Catalogue no. 82-003-X
ISSN 1209-1367

Health Reports

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Release date: June 20, 2018

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Acute care hospitalizations for mental and behavioural disorders among First Nations people

by Gisèle Carrière, Evelyne Bougie and Dafna Kohen

Abstract

Background: National information about acute care hospitalizations for mental/behavioural disorders among Aboriginal people in Canada is limited.

Data and methods: This study describes acute care hospitalizations for mental /behavioural disorders among First Nations people living on and off reserve. The 2006 Census was linked to the Discharge Abstract Database from 2006/2007 through 2008/2009 for all provinces (except Ontario and Quebec) and the three territories. Hospitalizations for seven types of disorders were identified. "Most responsible" diagnosis and secondary diagnoses were examined separately. Age-standardized hospitalization rates (ASHRs) per 100,000 population and rate ratios were calculated.

Results: ASHRs for most responsible and secondary diagnoses of mental/behavioural disorders were significantly higher for First Nations people living on and off reserve than for non-Aboriginal people. The leading diagnoses were the same for each group, but the rank order differed. Among First Nations people, the most common diagnoses were substance-related disorders, mood disorders, and schizophrenic/psychotic disorders. Among non-Aboriginal people, mood disorders were the leading most responsible diagnosis, followed by schizophrenic/psychotic disorders and substance-related disorders. The greatest rate differences between First Nations and non-Aboriginal people for both most responsible and secondary diagnoses were for substance-related disorders.

Interpretation: The higher burden of hospitalizations due to mental/behavioural disorders among First Nations people provides benchmarks and points to the need of considering every hospital admission as an important opportunity for intervention and prevention. The Truth and Reconciliation Commission of Canada (2015) has recognized that the poorer health outcomes of Aboriginal people in Canada were rooted in the legacies of colonization. Further research is required to better understand the direct impacts on mental health.

Keywords: Aboriginal, census, data linkage, hospital records, Indigenous, substance-related disorders

Each year, one in seven Canadians is treated for mental illness.[1] Research on population mental health, addictions, and treatment attracts considerable attention, but as noted in federal reports, data relevant to the development of policies and programs are required in several key areas.[2-5] Notably, national statistics about the use of mental health services by Aboriginal people, particularly First Nations people who live on reserves, are lacking.[6] The need to address data gaps is underscored by recent information documenting a higher prevalence of suicidal thoughts among First Nations people living off reserve, Métis and Inuit, compared with the non-Aboriginal population.[7]

It has been recognized that processes arising throughout the historical context of colonization in Canada represent "key underlying health determinants" for Aboriginal people,[6,8-10] and present-day disparities in mental health among Aboriginal people have been attributed to factors such as the intergenerational effects of residential schools, the forced relocation of communities, the forced removal of children from their families and communities, and inadequate services to individuals living on reserves.[11-15]

The Truth and Reconciliation Commission (TRC) of Canada[15] has expressed concerns for the continuing gaps in health outcomes between the Aboriginal and non-Aboriginal populations, and has called upon the federal government to report on data related to mental health, addictions, and availability of appropriate health services among Aboriginal people. A challenge in providing a national picture of Aboriginal peoples' use of mental health services is that administrative data generally do not include Aboriginal identifiers.[16] Studies of mental health-related acute care hospital use by Aboriginal people have focused on specific regions[16,17] where information was available to identify First Nations status. However, methods are not standardized, and identifiers for some First Nations communities are missing.[16]

At the provincial level, to overcome challenges to identifying Aboriginal people on health administrative records, British Columbia and Manitoba used record linkages between the Indian registry, survey data, and administrative records.[18,19] More recently, in national linkages to the 2006 Census, Statistics Canada appended Aboriginal identifiers to hospital records.[20] With those data, acute care hospitalization overall was analyzed by Aboriginal identity.[21] That study observed higher mental/behavioural hospitalizations among Aboriginal people, but only reported hospitalizations for those conditions overall. The present study builds on that analysis. It describes acute care hospital use by First Nations people (the most populous Aboriginal identity group) living on and off reserve relative to non-Aboriginal people for seven categories of mental and behavioural disorders (substance abuse-related, mood, schizophrenic/psychotic, anxiety and adjustment, organic, personality, and all other mental/behavioural disorders in *International Statistical Classification of Diseases and Related Health Problems,10th Revision, Canada* (ICD-10-CA) range F00-F99). The data pertain to eight provinces (excluding Ontario and Quebec) and the three territories.

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What is already known on this subject?

- Elevated rates of acute care hospitalization among First Nations people relative to non-Aboriginal people have been reported for mental/behavioural disorders overall.

What does this study add?

- This study reports acute care hospitalization rates for seven groupings of mental/behavioural disorders for First Nations people, compared with non-Aboriginal people.
- Age-standardized acute care hospitalization rates were higher among First Nations people than among non-Aboriginal people for each grouping of mental health/behavioural disorders except organic disorders.
- Among First Nations people, the leading most responsible mental/behavioural diagnostic groupings were substance-related, mood, and schizophrenic/psychotic disorders. Among non-Aboriginal people, mood disorders ranked first, followed by schizophrenic/psychotic and substance-related disorders.
- The Truth and Reconciliation Commission of Canada (2015) has recognized that the poorer health outcomes of Aboriginal people in Canada were rooted in the legacies of colonization. The higher burden of hospitalizations due to mental/behavioural disorders among First Nations people provides benchmarks and points to the need of considering every hospital admission as an important opportunity for intervention and prevention.

Methods

Data sources

The 2006 Census of Population was linked to the Canadian Institute for Health Information's Discharge Abstract Database (DAD) from 2006/2007 through 2008/2009.[20] The DAD compiles approximately 3 million hospital records annually from all acute care facilities and some psychiatric, chronic rehabilitation, and day surgery facilities in all provinces and territories, excluding Quebec.[22-24] Because hospital data are not available for Quebec, residents of that province are not represented in this study, nor are hospitalizations that occurred in Quebec for residents of other provinces. As well, since 2005, Ontario has recorded mental health service use in the Ontario Mental Health Reporting System rather than reporting all inpatient service use to the DAD.[25] Therefore, this analysis also excludes Ontario census respondents and Ontario hospital discharges.

Details about the linkage methodology are available elsewhere.[20] A validation study of the linked cohort file found it to be suitable for health research and broadly representative of people in Canada,[20] although rates of census coverage and of eligibility to link were lower among Aboriginal people.

The linkage was conducted in accordance with the Policy on Record Linkage[26] and approved by Statistics Canada's Executive Management Board.[27] Statistics Canada ensures respondent privacy during linkage and subsequent use of linked files. Only employees directly involved in the process have access to the identifying information (such as name and sex) required for linkage; they do not access health-related information. When linkage is completed, an analytical file is created from which identifying information has been removed. Analysts have access only to this de-identified file.

This study used information provided by respondents to the long-form census—typically about 20% of the non-institutionalized population. However, all households in Nunavut, the Northwest Territories and Yukon (excluding Yellowknife and Whitehorse where 20% received long-forms), and on all Indian reserves and settlements, were asked to complete the long-form questionnaire. Because the long-form is not administered to residents of institutions, severe psychiatric illnesses and dementia, which are more prevalent among the institutionalized population, may be underrepresented.

The cohort eligible for linkage to the DAD consisted of 4.65 million long-form census respondents. Over fiscal years 2006/2007 through 2008/2009, 1,028,604 acute care hospitalizations were linked to these census respondents.[20] According to the validation study, 7.2% to 7.7% of Aboriginal people linked to at least one hospitalization record during the three years. The corresponding figures were 7.6% to 8.1% for First Nations people, and 5.0% to 5.4 % for non-Aboriginal people. The present analysis used unweighted linked data: 2,298,200 census long-form respondents to whom 563,643 acute care hospitalizations were linked during the three years (Appendix Table A).

Aboriginal identity

The term "Aboriginal," which was used for 2006 Census collection, appears throughout this analysis. Aboriginal identity was determined based on responses to the census question: "Is this person an Aboriginal person, that is, North American Indian, Métis, or Inuit (Eskimo)?" Respondents marked all applicable responses. This study focused on respondents who reported single-identity North American Indian (First Nations).

Geographical location was used to identify those living on reserve (Indian reserves or settlements) or off reserve. The 2006 Census on-reserve population was comprised of residents of eight census sub-division (CSD) types legally affiliated with First Nations/Indian bands and selected CSDs in Saskatchewan, the Northwest Territories, and the Yukon with large concentrations of First

Nations people. "On reserve" includes legally defined Indian reserves, Indian settlements, other land types created by the ratification of Self-Government Agreements, and other northern communities affiliated with First Nations, according to criteria established by Indigenous and Northern Affairs Canada.

Hospitalization

Total frequencies of mental/behavioural disorder hospitalizations from 2006/2007 through 2008/2009 were compiled separately for First Nations people living on and off reserve and for non-Aboriginal people, based on the patients' census-reported Aboriginal identity and geographical location, rather than the province submitting the hospital record. This enabled reporting of hospitalizations in provinces other than the respondent's province of residence at the time of the 2006 Census. A total of 26,870 mental/behavioural disorder hospitalizations were linked, representing 4.8% of all linked hospital records. Of these hospitalizations, 4,064 occurred among First Nations living on reserve; 1,000, among First Nations living off reserve; and 21,806, among non-Aboriginal people.

Most responsible and secondary diagnoses

Each hospital record contains up to 25 diagnoses coded according to the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada* (ICD-10-CA).[28] The "most responsible" diagnosis is the most significant diagnosed condition and/or the condition accounting for the longest length of stay. Up to 24 additional diagnoses could appear on a given hospital record; all were considered to identify secondarily diagnosed mental/behavioural disorders. To minimize variation due to different coding practices across provinces,[29] diagnoses were used only if the recorded "type" indicated that requirements of the Canadian Institute for Health Information to determine comorbidity were met.

Records were classified into seven groups[30-32] of mental/behavioural disorders: 1) substance-related; 2) mood; 3) schizophrenic/psychotic; 4) anxiety; 5) organic (such as Alzheimer's disease); 6) personality; and 7) all other mental/behavioural disorders in ICD-10-CA range F00-F99. Each group represents aggregations of diagnoses within defined coding ranges (Appendix Table B). Seven dichotomous mental disorder group indicators were created to determine if a specific diagnosis within each ICD-10-CA grouping appeared at least once.

A single hospital record could contain more than one mental/behavioural disorder group indicator; therefore, an individual could be represented more than once across all seven disorder groups. Individuals could also be represented more than once if they had been hospitalized multiple times in 2006/2007 through 2008/2009. Reported frequencies and rates for a given condition represent counts of hospitalizations, not of people.

Analytical techniques

Age-standardized hospitalization rates per 100,000 population, rate ratios using the non-Aboriginal cohort as the reference, and 95% confidence intervals were calculated for First Nations people living on reserve, First Nations people living off reserve, and non-Aboriginal people. Pooling hospital records for the three fiscal years (2006/2007, 2007/2008, 2008/2009) reduced the variation that can occur with small numbers.

ASHRs were calculated as the sum of linked hospitalizations for each First Nations and non-Aboriginal cohort as numerators, divided by the unweighted person counts from the same linked study cohort group (denominator), multiplied by three (number of DAD years). Age-standardization used the direct method to apply the 2006 Census national Aboriginal population age structure. The age groups were: 0 to 9; 10 to 19; 20 to 29; 30 to 39; 40 to 49; and 50 or older.

Table 1
Age-standardized hospitalization rates (ASHR) per 100,000 for mental/behavioural disorders, by type of disorder and type of diagnosis, non-institutionalized First Nations people living on and off reserve and non-Aboriginal population, Canada except Ontario and Quebec, 2006/2007 through 2008/2009

	First Nations								
	On reserve			Off reserve			Non-Aboriginal		
		95% confidence interval			95% confidence interval			95% confidence interval	
Type of disorder (type of diagnosis)	ASHR	from	to	ASHR	from	to	ASHR	from	to
Total (most responsible)	740	717	763	621	583	660	309	305	314
Total (comorbid)†	720	698	743	583	547	622	246	242	249
Substance-related (most responsible)	348	333	364	212	191	236	50	48	51
Substance-related (comorbid)†	485	467	504	374	345	405	75	73	77
Mood (most responsible)	128	119	138	165	147	187	105	102	107
Mood (comorbid)†	101	93	110	86	73	102	51	50	53
Schizophrenic/Psychotic (most responsible)	95	88	104	98	84	115	53	51	55
Schizophrenic/Psychotic (comorbid)†	21	17	25	21	15	29	11	10	12
Anxiety (most responsible)	47	41	53	34	26	45	20	19	21
Anxiety (comorbid)†	65	58	72	59	48	72	41	40	43
Organic (most responsible)	26	22	31	24	17	33	25	24	26
Organic (comorbid)†	43	37	49	38	29	49	52	50	53
Personality (most responsible)	10	8	13	12	7	18	9	8	9
Personality (comorbid)†	32	28	37	45	36	56	27	26	28
Other (most responsible)	85	78	93	75	63	89	49	47	51
Other (comorbid)†	57	52	64	44	35	55	34	32	35

† excludes most responsible diagnosis

Source: Linked 2006 Census–2006/2007-to-2008/2009 Discharge Abstract Database.

Table 2
Rate ratios (RR) for age-standardized hospitalization rates per 100,000 for mental/behavioural disorders, by type of disorder and type of diagnosis, non-institutionalized First Nations people living on and off reserve relative to non-Aboriginal population, Canada except Ontario and Quebec, 2006/2007 through 2008/2009

	On reserve			Off reserve		
		95% confidence interval			95% confidence interval	
Type of disorder (type of diagnosis)	RR	from	to	RR	from	to
Total (most responsible)	2.4	2.3	2.5	2.0	1.9	2.1
Total (comorbid)†	2.9	2.8	3.0	2.4	2.2	2.5
Substance-related (most responsible)	7.0	6.6	7.4	4.3	3.8	4.8
Substance-related (comorbid)†	6.5	6.2	6.8	5.0	4.6	5.4
Mood (most responsible)	1.2	1.1	1.3	1.6	1.4	1.8
Mood (comorbid)†	2.0	1.8	2.1	1.7	1.4	2.0
Schizophrenic/Psychotic (most responsible)	1.8	1.6	2.0	1.9	1.6	2.2
Schizophrenic/Psychotic (comorbid)†	1.8	1.5	2.3	1.9	1.3	2.6
Anxiety (most responsible)	2.3	2.0	2.7	1.7	1.3	2.3
Anxiety (comorbid)†	1.6	1.4	1.8	1.4	1.2	1.8
Organic (most responsible)	1.1	0.9	1.3	1.0	0.7	1.3
Organic (comorbid)†	0.8	0.7	0.9	0.7	0.6	0.9
Personality (most responsible)	1.2	0.9	1.5	1.3	0.9	2.1
Personality (comorbid)†	1.2	1.0	1.4	1.7	1.3	2.1
Other (most responsible)	1.7	1.6	1.9	1.5	1.3	1.8
Other (comorbid)†	1.7	1.5	1.9	1.3	1.0	1.6

† excludes most responsible diagnosis
Source: Linked 2006 Census–2006/2007-to-2008/2009 Discharge Abstract Database.

Results

Mental/Behavioural disorders accounted for similar percentages of total hospitalizations of each cohort group: 5.0% and 6.5%, respectively, for First Nations people living on and off reserve, and 4.6% for non-Aboriginal people (Appendix C).

Most responsible diagnosis

Based on the most responsible diagnosis, the overall age-standardized hospitalization rates (ASHR) for mental /behavioural disorders were 740 per 100,000 population for First Nations people living on reserve and 621 for First Nations people living off reserve (Table 1). These rates were more than twice the rate (309 per 100,000) for non-Aboriginal people.

For First Nations people living on reserve, nearly half this ASHR reflected substance-related disorders (348 per 100,000 population); for those living off reserve, about one-third (212 per 100,000). Mood disorders (128 and 165 per 100,000 for First Nations people living on and off reserve, respectively), and schizophrenic/psychotic disorders (95 and 98 per 100,000, respectively) ranked second and third.

Among non-Aboriginal people, the same three diagnosis groups predominated, but the ranking differed. Mood disorders led at 105 per 100,000 population, followed by schizophrenic/psychotic disorders (53 per 100,000), and substance-related disorders (50 per 100,000).

Rate ratios (RRs) show much higher ASHRs for most mental/behavioural disorders among First Nations than non-Aboriginal people (Table 2). The greatest disparities were for substance-related disorders, with rates 7.0 times higher among First Nations people living on reserve, and 4.3 times higher among First Nations people living off reserve.

First Nations people living on reserve were about twice as likely as non-Aboriginal people to be hospitalized for anxiety disorders (RR = 2.3), schizophrenic/psychotic disorders (RR = 1.8), and the category for all other mental/behavioural disorders (RR = 1.7). RRs for personality disorders and organic disorders were not elevated for First Nations people living on reserve relative to non-Aboriginal people.

First Nations people living off reserve were almost twice as likely as non-Aboriginal people to be hospitalized for schizophrenic/psychotic disorders (RR = 1.9). RRs were also high for anxiety disorders (RR = 1.7), mood disorders (RR = 1.6), and the category capturing all other mental/behavioural disorders (RR = 1.5). ASHRs for personality disorders and organic disorders among First Nations people living off reserve did not differ from those among non-Aboriginal people.

Secondary diagnoses

The leading secondary mental/behavioural diagnoses differed slightly from the leading most responsible diagnoses (Table 1). For First Nations people living on and off reserve, substance-related disorders and mood disorders were the most common secondary diagnoses, with anxiety disorders ranking third. Among non-Aboriginal people, too, substance-related disorders were the most common secondary diagnosis, but organic disorders (for instance, dementia) and mood disorders ranked second and third.

ASHRs for mental/behavioural disorders as a secondary diagnosis among First Nations people living on and off reserve were higher than rates among non-Aboriginal people for all categories except organic disorders (Table 2).

Discussion

Building on previous research,[21] this study examined First Nations' and non-Aboriginal peoples' rates of hospitalization for mental/behavioural disorders, by seven diagnostic groupings, in Canada except Quebec and Ontario.

Among First Nations people living on and off reserve, substance-related disorders were the leading most responsible

mental/behavioural diagnosis—compared with the non-Aboriginal cohort, rates were seven times higher for First Nations people living on reserve, and more than four times higher for First Nations people living off reserve. Hospitalization rates for schizophrenic/psychotic and anxiety disorders were about twice as high.

These findings are in line with analyses using provincial hospital administrative data[16,17,33] and national survey data.[34] Results are also consistent with studies of the American Indian population.[35]

A number of factors may contribute to the higher hospitalization rates for mental/behavioural disorders among First Nations people. The trauma and disempowerment caused by residential schools; the forced relocation of communities; and the forced removal of children away from their families, for instance, have been identified as having placed Aboriginal people at a higher risk of mental illnesses[11-15] such as depression and psychological distress.[6,36,37] Inequalities in social determinants of health may also influence hospitalization rate disparities. In many First Nations communities, municipal infrastructure (sewage and drinking water) are inadequate[38]; educational and employment opportunities are limited; and the prevalence of low income is high.[39] As well, they may encounter barriers when they seek primary health care[6,36,40] or perceive discrimination as patients.[41]

The presence of additional chronic conditions is also a risk factor for mental health hospitalization.[1] For instance, asthma, chronic obstructive pulmonary disease (COPD), and diabetes are more prevalent among Aboriginal than non-Aboriginal people.

Variations between First Nations and non-Aboriginal people in hospitalization for mental/behavioural disorders may reflect differences in patient management, such as transfers to specialized facilities. Remote or rural residence could play a role, especially for those on reserves far from specialized health services. Exploratory analyses revealed differences in hospital length of stay between First Nations and non-Aboriginal people when a mental/behavioural disorder was the most responsible diagnosis (data not shown), but further examination was out of scope for this study. Future research examining length of stay and admissions for mental/behavioural disorders is warranted.

Furthermore, the results of this study would be enhanced by additional research using these data and adjusting for differences between First Nations and non-Aboriginal people on socioeconomic characteristics, distance to hospital, and geographic location.

Limitations

Acute care hospitalization accounts for only a small portion of mental health treatment; the linked census-DAD data do not capture most services typically accessed for mental health care, such as regular physicians and counselling. Therefore, the results should not be interpreted as representing the prevalence of mental/behavioural disorders or total mental health service use.

Even hospitalizations are underreported in this study. Patterns might be different if Ontario and Quebec data had been available. For Ontario, information for 60,200 First Nations people was not included, and for Quebec, based on 2006 Census estimates, information for 65,085 First Nations people could not be considered. As well, an estimated 40,000 people lived in the 22 Indian reserves and settlements that were incompletely enumerated in 2006.[42] These people resided primarily in Ontario.

Notable changes to governance structure and delivery of health care occurred during the study reference period.[43,44] Therefore, the patterns described in this study may not emerge in analyses of different vintages of data.

Rates of census coverage and of eligibility to link were lower among Aboriginal people.[20] Eligibility rates for linkage to the DAD were lower among those identifying as Aboriginal, individuals of lower socioeconomic status, rural/farm residents, and residents of Nunavut and British Columbia. Validation of the linked files used in this study found lower coverage of populations in the territories and of younger age groups.[20]

Lower census coverage means a greater likelihood of being underrepresented. Lower eligibility to link means that fewer records contained enough information to complete linkage. The likely impacts are underestimation of ASHRs of First Nations people and a downward bias in estimates of differences between First Nations and non-Aboriginal people.

The data were not adjusted for the death of study cohort members. Aboriginal people have a greater risk of premature mortality,[45,46] so it is possible that a disproportionate number of First Nations cohort members may have died during the study period.

This study examined national-level (excluding Quebec and Ontario) hospitalization rates, however analysis of more specific geographies, communities and/or regions might have revealed lower rates. Disaggregating national-level data for First Nations people living on reserve might also highlight First Nations communities that have succeeded in promoting and maintaining positive mental health.[47]

Despite these limitations, these analyses indicate opportunities for interventions. These data are important for the monitoring and surveillance of mental health service use by Aboriginal people and thereby support intervention strategies. Future research using other data sources could focus on the root causes of mental health and substance use disorders and on "strength-based" factors associated with resilience and wellness.

Conclusion

Hospitalization rates for mental/behavioural disorders were significantly higher among First Nations people living on and off reserve than among non-Aboriginal people, particularly for substance-related disorders. The higher burden of hospitalizations due to mental/behavioural disorders among First Nations people serves as benchmarks where hospital admissions indicate opportunity points for intervention and to inform prevention.

Acknowledgements

This study was sponsored by the First Nations and Inuit Health Branch (FNIHB), formerly with Health Canada, now formally transferred to the new Department of Indigenous Services Canada. The authors acknowledge FNIHB for their financial support as well as their input and feedback on the conception and design of this study and on the analysis and interpretation of the data. ■

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Appendix

Table A
2006 Census cohort eligible for linkage to Discharge Abstract Database, by sex, age group, residence and region, First Nations people living on and off reserve and non-Aboriginal population, Canada except Ontario and Quebec

Characteristics	Total cohort	First Nations		Non-Aboriginal
		On reserve	Off reserve	
Total	2,298,200	190,700	55,500	2,052,000
Sex				
Female	1,165,400	94,000	29,400	1,041,900
Male	1,132,800	96,600	26,100	1,010,100
Age group				
0 to 9	271,600	42,000	12,000	217,500
10 to 19	322,200	43,400	12,300	266,600
20 to 29	296,500	27,700	8,100	260,600
30 to 39	307,100	25,100	7,900	274,200
40 to 49	373,100	23,500	7,200	342,500
50 or older	727,700	28,900	8,000	690,700
Residence				
Rural	703,200	177,000	18,200	507,900
Urban	1,595,000	13,600	37,300	1,544,100
Region				
Atlantic	425,900	15,300	4,400	406,200
Manitoba	248,100	50,600	9,200	188,400
Saskatchewan	211,700	43,400	10,800	157,400
Alberta	620,900	33,300	12,600	575,000
British Columbia	756,400	38,000	14,300	704,100
Territories	35,300	10,000	4,400	21,000

Notes: Data for First Nations based on population reporting a single First Nations identity. Population counts rounded to nearest 100.
Source: 2006 Census of Population.

Table B
ICD-10-CA codes for mental/behavioural disorder groups

Mental/Behavioural disorder group	ICD-10-CA version 2006 codes	Common-language examples of diagnoses
Mental/Behavioural disorders (Chapter V)	F00 - F99	
Substance-related	F10 - F19, F55	Mental/Behavioural disorders due to use of alcohol; acute intoxication; harmful use; dependence syndrome; withdrawal state; late-onset psychotic disorder due to use of opioids, cannabinoids, sedatives or hypnotics, cocaine, other stimulants
Mood	F30 - F33, F39, F340, F341, F348, F349, F380, F381, F388	Manic episode; bipolar affective disorder; depressive episode; recurrent depressive disorder; persistent mood (affective) disorders
Schizophrenic/Psychotic	F20 - F29	Schizophrenia; schizotypal disorder; persistent delusional disorders; acute and transient psychotic disorders; induced delusional disorder (includes paranoid disorder); other non-organic psychotic disorders
Anxiety	F40 - F42, F430, F431, F438, F439, F930 - F932	Neurotic, stress-related and somatoform disorders; phobic anxiety disorders; panic disorder; obsessive-compulsive disorder; reaction to severe stress and adjustment disorders; post-traumatic stress disorder
Organic	F00 - F09, G30	Dementia in Alzheimer's disease; vascular dementia; dementia in other diseases classified elsewhere, for example, Parkinson's, Creutzfeldt-Jacob disease
Personality	F60 - F62, F68, F69	Specific personality disorders (for example, paranoid, schizoid); mixed and other personality disorders; enduring personality change after catastrophic experience (post-disasters, exposure to life-threatening situation)
Other	F432, F45, F59, F52, F63, F64, F66, F80 - F89, F91, F92, F933 - F939, F95, F99	Adjustment disorders (culture shock, grief reaction, hospitalism in children); specific developmental disorders of speech and language; specific developmental disorder of motor function; behavioural/emotional diorders with onset usually in childhoood and adolescence

ICD-10-CA = International Statistical Classification of Diseases and Related Health Problems,10th Revision, Canada.

Table C
Distribution of hospitalizations linked to Discharge Abstract Database, by most responsible diagnosis, non-institutionalized First Nations people living on and off reserve and non-Aboriginal population, Canada except Ontario and Quebec, 2006/2007 through 2008/2009

			First Nations					
	Total		On reserve		Off reserve		Non-Aboriginal	
Most responsible diagnosis	Number	%	Number	%	Number	%	Number	%
Total mental/behavioural disorders	26,870	4.8	4,064	5.0	1,000	6.5	21,806	4.6
Substance-related	5,767	1.0	1,878	2.0	338	2.0	3,551	1.0
Mood	8,297	1.5	710	<1.0	266	2.0	7,321	2.0
Schizophrenic/Psychotic	4,213	<1.0	528	<1.0	160	1.0	3,525	1.0
Anxiety	1,678	<1.0	254	<1.0	56	<1.0	1,368	<1.0
Organic	3,131	<1.0	140	<1.0	35	<1.0	2,956	1.0
Personality	590	<1.0	56	<1.0	19	<1.0	515	<1.0
Other mental/behavioural	3,194	<1.0	498	1.0	126	1.0	2,570	1.0
Other than mental/behavioural	536,773	95	71,418	95.0	14,498	93.5	450,857	95.4
Total	563,643	100.0	75,482	100.0	15,498	100.0	472,663	100.0

Source: Linked 2006 Census–2006/2007-to-2008/2009 Discharge Abstract Database.