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Manitoba Child Health Atlas Update: How Are Our Kids Doing?

MANITOBA CENTRE FOR HEALTH POLICY

Summary of the report:
*Manitoba Child Health
Atlas Update*
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- Manitoba children are relatively healthy
- There are significant disparities in children's outcomes
- Children from areas with lower socioeconomic status tend to have poorer outcomes

It has often been said that one can measure how advanced a society is by how well it meets the needs of its weakest and most frail members. In Manitoba, we are fortunate to live in a society where considerable time and effort has been spent to improve the health of children. Policies and programs have been designed and put into place so that in theory, all children are born with an equal chance of being healthy. And for those children born into circumstances resulting in poorer health, programs exist which try to ensure that they eventually get onto a level playing field. All this work has resulted in children, for the most part, being healthy in Manitoba.

Unfortunately, from studies that the Manitoba Centre for Health Policy (MCHP) and others have undertaken, we know that there are always exceptions to the rule. Despite our best efforts, there are some children whose health remains much poorer than others. Furthermore, research has shown that poor health is not entirely random.

And this is where the latest release of MCHP's Child Health Atlas plays a vital role. This report, undertaken at the request of Manitoba Health and Healthy Living, contains measures of child health that can be compared across different parts of Manitoba. Therefore, policymakers have a tool that is capable of not only saying how well kids are doing, but how this differs across areas of the province. Moreover, as the measures we've developed for the atlas have been designed to be updated regularly, progress on the different measures can be easily tracked.

The more things change, the more they stay the same?

On one level, the latest release of the atlas is an update of earlier versions. On another level, we are adding a substantial amount of value to the information available from previous versions of the atlas. We've expanded our definition of what "good health" means, by taking advantage of new data, measures and techniques. We have also put some thought into trying to come up with ways of predicting what may be associated with good (or poor) child health. We call these predictors the "determinants" of child health.

So this child health atlas had two main purposes:

- 1) To provide comprehensive information on child health status indicators at regional and sub-regional levels in Manitoba;
- 2) To provide comprehensive information on the determinants of health of children in Manitoba.

Before we summarize the information, we ought to have a word on indicators. Measuring health is a very complex issue – there is no quick and easy way to say whether a group of children are healthy. So we used measures that are thought to indicate "healthiness", according to published studies and the opinion of members of our expert working group. These included such things as whether babies survive to their first birthdays, how many immunizations children receive, the number and type of drugs children are prescribed, and whether or not a child has any of a number of conditions, such as diabetes or autism. We looked at dozens



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Table 1. Child Health Indicators

Perinatal Health	Health Care Utilization	Use of Prescription Medications
Teen Pregnancy Teen Birth Caesarean Sections Vaginal Birth after Caesarean Section Preterm Birth Small for Gestational Age Large for Gestational Age Breastfeeding Initiation Breastfeeding Duration Prenatal and Family Risk Factors Congenital Anomalies Newborn Readmissions	Immunization Hospitalization for Preventable Infections Hospital Episode Rates Hospitalization for Injury Hospitalization for Lower Respiratory Tract Infections Tonsillectomy/Adenoidectomy Dental Extractions Physician Visits Continuity of Care	Any Prescription Antibiotic Prescriptions Antidepressants Psychostimulants Narcotic Analgesics NSAIDs Anxiolytics Antipsychotics
Infant and Child Mortality	Education	Nutrition and Physical Activity
Infant Mortality and Stillbirths Child Mortality Injury Mortality	Retention School Mobility Grade 12 Standards Test Performance High School Completion	Nutrition Physical Activity BMI and Obesity/Overweight Exposure to Second-Hand Smoke
Childhood Chronic Conditions	Community and Social Services	Adolescent Health and Reproductive Health
Asthma Diabetes ADHD Autism Spectrum Disorders Disabilities	Licensed Child Care Spaces Receipt of Income Assistance Children in Care Children in Families Receiving Protection/Support Services	Adolescent Smoking Adolescent Drinking Adolescent Sexual Activity Condom Use Birth Control Pill Use

of these indicators of child health. Table 1 lists the indicators we looked at, as well as the broad categories we grouped them into.

We should also have a quick word about our methods. We defined “child” as someone who was under the age of 20 during the reporting period. In addition to looking at indicators by the areas where children live, we also found that it was very useful to look at the indicators over time. This combination offers us some advantages. First, it allows us to compare one area with other areas in Manitoba. So we can say, for example, that there are more children with asthma in one area compared to the rest of the province. Second, it lets us know how the indicator has changed over time in the same area – that is, has the number of children with asthma decreased, stayed the same, or increased in a particular area. For most of the indicators, we looked at two five-year time periods (1996/97-2000/01 and 2001/02-2005/06).

Finally, because we are comparing areas during the same two time periods, policymakers can look at whether other areas have experienced similar or different changes in the indicators. This last advantage is rather critical. Why? While it is one thing to say that asthma is increasing or decreasing in a

particular area, it is a much more useful and insightful thing to ask whether changes in one area may be due to programs that exist (or do not exist) in that area, compared to other areas.

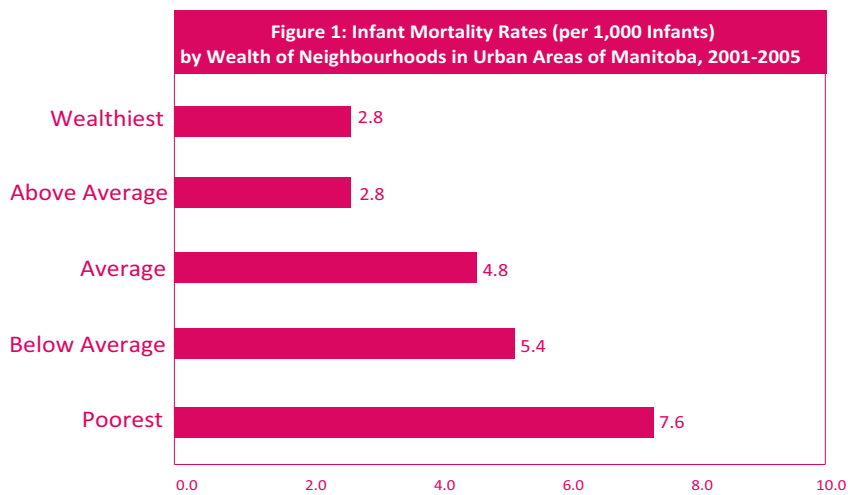
Findings

What did we find? With over 80 indicators, summarizing all this information is no small task. But we did find some consistent themes within the data, some of which echo earlier versions of the atlas. First and foremost we found that for most indicators, children’s health was very much tied to the average level of wealth (measured by the average household income) of the area in which they live. Simply put, more wealth translates into better health: when the population of children is divided into five equal parts according to average income, each step up the income ladder also raises the level of health.

Wealth equals health?

For example, it may be surprising to hear that between 2001-2005 in Winnipeg and Brandon, babies born to parents living in the poorest neighbourhoods were almost three times more likely to die before their first birthday, compared to babies born to parents from the

wealthiest neighbourhoods (Figure 1). Fortunately, we didn't see the rates of this indicator (called "infant mortality") increasing over the study period. But we did see this higher wealth/better health relationship for many indicators. This list included child mortality rates (deaths for kids between the age of 1 and 19), whether babies were very small or very big for "gestational age" at birth (by "gestational age" we mean how long the baby was in its mother's womb before she gave birth), the number of visits to a hospital by both babies and children, whether a child has diabetes, and how well kids do in school.



This relationship was present even in the indicators we considered as "preventive health" measures. These indicators measure steps people take to prevent sickness. Two important indicators are whether a mother breastfeeds her baby, and how complete a child's immunizations are. In Winnipeg and Brandon, as well as in rural areas of Manitoba, we saw that mothers from poorer areas were less likely to breastfeed, and their children were less likely to have had all their immunizations.

Geography matters

Similarly, health was associated with the region where a child came from. Take the example of the "preterm birth" indicator. This indicator measures the number of babies born early – that is, at less than 37 weeks gestational age (compared to the norm of 40 weeks). Preterm birth rate is one of the most important predictors of infant mortality (i.e.,

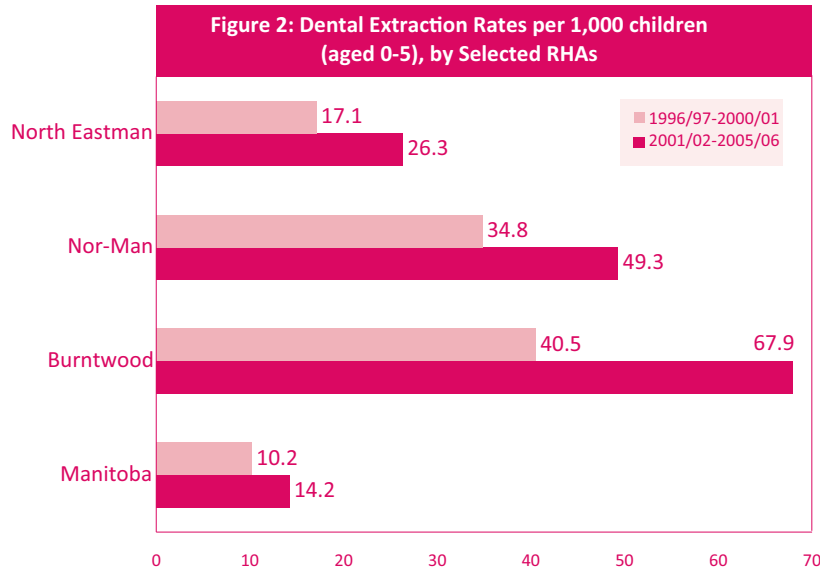
death in the first year of life). According to the atlas in the two time periods measured, preterm birth rates increased significantly (that is, more than what would be expected due to chance) for infants from Burntwood and Brandon Regional Health Authorities (RHA). At the same time, we see that rates were significantly lower in Nor-Man RHA, and remained stable in Assiniboine RHA. Why are the rates so much higher in Burntwood (8.8%) compared to Nor-Man (6.0%), even though their populations are very much alike? Similarly, why did rates increase in Brandon, but remain the same in Assiniboine? We're

not sure. But the atlas allows policymakers (and researchers) to ask these more focussed questions.

To use another example, we looked at how the rate of "dental extractions" changed in Manitoba for children under the age of 5 in our two time periods. Now, "dental extractions" basically means removing teeth that are severely damaged by tooth decay. For this indicator, we only had data from surgeries that happened in hospitals under general anaesthetic, and not from dentists' offices. Good dental health is vital for speech and nutrition, as well as the shape of a child's face

and jaw. Ideally, this invasive operation could be avoided with preventative dental care in a child's early years.

Looking at Figure 2, we found that between the two time periods the rate of this procedure increased significantly in three regions: North Eastman, Nor-Man and Burntwood. Somewhat alarmingly, the differences in the rates of this indicator, compared to the Manitoba average, appear to have increased over the two time periods. For instance, rates of dental extractions in Burntwood went from about 4 times higher than the Manitoba average in 1996/97-2000/01 to almost 5 times the average in 2001/02-2005/06. Keep in mind that these cases represent the worst cases of tooth decay. As well, in rural Manitoba, children from the poorest areas were 7 times more likely to have had this surgery than those from the wealthiest areas. And in Winnipeg and Brandon, compared to those from the wealthiest neighbourhoods, children from the poorest



neighbourhoods were 11 times more likely to have had dental extraction surgery. We recommend looking at the reasons behind why rates seem to be so much higher in some areas.

Trends over time - some good news

Fortunately, not all the news is bad. It appears that more and more children are finishing high school, which is good news, since getting more education is related to better health as an adult. And teen pregnancy and birth rates have dropped in most areas of the province. As well asthma rates, which appeared to be increasing at an extremely fast pace in earlier years, seem to have levelled off. Finally, we found that hospital stays due to a serious injury have decreased in children over the two time periods. In the first time period, about 70 out of every 10,000 children had a stay in the hospital due to some type of injury – and this decreased to just under 60. But even in this good news story, geography and wealth mattered. Rates were higher in the north than in the south, and also higher in the poorest compared to the wealthiest areas in Manitoba. Seeing a drop in hospitalizations due to injury is very good news indeed, especially given the fact that injuries are the number one reason for deaths and the second-leading cause of hospitalizations in Manitoba children. In fact,

we saw a dramatic drop in deaths due to injuries for children aged 5-9: injuries were responsible for about half of all these deaths in the first time period, but only one-third of deaths in the second time period. At the same time, the total number of deaths in this age group that were due to injuries was cut in half – from 44 to 20. We also noticed that this drop was greater for girls than for boys. A lot has been invested in programs to decrease injuries in children, so we recommend that a close eye be kept on these rates, to see if they stay the same, or hopefully, decrease even further. As well, an obvious

question to ask is why boys haven't experienced the same drop in injury deaths as girls.

To sum up

We would like to assume that every child born in Manitoba is given a fair and equal chance at being healthy. Unfortunately, time and time again, this assumption has been proven wrong. There are clear differences in child health, and these differences usually coincide with where and under what circumstances children live. The results from this atlas confirm this fact. And for some measures of child health, the gap is widening between those children living in wealthier areas and those in the poorest areas of Manitoba.

In some ways, this is disappointing news. But that is why this atlas is so crucial to policymakers. We talked earlier about a level playing field. With this atlas, planners can look to see where the rough patches are, where things are going well, and where they may want to be in a few years. It can be used to highlight success stories, and to draw from the strength in experience and knowledge of what has been done to help overcome inequities. After all, at one point in their lives, children may be among the weakest and most frail in our society. But over time, they can turn out to be our strongest asset.

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