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An Apple a Day: Primary Prevention Data in Manitoba

MANITOBA CENTRE FOR HEALTH POLICY

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based on the report:
*Primary Prevention:
An Examination of
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An apple a day keeps the doctor away. Or so goes the old saying. Most of us know that things like healthy eating, regular exercise and not smoking can all improve our health, reduce our need to see a doctor and lead to a longer life. And that's just to name a few. Community-based initiatives, from housing projects to recycling campaigns, also work toward the same end.

Across Manitoba, Regional Health Authorities (RHAs) offer many different programs or initiatives designed to promote good health—called primary prevention—rather than to treat poor health—secondary and tertiary prevention (see flow chart). Some RHAs may also be planning on implementing more of these programs.

This report by MCHP looks at primary prevention in Manitoba. But it doesn't try to answer questions like: Are these programs helping? Are more needed? Have they led to less reliance on health care services?

Rather, what we are exploring here is whether it is possible to answer such questions. First of all, what indicators do we use? What do we measure that will tell us what individuals and/or communities are doing to be healthier, or what they are doing that leads to poorer health? How do we measure these indicators? Do we have the data to do the measuring? Can we relate primary prevention data to data we do have on health and the use of health care services?

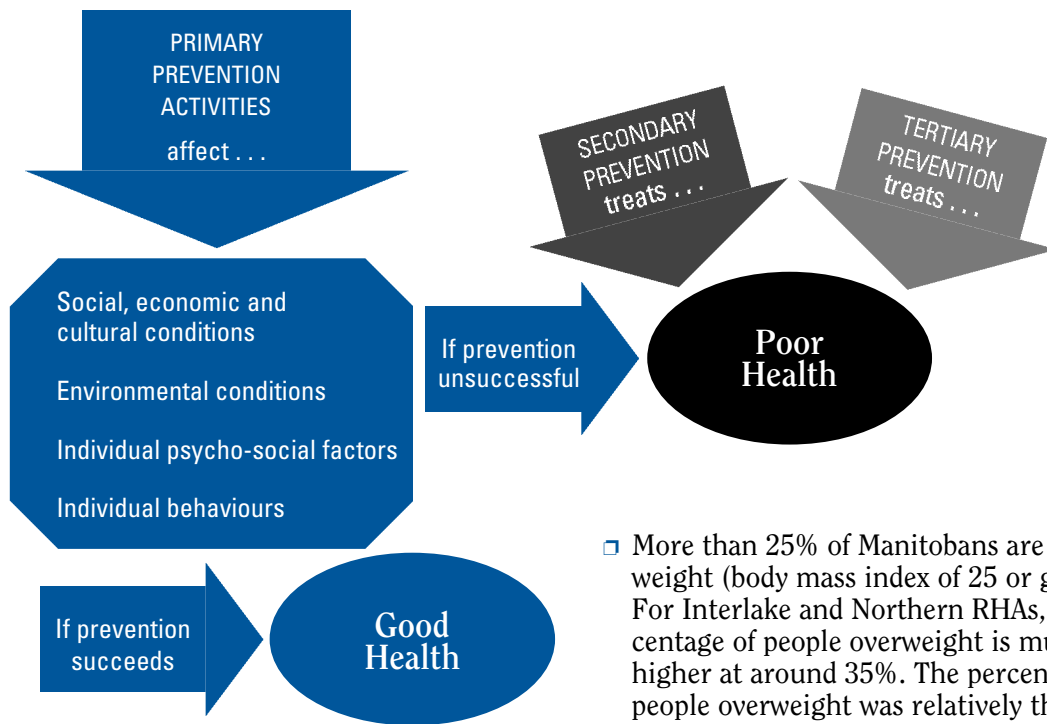
It made sense to start by looking to see if other provinces or countries had taken

a look at primary prevention. So we began with a literature review. What primary prevention indicators did they use? Which primary prevention indicators are right for Manitoba?

We then looked at local data sources to see what help they might be in developing indicators. We looked at anonymized administrative data (prior to transfer, Manitoba Health removes the names and addresses of all individuals; and identification numbers are changed to fake ones) in the Population Health Research Data Repository housed at MCHP. We also looked at anonymized health survey data and public health data collected from Manitoba RHAs.

With the help of a Working Group (composed largely of experts in public health and prevention) we took a two-dimensional approach to sorting our indicators. First, we divided them into risk factors (like smoking or unsafe sex), protective factors (such as childhood immunizations) or health outcomes (like illnesses related to smoking). Second, we recognized that these indicators could be reported individually, or by community (for example, a town or an ethnic group), or by populations (such as an RHA or all of Manitoba).

Overall, most of the measures in the literature focussed on healthy eating, healthy weights, immunizations, chronic and infectious diseases, exercise and tobacco use. Fewer indicators looked at the contributions of social determinants known to influence health, such as education and socioeconomic differences.



Sources of Data

Surveys are useful for obtaining information on risk factors like risky sexual behaviors, and protective factors like physical activity and healthy eating. Surveys can also be used to study long-term relationships between different risk factors and health outcomes.

We used Statistics Canada's *Canadian Community Health Survey* (CCHS) data to look at these indicators. CCHS gathers information from eleven Manitoba regions corresponding to RHAs. We combined three of those—Nor-Man, Burntwood and Churchill—into one *Northern* region due to small numbers in those areas. CCHS surveys these regions on a variety of risk/protective factors. In addition, data is available on household incomes. We used this information to divide Manitobans into income groups: lowest, lower-middle, middle, upper-middle, or highest.

One drawback to this survey data is that individuals living in First Nations communities and children under 12 are excluded. So we don't get as complete a picture of what's going on in the province as we'd like. However, overall it offers important population-based information for Manitoba. Let's look at two examples of CCHS data from 2000-2001—body mass index and smoking—and some of what it can tell us.

- More than 25% of Manitobans are overweight (body mass index of 25 or greater). For Interlake and Northern RHAs, the percentage of people overweight is much higher at around 35%. The percentage of people overweight was relatively the same across the five income groups.
- On average, one-fifth of Manitobans report smoking on a daily basis. In Northern RHAs, the proportion of smokers is higher, at about 25%. Across income groups, the high-income group has the lowest rate at 15%; the lower-middle group has the highest rate at 34% (Fig. 1).

Administrative Data can tell us a lot about health and the use of health care services. As such, it can also help target where primary prevention might be the most beneficial. Administrative data also provides some information (albeit limited) about primary prevention programs operating in the province.

For example, the Manitoba Immunization Management System offers useful information on childhood immunizations. Manitoba medical claims include data on breast and cervical cancer screening. There is also data on breastfeeding (while in hospital), teenage pregnancy, and low and high birth weight babies.

The Provincial Public Health Statistic System (PPHSS) tracks public health contacts with individuals, groups and communities. The people who provide public health services that are recorded in PPHSS are: nurses, community health workers, public health educators, home

economists/nutritionists and dental hygienists/assistants.

These service providers make contact mostly for family health issues, such as newborn, child or adolescent health, and also postnatal health. Other common reasons are communicable diseases, such as STDs (sexually transmitted diseases), HIV and AIDS. Acute conditions like obstetrics, and ear/nose/throat or skin problems are also common. This was our first look at this data source.

Demonstration Project: Diabetes

One of the main reasons to monitor primary prevention is to see what is working and what is not. So as part of this initial exploration, we wanted to see if it was possible to link public health data with outcomes data. It is foreseeable that service providers and policy-makers will want to know what impact these initiatives are having.

We chose two demonstration projects to highlight the potential for using PPHSS data. The one we'll talk about here is diabetes contacts. There were close to 2,000 contacts for diabetes in Manitoba in 2001/02. We looked to see if the individuals who had these contacts could be identified via a personal health identification number or *PHIN* (again, identification numbers are anonymized before we get them).

Our goal was to see if we could determine whether the contacts were for primary prevention, or for secondary or tertiary prevention.

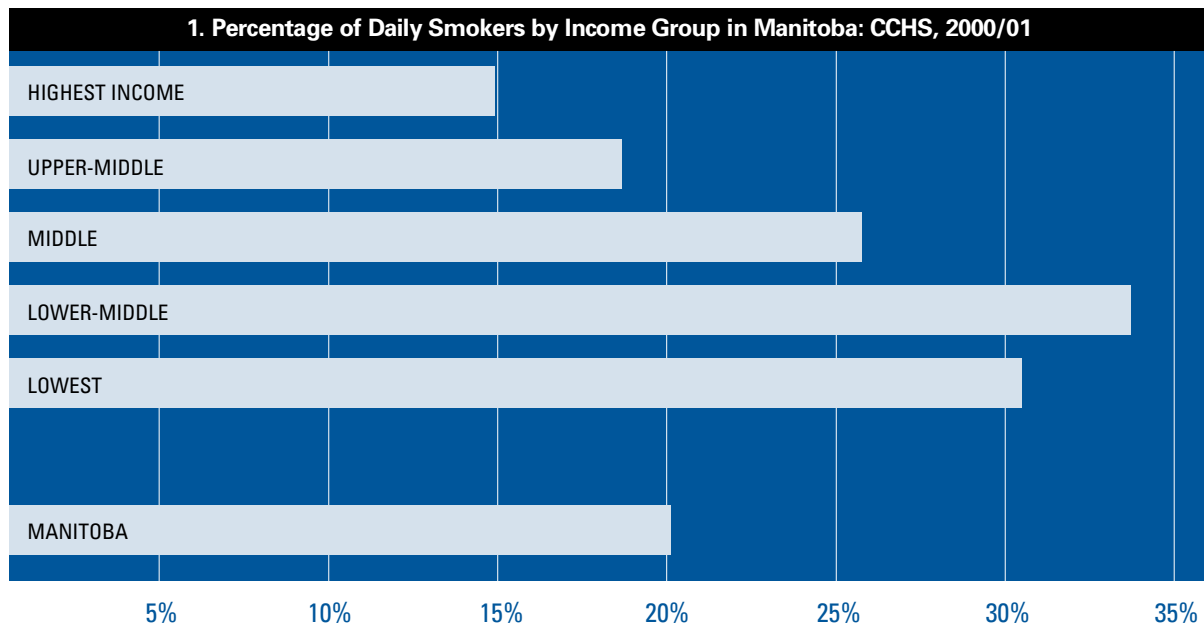
We were able to distinguish 491 separate individuals. There were of course more, but since many records had no PHIN, we were unable to determine how many. Of those 491, 360 had a recent diabetes diagnosis (at least one diagnosis within a three-year period between the years 1998/99 and 2001/02), while 131 had no recent diabetes diagnosis.

People with diabetes averaged 4.0 PPHSS contacts. When we looked at contacts with diabetes as the main reason, people with a recent treatment diagnosis averaged 2.6 contacts; people without a recent diagnosis averaged 1.7 contacts. On average, individuals with a recent diabetes diagnosis made greater use of hospitals, physicians and prescriptions.

In short, most PPHSS contacts were with those already diagnosed with diabetes, not to prevent them from getting it. The data suggests there was more secondary or tertiary prevention than there was primary prevention.

What's Good, What's Bad, What's Needed

The story on primary prevention data is one of potential. Currently, population-based data can be used to monitor primary prevention in a number of key areas, like immunizations and



chronic disease incidence. The infrastructure is in place to record data on public health services across the province. With a properly implemented system with consistently recorded information, we can then link this information to data on physicians, hospitals and pharmaceuticals.

Unfortunately, there are gaps in the data that limit its use. For example, PPHSS data—a potentially rich source of data—is hampered by inconsistent recording practices. Some

2. PPHSS Contacts With PHINs by RHA, 2001/02	
RHA	% of contacts with PHIN
Brandon	89.4
Burntwood	70.1
Parkland	69.4
South Westman	68.2
Marquette	66.7
Nor-Man	62.6
South Eastman	47.3
Churchill	45.9
Winnipeg	31.7
Interlake	25.5
North Eastman	25.2

Note: Central RHA absent as it did not report to PPHSS in 2001/02

PPHSS data have a PHIN associated with each contact, but many have no PHIN at all. For example, PPHSS contacts in Brandon RHA have PHINs almost 90% of the time; meanwhile, in North Eastman RHA, only about 25% have PHINs (Fig. 2).

This inconsistency makes many useful comparisons difficult if not impossible. These data are also hindered by lack of standardization: different RHAs record different things in different ways.

Another problem is that some primary prevention indicators are difficult to define. Good

air quality for example. How is it measured? How often? And our look outside the province tells us of other useful indicators that have not been considered here.

In other words, we are far from being able to get a complete picture of primary prevention in Manitoba. Changes are needed.

We could start by changing or improving existing data collection mechanisms. This could be something as simple as recording patient height and weight on physician claims or indicating breastfeeding status when entering infant immunization data. Another positive step would be for RHAs to make it mandatory for public health staff who report to PPHSS to record PHINs for every contact.

New measures are also needed, especially at the community level. One example from the literature is determining a community's "social capital," referring to factors like voter turnout, community volunteerism and green space per person, to name a few. Measures such as these would of course require the cooperation of decision-makers from various levels of government and individual communities to sit down together and decide what is important, how they can measure it, and go from there.

Hand in hand with all that, it is important that data users have proper training in the use and interpretation of survey or administrative data, and know how to link health outcomes to risk and protective factors.

Finally, as mentioned, the goal of monitoring primary prevention is to help understand what is working and what is not. Providing service providers with answers to questions—like, Are these programs helping? Where are more needed?—is pivotal to the success of these initiatives. A comprehensive reporting strategy would help ensure that success.

The "apple a day" of yesterday has become the immunization programs, nutritional counselling and exercise classes of today. Does primary prevention help "keep the doctor away" and lead to better health for Manitobans? Currently, the data is insufficient to tell us that. With changes and improvements, it might.

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