UNIVERSITY CENTRE FOR RURAL HEALTH
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# 1+1= A Healthy Start to Life - Research Report

The *1+1 = A Healthy Start to Life Project: Targeting the year before and the year after birth in Aboriginal children in remote areas* is a three stage baseline, intervention and post-intervention study designed to improve maternal and infant health for remote dwelling Aboriginal families in Maningrida and Wadeye. We are investigating how services can be better designed to increase community involvement in improving early detection of problems and increase the effectiveness of multidisciplinary practice during pregnancy and the year after birth. This study is funded by the National Health and Medical Research Council, the NT Research and Innovation Board and the Helen and Bori Liberman Family. An Australian Research Council funded project in partnership with the Department of Health and Community Services and Danila Dilba Aboriginal Medical Service is looking at Indigenous families and birth which is also informing this work.

## *Dear Colleagues*

On behalf of the research team, I am pleased to have this opportunity to report the study progress to you.

It is our 4th year of the study and we have made considerable progress. Our baseline maternal infant health data collection and analysis is completed; ethnographic data collection and analysis on infant health study in Community 2 is completed; interventions are in train being led by committed clinical and policy leader; and the evaluation is underway. A cost study protocol for the Midwifery Group Practice (MGP) has been developed and data collection is progressing.

We are delighted with the progress of the study. We have now published one book chapter, four peer-reviewed articles and more are under review and in train. We have presented our work in 20 different international and national conferences and completed a report for Prime Minister's Science, Engineering and Innovation Council. An Honours student has graduated and two PhD students are progressing well and are on track to complete around the end of this year.

In April I travelled up to Darwin and met with many key NT Health Government leaders and brought them up to date. It is so heartening to see such effort going to improvements in maternal and child health. **We have decided to cancel our next Advisory Committee Meeting which was scheduled on 26 May.** Rather we have issued this Newsletter to share with you what we have achieved. Here are some updates from each of the researchers about their work. Please contact myself or any of the researchers mentioned here if you want more information or have any queries about the content of this Newsletter.

Lesley Barclay AO PhD

Director and Professor; University Centre for Rural Health North Coast, Chief Investigator on behalf of the project team

**Sarah Bar-Zeev** is continuing to work on baseline data analysis that will be included in the MGP evaluation and costing study. Sarah is also working towards completing publications, with one currently under review and a number due for submission in the coming months. These include:

1. Bar-Zeev, S., Kruske, S., Barclay, L & Bar-Zeev, N., Carapetis, J. & Kildea, S . Under review 2011. MJA ***Extremely high rates of health service utilisation by remote-dwelling Aboriginal infants in tropical northern Australia*.**

2. Bar-Zeev, S., Barclay, L., Kruske, S. & Bar-Zeev, N. & Kildea, S. BMC Pregnancy and Birth. For submission June 2011 ***Utilisation of maternal health services by remote dwelling Aboriginal women in tropical northern Australia: a retrospective cohort study***

3. Bar-Zeev, S., Barclay, L., Kruske, S & Kildea, S. *Quality in Primary Care. For submission June 2011.* ***Comparing protocol with practice: Antenatal care quality for remote dwelling Aboriginal women in northern Australia.***

4. Bar-Zeev, S., Kruske, S., Barclay, L & Kildea**, S**. For submission May 2011. Rural and Remote Health Journal. ***Barriers to quality infant health care in remote Australian Aboriginal communities.***

**Malinda Steenkamp** is continuing her work on analysing NT midwives, hospital and patient travel data. She is looking at teenage pregnancies and found that between 2003 and 2005, 3,890 Aboriginal mothers had singleton pregnancies. Of these, 8% were aged 13-16 years, 20% 17-19 years, 66% 20-34 years, and 6% 35 years or more. About 93% of early teenage mothers were primiparous and 60% of mothers aged 17-19 years compared to 17% of 20-34 year old women and 6% of mothers older than 34 years. Reported smoking at first antenatal visit was lowest for younger teenage mothers and increased for older teenagers mothers aged 17-19 years to the same proportion as for mothers aged 20-34 years, whereafter it declined somewhat for mothers aged 35 years or more. There were differences between the groups of mothers in regard to maternal outcomes, i.e., about one-quarter of both teenage mothers groups had an operative birth compared to about one-third of the older mother groups. There were few differences in neonatal outcomes for the four groups, but the median birth weight for babies born to 13-16 year olds was 140g less than that of babies born to mothers aged 20-34 years. There seems to be a transition from the teenage to older age groups in regard to smoking and it is important to start interventions at a young age.

**Cath Farrington** is continuing qualitative and quantitative data analysis. Medical chart audits of women and infants will be completed by mid August 2011. Preliminary data analysis of the first 111 women through the MGP showed that the MGP cohort has a smaller proportion of women aged less than 20 years compared to a comparison group from the NT Midwives collection (111 women from Darwin remote 2003 - 2005) and baseline data (women from the 1+1 study (2004 - 2006). Following discussion with the Department of Health it was decided to extend the evaluation of the MGP to investigate this finding further. A final report will be made available to the Department of Health by the end of the year.

**Gao Yu** returned from maternity leave in March and continued to work on the the economic evaluation for the MGP evaluation. The protocol developed by the study team received constructive comments from two health economists: Dr. Lisa Gold and Dr. Yuejen Zhao. Most the baseline data required for the costing study is already collected by Sarah Bar-Zeev and Malinda Steenkamp. This data will be used by Gao Yu for her to populate the model and conduct further analysis. Cath Farrington is undertaking data collection which will also be used for the costing study as post- MGP data.

**Sue Kruske** and **Lesley Barclay** have commenced discussions with Tricia Nagel and staff from health in midwifery and mental health to apply for beyondblue funding around perinatal mental health for Aboriginal women and their families. We hope to progress these discussions and submit on the next round of beyondblue funded due later this year.

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***Publications***

**'Closing the Gap': How maternity services can contribute to reducing poor maternal infant health outcomes for Aboriginal and Torres Strait Islander women**

S Kildea, S Kruske, L Barclay, S Tracy

*Rural and Remote Health, 10(1383)*

A B S T R A C T

**Context:** The reproductive health outcomes for Aboriginal and Torres Strait Islander mothers and infants are significantly poorer than they are for other Australians; they worsen with increasing remoteness where the provision of services becomes more challenging. Australia has committed to 'Overcoming Indigenous Disadvantage' and 'Closing the Gap' in health outcomes.
**Issues:** Fifty-five per cent of Aboriginal and Torres Strait Islander birthing women live in outer regional and remote areas and suffer some of the worst health outcomes in the country. Not all of these women are receiving care from a skilled provider, antenatally, in birth or postnatally while the role of midwives in reducing maternal and newborn mortality and morbidity is underutilised. The practice of relocating women for birth does not address their cultural needs or self-identified risks and is contributing to these outcomes. An evidence based approach for the provision of maternity services in these areas is required. Australian maternal mortality data collection, analysis and reporting is currently insufficient to measure progress yet it should be used as an indicator for 'Closing the Gap' in Australia.
**Lessons learned:** A more intensive, coordinated strategy to improve maternal infant health in rural and remote Australia must be adopted. Care needs to address social, emotional and cultural health needs, and be as close to home as possible. The role of midwives can be enabled to provide comprehensive, quality care within a collaborative team that includes women, community and medical colleagues. Service provision should be reorganised to match activity to need through the provision of caseload midwives and midwifery group practices across the country. Funding to embed student midwives and support Aboriginal and Torres Strait Islander women in this role must be realised. An evidence base must be developed to inform the provision of services in these areas; this could be through the testing of the Rural Birth Index in Australia. The provision of primary birthing services in remote areas, as has occurred in some Inuit and New Zealand settings, should be established. 'Birthing on Country' that incorporates local knowledge, on-site midwifery training and a research and evaluation framework, must be supported.

**Pragmatic indicators for remote Aboriginal maternal and infant health care: why it matters and where to start**

Steenkamp M, Bar-Zeev S, Rumbold A, Barclay L, Kildea S

*Australian and New Zealand Journal of Public Health*, *34*(s1): S5 - S8.

A B S T R A C T

**Objective**: There are challenges in delivering maternal and infant health (MIH) care to remote Northern Territory (NT) communities. These include fragmented care with birthing in regional hospitals resulting in cultural and geographical dislocation for Aboriginal women. Many NT initiatives are aimed at improving care. Indicators for evaluating these for remote Aboriginal mothers and infants need to be clearer. We reviewed existing indicators to inform a set of pragmatic indicators for reporting improvement in remote MIH care.
**Methods:** Scientific databases and grey literature (organisational websites and Google Scholar) were searched using the terms 'Aboriginal/maternal/infant/remote health/monitoring performance'. Key stakeholders identified omitted indicators sets. Relevant sets were reviewed and organised by indicator type, stage of patient journey, topic and theme.
**Results**: Forty-two indicators sets were found. Seven focused on Aboriginal health, 23 on reproductive/maternal health, eight on child/infant health and four on other aspects, e.g. remote health. We identified more than 1,000 individual indicators. Of these, 656 were relevant for our purpose and were subsequently organised into 300 topics and 16 themes for antenatal, birth and postpartum, and infant care by indicator type.
**Conclusion**: There are many measures for monitoring health care delivery to mothers and infants. Few are framed around remote MIH services, despite poorer health outcomes of remote mothers and infants and the specific challenges with providing care in this setting. Establishing relevant indicators is vital to support relevant data collection and the development of appropriate policy for remote Aboriginal maternal and infant care.

**From hospital to home: The quality and safety of a postnatal discharge system used by remote dwelling Aboriginal mothers and infants in the Top End of Australia.**

Bar-Zeev, S., Barclay, L., Farrington, C. & Kildea, S.

*Midwifery. Accepted for publication April 2011.*

A B S T R A C T

**Objective**: To examine the transition of care in the postnatal period from a regional hospital to a remote health service and describe the quality and safety implications for remote dwelling Aboriginal mothers and infants.
**Design**: A retrospective cohort study of maternal health service utilisation and birth outcomes, key informant interviews with health service providers and participant observation in a hospital and two remote health centres. Data were analysed using descriptive statistics and content analysis.
**Setting**: A maternity unit in a regional public hospital and two remote health centres within large Aboriginal communities in the Top End of the Northern Territory, Australia.
**Findings**: Poor discharge documentation, communication and coordination between hospital and remote health centre staff occurred. Additionally, the lack of clinical governance and a specific position holding responsibility for the postnatal discharge planning process in the hospital system were identified as serious risks to the safety of the mother and infant.
**Conclusions and implications for practice**: The quality and safety of discharge practices for remote dwelling mothers and their infants in the transition from hospital to their remote health service following birth need to be improved. The discharge process and service delivery model must be restructured to reduce the adverse effects of poor standards of care on mothers and infants.

**Niyith Niyith Watmum (the quiet story): Exploring the experiences of Aboriginal women who give birth in their remote community** (funded by Australian Research Council**)**

Ireland, S., Narjic, CW., Belton, S., Kildea, S

*Midwifery. In Press (2010)*

A B S T R A C T

**Objective**: to investigate the beliefs and practices of Aboriginal women who decline transfer to urban hospitals and remain in their remote community to give birth.
**Design**: an ethnographic approach was used which included: the collection of birth histories and narratives, observation and participation in the community for 24 months, field notes, training and employment of an Aboriginal co-researcher, and consultation with and advice from a local reference group.
**Setting**: a remote Aboriginal community in the Northern Territory, Australia.
**Participants**: narratives were collected from seven Aboriginal women and five family members.
**Findings**: findings showed that women, through their previous experiences of standard care, appeared to make conscious decisions and choices about managing their subsequent pregnancies and births. Women took into account their health, the baby's health, the care of their other children, and designated men with a helping role.
**Key conclusions**: narratives described a breakdown of traditional birthing practices and high levels of non-compliance with health-system-recommended care.
**Implication for practice**: standard care provided for women relocating for birth must be improved, and the provision of a primary maternity service in this particular community may allow Aboriginal Women's Business roles and cultural obligations to be recognised and invigorated. International examples of primary birthing services in remote areas demonstrate that they can be safe alternatives to urban transfer for childbirth. A primary maternity service would provide a safer environment for the women who choose to avoid standard care.

**Investigators** on the study are: Professor Lesley Barclay, *Project leader*; Professor Jonathan R Carapetis, *child health, infectious disease prevention*; Prof Sue Kildea, *PAR, service intervention, evidence based care*; Assoc. Professor Sue Kruske, *child health, parenting practices, nurse workforce reform*; Professor Gweneth Norris, *management accounting, costing, economic analysis*; Dr Carolyn McGregor, *patient journey modeling, health informatics*; Dr Joanne Curry, *patient journey modeling analyses*; Prof Sally Tracy, *innovative service delivery, cost, evaluation, risk management*; Dr Suzanne Belton, *ethnographic studies*, Dr Jacqui Boyle, *Obstetrics, service design*, Dr Ngiare Brown, *Indigenous child health*, Dr Steve Guthridge, *epidemiology, statistical advice*, Noelene Swanson, *remote health service reform*.

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