatal period (NSW Child Death Review Team 2000a).

Primary Health Care for Aboriginal communities

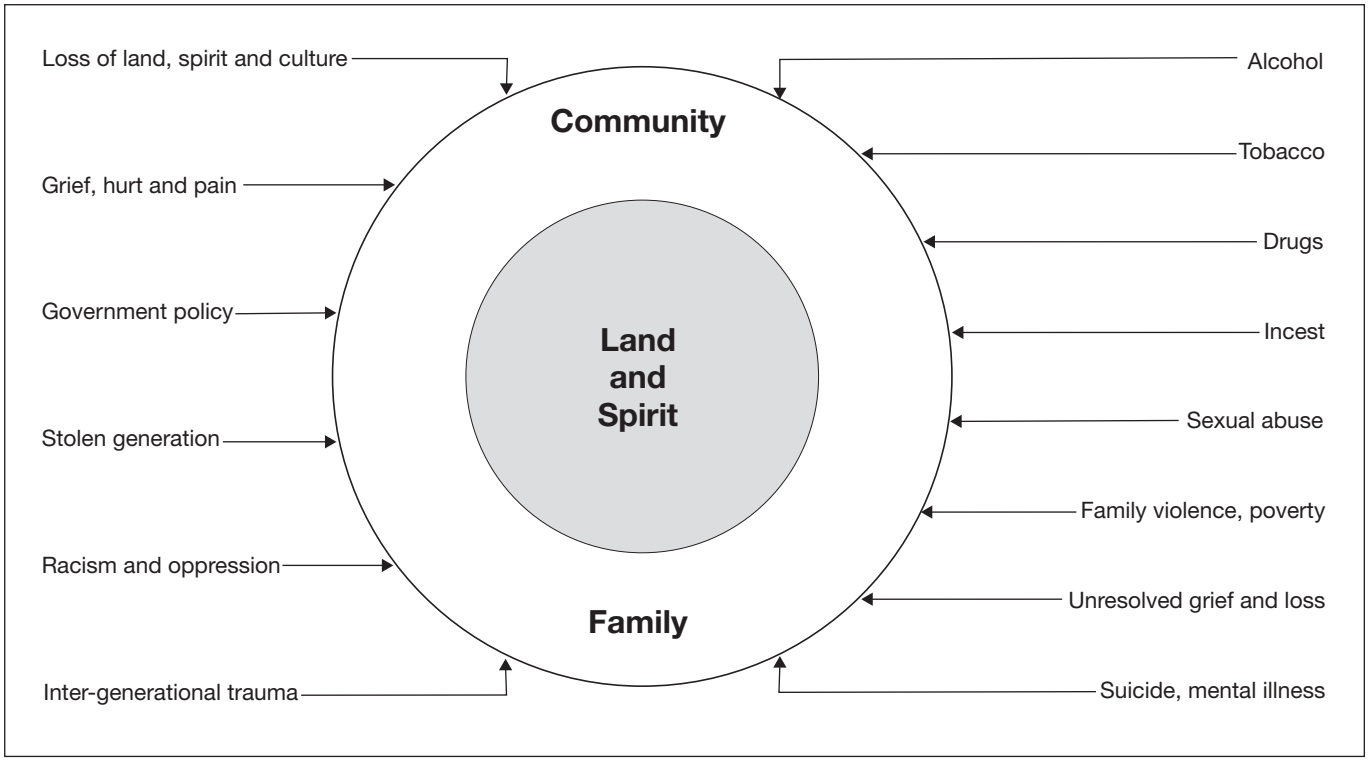
The World Health Organisation (WHO) defines health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO 1978). The Aboriginal definition of health is very similar to this and states that health is 'not just the physical well-being but the social, emotional and cultural well-being of the whole community' (*National Aboriginal Health Strategy* 1989).

Poverty and low educational levels are the most powerful predictors of poor health status and Aboriginal Australians continue to suffer extreme disadvantage in these areas (Mathews 1997). Aboriginal people also associate their ill health with their loss of land and culture and the breakdown of the family structure (Baird 1998).

The frequent deaths, suicides and violence evident in Aboriginal communities have led to a gradual loss of spirit for many Aboriginal people. This has in turn led to feelings of apathy and hopelessness and an increase in the behavioural risk factors of smoking and drug and alcohol use (Baird 1998 – Figure 7 below). The cumulative effect of these multiple losses are recognised for their adverse effects on the health and wellbeing of Aboriginal people in terms of physical and mental health and the cycles of alcohol abuse and suicide (Swan and Raphael 1995, Hunter 1998).

Neglect, sexual abuse and domestic violence in many rural Aboriginal communities have been associated with parental alcohol use (NSW Child Death Review Team 2000b). Many Aboriginal people use alcohol as a way of dealing with the inter-generational cycles of unemployment and violence (Memmot et al. 2001). Noel Pearson, an Aboriginal leader from Cape York in Queensland, believes that alcohol use fuels the violence and makes it more extreme. He blames alcohol addiction for the majority of problems in Aboriginal communities (McKew 2001).

Figure 7. Historical issues related to Aboriginal ill-health



Source: Baird, 1998

The concept of primary health care, as originally defined by the WHO and UNICEF in 1978, has a strong social and political focus. Primary health care goes beyond the pure medical model of alleviating disease and providing health services, to also address the underlying social, economic and political causes of poor health. Figures 8 and 9, p.23 and 24 (James 1993, Werner and Sanders 1997).

There is a strong association between the structural factors that affect indigenous women and the behavioural and medical risk factors which cause low birthweight and perinatal and infant mortality (James 1993). Studies of Aboriginal maternal health in Australia consistently point out the link between Aboriginal women's poor reproductive health and their social and economic disadvantage (*National Aboriginal Health Strategy* 1989, Plunkett et al.1996).

Indigenous women's disadvantaged status exposes them to a wide range of physical and social stressors, such as discrimination, violence and poor housing. How women react to this stress can be related to the strength of their social networks and their links with traditional culture – Figure 9 p.24 (James 1993, McLean D. et al.1993).

Figure 8. Risk factors associated with Aboriginal perinatal mortality and morbidity

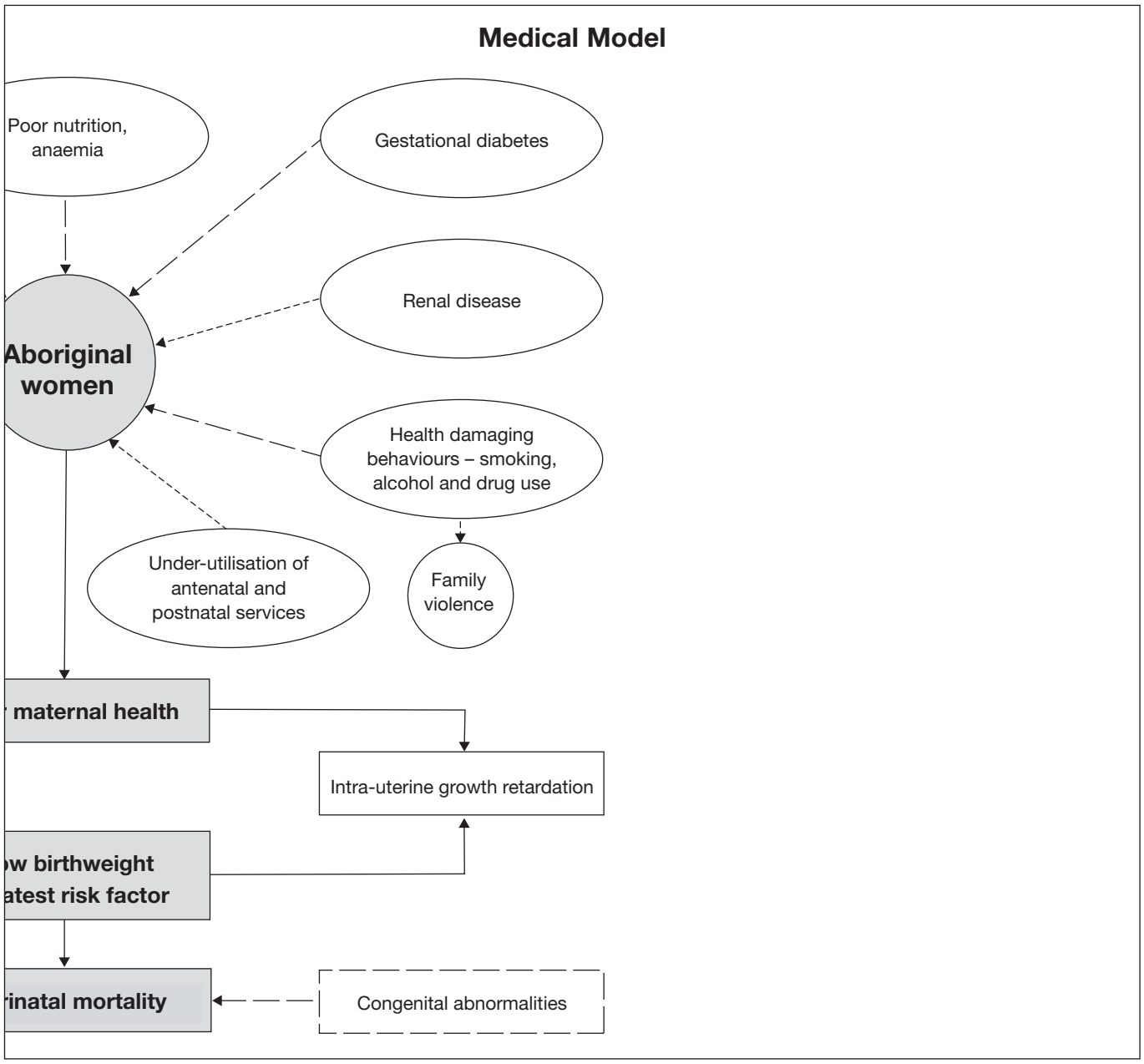
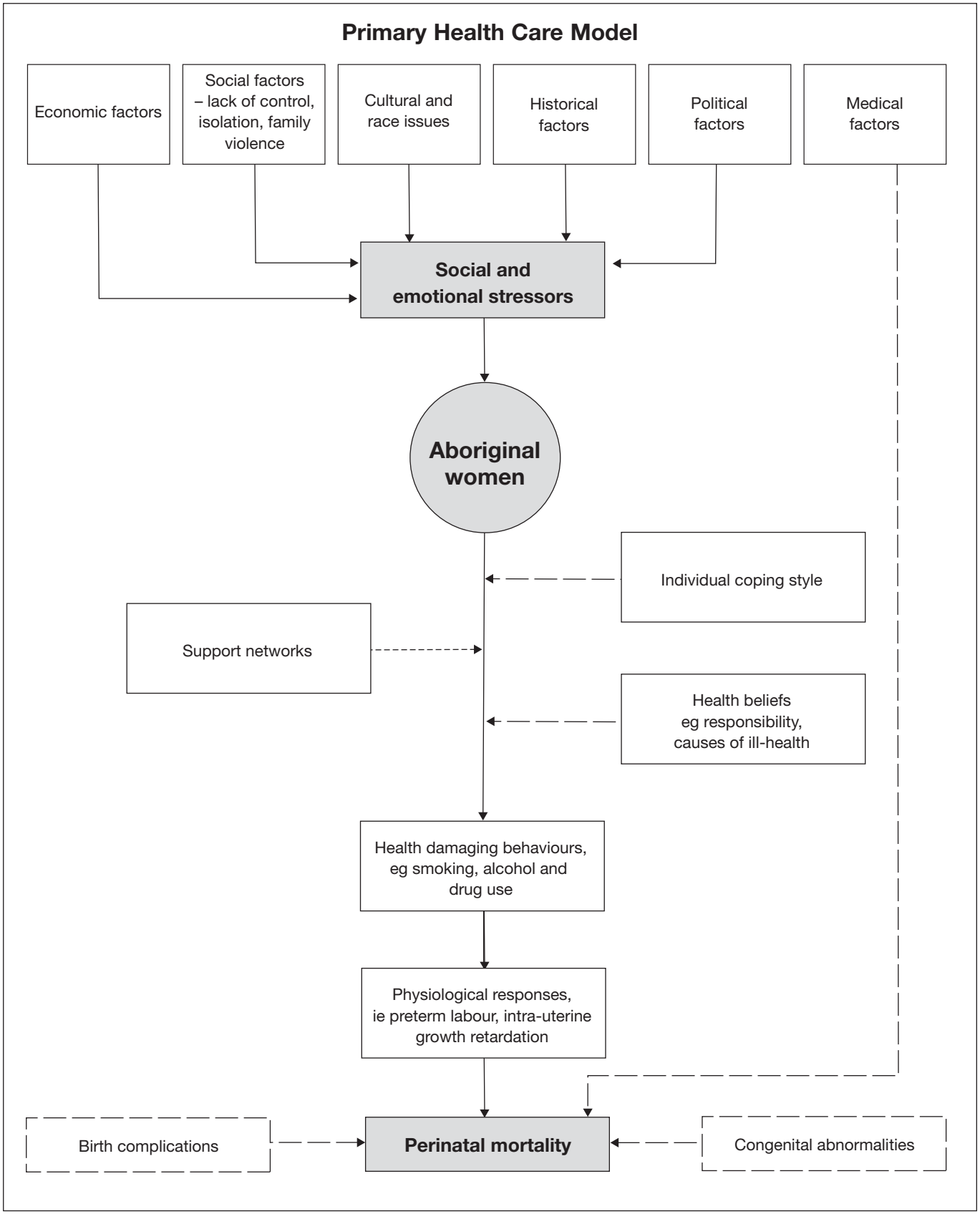


Figure 9. Risk factors associated with Aboriginal perinatal mortality and morbidity



Health care providers' perspectives on risk factors associated with Aboriginal perinatal mortality and morbidity

The following direct quotes obtained from interviews with health care providers across NSW reflect many of the key issues associated with Aboriginal perinatal mortality and effective service provision for Aboriginal women.

Under-utilisation of antenatal and postnatal services

Large numbers of Aboriginal women do not access mainstream services. In 2000, over 22% of Aboriginal women presented after 20 weeks gestation for their first antenatal visit.

The under-utilisation of antenatal and postnatal services by Aboriginal women:

- is associated with inappropriate and inaccessible maternal health services, lack of long-term targeted Aboriginal maternal health programs and the itinerancy of many Aboriginal women
- results in inadequate management of complications during pregnancy and the perinatal period
- leads to increased perinatal mortality and morbidity.

An obstetrician

'It's poor quality antenatal care, just come sometimes and don't do what you tell them, versus no antenatal care.'

A GP

'Girls come for the first visit to see if they're pregnant but they don't come back.'

A hospital midwife

'We don't usually get them [Aboriginal women] till there's a crisis.'

It appears that it is usually the most vulnerable group of Aboriginal women who do not present to services.

A GP

'(Aboriginal) women who don't come in are the ones most 'at risk.'

A midwife

'Itinerant women are the ones with the multiple problems – poor antenatal care, unplanned pregnancies, family violence, non-compliant.'

The irregular use of antenatal services by Aboriginal women is associated with several factors which include: a lack of understanding about the value of antenatal care, the inappropriateness of many services and the cost of consultations with medical practitioners.

A midwife

'It's an attitude thing – they [Aboriginal women] don't see the importance of it [antenatal care] – it's not an issue.'

A midwife

'Antenatal clinics are still like big cattle yards.'

An Aboriginal health worker

'GPs don't bulk bill – they charge $30-45 up-front – Aboriginal women won't take their children in when they're sick, let alone go in for a pregnancy check.'

The attitudes of some health care providers are also a disincentive for Aboriginal women presenting for care. Some continue to have a 'blame the victim' attitude, largely due to a lack of awareness about the complex social issues that impact on many Aboriginal women and can result in non-attendance.

A GP

'It's not the system that's wrong – it's the [Aboriginal] women – they don't follow instructions.'

A women's health nurse

'The social stuff is the most important – this is what impacts on the women – they're not thinking about antenatal care or pap smears.'

A midwife

'Hospital staff can be judgemental – when girls have a low birthweight baby they blame the girls after they've had the baby.'

Postnatal care for Aboriginal women and their babies is often inadequate. Most Aboriginal women leave hospital soon after the birth and can become lost in the system, unable or unwilling to access GP or child health services. As a result, Aboriginal babies can miss out on appropriate follow-up and management.

A GP

'Early discharge means babies are not getting checked by the doctors – Aboriginal women don't come back for the six weeks check.'

A midwife

'Aboriginal women leave hospital too early and are not provided with adequate follow-up – they don't want to go to the early childhood nurse.'

A midwife

'It's hard to get [Aboriginal] women to come back for baby checks – one [baby] with polycystic kidney didn't come back.'

High adolescent birth rate

In 2000 one fifth of the Aboriginal births in NSW were to adolescents, which was four times the non-Aboriginal rate. The high number of Aboriginal adolescent births:

- is associated with social disadvantage, powerlessness and single motherhood
- results in increased behavioural risk factors, eg minimal use of antenatal and postnatal care, poor nutrition, high rates of smoking, drug and alcohol use, unsafe sex
- leads to poor maternal health and increased perinatal mortality and morbidity.

With peer pressure to leave school early and a lack of job opportunities, it appears that there is little incentive for Aboriginal adolescent girls to not fall pregnant.

A doctor

'Girls are drifting around the community because they drop out of school at 15 – they're the community babysitters.'

Many Aboriginal elders express concern about the number of young adolescents giving birth.

An Aboriginal elder

'We're worried about our young girls – kids having kids.'

It appears that Aboriginal adolescents rarely access health services for contraceptive advice.

A GP

'We don't see any Aboriginal girls coming in for the pill – contraception is just not happening.'

A women's health nurse

'The (Aboriginal) girls don't tell anyone – they can't tell the Aboriginal health worker who knows them and the cost of going to a GP is prohibitive.'

Disempowerment of Aboriginal women

Many Aboriginal women feel disempowered and suffer low self-esteem. The disempowerment experienced by many Aboriginal women (and their families) stems from a combination of historical and social factors. The strong Aboriginal kinship traditions have been substantially eroded, largely as a result of the 'stolen generation' and many Aboriginal women fall victim to abuse and violence because of the disharmony evident in communities.

In studies conducted with Aboriginal women in the Mid Western and New England Area Health Services, women stated that their priority health issues were stress and low self-esteem (Central West Public Health Unit 1997, New England Area Health Service 1998). Lack of self-confidence and the perception by many Aboriginal women that they are unable to improve their circumstances has a far-reaching impact on all aspects of their lives.

> ***'Empowerment is the process by which disadvantaged people work together to take control of the factors that determine their health and their lives'.***
>
> Werner and Saunders 1997

Aboriginal women's lack of empowerment:

- is associated with family violence, lack of control over life events, social disadvantage and diminished social support networks
- results in poor self-esteem and health damaging behaviours, eg high rates of smoking, alcohol and drug use, unsafe sex, adolescent pregnancies
- leads to poor maternal health and increased perinatal mortality and morbidity.

A midwife

'Aboriginal women leave themselves last – they're more concerned about how to stop their husbands beating them.'

A midwife

'Aboriginal women won't ask for help!'

A women's health nurse

'[Aboriginal] girls haven't got the self-esteem not to get pregnant – they have to get this from their parents who don't have it either.'

The sense of isolation many women experience also affects the manner in which they are able to participate in community activities and make use of health services.

An early childhood nurse

'Aboriginal women are still very shy – young women are socially isolated – they don't get out of the house – won't come to meetings.'

An Aboriginal health worker

'(Aboriginal) women are too shy to ask doctors to explain things – they don't hear what they say – they're too frightened.'

Social, economic and political factors

The structural, economic and political factors surrounding Aboriginal disadvantage are intrinsically linked to the behavioural and medical risk factors associated with Aboriginal ill-health. Structural factors:

- are associated with Aboriginal women's exposure to a wide range of risk factors which include loss of culture, discrimination, poverty, low levels of education, few employment opportunities and lack of control
- result in increased behavioural and medical risk factors, eg poor nutrition, high rates of smoking, drug and alcohol use, adolescent pregnancies
- lead to poor maternal health associated with low birthweight babies and increased perinatal mortality and morbidity.

Many service providers feel that these factors severely mitigate the effectiveness of health services.

A midwife

'We can get live babies but then we send them home to what? It's the poverty, the poor education, the violence – children don't get the support they need – there's no food in the fridge – if women don't give their pensions to their men they get beaten.'

A midwife

'The women still smoke cigarettes and dope heavily during pregnancy – there are a lot of small babies as a result of this.'

A GP – Aboriginal Medical Service

'We aren't having any effect on drug use during pregnancy.'

In rural and remote NSW there has been a downturn in employment opportunities. This has been particularly hard for Aboriginal people who, largely due to race issues and low educational levels, are more disadvantaged when seeking employment than their non-Aboriginal counterparts.

A midwife

'Some towns have serious viability problems – (a particular community) has had the mine and the abattoir close.'

A GP

'Because of the downturn in the rural industry Aboriginal men aren't employed like they used to be 15 years ago – stations used to employ four to five men – now they're lucky to employ one.'

A GP

'Aboriginal people are suffering from generational unemployment.'

It appears that the lack of paid work, particularly for Aboriginal men, is undermining the fabric of many Aboriginal communities.

An Aboriginal health worker (male)

'Men need a feeling of self-worth – family violence is from men wanting to assert their will – males got no role.'

An Aboriginal health worker

'Millions have gone into [a particular community] – communities don't have any self-esteem – people are getting money to do nothing – too many handouts.'

A midwife

'There are no functioning elders here – there's a big breakdown in the extended family in Aboriginal communities – it's not there anymore.'

Disadvantage and lack of control are factors frequently associated with increased behavioural risk factors and the high rate of smoking in Aboriginal communities is a clear example of this.

A public health physician

'Smoking is a proxy for all the social things going on.'

A paediatrician

'90% of the Aboriginals smoke in [a particular community] – every household needs inhalation medicines.'

Practices which have improved the risk factors associated with Aboriginal perinatal mortality and morbidity

3

Under-utilisation of antenatal and postnatal services

Antenatal care for high risk women

Although there is considerable debate about the value of all pregnant women receiving the standard number of 12-14 antenatal visits per pregnancy, it is unquestionable that for women who are considered high risk, regular antenatal care which begins early in pregnancy, is critical.

The Victorian Consultative Council on Obstetrics and Paediatric Mortality and Morbidity identified the most important avoidable factors for stillbirths as inadequate antenatal monitoring of fetal well being in high-risk pregnancies (24%) and inappropriate management of the growth restricted fetus (10%). (The Consultative Council on Obstetrics and Paediatric Mortality and Morbidity 1998).

Antenatal care for Aboriginal women

Given the high Aboriginal perinatal mortality rate, it is clear that Aboriginal women fall into a high-risk category. However, almost one third of Aboriginal women present late in pregnancy for their first antenatal visit and many attend irregularly for subsequent visits. In addition, Aboriginal women rarely access antenatal classes or parent groups and many do not use postnatal services.

The provision of accessible and appropriate antenatal care early in pregnancy has been a key recommendation of all the major studies undertaken on Aboriginal maternal health since 1989, ie *the National Aboriginal Health Strategy* (1989), the S*hearman Report on Obstetric Services in NSW* (1989), the *NSW Department of Health's Review of Aboriginal Perinatal Morbidity and Mortality* (1994), the *NH&MRC's Options for Effective Care in Childbirth* (1996) and the *NSW Framework for Maternity Services* (2000b).

Antenatal care provides an invaluable opportunity for health care providers to link Aboriginal women into other community support services, as well as provide comprehensive medical management of pregnancy complications. This is particularly relevant for young Aboriginal women because antenatal visits are often their first contact with the health system.

One of the key barriers to many Aboriginal women accessing antenatal services is a lack of awareness about the need for antenatal care. A western Sydney study found that an important role for health care providers is to develop a 'culture of antenatal care' for Aboriginal women where they can learn about the value of regular antenatal care and the factors which affect the growth of the fetus. Developing a 'culture of antenatal care' encourages women to take more responsibility for their health during pregnancy and increases their use of antenatal services (Daruk Aboriginal Medical Service and Western Sydney Public Health Unit 1998).

Midwifery models of care

There are a variety of midwifery models of care. These include midwives clinics, team midwifery, independent midwifery, birth centre care by midwives and domiciliary midwifery. Midwives are the main health care providers in these models and work in collaboration with a medical team.

Evidence from national and international randomised controlled trials demonstrates that when compared with specialist/GP care, midwifery care does not have an adverse impact on the health outcomes of women and babies (NH&MRC 1998). A systematic review comparing continuity of midwifery care with standard maternity services found that there was no statistically significant difference in perinatal outcomes. This was probably due to a 'lack of power' in the statistical analysis (Waldenstrom and Turnbull 1998 p.1169).

Statistical studies in the United Kingdom and Australia also showed that with midwifery models of care, women were more satisfied during all phases of pregnancy, were more likely to have a normal birth without medical intervention and received less frequent pharmacological pain relief (*NH&MRC* 1998, Waldenstrom and Turnbull 1998).

Midwife/Aboriginal health worker programs

The midwifery model used in Aboriginal maternal health programs is a shared care arrangement between midwives and an obstetrician and/or general practitioner. Midwives work in partnership with Aboriginal health workers to provide care which is culturally appropriate and sensitive to the needs of Aboriginal women (Appendix 2).

Descriptive studies from NSW and Queensland indicate that Aboriginal women find the individualised care provided by the midwife/Aboriginal health worker programs an acceptable and very appropriate form of service delivery. This is demonstrated by their high attendance rates and high satisfaction levels (McDonald and Morero 1996, Jarrett et al.1998, Daruk Aboriginal Medical Service and Western Sydney Public Health Unit 1998, Macquarie Area Health Service 1998, New England Health 1998, NSW Department of Health 1998a).

Midwife/Aboriginal health worker programs provide outreach services, home visiting and a transport service, which are all critical to increasing the use of antenatal and postnatal services by Aboriginal women.

Continuity of care and the development of trusting relationships with Aboriginal women are central to the effectiveness of the midwife/Aboriginal health worker teams. By developing a rapport with Aboriginal women, the teams are able to establish a non-threatening environment where women feel comfortable and receptive to antenatal care.

Program staff provide support for Aboriginal women who often present with complex social problems which require immediate and time-consuming solutions. When necessary, women are accompanied to hospital for referrals and specialist consultations. This helps to dispel many Aboriginal women's fear of the medical system and increase their willingness to be admitted to hospital when complications occur (Daruk Aboriginal Medical Service and Western Sydney Public Health Unit 1998).

The following section describes four programs which have demonstrated their effectiveness in improving health outcomes for indigenous women and babies.

Other programs in Australia which have demonstrated their effectiveness in improving outputs (eg increasing the number of Aboriginal women attending for care) are: the Aboriginal Maternity Service, Tamworth (New England Health 1998), Durri AMS Djuligalbhan Maternity Program, Kempsey (Jarrett et al. 1998), Ngua Gundi (Mother and Child) Program, Rockhampton, Queensland (Dorman 1997) and Congress Alukura, Northern Territory (Territory Health Services 1997).

Daruk Aboriginal Medical Service (AMS) Program

- A midwife/Aboriginal health worker team based at Daruk AMS provide antenatal, intra-partum care (when required), postnatal care, transport and outreach services for Aboriginal women at Mt Druitt, in western Sydney.
- The team works in collaboration with an AMS general practitioner and a visiting obstetrician and has developed a successful partnership with the maternity unit at nearby Nepean Hospital.
- Continuity of staff (over seven years) and the team's non-judgemental approach to providing care for Aboriginal women within the context of their families are two features of the program's effectiveness.
- The Daruk team provides 'cultural awareness' workshops for local hospitals and has contributed substantially to improving the links between all health care providers who deliver services to Aboriginal women in the area.

Outcomes

An evaluation of the Daruk AMS program found that from 1990-1996 the service provided care for approximately 40% of the Aboriginal women from the Western Sydney and Wentworth Area Health Services. Thirty six percent (36%) of Daruk women presented in the first trimester of pregnancy compared with 25% at Nepean Hospital and 21% at Blacktown Hospital. The Daruk program developed a 'culture of antenatal care' among Aboriginal women who prior to the program's establishment rarely presented to mainstream services for care.

Although Daruk women experienced more antenatal risk factors (eg hypertension, gestational diabetes) than Aboriginal women who attended local hospital services, there was no consequent increase in birth or postnatal morbidity or mortality. This was associated with the high uptake of the Daruk service and the comprehensive management of complicated pregnancies (Daruk Aboriginal Medical Service and Western Sydney Public Health Unit 1998).

Nganampa Health Council Program

- Midwife/Aboriginal health worker teams provide maternal health care for traditional Aboriginal women on the Anangu-Pitjantjatjara (AP) Lands in South Australia.
- The teams provide an active outreach service to 'homeland' communities to ensure women receive adequate follow-up during pregnancy and the postnatal period.
- Midwives and Aboriginal health workers closely adhere to the CARPA Women's Business Manual clinical care protocols and medical support is provided by medical practitioners on the AP Lands and specialists at Alice Springs Hospital (Congress Alukura and Nganampa Health Council Inc. 1994).

Outcomes

Between 1984 and 1996 perinatal mortality decreased from 45 per 1,000 to 9 per 1,000 and low birthweight decreased from 14% to 8%. There was also a marked increase in the detection and treatment of gonorrhoea, chlamydia and urinary tract infections during pregnancy. Preliminary data analysis associated improved perinatal outcomes with the improved management of infections during pregnancy.

Caveat

During the same period similar perinatal improvements were seen in comparable Aboriginal communities in the Northern Territory. However, these were primarily in urban Aboriginal women (unpublished data – conference proceedings Sloman et al. 1999).

Other midwifery models of care

Northern Plains Healthy Start Program (NPHS), USA

- In 1991 the United States Congress provided five-year funding for the Healthy Start Program to reduce infant mortality in communities which had high infant mortality rates and the capacity to develop community-based solutions.
- The Healthy Start program received strong support from the US Congress and in 1996, funding was extended by a further three years in all 15 demonstration projects.
- The NPHS project covers 19 Native American tribal organisations across the four states of Iowa, Nebraska, North Dakota and South Dakota.
- A key component of the NPHS project is the provision of individual case management for pregnant women by mostly indigenous lay workers experienced in delivering programs for mothers and babies.
- The programs provide a transport service, one-on-one health education, an incentive program to encourage indigenous women to attend antenatal clinics and well-baby appointments and a targeted adolescent pregnancy program.

- Home visits are an important feature and provide an opportunity to assess the risk factors associated with the causes of infant death and to engage pregnant women (as well as their family members), in educational activities.
- Particular emphasis is placed on Native American culture to guide the development of promotional and educational materials and the use of traditional elders as role models.

Outcomes

Infant mortality in the Northern Plains decreased from 18.9 per 1,000 in the 1984-88 period to 12.6 per 1,000 in the 1995-1996 period of the program's operation. A major achievement of the project was to demonstrate that different tribes could come together on a collaborative venture to share resources and learn from each other (Howell et al. 1999).

Caveat

Infant mortality rates also decreased in comparison areas during this period.

Guildford County Antenatal Program, USA

- Midwife practitioners provide maternal health services for women at Guilford County Health Department, North Carolina, in the USA.
- Midwives spend a large amount of time advising women about nutrition during pregnancy, providing referrals to the Women, Infants and Children program and actively following up missed appointments.

Outcomes

A study of 800 low socio-economic Afro-American women at Guilford County found that women who received antenatal care from private practitioners were twice as likely to have a low birthweight baby than women who received care through the midwifery service at the Guilford County Health Department.

The difference in outcomes was associated with the fact that the midwifery service provided low-income women with a female support system which not only addressed their medical needs but also their social and psychological needs (Buescher et al.1987).

High adolescent birth rate

Adolescent mothers delay presenting for antenatal care for a variety of reasons which include: lack of family support, lack of motivation, denial of the pregnancy, fear and the cost of care (Lee and Grubbs 1995). Antenatal care which is specifically designed for adolescents has been found to increase attendance and improve pregnancy outcomes for adolescents (Smoke and Grace 1988 cited by Lee and Grubbs 1995).

An adolescent specific maternal health service

CHAAS (Collaborative Health Adolescent Antenatal Services) Program, NSW

- In 1996 the 'Baby CHAIN' pilot program was established in Wollongong to meet the needs of pregnant adolescents who were not accessing mainstream antenatal services.
- Baby CHAIN was an offshoot of the non-government organisation CHAIN (Community Health for Adolescents in Need) funded through the Innovative Services for Homeless Young People initiative. Baby CHAIN is one of several NSW programs providing services for pregnant adolescents.
- The CHAAS program evolved in response to the success of 'Baby CHAIN' and had an explicit focus on establishing an effective partnership with the Illawarra Area Health Service Maternity and Paediatric Services.
- CHAAS is a joint venture of CHAIN and the Community Midwives program at Wollongong and Shellharbour Hospitals.
- CHAAS provides 'at risk' adolescent girls with antenatal and postnatal care, health education, transport, a postnatal support group and a playgroup, while addressing their social needs, such as housing, finance and family support.
- The key elements of CHAAS are: its flexible and non-judgemental approach, the continuity of care provided by midwives, its location in a non-institutionalised, youth friendly environment, a drop-in service and activities which are client driven.

Outcomes

A process evaluation indicated that the program had developed an effective collaborative service. 'At risk' adolescents who previously rarely used antenatal services, were now regularly attending the CHAAS service. Young women from the pilot 'baby CHAIN' group acted as peer consultants for subsequent groups and co-facilitated educational sessions. Descriptive information indicated that Aboriginal girls found this program very accessible and attended the service regularly (NSW Department of Health 1999c).

An adolescent pregnancy prevention program

Northern Plains Healthy Start Program, USA

- The aim of the Northern Plains Healthy Start program is to reduce infant mortality across 19 Native American tribal organisations.
- The project identified adolescent parenting (12-17) as one of the important contributors to infant mortality and a targeted public information campaign based on pregnancy prevention and regulated birth planning was developed.
- Adolescents were given individual case management and provided with an educational program about the adverse consequences of early parenting. A very effective feature of the program was a travelling photographic exhibition titled, 'Diary of a teen mother'.
- The program had a strong emphasis on Native American culture.

Outcomes

The adolescent pregnancy rate decreased from 54 to 44 per 1,000 from the 1984-88 baseline period to the1995-96 period of full program operation. The program's effectiveness was largely due to educational information being directed not only at adolescents but also at the extended family and community members (Howell et al.1999).

Disempowerment of Aboriginal women

Powerlessness associated with low socio-economic status is acknowledged as a general risk factor for poor health (Wallerstein 1992). The empowerment of Aboriginal women is intrinsically linked to their ability to take more responsibility for their own health and that of their babies.

The *NSW Framework for Maternity Services* recommends the establishment of community development programs with Aboriginal women. The aim of these programs is to improve Aboriginal women's health and well-being by maximising their involvement in decision-making regarding healthy lifestyles (NSW Department of Health 2000b).

Studies show that two of the strongest motivators for accessing early antenatal care are first, the belief that antenatal care will ensure a healthy baby and second, sufficient support and encouragement for women to start care early (National Institute of Medicine 1987).

A study conducted with Aboriginal women in the Mid Western Area Health Service found that Aboriginal women have a vital role to play in educating their communities as peer educators (Central West Public Health Unit 1997). By providing pregnant women with health education, resource information and a female support network, peer educators can empower Aboriginal women with knowledge and enable them to increase their use of available services.

The following two models of care describe the effectiveness of peer education programs.

'Strong Women, Strong Babies, Strong Culture' (SWSBSC) Program, NT

- The 'Strong Women, Strong Babies, Strong Culture' Program is a peer education program based in nine traditional Aboriginal communities in remote areas of the Northern Territory.
- Key Aboriginal women are selected by their communities and trained to provide education (primarily about nutrition during pregnancy), as well as other women's health issues.

- The SWSBSC Program workers develop activities to improve the nutritional status of pregnant women in collaboration with nutritionists, Aboriginal health workers and midwives (Department of Social and Preventative Medicine, University of Queensland 1998).

Outcomes

From 1990 to 1995 low birthweight dropped from 19.8% to 11.3%, Aboriginal women attended earlier for antenatal care and the rates of chlamydia and gonorrhoea decreased. During the same period low birthweight in other Top End rural communities dropped from 17.4% to 15.9%. Importantly, the SWSBSC program workers increased their women's health knowledge and gained skills in running workshops and developing educational resources.

Caveat

As there was no formal control group, it is not possible to state with certainty that the SWSBSC program produced the improvements. However, it is likely that the program had a positive effect (Mackerras 1998).

'de Madres a Madres' Program, USA

- The 'de Madres a Madres' (mothers to mothers) Program was established in 1989 in Houston, USA, to increase Hispanic women's access to antenatal care. The program is based on the premise that 'knowledge is power'.
- The two principles underlying the program are:
  1. The empowerment of women by providing culturally relevant information.
  2. The ability of communities to address their own health needs.
- Volunteer mothers supported by community health nurses provide community resource information (eg health care, legal aid, food and clothing) and a follow-up home visit or phone call to all pregnant women before they enter the health system.
- Each volunteer receives a training session from the community nurse and develops skills in writing proposals, budgeting and working with community funding agencies.
- In the program's fifth year, two volunteer mothers became paid staff members and the role of professional staff gradually diminished as community women took over the management of the program.
- The women also established a community centre and started a craft business to provide more funds for their outreach services.

Outcomes

From 1989 to 1993 over 7,000 Hispanic women received information and resources about pregnancy. During the same period infant mortality decreased from 16.5 per 1,000 to 11.4 per 1,000 and no low birthweight babies were born.

Community women were empowered by being part of decision-making at every level, developing leadership skills and spending time in the community centre (McFarlane and Fehir 1994).

Social, economic and political factors

Policy change

It is widely acknowledged that social, economic and political factors are fundamental determinants of health (National Advisory Committee on Health and Disability 1998, Wilkinson and Marmot 1998). Countries which have implemented policies to reduce poverty and bring about a more equal distribution of resources are also the countries which have made most progress in reducing infant mortality, such as in Kerala State, India (World Bank 1993, Benzeval et al.1995).

Kerala State, India

Although Kerala State is one of the poorest states in India, over the past 30 years the government has given a high priority to improving the population's basic education and health levels (World Bank 1993).

Outcomes

90% of adults in Kerala State are literate compared with 52% in India overall and infant mortality dropped to 10 per 1,000, compared with 81 per 1,000 in India overall.

Community development

The main objective of community development is to address structural factors and achieve social change by empowering communities to take control of the factors that contribute to ill-health (Shiell and Hawe 1996). The following two examples describe community development projects with Aboriginal communities.

Neighbourhood Improvement Project, NSW

- South Kempsey is a public housing estate in NSW with over 80% Aboriginal tenants. In 1996, in a bid to improve conditions and make South Kempsey a better place to live, the Department of Housing developed the South Kempsey Neighbourhood Improvement Project (SKNIP).
- The Department of Housing has established similar projects in Goonellabah (Lismore), South Inverell, South Moree and in the Sydney suburb of Airds.
- The Kempsey project is a joint venture of the South Kempsey Aboriginal community, the Department of Housing, Djigay Aboriginal Education Centre, the North Coast TAFE and the Guri-wa Ngundagar CDEP (Community Development and Employment Program).
- Other participating organisations are the Kempsey Shire Council, Durri Aboriginal Medical Service, South Kempsey Primary School, Melville High School and the Kempsey Police.

Outcomes

In three years SKNIP achieved a 6% reduction in vacancy rates, reduced vandalism and improved the appearance of houses in the area. The SKNIP program established several sports teams, a playgroup, a community garden group, a landscaping and building program and a community house for youth programs and outreach services. The program provides regular craft afternoons for Aboriginal elders.

Importantly, the project has been the catalyst for rebuilding and strengthening the Aboriginal community in South Kempsey (SKNIP community newsletter, *The Macleay Argus* 1998).

Schools as Community Centres Program, NSW

- The Schools as Community Centres Program was established as a pilot program in 1995 and jointly funded by the NSW Department of Health and Department of Education and Training and Community Services. In 1998, the Department of Housing became involved in the program as a joint sponsor.
- The NSW Schools as Community Centres model has been included in the Government's Families First framework.
- The Schools as Community Centres Program works with families to:
  - support families with young children to ensure children have a healthy and positive start to school
  - influence the planning and integration of service delivery to better meet the needs of families with young children
  - strengthen communities through community participation in decision-making processes relating to the provision of services
  - improve inter-agency collaboration.
- Projects operate from the local primary school and a facilitator is employed at each of the sites. A local committee comprised of senior representatives from the participating departments manages each project and an inter-sectoral state steering committee manages overall program development.
- The program operates in six areas: Redfern (Central Sydney AHS), Chertsey (Central Coast AHS), Coonamble (Macquarie AHS), Curran (South Western Sydney AHS), Kempsey (Mid North Coast AHS) and Kelso (Mid Western AHS). A number of these centres have a high proportion of Aboriginal children and families in the local community.
- Initiatives are community-driven and each program is tailored to meet local community needs.

Outcomes

An evaluation of the program demonstrated that it had successfully met its objectives. The program resulted in major gains in school readiness, attendance at school, provision of local support for parents and improved inter-agency cooperation.

For example, the 'Connect Redfern' program for kindergarten children increased enrolments in the first quarter of school, decreased absenteeism and increased attentiveness and readiness to learn.

The program increased the sense of cohesion in the Aboriginal community by enabling Aboriginal families to participate in decision making and develop initiatives. This was indicated by the increased participation by the Aboriginal community in community events (Fletcher and Alperstein 1999).

Schools as Communities also promotes access to services for other disadvantaged groups and provides an appropriate facility for the development of many inter-sectoral programs for young children and their families (Cant 1997).

Another initiative of the NSW Department of Education is the 'Young Mothers in Education Project'. This project informs school communities about the ways they can help pregnant adolescents and young mothers to continue their education without discrimination. The resource provides current information to assist teachers in understanding the needs of young mothers and to improve the links between schools and community agencies.

Health services for Aboriginal women 4

Aboriginal population and births

NSW Aboriginal population

In 2001 the number of Aboriginal people in NSW was 119,865 (1.9% of the total NSW population) of which 27,462 were women of childbearing age (15-44) (ABS 2002). The 1999 ABS estimates indicate that the highest proportion of Aboriginal people live in the following Area Health Services:

- New England – 10.2%
- South Western Sydney – 8.5%
- Hunter – 8.4%
- Macquarie – 7.7%
- Western Sydney – 7.6% (Figure 10 p.38)

Number of Aboriginal births in NSW

The five Area Health Services with the largest number of births to Aboriginal women during the 1996-2000 period were:

- New England – 1,295
- Macquarie – 1,048
- Mid North Coast – 959
- Far West – 809
- Northern Rivers – 783
  (Figure 10 p.38 and Appendix 3 – HOIST)

Maternal health services for Aboriginal women

Aboriginal women and their babies receive health services from a combination of service providers. These include:

- obstetricians
- neonatologists/paediatricians
- general practitioners (in mainstream and ACCHSs)
- midwife/Aboriginal health worker teams (in mainstream and ACCHSs)
- hospital clinics – doctors and/or midwives clinics
- adolescent specific services
- community midwives
- Aboriginal maternal and child health liaison workers
- early childhood health nurses
- child, family and adolescent nurses

Other community services for Aboriginal women include: parent educators, women's health nurses, drug and alcohol services, sexual health, youth and mental health services.

Specialist and general practitioner services

Obstetric and paediatric services are widely available in NSW. However, in the remote areas of the Far West and New England Area Health Services, specialist services are flown in from regional and/or metropolitan centres on a two to four weekly basis. There are also 215 general practitioners in rural NSW with obstetric qualifications.

Additional hospital services

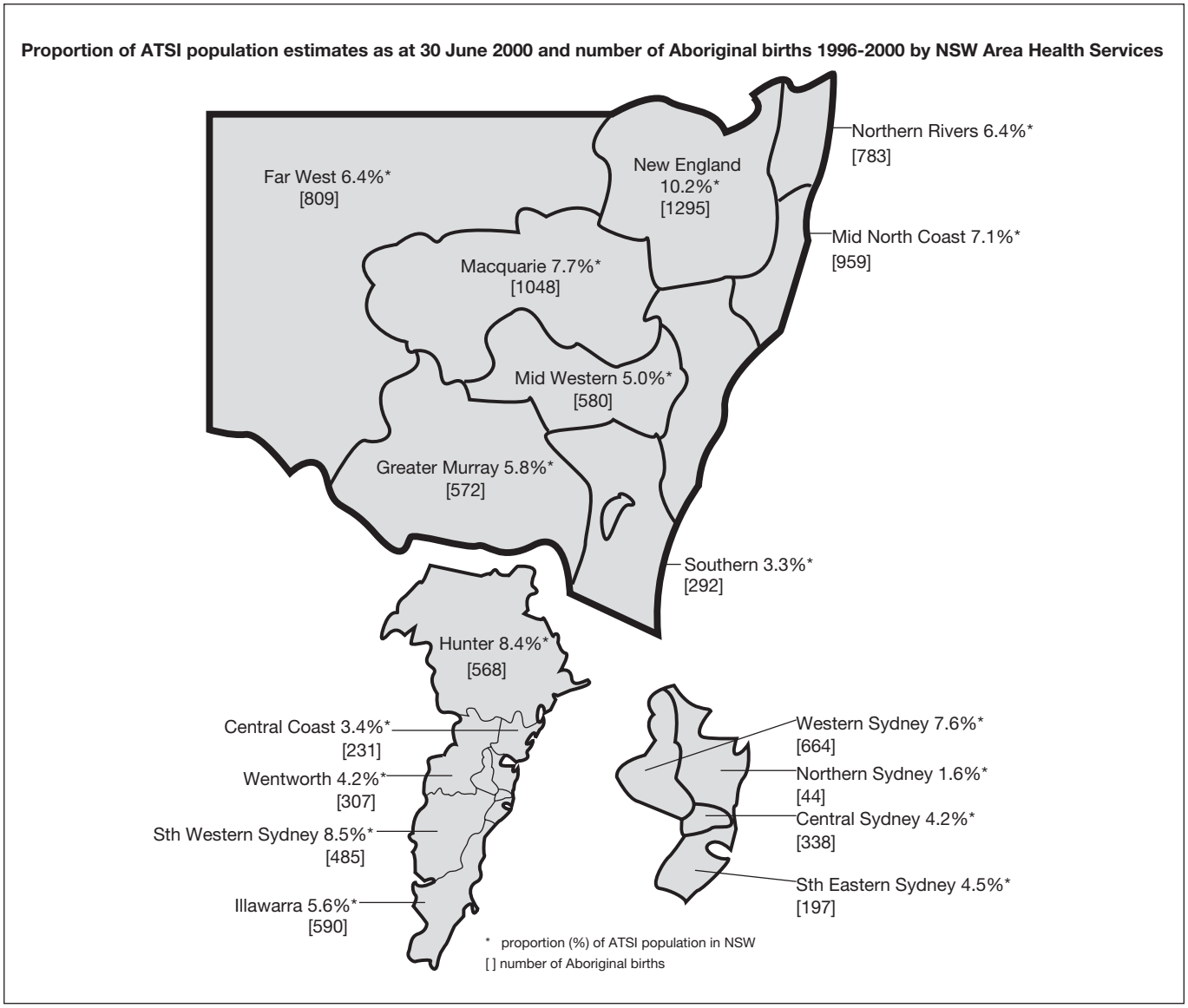
Midwives, Aboriginal Health Workers, Aboriginal liaison officers

Some Area Health Services (AHSs) have employed midwives, child and family workers, Aboriginal health workers, Aboriginal liaison officers and Aboriginal health education officers to provide care specifically for Aboriginal women. These staff are attached to either maternity units or community health centres. Their roles range from the provision of clinical care through to providing health education and liaison between Aboriginal women, hospital services and community-based services.

The following examples illustrate this approach:

- Liverpool Hospital in South Western Sydney AHS employs an Aboriginal midwife to provide antenatal care for Aboriginal women two days per week at the maternity unit and an outreach clinic at a local community health centre.

Figure 10. Aboriginal population/Aboriginal births by Area Health Service



- King George V Hospital in Central Sydney AHS employs an Aboriginal midwife/consultant and two Aboriginal health education officers to provide a liaison service for Aboriginal women, particularly from rural and remote areas.
- Illawarra AHS employs a part-time Aboriginal child and family worker and a part-time child and family nurse for Aboriginal families in Nowra and a full-time child and family nurse for Aboriginal families in the Northern Illawarra.
- Grafton Hospital in the Northern Rivers AHS is establishing a part-time midwife position to provide outreach services for Aboriginal women in Baryugil.

Aboriginal maternal and child health liaison workers

There are five Area Health Services with Aboriginal maternal and child health liaison workers attached to the community health teams. Their roles differ from area to area but generally include:

- a 'cultural brokerage' role (which enables non-Aboriginal child and family health workers to visit Aboriginal women in their homes)
- liaising between medical practitioners and Aboriginal women
- assisting women to have regular antenatal and postnatal care and women's health checks

- ensuring childhood immunisations are up to date
- assisting Aboriginal women to link into early intervention services.

These positions are located in:

- South-East Sydney – SE Sydney Maternal and Child Health Program
- Northern Rivers – Tweed Hospital Community Midwives Program
- Mid Western – Orange Hospital Child, Family and Adolescent Health Program
- New England – Tamworth Child and Family Health team
- Far West – Bourke Community Midwives Program

Aboriginal health worker maternal health courses

1. The School of Public Health and Tropical Medicine at James Cook University, Townsville, in partnership with King George V and Nepean Hospitals in Sydney, provides a four week maternal health program for Aboriginal health workers. The aim of the program is to equip Aboriginal health workers with practical and theoretical knowledge to improve the care of Aboriginal women during pregnancy, childbirth and the postnatal period. To date, 30 Aboriginal health workers from NSW have completed the course.
2. The Flinders University, in South Australia, offers a four day workshop in Maternal and Newborn Health for Aboriginal Health Workers titled, 'Safe Birthing, Looking After Our Future'. The course aims to support the work of Aboriginal health workers in improving the health of mothers and newborn babies.

Midwife/Aboriginal health worker programs

Midwife/Aboriginal health worker programs are located throughout NSW. Five of these programs have been funded since 1993 – four from the Alternative Birthing Services Program (ABSP) and one from Women's Health funds. All five programs are located in Aboriginal Medical Services. These programs are located at:

• Kempsey	Durri AMS	ABSP funds
• Walgett	Walgett AMS	ABSP funds
• Campbelltown	Tharawal AMS	ABSP funds
• Wollongong	Illawarra AMS	ABSP funds
• Mt Druitt	Daruk AMS	Women's Health funds

Midwife/Aboriginal health worker programs have also been funded by Area Health Services in:

• Tamworth	New England	AHS funds
• Casino (AMS)	Northern Rivers	AHS funds

The ABSP is a component of the Public Health Outcomes Funding Agreement (PHOFA) and has provided funding to improve Aboriginal maternal health since 1993. The ABSP has also provided short-term funding for innovative Aboriginal maternal health initiatives in Area Health Services and Aboriginal Community Controlled Health Services.

Examples of initiatives which were funded by the ABSP in 1998-99 are:

- an Aboriginal health worker position to improve breast feeding rates (Nowra)
- a midwife position to improve liaison between Blacktown Hospital and Daruk AMS
- an educational program for midwives in the Far West
- a feasibility study to improve care for Aboriginal women (Taree)
- a research project to improve liaison between Redfern AMS and King George V Hospital (see Appendix 5).

2000-2001 Initiatives

In December 2000, NSW Department of Health allocated recurrent funds for the *NSW Aboriginal Maternal and Infant Health Strategy*. The Strategy funds:

- six AHSs to provide primary health care (PHC) programs for Aboriginal women
- one AHS (Northern Sydney) to provide a training and support program for midwives and Aboriginal health workers
- an evaluation strategy.

The components of the PHC programs consist of a midwife, an Aboriginal health worker, GP services, training and support, a vehicle, community consultation and community peer education. The PHC programs are located in the following Area Health Services:

- Far West
- Macquarie
- New England
- Mid North Coast
- Hunter
- Mid Western

Three additional midwife/Aboriginal health worker programs were established with ABSP funds in the following Area Health Services:

1. Southern
2. Northern Rivers
3. Greater Murray

Adolescent specific services

Specific adolescent antenatal and postnatal services for both non-Aboriginal and Aboriginal young women are located in:

- four non-metropolitan Area Health Services – Illawarra, Greater Murray, Macquarie and Hunter
- four metropolitan Area Health Services – Western Sydney, Wentworth, South Western Sydney, Central Sydney.

See Appendix 6 for detail on adolescent services in NSW.

Community Peer Education Program

- The Mid Western Area Health Service in Orange has developed a community peer education program for Aboriginal women. The program is based on similar community development principles to those of the 'Strong Women, Strong Babies, Strong Culture' and 'de Madres a Madres' programs (p.33 and p.34).
- The objective of this program is to improve Aboriginal women's self-esteem and self-confidence by increasing their health knowledge and leadership skills and enabling women to provide education and health resource information to their communities.
- Critical to the program's successful development was a previous needs assessment undertaken with Aboriginal women in 1997 (Central West Public Health Unit 1997). The Aboriginal women who participated in these consultations continued to meet regularly which provided the foundation for developing the program.
- The eight week program titled, 'Healthy Women, Health Bodies', was developed by the Mid Western Aboriginal Health Partnership and TAFE and Aboriginal women have a strong sense of ownership over the program.
- Initial training workshops took place in 1999 and the program is in the process of receiving VETAB accreditation (Vocational Education and Training Accreditation Board).
- The first program was delivered through Condobolin TAFE and ten Aboriginal women graduated in June 2002.

Related services for Aboriginal women

Drug and tobacco programs

NSW Department of Health is currently developing initiatives to address substance misuse among Aboriginal people and will be conducting an integrated care trial targeting young Aboriginal women during the antenatal and post partum periods.

Under the *NSW Tobacco and Health Strategy* 1995-1999, 11 Area Health Services developed initiatives with Aboriginal communities. The areas of focus for these initiatives were: young people, smoking cessation interventions, general health promotion activities and exposure to tobacco smoke. The Illawarra Area Health Service developed an educational program for Aboriginal women on smoking in pregnancy.

NSW Department of Health held a workshop in 2002 to address smoking in Aboriginal communities and is developing further initiatives across the State. The Commonwealth also developed initiatives in 1999/2000 to reduce tobacco related harm among young Aboriginal people in NSW.

Mental health services

The needs of Aboriginal communities are a high priority in the development of innovative mental health care. The Centre for Mental Health has developed and implemented specific interventions targeting the early years of life and the promotion of effective parenting practices.

These interventions include:

- A perinatal psychosocial screening tool that will assist in identifying mothers and infants at risk of poor physical and mental health outcomes, eg alcohol and other drug use, family violence and maternal mental health problems.
- A training package to assist the expansion of this initiative to other Area Health Services including Wentworth, Southern and Illawarra AHSs. This will provide training for primary health care workers in mental health issues for mothers and infants – eg post natal depression, maternal anxiety and other psychosocial problems.
- An agreement with the Department of Juvenile Justice for the provision of mental health care for young people in detention, which is particularly relevant for young Aboriginal people, who tend to be over-represented.
- Funding for the Aboriginal Health and Medical Research Council for mental health promotion in Aboriginal communities, with a special emphasis on young people and suicide.

Sexual health services

Thirty Aboriginal sexual health workers are employed in both Aboriginal Community Controlled Health Services and Area Health Services to provide health information, contact tracing and referral to clinical services. Improved screening and contact tracing systems for Aboriginal women during pregnancy is critical to improving Aboriginal perinatal outcomes.

Aboriginal sexual health workers play a key role in improving these services because of their specialised knowledge of Aboriginal community networks. Strong linkages between Aboriginal sexual health workers and other health care providers (midwives, Aboriginal health workers, GPs and obstetricians) are required to improve screening and contact tracing systems.

Additional services required for Aboriginal women

Preliminary fieldwork undertaken for this review indicates that there are several gaps in service delivery for Aboriginal women. Additional programs are required in Area Health Services which have high numbers of Aboriginal births and/or are geographically isolated.

Community peer education and adolescent services

The community peer education program developed through the Mid Western Aboriginal Health Partnership, is an excellent prototype of the sort of programs required for Aboriginal women across NSW. Preliminary fieldwork indicates that community peer education programs are needed in the majority of Area Health Services.

Additional adolescent specific maternal health services are required, particularly in rural and remote NSW. Culturally appropriate educational programs on sexually transmitted diseases, pregnancy prevention for young adolescents (13-15) and the longterm effects of adolescent parenting are also needed.

Bereavement services

Depressive symptoms following stillbirth, neonatal death and sudden infant death are increased when women have little support or social networks. For many Aboriginal women, the death of an infant may compound many previous losses and traumas. Few Aboriginal women receive bereavement counselling or attend support programs that assist mothers and families to recover from the loss of a baby in the perinatal period.

Although there are evidenced based Australian bereavement programs that show significant benefits from a prevention intervention, it appears that they are not readily accessible to Aboriginal communities (Murray 1996). Bereavement counselling services for Aboriginal women need to be developed in partnership with Aboriginal communities and should recognise a holistic concept of health.

Issues affecting service delivery for Aboriginal women

5

The following issues impact on the effectiveness of services for Aboriginal women:

- lack of long-term funding for Aboriginal maternal health initiatives
- poor coordination of maternal health services
- workforce issues.

The following direct quotes reflect maternal health care providers' views.

Health care providers' perspectives on the issues affecting service provision for Aboriginal women

Lack of long-term funding for Aboriginal maternal health initiatives

Funding for specific programs targeting Aboriginal women has historically been provided in an 'ad hoc' and inconsistent fashion. As a result, Aboriginal maternal health did not receive the necessary focused attention required to increase Aboriginal women's access to services and to develop initiatives to improve the health of Aboriginal women in the long-term.

A midwife

'No-one at the hospital thinks it's [Aboriginal maternal health] an issue – they say, we're really stretched and there's other groups too.'

A community health manager

'There's not enough commitment to Aboriginal women – the hospital is focused on acute care, not prevention.'

The short-term, uncertain nature of funds for targeted programs severely limits continuity of care and program effectiveness. The establishment of rapport and trust with Aboriginal women, a fundamental principle when working with Aboriginal people, takes time and continuity of staff. This is almost impossible to achieve within short funding cycles.

A nurse unit manager

'It takes six months to get trusted by the Aboriginal community – with training and orientation it takes four months to get new staff up to speed.'

A community health coordinator

'It's hard to get the right workers – re-advertising takes a lot of program money – I can't attract the right staff because of the short term funding.'

A program midwife

'I didn't know from one week to the other if I had a job.'

It appears that some Area Health Services are reluctant to allocate long-term funding to Aboriginal maternal health.

A maternity supervisor

'To keep Aboriginal programs going, hospitals have to give up a position in maternity – it's too hard to do this – some areas hurt when you do this.'

An antenatal clinic coordinator

'To start a program you have to move staff around and everyone works really hard because you want it to work but then you don't get the money.'

A community health manager

'One off funding is a waste of time – the 'Area' is too poorly funded – there is no way in the world that Area hierarchy will pick it up.'

As a result, Aboriginal maternal programs have been run in a climate of uncertainty and programs often do not continue. This leads to disillusionment and frustration for both health care providers and the Aboriginal community.

A midwife

'Why bother in the first place – you put so much energy into a program and then can't keep it going!'

An Aboriginal health coordinator

'Aboriginal communities feel disappointed when programs stop – they're sick of 'pilots' – programs can do more damage than good.'

Poor coordination of maternal health services

The poor coordination of maternal health services is a major stumbling block to improving service delivery for Aboriginal women. Although a range of services are available in most Aboriginal communities, the difficulty lies in effectively linking Aboriginal women into these services and linking the services to each other.

A GP – AMS (Aboriginal Medical Service)

'The hospital does not notify the AMS when (Aboriginal) women go home or deliver.'

A midwife

'GPs don't notify community midwives – there's no mechanism to ensure [Aboriginal] women are followed up.'

A women's health coordinator

'The problem is how to link it all up – midwives, Aboriginal health workers, early childhood nurses, parent educators – they're not linking in.'

There are many instances where health services work alongside each other but rarely communicate.

A community health coordinator

'A lot of services aren't working together – don't know what each other are doing – community health and Aboriginal health need to work together.'

It appears that outreach services are sometimes not used by Aboriginal people because communities are not effectively informed about the timing and nature of the service.

An Aboriginal health worker

'There are a lot of workers going into [a particular community] but the Aboriginal people don't know what they go there for, so they don't go near them.'

Within Aboriginal communities there can also be difficulties associated with providing services which meet the needs of different family groups.

A midwife

'The Mission and the Lands Council don't get on, so we have two different services.'

An Aboriginal health worker

'It's community factions – Aboriginal infighting – if you don't belong to the factions in control then you don't get the care.'

Workforce issues

Midwives

A global issue affecting service provision for Aboriginal women is the lack of midwives currently working in NSW. This is particularly difficult in rural and remote areas but also affects metropolitan services. Another key issue is the extremely small number of midwives who are of Aboriginal descent.

A community health coordinator

(A particular community) is on a knife edge – we don't have enough midwives for the non-Aboriginal population let alone the Aboriginal.'

A nursing supervisor

'We can't get midwives – having a midwife in (a particular Health Service) is a luxury.'

There are very few incentives to attract midwives to rural and remote NSW, which has led to a serious shortage.

A midwife

'Staff only stay a short time – there's no accommodation provided – no holiday relief.'

An obstetrician

'To get midwives back into the workforce you need to offer incentives – need a flexible approach.'

Providing Aboriginal women with regular outreach services is very labour intensive and demanding work for community midwives. Due to the staff shortages, midwives are often spread too thinly and frequently experience 'burnout'.

A community health coordinator

'Midwives have to cover too much ground physically – areas are too big to do outreach adequately – midwives get too strained and leave after eight months.'

A midwife

'I'm just one person – I need more Aboriginal health workers to work with – more time to follow women up.'

Many Aboriginal women present with complex social problems, which require individualised care and intensive emotional support from midwives and Aboriginal health workers.

A midwife

'We have to be everything for these women – advocate for them, be a social worker, psychologist – they don't have formula, no food, no clothes – you have to find food vouchers – help them with housing, child support – we get referrals from DOCs...'

A midwife

'It's a heavy workload because your role's much broader – drug and alcohol problems – there's five kids not immunised!'

Maternity unit managers do not always take this additional workload into account and midwives can often feel unsupported.

A community midwife

'I should not have to justify being out in the community – my boss says I'm wasting time running around after one or two Aboriginal women.'

Aboriginal health workers

The effectiveness of many Aboriginal health workers on the midwife/AHW programs is limited because they do not receive adequate formal training. Although on-the-job training and the Townsville maternal skills course are available, midwives find that many Aboriginal health workers do not have the skills needed to confidently care for pregnant women and their babies.

A midwife

'Aboriginal health workers have no background knowledge on maternal health – no self-confidence – you've got to build up their self-esteem – you need to empower the workers before you can empower the community.'

A midwife

'the health workers aren't motivated because they don't have the skills – they just do the driving.'

A midwife

'There's not enough ongoing training for health workers – Townsville's a good introduction – there's no one to support the health workers' professional development.'

Unlike midwives, most Aboriginal health workers and Aboriginal education officers are responsible for dealing with a wide range of health problems. This prevents them developing expertise on one specific health issue, such as maternal and child health.

A midwife

'Aboriginal health workers need the flexibility to specialise in certain areas instead of having to do everything.'

An Aboriginal health worker

'We're sick of being a 'Jack of all trades'.'

Aboriginal factional issues also impact on Aboriginal health workers, who find it difficult to provide a service that meets the needs of all the Aboriginal groups in their communities. This puts great pressure on Aboriginal health workers and often leads to increased stress levels and high staff turnover.

An Aboriginal health worker

'You have to show you're not with one mob – you have to be able to cross the different factions.'

Medical practitioners

The question of who provides antenatal care has become somewhat of a demarcation issue between medical practitioners – obstetricians and general practitioners (GPs) – and midwives. This appears to be most evident between GPs and midwives, with some rural GPs unwilling to refer Aboriginal women to the midwife/Aboriginal health worker programs.

A midwife

'There's too much ownership by GPs – they don't want midwives doing antenatal care – it's a waste of resources when the midwives' role is so minimalistic.'

This is a significant barrier to improving access for Aboriginal women especially in country towns where GPs are very busy and rarely bulk bill.

A doctor

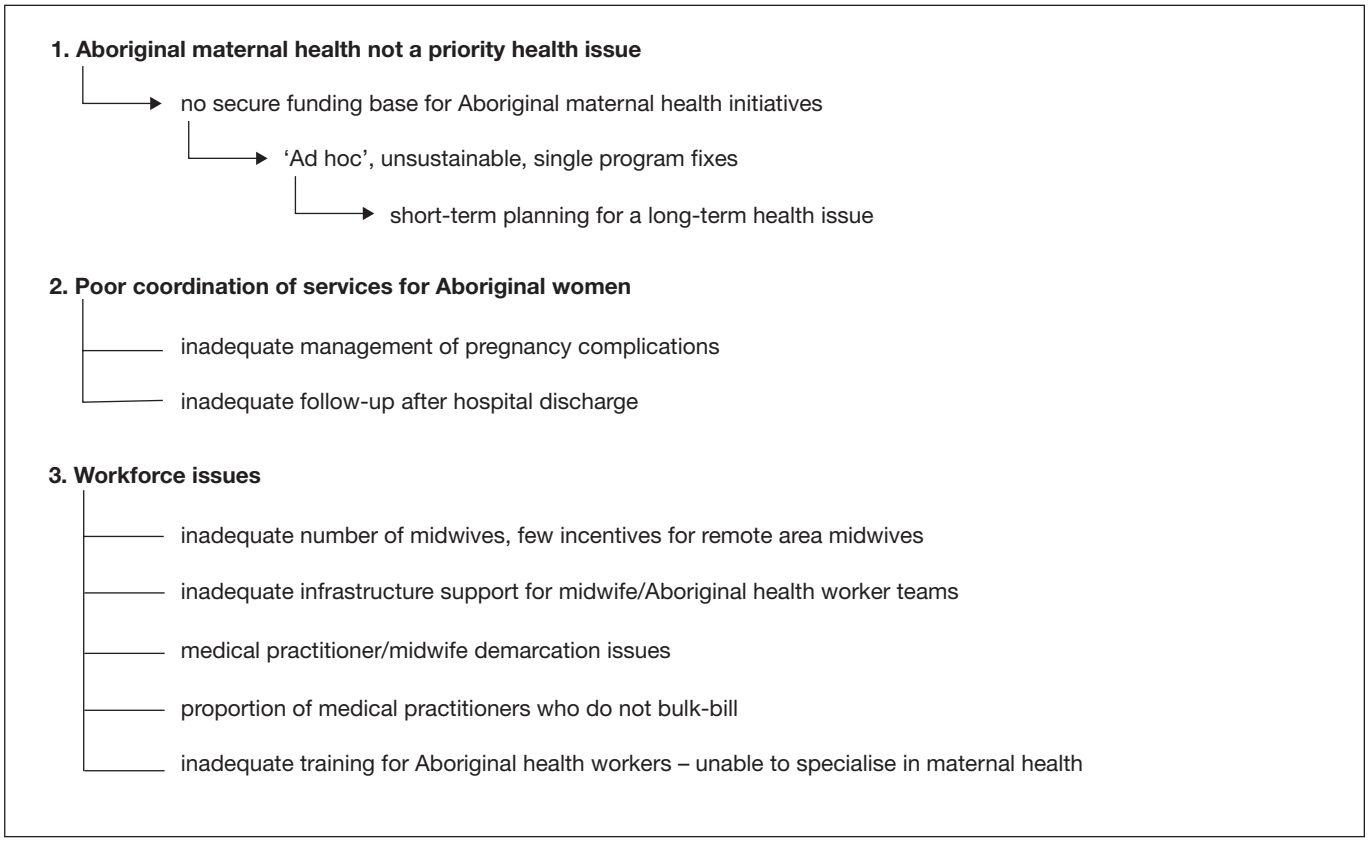
'50% of GPs won't see new patients in [a particular community] – it's a two-month wait – four months for a popular GP.'

An Aboriginal health worker

'In [a particular community] no doctors bulk bill – the young girls won't go in.'

The role of rural GPs is fundamentally important in delivering improved health care for Aboriginal women and babies across NSW. However, the midwife/Aboriginal health worker teams also play a vital role in providing culturally appropriate outreach services and increasing Aboriginal women's access to the health system. It is therefore critical, that these health care providers develop effective partnerships to improve the integration of maternal health services for Aboriginal women.

Figure 11. Issues affecting health service provision for Aboriginal women



Summary

Due to the complex mix of social, behavioural and medical risk factors that affect Aboriginal perinatal mortality, a long-term approach is needed to improve the health of Aboriginal women and their babies. Effective partnerships between mainstream services and Aboriginal Community Controlled Health Services is central to improving the accessibility and coordination of maternal health services for Aboriginal women.

Overcoming the issues which impact on service delivery will require substantial cooperation from all the representative groups. Solutions to these somewhat controversial issues are difficult and will need to be developed systematically at both an Area and State level over the next five years.

The midwife shortage in NSW and demarcation issues between medical practitioners and midwives are inter-related issues which require long-term strategies and fundamental change in the way the midwifery profession is viewed and legitimised in Australia.

The empowerment of Aboriginal women (and families) with a consequent increase in their self-esteem and self-confidence, will achieve a profound improvement in Aboriginal women's overall health status in the long-term. Therefore, in order to improve Aboriginal perinatal health, it is critical that health planners place as much emphasis on establishing community development initiatives (eg community peer education programs) with Aboriginal women, as on improving health service delivery.

Implementation plan

NSW Department of Health has provided an initial injection of funds to support implementation of the *Aboriginal Maternal and Infant Health Strategic Framework*. An Advisory Group with representation from NSW Department of Health central office, Area Health Services, the Aboriginal Health and Medical Research Council, NSW Midwives Association, Royal Australian College of General Practitioners, Royal Australian New Zealand College of Obstetricians and Gynaecologists and Families First, has been established to oversee the implementation process.

It is anticipated that Area Health Services will also contribute to implementation by directing maternal health funds from their global budgets into improving the health of Aboriginal women and babies at an Area level. It is expected that Area Health Services will improve the accessibility of mainstream services for Aboriginal women and overcome the present barriers to improved service delivery.

The implementation plan for the strategic framework (p.48), will be monitored by NSW Department of Health and an evaluation will be undertaken within three years of the release of this report.

Implementation Plan for NSW Aboriginal Maternal and Infant Health Strategic Framework

(incorporating the NSW Aboriginal Health Strategic Plan and NSW Framework for Maternity Services)

Issue	Action	Responsibility	Timeframe
Under-utilisation of antenatal and postnatal services	Improve the appropriateness and accessibility of health services for Aboriginal women and babies.	Area Health Services in collaboration with ACCHSs, RANZCOG and GP Divisions.	2001-2005
	Improve the management of complicated pregnancies.	Area Health Services in collaboration with ACCHSs, RANZCOG and GP Divisions.	2001-2003
	Establish long-term midwife/Aboriginal health worker programs.	NSW Department of Health, Area Health Services and ACCHSs.	2001-2002
	Establish a support network for midwives and AHWs who work with Aboriginal women.	Northern Sydney AHS in collaboration with AHSs, ACCHSs and other key agencies.	2001-2002
	Develop a training package for Aboriginal maternal/child health liaison workers to articulate with midwifery training.	Northern Sydney AHS in collaboration with other key agencies.	2001-2003
	Train more Aboriginal midwives.	Northern Sydney AHS in collaboration with other key agencies (linked to recruitment strategies of the Office of the Chief Nursing Officer).	2001-2005
Disempowerment of Aboriginal women	Establish community peer education programs with Aboriginal women (and families) in all Area Health Services.	Area Health Services, ACCHSs, Education Dept. and TAFE.	2001-2003

Issue	Action	Responsibility	Timeframe
High Aboriginal adolescent birth rate	Develop appropriate pregnancy prevention programs for young Aboriginal adolescents.	Area Health Services, ACCHSs and Aboriginal Health Partnerships.	2001-2003
	Develop appropriate educational programs to decrease smoking, drug and alcohol use during pregnancy.	Area Health Services, ACCHSs, Aboriginal Health Partnerships and Education Dept.	2001-2003
	Develop an 'Aboriginal friendly' educational resource on pregnancy, birth and infant care.	Area Health Services and ACCHSs.	2001-2003
	Enhance adolescent pregnancy services in rural and remote Area Health Services.	Area Health Services, ACCHSs and NGOs.	2001-2003
Poor Aboriginal maternal health associated with social, economic and political factors.	Develop inter-sectoral partnerships to improve the structural factors affecting Aboriginal health.	NSW Department of Health, Area Health Services and ACCHSs, Families First, Aboriginal Health Partnerships, Housing, Education, Employment Sectors and NGOs.	2001-2010
	Provide training and infrastructure support for Aboriginal health workers to establish additional community development projects with Aboriginal families.	NSW Department of Health, Area Health Services and ACCHSs, Housing, Education and Employment Sectors (State and local level).	2001-2005

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A Appendix A – NH&MRC best practice guidelines for evaluating evidence

Designation of levels of evidence

Level I	Evidence obtained from a systematic review of all relevant randomised controlled trials.
Level II	Evidence obtained from at least one properly designed randomised controlled trial.
Level III	Evidence obtained from well designed controlled trials without randomisation. III -1 Evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method). III -2 Evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case control studies, or interrupted time series with a control group. III -3 Evidence obtained from comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group.
Level IV	Evidence obtained from case series, either post-test or pre-test and post-test. (NH&MRC 1999).

Appendix B – Culturally appropriate antenatal care

B

Aboriginal women state that culturally appropriate antenatal care is:

- Non-judgemental
- Family orientated
- Respectful to Aboriginal culture
- Sensitive to Aboriginal needs
- Respectful to elders
- Provides a meeting place for Kooris to meet other Kooris
- Where women do not have to explain themselves
- Where explanations are provided in plain English but not in a condescending tone

(Daruk AMS and Western Sydney Public Health Unit 1998).

C Appendix C – Aboriginal births by hospital, NSW 1996-2000

AHS of hospital of delivery	Hospital	Number of births
Central Sydney	King George V	394
	Other Area Health Service hospitals	4
	All hospitals	**398**
Northern Sydney	Royal North Shore	15
	Ryde	10
	Other Area Health Service hospitals	34
	All hospitals	**59**
Western Sydney	Auburn	27
	Blacktown	306
	Westmead	121
	Other Area Health Service hospitals	5
	All hospitals	**459**
Wentworth	Blue Mountains	20
	Nepean	486
	Jamison Private	10
	Hawkesbury	32
	Other Area Health Service hospitals	4
	All hospitals	**552**
South Western Sydney	Camden	16
	Fairfield	40
	Liverpool	128
	Campbelltown	251
	Bankstown/Lidcombe	27
	Bowral	16
	Other Area Health Service hospitals	5
	All hospitals	**483**
Central Coast	Gosford	186
	Wyong	34
	Other Area Health Service hospitals	7
	All hospitals	**227**
Hunter	Cessnock	12
	Maitland	82
	Muswellbrook	29
	Belmont	45
	Singleton	15
	John Hunter	419
	Other Area Health Service hospitals	8
	All hospitals	**610**
Illawarra	Shoalhaven	319
	Wollongong	196
	Shellharbour	52
	Other Area Health Service hospitals	4
	All hospitals	**571**

AHS of hospital of delivery	Hospital	Number of births
Miscellaneous	**All**	**3**
South Eastern Sydney	Royal Hospital for Women	135
	St. George	16
	Sutherland	34
	Other Area Health Service hospitals	21
	All hospitals	**206**
Northern Rivers	Casino and Memorial	76
	Grafton Base	165
	Lismore Base	383
	Maclean	20
	Murwillumbah	35
	Tweed Heads	158
	Other Area Health Service hospitals	14
	All hospitals	**851**
Mid North Coast	Coffs Harbour	216
	Kempsey	310
	Macksville	98
	Port Macquarie Base	87
	Manning Base	203
	Other Area Health Service hospitals	14
	All hospitals	**928**
New England	Armidale	203
	Glen Innes	29
	Gunnedah	96
	Inverell	117
	Manilla	15
	Moree	356
	Narrabri	71
	Prince Albert Memorial, Tenterfield	15
	Quirindi	25
	Tamworth Base	364
	Wee Waa	46
	Other Area Health Service hospitals	13
	All hospitals	**1350**
Macquarie	Coonamble	29
	Dubbo Base	1101
	Gilgandra	13
	Mudgee	13
	Narromine	30
	Warren	19
	Wellington (Bindawalla)	57
	Other Area Health Service hospitals	25
	All hospitals	**1287**

AHS of hospital of delivery	Hospital	Number of births
Mid Western	Bathurst Base	109
	Condobolin	31
	Cowra	56
	Forbes	55
	Lithgow	12
	Orange Base	187
	Parkes	66
	Other Area Health Service hospitals	7
	All hospitals	**523**
Far West	Bourke	128
	Brewarrina	20
	Walgett	53
	Broken Hill Base	201
	Other Area Health Service hospitals	16
	All hospitals	**418**
Greater Murray	Deniliquin	23
	Mercy Care Centre, Albury	40
	Griffith Base	171
	Leeton	35
	Narrandera	64
	Tumut	29
	Wagga Wagga Base	245
	Other Area Health Service hospitals	18
	All hospitals	**625**
Southern	Batemans Bay	32
	Bega	65
	Goulburn Base	25
	Moruya	67
	Pambula	28
	Queanbeyan	64
	Other Area Health Service hospitals	15
	All hospitals	**296**

Source: NSW Midwives Data Collection (HOIST). Epidemiology and Surveillance Branch, NSW Department of Health.

Appendix D – Births to Aboriginal mothers by Area Health Service of residence and of hospital, NSW 1996-2000

D

Area Health Service of residence	Area Health Service of hospital of birth	Number of births	
		No.	%
Central Sydney	Central Sydney	290	85.8
	Northern Sydney	1	0.3
	Western Sydney	4	1.2
	Wentworth	1	0.3
	South Western Sydney	7	2.1
	Central Coast	1	0.3
	South Eastern Sydney	29	8.6
	Northern Rivers	4	1.2
	Macquarie	1	0.3
	Total	**338**	**100.0**
Northern Sydney	Central Sydney	5	11.4
	Northern Sydney	36	81.8
	Western Sydney	2	4.5
	Central Coast	1	2.3
	Total	**44**	**100.0**
Western Sydney	Central Sydney	8	1.2
	Northern Sydney	12	1.8
	Western Sydney	381	57.4
	Wentworth	253	38.1
	South Western Sydney	6	0.9
	Miscellaneous	1	0.2
	South Eastern Sydney	1	0.2
	Macquarie	1	0.2
	Far West	1	0.2
	Total	**664**	**100.0**
Wentworth	Central Sydney	1	0.3
	Western Sydney	31	10.1
	Wentworth	272	88.6
	Miscellaneous	1	0.3
	South Eastern Sydney	1	0.3
	New England	1	0.3
	Total	**307**	**100.0**
South Western Sydney	Central Sydney	10	2.1
	Western Sydney	13	2.7
	Wentworth	2	0.4
	South Western Sydney	453	93.4
	Illawarra	1	0.2
	South Eastern Sydney	4	0.8
	Mid Western	1	0.2
	Greater Murray	1	0.2
	Total	**485**	**100.0**

Area Health Service of residence	Area Health Service of hospital of birth	Number of births	
		No.	%
Central Coast	Central Sydney	3	1.3
	Northern Sydney	1	0.4
	Western Sydney	1	0.4
	Central Coast	215	93.1
	Hunter	10	4.3
	New England	1	0.4
	Total	**231**	**100.0**
Hunter	Central Sydney	1	0.2
	Northern Sydney	1	0.2
	Western Sydney	1	0.2
	Wentworth	5	0.9
	South Western Sydney	1	0.2
	Central Coast	8	1.4
	Hunter	542	95.4
	South Eastern Sydney	1	0.2
	Mid North Coast	1	0.2
	New England	6	1.1
	Macquarie	1	0.2
	Total	**568**	**100.0**
Illawarra	Central Sydney	7	1.2
	Northern Sydney	1	0.2
	Western Sydney	4	0.7
	South Western Sydney	2	0.3
	Illawarra	564	95.6
	Miscellaneous	1	0.2
	South Eastern Sydney	5	0.8
	Mid North Coast	2	0.3
	Macquarie	1	0.2
	Mid Western	1	0.2
	Southern	2	0.3
	Total	**590**	**100.0**
South Eastern Sydney	Central Sydney	39	19.8
	Western Sydney	1	0.5
	Wentworth	1	0.5
	South Western Sydney	1	0.5
	South Eastern Sydney	154	78.2
	Northern Rivers	1	0.5
	Total	**197**	**100.0**
Northern Rivers	Central Sydney	2	0.3
	Northern Sydney	1	0.1
	Hunter	1	0.1
	Northern Rivers	768	98.1
	Mid North Coast	9	1.1
	New England	2	0.3
	Total	**783**	**100.0**

Area Health Service of residence	Area Health Service of hospital of birth	Number of births	
		No.	%
Mid North Coast	Central Sydney	3	0.3
	Western Sydney	2	0.2
	Wentworth	1	0.1
	South Western Sydney	1	0.1
	Hunter	34	3.5
	Illawarra	2	0.2
	South Eastern Sydney	1	0.1
	Northern Rivers	4	0.4
	Mid North Coast	910	94.9
	New England	1	0.1
	Total	**959**	**100.0**
New England	Central Sydney	5	0.4
	Northern Sydney	2	0.2
	Western Sydney	2	0.2
	Wentworth	4	0.3
	South Western Sydney	2	0.2
	Central Coast	2	0.2
	Hunter	15	1.2
	South Eastern Sydney	1	0.1
	Northern Rivers	16	1.2
	Mid North Coast	4	0.3
	New England	1239	95.7
	Macquarie	2	0.2
	Mid Western	1	0.1
	Total	**1295**	**100.0**
Macquarie	Central Sydney	6	0.6
	Northern Sydney	1	0.1
	Western Sydney	8	0.8
	Wentworth	4	0.4
	South Western Sydney	1	0.1
	Hunter	3	0.3
	South Eastern Sydney	3	0.3
	New England	28	2.7
	Macquarie	978	93.3
	Mid Western	5	0.5
	Far West	1	0.1
	Greater Murray	10	1.0
	Total	**1048**	**100.0**

Area Health Service of residence	Area Health Service of hospital of birth	Number of births	
		No.	%
Mid Western	Central Sydney	5	0.9
	Western Sydney	4	0.7
	Wentworth	9	1.6
	South Western Sydney	2	0.3
	Hunter	1	0.2
	South Eastern Sydney	1	0.2
	Northern Rivers	1	0.2
	Macquarie	7	1.2
	Mid Western	501	86.4
	Far West	3	0.5
	Greater Murray	44	7.6
	Southern	2	0.3
	Total	**580**	**100.0**
Far West	Central Sydney	8	1.0
	Northern Sydney	3	0.4
	Western Sydney	4	0.5
	South Western Sydney	4	0.5
	Hunter	3	0.4
	Illawarra	1	0.1
	South Eastern Sydney	2	0.2
	New England	66	8.2
	Macquarie	294	36.3
	Mid Western	8	1.0
	Far West	413	51.1
	Greater Murray	1	0.1
	Southern	2	0.2
	Total	**809**	**100.0**
Greater Murray	Central Sydney	3	0.5
	Mid Western	3	0.5
	Greater Murray	566	99.0
	Total	**572**	**100.0**
Southern	South Western Sydney	2	0.7
	Illawarra	2	0.7
	South Eastern Sydney	2	0.7
	Mid North Coast	2	0.7
	Mid Western	2	0.7
	Southern	282	96.6
	Total	**292**	**100.0**
Not Stated/Other	**Total**	**84**	**100.0**
TOTAL NSW		**9846**	**100.0**

Source: NSW Midwives Data Collection (HOIST). Epidemiology and Surveillance Branch, NSW Department of Health.

Appendix E – ABSP innovative projects 1998-1999

E

Area Health Service	Town	Host agency	Project
Illawarra	Shoalhaven	Illawarra AMS Waminda Illawarra AHS	A peer education project to educate Aboriginal women about breast-feeding and smoking during pregnancy and the postnatal period. A Maternity Work Book was produced which won an Illawarra AHS quality award.
Western Sydney	Blacktown	Area Health Service	12-month funding for a full-time midwife to improve liaison between Daruk AMS and Blacktown Hospital and improve access to both services.
Central Sydney	Redfern	Area Health Service and AMS	Research project to improve liaison between Redfern AMS and King George V Hospital and to improve access to both services.
Mid North Coast	Taree	Area Health Service	Feasibility study for the establishment of a midwives' clinic and appropriate maternal health care for Aboriginal women.
Mid Western	Lithgow	Area Health Service	12-month funding for a midwifery program.
Northern Sydney		Area Health Service and AMS	A midwifery education program for midwives in remote areas of the Far West.

Appendix F – Adolescent specific maternal health services

Specific services for adolescents (Aboriginal and non-Aboriginal) are located in the following Area Health Services:

Area Health Service	Town	Host Agency	Program
Illawarra	Wollongong	Non-government	'Baby CHAIN' program
Greater Murray	Wagga Wagga	Area Health Service	Adolescent Support
Macquarie	Dubbo	Area Health Service	'Teen Mum' program
Hunter	Newcastle	Area Health Service	John Hunter Hospital adolescent program
Western Sydney	Mt Druitt Westmead	Area Health Service Area Health Service	Young mothers support program Adolescent antenatal clinic
Wentworth	Penrith	Non-government	Antenatal and postnatal support 'Streetwork' program
South-West Sydney	Campbelltown Liverpool	Area Health Service Area Health Service	'Traxside' young mothers program Adolescent antenatal clinic
Central Sydney	Outreach services from Glebe Camperdown	Area Health Service Area Health Service	Young parents early childhood service Adolescent antenatal service

Appendix G – Maternal health services for Aboriginal women by Area Health Service

Area Health Service	Aboriginal births 1996-2000	Midwife/ AHW programs (Aboriginal Maternal/Infant Health Strategy and ABSP funded)	Aboriginal maternal/ child health liaison workers	Aboriginal community peer education programs	Adolescent targeted services	ABSP Innovative programs for Aboriginal women 1998-1999
New England	11,123	Tamworth Moree (outreach to Boggabilla and Toomelah)	Tamworth child and family health team	–	–	–
Far West	7,014	Walgett Broken Hill	Bourke community midwives program	–	–	–
Mid North Coast	7,751	Kempsey Taree Coffs Harbour	–	–	–	Taree
Northern Rivers	6,964	Casino Ballina	Tweed community midwives	–	–	–
Western Sydney	8,278	Mt Druitt	–	–	Mt Druitt, Westmead	Blacktown Hospital/ Daruk AMS access project
Illawarra	6,159	Wollongong	–	–	CHAAS program	Shoalhaven – peer education project re: access, smoking and breast feeding
Macquarie	8,401	Dubbo	–	–	Dubbo 'Teen Mum' program	–
Mid West	5,506	Orange	Orange, Child, Family and Adolescent program	Condobolin Orange	–	–
Greater Murray	6,351	Wagga Wagga (outreach to Narrandera, Leeton)	–	–	Adolescent support program	–

Area Health Service	Aboriginal births 1996-2000	Midwife/ AHW programs (Aboriginal Maternal/Infant Health Strategy and ABSP funded)	Aboriginal maternal/ child health liaison workers	Aboriginal community peer education programs	Adolescent targeted services	ABSP Innovative programs for Aboriginal women 1998-1999
Hunter	9,199	Newcastle (outreach to Karuah)	–	–	John Hunter adolescent program	–
South West Sydney	9,344	Campbelltown	–	–	'Traxside' young mothers' program	–
Central Sydney	4,636	–	Central Sydney Community Health Team	–	Young parents service, adolescent antenatal program	Redfern AMS/ King George access project
Southern	3,653	Bega	–	–	–	–
Wentworth	4,605	Mt Druitt	–	–	'Streetwork' program	–
South-East Sydney	4,984	SE Sydney maternal/ child health program	Royal Women's Hospital Outreach	–	–	–
Central Coast	3,665	–	Integrated Perinatal Care Team, Wyong	–	–	–
Northern Sydney	1,798	–	–	–	–	–

Appendix H – Aboriginal Perinatal Mortality Project Steering Committee

Professor William Waters (Chairman)
Chairman NSW Maternal and Perinatal Committee
Department of Obstetrics and Gynaecology
John Hunter Hospital

Professor David Henderson-Smart
Coordinator of the NSW Perinatal Health Services Research

Dr Heather Dalgetty
Rural Doctors Association (NSW)

Margaret Teuma
Office Aboriginal and Torres Strait Islander Health
Department of Health and Aged Care

Allison Bush
Aboriginal Midwife/Liaison Officer
Central Sydney Area Health Service

Val Dahlstrom
Aboriginal Health Coordinator
New England Area Health Service

Dea Thiele
Aboriginal Health and Medical Research Council

Elva Taylor
Aboriginal Health Worker
Armidale Aboriginal Medical Service

Namira Williams
Child and Family Health Improvement Officer
Far West Area Health Service

Anne Connolly
NSW Women's Health Coordinators

Geraldine Wilson
Aboriginal Health Branch
NSW Department of Health

Maria Fenn
Office of the Chief Nursing Officer
NSW Department of Health

Lee Taylor
Manager, Epidemiology and Surveillance Branch
NSW Department of Health

Pam Adelson
Centre for Research and Clinical Policy
NSW Department of Health

Dr Elisabeth Murphy
Clinical Consultant
Primary Health and Community Care Branch
NSW Department of Health

Rosalind Hecker
Project Officer, Aboriginal Perinatal Mortality Project
NSW Department of Health

Objectives of the Aboriginal Perinatal Mortality Project Steering Committee

1. Guide the implementation of the Aboriginal Perinatal Mortality Project.

2. Provide advice on:
   - the socio-economic, environmental and cultural factors which affect maternal health and contribute to Aboriginal perinatal deaths.
   - methods of engaging other key stakeholders in the project, eg Aboriginal women, Area Health Services, Community Controlled Aboriginal Health Services and relevant medical associations
   - how to implement and sustain effective models of care for the prevention of Aboriginal perinatal deaths in NSW
   - a policy for review of perinatal deaths at hospital level which will inform service provision as it relates to Aboriginal perinatal deaths and include bereavement counselling and post-mortem examination
   - workforce and training issues as they relate to the project
   - a system to monitor health outcomes resulting from the implementation of effective models of care.

Appendix I – Health care providers consulted for the report

The project officer would like to thank the following people who gave their time to participate in this study.

Illawarra AHS	
Julie Booker	CEO, Illawarra AMS, Wollongong
Caroline Harris	Nurse, Illawarra AMS
Cathy Peters	Midwife, Illawarra AMS
Rosemary Osborne	Early childhood health nurse, Wollongong
Katey Stewart	Community midwife, Wollongong
Theresa Hoyne	Women's health coordinator
Iris McLeod	Aboriginal health coordinator
Victoria Westley-Wise	Director, Illawarra Public Health Unit
Lisa Baker	Community midwife, 'Baby CHAIN' program, Wollongong
Jenny Davey	Community midwife, Nowra
Kay Delaney	Community midwife, Nowra
Joyce Donovan	CEO, Waminda Aboriginal women's health centre, Nowra
Sandra Welsh	Aboriginal family worker, Waminda
Southern AHS	
Kate Lohse	Women's health coordinator
Heather Black	Community midwife, Midwife/AHW program, Bega
Donna Aldridge	Aboriginal health worker
Helen Bowman	Community midwife, Moruya
Angela Nye	Aboriginal team leader, Bateman's Bay
Loretta and Roseanne	Hospital midwives, Bateman's Bay
Central Coast AHS	
Ann Conning	Women's health coordinator
Vicki Bradford	Aboriginal health coordinator
Carol McCloy	Nurse unit manager, Maternity Unit, Gosford Hospital
Trish White	Clinical nurse consultant (CNC), Maternity Unit, Gosford Hospital
Gerti Nelissen	Community midwife
Hunter AHS	
Marilyn Wilson	Aboriginal health coordinator
Rosalie Shore	CNC, Maternity Unit, John Hunter Hospital
Anne Melmeth	CNC, Antenatal Ward, John Hunter Hospital
Peggy Booth	Family Care Program, John Hunter Hospital

Greater Murray AHS	
Dianne Zalitis	Maternity services coordinator
Rhonda Dixon	Community midwife, Deniliquin
Jill Ludform	Community midwife, Tumut
Maureen Allen	Community midwife, Wagga Wagga
Shirley O'Brien	Adolescent pregnancy support program, Wagga Wagga
Jing Sing	Obstetrician, Wagga Wagga
Dennis Quix	Aboriginal project officer, Wagga Wagga
Colleen Hughes	Aboriginal education worker, Wagga Wagga
Bev Murray	Aboriginal liaison officer, Wagga Wagga
Yvonne Ingram	Aboriginal midwife, Narrandera
Gail May	Aboriginal health worker, Narrandera
South Western Sydney AHS	
Kaye Mundine	CEO, Tharawal AMS, Campbelltown
Cheryl Woodall	Nurse, Tharawal AMS
Tracey Clement	Community midwife, Midwife/AHW program, Tharawal AMS
Dena Rodgers	(Ex-program-midwife), Tharawal AMS
Kelly Briggs	Aboriginal health worker, Tharawal AMS
Greer Jones	Director Maternal and Child Health, Campbelltown Hospital
Robert Mills	NUM, Labour Ward, Campbelltown Hospital
Annette Robertson	NUM, Antenatal Ward, Campbelltown Hospital
Helen Stewart	Director, Maternal and Child Health Services, Liverpool Hospital
Margo Moore	Women's health coordinator
Robyn Field	Aboriginal health worker, Bankstown Hospital
Carol Slater	Child care worker, Miller Centre, Miller
Irene Pierce	Mental health worker, Miller Centre, Miller
Shai Marshall	Aboriginal liaison worker, Liverpool Hospital
Ronnie Kroon	Women's health nurse, Bankstown Community Health
Western Sydney AHS	
Sadie Burling	Director of Women's and Children's Health, Blacktown Hospital
Elaine Lomas	Aboriginal health coordinator
Kate Lamb	Women's health coordinator
Carol Schuil	Midwife, Midwife/AHW Program, Daruk AMS, Mt Druitt
Elaine Gordon	Aboriginal health worker, Midwife/AHW Program, Daruk AMS
Wentworth AHS	
Trish Heal	Aboriginal health coordinator
Dr Henry Murray	Perinatal specialist
Professor Ron Benzie	Obstetrician
Northern Sydney AHS	
Marie Chamberlain	Professor of Midwifery, Hornsby Hospital
Central Sydney AHS	
Anne Connolly	Women's health coordinator
Allison Bush	Aboriginal midwife/liaison officer

South Eastern Sydney AHS	
Elaine Walker	Aboriginal education officer, Early Childhood Program
Fay McCartney-Bourne	Coordinator Maternal and Child Health services
Gail Daylight	Aboriginal health coordinator
Mid Western AHS	
Sue Bourke	Women's health coordinator, Orange
Ian Long	Aboriginal health coordinator
Janelle Dymock	Cervical screening nurse, Orange
Dr Annie Balcomb	GP Division, Orange
Gill Hindmarsh	Child, Family and Adolescent Program, Orange
Cindy Williams	Child, Family and Adolescent Program, Orange
Sandra Rose	Aboriginal health Worker, Child, Family and Adolescent Program, Orange
Cathy Dickson	Acting NUM, Maternity Unit, Orange Hospital
Marion Gillett	Aboriginal liaison officer, Orange Hospital
Lynette Kent	Aboriginal health worker, Cowra
Irene Riley	Hospital midwife, Condobolin
Suzanne Donohue	Women's health nurse, Condobolin
Louise Davis	Aboriginal health worker, Condobolin
Jenny Lincoln	Community midwife, Condobolin
Dr Andrew West	GP, Condobolin
Sue Wood	Community nurse, Lake Cargelligo
Josephine Harris	Aboriginal family services coordinator, Lake Cargelligo
Dr Shona Lewis	GP, Lake Cargelligo
Macquarie AHS	
Peggy Devrell	Nurse, Wellington AMS
Norma Griffin	Aboriginal health education officer, Wellington
Dr Tony Geraghty	Obstetrician, Dubbo
Dr Hardacre	Paediatrician, Dubbo
Kathleen Ryan	Maternity services coordinator, Dubbo
Janie Brown	Aboriginal liaison officer, Dubbo Hospital
Gwen Cosier	Women's health coordinator
Steve Gibson	Aboriginal health coordinator
Diana Evans	NUM, Maternity Unit, Dubbo Hospital
Julie Mulligan	NUM, Community Health, Dubbo
Allison Loudon	Community midwife, Dubbo
Ellen Doolan	Aboriginal health worker, Midwife/AHW Program, Dubbo
Julie Bowen-Withington	Women's health nurse, Dubbo
Jane Beach	Women's health and early childhood nurse, Dubbo
Far West AHS	
Namira Williams	Child and family health officer, Broken Hill
Betty Mitchell	NUM, Far West Health Service, Broken Hill
Hugh Bourke	Deputy Director, Population Health Unit, Broken Hill
Kim Browne	Director, Health Service Development, Broken Hill
Sue Selden	PHC senior lecturer, Dept of Rural Health, Broken Hill
Karrina Demasi	Child and family health nurse, RFDS, Broken Hill
Judy Nancarrow	Midwife, Broken Hill AMS
Jeannee Spears	Midwife, Broken Hill Hospital
Faye Weinert	Midwife, Broken Hill Hospital
Marie White	Community midwife, Bourke
Liz Kelly	Aboriginal health worker, Bourke
Kate Horsburgh	Child and family nurse, Walgett
Alisa Jackson	Nurse/midwife, Menindee Health Service

Geraldine Rolton	Aboriginal health worker, Menindee Health Service
Terri Bevan	Primary health care nurse, Dareton
Marg Lawson	Aboriginal health worker, Dareton
Anne O'Halloran	School nurse, Balranald
Fran Grimm	Child and family nurse, Balranald
Julie King	Nurse, Ivanhoe
New England AHS	
Robin Skewes	Maternity services coordinator
Maggie Daley	Women's health coordinator
Janelle Powell	Community midwife, Midwife/AHW program, Tamworth
Dr Peter Finlayson	Medical superintendent, Tamworth Hospital
Dr Keith Hollebone	Obstetrician, Tamworth
Sandra Thompson	Early childhood nurse, Tamworth
Kathy Prowse	Social worker, Tamworth
Chris Solberg	Aboriginal health education officer, Tamworth
Jenny Bath	Women's health nurse, Tamworth
Martin Nean	Aboriginal health worker, Tamworth
Jenny Richardson	NUM, Maternity Unit, Armidale Hospital
Narelle Clayton	Community midwife, Armidale
Kaye Morris	Aboriginal community nurse
Priscilla Vale	Aboriginal health education officer, Armidale
Megan Jones	Director, Community Services, Armidale
Lyn Bullen	Midwife, Armidale AMS
Dr Obermeder	GP, Armidale AMS
Michael Sivarmann	Nurse, Armidale AMS
Pat Dixon	CEO, Armidale AMS
Dr Bookallil	GP, Armidale
Elaine Bing	Aboriginal health worker, Toomelah
Richard Swan	Aboriginal health worker, Moree
Judy Hancock	Aboriginal health worker, Moree
Candice Dalhstrom	Aboriginal healthworker, Moree
Bill Toomey	Aboriginal health worker, Narrabri
Mary Swan	Aboriginal health worker, Pius X AMS, Moree
Louise Peckham	Aboriginal youth worker, Moree
Diana Shiel	Director, Community Health, Moree
Helen Tonkin	Women's health nurse, Moree
Sue Thrift	Nurse, Pius X AMS, Moree
Dr Maree Puxty	GP, Moree
Barbara Schultz	NUM, Maternity Unit, Moree Hospital
Northern Rivers AHS	
Virginia Apani	Aboriginal liaison officer, Tweed Heads
Danna Williams	Aboriginal child health worker, Tweed Heads
Sue Follent	Aboriginal health worker, Team leader, Tweed Heads
Susie Dunn	Early childhood nurse, Tweed Heads
Joy Cordner	Parent educator, Tweed Heads
Margie Young	Women's health coordinator
Mavis Gold	Aboriginal health coordinator
Teena Binge	Team leader, Aboriginal health workers, Lismore
Anne Davies	Maternity services Coordinator, Lismore
Mary Wickham	Parent education coordinator, Lismore
Rossie Lyons	Families First project officer, Lismore
Anne Church	Community health nurse, Ballina
Vicki Harrison	Community midwife, Casino AMS
Steve Woods	CEO, Grafton AMS

Rosemary Laurie	Team leader, Casino AMS
Marlene Binge	Aboriginal health worker, Casino AMS
Karen Day	Aboriginal health education officer, Casino
Marion Johnson	Women's health nurse, Grafton
Margaret Jeffries	NUM, Maternity Unit, Grafton Hospital
Mid North Coast AHS	
Lynda Fletcher	Families First project officer, Coffs Harbour
Kate Skinner	Nurse/midwife, Aboriginal health unit, Coffs Harbour
Melanie Stearn	Aboriginal parent educator, Coffs Harbour
Lyndell Williams	Early childhood nurse, Coffs Harbour
Lesley Flanders	Aboriginal parent and maternity educator, Bowraville
Caroline Maher	Nurse, Bowraville
Wendy Asprey	Midwife, Durri AMS, Kempsey
Laurie Clay	Acting CEO, Durri AMS
Jackie Jarret	Aboriginal health worker, Midwife/AHW program, Durri AMS
Dr Peter Fletcher	GP, Durri AMS
Gail Saul	NUM, Maternity Unit, Kempsey Hospital
Bob Davis	Aboriginal health coordinator, Port Macquarie
Lyn Boylan	Maternity services research officer, Taree
Lorna Neal	Women's health coordinator, Taree
Pam Buchanan	NUM, Maternity Unit, Taree Hospital
Dr Margaret Gibbons	GP, Cabarita clinic, Foster
Tanya Simon	Aboriginal health worker, Cabarita clinic, Foster
Sadatia Ferguson	Aboriginal health worker, Cabarita clinic, Foster
Karyn Walker	Aboriginal health worker, Cabarita clinic, Foster
Dennis Moulds	Coordinator, Child, Adolescent and Family Health Unit, Foster
Julie Williams	Health Improvement Cluster, Foster
Lee Davidson	Director, Community Health, Taree
Dr Pat Sweeney	GP, Biripi AMS, Taree
Vanessa Villafor	Aboriginal health worker, Biripi AMS
Janine Cochrane	Aboriginal health worker, Biripi AMS
Other	
Dr Jenny Hunt	Public health physician, Sydney
Dr Paul Lancaster	Director, National Perinatal Statistics Unit, Sydney
Pat Brodie	President, Midwives Association, Senior research midwife, Australian Midwifery Action Project, Sydney
Sally Tracey	Senior research midwife, Australian Midwifery Action Project, Sydney
Sue Ferguson-Hill	Midwifery lecturer, College of Nursing, Sydney

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