

COSMOS Comparing Standard Maternity Care with 'One to one' midwifery Support

Helen McLachlan

MCHR, in collaboration with the Division of Nursing and Midwifery at La Trobe University and the Royal Women's Hospital, received an NHMRC project grant to conduct a randomised controlled trial comparing one to one (caseload) midwifery care with standard options of care for women at low risk of complications. The trial is called COSMOS, which stands for 'COmparing Standard Maternity care with One to one midwifery Support'.

Caseload (one to one) midwifery is a model of maternity care where women are cared for by a primary midwife throughout pregnancy, birth and the early postnatal period. This differs from birth centre and team midwifery care in that the underlying philosophy is one of continuity of carer. Each woman is allocated a primary midwife, who works with one or two other midwives as a small group. This midwife provides the majority of the woman's antenatal care, is on call to come in when the woman is in labour and undertakes some hospital postnatal care and domiciliary visit/s. The back-up midwives also meet the

woman and do an antenatal check during pregnancy so they can be a back-up for labour or postnatal care as needed, for example if the primary midwife is on leave, on days off or has already worked an appropriate number of hours in a 24 hour period. A full-time midwife usually cares for 40-45 women per year.

Continuity of carer models such as this have been strongly recommended and encouraged in Victoria and throughout Australia. The Victorian Department of Human Services (DHS) released a policy document "Future directions for Victoria's maternity services" in June 2004 which endorsed and promoted the expansion of public models of maternity care that offer continuity of carer. Many hospitals have responded by introducing caseload midwifery, however, this model of care has yet to be subjected to rigorous evaluation. There is very little evidence about the clinical outcomes of one to one midwifery care for mothers and babies. There is some evidence that both women and midwives like this type of care, but there is also evidence that the model needs to be carefully managed to ensure that midwives don't become 'burnt out'. The results of this trial are urgently needed and will assist policy makers and maternity services in planning for future models of maternity care. This study will be the first randomised controlled trial of caseload midwifery care in Australia.

We will evaluate whether caseload midwifery decreases a number of interventions during childbirth (such as caesarean births, instrumental vaginal births, and induction of labour) compared with standard maternity

care. We will also compare a range of other outcomes such as perineal trauma; postnatal depression; maternal satisfaction with care; initiation and duration of breastfeeding; costs; health outcomes for mothers and babies; and the impact of this new model on midwives and other staff in the organisation.

COSMOS is being implemented at the Women's initially, with the possibility of one or two other sites also joining the trial. Two thousand women at low risk of medical complications will be recruited to the study. We commenced recruitment in September 2007 and have found that many women are happy to be involved. To date 150 women have agreed to participate in COSMOS; half have been allocated to caseload midwifery care and half to standard care.

Any enquiries about the study can be directed to Dr Mary Anne Biro on 8341 8536.

Members of the COSMOS team are Dr Helen McLachlan,^{1,2} Dr Della Forster,^{1,5} Ms Mary-Ann Davey,^{1,3} Ms Lisa Gold,^{1,4} Professor Judith Lumley,¹ Ms Tanya Farrell,⁵ Professor Jeremy Oats⁵ and Professor Ulla Waldenström.⁵ Professor Leah Albers is an Associate Investigator⁷.

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L-R: Della Forster, Michelle Kealy, Mary Anne Biro, Michelle Newton, Mary-Ann Davey, Jo Rayner, Tanya Farrell, Helen McLachlan, Lisa Gold

COMPASS

Rhonda Small

COMPASS is a National Health and Medical Research Council Capacity Building Grant in Population Health Research, awarded in October 2006 to the Centre, in partnership with the Primary Care Research Unit in the Department of General Practice at The University of Melbourne and the Healthy Mothers Healthy Families Research Group at Murdoch Childrens Research Institute. COMPASS commenced in April 2007.

The focus for COMPASS is building public health research capacity for:

- conceptualising complex questions;
 - working with populations who are often excluded from research, including Indigenous communities, immigrant and refugee women and women experiencing intimate partner violence; and
 - designing and evaluating complex interventions in diverse settings ranging from hospitals to primary care and communities.
- COMPASS has a major interest in the health and care of mothers and children.
- COMPASS has provided us with the opportunity to develop a program of continuing education and development for postdoctoral staff in the transition from completing a PhD to becoming independent researchers.
- The program has a number of components:
- Individual mentoring by lead investigators that involves specific supervision and support;
 - Opportunities for co-mentoring by team investigators who themselves bring a wide range of skills and expertise to COMPASS;
 - A personal development and skills development program with a focus on strengthening personal capacities and developing research leadership, as well as providing practical skills, such as research project management, writing skills (for grant applications and for publication); and skill development for public health advocacy and research transfer;
 - Capacity-building through participation in multi-disciplinary research that addresses complex problems with appropriately conceptualised interventions to address them;
 - A program of two workshops per year open to all members of the three participating research groups - our first workshop has just been held on the 'uses and abuses of focus groups';
 - A short course on complex interventions, also open to the wider public health community that will be held in 2008, 2010 and 2012, with the first planned for April 2008; and



Some of the COMPASS team

- Finally, a book is planned on methods for complex interventions, with contributions based on the past and ongoing research of COMPASS investigators.

Examples of the research projects that underpin COMPASS to date:

Complex questions, complex settings

Changing maternity care: Healthy Mothers Healthy Families Survey in South Australia and Victoria - Jane Yelland, Stephanie Brown

A population-based postal survey of >8000 women giving birth in South Australia and Victoria in 2007 will be conducted in early 2008. The study is designed to investigate the impact of changing patterns in the provision and organisation of maternity and postnatal care in both states.

Reproductive health: pregnancy outcomes after treatment for cervical dysplasia - Fiona Bruinsma, Judith Lumley

A multi-centre, Australia-wide prospective cohort study of women presenting for assessment of a cervical lesion is in advanced stages of planning following a recent investigation of pregnancy outcomes after treatment for cervical dysplasia.

Managing depression in primary care - Renata Kokanovic, Jane Gunn

A range of studies examining this complex area of improving primary care responses to the experience of depression.

Breastfeeding research - Lisa Amir, Della Forster, Mary-Ann Davey, Judith Lumley

Several studies exploring contemporary breastfeeding issues and a proposed peer support intervention study to improve breastfeeding duration.

Populations often excluded from research

Indigenous women and families: pregnancy and postnatal care - Jane Yelland, Tanya Koolmatie, Stephanie Brown

Indigenous women have been under-represented in previous Victorian population-based surveys of recent mothers. Currently we are consulting with Indigenous community organisations and communities in South Australia regarding the development of a study for Aboriginal families documenting experiences of pregnancy and postnatal care. The study is being developed in partnership with the Victorian Aboriginal Community Controlled Health Organisation and the South Australian Aboriginal Health Council.

Immigrant and refugee health: birth outcomes and experiences of care - Mridula Bandyopadhyay, Rhonda Small

Many developed countries find the provision of maternity care to immigrants and refugees challenging and have difficulty in measuring the outcomes of care. We are exploring pregnancy outcomes and explanations for country of birth variations in immigrant and refugee women, compared with Australian-born women.

Complex interventions

Reducing intimate partner violence and depression: Mothers Advocates In the Community (MOSAIC) - Angela Taft, Rhonda Small, Judith Lumley

MOSAIC is a cluster-randomised trial based in primary care (general practice and maternal and child health) that aims to reduce intimate partner abuse and depression in women pregnant or with children under five. MOSAIC offers women non-professional supportive friendship by a local 'mentor mother'.

COSMOS: a trial of caseload midwifery - Helen McLachlan, Della Forster, Mary-Ann Davey, Jo Rayner, Judith Lumley

COSMOS is the first rigorous evaluation of 'one to one' (caseload) midwifery care in Australia and is being conducted initially at the Royal Women's Hospital. (See article on page 1.)

COMPASS lead investigators are: Prof Judith Lumley (MCHR), A/Prof Stephanie Brown (Healthy Mothers, Healthy Families, Murdoch Childrens Research Institute), Prof Jane Gunn (Primary Care Research Unit, University of Melbourne), Dr Rhonda Small (MCHR), A/Prof Jeanne Daly (MCHR) and Prof Christine MacArthur (University of Birmingham)

COMPASS team investigators are: at MCHR: Dr Angela Taft, Dr Lisa Amir, Dr Della Forster, Dr Helen McLachlan, Fiona Bruinsma, Lyn Watson, Dr Mridula Bandyopadhyay, Mary-Ann Davey, Joanne Rayner; at PCRU: Dr Renata Kokanovic, and at Healthy Mothers Healthy Families: Dr Jane Yelland and Tanya Koolmatie. The team will also be joined in 2008 by Dr Karen Willis, a sociologist seconded to COMPASS from the University of Tasmania for 12 months and Dr Arthur Hsueh, a health economist at the University of Melbourne who will be spending a day a week with COMPASS.



Building public health capacity for complex questions, complex settings, complex populations, complex interventions

Early Births

Lyn Watson



Early Births was a case-control study of birth prior to 32 weeks gestation where the risk factor of primary interest was prior reproductive history. All women in Victoria having a very preterm, singleton birth were eligible to be cases and a sample from the population of women giving birth at 37 or more completed weeks were eligible to be controls. Data were collected from April 2002 to April 2004. Forty-eight percent of eligible singleton cases (n= 608) and 53% of eligible singleton controls (n= 796) were interviewed.

Obtaining ethics approval involved approaching 85 hospitals across Victoria and took 16 months. Approval to recruit was obtained from 73 hospitals, requiring more than 26,000 pages and 258 copies of the application.¹

Recruitment, and ultimately the response was less than we had hoped. Challenges included recruiting at many hospitals, short postnatal hospital stay, reliance on hospital staff to make the first approach to women, particularly to women whose babies had died.² However, when approached, women readily agreed to participate.

There are a number of potential biases in case-control studies, particularly when the data collectors know the status of participants. To lessen this bias, we used procedures such as masking the main hypothesis and ensuring interviewers conducted interviews with both cases and controls. We conducted a study of the interviewers' experiences to investigate these issues and documented the data collection process.³

Analysis of the results is now nearly complete and is the subject of my PhD. With the help of Associate Professor James King, I have developed a pregnancy history formula to categorise and sequence women's prior pregnancies. One number provides information on parity, gravidity, sequence, gestation and outcome of pregnancies.⁴ I presented the preliminary findings of

Early Births at the PSANZ congress earlier this year⁵ and further publications are underway.

1. Watson LF, Rayner JA, Lumley JM. Hospital ethics approval for a population-based case-control study of very preterm birth. *Aust Health Rev* 2007;31: 514-22.
2. Watson LF, Lumley J, Rayner JA, Potter A. Recruitment to research studies in maternity hospitals: An example from the *Early Births* Study. *Midwifery* <http://dx.doi.org/10.1016/j.midw.2007.07.004>
3. Watson LF, Lumley J, Rayner JA, Potter A. Research interviewers' experience in the *Early Births* study of very preterm birth: Qualitative assessment of data collection processes in a case-control study. *Paediatr Perinat Epidemiol* 2007;21:87-94.
4. Watson LF, King JF. A new formula for summarising the pregnancy history. *Aust N Z J Obstet Gynaecol* 2007;47:475-6.
5. Watson LF, Lumley J, Rayner J, King J, Jolley D. Prior reproductive history and very preterm birth: Data from the *Early Births* study. *J Paediatr Child Health* 2007;43:A42.

Lyn Watson



Women's views of maternity care: A practical guide for quality improvement from Iran

Siamak Aghlmand

Around one million women give birth annually in Iran, with 90% receiving maternity care in hospital. However, this does not guarantee high-quality care. Caesarean section is as high as 40%, maternal mortality is 37.5 per 100,000 live births, and neonatal mortality is 16.9 per 1000 live births. Of the 295 registered maternal deaths in 2005, 88% occurred in hospitals and 60% were related to medical errors.¹ Obstetricians are responsible for the care of all women in hospitals, although midwives provide much of the care under supervision.

Taking into account women's views about the care they needed,² we decided to improve the quality of maternity care in Fayazbakhsh hospital, the biggest Social Security-affiliated hospital in Iran, located in one of the poor suburbs of Tehran. We used the quality function deployment (QFD) method developed in the manufacturing industry. QFD uses new quality tools to identify 'customer' requirements and to link the requirements to the key organisational

functions and tasks that are necessary to satisfy them.³

Briefly our approach involved a number of steps:

- A small team of doctors and midwives was formed to oversee the changes.
- Midwives conducted in-depth interviews with women following birth (n=18) to identify their needs and requirements.
- We focused on the top 20 of the 54 requirements that women identified. These included: well-being of mother and baby, adequate pain relief in labour, caring and sensitive staff, frequent monitoring, privacy during delivery and vaginal examination, quick response to requests, provision of comfort, normal vaginal delivery, companionship after delivery, immediate opportunity to see the newborn, and improved hospital facilities.
- A baseline survey of a random sample of postpartum women at home (n=89) determined women's satisfaction with their care before the introduction of the improved care model. At this time 42% of the women had had a caesarean section.
- Using a range of QFD techniques, the team then identified six organisational functions or tasks that could best address the 20 top-ranked maternal requirements. These included: development of a guideline for evidence-based care practices, ensuring access to an obstetrician in the maternity ward at all times, increasing privacy for women with folding screens and allowing a companion to be with a woman after normal vaginal delivery.

- A flowchart for the ideal maternity care process was designed and all physicians participated in evidence-based care workshops.
- Satisfaction data were again collected from a random sample of 100 women following the changes.
- There was a statistically significant increase in maternal satisfaction for 17 of the 20 maternal requirements.
- 78% of clinicians were following the new guidelines and fewer women (30%) had had a caesarean section.

Our study demonstrated both that women are well aware of their needs and that taking these into account can play a major role in designing a model for improved woman-centred care.

1. Ministry of Health and Medical Education (MHME) of Iran (2004). **The report of the health indicators in 2003**. URL: <http://www.mohme.gov.ir/HNDC/Indicators/Zij%201382.htm> (Accessed 18 Sept 2006).
2. Iacobucci D, Ostrom A, Grayson K. Distinguishing service quality and customer satisfaction. *J Consult Psychol* 1995;4:277-303.
3. Chaplin Ed, Terninko J. **Customer driven healthcare: QFD for process improvement and cost reduction**. Milwaukee: ASQ Quality Press; 2000.

Siamak Aghlmand



check on breastfeeding

Lisa Amir

General practitioners (GPs) enjoy learning through case studies. A long-running, popular method of continuing medical education is the *check (continuous home evaluation of clinical knowledge)* program of self assessment. This consists of six to eight brief scenarios followed by a series of questions designed to bring out the important issues for GPs to consider.

I was invited by the editors of *Australian Family Physician (AFP)* to develop a new *check* program on breastfeeding. Fiona Clements and Alison Hawthorn, GPs in country Victoria, worked with me to develop the case studies. The cases ranged from common problems of nipple and breast pain to more unusual cases, such as induced lactation for an adopted baby. Several cases emphasised that most medicines are safe to use in lactating women. The *check* program includes a list of resources for GPs and families, including resources on the safe use of medicines.

"Breastfeeding" was published in September 2007 and distributed with AFP to about 17,000 GPs around Australia.

Lisa Amir



New postnatal report available

Della Forster

Recently we completed a report titled *Alternative approaches to early postnatal care: exploring women's views* (Della Forster, Helen McLachlan, Sharon Rayner, Jo Rayner, Jane Yelland, Lisa Gold), which summarises the findings of a series of focus groups conducted in 2006 in rural and metropolitan Victoria. We explored women's experiences and expectations of postnatal care and their responses to four proposed packages of postnatal care. The packages mainly related

to a shorter length of hospital stay with various care options.

In many health services in Victoria, particularly metropolitan, the pressure on hospital postnatal beds has increased. Many services, especially tertiary referral hospitals, have needed to discharge women much earlier than planned or expected. Our aim is to help ensure that if service delivery is changed, this is undertaken in a systematic, evidence-based manner taking into consideration women's views as well as the effect of changes on health outcomes of mothers and babies.

We will present this work as part of a seminar on postnatal care in April 2008. If you would like to purchase a copy of the report (\$10) please contact MCHR.

Della Forster



Staff news

Congratulations to both **Lisa Amir** and **Della Forster** who have been successful in their applications for promotion as Senior Research Fellows.

The COMPASS team at MCHR welcomes **Mridula Bandyopadhyay**, a demographer and anthropologist who has extensive experience working in maternal and child health projects in rural India, particularly in reproductive and sexual health, family planning, and determinants of health. Mridula has also worked with immigrant and refugee women's health research in Australia for several years.

Recently we said good-bye to **Shirley Bilardi** with thanks for providing us all with administrative assistance. Currently administrative support is provided by **Melanie Callander, Nicole Connors, Sandra Cowen and Kaj Lofgren**. We welcome them to their part-time roles at the Centre.

MOSAIC has recently farewelled **Vicki Wells** and welcomed **Karalyn McDonald** as a new member of the research team.

Visitors

Leah Albers, a midwifery professor at the University of New Mexico Health Sciences Center (College of Nursing and OB-GYN Dept, School of Medicine) visited during October and November. This was Leah's second visit, she was previously on sabbatical at MCHR from Aug '05 to May '06. She is an associate investigator with COSMOS and studies pregnancy and childbirth, with an emphasis on normal birth.

Dr Siamak Aghlmand has joined MCHR for six months as a visiting honorary research fellow. He has written about his doctoral research in Iran on page three.

New baby

Congratulations to **Kasey Gibson**, (former *Early Births* staff), and her partner Jeremy on the birth of their first child, Riley Robert Smart born on 16 October.

Recent conference

MCHR staff and students were well represented in September at the Australian College of Midwives' 15th National Conference in Canberra. Together with our clinical partners, we contributed nine published abstracts; four related to postnatal care and the remainder focused on collaborative projects.

Postgraduate news

Nilva Egaña joined MCHR for a four month Victorian Public Health Training Scheme placement in November. She will work with Fiona Bruinsma on projects regarding pre-cancerous changes in the cervix.

Michelle Kealy's PhD thesis "Caesarean section - a response to risk and fear: an Australian study of women's experiences" recently passed with minor revisions.

Touran Shafiei has recently had her Masters research project successfully upgraded to a PhD.

'Hot' spot Congratulations to

Jeanne Daly et al. for their paper: A hierarchy of evidence for assessing qualitative health research. **J Clin Epidemiol** 2007; 60: 43-49, which has rated first in the 'Hottest 25 papers' downloaded from the journal this year!

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