

Mental Health Expenditure in Canada

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Abstract

Background: Mental ill-health – illness or conditions related to mental health, including dementia, schizophrenia, mood (affective) disorders, and mental and behaviour disorders due to psychoactive substance and alcohol use – places a significant burden on society in terms of economic, health, and social costs. Focusing on direct health care costs, estimated expenditures on treating mental health conditions accounted for up to 14% of total health expenditures across 12 OECD countries over the period of 2003 to 2010.

Aims of the Study: The purpose of this study was to estimate the direct health care costs associated with the treatment of mental ill-health in Canada for the year 2019 using currently available guidelines. A consistent and systematic method, such as that used in the OECD guidelines on expenditure by disease, age and gender under the System of Health Accounts, can provide valuable information for policy makers and improve comparability of Canadian estimates with those of peer countries.

Methods: To derive comprehensive, and internationally comparable estimates of mental health care expenditures, the results were classified according to the OECD System of Health Accounts 2011 for the following cost components: hospitals, physicians, psychologists in private practice, prescription drugs, and community mental health care. Based on data availability, both public and private expenditures were captured. Where data were lacking, estimates were based on the published literature.

Results: Total expenditure for mental health care was estimated at \$17.1 billion in Canada in 2019. Hospital services (inpatient and outpatient) represent the largest component totaling \$5.5 billion or 32% of total mental health spending. They are followed by expenditures on prescribed pharmaceutical drugs of \$4.3 billion (25%), community-based care of \$3.6 billion (21%), physician services of \$2.7 billion (16%) and services of psychologists in private practice of \$1.1 billion (6%).

Discussion: The study provided the most recent and comprehensive estimate of mental health expenditure in Canada. The results for similar cost components, are comparable to those found in the previous studies. Expenditures directed towards mental health treatment accounted for 6.4% of total health expenditures, and 6.9% of public health expenditures, in 2019, on par with the OECD average of 6.7% for twenty-three countries. Among considered cost components,

community-based mental health and addiction services remain an area where further work is needed the most, including a standardized list of services reported by each Canadian province/territory regardless of care setting, service administrator or funder. In Canada, data challenges are considerable to assess private spending out-of-pocket or through third-party insurance for services by psychologists or psychotherapists, as well as residential and home care. Given data challenges, the total expenditure estimate is likely conservative.

Implications: Consistent and comparable estimates such as these can be used to better understand how resources are being used in the treatment of mental health, including key cost drivers, and the impact of policy changes, as well as to undertake reliable inter-jurisdictional and international comparisons.

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Introduction

Mental ill-health – illness or conditions related to mental health, including dementia, schizophrenia, mood (affective) disorders, and mental and behaviour disorders due to psychoactive substance and alcohol use – places a significant burden on society in terms of economic, health, and social costs.¹ Mental ill-health refers to not only diagnosed mental and behavioural disorders, but also includes psychological, or mental, distress (i.e., conditions that may not reach the threshold of diagnosis). According to the Organization for Economic Cooperation and Development (OECD), the direct and indirect costs associated with mental ill-health account for over 4% of GDP in most countries, including 4.4% of GDP in Canada.² Focusing on the direct costs, estimated expenditures on treating mental health conditions accounted for up to 14% of total health expenditures across 12 OECD countries over the period of 2003 to 2010.³

The costs associated with mental ill-health can be classified using a cost-of-illness framework where the costs represent foregone opportunities associated with poor mental health. Conventionally, these costs are divided into three components – direct costs, indirect costs resulting from decreased productivity, and the intrinsic value of health (i.e., the value of mortality and morbidity associated with losses in health). Estimating, and comparing, the economic burden of mental-ill health across these components, can be challenging due to a lack of valid and comprehensive data.

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The most available, and comparable, data are related to the direct health care costs. Direct costs refer to any service for which a direct payment was made related to the treatment of mental health; this includes expenditures on healthcare services as well as expenditures on other social services, such as supportive housing and employment supports resulting from mental illness. These costs can be incurred privately (e.g., out-of-pocket, or via privately funded insurance) or publicly. Given the varied types of health care resources that can be used in the treatment of mental ill-health, as well as the various flows of funding allocated towards these treatments, which can vary significantly across countries, a proper capturing of all components is difficult.¹

The purpose of this study was two-fold: (i) to provide a more up-to-date estimate of the direct health care costs associated with the treatment of mental ill-health in Canada as previous comprehensive studies used 2010 and 2008 expenditure data; and (ii) to enable greater comparability of the Canadian estimates to that from other jurisdictions by using a consistent method from internationally-accepted OECD guidelines.^{4,5}

Background

Mental health care is a continuum, including such services as community-based clinics and treatment programs, residential treatment centres, ongoing and acute inpatient and outpatient hospital care, services by physicians (general practitioners and psychiatrists) and by other mental health providers such as psychologists, social workers, or mental health teams. Provincial and territorial governments fund mental health services in their own jurisdictions. However, mental health spending by jurisdiction is not easily obtainable and no single depository of national mental health spending exists.

Several studies estimated expenditures on mental health services in Canada.⁶⁻¹² Estimated direct health care expenditures in these studies ranged from \$4.6 billion to \$17.0 billion (2019 Canadian dollars, CAD), however due to different cost components or diagnoses included and costing methodologies employed, comparisons are not without challenge. **Table 1** presents a summary of the current literature.

Due to differences in cost components included a comparison across studies should be undertaken within a component. For example, hospital inpatient costs in most studies range from \$3.4B to \$4.5B in 2019 CAD. (**Table 1**). The estimates by the Canadian Institute for Health Information (CIHI) and the Canadian Centre for Substance Use and Addiction (CCSA) are lower than this range mostly due to an exclusion of a large province of Quebec and some services from the CIHI study, as well as a specific focus on substance use in the CCSA study.

Moreover, the two main approaches employed to estimate hospital expenditures by disease – the top-down versus bottom-up – may result in significant differences. The top-down approach employed in the PHAC study starts with the overall expenditures in a sector, and then allocates the costs according to patient characteristics such as treatment, diagnosis, age, and sex based on an overall distribution or

allocation key. The bottom-up approach, also known as micro-costing, requires that all specific resources for each patient be identified, aggregated, and valued using an estimate of unit cost. For example, physician expenditure in the Jacobs *et al.*⁷ study were estimated using data collected via a bottom-up method. While neither approach is more correct than the other – which approach to employ will depend upon data availability and the purpose of the study – they may result in different results.^{13,14}

These studies also differed in the range of mental health conditions included (e.g., dementia or disorders due to alcohol or substance use was either included or excluded) and costs components covered. The inclusion, or exclusion, of various cost components depends upon the perspective of the study and may be limited by the availability of valid data. As a result of the aforementioned issues, in conjunction with the utilization of different data sources, data gaps (i.e., data may be missing for some provinces and/or territories) and other differences in methodologies, caution should be exercised when making comparisons across studies.

While hospital expenditures may be easier to estimate than those in community settings, it is important to note that on their own they may provide a distorted picture of mental health service provision. Trends towards deinstitutionalisation have resulted in decreased hospital beds allocated to mental illness, however, those beds that do remain are more often for the most severe mental illnesses. As such they tend to be more resource intensive, and thus costlier. In addition, in Canada, data for public expenditures on health care are more readily available than private expenditures. As a result, spending on services that are mostly privately funded (e.g., psychological treatment) may not be captured.

Methods

To derive comprehensive, and internationally comparable, estimates of mental health-related expenditures, the results were classified according to the OECD System of Health Accounts 2011 (SHA 2011). The System of Health Accounts 2011 is a national accounting framework which provides a detailed system for tracking resource flows related to the provision, consumption, and financing of health care goods and services.⁵ With respect to the provision of health care goods and services, the Health Care Provider (HP) classification organizes services by provider, such as hospital, physician, and providers of ancillary goods and services. The Health Care Function (HC) classification refers to the goals or purposes of health care such as inpatient and outpatient care, health promotion, curative, rehabilitation, and long-term care. OECD member countries report health care expenditure data to the OECD according to these classifications; the data are available through OECD Stats. Expenditure by disease across OECD countries is not as easily available, but progress has been made in comparable reporting.³

In Canada, health expenditure data are available from the National Health Expenditure (NHEX) database.¹⁵ The NHEX breaks expenditures down according to use and source of funds, with the categories broadly aligned with the SHA 2011.

Table 1. Summary of Mental Health Expenditure Estimates – Direct Costs, Canada (millions of dollars, 2019 CDN).

Source	Year of analysis	Hospital, inpatient	Hospital, Outpatient	Physician in total	Prescribed drugs	Community care	Total direct health care costs	% of total health care expenditure*	Notes
Lim <i>et al.</i> , 2008	2003	included in total	included in total	included in total	not included	not included	6,568.5	4.0%	– Dementia included: no – Bottom-up method
Jacobs <i>et al.</i> , 2010	2007/08	3,383	80	1,740	3,433	3,515	12,151	6.1%	– Dementia included: yes – Bottom-up, and top-down methods
Smetanin, 2011	2011	4,069	ED visits included in community care	2,202	3,834	6,930	17,035	7.5%	– Dementia included: no – Based on estimates from Jacobs <i>et al.</i> 2010
PHAC, 2017**	2010	3,568	740.2	2,807	4,540	not included	12,177	5.4%	– Dementia included: yes – Top-down approach
Wang, 2018	2013	4,456	not included	1,868	1,154	not included	7,478	3.2%	– Dementia included: yes – Public expenditures only – Bottom-up method
CIHI, 2019	2017	1,464	358	not included	not included	2,767	4,589	1.8%	– Dementia included: no – Bottom-up method – Expenditures from the province of Quebec and the territory of Nunavut are excluded.
CCSA, 2020	2017	1,716	391	2,537	1836	733	7,213	2.8%	– Dementia included: no – Focus was on substance use only. – Bottom up, based on the proportions of health outcomes attributable to substance use

Note: *The percentage is calculated using expenditures expressed in Canadian dollars of the year of the study, e.g., 2003 dollars for Lim *et al.*⁶ Total health care expenditures for relevant year are from Table B.1.1 Total health expenditure by province/territory and Canada, in millions of current dollars, 1975 to 2022. National Health Expenditure Database. Canadian Institute for Health Information. 2022.
**Expenditure estimates from this study were used to report to OECD and were featured in OECD (2021).

Table 2. Hospital Expenditures on Mental Disorders by International Shortlist for Hospital Morbidity Tabulation (ISHMT) group, and System of Health Accounts (SHA) categories*, Canada, 2019 (millions of dollars).

ISHMT code	Diagnoses / Conditions (ICD-10-CA ¹ Codes)	Inpatient ²	Day Surgery	Outpatient ED ³	Outpatient clinics ³	Other	Total
500	Mental and Behavioural Disorders (total) (F00-F99)	4,469.0	14.5	272.9	236.1	457.5	5,450.1
501	Dementia (F00-F03)	592.9	0.2	6.4	2.2	0.2	601.8
502	Disorders due to alcohol use (F10)	337.9	0.0	57.4	5.8	21.3	422.4
503	Disorders due to psychoactive substances use (F11-F19)	139.7	0.0	34.1	28.9	26.1	228.9
504	Schizophrenia, schizotypal and delusional disorders (F20-F29)	1,363.5	2.0	28.7	44.5	50.4	1,489.1
505	Mood [affective] disorders (F30-F39)	931.1	9.6	41.0	30.4	55.6	1,067.6
506	Other mental and behavioural disorders (remainder of F00-F99)	1,103.9	2.7	105.3	124.4	303.9	1,640.2

Note: *Health care expenditures in Canada cannot be broken down by curative/rehabilitative care.

¹International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA), chapter V - Mental and behavioural disorders.

²Composed of HC.1.1 (inpatient curative care) and HC.2.1 (inpatient rehabilitative care)

³Composed of HC.1.2 (outpatient curative care) and HC.2.2 (outpatient rehabilitative care); the expenditures are further broken down by Emergency Department visits and clinic visits.

For consistency, both NHEX and SHA data were employed in the analysis. As most types of health care data in Canada are organized according to the provider type; data were often originally grouped according to health care provider, and then allocated to the relevant health care function(s) based on available information within the specific databases. (Chapters 5 and 6 in OECD (2017)⁵ provide further details on the HP and HC classification systems.)

This paper includes the following cost components with related classifications:

- Hospitals – HP.1 – Hospitals. These were broken down according to HC classification into inpatient care, day surgeries, emergency department (ED) visits, and outpatient clinics.
- Physicians – HP.3 – Providers of ambulatory health care.
- Psychologists in private practice – HP.3
- Prescription drugs (from retail pharmacies) – HP.5 – Retailers and other providers of medical goods.
- Community mental health care – Providers Unknown (likely HP.3)

This study uses a top-down approach as in PHAC (2017).⁹ to estimate hospital and drug expenditures. For physician expenditure it follows the approach from Jacobs *et al.* (2010)⁷ by utilizing aggregated data that have been collected using a bottom-up approach. For community-based care expenditure, two estimates are derived, using aggregate data collected via either a top-down or a bottom-up approach.

Based on data availability both public and private expenditures were captured. Where data were lacking, estimates were based on the published literature. For hospital and prescription drug expenditures mental health conditions were disaggregated into groups according to the International Shortlist for Hospital Morbidity Tabulation, ISHMT (see **Table 2** and **Table 3**).

Results

Hospital Expenditure

Following the top-down approach, total hospital expenditures were allocated to diagnostic, age, and sex categories using hospital discharge data, obtained from several sources which are held by CIHI. The Discharge Abstract Database (DAD) contains information related to most inpatient discharges, the National Ambulatory Care Reporting System (NACRS) contains information related to ambulatory care, and the Hospital Mental Health database (HMHDB) contains information from mental health specialty hospitals.¹⁸⁻²⁰ Each record contains up to twenty-five diagnoses, coded as per the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada; the one deemed to have used the greatest amount of resources is designated as the most responsible diagnosis. As these databases include some overlapping observations, any duplicate observations were excluded.

Expenditures were aggregated across diagnostic categories according to each record's most responsible diagnosis and grouped according to ISHMT. For records in the DAD and NACRS, costs for each record were derived using resource intensity weights; these weights consider the relative resource utilization across diagnostic categories, as well as patient characteristics such as age and number of comorbidities. Resource intensity weights were not available for the HMHDB data; thus, an average per-diem value was used to estimate the costs. Expenditures were scaled up to the value of hospital expenditures noted in the NHEX. As hospital data for Quebec were not included in the administrative databases, total Quebec hospital expenditures

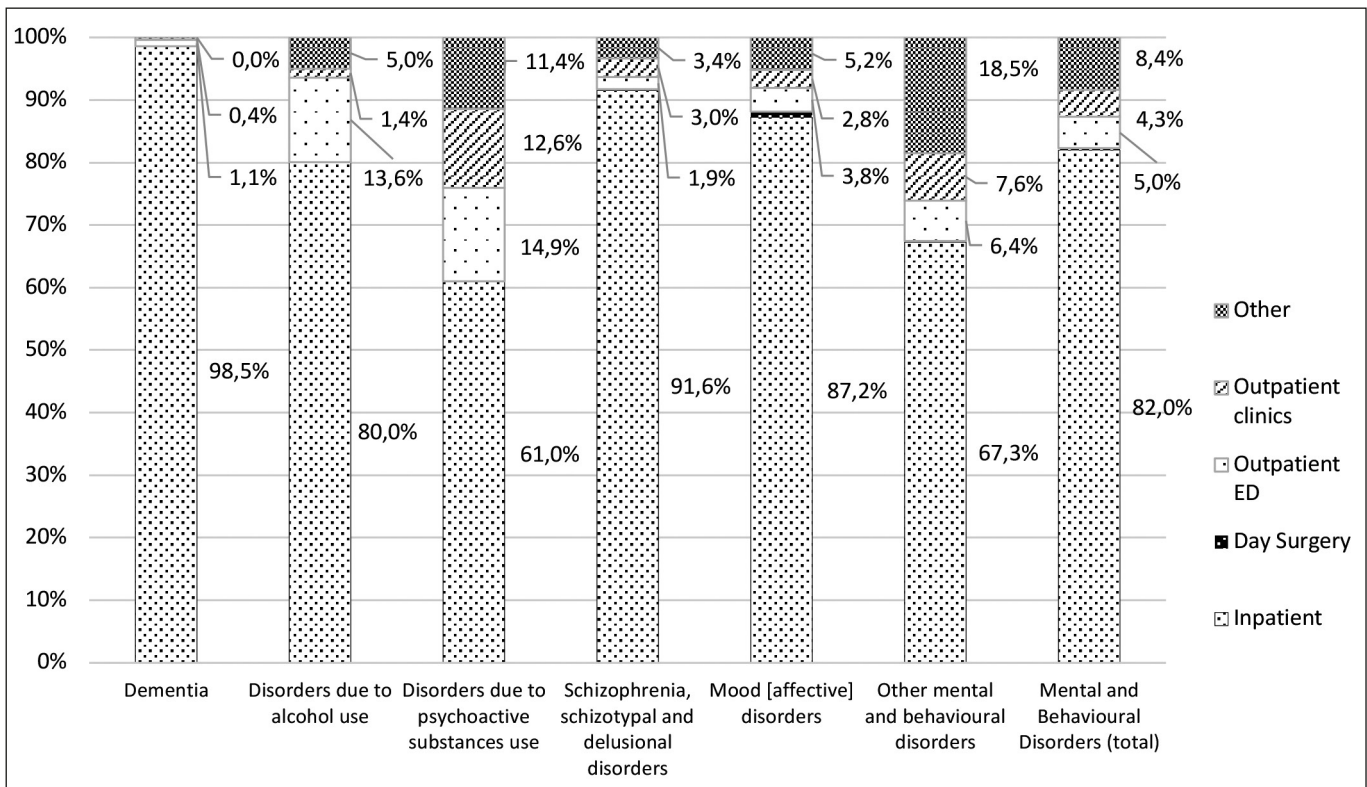


Figure 1. Hospital Spending by Health Care Function and ISHMT Code, Canada, 2019.

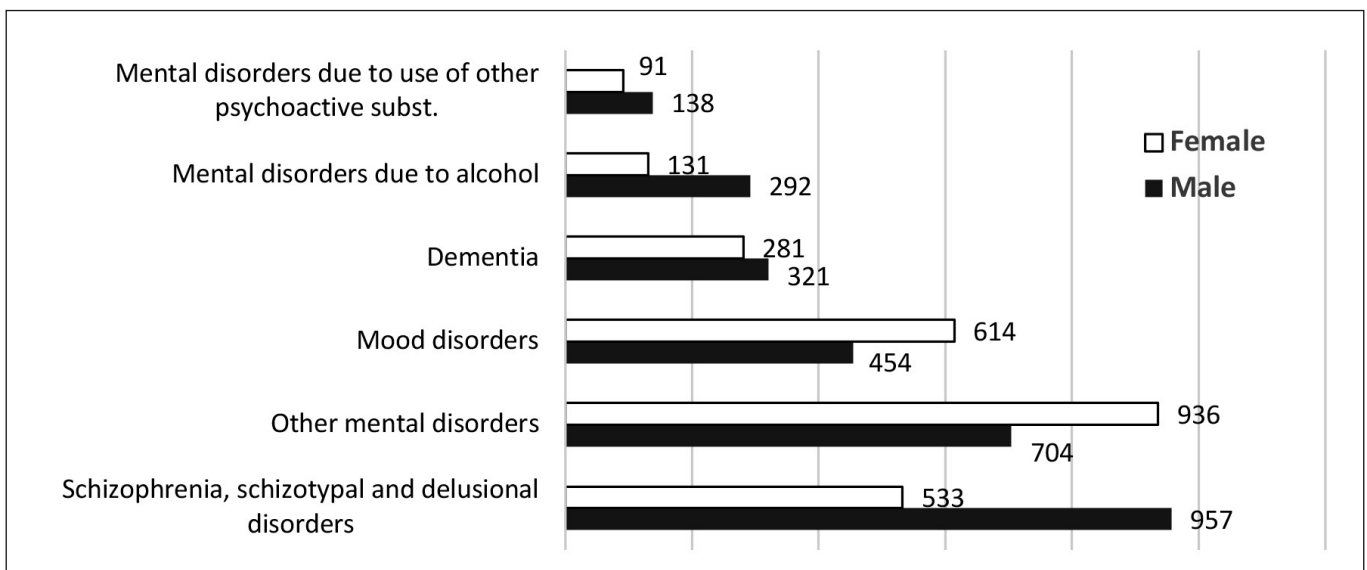


Figure 2. Hospital Expenditures on Mental Disorders By ISHMT Group and Sex, Canada, 2019 (millions of dollars).

as noted in the National Health Expenditure database were derived using the distribution obtained from the other provinces and territories.

Hospital expenditures include all costs associated with operating and maintaining the hospitals, drugs, medical supplies, therapeutic and diagnostic services, administrative costs, some research costs, accommodation, meals, wages for hospital staff, and hospital maintenance. The hospital expenditure data do not include spending on physician services provided in hospital; these expenditures are covered under physician expenditures.

In 2019, spending in all hospitals on mental health services was \$5.5 billion or \$145 per capita; \$2.4 billion of these expenditures were spent in psychiatric hospitals. The hospital expenditures on mental illness represented 7.6% of total hospital expenditures. Hospital expenditures were further broken down by health care function, specifically: inpatient care, day surgery, emergency department visits, and outpatient clinics (see **Table 2**).

Inpatient hospitalizations accounted for the majority of mental health hospital expenditures – \$4.5 billion, or 82%.

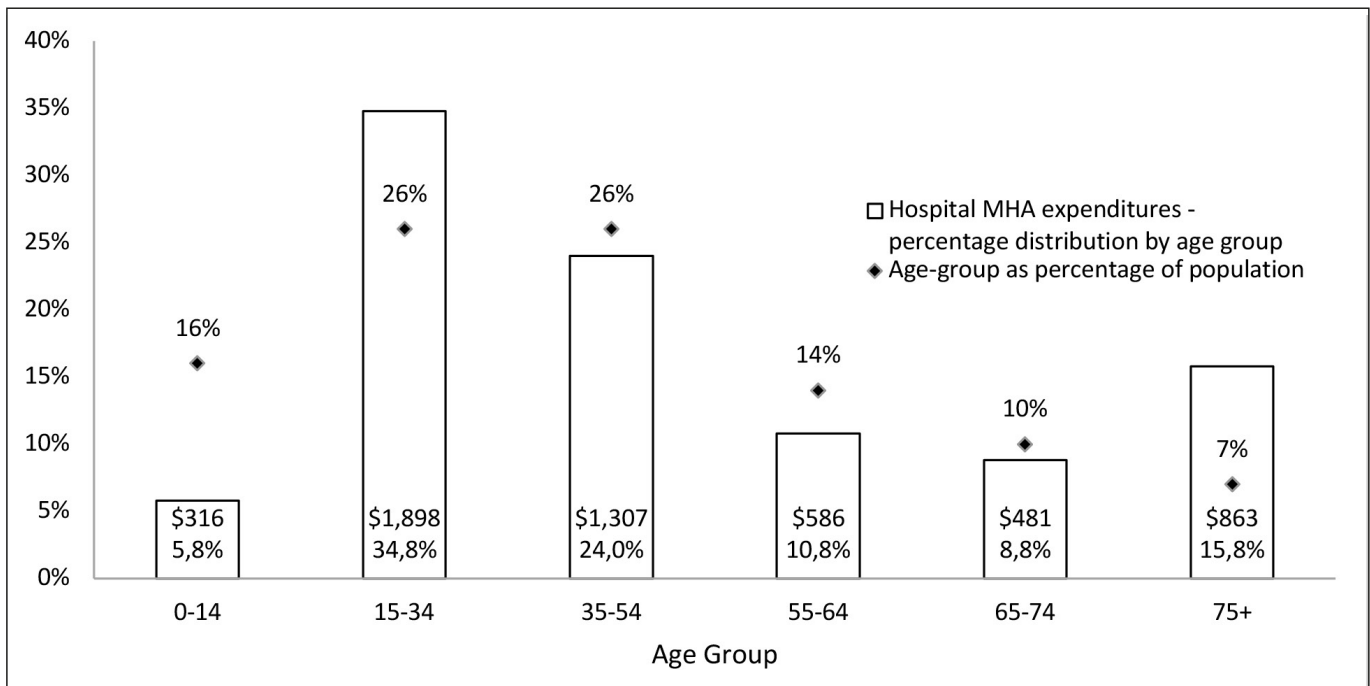


Figure 3: Hospital Expenditures on Mental Disorders by Age-group, Canada, 2019 (millions of dollars).

However, there was a large variation of spending according to health care function when examining the specific types of diagnoses. For example, 99% of dementia-related expenditures were on inpatient care, while only 61% of hospital care for psychoactive substance use was related to inpatient care (see **Figure 1**).

Figure 2 shows the breakdown by diagnosis and sex. Males accounted for a greater share of the expenditures for each diagnosis category with exception of “Mood disorders” and “Other mental disorders” categories. In particular, the hospital costs associated with schizophrenia, schizotypal and delusional disorders were 1.8 times higher for males compared to that for females.

Examining breakdowns according to age-group, approximately 35% of hospital expenditures occurred in patients who were 15 to 34 years old, although they account for only 26% of Canadian population. Nearly 16% of hospital expenditures occurred in patients who were 75 or older, while they accounted for 7% of the Canadian population (see **Figure 3**).

Physician Expenditure

In Canada, most physicians are paid according to a fee-for-service schedule (71%), while the remainder are remunerated according to alternative payment plans including salary, sessional, capitation, block funding, contract, and blended schemes.

The National Physician Database contains physician payment from provincial and territorial budgets, as well as utilization data.²¹ Included in this database is information on physician and specialty type, as well as a classification based on the National Grouping System. This system organizes fee codes into homogenous categories for each province and territory, which allows for comparisons of physician services

and activities across the country. To estimate mental health expenditures, the expenditures associated with fee-for-service payments provided to psychiatrists and the compensation paid for psychotherapy and counseling services provided by other types of physicians were compiled. Information on patient age or sex is not available from this database, nor can physician expenditures be broken down into inpatient/outpatient care.

Data on alternative payments to physicians are also collected for all provinces and territories, except for Nunavut. Psychotherapy and counseling services are part of the service basket for which alternative payments are made; however, their portion cannot be identified in the total payment. Thus, the portion of psychotherapy/counseling in total *fee-for-service* payment was applied to the alternative payment expenditures.

Total clinical payments to general practitioners and specialists for psychotherapy/counseling and to psychiatrists were \$2.7 billion or \$71 per capita. From this, almost \$2 billion were in fee-for-service payments and the rest - in alternative payments. Psychiatrists received the largest share of the total clinical payments, i.e., \$1.6 billion, whereas \$0.9 billion were paid to general practitioners and \$0.1 billion were paid to specialists (other than psychiatrists).

Prescription Drug Expenditure

For this study retail claims data and physician prescribing data were employed from two IQVIA databases: CompuScript (CS) and the Canadian Disease and Therapeutic Index (CDTI) - to determine prescription drug expenditures related to the treatment of mental illness.^{22,23} The CS database contains information on prescription drug expenditures in retail pharmacies across Canada. The CDTI database col-

Table 3. Prescription Drug Expenditures on Mental Disorders by International Shortlist for Hospital Morbidity Tabulation (ISHMT) Group, Canada, 2019 (millions of dollars).

ISHMT code	Diagnoses / Conditions (ICD-10-CA* Codes)	Expenditures (Millions of \$s)
500	Mental and Behavioural Disorders (F00-F99)	4,315.0
501	Dementia (F00-F03)	24.4
502	Mental and behavioural disorders due to alcohol (F10)	109.7
503	Mental and behavioural disorders due to use of other psychoactive substances (F11-F19)	287.9
504	Schizophrenia, schizotypal and delusional disorders (F20-F29)	404.7
505	Mood [affective] disorders (F30-F39)	1,317.8
506	Other mental and behavioural disorders (remainder of F00-F99)	2,170.6

Note: *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA), chapter V - Mental and behavioural disorder.

lects information on diagnosis and related prescription drug recommendations from a panel of Canadian physicians. The database identifies the relative proportions of medications prescribed by diagnosis. This information was used to map prescription drugs to diagnoses. Using the mapping, the expenditure values obtained from the CS database were allocated across diagnostic categories. Like hospital expenditures, pharmaceutical expenditures were separated into mental and behavioural disorder categories according to ISHMT.

Prescription drugs for mental health treatment and services accounted for \$4.3 billion or \$115 per capita, representing 12.5% of total prescription drug expenditure in 2019. The publicly funded share of the drug expenditures on mental disorders was 43.3% or \$1.9 billion. Two groups, mood disorders and “other disorders” comprise 81% of the total drug expenditure on mental disorders (see **Table 4**).

Community-based Care Expenditure

Community mental health care, generally, refers to those types of treatments and programs received in a community setting. Note that although many physicians who are general practitioners provide services in community settings, these services are covered under physician expenditure, thus, double counting is avoided. Community care services include such items as residential treatment centres, transitional care, and home care, community outreach programs, housing support, outpatient programs and more.²⁴ These types of services may be provided through hospitals, health clinics, or community agencies. It is recognized that care in community plays a key role in the landscape of mental health services in Canada. Over time the provision of mental health services in Canada has shifted from institutional (mostly hospital-based) to community-based settings. Community mental health care has been recognized as cost-effective in comparison to institutional care and allows individuals living with mental health conditions to have more fulfilling lives with greater community engagement and increased employment opportunities.²⁵

Estimating expenditures for community mental health services presents greater challenges than estimating ex-

penditures for the other types of mental health services. First, given the diverse types of services, which can range in scope, and involve various providers, data on such expenditures tend to be incomplete with reporting varying across jurisdictions. Furthermore, while the SHA’s functional classification provides clear definitions and boundaries related to what should be included under the health care function and health care provider categories, some uncertainties still exist, particularly with the determination of spending on residential and community care services. This is because it is often not possible to separate the resources which contribute directly to health care from activities that may accompany or follow the provision of health care services (e.g., long-term social care or activities related to enhancing the social integration and participation of disabled persons). While the SHA does provide codes for expenditures related to social care, it is often not possible to separate social care expenditures from health care expenditures when they may be financed as a complete bundle of goods and services.

The Canadian Institute for Health Information provided updated analyses based on previously published estimates of the expenditures related to community care for mental health using two alternative approaches.^{24,26} One approach employed the NHEX data, while the other employed the Canadian Management Information System Database (CMDB). As each database employs different classification and coding systems, as well as varying coverage of provinces and territories, the results are not directly comparable. Scaled up to represent the entire population, the mental health expenditures related to community care were \$2.7 billion and \$2.9 billion (\$71.7 and \$78.1 per capita), using 2019 NHEX data and 2019 CMDB data, respectively.

There are, however, significant gaps in both data sets as expenditure data related to community mental health services are often not explicitly identified. As a result, there is significant variation in the estimated per capita expenditures across provinces and territories (from \$5 per capita to \$492 per capita). Using the median estimate across both analyses results in a per capita expenditure of \$95.3, or a total expenditure of \$3.6 billion; this estimate is used in the remainder of this paper.

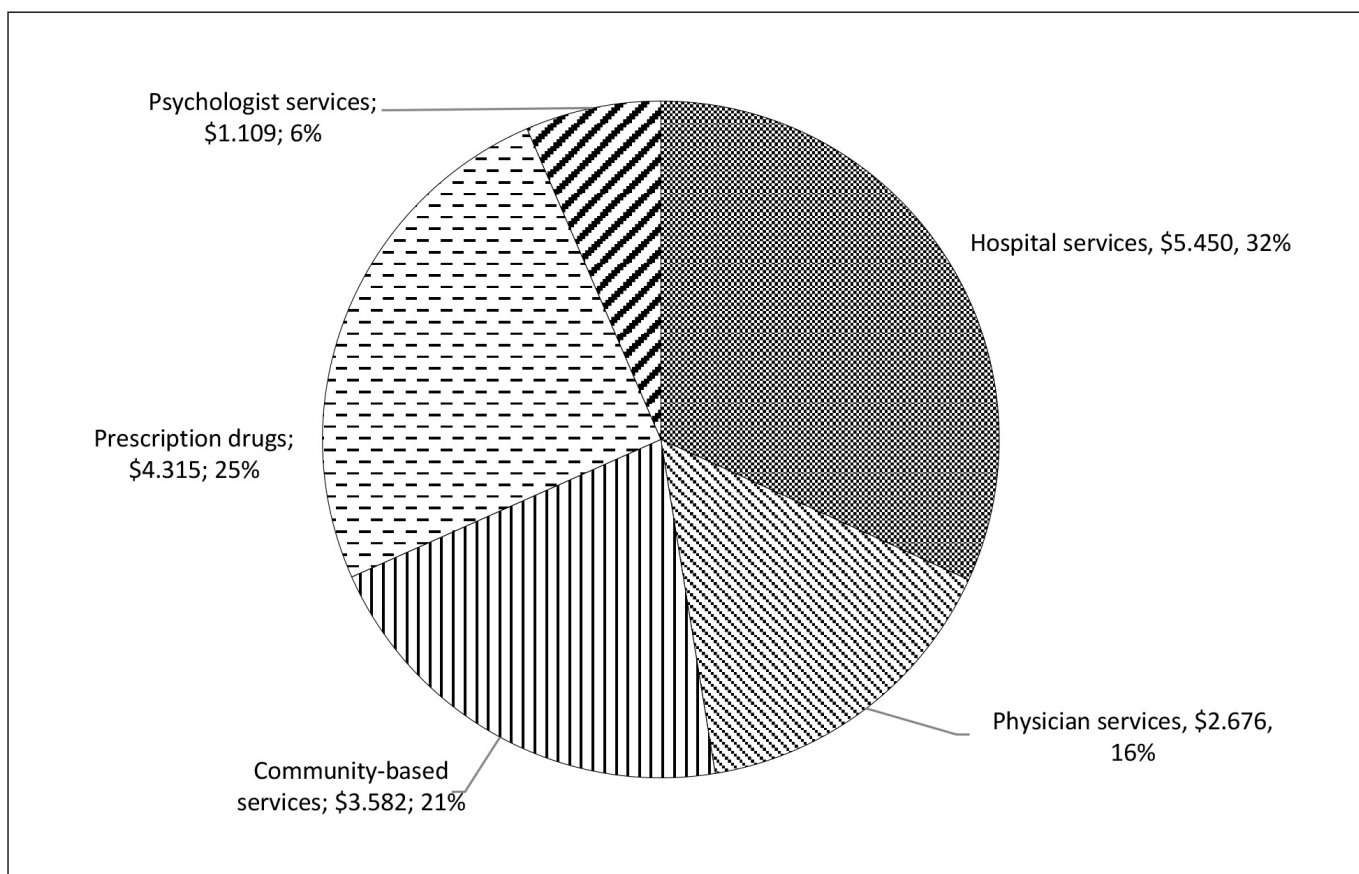


Figure 4. Direct Health Care Cost of Mental Health Services by Provider Category, Canada, 2019. (millions of dollars).

Expenditure on Psychologist Services

In Canada, psychologist services are, generally, privately funded with most expenditures made by the individual out-of-pocket or reimbursed by insurance firms. Since primary data on expenditures for psychologist services were not available for this analysis, an estimate was obtained from a recent report on access to psychological services in Canada, prepared for the Canadian Psychological Association.²⁷ The authors of the report estimated psychological services spending at \$950 million for year 2010. Inflating this to 2019 dollars resulted in an estimated \$1.1 billion, which is used in the remainder of the paper. Thus, services by psychologists account for 3.9% of expenditures on “Other health care professionals” (other than physicians) from NHEX.

In comparison, the Canadian Life and Health Insurance Association (CLHIA) estimated that \$580M in claims were paid out by Canadian insurers in 2021 for psychological services.²⁸ As per personal communication with CLHIA, this payment comes from the extended health benefit for mental health and is likely among the most common ways to pay for psychology services among the insured. In 2019 the coverage varied from \$300 to \$10,000 per person per year. Other programs, such as Employee and Family Assistance Programs are not included in this estimate.

Public Versus Private Expenditures

According to the NHEX data, in 2019, public spending accounted for 90.3% of hospital expenditures and 43.3% of prescription drug expenditures. Thus, publicly funded hospital expenditures on mental disorders were estimated at \$4.9 billion, while privately financed – at \$0.5 billion. Publicly funded prescription drug expenditure estimated at \$1.9 billion, while the privately financed – at \$2.4 billion. All the expenditures for community care were allocated to the publicly funded category; expenditures for psychologist services were designated as privately financed as data were otherwise lacking. Overall, approximately 75%, or \$13.1 billion, of the total mental health expenditure was publicly funded.

Summary

Total expenditure for mental health treatments was estimated at \$17.1 billion in Canada in 2019. **Figure 4** provides a breakdown of this spending by provider/setting. Hospital services (inpatient and outpatient) represent the largest component totaling \$5.5 billion or 32% of total mental health spending. They are followed by expenditures on prescribed pharmaceutical drugs of \$4.3 billion (25%), community-based care of \$3.6 billion (21%), physician services of \$2.7 billion (16%) and services of psychologists in private practice of \$1.1 billion (6%).

Discussion and Conclusions

This study estimated the direct cost associated with the treatment for mental health in Canada based on international guidelines using the OECD System of Health Accounts. Consistent and comparable estimates such as these can be used to better understand how resources are being used in the treatment of mental health, including key cost drivers, and the impact of policy changes, as well as to undertake reliable inter-jurisdictional and international comparisons.

Notwithstanding differences in data sources and methods employed, the results for similar cost components, are comparable to those found in the previous studies, albeit on the higher side. This is mainly due to differences in the estimates for expenditures on physician care and prescription drugs. Further analysis may be warranted to better understand these differences and ensure that the most appropriate methods are utilized in such costing exercises. Of particular interest is the large discrepancy between our results and the mental health expenditures derived by CIHI (2019).¹¹ The latter estimate included significant data gaps, i.e., key geographical areas were excluded, and the methods employed did not allow for a more comprehensive set of service components. Also, note that the CCSA (2020)¹² study which focused only on the costs associated with substance use estimated direct health costs to be \$7.2 billion, which represents 42% of the *total* costs for mental health treatment estimated in this study. To that end, the CCSA study took an attributable fraction approach to account for the portion of health conditions attributable to substance use (for example, injuries and liver diseases due to alcohol). The other studies, including ours, did not account for the costs associated with such risk factors. In addition, none of the studies estimated the extra burden associated with poorer physical health as a result of having a mental health co-morbid condition, which can be a significant burden.²⁹ Based on our estimate, expenditures directed towards mental health treatment accounted for 6.4% of total current health expenditures, and 6.9% of public health expenditures, in 2019. This is on par with the OECD average of 6.7% for twenty-three countries.² The previously reported OECD estimate for Canada of 10.6% is calculated using a denominator consisting of three expenditure components, i.e., hospital, prescription drug and physician service, rather than of the total health care expenditure, (the latter includes community-based services by other providers, dental services, administration, etc.) resulting in a larger ratio. This finding, however, highlights issues around the scope and methods employed in deriving such estimates, including what components are included in both the numerator (mental health expenditures) and the denominator (total health expenditures) of this ratio. As noted by the OECD, “There remain significant methodological challenges in collecting and comparing mental health spending, in particular scope of what services are included, whether all age groups are included, whether dementia is included, and whether government expenditure or all expenditure is included.”²

As discussed, this analysis has several limitations due to significant data gaps for some of the cost components. Data challenges are considerable to access private expendi-

ture data, including out-of-pocket and third-party insurance spending on mental health services in Canada. Primary data on privately funded psychotherapy services delivered by psychologists or other providers, privately purchased residential mental health services or formal caregiving are lacking. With respect to hospital expenditures, it was not possible to break the expenditures down by type of hospital (e.g., general, psychiatric) and function due to data limitations. Such information would be valuable in helping to understand where, and how, mental health care is being provided.

Community-based mental health services remain an area with significant data gaps, often due to the fact the mental health spending cannot be separated from spending on other types of community and social care and may be included in other public health spending. Given data challenges, the estimate for community care expenditure is likely low. In addition, direct federal funding for mental health services for certain population groups, i.e., First Nations people living on reserves, Inuit, serving members of the Canadian Armed Forces, eligible veterans, and inmates in federal penitentiaries, was outside the scope of the study.

Direct costs are likely only a fraction of the overall economic burden of mental ill-health. Indirect costs in terms of lost production due to unemployment, absenteeism, and sub-optimal productivity while at work – all associated with mental ill-health – may be substantial for Canadian economy and society. A recent study in the United Kingdom found that productivity losses due to mental ill-health are larger than the healthcare costs.²⁵

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