University of Manitoba | Faculty of Medicine
Community Health Sciences

GIVING BIRTH IN MANITOBA

A summary of the report *Perinatal Services and Outcomes in Manitoba* by Maureen Heaman, Dawn Kingston, Michael E. Helewa, Marni Brownell, Shelley Derksen, Bogdan Bogdanovic, Kari-Lynne McGowan, Angela Bailly

Summary written by Amy Zierler

More than 15,000 babies are born in Manitoba each year, and a healthy start for each new life can make a lifelong difference for individuals and their families. Achieving this goal has been the focus of a good deal of health and social policy. But for some groups of mothers, it is hard to ensure a strong beginning for their newborns.

This report by the Manitoba Centre for Health Policy (MCHP) shows, for example, that women who live in poverty—whether in the northern regions of the province or inner-city areas of Winnipeg—are more likely to have less healthy pregnancies and deliveries. Their babies are also more likely to have serious health problems.

This health gap between poorer and wealthier families has been recognized for some time. What this report adds is a bigger, more comprehensive picture of giving birth and being born in Manitoba. The wide-ranging study brings together up-to-date information on more than 45 indicators, or measures, covering prenatal care through the newborn's first year of life. We conducted the study to better understand trends in the health of mothers and babies and the services they use.

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How the study was done

We used anonymous data on all births in Manitoba over an eight-year period (2001/02 to 2008/09), and we followed the mothers and babies for one year after delivery. For the first time, we are able to include data on care by midwives for both hospital and home births. Most indicators are analyzed by geographic region and by factors known to influence mothers' and babies' health. These include socioeconomic and demographic factors (such as the mother's age, income, education and social support), medical conditions (such as diabetes and high blood pressure), and health behaviours (such as smoking during pregnancy and breastfeeding).

For our geographic breakdowns, the rates are based on where women live, not where they gave birth or received services. This helps planners and policy-makers working at the regional level to identify local issues. We used the 11 Regional Health Authorities (RHAs) that were in effect during our study period (they were combined into five larger regions in May 2012) and the 12 community areas in Winnipeg. To report trends over the eight years, we summarized the detailed geographic findings into four broader regions (Winnipeg, Brandon, North, Rural South) and Manitoba overall.

We can examine this wide range of variables thanks to the Manitoba Population Health Research Data Repository, a collection of linked databases housed at MCHP. For this report, we used data from Manitoba Health, provincial income assistance records, the Canadian Census, and the Families First screening done by provincial public health nurses as part of their routine postnatal visits. Those screening data provided valuable information about mothers' social conditions and health behaviours. But unfortunately, the data collected through the Families First program do not represent women and babies living in First Nations communities.

Our analyses are descriptive, not explanatory: The data show us how the health of mothers and babies is associated with the factors we studied, but we can't say what caused any outcome.

Mothers' circumstances matter

An overarching message from this study is the importance of mothers' social and economic circumstances. Fairly consistently, we found that outcomes got worse as mothers became poorer or had less education or social support. Smoking during pregnancy provides a good example of these relationships.

Manitoba Centre for Health Policy

Smoking is a preventable cause of health problems for newborns including preterm birth, low birth weight, and sudden infant death syndrome (SIDS). Overall, 18.1% of Manitoba mothers reported smoking during pregnancy (2007/08 – 2008/09), but the rates were much higher if women were teenagers (43.8%), single parents (52.5%), received income assistance (59.1%), had less than a Grade 12 education (41.4%), or lived in the North (35.2% to 45.4%) or in inner-city Winnipeg (25.7% to 39.7%). These findings, based on the Families First screening, do not include women in First Nations communities, where smoking rates tend to be higher than in the general population. On the flip side, smoking rates tended to be much lower than average among women in higher income groups.

Table 1: Trends Over Time and Comparisons with National Rates

Indicator	Manitoba Overall Rate (% of all births, 2007/08-2008/09 unless otherwise noted)	Canadian Rate	Trend in Manitoba Overall (2001/02-2008/09)
Teen Mothers (age 19 and younger)	9.1%	4.8% (2004)	Stable. Significant declines in Winnipeg and Brandon
Delayed Childbearing (first birth at age 35 and older)	2.9%	11% (2005)	Stable. Highest and increasing in Winnipeg and Brandon
Infertility Treatment (Medication to induce ovulation)	2.0%	Not Available	Decrease
Alcohol During Pregnancy	13.6%	10.5% (2009)	Increase
Mother Smoked During Pregnancy	18.1%	10.5% (2009)	Decrease
Street Drug Use During Pregnancy	3.6%	1.0% (2009)	Increase
Mother Hospitalized Before Delivery	11.4%	15.1% (2001/02-2002/03)	Decrease
Small-for-Gestational-Age	7.3%	7.8% (PHAC, 2009) - 8.3% (CIHI, 2006/07)	Stable
Large-for-Gestational-Age	15.0%	11.1% (2008)	Stable
Breastfeeding Started Before Leaving Hospital	79.0%	90.3% (2006/07)	Decrease
Infant Mortality Within One Year of Birth	5.2 deaths per 1,000 live births (2003/04-2007/08)	4 deaths per 1,000 live births (2005)	Not Available

Overall 18.1% of Manitoba mothers reported smoking during pregnancy. Rates were much higher for teenagers, single parents, received income assistance, had less than a Grade 12 education, lived in the North or inner-city Winnipeg.

In general, smoking among pregnant women has been declining in Manitoba, but it remains considerably higher than the Canadian average (10.5%) (Table 1). Continued efforts to reduce smoking should focus on addressing the kind of differences we found.

The report describes similar regional and socioeconomic patterns for a number of other issues, such as:

- mothers who reported drinking alcohol during pregnancy (13.6% and rising slightly over the study period, although the increase may be partly due to better data collection)
- mothers who breastfed their babies (79.2% overall but significantly lower in the North where the rate declined to 55.7%).

Prenatal care

Routine prenatal care from a health professional can help women have a healthy pregnancy and ensures that risks to the mother's or baby's health are identified early. We used an indicator called "inadequate prenatal care," meaning mothers had fewer than the recommended number of prenatal visits and/or a late start to prenatal care. Overall, about one in eight pregnant women (12.5%) had inadequate prenatal care. That rate grew worse rather than better during the study period, particularly in the North, where it rose from 26.4% in 2001/02 to 37.4% in 2007/08 (Figure 1).

These data don't tell us anything about the quality of care that women received, but the worsening trends and the differences across income groups raise concerns. For example, 26.6% of pregnant women who received income assistance had inadequate prenatal care, compared to 9.9% of those not on income assistance. Differences by income group were particularly strong in rural areas.

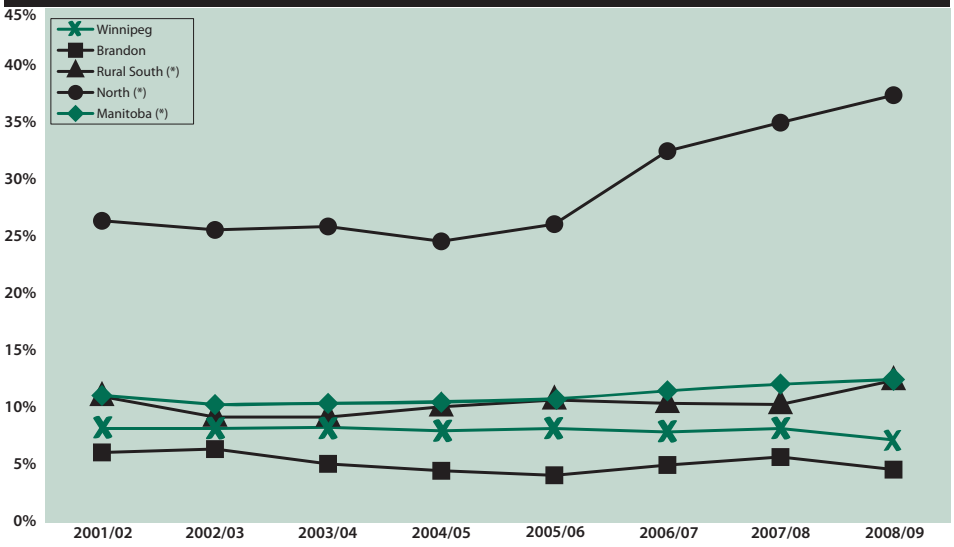
The changing face of birthing care

Similar to trends across Canada, family doctors or general practitioners (GPs) in Manitoba are less involved in prenatal and birthing care than they used to be. Deliveries by GPs declined significantly from 30.0% to 21.0% over our eight-year study period.

Taking their place for delivery and prenatal care are obstetrician/gynecologists, who attended 73.7% of births in 2008/09. Midwives are also playing a greater role. They delivered 4.7% of babies that year, and much more in some

regions (8.5% - 10.4% in Brandon, South Eastman and NOR-MAN RHAs). The majority of deliveries by midwives were in hospitals; home births made up less than 1% of all deliveries. Manitoba introduced regulations and public funding for midwifery services in June 2000, and 40 registered midwives were practicing in the province by the last year of our study. (By mid-2012, there were 48.) However, despite the growth in midwifery care, our analysis shows that it is not reaching enough women in target groups, including poor, teenage, socially isolated and other at-risk mothers.

Figure 1: Inadequate Prenatal Care Percent of Women Giving Birth



*Indicates that the linear trend over time is significant at p<0.05

Cesarean births

In light of these shifts in delivery care, it's noteworthy that Manitoba continues to have relatively low rates of obstetrical interventions such as induced labour or assisted births. This is one of a number of good news stories that emerged from the study. For example, rates of Cesarean birth increased slightly, from 18.0% to 19.9%, but they are still significantly lower than the Canadian rate of 27.8%.

Despite the growth in midwifery care, our analysis shows that this is not reaching enough women in target groups, including poor, teenages, socially isolated and other at-risk mothers.

Preterm births

In other good news, the rate of preterm births (7.8%) has been fairly stable and in line with national statistics. Still, one in 12 babies being born too early is cause for concern. We found that several preventable factors (diabetes, high blood pressure, smoking) were associated with preterm births, pointing to ways to improve this outcome.

Travelling to give birth

Two-thirds of all births in Manitoba—about 10,000 deliveries each year—take place in two Winnipeg hospitals. This means many women are travelling long distances to give birth. Not including residents of Winnipeg, one-quarter of mothers gave birth more than 100 km "as the crow flies" from where they live. The real distances are likely much farther for some women. There are pros and cons to having women travel to give birth. On the one hand, specialist expertise and services are available in larger hospitals. On the other hand, women are away from their families and other social supports during an important time. If giving birth closer to home is an objective, these data can provide the basis for planning and monitoring strategies to reach that goal.

Mothers' mental health

For the first time, we were able to take a close look at mothers' mental health during and after pregnancy. Anxiety and depression in new mothers have been linked to a range of problems for their children, ranging from preterm birth to poor child development.

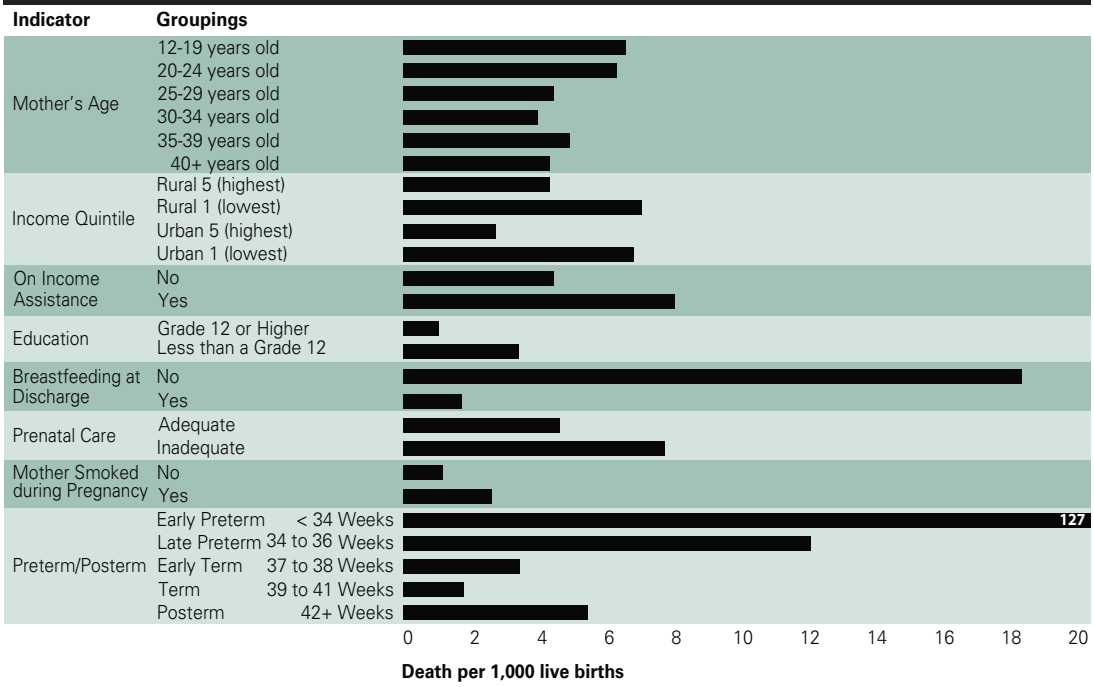
Using data on physician and hospital care for these conditions, and prescriptions for drugs typically used to treat them, we found that women who experienced anxiety or depression during pregnancy (7.5%) were eight times more likely to experience it after pregnancy. This very strong finding held up even after we accounted for a variety of other factors. It suggests that healthcare providers and community programs should try to intervene sooner, and not just focus on the more well-known problem of postpartum depression.

Maternal diabetes

We looked at many of our indicators in relation to whether or not women had diabetes (including type 1, 2 and gestational diabetes). This condition is associated with poor health for pregnant women and their newborns. Among mothers with diabetes, more than one-third of their infants (34.8%) were born large for their gestational age—an outcome that carries higher risk of short- and long-term health problems including childhood and adult obesity.

Our findings underscore the importance of preventing and managing diabetes in this province, where more people in general have diabetes compared to the rest of Canada.

Figure 2: Infant Mortality (within 365 Days of Birth) Rates (per 1,000 Live Births) by Sociodemographic and Other Characteristics, 2001/02-2008/09



Similar to results from other studies, mothers with diabetes in Manitoba had higher rates of preterm birth, induced labour and Cesarean birth. Their newborns were more likely to need intensive care right after birth. And both mothers and babies had higher rates of readmission to hospital. This is in stark contrast to the improvement in the overall rate of infants needing to be readmitted to hospital within 28 days of birth, which declined dramatically—from 5.6% to 1.7%.

Babies were more likely to die before their first birthday if their mothers were younger than 25, had low incomes or education, smoked, had inadequate prenatal care, or did not breastfeed.

Infant mortality

Manitoba has a relatively high rate of infant mortality (deaths before one year of age). We found a number of factors to be associated with this tragic outcome. Babies were more likely to die before their first birthday if their mothers were younger than 25 years, had low incomes or education, smoked, had inadequate prenatal care, or did not breastfeed (Figure 2). Note breastfeeding had the strongest association with higher infant mortality after we did a more detailed analysis that accounted for differences among mothers and the health of newborns.

Infant deaths are fairly rare in developed countries today: Manitoba's rate of 5.2 deaths per 1,000 live births works out to about one-half of one percent. But that's considerably higher than the Canadian average (4.0 per 1,000), and rates were much worse in the North (9.5 in Burntwood, 9.2 in NOR-MAN). Although infant mortality in Winnipeg was lower overall (4.7 per 1,000), some areas of the city were much higher than the provincial and national rates (7.3 – 7.4 in Point Douglas and Downtown). While most infant deaths occur within a few days or weeks of birth, the post-neonatal period (28 – 364 days) accounts for close to one-third of infant mortality in Manitoba. After congenital anomalies, the main causes of these later deaths are SIDS and injury. This points to concerns about living conditions for infants after they go home.

More to learn

This summary touches on only a few of the topics in this wide-ranging study, which we conducted at the request of Manitoba Health to support the ongoing work of the province's Maternal and Child Health Services Taskforce and the Healthy Child Committee of Cabinet. While the report is not an evaluation of any specific program or policy, it provides essential information that can be used to improve services and for deeper study into why programs and policies are succeeding and where challenges remain.

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