



# Northern Health Information Partnership

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## Mental Health in Northern Ontario

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**INTRODUCTION:** Mental illness is an issue of understated importance. Mental illness exerts a significant toll on the health and well-being of residents throughout the age span. For example, approximately 20% of all Canadians will experience mental illness during their lifetime, and it affects individuals from all ages, socio-economic conditions, and cultures.<sup>1</sup> Onset of most mental illnesses is typically during adolescence or early adulthood.<sup>1</sup> Another critical factor in the examination of mental illness is the occurrences and mental health indicators that are often poorly documented by traditional data sources, such as mental well-being, medication use, depression and social support. Issues such as these permeate the population and are vital to consider when examining the health status and health resource use of a population. The current report examines selected mental health indices as well as hospitalizations and deaths related to mental health diagnoses and issues. Data are presented for the province, Northern Ontario, and the Northern District Health Council (DHC) area (Algoma Cochrane Manitoulin & Sudbury [ACMS], Northern Shores, Northwestern Ontario).

**METHODOLOGY:** Data were drawn from a number of sources. Data for mental health and general health indicators were drawn from the Canadian Community Health Survey (CCHS) Mental Health Supplement (Cycle 1.2, 2002).<sup>2</sup> Mortality data were drawn from the Provincial Health Planning Database using Vital Statistics (2000/2001). Hospitalizations with mental health diagnoses were also obtained through the Provincial Health Planning Database (2003, Canadian Institute for Health Information). Mental health diagnoses were coded using International Classification of Diseases, 10<sup>th</sup> revision (ICD-10-CA, F00 to F99). It should be cautioned that hospital separations do not include provincial psychiatric hospitals. Although these hospitals submit data to the Ministry of Health and Long-Term Care, access to these data are not readily available. The presented hospitalization data most likely under-represents chronic mental health patients.

Age standardized rates were calculated using the NHIP Excel Rates Macro (2004). It should be noted that because of small numbers in the Northern region, suicide mortality typically shows increased variability in comparison with the province. For this reason, a number of years of data are often used to show suicide mortality trends in the North. The advent of ICD-10 in 2000 mortality data limits comparisons with older (1999 and earlier) data using ICD-9. Thus, only two years of data are presented in the current report and no attempt to ascertain trends from these data are made. A number of important limitations to the data must also be considered. Data were drawn from several sources, and must be considered accordingly. Survey data from the CCHS does not include homeless individuals, those living in institutions or on-reserves, which are populations generally known to have increased risk of mental health issues.<sup>3,4</sup> In contrast, Vital Statistics and Hospitalization records are considered inclusive of the population. Thus, data should be interpreted accordingly and could possibly underestimate the prevalence of mental health issues.

The geographical areas of the three Northern Ontario District Health Councils are defined as follows: Northern Shores includes the census divisions of Nipissing, Timiskaming, Parry Sound, and Muskoka; ACMS includes the census divisions of Algoma, Cochrane, Manitoulin, Sudbury District, and Sudbury Regional Municipality; Northwestern Ontario includes Kenora, Thunder Bay, and Rainy River census divisions.

**Table 1: General Health Indicators by Geographic Area and Sex (% , 2002)**

	Ontario	North	ACMS	Northern Shores	Northwest
BOTH SEXES					
Physical activity (active)	27.1	33.4*	31.6	33.9	35.9*
Income (low)	8.0	12.6*	15.1*	15.0*	6.1
BMI (normal)	41.4	35.3*	37.5	34.7	32.3
Education (<high school)	23.8	28.0*	33.4*	26.3	21.1
MALES					
Physical activity (active)	31.1	37.0*	34.3	40.3	37.8
Income (low)	6.4	9.6	11.6*	13.7	**
BMI (normal)	38.0	32.3	36.3	33.4	25.8*
Education (<high school)	23.5	28.0	34.9*	25.7	20.1
FEMALES					
Physical activity (active)	23.4	29.9*	29.2	27.5	33.9*
Income (low)	9.5	15.6*	18.5*	16.4*	9.8
BMI (normal)	46.0	39.4	39.0	36.3	44.1
Education (<high school)	24.1	28.0	32.0*	26.8	22.2

\* Statistically significant as compared to Ontario; \*\* Suppressed due to small sample size;

High sample variability, use estimate with caution

**Table 2: Mental Health Indicators by Geographic Area (Both Sexes, %, 2002)**

	Ontario	North	ACMS	Northern Shores	Northwest
Mental well-being (very good/excellent)	67.9	64.1	63.7	65.2	63.7
Physical well-being (very good/excellent)	54.3	48.1*	48.7	43.8*	51.4*
Mental health resource use	8.7	10.7	11.1	10.6	10.2
Depression	5.1	6.7	7.6	**	4.9
Medication use***	16.8	22.3*	22.7*	23.9*	20.0
Disability days-0†	86.5	84.9	86.2	82.5	85.1
Emotional social support	92.5	93.6	94.8	93.3	91.7
Tangible social support	92.6	93.3	88.6	96.2	97.5*
Workstress (high)	29.6	29.3	30.4	26.1	30.4
Stress (high)	23.7	20.6	21.5	19.9	19.7
Difficulty with tasks	24.5	32.3*	31.4*	39.4*	26.8
Help with tasks	13.7	17.4*	16.4	21.0*	15.6
Chronic conditions	70.7	76.2	75.6	78.9*	74.3
Panic disorders	7.3	8.7	9.8	9.3	6.3

\* Statistically significant as compared to Ontario; \*\* Suppressed due to small sample size; \*\*\*In past 12 mo., includes medications for sleep, diet, anxiety, mood, depression, psychosis, stimulants; High sample variability, use estimate with caution

† Total number of days spent in bed because of illness or injury in previous two weeks

## COMMENTARY:

### General Health and Mental Health Indicators

In terms of overall health, the Northern region is generally poor as compared to Ontario. As shown in Table 1, the percentage of those with low income is significantly higher for both sexes in the North (8.0% vs. 12.6%). When separated by sex, females show a statistically significant difference when compared to the province (9.5% vs. 15.6%) and overall females in Ontario and the North have a significantly greater proportion of those reporting low income. Education also shows a similar trend.

There is a significantly greater proportion of those with less than grade 9 education in Northern Ontario (23.8% vs. 28.0%).

When comparing measures of overall health (Tables 2-3), there is a lower proportion of those reporting very good or excellent physical well-being (for sexes combined and for males) in the North (both sexes: 54.3% vs. 48.1% males: 57.1% vs. 49.3%). Medication use is also elevated in Northern Ontario for both sexes and for females (both sexes: 16.8% vs. 22.3% females: 20.4% vs. 26.8%). It is also worth noting that females also have significantly higher medication use overall for both Northern Ontario and Ontario. In addition, females (Ontario and North) also have a significantly higher proportion of those with a chronic condition (Ontario males 66.4%, females 74.8%; North males 71.3%, females 80.9%). Overall in comparing Ontario to the North, there is a significantly higher prevalence of chronic conditions amongst Northern Ontario females.

In terms of lifestyle factors, there are a number of positive indices worth highlighting. Physical activity (Table 1) levels are significantly higher (both sexes, males, females) in Northerners. Unfortunately, the proportion of those with normal body weight is lower (both sexes) in the North (Ontario: 41.4% vs. North: 35.3). Males in Northern Ontario also reported significantly lower levels of high stress (Ontario: 23.1% vs. North: 17.6%). There is also a greater prevalence of those who have difficulty with day-to-day tasks in Northern Ontario (both sexes, males, females). There is also a significantly higher proportion of those who needed help with their daily tasks in the Northern region (both sexes 13.7% vs. 17.4%).

**Table 3: Mental Health Indicators by Geographic Area and Sex (% , 2002)**

	Ontario		North		ACMS		Northern Shores		Northwest	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Mental well-being (very good/excellent)	70.7	65.3	66.5	61.7	62.7	64.6	71.8	58.5	67.3	59.8
Physical well-being (very good/excellent)	57.1	51.6	49.3*	46.9	47.0*	50.2	47.3	40.3*	54.8	47.6
Mental health resource use	6.0	11.4	8.1	13.3	<u>9.4</u>	12.6	<u>7.3</u>	14.0	<u>7.1</u>	<u>13.8</u>
Depression	3.7	6.4	4.9	8.5	<u>6.9</u>	<u>8.3</u>	**	**	**	<u>7.3</u>
Medication use***	13.1	20.4	17.8	26.8*	20.5*	24.7	<u>16.0</u>	32.0*	<u>15.3</u>	25.3
Disability days-0 †	89.2	84.0	86.8	83.1	88.7	84.0	85.8	79.2	84.8	85.3
Emotional social support	92.1	92.8	93.3	93.8	95.8*	94.0	93.8	92.8	89.3	94.4
Tangible social support	92.6	92.5	94.7	92.3	90.5	87.2	97.6*	95.2	98.3	97.0*
Workstress (high)	29.1	30.2	25.1	34.1	28.1	32.7	<u>19.3*</u>	<u>34.3</u>	<u>25.8</u>	36.1
Stress (high)	23.1	24.3	17.6*	23.6	17.5	25.1	<u>17.2</u>	<u>22.7</u>	<u>18.2</u>	21.5
Difficulty with tasks	22.8	26.1	30.2*	34.4*	29.4	33.1	37.1*	41.7*	24.7	29.1
Help with tasks	9.0	18.2	12.4	22.3	<u>13.3</u>	19.1	<u>13.1</u>	28.9*	<u>10.4</u>	21.4
Chronic conditions	66.4	74.8	71.3	80.9*	71.6	79.3	77.1*	80.8	65.4	84.2*
Panic disorders	6.0	8.5	8.12	9.3	<u>10.6</u>	<u>9.1</u>	<u>7.1</u>	**	**	<u>7.4</u>

\* Statistically significant as compared to Ontario; \*\* Suppressed due to small sample size; \*\*\*In past 12 mo., includes medications for sleep, diet, anxiety, mood, depression, psychosis, stimulants; High sample variability, use estimate with caution

† Total number of days spent in bed because of illness or injury in previous two weeks

The leading sources of stress also differ between males and females. For Ontario males, they are the work situation, time, and finances. For Ontario females, they are time, work situation, and finances. Northern Ontario males are very similar to Ontario (work, finances, time), but Northern females show an interesting difference in that the leading stressors are work, own physical problems, and time. This is somewhat reflected in the higher prevalence of a number of overall poorer health and mental health, as highlighted in Tables 1-3. It is also noteworthy that for Ontario, females are significantly lower in both mental and physical health. These differences are not statistically significant for Northern Ontario. Medication use, however, is more prevalent in the Northern region. The most commonly used medications are those to help with sleep, anti-depressants, and anti-anxiety medications. These did not differ significantly between the province and the North.

When comparing the data between the DHC areas (Tables 1-3), a number of differences are noteworthy. In terms of socio-economic differences, income and education levels are significantly lower than the province (for both sexes, and for males and females separately). Physical well-being is also lower amongst ACMS males (57.1% vs. 47.0%). Medication use is higher in both sexes and in males of the area (both sexes: 16.8% vs. 22.7%; males: 13.1% vs. 20.5%) and medication use in ACMS males is nearly twice the provincial rate. Residents of both sexes also have a higher prevalence of having difficulty with daily tasks (Ontario: 24.5% vs. ACMS: 31.4%). The positive side of the presented information is that males in the area have significantly greater levels of emotional support in comparison with the province (Ontario: 92.1% vs. North: 95.8%).

In Northern Shores DHC area income is also significantly lower, but only for the sexes combined and for females (Table 1). Physical well-being is significantly lower as well (both sexes, 54.3% vs. 43.8%; females, 51.6% vs. 40.3%, Tables 2-3). Accordingly, medication use in these groups is significantly elevated (both sexes, 16.8% vs. 23.9%; females, 20.4% vs. 32.0%). For males, there is positive information in that males have significantly higher tangible social support than the province (92.6% vs. 97.6%). In contrast, the area reports significantly higher prevalence for difficulty with tasks and increased need for help with tasks. Females in particular report the highest need for help with tasks. There was also a higher prevalence of chronic conditions in both sexes (70.7% vs. 78.9%) and for males (66.4% vs. 77.1%).

Northwestern Ontario DHC area has the highest proportion of physically active individuals in the North (35.9%) and is significantly higher than the province (both sexes, males, females, Table 1). Levels of physical well-being for both sexes is also significantly lower (54.3% vs. 51.4%, Tables 2-3). On the positive side, tangible social support is higher than the province for both sexes (92.6% vs. 97.5%) and females (92.5% vs. 97.0%). As with other Northern DHC areas, the prevalence of chronic conditions in females was significantly higher than the province (74.8% vs. 84.2%).

### Mental Health Hospitalizations

Mental health hospitalizations are presented in Figure 1 for males and females for the areas of Ontario, Northern Ontario, and the Northern DHC areas. Despite the higher prevalence of mental health indices shown in Tables 1-3, there are no significant differences between mental health hospitalizations between males and females overall. There are, however, differences by geographic area. Northern Ontario has a significantly higher hospitalization rate than the province. In fact, the rate is approximately twice that of Ontario (males: 91.0 vs. 149.6 per 10,000; females: 90.1 vs. 154.2 per 10,000). In addition, there is typically more than one mental health diagnosis per patient. In Ontario, there is an average of 1.5 diagnoses per patient and this is similar in Northern Ontario (1.4 diagnoses per patient). Also, 11.5% of all in-patients (from all diagnoses) also had a mental health diagnosis. In the North, it is similar with 13.7% of in-patients also having a mental health diagnosis.

ACMS DHC area had the highest hospitalization rate in the North (males: 149.6 vs. 162.2 per 10,000; females: 154.2 vs. 168.2 per 10,000), and was significantly higher than other Northern DHC areas (Figure 1). In contrast, Northern Shores DHC area was significantly lower than the North (males: 120.0 per 10,000; females: 130.1 per 10,000), although it remains higher than the province. Accordingly, mental health diagnoses follow a similar trend (Figure 2). Specifically, Northern Ontario is significantly higher than Ontario concerning the rate of mental health diagnoses, ACMS DHC area is significantly higher than the Northern rate and Northern Shores DHC area is significantly lower than the North, but it remains higher than the province.

### Suicide Hospitalizations and Mortality

Suicide data reveal a troubling trend in the Northern region (Figures 3 & 4). Northern Ontario suicide hospitalizations are occurring at more than double the provincial rate (8.3 vs. 19.2 per 10,000, Figure 3). There are no significant differences between Northern DHC areas, but clearly this is an area of serious concern for the region. Suicide mortality data further support this trend. Because of small numbers, both year 2000 and 2001 data have been shown. Northern suicide mortality is significantly

higher than the province (Figure 4). It is worth noting that Northern Shores DHC area has the lowest mental health diagnosis and hospitalization rate and the lowest suicide mortality rate. Furthermore, the area also has the highest medication use, the lowest physical well-being, the highest chronic conditions are accordingly, the highest reported difficulty with tasks (Tables 2-3).

**CONCLUSIONS:**

A positive overall finding is that physical activity levels are high in Northern Ontario, particularly in the Northwest. Also, levels of social support are generally very high, which is an established means of psychological support. Unfortunately, the high levels of low income and low education are troubling, particularly in ACMS DHC area (Table 1). Also, the startlingly high prevalence of suicide in the Northwest is an issue of concern.

Overall, a number of important trends are also evident. First, there are clear differences between males and females, typically showing a higher prevalence of chronic conditions, and poorer mental and physical well-being in females. Also, despite the high prevalence of poor mental well-being and high medication use, mental health resource use is very low. This could be the result of a number of factors including suppressed need, and resistance or stigma associated with obtaining help from mental health professionals. Other issues could also include lack of access relating to low income or geography, or lack of health human resources. Another concerning finding is that 3/4 of all individuals reported having a chronic condition and only half of residents of the province reported very good or excellent physical well-being.

For example, consider the following information for Northern Ontario:

- Only 2/3 of individuals reported very good or excellent mental well-being
- 1/5 reported medication use
- 1/3 reported being highly stressed at work
- 1/5 reported being highly stressed in general
- Only 1/10 have used mental health resources

In terms of issues that appear to be prevalent in the North overall, selected risk factors are more common in the area, such as low income, unhealthy body weight, and low education. Other mental health indicators that are concerning is the consistently higher proportion of those with chronic conditions and increased difficulty with daily tasks. Although some of the mental health indicators are similar to the province, by their own merit these data speak to the need to increase attention and services for mental health in the North and the province.

**Figure 1:**

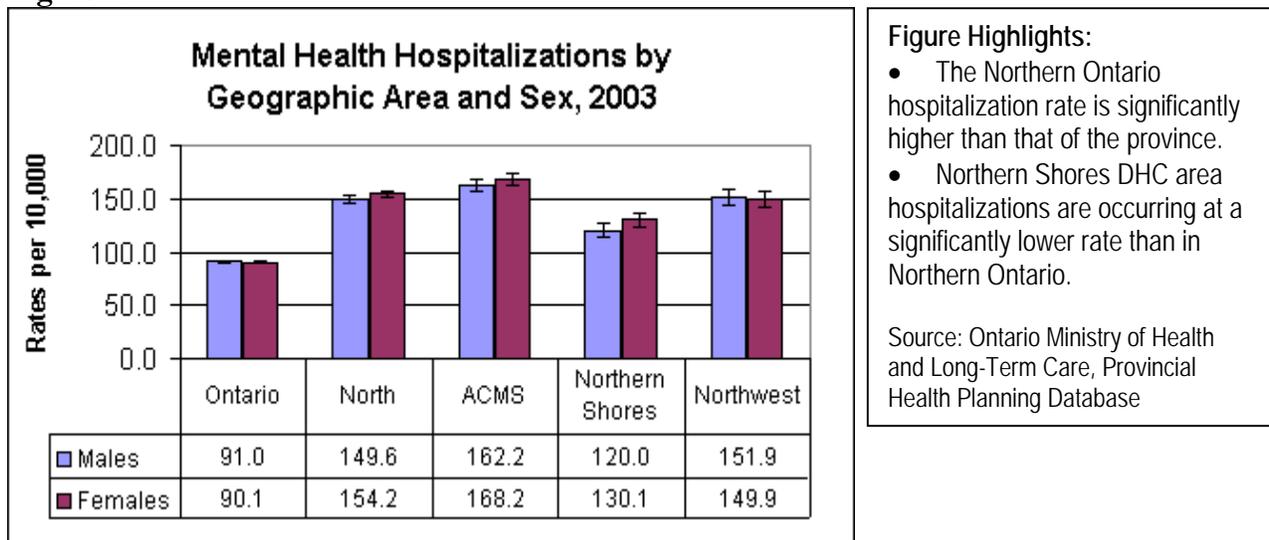
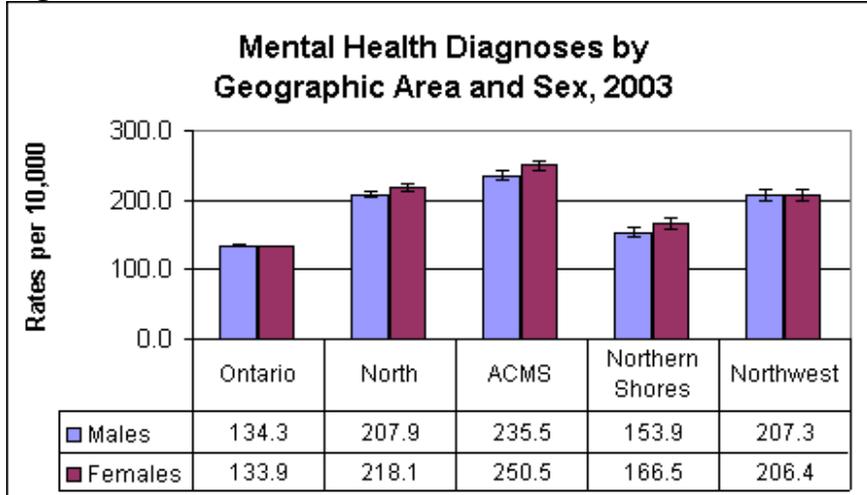


Figure 2:

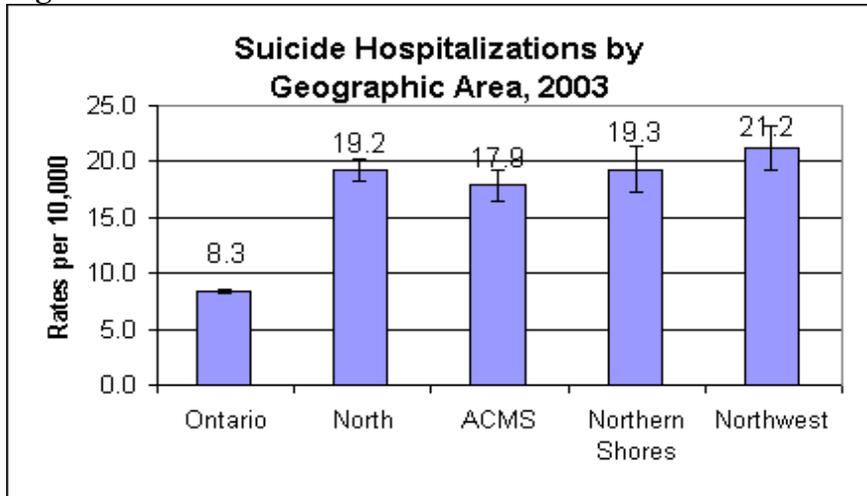


**Figure Highlights:**

- The Northern Ontario rate of mental health diagnosis is significantly higher than that of the province.
- Northern Shores DHC area diagnoses are occurring at a significantly lower rate than in Northern Ontario.

Source: Ontario Ministry of Health and Long-Term Care, Provincial Health Planning Database

Figure 3:

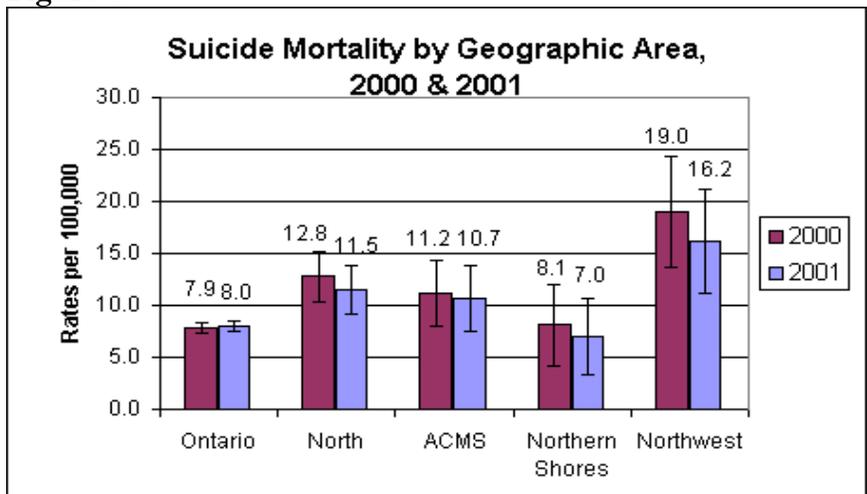


**Figure Highlights:**

- The rate of suicide hospitalization is significantly higher in Northern Ontario as compared to Ontario.

Source: Ontario Ministry of Health and Long-Term Care, Provincial Health Planning Database

Figure 4:



**Figure Highlights:**

- The rate of suicide mortality is significantly higher in Northern Ontario as compared to Ontario.

Source: Ontario Ministry of Health and Long-Term Care, Provincial Health Planning Database

<sup>1</sup> Government of Canada. A report on mental illnesses in Canada. Health Canada, Catalogue H39-643/2002E. 2002.

<sup>2</sup> Statistics Canada. Canadian Community Health Survey, Mental Health Supplement. Cycle 1.2. 2002.

<sup>3</sup> MacMillan HL, MacMillan AB, Offord DR, Dingle JL. (1996). Aboriginal health. Canadian Medical Association Journal, 155(11), 1569-1578.

<sup>4</sup> Scott J. (1993). Homelessness and mental health. British Journal of Psychiatry, 162, 314-324.