2016-18 Evaluation of the NSW Aboriginal Maternal and Infant Health Service (AMIHS)

FINAL REPORT

June 2019

HUMANCAPITAL Alliance

Creating workforce solutions

About this report

This Final Report was prepared by Murawin Consulting and Human Capital Alliance (HCA) under the guidance of a structured governance arrangement, including an Evaluation Advisory Committee and a Cultural Reference Group. We would like to acknowledge their input to the evaluation and note their contributions.

The purpose of the report is to present the findings from the six interrelated components of the evaluation. It is accompanied by two technical reports which detail the methods and results of the qualitative and quantitative components of the evaluation.

The report was commissioned by the NSW Ministry of Health.

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

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Acknowledgements

We acknowledge the First Nations people of NSW and we pay respect to Elders past and present and to emerging leaders. In the acknowledging, we also recognise the people of those First Nations communities where Aboriginal Maternal and Infant Health Service (AMIHS) operates. This includes the people of the following Nations - Kamilaroi, Ngemba, Wiradjuri, Anaiwan, Bundjalung, Yaegl, Gumbaynggirr, Dunghutti, Biripi, Wonnarua, Awabakal, Darkinjung, Eora (Dharug and Gadigal clans), Tharawal, Yuin, Ngunnawal/Ngambry, Maraura, Kureinji, and Barkindji – and the peoples of many other Nations who live in or visit communities where AMIHS services are delivered.

We further acknowledge that Aboriginal people have maintained cultural connection to Country in the AMIHS sites. It is this very essence of cultural connection that is significant to the AMIHS program – when the AMIHS model is delivered as intended, it contributes to strong cultural identities and to creating the best possible environment for mothers and their Aboriginal babies to thrive.

In particular, we acknowledge and thank the many stakeholders - AMIHS clients (mothers, fathers, and extended families), AMIHS staff, service managers, Aboriginal Community Controlled Health Services (ACCHS) staff, community members, other service providers and peak organisations - who contributed their insights, reflections and advice on their experiences with the AMIHS program. These contributions were often based on understandings gained over many years and, sometimes, with perspectives gained from two generations of births that were supported by AMIHS. We sincerely hope that we have honoured their input.

We also wish to thank the members of the Cultural Reference Group, the Evaluation Advisory Committee and the NSW Ministry of Health, whose support and assistance throughout the evaluation was invaluable.

Aboriginal life view – a holistic view of health

The AMIHS evaluation has been undertaken on the premise that understanding the health of Aboriginal people first requires the acknowledgement of the profound effects of colonisation and consequential intergenerational trauma and, therefore, the critical need for trauma-informed practices and services.

> *"Aboriginal health means not just the physical wellbeing of an individual but refers to the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being thereby bringing about the total wellbeing of their community. It is a whole of life view and includes the concept of life-death-life."*
>
> *National Aboriginal Health Strategy 1989*

Valuing the Aboriginal Voice

The 2016-18 evaluation has sought to privilege Aboriginal ways of being, knowing, and doing by ensuring that Aboriginal community members' and health professionals' voices are valued for their cultural understanding and knowhow. It also sought to acknowledge the effects that the social and cultural determinants (Lowitja, Institute, 2014) of health have had in the design and delivery of services for Aboriginal people.

An important aspect of the evaluation has been the integral involvement of Aboriginal people in all aspects of the evaluation process. A Cultural Reference Group was established in the early stage of the evaluation, designed to bring Aboriginal community voices into all aspects of the governance of the evaluation. The evaluation team worked closely with the CRG throughout the evaluation. A deep listening methodology was engaged by the evaluators throughout the qualitative interview process and writing of this report to hear the voices of women having Aboriginal babies, their partners, extended families and communities who have used or are using AMIHS and others involved with AMIHS to ensure their voices are conveyed.

Aboriginal leadership, guidance and reflections have been integrated into these evaluation findings in a wide range of ways, including the following key mechanisms:

- the inclusion of Aboriginal stakeholders in the initial stages of framing the evaluation research questions and the evaluation framework more broadly
- the selection of Murawin and HCA as Aboriginal and non-Aboriginal evaluators working in partnership
- close engagement and collaboration with the Aboriginal members of the Cultural Reference Group and the Evaluation Advisory Committee
- involvement of Aboriginal researchers in all qualitative data collection and analysis
- presentation of emerging findings with Aboriginal stakeholders, including AMIHS workers, through a workshop to consider how best to present draft findings
- presentation of integrated evaluation findings in storyline form to align with Aboriginal cultural practices for conveying meaning to an issue and transference of knowledge.

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Executive summary

Program and evaluation overview

The NSW AMIHS program is a maternal and infant health care program that has been funded by the NSW Ministry of Health (the Ministry) on a recurrent basis for nearly 20 years. AMIHS commenced at 12 sites in 2000-01, expanding further in 2008-10. It now operates in over 40 sites across NSW providing care to mothers of Aboriginal babies and their families.

From the outset, AMIHS has been guided by a Service Delivery Model (SDM) that was designed to support a flexible and responsive social health model of service delivery and to be delivered by a team of a midwife and an Aboriginal Health Worker (AHW) working in partnership. Home visiting is an integral element of the SDM, along with integration of health promotion activities and capacity for the AMIHS staff to connect with relevant local services and organisations. The program also uses a community development approach to build linkages with the local community and to promote connection and support with clients of AMIHS.

Over the course of 2016-18, an evaluation has been undertaken of the program, using a mixed methods approach to examine client and staff perceptions of the program, how the program has been implemented, the extent of its reach, the health outcomes that can be attributed to it, and an analysis of its costs.

The evaluation has drawn on program documentation (including site annual reports), a survey of site managers, routine maternal and infant health data, and interviews with AMIHS clients and their families, AMIHS staff, community members and other program stakeholders undertaken at six case study sites throughout NSW. The evaluation has been conducted, guided, and informed by Aboriginal consultants, administrators, service providers, program clients and community members, with the intention that Aboriginal voices will be central to the evaluation findings.

Key findings

AMIHS is valued by clients and their families

The qualitative component of the evaluation revealed that clients, families and community members across the case study sites were almost unanimous in their positive assessment of the value of the program. Aspects of the program that were highly valued include:

- a flexible and responsive approach to service delivery
- demonstrated respect and willingness to incorporate the knowledge, values and choices of clients
- delivery of relationship and family-based care that includes clients' family and community
- inclusion of a respected Aboriginal health professional
- the opportunity to build close and trusted relationships with AMIHS staff, and

- support and guidance to access mainstream services.

AMIHS is culturally appropriate

AMIHS was considered by most stakeholders at case study sites to be a culturally appropriate service, because AMIHS staff demonstrated a willingness to listen and incorporate the knowledge, values and choices of clients as part of providing support. A deep connection and long-standing relationship between the AHW, and in some locations, the midwife and the community were noted by clients and community stakeholders as being an important demonstration of the cultural appropriateness of the service. The presence and visibility of Aboriginal staff, as noted by some stakeholders, was perceived to be comforting for clients. At most case study sites, the visibility of culture and language, such as artwork, images and incorporation of the local language into signage in the service environment was perceived by some clients, AMIHS staff and other stakeholders as valuing and respecting Aboriginal culture.

AMIHS is implemented in different ways

Evaluation data from annual reports, the Managers' Survey, the case studies and stakeholder interviews indicated that AMIHS at most sites was being delivered largely in conformance with the AMIHS SDM but there was some variation across sites. The SDM allows some scope for the model to be delivered according to community needs, but it was identified through the case study data that there were some elements of the model that appear to be critical to the success of the program and where variation may be compromising the unique characteristics of the model and may be affecting outcomes achievement. These critical elements include:

- an active, structured and regular health promotion focus
- collaboration with other (health and welfare) service providers
- flexible and mobile care
- building and maintaining effective community partnerships.

The most common reason offered for sites not fully conforming with the SDM across all sites was the constraint of time. AMIHS staff and managers at some case study sites reported that a lack of time often resulted in some elements of the model being prioritised over others. The economic evaluation gave some support to the perceptions of AMIHS workers and managers in estimates that some sites more than likely do not have enough staff[1], although in the absence of an agreed standard for staffing arrangements and/or guidelines on an appropriate service workload, this is difficult to conclusively demonstrate.

AMIHS is reaching the women who need it the most

The AMIHS program was found to be widely available to eligible mothers (that is, mothers of Aboriginal babies) throughout NSW. Over 80% of eligible mothers are within the footprint of

[1] The economic evaluation also estimated that some sites might be over-staffed.

an AMIHS site. Within this footprint, just over half of the eligible mothers are accepting the service.

The evaluation found that women who were young, Aboriginal and smoked during pregnancy were more likely to access AMIHS. Stakeholders at the case study sites also reported that many clients were experiencing complex health and social issues (particularly mental health, drug and alcohol problems and/or child protection issues). To support clients with multiple complexities, AMIHS staff reported that extra time was needed to build trust and provide wrap around support that would enable good health and social outcomes.

The case study findings suggest that improved resourcing may be needed in some sites to ensure that all AMIHS clients receive holistic care and that staff are provided with support to deliver all elements of the program. This includes AMIHS staff being supported to develop their skills, knowledge and confidence through regular training and clinical supervision and cultural supervision. [2]

AMIHS is contributing to better outcomes for women and their families

A number of forms of analysis were undertaken to investigate the impact of AMIHS on health outcomes. The combined results of these analyses found moderate evidence that AMIHS is associated with women with Aboriginal babies attending antenatal services earlier and initial evidence that it is associated with women attending more antenatal visits. Moderate evidence was found that AMIHS is contributing to a reduction in smoking at any time during pregnancy among women with Aboriginal babies. There is also initial evidence that AMIHS is associated with a reduction in low birthweight babies. However, the evaluation was unable to demonstrate that AMIHS was associated with improvements in quitting smoking in the second half of pregnancy or fully breastfeeding at hospital discharge. Additionally, results were mixed for small for gestational age and preterm birth.

Of the analyses undertaken, a key comparison was between women who received the program and women who were not offered the program, as both groups had very similar demographic and pregnancy characteristics. Compared to eligible women who were not offered AMIHS, women who received the program had more antenatal visits, commenced antenatal care earlier in their pregnancy, and were less likely to have babies who were either preterm or low birth weight.

In addition to these quantitative outcome measures of AMIHS, many stakeholders in the case study sites reported that there were a range of health and social benefits for clients accessing AMIHS that were evident but not always obvious or easy to measure. Various stakeholders reported that there were many flow-on effects for some local communities, such as employment opportunities and development of career pathways that are observed after longer periods of time. Additional measures that gauge incremental changes and outcomes

[2] A definition of 'cultural supervision' can be found in *'Access to clinical supervision'* in Storyline 2 of main report.

and the experiences of clients, as well as the flow-on effects for communities could provide a better understanding of the broader impacts of AMIHS.

Summary

The evaluation findings suggest that AMIHS is a successful program and many Aboriginal communities in NSW have benefited from its constancy over the last two decades. The flexibility of the model and the inclusion of Aboriginal team members are critical to its success. Stakeholders reported that the program has provided significant support to clients to gain access to mainstream services and to build lasting health literacy skills that are beneficial for themselves, their families and their communities. Across the case study sites, clients highly valued the program and considered it to be a very positive option for their maternity care.

Resource constraints though appear to be having a limiting effect on the capacity of some sites to deliver the AMIHS service model in its entirety and this may be influencing the capacity of the program to achieve its optimal effect. The roles played by AMIHS team members are sometimes challenging, particularly when supporting AMIHS clients and their families who experience multiple health and psychosocial complexities – in this context careful attention is required to ensure that AMIHS staff are well trained and supported on an ongoing basis.

There have been positive impacts on intermediate outcomes related to client involvement with AMIHS, and there was a strong sense from many clients, AMIHS staff and some community members at the case study sites that AMIHS is having a positive impact. More sensitive and objective measures are required to allow analysis of these more nuanced client experiences and outcomes. The evaluation has found that AMIHS is making a positive contribution to the health and wellbeing of local communities and better data will allow it to demonstrate what strategies are making a difference for NSW Aboriginal communities.

The NSW Aboriginal Maternal and Infant Health Service (AMIHS)

Over the past 20 years, there have been important improvements in Aboriginal maternal and infant health in NSW. These include increased access to early antenatal care, declines in risk factors such as smoking in pregnancy and teenage pregnancy and improved birth outcomes. However, significant inequities between Aboriginal and non-Aboriginal populations remain. Relatively little is known about the kinds of programs and services that are effective in improving the health and wellbeing of Aboriginal mothers and babies. Recent reviews have found a growing number of studies evaluating such programs and services. While these studies tend to report positive participant outcomes, their true effectiveness is uncertain due to poor study quality (Jongen et al., 2014; Kildea and Van Wagner, 2013). There is therefore a need to conduct rigorous impact evaluation of initiatives seeking to improve the health of Aboriginal mothers and babies (Brock, Charlton, and Yeatman, 2014).

The AMIHS program is a NSW Health-funded maternity service for Aboriginal families that aims to improve health outcomes for mothers and babies.

AMIHS uses a continuity of care model in which AHWs and midwives work together and with other services to provide high quality antenatal and postnatal care. Care starts as early as possible in pregnancy and continues through pregnancy and up to eight weeks after the baby is born. AMIHS sites are given a certain level of autonomy in how they implement and adapt the program to meet local needs. Key elements of the AMIHS SDM (NSW Health, reviewed 2014[3]) when implemented in full include:

- **antenatal and postnatal care** –antenatal and postnatal care must be provided. Postnatal care should also include a process of transition to child and family health (CFH) services.
- **site location** – the program can be provided in a range of locations but should be based alongside community health, Aboriginal health or maternity units. To support access, a community-based location is preferable, such as community health centres, CFH services or ACCHS.
- **smooth transition from AMIHS to CFH services** – families should be facilitated to transition from AMIHS to the CFH service through referral processes and shared visits in the antenatal and postnatal periods.
- **effective collaboration, consultation and referral** – AMIHS staff work with other services to provide integrated care for women and families.

[3] An outline of the AMIHS model was first publicly articulated in 2003 in the NSW Aboriginal Perinatal Health Report. The AMIHS Service Delivery Model was documented in 2010 and reviewed in 2014.

- **community development and health promotion activities** – these are led by the AHW and are conducted with the local Aboriginal community members and organisations.
- **being flexible and mobile** –AMIHS staff must have access to infrastructure and flexible working conditions to deliver flexible services that include home visits.
- **workforce and professional development** – AMIHS staff should be provided with workforce development and clinical supervision to build individual and team capacity.
- **effective community partnerships** – sites are adapted to the local needs and context of the local Aboriginal community by establishing community consultation processes and/or a Women's Reference Group.
- **ongoing monitoring and evaluation** – monitoring and evaluation must be built into the delivery of the AMIHS model to measure how well the program is meeting the intended aims.

Most AMIHS services are delivered by Local Health Districts (LHDs) through public maternity and community health services, and some are delivered by ACCHSs.

AMIHS was initially funded in 2000/01 and, following an action-research evaluation, was expanded in 2008/09. Funding is provided to LHDs and ACCHSs who undertake local planning to determine where AMIHS is delivered. This means that the number and location of AMIHS sites can change over time based on community needs.

The survey of AMIHS managers conducted for this evaluation found that 12 AMIHS sites were established in 2000/01 and a further 35 sites were established following funding enhancement in 2008/09. In 2017, there were 46 AMIHS sites delivering services to Aboriginal families in over 80 locations in NSW.

Evaluation of the AMIHS program

Previous evaluations

An evaluation of AMIHS was conducted over 10 years ago after the first sites were implemented (NSW Health, 2005). The findings suggested that AMIHS was achieving its goal of providing improved and culturally appropriate antenatal and postnatal care for mothers of Aboriginal babies and their families. The evaluation also identified ways in which the program could be strengthened. However, the evaluation design had some limitations, such as inadequate control of potential confounders in analyses of program impacts.

Following the 2005 AMIHS evaluation, the program was enhanced to increase access to antenatal care, reduce levels of antenatal smoking and improve uptake of CFH services.

Current evaluation

The objectives of the 2016-18 evaluation of AMIHS were to:

1. identify and describe the ways in which AMIHS is being implemented, at state and local levels
2. explore client, staff and stakeholder experiences and perspectives of AMIHS
3. investigate the extent to which AMIHS is reaching its target population(s)
4. investigate the impact of AMIHS on the health outcomes of Aboriginal babies and their mothers
5. investigate the costs of implementing AMIHS and undertake an economic evaluation of AMIHS.

Design of the 2016-18 evaluation

Data collection and analysis

A mixed methods approach was used for the 2016-18 evaluation. This involved using existing information and new data sources through qualitative and quantitative data collection and analysis. The evaluation involved six interrelated components:

1. *a review of program documentation* – this involved collating and reviewing the annual reports from all AMIHS sites and other core program documentation related to the implementation of AMIHS since its inception in 2000. Program activity data from the document review formed an important cross-reference with Managers' Survey data.
2. *a survey of AMIHS managers* - Managers of all AMIHS sites in NSW completed an online survey to collect information on the implementation of AMIHS at the site level; the survey was completed for all 46 active sites in 2017 (the 'Managers' Survey').

3. *qualitative interviews with key stakeholders* - interviews with 14 individual statewide or peak body representatives ('Statewide Stakeholder interviews') were conducted as part of the qualitative component.
4. *case studies in six selected AMIHS sites* – data collected for the evaluation was undertaken through interviews and focus group discussions with 140 different stakeholders across six case study sites representing the different service types of AMIHS. The different types of stakeholders included clients of AMIHS (past and current) AMIHS staff and managers, community members (partners of clients, grandparents and local Elders), LHD workers and partner organisations.
5. *quantitative analysis of routinely collected patient data* – routinely collected health data from the NSW AMIHS Data Collection (AMDC) and Maternal Child Health Register (MCHR) were used to investigate the reach of the AMIHS program and its impact on the health outcomes of mothers and babies. AMDC data were made available from 2012 to 2016 and MCHR data were available for the period 1 January 1994 to 31 December 2015.
6. *an economic evaluation* – a value for money (VfM) analysis was undertaken which involves the targeting of resources in a manner which maximises project outcomes relative to their costs. The focus of analysis was to identify differences between service types and other variables in the influence on unit costs. The Managers' Survey data was primarily used for this analysis. Data was collected in 2017 for financial year 2015-16.

A more detailed description of the overall method and specific descriptions of the research design, data collection methods and means of data analysis are provided for the qualitative components (1, 2, 3 and 4) and the quantitative component (5) in Cowles et al. (2019) and Jalaludin, et al. (2019) respectively. More details of the method for the economic evaluation can be found in *Storyline 5: The costs of implementing AMIHS* of this report.

Interpretation of findings

The mixed methods approach was useful for the evaluation to look at the AMIHS program from a range of different perspectives and data sources. This reduced the risk of missing important elements of the program or relying on findings from a single source. A mixed methods approach includes both quantitative and qualitative data collection and analysis, and as Madey (1983) has observed:

> "...*qualitative methods provide depth to some of the causes behind the changes observed using more quantitative methods (but) quantitative methods provide an enduring yardstick for measuring change.*"

The evaluation used a triangulation approach (Jick, 1979) where – the different data collection methods were undertaken in parallel. This approach allows for comparison of findings from multiple sources during the findings or interpretation stage.

A framework or rules for integrating the quantitative and qualitative data is required (Driscoll, et al., 2007). The rules adopted by the research team for this project included:

- giving equal weight to different data sources (qualitative and quantitative)

- interpreting the findings from different data sources separately before triangulation
- undertaking the data analysis and interpretation of different research components at the same time (and therefore not allowing findings from one component to influence another component)

The evaluation was reviewed and approved by the Aboriginal Health & Medical Research Council (AH&MRC) Research Ethics Committee (Ref: 1223/16) and Population and Health Services Research Ethics Committee (PHSREC) (Ref: HREC/16/CIPHS/35).

Storyline 1: The views of clients, staff and stakeholders about AMIHS

AMIHS is a valued program

Across all case study sites, clients and community members talked about valuing AMIHS. The program was valued because clients **felt safe and comfortable to access AMIHS** and they felt that AMIHS staff went 'above and beyond' to support them with a range of needs in their lives.

For many clients, AMIHS represented a place where they felt a sense of security and assurance during what could be a joyous but vulnerable time in their life; some compared the support and security experienced through AMIHS to the love, support and nurturing provided by a mother or a family.

"Not having a mum it's good to have them. It's good to be close to them. It's like they build you up, how they do the classes, wrapping baby. They don't bombard you with information, they just prepare you."

AMIHS client #6

AMIHS was also viewed as a familiar program to clients because they felt that **staff were accessible and approachable**. Many clients and community members talked about feeling a sense of familiarity with the program because they knew the AMIHS staff outside of the program and talked to them in the community. AMIHS staff were often seen to make a genuine effort to provide support and **develop ongoing relationships** with the clients' families.

"And they know all kids by name. They know them all. And they'll ask how they're going, what they're up to, they know how old they are…it's not a job to them. They're invested in the children from the start and they like to do what they do."

AMIHS client #9

AMIHS was also valued by many clients because they felt that AMIHS staff provided support that was **responsive to their overall health and wellbeing**. AMIHS staff were seen to work hard to support clients with practical things like arranging transport to ensure they could attend appointments. Often, it was the little things that counted most for clients – AMIHS staff being available to answer calls, answer questions or just provide support and encouragement.

Importantly, clients valued AMIHS for the efforts staff made to provide **relationship and family-based care** that valued and incorporated the whole context of their life, including their partners, other children and their extended family. This was achieved by identifying and working with the family support networks such as grandparents, encouraging fathers to attend weekly playgroups or providing personalised support for women and their partners. There were several examples of women and their partners being supported to access mental health and drug and alcohol services or AMIHS staff working closely with families to resolve child protection issues and increase their skills and confidence as parents.

AMIHS delivers flexible support

One of the key elements of the program, as reported by a broad range of stakeholders, was that **AMIHS delivers flexible support**.

The value of flexible support

The flexibility of the program was highly valued by clients and other stakeholders in case study sites for the positive impacts that could be achieved. AMIHS staff reported that a flexible approach ensured that women were accessing, and remaining engaged with, AMIHS. They felt that this resulted in women receiving antenatal care, regardless of their stage of pregnancy.

Many clients reported that a flexible approach was about AMIHS staff being patient, understanding and encouraging, which could help to increase their confidence as parents.

When clients did not access the program until the late stages of pregnancy, a flexible and understanding approach by AMIHS staff was viewed by client and staff respondents as necessary to build trust and rapport to ensure all the client's needs were addressed. Working flexibly was also identified by AMIHS staff as a critical strategy for achieving positive outcomes for clients who were experiencing complex and high-risk issues.

"I think that because of our flexible model and because we do more than just midwifery care and Aboriginal health work care, we're able to really support vulnerable women. Whether it be providing housing, assisting them with domestic violence, linking them in with community transport, lots of other things that are really important.

AMIHS AHW #3

Features of flexible support

"It was so great not to have to get all my kids on the bus and try to get down there for check-ups – [AMIHS midwife] comes to my place and does all the checks and everything. It doesn't worry her if there's a big mob in the house – she just gets on with it and doesn't mind if they ask questions and everything."

AMIHS client #12

The availability of **home visiting** was viewed as an important feature of delivering flexible support by many stakeholders, including clients and AMIHS staff. Home visits were considered useful when access to affordable transport, the cost of parking, or caring for other children could be a barrier for a client to access an AMIHS clinic or when clients were feeling particularly vulnerable.

AMIHS staff felt that home visits often provided them with a 'window' into how people are living and who their supports are, which in turn gave them a better understanding of what other supports might be needed for the mother and her baby.

While home visits were reported to be generally valued by AMIHS clients, it was reported by some AMIHS staff and partner organisations that some clients did not like home visits because of the fear of being judged by staff entering their home. Several stakeholders reported that this was often in relation to new staff providing services to clients.

Working 'around and with' the client was also identified by most AMIHS staff as a feature of flexible support. This included staff being understanding about why clients missed appointments, exploring and identifying clients' needs, or coordinating relevant services and supports as needed.

AMIHS staff and other stakeholders reported that this approach could ensure that women received support that was planned around their circumstances and needs, resulting in better engagement with the program. It was reported that some clients, particularly women experiencing high-risk issues, could find it hard to keep appointments; therefore, following up with women and working around their needs and circumstances could make the difference for whether they received antenatal and postnatal care. AMIHS staff also reported that speaking directly with other service providers could also assist clients to engage effectively and ensure they received necessary additional care and support.

AMIHS is culturally appropriate

Features of a culturally appropriate program

Across the case study sites, many stakeholders viewed AMIHS as a culturally appropriate program because care and support were delivered by **AMIHS staff who demonstrated an awareness and willingness** to provide support that openly respected the cultural knowledge and values of the client. This was demonstrated through **incorporating and understanding the value of the family and community** for clients, a willingness to listen and explore the needs of clients, and respect for their perspectives and choices.

> *"It's nice to see an Aboriginal person when you're an Aboriginal person laying there on a hospital bed."*
>
> *AMIHS AHW#2*

A **deep connection and long-standing relationships** between the AHW, and in some locations, the midwife, and the community was noted by clients and community stakeholders as being an important demonstration of the cultural appropriateness of the service.

"The AHW managed to get a cultural inclusiveness grant for upgrades at the hospital – there is a big mural done by a local artist, there are cot cards for all babies to say welcome in [the local Aboriginal language]."

LHD worker #31

For many stakeholders, the AHW represented a focus on Aboriginal health and valuing of culture at the AMIHS site and was perceived as an important way to ensure clients accessed the service and remained engaged. The **presence and visibility of Aboriginal staff**, as noted by some stakeholders, was perceived to be comforting for clients. AHWs were also viewed by many stakeholders, including clients, AMIHS midwives, managers and other LHD workers, as having a significant role in bridging the gap between communities and services through lines of kinship, community knowledge and dedication to the community. Some stakeholders also considered AHWs as the 'key' to the AMIHS program because they could bring a tangible cultural connection that could be the basis for developing trust with clients.

At most of the case study sites, **visibility of culture and language** in the service environment was perceived by some clients, AMIHS staff and other stakeholders as contributing to the service being culturally appropriate because it could demonstrate an appreciation of Aboriginal culture. This included displaying Aboriginal artwork, imagery and photographs of clients and babies, creating and decorating outdoor spaces at the site, client participation in art activities such as belly casting, or incorporating the local Aboriginal language into signage.

While a variety of efforts had been made at most case study sites to embed Aboriginal culture into the delivery of the AMIHS program, some AMIHS staff and LHD staff observed and noted that efforts to make mainstream service, such as maternity units, look more 'Aboriginal-friendly' or culturally appropriate could sometimes appear tokenistic. These stakeholders felt that if there was not enough effort to make systemic changes, such as increasing the level of cultural training for clinicians, the service would only be superficially culturally appropriate and clients may still not feel welcome.

Barriers to accessing AMIHS

AMIHS staff aimed to deliver services that upheld and respected the values, knowledge and choices of clients. But it was reported by some stakeholders at some of the case study sites that not all community members viewed AMIHS as accessible, particularly if it was an LHD-managed site. Stakeholders reported that this was because of broader suspicion, mistrust and enduring fear of government services that persisted in some parts of communities. Fear and mistrust were described by some stakeholders as being directly linked with historical incidents of racism or removal of children as part of previous policies and practices, and this could contribute to negative assumptions about AMIHS.

AMIHS staff reported that building trust with the local community required a shift in thinking from 'normal' or mainstream approaches to **connect with local communities and to work in a personalised way with clients**. Several stakeholders noted that past negative experiences with AMIHS or other government services recounted by family and community members,

could create a belief in communities that women who accessed AMIHS would not be respected as Aboriginal people, or their needs would not be accommodated, or their choices respected.

Experiences of racism

AMIHS can protect clients from experiences of racism

Instances of racism were talked about at all case study sites by AMIHS staff, ACCHS staff, mainstream hospital staff and clients. These examples were not directly related to the AMIHS site's operation but were reported to occur primarily during clients' contact with local mainstream health services.

The case study findings, as reported by clients, community members and AMIHS staff, indicated that by accessing AMIHS, women were largely protected from experiencing racism. Yet, it was reported by some stakeholders that some AMIHS clients were impacted by racism when the AMIHS program linked clients with other services, such as **at the point of birthing or needing to travel to a regional hospital**. This included examples of derogatory comments being made by hospital staff to clients, or reluctance by hospital staff to accommodate and respect an individual's needs and circumstances, such as being understanding that some clients may be fearful and anxious of government services, or that large groups of visitors is a cultural norm and a source of welcome support and encouragement for clients and their families.

"She said to us: 'We can't all go back to the bush'. They still think we're just running around not knowing what we're doing.

AMIHS AHW #5

The impact of racism on the delivery of AMIHS

"I hear frequently from management through to nurses, midwives in hospital statements like, "Hopefully one day we won't need these services because everyone will just want to come to mainstream". That in itself says to me that they don't know or understand what colonisation has done to us. It wiped out our culture."

AMIHS AHW #1

It was reported by stakeholders at some case study sites that racist attitudes within the health system could have **a direct impact on the implementation and delivery of AMIHS**. Some AMIHS staff felt that some health staff viewed the AMIHS program as a 'transitional' or time-limited service for Aboriginal people while they 'assimilate' rather than a valid permanent option for maternity care, or there was resentment from other colleagues that there was a 'special' program for Aboriginal people.

Racist attitudes were also reported to have an impact on whether potential AMIHS clients were referred to the program, with some stakeholders reporting examples of local **hospital staff not referring eligible women to AMIHS** because they did not value the program. Some stakeholders also reported observing an attitude within the health system that Aboriginal health work more

broadly was considered inferior compared to other modes of health care.

Some AMIHS AHWs talked about feeling undermined and undervalued by some staff when they felt that their perspectives were not heard or incorporated into the delivery of the program, or they felt undervalued by the structures and processes of the health system. A key example of this was that the AHW role was reportedly not included in the design of the centralised patient record system within one LHD.

Storyline 2: The ways that AMIHS is implemented

AMIHS is being implemented in different ways

The table below (Table 1) provides a summary of the assessment by the evaluation team of how the essential elements of the AMIHS SDM are being implemented across sites. The assessment is based on the combined findings that were collected from different sources for the evaluation. This included the Managers' Survey, the case studies, and the stakeholder consultations. Each designated 'essential' element of the AMIHS SDM is rated by:

a) the level of conformity of AMIHS sites with the SDM – the four levels are as follows:

   i. Comprehensive - all sites conforming with the SDM

   ii. High – 75% or more sites conforming with the SDM but with varying level of emphasis and quality

   iii. Moderate – 50% to 75 % of sites conforming with the SDM

   iv. Low – less than 50% of sites conforming with the SDM.

   The quantitative measure of conformity is exclusively based on data from the Managers' Survey[4], however, observations and further insights on the measure are possible from other data sources.

b) the sources of evidence – this provides a description of the data used to estimate level of conformity and other data that supports or provides alternative insights to the assessment.

c) the level of importance of conformity with the SDM[5] – the four levels of importance are as follows:

   i. "Very important" – non-conformity with the SDM will likely compromise the integrity of the model

   ii. "Important" – non-conformity with the SDM could compromise the integrity of the model

   iii. "Somewhat important" – non-conformity with the SDM could compromise the integrity of the model but the effect would be limited

   iv. "Not important" – non-conformity with the SDM seems unlikely to compromise the integrity of the model.

Quantitative statistical analysis was not undertaken of the influence of SDM essential elements on mother and baby health outcomes; this was assessed through the qualitative data findings.

[4] See Cowles et al. (2019) for a more detailed description of the Managers' Survey data.

[5] Although all the elements are designated 'essential' in the SDM, the evaluation found that variance on some elements was considered by stakeholders (clients, AMIHS workers, AMIHS managers, LHD and state-wide stakeholders) to be less likely to impact the integrity of the model.

Table 1: Summary description of the implementation of AMIHS essential elements as per SDM requirements

Model elements	Level of conformity with SDM	Description of the evidence	Level of importance of conformity
Provision of antenatal care	Comprehensive - all sites conforming with the SDM	Survey data indicated that all sites were providing comprehensive 'booking in' and regular antenatal visits. Almost all (97.8%, n=44) were providing support to access specialist care. All case study sites and stakeholders interviewed confirmed comprehensive antenatal services being provided. The quantitative analysis showed that on average AMIHS clients received over nine antenatal care visits.	Very important – this essential element of the SDM was widely identified through the qualitative data as critical.
Postnatal care up to 8 weeks	High - 75% or more sites conforming with the SDM but with varying levels of emphasis and quality	Survey data indicated that 97.8% (n=44) of sites were providing postnatal care. The survey did not seek information about the length of postnatal care provided at each site, but the case study data found variation across the six sites[6]. AMIHS staff at some case study sites reported that they did not have enough time to provide extended postnatal support.	Important – Clients, AMIHS workers and other stakeholders all agreed that postnatal care provided by AMIHS was important. However, different opinions prevailed on the length of care required.
Location of the sites	High - 75% or more sites conforming with the SDM	Survey data revealed that most AMIHS sites (73.9%, n=34) are located in the community, this included community health centres, ACCHS and CFH services. Four sites (8.7%) were located in a maternity service, which also conforms with the SDM.	Not important - the case studies indicated that there are advantages and disadvantages for each type of location, but overall

[6] The AMIHS SDM proposes an eight-week period of postnatal care. However, current NSW Health policy requires LHDs to provide midwifery home visiting for at least two weeks after the baby is born, which may extend to six weeks postnatal. The length of time is dependent on the woman's birth recovery and the baby's health.

Model elements	Level of conformity with SDM	Description of the evidence	Level of importance of conformity
			there does not appear to be an ideal location for AMIHS.
A smooth transition to CFH services	High - 75% or more sites conforming with the SDM but with varying levels of emphasis and quality	Survey data indicated that over 80% of AMIHS sites considered their relationship with CFH services to be effective or extremely effective. Case study data indicated however, that the quality of transition from AMIHS to CFH could be variable. If the programs were co-located within one organisation (ACCHS or LHD), seamless transition could be achieved; transition was 'clunky' if handover was between AMIHS and an external organisation. The case study data also indicated that the point of transition to other services, such as birthing or the postnatal handover, could be a vulnerable time for clients if health staff were not willing to work in person-centred ways or transition occurred too early.	Important – qualitative data strongly supported the importance of a smooth transition to CFH services to support breastfeeding and baby health outcomes.
Effective collaboration, consultation and referral	High - 75% or more sites conforming with the SDM but with varying levels of emphasis and quality	Survey data indicated that all sites were collaborating with some other services to some extent. Sites reported effective relationships with ACCHSs, CFH services, mainstream maternity services and Family and Community Services (FaCS). However, less effective relationships were reported with mental health, drug and alcohol and housing services, key 'partners' identified for the AMIHS target population through the qualitative data.	Very important - the case study data highlighted that relationships with other services were important to ensure clients received support for a range of needs, especially FaCS, mental health and drug and alcohol services.

Model elements	Level of conformity with SDM	Description of the evidence	Level of importance of conformity
		The case study data identified some sites did not have an effective relationship with FaCS which was also considered as a key agency by some stakeholders.	
Involvement in community development and health promotion activities	Moderate - 50% to 75% of sites conforming with the SDM	Survey data indicated that almost all sites (95.7%, n=44) were delivering community development and health promotion activities, mostly about smoking cessation and breastfeeding. Document review, survey and qualitative data together appear to suggest some sites invest significant worker time and dedicated funds into health promotion and community development activity while some rely significantly only on opportunistic interventions. Case study data indicated that AMIHS staff felt that they did not have enough time to deliver activities in addition to providing antenatal/postnatal support.	Very important – AMIHS workers and stakeholders identified this element as a distinguishing characteristic of AMIHS and the key to changing smoking and breastfeeding behaviour.
AMIHS services must be flexible and mobile	High - 75% or more sites conforming with the SDM but with varying levels of emphasis and quality	Survey data indicated almost all sites (98%, n=45) provided home visits and some sites only did home visits. The case study data indicated that clients felt that AMIHS was a flexible program because staff supported them with a range of needs, and they were accessible. Home visits were an important feature of the flexibility of AMIHS. Just over a one-third (37%, n=17) of surveyed sites did not think the working conditions matched the program needs. Survey data revealed that only half of the sites had access to a dedicated car.	Very important – clients in the case study sites almost universally appreciated the flexibility of AMIHS. It is most likely a key aspect influencing mothers to accept the AMIHS offer.

Model elements	Level of conformity with SDM	Description of the evidence	Level of importance of conformity
Workforce and professional development	Not quantifiable	Case study data indicated that AMIHS staff felt that they needed more training opportunities and more support to access training, particularly for rural and remote sites. Most AMIHS staff interviewed reported that more clinical supervision was needed, particularly for AHWs. Stakeholders supported this perspective.	Very important – Several AMIHS staff located in the case study sites felt insufficiently skilled to respond to the complex non-maternal health needs of their clients.
Effective community partnerships	Low – less than 50% of sites conforming with the SDM	Managers indicated through the survey that a majority of AMIHS sites (89%, n=41) had consulted the community in the past 5 years. Most AMIHS sites reported that they consulted with the community in unstructured ways and 45.7% (n=21) of the sites conducted structured and regular consultation. The survey results indicated that only 23.9% (n=10) of AMIHS sites had a currently functioning Women's Reference Group.	Somewhat important – some case study sites strongly link community engagement and community self-determination to outcomes, but other qualitative evidence is limited.
Ongoing monitoring and evaluation	High - 75% or more sites conforming with the SDM but with varying level of emphasis and quality	Survey data indicated that most sites (84.7%, n=39) had a formal system for gathering and reviewing program data. It was not possible to confirm to what extent the data were being used specifically for evaluating and monitoring the program. Just over half of the sites conduct feedback surveys with clients, and less than half conduct surveys with staff.	Important - difficult to relate this element directly to program outcomes but stakeholders noted that without ongoing monitoring it was difficult to identify areas for improvement.

Variations that could impact the integrity of the AMIHS model

The most critical elements of the SDM where variation was found to exist and could impact the integrity of the model were:

- Delivery of postnatal care for up to eight weeks
- A smooth transition to CFH services
- Effective collaboration, consultation and referral with other services
- Community development and health promotion activities
- Provision of flexible and mobile services
- Workforce and professional development for AMIHS staff
- Effective community partnerships.

Findings for how each of these elements was being implemented and the evidence for how variation can impact on the integrity of the model are described in the following sections.

Delivery of postnatal care for up to eight weeks

Delivery of postnatal care for up to eight weeks is an essential element of the AMIHS program yet findings from the case study sites and stakeholder interviews indicated that it was not being delivered at all sites or only a short period of postnatal care was being provided by AMIHS staff.

Across the six case study sites, some AMIHS staff reported that **they did not have enough time** to provide some or any postnatal care to clients.

Some stakeholders felt that transitioning clients out of AMIHS postnatal care too early (that is, less than four weeks) **could undermine the positive outcomes** achieved during the antenatal period and the benefit of those established relationships.

The initial post-birth period was viewed by many stakeholders to be a vulnerable time for some women because of the physical recovery, breastfeeding, and general adjustment to the arrival of a newborn. Therefore, without postnatal care from trusted caregivers, it was reported by AMIHS staff that women potentially missed out on other positive outcomes, such as establishing breastfeeding or keeping immunisation appointments.

"By the time someone's found them, they will have given up breastfeeding and be on formula, if they're lucky, or milk because formula is expensive. Who's following up their vaccinations, their screenings, whether mum's got contraception?"

LHD worker #23

Some clients also reported feeling uncomfortable with a new service provider coming to their home, particularly when they were feeling vulnerable in the initial post-birth period. They talked about preferring to be supported by the AMIHS staff they already knew rather than feeling shame when they had to re-tell their 'story' to a new worker, particularly when there had been circumstances of trauma, mental health issues and/or drug use.

A smooth transition to child and family health services

Child and family health services

A key element of the AMIHS model is to ensure clients have a smooth transition from AMIHS to a relevant CFH service. AMIHS staff are expected to initiate a process of transition during the postnatal period so that clients can become familiar with CFH staff.

Most AMIHS sites reported in the Managers' Survey that they had strong working relationships with the local CFH service by creating opportunities for the CFH nurses to meet with clients in the antenatal period, and most reported that the AMIHS site had shared premises with the CFH service.

"They [clients] go from an intensive partnership to a universal system. They tend to disappear. We need more case management models and home-based care within the universal system."

Partner organisation stakeholder #13

The case study findings indicated that the process of referral and handover to the relevant local CFH service was variable across the six sites. The least effective handover arrangements seemed to occur when handovers were being made between different organisations (e.g. between LHD services and ACCHSs or vice versa) or across other organisational boundaries (e.g. from maternity care to community care).

Stakeholders felt that when the transition to CFH from AMIHS was working well, clients appeared to be unaware of the handover, except for the change of the worker. Yet, if not carefully planned, as described by some AMIHS staff, clients would experience a 'clunky' rather than 'smooth' changeover between AMIHS and the CFH (where the Building Strong Foundations (BSF) program[7] is not present). AMIHS staff felt that this could be a barrier for some clients to access CFH services, particularly those who were not confident in navigating the health system, were experiencing a range of complex and high-risk issues or did not have good access to transport.

"Yeah – by the time I had to change over to [name of CFH nurse], I already knew her because she always said hello to me when I came in. And my kids are used to coming here – everyone knows them and they feel really welcome."

AMIHS client #1

At case study sites **where the AMIHS program and CFH service were co-located**, AMIHS staff felt that there was more likely to be a **seamless transition between the services**. They also felt that having a BSF program in the service mix could also contribute to a smooth transition and continuity of care. Several stakeholders were also of the view that **effective coordination** and **co-location of these programs** could enable continuity of care from the antenatal period potentially through to when a child starts school. Stakeholders also felt that co-location

[7] Building Strong Foundations for Aboriginal Children, Families and Communities Program (BSF) is a childhood CFH service for Aboriginal families in NSW.

also offered the chance to build trust much earlier than a formal handover would allow. However, some clients and AMIHS staff cautioned that early engagement of CFH staff should not leave clients without a transition period in the initial weeks post-birth with continued AMIHS staff support.

Some stakeholders also thought that **successful transitions relied on a joint effort by AMIHS and CFH staff to meet regularly and develop a trusted partnership**. Where a trusted partnership could not be established or staffing changes had occurred, AMIHS staff reported that there was an impact on the handover process.

Intrapartum care

AMIHS sites reported that building positive relationships with the local maternity service and staff was the primary way that they ensured clients received continuity of care during birth.

Maternity care and support during the intrapartum or birthing phase is not an element of the AMIHS model, and the Managers' Survey indicated that it was not provided by many sites. Some sites reported that AMIHS staff tried to offer direct support to clients by visiting during their working week (mostly Monday to Friday daytime hours). But generally, AMIHS staff indicated there was a limit to what they could provide within their existing resources.

> *"...they often ask me though "are you going to be there for the birth?". I'd love to say yes...there have been a couple of times where I was on the ward, I did go down to the labour ward and I did sit with the woman. We had to cancel some things to do that but at the time we thought that that was important ... I just find that it would be good if they could look at that in the future."*
>
> *AMIHS midwife #6*

Despite the attempts to support clients to connect with maternity services, many stakeholders across all case study sites felt that the **intrapartum or birthing care phase** was the stage of the maternity and infant care journey where **clients were often most vulnerable and needed more support**.

Some clients reported being aware of and prepared for the handover process to the maternity service and felt they had overall positive experiences during birth. But some clients, despite being informed about the changeover, were unclear about the handover process or wanted to be supported by the AMIHS midwife and/or AHW because they already knew and trusted them.

The Managers' Survey, document review and case study data indicated that there were times when some sites were able to provide birthing support. At some case study sites, AMIHS staff and managers reported that this could be achieved if AMIHS staff were available during birth or if the **AMIHS midwife also worked part-time in the local maternity unit** and they could support AMIHS clients when they were on duty. **Developing a good working relationship** between managers and staff of the local hospital was also reported by various stakeholders to be an important strategy to ensure clients received continuity of care.

Effective collaboration, consultation and referral with other services

AMIHS sites collaborate and work with a range of other services and organisations as part of providing clients with holistic and wrap around care. This was a feature of the program that was highly valued by many clients at the case studies sites.

The most effective relationships reported by sites in the Managers' Survey were with mainstream maternity services, allied health workers (including social workers) and obstetricians.

Most sites also reported that they had effective relationships with the local ACCHS enabled through effective referral pathways and sharing of information. As part of a **holistic approach,** some case study sites reported **working closely with the local ACCHS** who often provided additional services such as access to a GP, dentist or mental health services. In some cases, this was also viewed as an important strategy to **provide clients with choice** for their antenatal and postnatal care.

"Working with the AMS is very important because they know that we're here to do the same job, no competing for clients. They know what we do, and they try to fill gaps and we try to help them to access the hospital and have taken them to the hospital. If the women want to use both services, they can."

Other AMIHS staff #2

Various stakeholders in case study sites reported that effective relationships with FaCS and local mental health and drug and alcohol services (and at some sites, housing agencies) were critical to deliver the AMIHS model because many clients accessing the program were experiencing complex and high-risk issues. However, relationships with these agencies were reported in the Managers' Survey and by various stakeholders at case study sites, to be variable.

At all case study sites, stakeholders talked about the **benefits of working closely with other services** so that clients with complex and high-risk issues could be supported and remain engaged with services. But collaboration was **highly dependent on the establishment and maintenance of trusting relationships** between AMIHS staff and the staff of other services, the success of which was variable across the case study sites.

Some sites reported having effective and trusting relationships with FaCS agencies, which staff viewed as an important strategy to minimise the risk of removal of children for some AMIHS clients: **two-way relationships** were developed between AMIHS staff and FaCS staff who **shared information** and **worked collaboratively to develop preventative strategies** to support AMIHS clients and ensure the safety and protection of children. But this was not possible at all sites due to a lack of trust, as reported at some sites by various stakeholders, between FaCS staff and AMIHS staff and the local community.

"They gave me referrals to the psych when I needed it. Anxiety is an issue for me, I've always had that. I felt supported. "

Past client #6

Mental health and drug and alcohol issues were reported by many case study stakeholders to be the most common high-risk issues experienced by some AMIHS clients. AMIHS staff reported referring clients as needed to relevant services, and most sites reported in the Managers' Survey that relationships between AMIHS sites and relevant services were neither effective nor ineffective. Some stakeholders noted that intake policies and procedures adopted by community mental health services could adversely affect access to the service by placing a barrier to all but the most serious forms of mental illness. AMIHS staff and managers at most case study sites reported that there was often a limit to the support AMIHS staff could provide due to time constraints.

Some AMIHS staff reported that they lacked the skills or knowledge to coordinate appropriate support for clients. Some staff reported that it was often difficult to organise access to mental health services because there were not enough services available, there were long waiting lists, or there were complex referral processes in place to access subsidised support which could be overwhelming for clients.

Community development and health promotion activities

Types of activities

Community development and health promotion activity is a key factor that differentiates the AMIHS model from many other maternity models. It is also the key area of leadership for the AHW in the AHW/midwife partnership.

"... we didn't have to pick them up. They all turned up. So, I could see that they were really interested and motivated to do it. That was the really good thing about it. Whereas, sometimes at appointments, especially with smoking, we've got to drag them, practically. But, with the walking group, they'd turn up without fail."

AMIHS AHW #5

The Managers' Survey and document review indicated that **almost all sites (95%) were delivering some form of community development and health promotion activity** which varied in scope and nature across sites and was often undertaken in partnership with other local organisations.

The most common areas of focus of health promotion activity, as found from the document review and Managers' Survey, were reduction of smoking, reduction of alcohol and other drug use, promotion of breastfeeding, support for reducing teenage pregnancy, and promotion of healthy food. Such information was **commonly delivered during one-to-one discussions with clients** or through brochures and access to electronic information such as DVDs, YouTube clips or Facebook posts.

The Managers' Survey, document review and the case study sites also revealed that at some sites AMIHS staff either delivered or attended local Mums and Bubs groups, playgroup or preschool sessions to deliver health promotion. Mums and bubs groups at some case study sites were delivered by the site, sometimes using other non-AMIHS AHWs in the service, and some sites co-facilitated the weekly group with the local ACCHS.

AMIHS staff at many sites also reported attending community events, such as NAIDOC celebrations or National Sorry Day to increase visibility of the program and provide health promotion messages. Some sites also reported delivering art and culture-based activities such as belly casting, murals in hospital maternity units or entry areas, possum cloak making, placenta prints, "Cuppa Talk" mug decoration, production of Welcome to Country cot cards, screen printing of art and local language onto hats, nappy bags, baby wraps and baby suits, and annual calendar photo shoots.

Many stakeholders viewed these activities as **positive strategies to connect** and **build trust** with mothers**, promote cultural pride** and **reinforce the value of healthy, strong communities**.

Desire to do more

A wide variety of community development and health promotion was reported through annual reports, the Managers' Survey and the case studies. However, these data sources also revealed that AMIHS staff **did not have enough time** to deliver activities comprehensively in addition to providing antenatal and postnatal services to clients.

Most AMIHS staff at case study sites also felt that it was not possible to deliver more activities because their **caseloads were too high** and because many clients experiencing **complex and high-risk issues needed to be prioritised**.

Many AHWs and midwives talked about **feeling rushed**, going from one visit to another which resulted in little time to talk with the mothers, provide more information and ensure it was understood by the client.

Due to time constraints at some of the six case study sites, stakeholders reported that only minimal community development and health promotion was being conducted by AMIHS staff, limited to one-to-one brief discussions with clients, occasionally attending annual NAIDOC events and other community events, or sitting in on Mums and Bubs groups run by other organisations.

> *" ... the service has grown so much, the complexities have increased and I guess as a midwife even though I understand the importance of community development and allocating that time ... when there are women who need antenatal care out there it's just really difficult to do, and to do anything properly..."*
>
> *AMIHS midwife #4*

Most AMIHS staff (particularly AHWs), however, felt that these strategies were important and effective, and expressed a **strong desire for more opportunities to deliver activities** such as providing smoking cessation and breastfeeding support and information in group settings. Yet, AMIHS staff and managers reported that such activities required an investment of time to plan and coordinate resources. The Managers' Survey found that 25% of sites had allocated funds for community development and health promotion, and the case study data and document review indicated that many stakeholders felt that **more allocated funding and time was needed** to ensure the **sustainability of delivering activities.**

Provision of flexible and mobile services

A key element of the program is the ability to provide services that are flexible and mobile. It is also a feature of the program that is highly valued by AMIHS clients (see Storyline 1).

AMIHS staff and managers reported that **flexibility was required to provide home visits** and to respond to the **needs and circumstances of clients**. Some stakeholders also felt that flexibility underpinned the delivery of culturally competent services where time is taken to listen to clients to understand and accommodate their needs, choices and values.

Many stakeholders at case study sites felt there was not enough flexibility in how the program was being managed. Some stakeholders felt that **greater flexibility was required around service delivery hours**, such as over the weekend or during birthing. Some AMIHS staff felt that **more flexibility in their roles** would enable them to properly support clients with other additional supports and services outside of antenatal and postnatal support (e.g. transporting to and attending consultations for other health or social / welfare needs).

Some stakeholders, including clients, felt that **more flexibility was needed** around the **choice of AMIHS staff**, particularly in small communities, and in situations where a client felt uncomfortable or did not trust the AMIHS AHW or midwife at their local site.

At some case study sites, AMIHS staff and other stakeholders felt they needed **better access to essential infrastructure,** such as a car or a quality mobile phone, so that they could conduct home visits and be accessible to clients.

Workforce and professional development for AMIHS staff

Support to access training opportunities

Workforce and professional development are essential elements of the AMIHS model and require that the AMIHS AHW and midwife have access to education, clinical supervision, management support, and professional development and flexibility.

The core training for AMIHS staff is the responsibility of LHDs and ACCHS who manage the sites. Online courses, regular webcasts and at least one face to face workshop (approximately 1-2 days) per year are also available to AMIHS staff through the Training Support Unit (TSU)[8]. Yet, AMIHS staff and other stakeholders at all case study sites felt that **access to training and clinical supervision needed to be improved**.

"I've asked for the last four years, drug and alcohol, drug and alcohol is a huge thing and I think you can never have enough training especially as an AHW but everything costs money and you've never got the funds to do anything."

AMIHS AHW #3

[8] The Health Education and Training Institute (HETI) is funded to operate the TSU, which provides education and training to staff working in AMIHS and BSF services.

Some AMIHS staff reported that it was **difficult to access training** because of **funding constraints** or because they **did not have enough time** to attend training and it was difficult to fill positions with casual staff.

Many AMIHS staff in the case study sites reported feeling under-skilled to support clients who were experiencing trauma, mental health, and drug and alcohol issues and training was therefore viewed as an **important strategy to develop their skills and confidence**. This was particularly important for midwives because addressing and managing complex psychosocial issues with clients is not traditionally within the scope of midwifery practice.

At case study sites where it was reported by stakeholders that AMIHS managers were committed to developing staff, AMIHS staff reported feeling positive about the opportunities they had accessed, including secondment to other services or tertiary education.

Access to clinical supervision[9]

Access to clinical supervision was reported by many stakeholders in the case study sites to be very limited for AMIHS staff and particularly so for AHWs. At some sites, stakeholders reported that midwives were sometimes able to access clinical supervision through mainstream maternity services, but there were generally few local options for AHWs. Some stakeholders reported that direct managers did not always understand the need for or importance of an external process, or that it was difficult to access or fund regular clinical supervision through an external provider.

AMIHS staff felt that **access to regular clinical supervision needed to be improved** to ensure they were properly supported to deliver the full scope of the AMIHS program when working closely with clients. Some AHWs felt they needed more clinical supervision to effectively manage the challenge of working 'in two worlds' and to balance their personal obligations to the community and their professional obligations. Some midwives also felt more clinical supervision would assist them to manage their clinical tasks in the context of the AMIHS model.

It should be noted here that the terms 'clinical', cultural supervision, practice supervision or professional supervision were sometimes used interchangeably by some AMIHS staff and managers. It was not always clear if these terms were perceived by stakeholders as similar or different processes. However, at some case study sites, some AMIHS staff expressed explicitly a need for cultural supervision to manage their impacts of dealing with sensitive or traumatic

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[9] The term 'clinical supervision' can take on many meanings, but an appropriate definition for how it is used in this report is as follows: "*Clinical supervision is a formal and disciplined working alliance that is generally, but not necessarily, between a more experienced and a less experienced worker, in which the supervisee's clinical work is reviewed and reflected upon, with the aims of: improving the supervisee's work with clients; ensuring client welfare; supporting the supervisee in relation to their work, and supporting the supervisee's professional development*."

See: http://www.clinicalsupervisionguidelines.com.au/definition-and-purpose

In some circumstances the work of the supervisee is not 'clinical' then the term sometimes preferred is 'practice supervision'. In this report the two terms are synonymous, but only the term 'clinical' supervision is employed. This definition is consistent with that used in the AMIHS SDM.

experiences of clients, for example mandatory reporting for child protection issues. Several AMIHS staff termed these experiences as vicarious trauma.

Cultural supervision can be defined as:

> *"…the process of being with a skilled, experienced and wise person who respectfully, caringly and honestly supports a worker to reflect on their work in a meaningful way, learn and grow as an Aboriginal worker in the context of working with community."* (Victorian Dual Diagnosis Education and Training Unit, 2012, pg. 6)

Queensland Aboriginal and Torres Strait Islander Child Protection Peak (QATSICPP) (2012, pg. 8) also describe cultural supervision as *"…a co-created process, grown and developed by an ongoing, professional and collaborative conversation between a worker and their manager (or nominated person)', which is culturally-grounded"*. 'Culturally-grounded' supervision is viewed as a necessity to support Aboriginal staff to draw on their local knowledge of connections to family, community, country and culture while working in demanding contexts of loss and grief connected to the history of colonisation and forced removal of children from their families (QATSICPP, 2012).

Developing cultural competence of non-Aboriginal staff

Developing the cultural competence of midwives in understanding and working with Aboriginal people was identified as a training gap by some stakeholders at the case study sites. Many midwives recognised the need to develop their clinical skills, and some were also concerned about developing their competence in working closely and intensively with Aboriginal clients.

> *"We need more cultural training for clinicians – midwives and child and family health nurses …. they get one training course … one hour face-to-face but this is not enough. Would be good to have some in-depth training. We have had clinicians talk to families inappropriately, the language they use, medical terms, pushy manner."*
>
> *AMIHS AHW #4*

Stakeholders felt that **ongoing and regular training and support was required for midwives** because the AMIHS mode of operation requires a high degree of trust between clients and the AMIHS staff and most midwives employed in AMIHS are non-Aboriginal.

The NSW-wide cultural awareness training initiative - 'Respecting the Difference' was mentioned at all case study sites as a welcomed initiative, but it was generally felt that **training needed to be more frequent and more detailed**.

At some sites, some stakeholders also reported that developing the cultural awareness and understanding of managers of the program was required. Some AMIHS staff felt that the AHW role or the requirements of the program were not always properly understood by managers of the program, particularly if they had little experience working with Aboriginal clients and communities. They felt this could result in not being properly supported to deliver the program. In some instances, AHWs felt managers, and other staff, questioned their judgement and knowledge of the community, which they felt

undermined their ability to advocate for clients and to contribute to the way the program was delivered.

Effective community partnerships

Partnerships with the local community are required to ensure the local community is consulted and the AMIHS model is delivered in a way that meets the needs and wishes of the local community.

"… It is now well established and meets at the [name of location] for a nice lunch …and yarning about the service and what the community needs. So successful that it is now being called on by the LHD manager to provide input to the hospital upgrade planning."

AMIHS AHW #7

The level and nature of consultation and collaboration with the community was variable across all sites. Most AMIHS sites reported consulting with the local community in unstructured or informal ways. Less than half (45.7%, n=21) of the sites reported that they consulted with the community in more structured ways such as through reference groups, surveys or attending local community events and forums.

Almost a quarter of sites (23.9%, n = 42) had an established Women's Reference Group as prescribed in the SDM. Many AMIHS sites also reported in the Managers' Survey that they consulted directly with community members, playgroups, ACCHSs and local Aboriginal Land Councils.

The value of effective community partnerships was discussed by various stakeholders at some of the case study sites. At sites where time and resources had been invested to establish and sustain a Women's Reference Group or similar community reference group, stakeholders observed that the local community had greater influence and input on the program and even local health services. Some stakeholders reported that Mums and Bubs groups and playgroups delivered by some case study sites were also viewed as a useful strategy to connect with the local community, particularly if fathers and grandparents could also attend the group.

Partnering and working with the community was also viewed by some stakeholders as an important strategy to promote and increase access to the program.

"Because they [the program] need a higher profile. I didn't even know what AMIHS was; there'd be a lot of young girls in town who wouldn't even know about it and what it's about."

Community member #10

In longer-established case study sites where there were strong connections with the local community, AMIHS staff reported that the site had a high profile and women in the early stages of pregnancy would contact the midwife or AHW directly. But at some case study sites, the program appeared not to be widely known to the community and **some stakeholders felt that greater collaboration with the local community was required to promote the program** and ensure that eligible women accessed the program. At some case study sites, several clients reported finding out about AMIHS by chance but did not understand what the

program was, and some clients talked about finding out about the program through word of mouth.

Storyline 3: The reach of the AMIHS program

AMIHS is reaching a large number of eligible women in NSW

Statewide reach of AMIHS

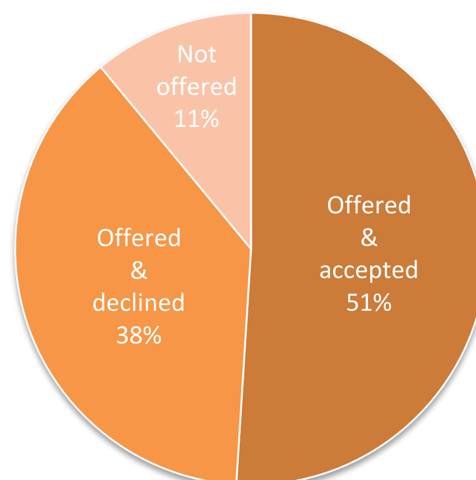

Figure1: Distribution of mothers by offer and acceptance of AMIHS (%). Source: AMDC data, 2012-2016

Analysis of the NSW AMIHS Data Collection (AMDC) for the period of July 2012 to December 2016 included 20,334[10] records of Aboriginal births in NSW. Of these records, there were 20,151 births where the mother's postcode was in NSW and the baby was identified as Aboriginal. Looking further at these records, 16,542 (82%) Aboriginal babies were born to mothers who lived in an AMIHS catchment area. This indicated that AMIHS is widely available to most mothers of Aboriginal babies in NSW. Over half (n=8,222) of the 16,542 mothers eligible to access AMIHS in the AMIHS catchment areas were 'offered and accepted' the program (see Figure 1). About one in 10 (11%) mothers were 'not offered' the service. Based on AMDC records, it was estimated that 41% of all Aboriginal babies born in NSW during the designated period were supported through an AMIHS site.

Reach by service type

There were five different types of AMIHS sites identified through an analysis of the Managers' Survey data. All active sites were categorised into one of five 'service types' (see Box 2 for description of service types).

Based on a multivariate data analysis, there were significant differences in the level of 'offer and acceptance' of the AMIHS program between service types. When comparing AMIHS service types, the 'Midwives & home visiting' and the 'AMIHS type' service types were associated with greater likelihood of women being offered and accepting the AMIHS program compared to the 'Midwife & clinic' service type (Table 9). The 'Midwives & home visiting' service type was almost twice as likely to have mothers accepting an offer of AMIHS compared to the 'Midwife & clinic' service type.

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[10] The total number of Aboriginal births recorded in the PDC for the same period is 25,027 (HealthStats NSW).

It is not clear what elements of these two service types lend themselves to a high proportion of offer and acceptance. Both have home visiting as the predominant mode of service delivery and the midwife and AHW undertake tasks together.

Box 2: Service types of AMIHS sites

Higher ratio midwives & clinic-based – sites most closely represent traditional maternity services. Limited home visiting, mostly clinic-based care, moderate community consultation, very low health promotion/community development activity, midwife/AHW undertake tasks together.

AHW-led & home visiting – sites have a higher ratio of AHWs, and more tasks are led by the AHW. Generally strong collaboration between AHWs and midwives, most care provided through home visiting. Low health promotion/community development activity, midwife/AHW undertake most tasks together.

AMIHS-type – this service type is most strongly aligned with the AMIHS Service Delivery Model. Predominantly service through home visits, equal number of AHW and midwives, AHW/midwife undertake tasks together, moderate level of health promotion/community development activity.

Higher ratio of AHWs & outreach – sites generally provide outreach service delivery and have a higher ratio of AHWs. Generally, an equal relationship between the AHW and midwife, most tasks are conducted together or equally likely to be led by either worker. Good relationship with community and high level of health promotion/community development activity.

Higher ratio midwives & home visiting – least aligned with the AMIHS service delivery model. Sites are generally midwife-led with a higher ratio of midwives, but AHWs and midwives generally conduct tasks together. Home visits predominant service delivery mode. Limited relationships with the community, including with the local ACCHS.

Key predictors of acceptance of an AMIHS offer

The quantitative data analysis also identified the key factors or characteristics that would predict whether a woman would accept an offer to access AMIHS[11]

For this analysis a range of factors that could influence (or predict) women who accepted the AMIHS program compared to women who were offered the program and declined or who were not offered the program at all were explored through a regression analysis. A regression analysis allows assessment of the independent contribution of each of the factors being examined as possible predictors. By comparison, descriptive analysis does not allow teasing

[11] Finding from the final multi-level regression model, after confounding factors were removed.

out of the independent contribution of one factor relative to other factors (see Jalaludin et al., 2019 for more detailed methods, analysis and findings of the quantitative component).

The predictive factors most likely to be associated with offer and acceptance of AMIHS were the mother's characteristics:[12]

- younger maternal age (≤19 years of age)
- Aboriginal
- had three or more previous pregnancies
- smoked during pregnancy.

Therefore, it is possible to predict if a woman will accept an offer to use AMIHS if she has one or more of the above factors (see Table 2 for details of statistical significance).

Table 2: Description of findings for predictive factors of women accepting AMIHS (Source: AMDC, 2012-2016)

Predictive factors women more likely to accept an offer	Description of finding and statistical significance
Younger maternal age	Compared to women aged <=19 years, women aged 20-34 years (OR=0.63; 95% CI = 0.56-0.70) and women aged more than 34 years (OR=0.48; 95% CI=0.40-0.56) (p<0.0001) were less likely to accept an AMIHS service. **This means that younger women were between one and a half and two times more likely to accept an AMIHS service offer**.
Aboriginality	Compared to non-Aboriginal mothers of Aboriginal babies, mothers who were Aboriginal were more likely to accept an AMIHS offer (OR = 2.35; CI = 2.18-2.52, p < 0.0001). **AMIHS acceptors were over two times more likely to be Aboriginal women than non-Aboriginal women.**

[12] In this section the degree of association between characteristics and a service offer and acceptance is described in terms of an odds ratio (OR). The OR is a measure of the association between an exposure and an outcome (Szumilas, 2010). The OR represents the odds that an outcome (AMIHS offer and acceptance) will occur given a particular exposure (a particular characteristic in this instance), compared to the odds of the outcome occurring in the absence of that exposure. The odds ratio can be used to compare the magnitude of various risk factors for that outcome as follows:

- OR=1 Exposure does not affect odds of outcome
- OR>1 Exposure associated with higher odds of outcome
- OR<1 Exposure associated with lower odds of outcome

Predictive factors women more likely to accept an offer	Description of finding and statistical significance
Three or more previous pregnancies	Compared to mothers in their first pregnancy, mothers with three or more previous pregnancies (OR = 1.19; 95% CI = 1.07-1.32, p = 0.002) were more likely to accept an AMIHS offer. **This means that women in their third or more pregnancy were almost 20% more likely to accept an AMIHS service than women who were pregnant for the first time.**
Smoked during pregnancy	Mothers who smoked during pregnancy (OR = 1.29; 95% CI=1.15-1.32; p<0.0001 for the first half of pregnancy and OR = 1.17; 95% CI=1.04-1.32; p=0.010 for the second half of pregnancy) were more likely to accept an AMIHS offer. **Compared to women who did not smoke during pregnancy, women who smoked were between 17% and 29% more likely to accept an AMIHS service.**

AMIHS is well placed to support clients with complex issues

There is strong evidence from the evaluation that the population being offered and accepting the AMIHS program is the intended population based on the SDM. **AMIHS is reaching the intended target groups of young and Aboriginal mothers and those who smoke during pregnancy.** The relationship between AMIHS being accepted and level of disadvantage of women is not as clear. There is an association between socioeconomic status and AMIHS participation; **more clients of AMIHS were in more disadvantaged groups** than women who did not accept an offer for AMIHS. However, the direction of the relationship is unclear.

"The majority have some vulnerability, medical or psychosocial or past history and so a lot of them are high risk pregnancies...."

Other AMIHS staff #2

The analysis of qualitative data collected through the case studies and stakeholder interviews for this evaluation found that respondents believed that **AMIHS is reaching the right target population**. The qualitative data findings added further insight that many AMIHS clients were experiencing a variety of complex and high-risk psychosocial issues. Stakeholders felt that compared to other maternity services, a high level of AMIHS clients were experiencing complex psychosocial issues.

A range of complex and high-risk issues were reported by all AMIHS staff and managers and various other stakeholders at all case study sites. The types of complex issues they reported included mental health issues, drug and alcohol use, domestic violence, homelessness or unstable housing options, young parenthood, or a lack of family support or networks. Many of these issues, as reported by the majority of AMIHS staff and managers were often observed

as occurring together and the interaction between the multiple issues was seen to increase the vulnerability of clients.

Mental health issues, especially depression and anxiety, were cited as being the most common high-risk factors experienced by AMIHS clients across all case study sites. Some clients also talked about experiencing postnatal depression. Stakeholders observed that mental health issues tended to go hand in hand with a range of other complexities and many stakeholders also felt there was a high prevalence of drug use among clients. Domestic violence and intergenerational trauma were also reported by stakeholders at all case study sites and were thought to almost always occur alongside other issues.

In response to the perceived level of complexity of many clients a variety of stakeholders talked about the importance of a holistic approach in how they supported clients. They talked about the need to look at the whole person and their needs so that they could coordinate a range of supports and services to achieve positive outcomes for the client and their baby. A holistic approach was also described as working flexibly around the client (a person-centred approach being a principle of the AMIHS model). This approach often meant that AMIHS staff felt they were required to go outside their normal roles and responsibilities.

"...I look at my life and my family and I can't believe how good it's turned out. I just want to keep learning how to be a better dad and do stuff with my kids and [my partner]. What the girls here [AMIHS team] did for us to help get us sorted out was amazing – we just wouldn't have known where to start."

Community member #5

Storyline 4: The impact of AMIHS on the health outcomes of Aboriginal babies and their mothers

AMIHS is having a positive impact on some health outcomes

The quantitative data analysis in this evaluation focussed on comparing the outcomes for Aboriginal babies born with support from AMIHS with outcomes for Aboriginal babies born without the support of AMIHS (see Jalaludin et al., 2019 for more detailed methods, analysis and findings of the quantitative component).

Three separate methods of analysis were employed in the study to try to understand the impact of the AMIHS program on a range maternal and baby health outcomes.

The three methods were:

1. A comparison of outcomes between an '*exposed*' group (a population who received AMIHS service support) and a '*control*' group (a population who did not receive AMIHS) group. This method of analysis used two models, where the 'control' group population could vary (between a population that did not receive AMIHS and a section of this population that were 'not offered' AMIHS).
2. A comparison of the outcomes of a population before the introduction of AMIHS with the outcomes of a population after the introduction of AMIHS. This method was used for two separate AMIHS groups based on when those services commenced (one set that commenced in 2001 and another set that commenced in 2008-09).
3. A comparison of the trend in outcomes of a population up to the introduction of an AMIHS service with the trend in outcomes of a population exposed to an AMIHS service after service implementation. This method was also used for two separate AMIHS service groups based on when those services commenced.

A key comparison

Of the analyses undertaken, a key comparison was between women who received AMIHS and eligible women who were not offered the program. Compared to eligible women who were 'offered and declined AMIHS', this control group was possibly more relevant because eligible women who were 'not offered' the AMIHS program were very similar in age composition, Aboriginality, number of pregnancies and smoking behaviour to women who accepted AMIHS.

Compared with eligible women who were not offered the program, women who received AMIHS were more likely to commence antenatal care early, attended more antenatal visits, and were less likely to have babies who were either preterm or low birth weight. However, in this analysis, AMIHS was not associated with a reduction in small for gestational age or increases in quitting smoking in the second half of pregnancy. Findings for breastfeeding were

less clear but indicated a greater likelihood of exclusively breastfeeding at discharge among Aboriginal mothers if they received AMIHS.

A summary of the results of this analysis is presented in Table 3 and statistical outputs are reported in Table 4.

Table 3: Results of analyses comparing 'offered and accepted' and 'not offered' groups

Pregnancy or birth outcome	Evidence of association between AMIHS and improvements in the outcome
At least seven antenatal visits (or at least 10 antenatal visits in first pregnancy)	Women who received the program were 1.45 times more likely to have at least seven antenatal visits, compared to eligible women who were not offered the program.
First antenatal visit ≤13 weeks gestation	Women who received the program were 1.2 times more likely to have their first antenatal visit by ≤13 weeks gestation, compared to eligible women who were not offered the program.
Quit smoking in second half of pregnancy	No evidence that AMIHS is associated with an increase in antenatal smoking cessation.
Preterm baby	Women who received the program were 1.43 times less likely to have a preterm birth, compared to eligible women who were not offered the program.
Low birth weight baby	Women who received the program were 1.54 times less likely to have a low birth weight baby, compared to eligible women who were not offered the program.
Small for gestational age (SGA) baby	No evidence that AMIHS is associated with a reduction in small for gestational age.
Fully breastfeeding at hospital discharge	No evidence that AMIHS is associated with an increase in fully breastfeeding at hospital discharge[13].

Source: AMDC data, 2012-2016

Results for all analyses

The results for all the analyses, including that detailed in Table 3 above, are rated for the weight of evidence in Table 4 based on the following criteria:

- "No evidence" –applied where AMIHS was not associated with an improvement in the outcome (either an increase or a decrease) in any of the analyses
- "Initial evidence" - applied where:
    i. one to two analyses found an association between AMIHS and an improvement (either an increase or a decrease) in the outcome

[13] A sensitivity analysis found that compared to Aboriginal women who were not offered the program, Aboriginal women who participated in the program were 1.16 times more likely to be fully breastfeeding at discharge.

    ii. no other analyses found an association between AMIHS and a worsening in the outcome

- "Moderate evidence" – applied where:
    i. three or four analyses found an association between AMIHS and an improvement (either an increase or a decrease) in the outcome
    ii. no other analyses found an association between the program and a worsening in the outcome
    iii. an improvement in the outcome was absent in Aboriginal babies born in the group in a non-AMIHS areas
- "Good evidence" – applied where:
    i. five or more analyses found an association between AMIHS and an improvement (either an increase or a decrease) in the outcome
    ii. no other analyses found an association between the program and a worsening in the outcome
    iii. an improvement in the outcome was absent in Aboriginal babies born in the group in a non-AMIHS areas
- "Inconclusive evidence" – applied where AMIHS was associated with an improvement in the outcome (either an increase or a decrease) in one or more analyses but was also associated with a worsening outcome in one or more analyses.

The summary in Table 4 indicates that there were several outcomes where AMIHS was having a positive and measurable impact. These included:

Early access to and use of antenatal services

There is moderate evidence that eligible women who have accessed AMIHS have an earlier use of antenatal services when compared with eligible women who have not accessed AMIHS. The 'exposed' vs 'control' comparison using AMDC data where the control or 'unexposed' population is eligible women who were not offered AMIHS, suggests that AMIHS mothers are 20% more likely to have their first antenatal visit ≤13 weeks gestation. Additionally, other analyses found initial evidence that receiving AMIHS is associated with early engagement with antenatal care.

Mothers who access AMIHS are also more likely to access antenatal services more frequently. On average, AMIHS mothers who delivered full-term babies received an average of 9.1 antenatal visits, almost equal to the visits of mothers who were 'offered and declined' an AMIHS service but significantly more ($p<0.0001$) than mothers 'not offered' AMIHS (average of eight visits). When confounding factors are considered, mothers who received an AMIHS service are likely to have 2% more antenatal visits than mothers who were 'offered and declined' and 8% more visits than mothers who were 'not offered' an AMIHS service even though eligible.

Smoking at any stage during pregnancy

Smoking during pregnancy is a major risk factor for pregnancy complications and poor birth outcomes. Reducing smoking in pregnancy is an important 'intermediate' outcome that can improve Aboriginal maternal and infant health. Moderate evidence was obtained, particularly

from the interrupted time series (ITS) analysis, that AMIHS exposure is associated with a modest population-level decrease in smoking during pregnancy.

Quitting smoking in second half of pregnancy

Following triangulation of multiple analyses, the evaluation was unable to demonstrate that AMIHS was associated with improvements in quitting smoking in the second half of pregnancy. However, a sensitivity analysis undertaken for Aboriginal women only found that eligible women who received the 'AMIHS type' and 'Midwife & Home Visiting' service types were more likely than 'Midwife & clinic' to quit smoking in the second half of pregnancy.

Health outcomes of the baby

Unlike the above 'intermediate' outcomes, low birth weight, preterm baby and SGA baby are all 'endpoint' health outcomes. This evaluation did not find conclusive results in relation to baby health outcomes except for some initial support for AMIHS having possible influence on birth weight.

One analysis of the comparison between an exposed population of eligible women who were offered and accepted AMIHS and an unexposed population of eligible women who were not offered AMIHS (see Table 4) found women who received the program were 1.54 times less likely to have a low birth weight baby, compared to eligible women who were not offered the program. Women who received the program were 1.43 times less likely to have a preterm birth, compared to eligible women who were not offered the program.

In the case of low birth weight baby outcomes one of the time series analyses also indicated a possible trend in reduction in low birth weight babies associated with the AMIHS intervention. The same trend though was observed in Aboriginal babies born to mothers in non-AMIHS catchment areas, meaning causation is difficult to attribute to the AMIHS intervention (Table 4).

Table 4: Triangulation of results of analyses comparing: (1) exposed and unexposed groups; and (2) pre- and post-AMIHS cohorts

Outcome[14]	Key findings for each of the six forms of analysis						Weight of evidence following triangulation of findings
	Cross-sectional exposed vs unexposed[15] analysis (AMDC)	Cross-sectional exposed vs not offered (AMDC)	Pre-Post AMIHS analysis 2001 cohort (MCHR)	Pre-Post AMIHS analysis 2008/09 cohort (MCHR)	Time series analysis 2001 cohort (MCHR)	Time series analysis 2008/09 cohort (MCHR)	
At least seven antenatal visits (or at least 10 antenatal visits in first pregnancy)	Unexposed group slightly less likely to have at least seven antenatal visits compared to exposed group (OR=0.93; 95% CI=0.85-1.01) but finding not statistically significant (p=0.08). If comparison is based on actual number of visits, unexposed group likely to have less	Not offered group almost half as likely (OR=0.69; 95% CI=0.60-0.79;p<0.0001) to have at least seven antenatal visits compared to group exposed to AMIHS	N/A	N/A	N/A	N/A	**Initial evidence** that AMIHS is associated with women attending at least seven antenatal visits[16] and attending antenatal care more frequently (albeit minimally).

[14] Perinatal death was also an outcome variable explored but the data only allowed this for the MCHR data and so this outcome is not included in Table 4.

[15] Unexposed group includes eligible women 'offered and declined' AMIHS and eligible women 'not offered' AMIHS.

[16] Or 10 antenatal visits in first pregnancy.

Outcome[14]	Key findings for each of the six forms of analysis						Weight of evidence following triangulation of findings
	Cross-sectional exposed vs unexposed[15] analysis (AMDC)	Cross-sectional exposed vs not offered (AMDC)	Pre-Post AMIHS analysis 2001 cohort (MCHR)	Pre-Post AMIHS analysis 2008/09 cohort (MCHR)	Time series analysis 2001 cohort (MCHR)	Time series analysis 2008/09 cohort (MCHR)	
	antenatal visits (OR=0.98)						
First antenatal visit ≤13 weeks gestation	No association found between receiving AMIHS and early engagement with antenatal care. However, if 'early' is defined as <20 weeks then exposed group more likely to visit early (OR=1.15; 95% CI = 0.80-0.95; p=0.002)	Not offered group almost 20% less likely to have early engagement with antenatal visits compared to group exposed to AMIHS (OR=0.83; 95% CI=0.73-0.94; p=0.003)	Post-AMIHS group more likely to have first antenatal visit ≤13 weeks gestation compared to pre-AMIHS group (OR=1.25; 95% CI=1.08-1.44; p=0.003)	N/A	Post-AMIHS group trend to more likely to have first antenatal visit ≤13 weeks gestation however, difference is only just significant (RR=1.01; 95% CI=1.001-1.018; p=0.027). Difference between pre and post trends significant (RR=1.017; 95% CI=1.004-1.029; p=0.009)	N/A	**Moderate evidence** that receiving AMIHS is associated with early engagement with antenatal care.

Outcome[14]	Key findings for each of the six forms of analysis						Weight of evidence following triangulation of findings
	Cross-sectional exposed vs unexposed[15] analysis (AMDC)	Cross-sectional exposed vs not offered (AMDC)	Pre-Post AMIHS analysis 2001 cohort (MCHR)	Pre-Post AMIHS analysis 2008/09 cohort (MCHR)	Time series analysis 2001 cohort (MCHR)	Time series analysis 2008/09 cohort (MCHR)	
Quit smoking in second half of pregnancy	No association found between receiving AMIHS and quitting smoking during pregnancy	No association found between receiving AMIHS and quitting smoking during pregnancy	N/A	N/A	N/A	N/A	**No evidence** that AMIHS is associated with quitting smoking during pregnancy
Smoked at any stage in pregnancy	N/A	N/A	No association found between receiving AMIHS and a reduction in smoking during pregnancy	Post-AMIHS group less likely to smoke during pregnancy compared to pre-AMIHS group (OR=0.79; 95% CI=0.74-0.84; p<0.0001)	Change in trend of outcome in desired direction from pre to post-intervention (OR=0.996; 95% CI=0.992-0.999; p=0.015)	Change in trend of outcome in desired direction from pre to post-intervention (OR=0.994; 95% CI=0.991-0.998; p=0.004)	**Moderate evidence** that AMIHS is associated with a modest population-level reduction in smoking during pregnancy
Preterm baby	Unexposed group slightly more likely to have a preterm baby compared to exposed group (OR=1.10;	Not offered group almost 40% more likely to have a preterm baby when	No association found between receiving AMIHS and a reduction in preterm births	Post-AMIHS group more likely to have preterm birth compared to pre-AMIHS group (OR=1.19;	No association found between receiving AMIHS and a reduction in preterm births	No association found between receiving AMIHS and a reduction in preterm births	**Inconclusive evidence**, as statistically significant associations

Outcome[14]	Key findings for each of the six forms of analysis						Weight of evidence following triangulation of findings
	Cross-sectional exposed vs unexposed[15] analysis (AMDC)	Cross-sectional exposed vs not offered (AMDC)	Pre-Post AMIHS analysis 2001 cohort (MCHR)	Pre-Post AMIHS analysis 2008/09 cohort (MCHR)	Time series analysis 2001 cohort (MCHR)	Time series analysis 2008/09 cohort (MCHR)	
	95% CI=0.99-1.22) but finding not statistically significant (p=0.066)	compared to group exposed to AMIHS (OR=1.43; 95% CI=1.20-1.71; p<0.0001)		95% CI=1.07-1.33; p=0.001)			found in both directions.
Low birth weight baby	No association found between receiving AMIHS and a reduction in low birth weight	Not offered group almost half as likely to have low birth weight baby when compared to group exposed to AMIHS (OR=1.54; 95% CI=1.30-1.82; p<0.0001)	No association found between receiving AMIHS and a reduction in low birth weight	No association found between receiving AMIHS and a reduction in low birth weight	Change in trend of outcome in desired direction from pre to post-intervention (OR=0.979, 95% CI=0.966-0.993; p=0.002). However, similar change in trend among Aboriginal babies born in non-AMIHS areas	No association found between receiving AMIHS and a reduction in low birth weight	**Initial evidence** that receiving AMIHS is associated with a modest reduction in low birth weight. However, factors other than AMIHS may account for this observed association.
SGA baby	Unexposed group less likely to have	No association found	No association found between	Post-AMIHS group less likely	Change in trend of outcome in	No association found between	**Inconclusive evidence**, as

Outcome[14]	Key findings for each of the six forms of analysis						Weight of evidence following triangulation of findings
	Cross-sectional exposed vs unexposed[15] analysis (AMDC)	Cross-sectional exposed vs not offered (AMDC)	Pre-Post AMIHS analysis 2001 cohort (MCHR)	Pre-Post AMIHS analysis 2008/09 cohort (MCHR)	Time series analysis 2001 cohort (MCHR)	Time series analysis 2008/09 cohort (MCHR)	
	small for gestational age baby compared to exposed group (OR=0.87; 95% CI=0.78-0.96; p=0.008)	between receiving AMIHS and having an SGA baby	receiving AMIHS and a reduction in SGA	to have an SGA baby compared to pre-AMIHS group (OR=0.87; 95% CI=0.79-0.95; p=0.003)	desired direction from pre to post-intervention (OR=0.991; 95% CI=0.983-0.998; p=0.010). However, similar change in trend among Aboriginal babies born in non-AMIHS areas	receiving AMIHS and a reduction in SGA	statistically significant associations found in both directions. Factors other than AMIHS may account for observed improvements in this outcome.
Fully breastfeeding at hospital discharge	No association found between receiving AMIHS and an increase in fully breastfeeding at hospital discharge. Same result if considering any	No association found between receiving AMIHS and an increase in fully breastfeeding at hospital discharge	N/A	N/A	N/A	N/A	**No evidence** that AMIHS is associated with an increase in fully breastfeeding at hospital discharge.

Outcome[14]	Key findings for each of the six forms of analysis						Weight of evidence following triangulation of findings
	Cross-sectional exposed vs unexposed[15] analysis (AMDC)	Cross-sectional exposed vs not offered (AMDC)	Pre-Post AMIHS analysis 2001 cohort (MCHR)	Pre-Post AMIHS analysis 2008/09 cohort (MCHR)	Time series analysis 2001 cohort (MCHR)	Time series analysis 2008/09 cohort (MCHR)	
	breastfeeding at discharge[17]						

Source: AMDC and MCHR data

[17] An association between AMIHS and breastfeeding at discharge from hospital was found in a sensitivity analysis undertaken for Aboriginal women only.

AMIHS has a broader impact

There are some outcomes of AMIHS that can be measured and observed by analysing client data collected through the program. Yet, the case study data revealed that there were other positive health and social outcomes AMIHS was contributing to that were not as easy to measure but also need to be valued and recognised.

"… it happens over multiple pregnancies when you get trust. I made a comment about first baby and commented that she only breastfed for 12 weeks because she didn't know whether he was getting enough. Out of that I was able to ask why she felt that - lots of little yarns – not going through the checklist of education. I can proudly say that her second child is nearly 12 months old and she is still breastfeeding."

AMIHS AHW #1

The value of small but positive impacts of AMIHS

Many stakeholders across the six case study sites reported that there were a range of health and social benefits for clients accessing AMIHS that were not always clear or easy to measure. Therefore, it was considered important to recognise and **celebrate small positive changes** that were being achieved for clients. Many AMIHS staff also felt it was important to look at **the "journey" of the client, not just the endpoint** because there were many benefits that might only be **observed over longer periods of time** through ongoing contact with clients, often over several pregnancies.

Positive change takes time

Important outcomes observed by stakeholders included good spacing between pregnancies, healthy babies meeting their milestones and children attending school regularly. Several case study and statewide stakeholders noted that **such outcomes might happen long after the AMIHS intervention has been completed**. They noted that measurable health outcomes, such as increased birth weight of babies, quitting smoking or increased levels of breastfeeding might not be observed during the first or second pregnancy, but may **improve during a woman's third pregnancy**.

Several stakeholders noted the longer-term and the flow-on effects which they attributed to the AMIHS program. A key example was **helping young families feel less vulnerable**, even if only for the time of being supported by AMIHS. This could be in the form of better **protection and support from domestic violence**, or helping to ensure **families stayed together**, providing **support for young mums**, or **helping women feel stronger and more confident** as a mother and a person.

"When you have a young healthy mum, who is well supported that's what she does for her family … Women are really strong in the community – if the women are strong, families do much better."

LHD worker #22

The interviews also revealed that, for some clients and their families, their **lives had changed in ways that they attributed directly to the relationships they had developed with AMIHS staff**. AMIHS staff had helped individuals, sometimes over several pregnancies, deal with substance abuse issues and become more in control of mental health issues.

It was reported by stakeholders in case study sites that in many small ways, **AMIHS could have an impact at the community-level** by developing a **sense of ownership** of the local AMIHS site and **raising expectations** of maternal and child health outcomes within the community.

Several stakeholders also considered that there were **broader impacts and flow-on effects beyond maternity care,** which they directly linked to AMIHS. It was felt that the AMIHS program had the potential to **influence career pathways of local Aboriginal women** where they observe local role models; they could join the health system, advance as professionals and embark on aspirational career paths.

Some stakeholders also reported that AMIHS could provide the additional benefit of helping young women develop constructive relationships with the health system, and other support services, by **building their confidence, skills and health literacy to use when accessing the system in future**.

Storyline 5: The costs of implementing AMIHS

Approach for understanding the costs of AMIHS

A key objective of this component of the evaluation was to investigate the costs of implementing AMIHS. This was examined by conducting a Value for money (VfM) analysis (NSW Government, 2016)[18].

A VfM analysis involves focussing on resources in a way that maximises project outcomes relative to their costs.[19] The NSW Government (2016) notes that:

> *"… value for money is the differential between the total benefit derived from a good or a service against its total cost, when assessed over the period the goods or services are to be utilised …"*

For this evaluation the VfM analysis was based on the five AMIHS service types (described in Box 2). The analysis was undertaken to determine:

- the per annum cost of implementing AMIHS in NSW
- the cost of implementing various elements of AMIHS
- the costs of implementing AMIHS by service delivery types
- the total implementation costs as an average cost per baby delivered through the program.

Other measures of efficiency were also explored such as the number of babies delivered per full-time equivalent of staff (AHW and midwife). The primary data source used for the analysis was the Managers' Survey. AMIHS managers were sent the survey in early 2017 and asked to specify implementation costs for the previous financial year, 2015-16. Information from the document review, AMDC data and a literature review were also used for the analysis. The analysis was also restricted to the 46 AMIHS sites that were active in NSW in the 2015/16 financial year.

Sources of costs of AMIHS

The average cost of implementing current AMIHS sites is approximately $137,000 but varies from a low of $13,200[20] to a highest per annum amount of $465,500 per annum. As might be

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[18] While some statistically significant effects of AMIHS were found on mother and baby health outcomes by Jalaludin et al (2019), evidence of these effects (impacts) was not sufficiently clear to support an economic analysis. Accordingly, a VfM analysis only was undertaken.

[19] University of York on cost-effectiveness thresholds and simple opportunity cost calculator: https://www.york.ac.uk/che/research/teehta/thresholds/

[20] Cost figures have been rounded to the nearest 100.

expected with any health service, but especially one with such intensive client contact, the proportion of total expenditure consumed by staff salaries is very high, with an average value of 88% and ranging from a minimum of 83% to a maximum of 90% (Figure 3).

The average annual budget reported by ACCHS managed AMIHS sites (n=5, 11.1%) was higher than LHD-managed sites ($203,700 and $120,300 respectively). This is likely accounted for by more complete reporting of total budget requirements by ACCHS sites, as these services were more likely to include cost estimates for office space, vehicle costs and utility[21] costs. The average cost distribution of the ACCHS sites at 73%, 10%, 4% and 13% (staffing, accommodation, vehicle and other respectively) may provide a more accurate estimate of costs, as most LHD-managed sites did not report cost estimates for rent, consumables, equipment and utilities. This was possibly due to AMIHS costs being included with other cost centre service budgets. Some managers noted in their survey responses the difficulty of separating out some expenses for AMIHS if these items were not reported as discrete budget items in their own budgets.

Variation in costs between sites

Because AMIHS sites vary considerably in size and number of clients, comparing sites based on total expenditure was not instructive. A better way to compare sites was by using the cost per baby born as a unit of analysis. This also allowed for a VfM or crude efficiency comparison between service types.

The overall average cost per baby for all AMIHS sites for 2015-16 was $3590. There were, however, differences between sites in this statistic (ranging from as low as $880 per baby to as high as $14,900 per baby), which is evident in the differences in average cost per baby born by service type. The average costs per baby born were highest for the 'AHW & outreach' type service, and lowest for the 'Midwife & home visiting' service type. The other service types had comparable average costs per baby, however, the 'Midwife & clinic based' service type is a little lower than the others (see Figure 4). Despite seeming large differences between mean costs per baby, they are not statistically significant ($p = 0.450$[22]). This is largely because the average costs per baby by service type conceal very large differences within service type categories between individual service sites in the cost per baby.

The highest cost sites were those with a small number of babies born per annum and/or located in remote towns. One of the 15 highest cost per baby service sites had more than 40 babies born per annum (the average was 26 babies per annum). Lower cost per baby sites were overrepresented by sites with many babies per annum, with the average number of babies born for the 15 least cost per baby sites being 76 babies born per annum.

A simple comparative analysis between sites or service types based on cost per baby should be interpreted with caution. Costs can be affected by the level of remoteness (considerably more staff time is consumed with travel), the level of investment in health promotion and

[21] Utility costs are part of 'Other' in Figure 3. The 'Other' category also includes telephone, training & development, equipment, consumables, health promotion, capital works / repairs.

[22] Analysis of variance; degrees of freedom = 4,38; F= 0.941309

community engagement (which adds to the cost of labour assuming the clinical tasks use the same level of workforce), the locational arrangements of a service (for example, the capacity to share overheads with a co-located service) and the type of clinical services delivered (for example, if more effort is directed to longer duration postnatal support). Only variance in level of remoteness and investment in health promotion and community engagement and their possible influence on implementation costs were able to be explored in this analysis. The highest average cost per baby service type, 'AHW & outreach' service type, has sites that have on average the highest levels of allocated staff time (both AHW and midwives) to health promotion and community development (39.4% and 35.6% respectively), between 30% and 35% more than any other service type except for the 'AMIHS type' model (Figure 4). This potentially increases the cost for the service, and if this workforce contribution is removed from the calculation then the cost per baby would be similar if not lower than other service types.

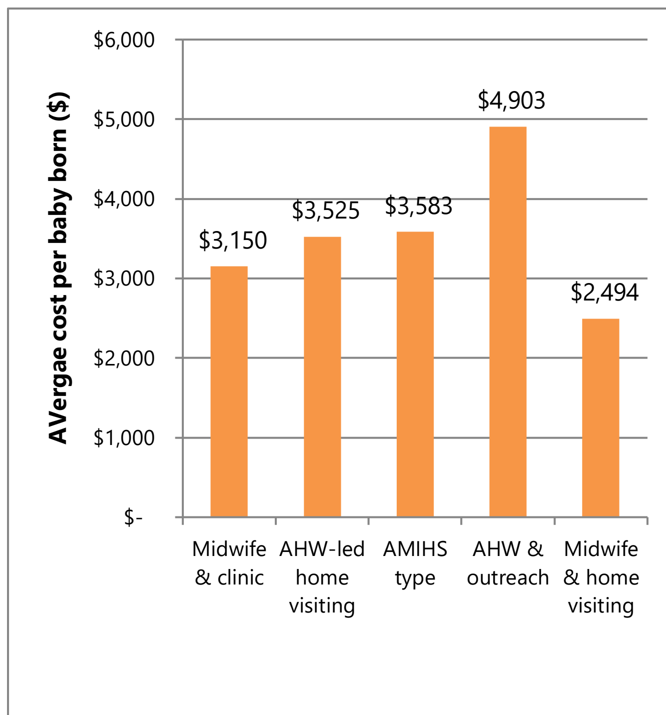

Figure 1: Average expenditure per baby delivered (in dollars) by Type of AMIHS service (Source: Managers' Survey data, 2017)

Similarly, the 'AMIHS type' service model has a high proportion of AHW and midwife time being contributed to health promotion activity (31.4% and 19.3% respectively), and nearly 40% of the mothers accessing this service type were from outer regional and remote geographic areas, which was at least 10% more than all other service types. A disproportionate number of midwife-led types of AMIHS service model sites (the lowest cost per babies born per annum) are in urban and larger regional towns (RA 1 and RA 2).

Variation between sites in workforce allocation

The evaluation revealed that an average of 33.3 (median = 30; n = 45) babies were born in the AMIHS program per FTE of staff per year for the 2015/16 financial year (Figure 5).

This average of babies born to FTE ratio of 33.3 is roughly consistent with most maternity service staffing recommendations which are normally close to 1 FTE midwife to 30 births per annum[23]. However, comparison between these calculations and other maternity services is complicated because (a) the AMIHS model includes two roles – the AHW and midwife and (b) the referenced guidelines include intrapartum care, whereas the AMIHS program service delivery does not generally include attendance during the birthing process.

In the AMIHS model, **AHWs are not meant to undertake clinical work**, therefore the calculation for this evaluation for comparative purposes should only focus on the FTE of midwives. Using this calculation (number of babies born in 2015/16 divided by the midwife FTE) it is revealed that the minimum ratio for baby to midwife FTE at an AMIHS site is 10, and the maximum would be 155[24], with a median value of 60 babies per midwife FTE and **an average of 66**. The average number of babies born per FTE by service type are similar as shown in Table 5. Ministry stakeholders noted that the AMIHS funding model is based on 60 families per 1 FTE AHW, and 1 FTE midwife.

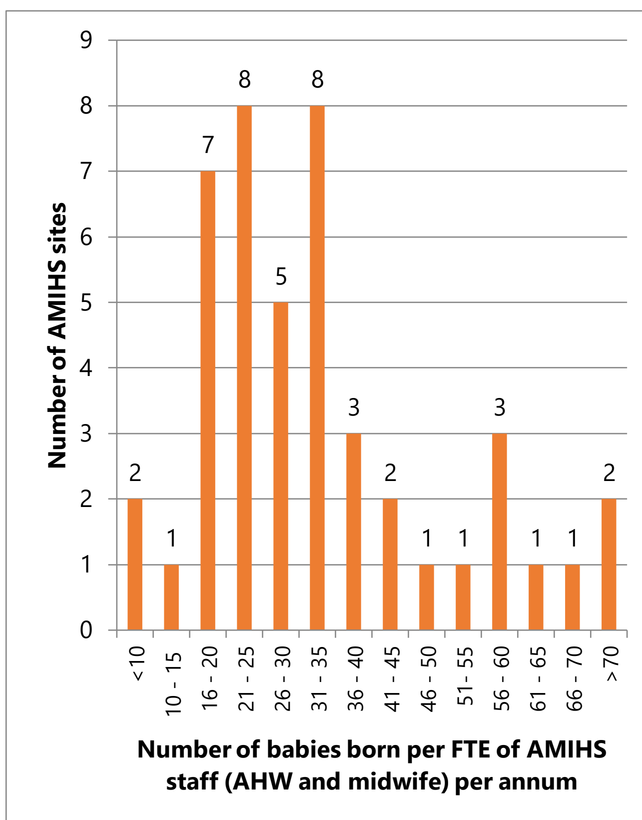

Figure 3: Distribution of AMIHS service sites by number of mothers supported per annum (n = 45) (Source: Managers' Survey data, 2017)

[23] For example, the Royal College of Midwives and the Royal Colleges for Obstetrics, Paediatrics and Anaesthetics, in the UK has established a guide of one FTE midwife per 29.5 babies born per year. https//inmo.ie/Article/11417. Closer to home, Queensland Health (2012) argued that a 'caseload' model of midwifery care, a model which is similar to the AMIHS person-centred approach, at the maximum could support 40 clients per 1 FTE midwife.

[24] These endpoints seem not to be feasible, especially the maximum number, despite being calculated on reported data. However, it is possible that in some sites the AHW supports the midwife in the clinical service delivery in such a way as to appreciably improve the midwife's efficiency. As well, the calculation does not consider the number of visits, which for the very high ratios could be low.

Table 5: Average number of babies born per midwife FTE by AMIHS service type 2015/16

Service type	Average number of babies born per Midwife FTE
Midwife & clinic	78
AHW led & home visiting	66
AMIHS type	54
AHW & outreach	67
Midwife & home visiting	64

Source: Managers' Survey, 2017

An average of 66 babies per midwife FTE is a high ratio when compared with the AMIHS funding model. Supporting this finding of potential understaffing, AMIHS staff and other stakeholders in some case study sites perceived there to be insufficient levels of AMIHS staff to meet the demand for the program (mothers who have been 'offered and accepted' AMIHS).

"Unequivocally no, we do not have enough staff. For the number of births that we see, and I think if you looked at the ratio of midwives to number of births, if we were only going to do four per month, we would be way over that."

Other AMIHS staff #3

This analysis suggests that staff not being distributed appropriately between sites may be a possible contributing factor. The variation in babies per FTE between service sites within LHDs can be considerable. In one LHD the babies born per total staffing FTE per annum ranged from a low of 4.3 to a high of 61.4. Even allowing for the influence of remoteness and varying levels of non-clinical activity, this degree of variation was not able to be explained and further study of budget allocation (or staffing re-allocation in response to changes, even short term, in client demand) within LHDs between sites would seem advisable.

Economic analysis summary

The difference in total and average implementation costs and average costs per baby born between AMIHS service types, while not statistically significant, highlights whether the same or similar outcomes can be achieved with less expenditure.

The findings detailed earlier in this report on AMIHS reach (Storyline 3) indicated that two service types, 'Midwife & home visiting' and 'AMIHS type', were statistically associated with a higher likelihood that mothers will accept an offer of AMIHS. Not reported in this report, but noted in Jalaludin, et al. (2019), the 'AHW & home visiting' service type was associated with a higher likelihood of mothers commencing antenatal care earlier. 'AMIHS type' and 'Midwife & Home visiting' service types were more likely than 'Midwife & clinic' to have Aboriginal women

quit smoking in the second half of pregnancy. No other relationships between service types and health outcomes were identified.

A comparison of the AMIHS service types against the elements of the AMIHS model finds that home visiting as the primary form of service delivery is a common element across the three service types delivering outcomes. The cost efficiency appears similar except for the 'Midwife and home visiting' service type which is less costly per baby (although not statistically significantly different).

The findings of the economic analysis (summarised in Table 6) provide an indication of implementation costs and average cost per baby per service type, however, the relationship between costs and outcomes across and between AMIHS service types is unclear. Further economic analysis would be enhanced by more comprehensive data sources, such as improved costing estimates and the inclusion of outcome measures. There were inconsistencies in costs collected via a self-reported questionnaire from AMIHS sites, which may have resulted in variable quality of costing estimates. This could be improved by seeking objective measures of program costs. Further economic analysis should investigate the relationship between costs, service type, and outcomes (benefits), and consider the qualitative factors identified in the evaluation.

Table 6: Comparison of AMIHS service types by efficiency and outcomes measures and AMIHS model element implementation[25]

	Midwife & Clinic based	AHW led & Home visiting	AMIHS type	AHW & outreach	Midwife & Home visiting
Efficiency & outcomes measures					
Average cost per baby per annum by service type ($'s)	3150	3525	3583	4903	2494
Average number of babies per FTE by service type	37.7	31.6	27.6	32.2	38.1
Outcome associations		Early antenatal service commence-ment	Increased likelihood of AMIHS acceptance Possible increased likelihood of smoking cessation		Increased likelihood of AMIHS acceptance Possible increased likelihood of smoking cessation
Model 'essential' element level of conformity					
Postnatal care to 8 weeks	No site wide data collected to allow estimate				
Transition to CFH services	Very good	Very good	Good	Very Good	Moderate
Effective collaboration,	Moderate	Moderate / Good	Good	Poor	Moderate

[25] See Storyline 2 for a description of how the SDM assessments of level of conformity were obtained. In this Table the service type descriptions were also used.

	Midwife & Clinic based	AHW led & Home visiting	AMIHS type	AHW & outreach	Midwife & Home visiting
consultation and referral					
Involvement in community development and health promotion activities	Very low	Low	Moderate	High	Very low
AMIHS services must be flexible and mobile	No site wide data collected to allow estimate				
Workforce and professional development	Moderate	Moderate	Good	Moderate	Poor
Effective community partnerships	Moderate	Poor	Good	Moderate	Poor

Discussion

Stakeholder perspectives of AMIHS

AMIHS is valued by clients and families

The evaluation findings indicate that after nearly two decades of operation AMIHS has become a well-known, accepted and valued antenatal and postnatal service for mothers of Aboriginal babies and their partners, extended families and Aboriginal communities throughout most of NSW. It was also recognised by clients and families as an important conduit for clients and their families to a broad range of services within the mainstream health system and other mainstream services.

The AMIHS program, as described by many stakeholders, is characterised by personalised, family-based and flexible care. These features were highly valued by clients and communities. AMIHS staff were reported by various stakeholders to adopt an approach to supporting clients where they take the time to build trust and rapport and to understand and respond to client needs. The establishment and maintenance of a positive relationship between known service providers and the mother ensures the stability and confidence of the mother, which can have far-reaching effects (Kelly, et al., 2014; Josif, et al., 2014). The availability of home visiting was also seen by clients, AMIHS staff and managers as integral to providing clients with support in a familiar and comfortable environment or to support clients who had difficulty accessing transport.

AMIHS is delivering culturally appropriate care

A demonstrated awareness and willingness to incorporate Aboriginal culture and values of clients was central to AMIHS being viewed by many stakeholders as a culturally appropriate service for Aboriginal families. AMIHS staff were seen to try to develop deep connections, to listen and to incorporate the knowledge, values and choices of clients into the support provided. Clients and various stakeholders felt that the inclusion of Aboriginal health professionals provided a visible commitment to the Aboriginal focus of the program. The presence of Aboriginal health professionals can be key to ensuring cultural respect within services by reducing clients' anxieties and enhancing communication (Freeman et al., 2014). In contrast, it was reported by some clients and staff across all case study sites that Aboriginal clients accessing services outside of AMIHS, including other maternity services, could be exposed to varying forms of racism, an experience commonly reported for Aboriginal people accessing health services that can have a negative impact on overall health and wellbeing (Kelaher, Ferdinand and Paradies, 2014; Larson, et al., 2007; Priest, et al., 2011).

Many stakeholders also talked about the value of improving AMIHS service environments, including hospital units and services, to be more welcoming for Aboriginal people through displaying artworks and imagery. Yet, some stakeholders felt such efforts could appear tokenistic if systemic issues, such as developing the cultural awareness of staff, were not addressed. These perspectives suggest that incorporating visible cultural symbols need to be

accompanied by a set of attitudes and understanding that respect and value the needs and choices of Aboriginal people. Strategies to improve Aboriginal peoples' experience in health services need to go beyond cultural education for health professionals (Freeman, et al., 2014). As suggested by some case study and statewide stakeholders, this could include ensuring that Aboriginal people were employed in management and leadership roles with oversight of the AMIHS program or focussing on the development of the career pathways of local communities such as encouraging more Aboriginal midwives in the delivery of AMIHS. An important outcome of AMIHS is that clients feel comfortable and supported to receive pregnancy care through the program.

Aspects of AMIHS implementation that may impact effectiveness

Currently the AMIHS program is delivered in over 40 sites across NSW. A template for how AMIHS is intended to be delivered, the SDM (NSW Health, reviewed 2014), identifies 10 key or 'essential' elements to guide service implementation. Overall, while quantitative evidence of an association between these elements and mother and baby outcomes could not be explored, there is good qualitative data findings that suggest that nearly all of these elements are important or very important to AMIHS achieving positive program outcomes and retaining its value and acceptability among its intended target population as a maternal and infant health service. The evaluation found that the AMIHS model, by and large remains highly appropriate.

Fidelity with the model's 'essential' elements is crucial. In the case of two elements the level of conformity across all AMIHS sites with the SDM was assessed as 'low' or 'moderate'. In the case of one of these elements (community development and health promotion activities) it was assessed as being very important to achieving AMIHS outcomes, and in the case of the other (effective community partnerships) it was considered integral to the principles of AMIHS. With two other elements (effective collaboration with partner services and AMIHS service flexibility), it could be said that the level of conformity with the SDM was technically high (based on Managers' Survey responses) but in actual operation the level of conformity was more likely moderate (based on qualitative data analysis). For example, if a site had a good relationship with nearly all service partners it would be technically seen as highly conforming with the SDM. But if the relationship with FaCS, or mental health, or drug and alcohol were poor, then operational conformity with the SDM should be considered more moderate given the importance of these services to the AMIHS client population that was identified through the case study data.

Variations in how the program is implemented at each site are to be expected; an underpinning component of the AMIHS SDM is for the program to be planned and delivered according to the specific context of the needs and wishes of the local community. The findings indicate that even after taking those variations that represent appropriate customisation of the model into account, some other variations represent an undermining of the integrity of the model and this may influence the effectiveness of the service.

Time is a factor

Findings from the document review, case studies and stakeholder interviews indicated that in some sites, a lack of time was one of the biggest constraints to delivering the full AMIHS model. Findings from the economic evaluation suggest two possible reasons for this:

1. Insufficient numbers of staff at some sites to meet [AMIHS] client and service requirement demands.
2. Poor distribution of resources so that some AMIHS sites are well supplied and others have inadequate supply to meet requirements[26].

The case study data indicated that another contributing factor may be the extra staff time needed to provide holistic care for clients experiencing complex health and social issues. The economic evaluation found that, on average across all AMIHS sites, the babies born per all staff FTE per annum was approximately 33, but the calculation just for midwives was closer to 66 babies per FTE. This is higher than the ratio for the current funding model. It is also appreciably higher than what is recommended as a 'safe workload' by the Queensland Nurses and Midwives Union (QNMU) for midwives working to a 'caseload' model[27] (see Queensland Health, 2012) who suggest a ratio of 1 FTE midwife to 30 to 40 babies (QNMU, 2017) but also note:

> *"Lower caseload numbers are required where women and their babies are more likely to experience risk factors in pregnancy, in contexts of practice that require significant travel such as in rural and remote areas …"*

There are no relevant guidelines in the literature for staffing a maternity service like AMIHS; discussion and agreement about staffing across the AMIHS 'community' could be useful to establish a guideline for LHD and ACCHS managers and service planners. It was also noted though, that babies born per total FTE varied considerably both between and within LHD boundaries from a low of under 10 babies per FTE to some sites where the ratio is over 70 babies per FTE. Some of this variation could be partly explained by site location (there appears to be a strong correlation between resource requirements per baby and the level of geographical remoteness of the site) and by the types of work undertaken (some sites invest much more work time into non-clinical activity such as health promotion and community development). Although, there is still a level of variation that warrants further investigation.

Many stakeholders at case study sites felt that there was not enough time for AMIHS staff to properly support clients as intended in the SDM; some stakeholders reported that this was because of the complexity of many clients and at some sites there was a perception that demand for the program was increasing. Several AMIHS staff reported that during an occasion of service an opportunity to deliver health promotion was often missed because of a lack of time and the need to "rush" to the next appointment or to complete necessary reporting. In some cases, AMIHS staff reported that a "lack of time" could result in elements of the model

[26] Inefficient use of resources at some sites is another possible reason but the data collected for this evaluation did not provide information to assess this.

[27] As previously noted, direct comparison with the AMIHS model is difficult because of the referenced caseload measures refer to models that include intrapartum care.

being reduced or eliminated. Several AHWs expressed a desire to do more community development and health promotion work but reported that it was often the first task to be left out.

Together these findings suggest that the current AMIHS funding model of 60 families per FTE (AHW and midwife) needs to be reviewed to ensure that all elements of the model can be effectively and efficiently delivered.

Further action: Forum of AMIHS stakeholders to establish workload guidelines, for both clinical and non-clinical work areas.

The evaluation found that 'lack of time' was an issue to some extent at all the case study sites. The elements of the AMIHS model that appeared to be most affected were:

- Collaborating with local partner services- according to the Managers' Survey results, all sites had good relations with many if not most of their service partners. No site though had strong relationships with all service partners. Some of the poorer relationships were with possibly the most crucial partners, given the social welfare and health needs of the AMIHS client population. Good partnerships provide an opportunity to develop a shared understanding and coordinated approach to supporting clients, particularly those experiencing complex and high-risk issues. Effective partnerships were reported by most AMIHS staff and managers to be highly dependent on trust between AMIHS and other services. Where the building of trust (in situations where personalities clash, policies and procedures of partner services provide access barriers, or there has been a change in the key contact person) requires a significant commitment of time, trusting relationships were not always present or fostered.
- Community development and health promotion – this is a unique feature of the AMIHS program. Planning, delivery and sustainability of this element is highly dependent on AMIHS staff having enough time, yet many staff at case studies sites expressed a strong desire for more time and resources to deliver more regular and structured activities.
- Postnatal care –the model prescribes an up to eight-week period of postnatal care, but the case study data indicates that the length of postnatal care provided varies across sites. At some case study sites the transition period was reported to be reduced to two weeks or less. AMIHS staff at these sites reported that this was primarily due to a lack of time. [28]

  The intent of extending the period of postnatal care up to eight weeks is to promote access to *trusted* interpersonal care and to facilitate a *"process of transition"* to a relevant CFH service. The key issue it seems is not the duration of support (eight weeks or any other fixed time) but rather the capacity (and acceptance by managers) of AMIHS to provide an **appropriate level of support consistent with client-centred**

[28] Although not examined as part of the case study sites, it is expected that where an AMIHS site did not provide postnatal care, this was provided through a mainstream maternity service (NSW Health policy requires LHDs to provide midwifery home visiting for at least two weeks after the baby is born).

needs. These findings therefore suggest that the relevance of this element of the AMIHS model could be assessed in the context of other postnatal care programs in NSW.

- Development of partnerships with the community – another unique element of the AMIHS model, which, based on the case study findings, did not appear to be fully implemented at all sites. The findings suggested that most case study sites seemed to be relying on existing community relationships (through the AHW's community ties) and engaging with already established community groups. The one case study site that had established a Women's Reference Group noted substantial outcomes to the AMIHS program and beyond.

This evaluation did not assess the impact of the above variations in service model implementation on program outcomes. However, AMIHS staff and other stakeholders at the case study sites believed that the impact could be potentially significant. These findings suggest that more complete implementation of these elements could have a positive influence on the outcomes of reach, smoking cessation, breastfeeding and a range of other health and health literacy outcomes.

Further action: As part of annual reporting, ask sites to outline how the essential elements of the model are being implemented, including where variations have been made based on consultation and planning with clients and community.

Management and resourcing of AMIHS

The evaluation findings suggest that a better planned and managed approach to supporting AMIHS teams may be required. As reported by many stakeholders at case study sites, support for staff was not being implemented uniformly across sites and some AMIHS staff felt that this could have an impact on the effectiveness of the program.

Workforce and professional development of AMIHS staff is an essential element of the AMIHS model, however, the majority of AMIHS staff at the case study sites felt they needed more support to regularly access professional development and training opportunities. For many AMIHS staff, this element was viewed as critical to develop their skills and build their confidence to effectively support clients who were experiencing complex and high-risk issues.

Responsibility for professional development support for the AMIHS workforce is divided between LHDs and ACCHS employers and the TSU. This evaluation did not have the capacity to fully review the current arrangements; a separate review process would be warranted. The evaluation findings suggest that, in most of the case study sites, accountability for workforce development was largely being left to AMIHS staff to self-manage, except in isolated examples of proactive management. This is not an uncommon circumstance in the health system (Gould, Drey and Berridge, 2007). Many AMIHS staff at the case study sites expressed a need for more training opportunities to develop their skills and confidence to support clients, particularly clients experiencing mental health and drug and alcohol issues. This suggests that a more strategic, planned and systematic approach is required to ensure that the AMIHS workforce is sufficiently skilled to confidently meet the needs of AMIHS clients. This includes planning for

AMIHS staff to be temporarily relieved to attend training and professional development opportunities and ensuring AMIHS staff regularly update their skills and knowledge.

Further action: LHDs and ACCHSs to identify examples of innovative and best practice in workforce development of AMIHS staff which can be shared across the state.

Further action: LHDs and ACCHSs regularly assess workforce development needs of AMIHS staff through a skills matrix (all workers).

Further action: Review current arrangements and extent of professional development opportunities against TSU training needs analysis and the skills matrix.

Based on the case study findings, clinical supervision, a companion to professional development activity, appeared to be the area of workforce development that was not being sufficiently managed. It was reported by AMIHS staff that the delivery of AMIHS often required different ways of engaging with clients that were not always valued by the broader health system. AMIHS staff, particularly AHWs, reported that this required them to carefully manage their professional and personal boundaries. But at most case study sites AMIHS workers felt stranded and isolated to manage these boundaries and to manage the complexities of their somewhat unique service environment. AHWs felt they were not being provided with enough clinical supervision.

Access to cultural supervision was explicitly raised as an area of need for AHWs by several AMIHS staff and managers. Some AMIHS staff and managers talked about cultural supervision and clinical supervision interchangeably and it is possible that some of these stakeholders did not distinguish between the two processes. However, it was explicitly raised by several stakeholders, including AHWs and managers, as an area of need that was not currently being met.

Cultural supervision is an accepted requirement for Aboriginal workers in various other sectors, including child protection, community services and drug alcohol sectors (QATSICPP, 2016; Victorian Dual Diagnosis Education and Training Unit, 2012; Western Sydney Aboriginal Women's Leadership Program, 2013). It is viewed as a necessary strategy to support Aboriginal workers to draw on the local knowledge systems while navigating demanding and sensitive contexts where communities may be experiencing grief and trauma (QATSICPP, 2016). In this evaluation, AMIHS staff similarly described working in demanding and sensitive contexts, and several AHWs talked about the challenge of working in 'two worlds'. Cultural supervision was found to be a valuable element of the Aboriginal Family Health Strategy implementation in a recent evaluation commissioned by the Ministry of Health (CIRCA, 2016).

The case study findings suggest that a commitment to invest in the provision of regular and appropriate clinical supervision is required for AHWs and midwives. It is possible, that without clinical supervision, the work of AMIHS staff is being undermined and the Aboriginal cultural elements of the program – relationship and family-based care – are not being valued.

Attention may also be required for the ongoing development of cultural competence of AMIHS midwives and AMIHS managers. Delivering the AMIHS program, as described by the SDM, requires, *"a broad and social view of health encompassing physical, social and emotional, cultural and spiritual wellbeing of individuals and communities"*. AMIHS staff reported that this approach to maternity care could be challenging for some midwives and some case study stakeholders expressed concerns about the cultural competence of some AMIHS midwives. The mainstream 'Western' approach to accessing and achieving benefit from maternal and infant health care and support services has been noted to be ineffective for Aboriginal families (Rumbold, 2008). The challenges that can arise for many communities from the ongoing impact of colonisation and associated poverty and intergenerational trauma also means that support offered may not always be well suited to Aboriginal cultural ways of operating (NSW Ministry of Health, 2012).

This suggests that regular and ongoing cultural training of AMIHS midwives is therefore an essential component of the professional development of non-Aboriginal AMIHS midwives, a suggestion that the Nursing & Midwifery Board of Australia & CATSINaM (2018) propose is an essential strategy for clients to receive consistent culturally safe care.

Further action: LHDs and ACCHSs identify models and providers of effective clinical supervision for AMIHS staff, which can be shared across the state.

Further action: LHDs and ACCHSs identify models and providers of effective cultural supervision for AMIHS AHWs, in addition to clinical supervision, which can be shared across the state.

The reach of AMIHS is widespread across NSW

AMIHS is available to most eligible women

The AMIHS program was found to be widely available to eligible mothers (that is, mothers of Aboriginal babies) throughout NSW. Just over 80% of eligible mothers were within the footprint of an AMIHS site.

Not all the eligible women within an AMIHS footprint (approximately one in 10) were offered a service – a circumstance for which this evaluation was not able to identify a conclusive cause. This is a considerable number of women who could have accessed AMIHS but were not given the option to accept or decline the service. Analysis of the quantitative data suggests that this cohort of mothers, about 500 per year, is quite similar in characteristics with the population of mothers who accepted an AMIHS offer (Jalaludin, et al., 2019).

Further action: Undertake a review of sites where the 'not offered' statistic is prominent to identify why eligible women were not offered AMIHS.

AMIHS is reaching the women who need it the most

Just over half of the eligible mothers in AMIHS sites are accepting the service. The quantitative data analysis identified that acceptance of AMIHS is most associated with being young, Aboriginal, having had three or more pregnancies and women who smoke at some point during pregnancy. This is the population for whom AMIHS is intended. Findings from the case study and stakeholder interview data also indicated that AMIHS is supporting an appropriate client population, including some who are also experiencing a range of complex health and social issues and high-risk antenatal concerns.

Collectively, these findings provide a clear indication that the AMIHS program needs to be resourced and managed in a way that recognises that much of the client population are experiencing a combination of complex issues. The model should be implemented as intended to ensure positive outcomes for women and their families.

As highlighted by the case study findings, AMIHS staff need flexibility to spend time with clients to coordinate supports and services, provide clients with encouragement and assist to their build confidence and skills as parents. They also need time to develop strong partnerships with other services and engage with the community to ensure eligible women are aware of, and, can access the program.

The positive impact of AMIHS

Early engagement and support

As noted earlier, the evaluation identified that women who accepted AMIHS were more likely to receive antenatal care before 14 weeks pregnancy and they were also more likely to attend at least seven antenatal visits. Other studies of antenatal services for Aboriginal and Torres Strait Islander mothers have also identified an association between the intervention and earlier antenatal service attendance and increased antenatal service utilisation (Nel, 2003; Jan et al., 2004; Gao et al., 2014). These 'intermediate' type outcomes are not health outcomes *per se* but are important precursor outcomes to achieving improvements to baby health. In the program logic that underpins the conceptualisation of the AMIHS model and its implementation principles, achieving these outcomes is understood to provide the longer-term baby health outcomes desired at least at a population level. The literature strongly supports this program logic (e.g. Brock, Charlton and Yeatman., 2014).

AMIHS was also found to have a moderate impact on reducing the rate of smoking any time during pregnancy. Again, given the finding that women who smoked during pregnancy were more likely to accept AMIHS, the program is being offered to women who need it most. Despite this positive finding, addressing smoking with clients was identified by case study stakeholders as an issue that was often difficult to address because AMIHS staff had to confront smoking being normalised in many communities and entrenched attitudes around smoking (Cowles, et al., 2019). Stakeholders also noted that supporting clients to quit smoking required a customised and sustained approach. Aboriginal women should be provided with consistent messaging from health professionals and they should be offered planned approaches and scheduled ongoing support to quit smoking during pregnancy (Bovill, et al.,

2018). Support that involves the whole family, receiving advice from health professionals, including AHWs and midwives, and incentives have also been identified as acceptable strategies by pregnant Aboriginal women to quit smoking (Passey, et al., 2014; Gould, Bittoun, and Clarke, 2014).

Better resourcing and support for AMIHS staff to provide smoking cessation support through structured, systematic and ongoing health promotion efforts could therefore have an even more significant impact on the rates of smoking of AMIHS clients.

The quantitative data revealed the possibility that two service types of AMIHS, 'Midwife & Home Visiting' and 'AMIHS type', were more likely to result in women quitting smoking during pregnancy. Investigating what factors have influenced this outcome should be explored further and, if possible, replicated across other AMIHS sites. The quantitative analysis also indicates that clients access antenatal care earlier, complete the minimum number of service visits, and at some case study sites, clients continue to access the program over successive pregnancies.

Further action: Provide support for AMIHS sites to design and deliver best practice smoking cessation interventions.

Broader impacts of AMIHS

The case study data revealed that there were a variety of positive health (not necessarily maternal) and social outcomes being achieved through AMIHS, but they were not being systematically recorded and therefore not being captured for evaluation or research purposes. These outcomes were often difficult to measure or were not always being appreciated because there was a focus on endpoint health outcomes (such as reduction in low birth weight).

Stakeholders emphasised the need to look at the incremental changes that could be achieved, such as clients becoming more confident in their interactions with the health system, families feeling less vulnerable, smokers have an increased awareness of the harms of smoking before quitting. Stakeholders also emphasised that many positive outcomes, including increased breastfeeding, often occur over time through sustained [even if interrupted] contact with clients and their families over several pregnancies. Change in behaviour might not happen in the first pregnancy, or even the second, but rather in the third pregnancy. All of these are signs of progress towards endpoint health outcomes, and ideally would be measured.

Kruske (2012) and Jongen et al. (2014) similarly have noted that existing outcome measures for mothers of Aboriginal babies and their families are inadequate. Additional measures may therefore be required to assess progress, including the use of community-defined measures (Department of Health, 2017).

Enhanced data to measure the impact of AMIHS

The evaluation findings suggest that in identifying appropriate outcome measures to collect data, the endpoint outcomes currently captured through the AMDC and Maternal and Child Health Register (MCRH) databases could be enhanced with data that investigates the 'journey' as well as the end destination.

Smoking cessation was one example that emerged from the case study findings where the 'journey' or intermediate behavioural changes of clients' could be measured. Some stakeholders described that the endpoint outcome of smoking cessation requires numerous intermediate achievements and changes before getting to the point of quitting. Stakeholders (AMIHS and LHD staff and managers principally) also noted that over time clients were more open and interested to talking about a quitting pathway as they became more confident to make a quit attempt and hopefully quit. Such clients are clearly moving along the 'quitting continuum' (Pierce, Farkas and Gilpin, 1998) and it has been reported that Aboriginal women want to take ownership of their quitting process (Bovill et al., 2018). Understanding what might help to move them towards successfully quitting smoking would be worth measuring routinely.

Another example might be the incidence of low birth weight. Some stakeholders noted that birth weight of babies can improve between subsequent pregnancies for some women. This could suggest that several intermediate positive changes could have been achieved in a mother's life, such as increased health literacy, improved nutrition and health behaviours, to result in the endpoint of improved birth weight. A better understanding of AMIHS effectiveness may be achieved through measurement of these intermediate outcomes.

A better understanding and objective measure of the challenges faced by many AMIHS clients also needs to be routinely captured. Patient satisfaction and experience is positively linked with clinical effectiveness and patient safety (Doyle, Lennox and Bell, 2013) and measuring a person's perceived quality of life can provide information about the impact of a service (Burckhardt and Anderson, 2003). Data collection from Aboriginal people about their experiences in the health system also needs to be improved and increased (Aboriginal Health Policy Directorate, 2018). Measuring the satisfaction and experience of clients accessing AMIHS could therefore provide a broader understanding of the outcomes for clients.

A clear finding from the case study data was that mental health and drug and alcohol issues were experienced by many clients, yet such information was not captured in the AMDC and MCHR databases. An improved understanding of these outcomes and incidences of mental health and drug and alcohol issues, which can directly impact health outcomes for mothers and babies, would allow better monitoring of both the needs of clients and any improvements achieved through AMIHS participation.

Further action: AMDC data collection is enhanced to measure outcomes for women over time (e.g. over subsequent pregnancies).

Further action: Appropriate and relevant output and outcome measures are identified in consultation with community, AMIHS, LHD, ACCHSs and Ministry stakeholders that could be feasibly (cost and quality) collected.

Summary

AMIHS is a successful program and many Aboriginal communities in NSW have benefited from its sustained delivery over the last two decades. It is a unique program within the NSW Health

system that delivers holistic antenatal and postnatal care and has Aboriginal cultural perspectives interwoven into the model. The flexibility of the model is critical to its success and clients feel welcomed, valued and well supported; AMIHS staff are responsive, they take the time to listen, develop trust and coordinate support for clients.

Full implementation of the model, however, is being constrained at some sites and this is potentially undermining the full potential of the program. Stakeholders at the case study sites reported that many AMIHS clients are experiencing complex health and social issues and that AMIHS staff are often required to navigate complicated situations within significant time constraints. To effectively support clients, the AMIHS workforce needs to be appropriately resourced and supported through dedicated community development and health promotion funds and access to professional development.

Positive outcomes are being achieved through AMIHS. The program is available to most eligible women and it has an acceptance rate of over 50%. The evaluation found that AMIHS is associated with access to early and ongoing antenatal care and moderate improvements in some health outcomes. Stakeholders also reported many positive flow-on effects of AMIHS for clients and communities.

In the period since AMIHS commenced, there have been important improvements in Aboriginal maternal and infant health in NSW. These include increased access to early antenatal care, declines in risk factors such as smoking in pregnancy and teenage pregnancy, and improved birth outcomes. As there are a range of initiatives and programs in NSW that aim to promote good health outcomes for Aboriginal babies and their mothers, it can be difficult to attribute changed health outcomes to any specific service, including to AMIHS. However, AMIHS has good reach across NSW and both the quantitative and qualitative findings from this evaluation suggest that AMIHS is contributing to these health improvements.

Ongoing delivery of the AMIHS program especially following the implementation of improvements identified in this report, will support further improvements in the health and social outcomes of the Aboriginal communities in NSW.

Acronyms and abbreviations

ACCHS	Aboriginal Community Controlled Health Services
AHW	Aboriginal Health Worker
AMIHS	Aboriginal Maternal and Infant Health Service
AMDC	AMIHS Data Collection
AMS	Aboriginal Medical Service
CEE	Centre for Epidemiology and Evidence
CFH	Child and family health
FaCS	Family and Community Services
FTE	Full-time equivalent
HCA	Human Capital Alliance
KPI	Key Performance Indicator
LHD	Local Health District
MCHR	Maternal and Child Health Register
NAIDOC	National Aborigines and Islanders Day Observance Committee
SGA	Small for gestational age
TSU	Training Support Unit
VfM	Value for money

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