The Cost of Mental Health and Substance Abuse Services in Canada

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THE COST OF MENTAL HEALTH AND SUBSTANCE ABUSE SERVICES IN CANADA

A report to the Mental Health Commission of Canada

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EXECUTIVE SUMMARY

Mental health is a field where resources for services and supports cut across private and public sectors. Within the public sector, a multitude of government agencies are players in financing mental health services. The private sector payers included insurers, employers, and patients. Consequently, it is not surprising that the literature on mental health costs in Canada has many gaps. A single resource that tracks expenditures or identifies sectors does not exist. A mental health system perspective has been lacking. Most of the descriptions have focused on particular silos including inpatient and physician services. The task of understanding the flow of funding is no less daunting due to incomplete records and lack of detail. The absence of data that give a broad picture of where resources are being allocated makes it difficult to set policies. Furthermore, it is difficult to project future needs for system sustainability and improvements without information about the present.

To begin to obtain an overview of the mental health system, we measure the direct expenditures of mental health services across sectors where we could find them. The figures are actual expenditures in each province in 2007/08. These include expenditures for services and cash payment, but exclude indirect costs of unpaid resources. Although incomplete, this approach yields estimates that reflect the lower bounds of what is actually provided the different sectors in each province.

Some of the key findings are:

- A total of at least $14.3 billion in public expenditures went towards mental health services and supports in Canada.
- The largest component of costs was pharmaceuticals followed by hospitalization.
- In Canada, 7.2% of total government health expenditures go to mental health.
- Nonprofit mental health organizations reported receiving $847.9 million from provincial sources, $18.3 million from municipal sources and $41 million from Federal sources.
- Annually, the private sector spends between $180 and $300 million on short-term disability benefits related to mental illnesses. For long-term disability benefits related to mental illnesses, $135 million was paid.

- In an international context, Canada spends less than most developed countries; the ratio of government mental health to all government health spending is 7.2%, several points lower than the UK and Sweden.

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INTRODUCTION

In times past, people living with severe mental health problems and illnesses were sent away to psychiatric institutions where they received clinical, residential, custodial services, and sometimes employment support in protected workshops -- all provided within the same institution. The resources used to provide these services could be readily identified and measured.

Over time, there has been increasing recognition that many people living with mental health problems benefit from receiving services outside the institutional setting. This has led to changes in the organization of mental health services which can enable persons with mental illness to live meaningful lives in the community. The associated resources that are used to treat their mental illnesses, promote their mental health and well-being, and enable them to live in the community have become widely scattered across different ministries of government, health regions, private, and non-profit organizations. Other functions have been shifted to families and other informal caregivers.

While there is variation across provinces in health care delivery, some generalizations can be made. The health ministries pay for psychiatrists' services and for outpatient as well as inpatient care. The health regions and local area networks provide inpatient, emergency, and community mental health services, including some psychologist services and supportive housing. Health regions are directly funded by provincial governments. Social services departments provide or fund a range of services including income and housing support, and other services. Labour departments are contracted to train persons who formerly would have worked in sheltered workshops and they assist employers to hire them. Transport departments facilitate trips between home, work, and clinic. Law, justice, and corrections departments and the courts provide assessment and treatment services; often, these departments form partnerships with health and other ministries to provide court diversion and court support programs. Non-profit organizations are prominent in providing services such as special care to persons with mental illness, mostly under contract to governments.

With regard to the private sector, larger companies offer supportive services through employee assistance plans (EAPs) to promote the mental health of employees with or without mental

illness. These large employers provide supplemental health benefits that allow employees to access pharmacological treatments and counseling provided by some types of professionals. They also provide support through occupational health departments and disability management plans to help employees reintegrate into the workforce following absences for medical reasons. Addictions services, once considered in a realm of their own, are becoming an integral part of the new system.

In the process of this, still emerging, transition, we have lost our ability to measure the resources used to treat mental illness. We can accurately measure many of the traditional services, namely general hospital inpatient services and psychiatrist visits. But we have large information gaps in measuring the increasingly important outpatient, emergency department services, community mental health services, and doctors' services that are paid for under alternative payment plans. We can also measure the overall use of psychiatric drugs, many of which are not covered by provincial health plans, though in most provinces we do not know who uses them. As for social services, which are provided by or funded through a range of ministries, we very rarely know how many services, of what kind, are provided, and we don't know their costs.

Policymakers need information on the services used and their effectiveness, the resources that are needed to produce them, and their costs, as well as the number of persons affected and served, in order to plan and assess strategies. Budget analysts and planners also need this data to project adequate funding for the services.

As pointed out, the organization of mental health care today is widely diffused and there are many data gaps. The objective of this project was to fill as many gaps as was possible in order to develop estimates of the costs, by province, of providing services for persons with mental illness that are related to their conditions. We selected the fiscal year 2007/8 as our reference year. We sought to obtain data for as many different types of services as possible - public, non-profit, and private – recognizing that there will be reporting gaps. This report was carried out at the request of the Mental Health Commission of Canada, who wanted to determine the economic scope of mental health services in Canada.

METHODS

Scope of the Study

The cost of mental illness can be divided into four components. These are:

(1) mental health promotion and preventive services for high risk persons and for the general population;

(2) mental health and social services provided to people with mental illness that are related to their condition;

(3) services provided by non-mental health professionals (teachers, policemen, prison personnel) that are the result of their encounters with persons who have mental illnesses; and

(4) losses that are imposed on persons with mental illness, their employers and families, and others, including reductions in productivity and quality of life, and criminal damages.

Our intent is to measure the cost of mental health and related services (item 2). We list the service items used in the analysis in Figure 1.

The government health care sector has received the most attention in costing studies. Most costs in this sector are driven by medical doctors who treat patients, admit them to hospital and discharge them, and prescribe pharmaceuticals. Some services are performed by non-medical professionals, such as psychologists, nurses, and social workers when they are working within the health-care system. Addiction treatment can be included here but sometimes it is part of the government social service, non-profit, or private sectors.

Government departments other than health ministries also pay for services to people with mental illness. These include provincial social services departments, provincial and federal human resources departments, and local governments. These services are usually oriented towards a wider group that includes all people experiencing a disability or who are financially disadvantaged. They include homeless shelters, supportive housing, non-medical professional care, and employment support. We include income supports in this sector as well. These are not direct payments for *resources*; rather they are payments to offset low incomes, but they are the

cornerstone of social policy services for people with severe mental illness. Usually costs for people with mental illness are not identified separately.

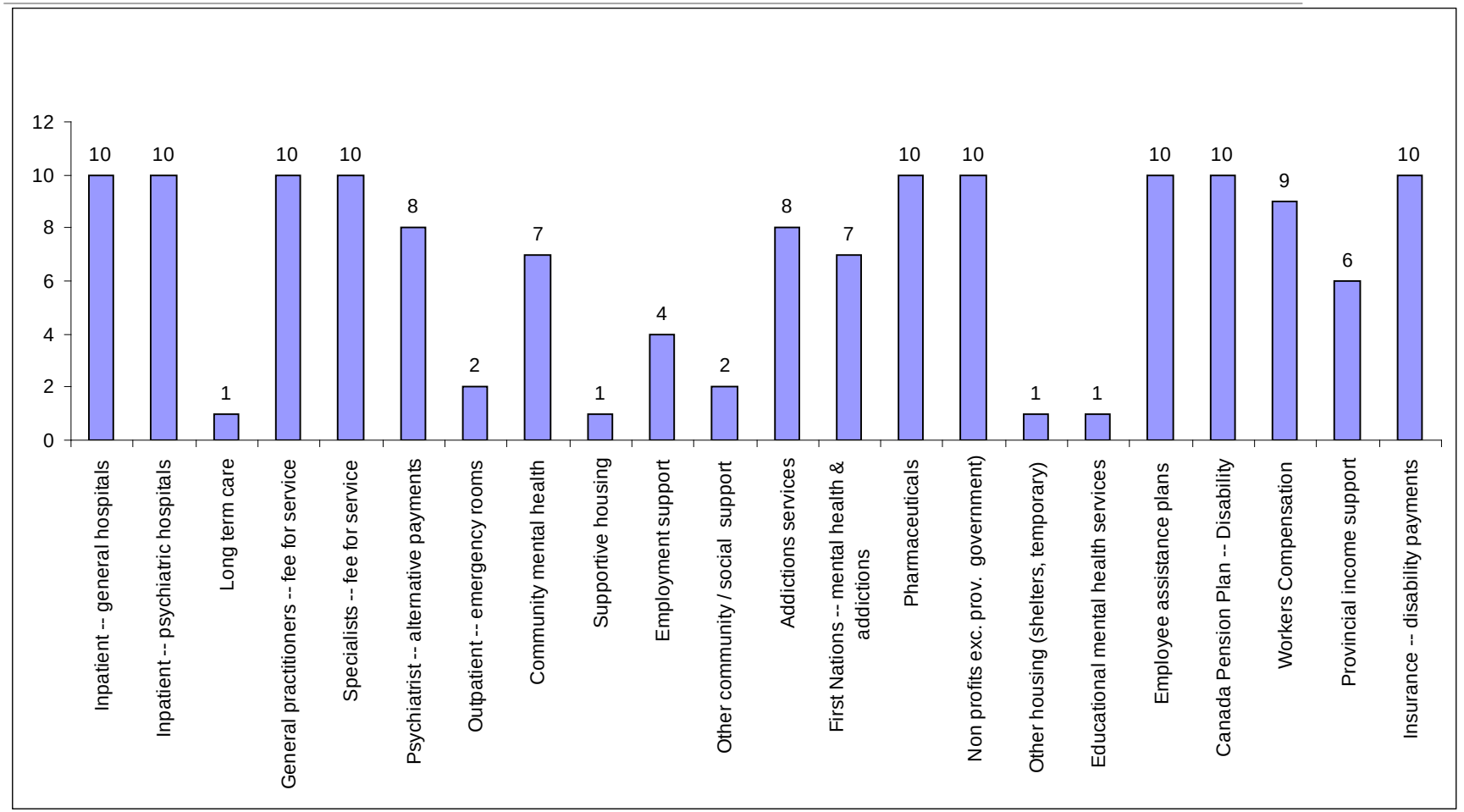
Provincial and federal justice and corrections departments provide a wide range of services that are related to mental illness. Data on these services are rarely available.

Nonprofit organizations are prominent providers of social services such as supportive housing, support groups (for patients and families), caregiving, and respite care. These organizations fill in many of the service gaps in the mental health system. They usually operate with government funding, but a small portion of their revenues come from philanthropic sources. In this report we count those services paid by government as governmental services, even though they are provided by nonprofit organizations. In some parts of Canada they would be major providers of community mental health services, for example Ontario, and Prince Edward Island. In other parts of Canada they would have a more limited role as many community services are provided directly by health regions.

Services related to mental health are also provided in the workplace. Many employers offer mental health-related services through employment assistance plans and supplemental health benefits for counseling and pharmaceutical treatments. Past and present employees receive psychiatric disability payments from private insurers; we include these in the same way that we included government disability payments.

Researchers have identified large losses in productivity in the workplace that are related to mental illness; these losses are not included in our analysis as they are not services. Services that are excluded from our report are those provided by certain professional groups in non-health sectors – teachers, police officers, prison personnel, and solicitors. These professionals provide services to people with mental illness as well. Although mental health care may not be the prime purpose of their actions, these persons take extra time when they provide services to those with mental illnesses. We exclude many of these costs because of difficulties in obtaining data for them.

Figure 1: Number of provinces for which data is available, by service



Definitions

(a) A mental disorder is defined as an alteration in behavior, thinking, or mood that is associated with distress, disability, or increased risk of death. Mental retardation is not included in this definition because it is a lifelong condition as opposed to a disorder (see American Psychiatric Association, 1994 and Public Health Agency of Canada, 2002).

(b) Mental health services related to mental illness fall into two groups:

  (i) Services that are provided, supervised, or ordered by health and mental health professionals. These include services provided by general practitioners, psychiatrists, psychologists, social workers and nurses, pharmaceuticals, and hospitalization.

  (ii) Other services provided that can either be oriented towards persons with mental illnesses or to broader groups, which include people with mental illness. These include income support, employment support, assisted housing, and other types of support.

(c) Our objective is to measure the cost of providing these mental health services. We include both:

  (i) **Produced services:** Those that are produced with physical resources (personnel, pharmaceuticals, buildings). These are directly paid for by the government, the nonprofit or private sectors, or out of pocket.

  (ii) **Income support**: Those payments made directly to people with mental illness. For people with low incomes, these payments come from the government (income support). For people who are employed and experience disability related to mental illness, the income support can come from employer sponsored insurance (benefits).

(d) We also want to measure the number of persons receiving services, but this is not usually available.

(e) The main focus of our analysis is on costs according to the types of services provided.

(f) We exclude extra services provided by non-health professionals such as school teachers and policemen and household production (informal caregiving services). These items are beyond the scope of our study.

(g) We exclude indirect costs, such as productivity or income losses due to disability and absenteeism. These are not services.

(h) The cost of services is the total cost paid for all the resources that are used to produce them. These are reported separately.

(i) Costs are for Fiscal Year 2007/8. Where data are only available for an earlier year, we updated the cost using the Statistics Canada Consumer Price index for the specific province.

(j) Mental health promotion is a preventive activity, oriented towards persons who are at risk but not being treated for mental illness. These costs are beyond the scope of the analysis. In some cases we cannot separate them from general mental health services where mental health promotion is embedded in the cost calculation. We did not make any attempt to separate them, as the data is not usually available.

(l) Costs are for services provided in one year, for all persons with mental illness. This includes both new (incident) and existing (prevalent) cases.

(m) Where possible, we use uniform definitions and methods across provinces.

Data sources

Hospital inpatient data (except for Quebec) and physician billings were developed from the Canadian Institute for Health Information's (CIHI) national data bases. Pharmaceutical expenses were obtained from the IMS Health database (a private national sample of pharmaceutical prescriptions) and federal disability pension payments were obtained from Human Development and Resources Canada. Services from nonprofit organizations were obtained from Revenue Canada's T3010 annual returns.

All other provincial data were obtained from provincial sources. Service definitions were not standardized. Of note, community mental health services were generally reported as aggregated figures and included a variety of services such as supportive housing, case management and addiction services. Often a breakdown was not available.

In other areas, namely mental health services in the educational system, supportive housing and housing for homeless people with a mental illness, estimates were obtained from special one-time studies, conducted by the Institute of Health Economics (IHE) or others.

We present our methods in detail in the data appendix of this report.

RESULTS

In Figure 1 we present a graph of the number of provinces where we could obtain data for each service. We obtained estimates for costs in all provinces for hospital care, physicians' paid by fee-for-service, all pharmaceuticals, First Nations addictions services (funded by the federal government), non-profits, employee assistance plans, and federal disability pensions. We obtained data for eight or nine provinces for psychiatrist alternative payments, provincial addictions services, and workers' compensation for mental illness claims that are recognized. There are a number of services where few provinces collect data. These include mental health services for family doctors under alternative payment, long term care, hospital ambulatory care, and some social services. We obtained data from one-time studies for homeless shelters and education. We obtained data on community mental health from six provinces. There is no accepted definition of this very important component of care. Some provinces may have greater coverage than is shown in our chart. In some provinces, addiction services are integrated with community mental health.

In Table 1, we show the total dollar costs for the data that was available. In total, we identified costs of $14.3 billion for 2007/8. We note that we could not obtain data for all services in each province; therefore, this amount is not a complete accounting for costs of the identified services. Of the services identified, the largest component was pharmaceuticals (privately and publicly funded), whose total was $2.8 billion. Hospitalization (general and psychiatric) was second with a cost of approximately $2.7 billion. Though community mental health was only reported for six provinces, costs in this category amounted to almost $1.5 billion. Costs for provincial income support in six provinces was $1.2 billion. In these latter two cases the largest two provinces were included in the reporting group.

Of the total reported costs, about $10.6 billion was for services and $3.7 billion was for disability payments. Although disability income supports are not payments for resources, they are a very important indicator of support for those persons with mental illness who incur income losses.

These costs were not standardized for population, nor were they adjusted for unreported data. The assessment of data reporting is important for determining where we need to focus our attention to obtain a more complete accounting for costs.

Table 1: Total expenditures for all reporting provinces and services

MHEX TOTALS ($MILLIONS) - 2007/08	NF	PEI	NS	NB	QC	ON	MB	SK	AB	BC	TOTAL
Produced services											
Inpatient	$55.9	$15.2	$62.0	$78.2	$737.2	$993.6	$128.9	$60.0	$339.3	$303.0	$2,773.3
Inpatient -- general hospitals	*$24.9*	*$10.1*	*$46.2*	*$68.1*	*$487.3*	*$475.6*	*$106.9*	*$49.8*	*$199.1*	*$249.4*	*$1,717.4*
Inpatient -- psychiatric hospitals	*$31.0*	*$5.1*	*$15.8*	*$10.1*	*$205.4*	*$518.0*	*$22.0*	*$10.2*	*$140.2*	*$53.6*	*$1,011.4*
Long term care					$44.5						$44.5
Physicians	$14.8	$4.8	$19.9	$23.2	$248.8	$787.2	$38.9	$30.6	$134.0	$124.8	$1,427.1
General practitioners -- fee for service	$1.1	$0.9	$0.3	$4.2	$51.2	$181.2	$3.1	$8.3	$46.9	$29.0	$326.2
Specialists -- fee for service	$5.2	$0.7	$7.3	$5.8	$83.9	$320.6	$23.9	$8.6	$87.1	$95.8	$638.9
Psychiatrist -- alternative payments	$8.5	$3.2	$12.3	$13.2	$113.7	$285.4	$11.9	$13.7			$461.9
Community and social	$12.6	$15.8	$26.0	$49.2	$682.3	$1,443.6	$90.8	$109.3	$252.5	$264.5	$2,946.6
Outpatient -- emergency rooms						*$46.0*			*$19.2*		*$65.2*
Community mental health		$6.9		$32.4	$565.4	$661.9	$44.0	$49.1	$103.8		$1,463.5
Supportive housing										$156.9	$156.9
Employment support		$1.8			$5.4		$2.4			$6.2	$15.8
Other community / social support						$506.7				$80.0	$586.7
Addictions services		$7.1	$26.0	$16.8	$99.8	$196.4	$22.3	$40.7	$102.0		$511.1
First Nations -- mental health & addictions	$12.6	----------	----------	---------->	$11.7	$32.6	$22.1	$19.5	$27.5	$21.4	$147.4
Pharmaceuticals	$42.2	$13.3	$95.2	$77.8	$785.0	$984.4	$99.2	$68.2	$293.3	$356.3	$2,814.9
Public	$15.9	$4.4	$38.1	$26.0	$391.7	$443.0	$46.9	$35.8	$133.7	$140.0	$1,275.6
Private	$26.3	$8.9	$57.1	$51.8	$393.3	$541.4	$52.3	$32.4	$159.6	$216.3	$1,539.3
Other services	$5.5	$2.2	$8.8	$6.4	$69.5	$218.2	$12.0	$25.2	$213.9	$95.3	$657.0
Non profits exc. prov. government)	2.5	1.2	2.3	1.2	13.5	125.9	3.3	17.8	68.0	13.4	$249.1
Other housing (shelters, temporary)										$50.6	$50.6
Educational mental health services									$118.0		$118.0
Employee assistance plans	$3.0	$1.0	$6.5	$5.2	$56.0	$92.3	$8.7	$7.4	$27.9	$31.3	$239.3
Income support	$29.8	$13.6	$58.3	$35.7	$213.9	$1,459.8	$101.2	$28.0	$91.3	$157.1	$3,728.7
Public											
Canada Pension Plan -- Disability	$22.5	$8.2	$58.1	$35.7	$4.0	$474.7	$37.5	$17.0	$89.8	$146.9	$894.4
Workers Compensation	$0.0	N/A	$0.2	$0.0	$15.4	$4.9	$0.5	$2.6	$1.5	$10.2	$35.3
Provincial income support	$7.3	$5.4			$194.5	$980.2	$63.2	$8.4			$1,259.0
Private Insurance -- disability payments											
Long term disability											$1,300.0
Short term disability											$240.0
Totals (millions)	$160.8	$64.9	$270.2	$270.5	$2,736.7	$5,886.8	$471.0	$321.3	$1,324.3	$1,301.0	$14,347.6

In Table 2 we present the per capita values for all services in those provinces where data was available. The average values for specific services are shown in Figure 2. The weighted value of services with the largest per capita values are pharmaceuticals ($85 per person, of which $38 was for government funded drugs), inpatient hospital services ($82 per capita), and community mental health ($54 per capita), and income support ($82 per capita). Community mental health services are not identified the same way in each province and so this statistic is difficult to interpret because it reflects different baskets of services and differences in the quality of services provided.

There was a wide variation between provinces in all groups. Inpatient services varied from $59 per person (Saskatchewan) to $110 (Newfoundland). Physician services varied from $28 (British Columbia) to $61 (Ontario). Pharmaceuticals varied from $67 (Saskatchewan) to $104 (New Brunswick). No single province, overall, had consistently low, or high, values. That is, the mix of services varied considerably between provinces.

The weighted value of all services was $549. Of the identified costs, 45% were government mental health and addictions expenditures, 10% private health care (including pharmaceuticals), 15% government social services, and 23% government – financial. These are shown in Figure 3. The estimated value of all costs for Canada is $14.3 billion.

Table 2: Per capita costs for reporting mental health services, by province

PER CAPITA	NF	PEI	NS	NB	QC	ON	MB	SK	AB	BC	
Inpatient											**$82.2**
Inpatient - general	*$49.03*	*$72.25*	*$49.24*	*$91.13*	*$62.87*	*$36.79*	*$88.49*	*$49.02*	*$55.54*	*$56.92*	*$51.7*
Inpatient -- psychiatric hospitals	*$61.04*	*$36.48*	*$16.84*	*$13.52*	*$26.50*	*$40.06*	*$18.21*	*$10.04*	*$39.11*	*$12.23*	*$30.5*
Long term care					$5.74						$5.7
Physicians											**$37.7**
General practitioners -- fee for service	$2.17	$6.44	$0.36	$5.62	$6.61	$14.02	$2.57	$8.17	$13.08	$6.62	$9.8
Specialists -- fee for service	$10.20	$5.36	$7.77	$7.80	$10.83	$24.80	$19.75	$8.49	$24.30	$21.87	$9.6
Psychiatrist -- alternative payments	$16.74	$22.89	$13.11	$17.66	$14.67	$22.07	$9.85	$13.48			$18.3
Community and social services											**$151.49**
Outpatient -- emergency rooms						$3.56			$5.36		$3.9
Community mental health		$49.36		$43.36	$72.95	$51.19	$36.42	$48.33	$28.95		$53.5
Supportive housing										$35.81	$35.8
Employment support		$12.88			$0.70		$1.99			$1.42	$1.9
Other community / social support						$39.19				$18.26	$33.9
Addictions services		$50.79	$27.71	$22.48	$12.88	$15.19	$18.46	$40.06	$28.45		$18.1
First Nations -- mental health & addictions	$5.40	=======>	=======	=======>	$1.51	$2.52	$18.29	$19.19	$7.67	$4.88	$4.4
Pharmaceuticals											**$84.8**
Public	*$31.32*	*$31.68*	*$40.58*	*$34.77*	*$50.54*	*$34.26*	*$38.84*	*$35.24*	*$37.31*	*$31.96*	$38.4
Private	*$51.76*	*$63.46*	*$60.88*	*$69.34*	*$50.74*	*$41.88*	*$43.28*	*$31.88*	*$44.51*	*$49.36*	$46.4
Other services											**$59.2**
Non profits (exc. Prov. Gov't.)	$4.92	$8.58	$2.45	$1.61	$1.74	$9.74	$2.73	$17.52	$18.97	$3.06	$7.5
Other housing (shelters, temporary)										$11.55	$11.5
Educational mental health services									$32.91		$32.9
Employee assistance plans	$5.91	$7.15	$6.93	$6.96	$7.23	$7.14	$7.20	$7.28	$7.78	$7.14	$7.2
Income support											**$127.9**
Canada Pension Plan -- Disability	$44.30	$58.66	$61.92	$47.77	$0.52	$36.72	$31.04	$16.73	$25.05	$33.53	$26.9
Workers Compensation			$0.21		$1.99	$0.38	$0.41	$2.56	$0.42	$2.33	$1.1
Provincial income support	$14.37	$38.63			$25.10	$75.81	$52.32	$8.27			$53.5
Insurance -- disability payments											
Long term disability											39.2
Short term disability											7.2
Totals ($ per capita)											**$543.3**

Figure 2: Per capita values for services - provincial weighted averages

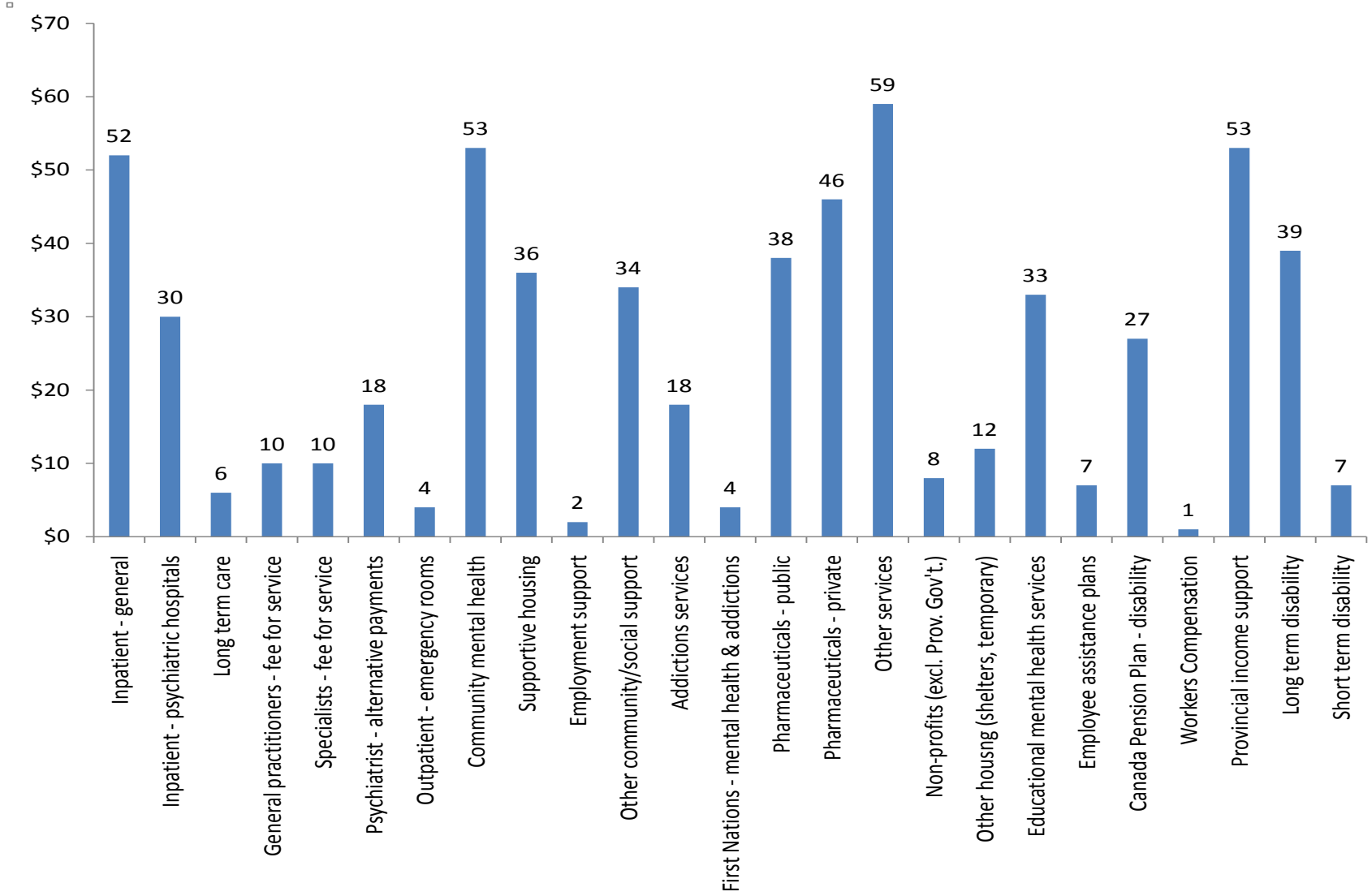
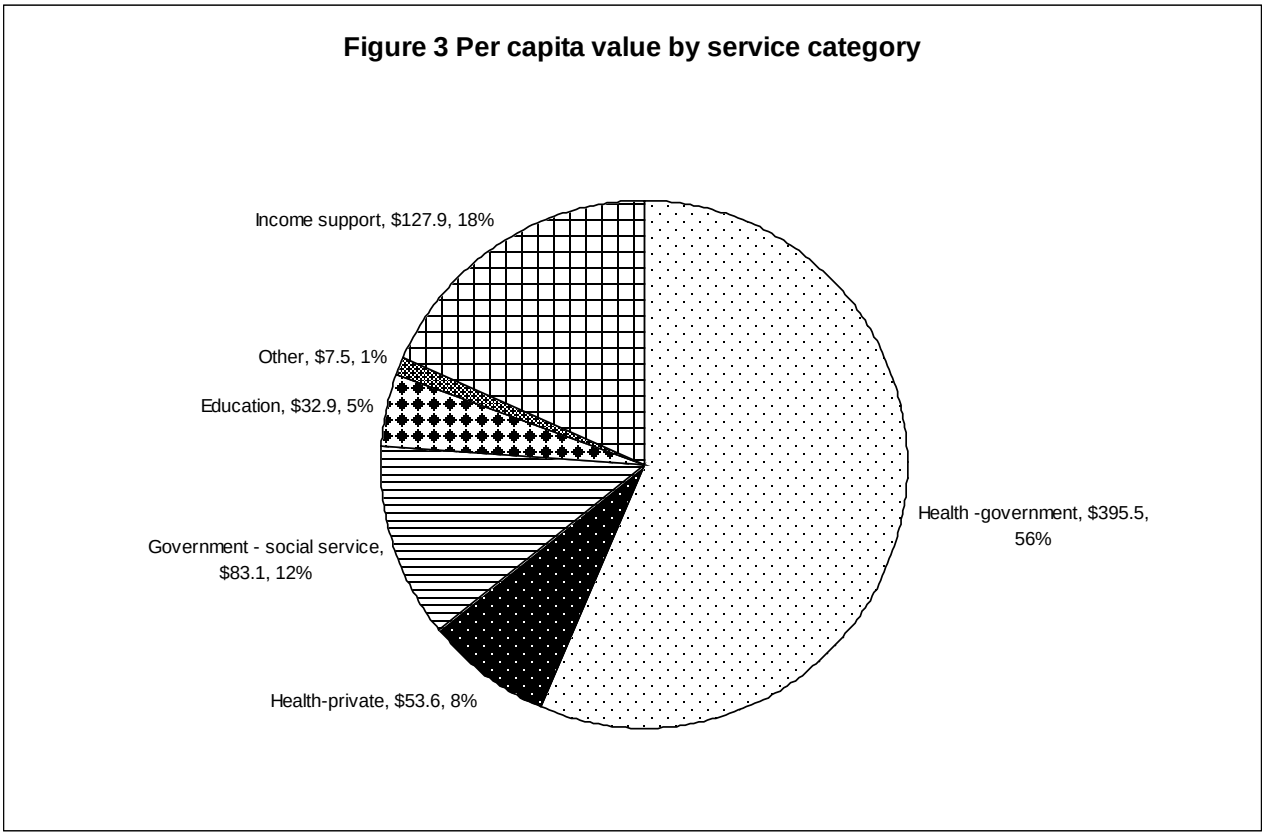


Figure 3: Per capita value by service category



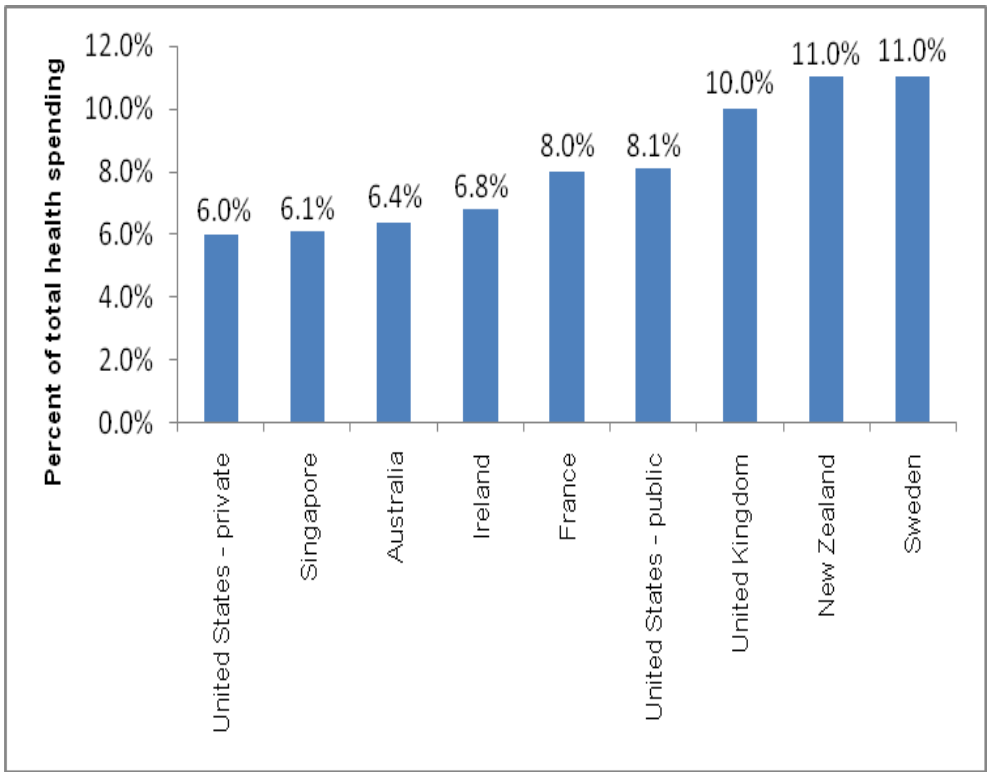
INTERNATIONAL COMPARISONS

The key statistic that is used in the international comparison of mental health expenditures is the ratio of mental health to total health expenditures. There are a number of different measures for both mental health expenditures and total health expenditures. Health expenditures can include public only, or public and private. In our sample, private mental health expenditures comprised 10% of the total expenditures, while public mental health comprised 45%. However, there were some private expenditures which we could not capture. With regard to total health expenditures, governments pay about 65% of the total in Canada; this ratio varies by country. Mental health expenditures include community mental health services but the definition of what services fall into mental health, as opposed to social services, will vary between jurisdictions. Finally, total health services in most countries exclude social services, even though social services are sometimes considered part of mental health.

The World Health Organization, in its *Mental Health Atlas 2005*, provided data on the ratio of mental health to total health expenditures in a number of countries. For comparison, we have chosen a series of countries which are at a similar level of development. These data are shown in Figure 4. Australia and UK data are for the public sectors. The ratios vary from a low of 6% to a high of 11% (Sweden). Data for the United States from another source indicates that the public ratio in the United States is about 8.1% (Substance Abuse and Mental Health Services Administration, 2007). As well, data from another source indicates that the ratio of mental health and social services to total health spending in the U.K. is 11.4% (Sainsbury Centre, 2007). However, this ratio includes social services, which would make it higher. The WHO document referred to above does not report data for Canada.

According to the Canadian Institute for Health Information (CIHI), government health expenditures in Canada in 2007/8 were $3,329 per capita. If we use the concept “government mental health and addictions spending” in our analysis ($244), the Canadian spending ratio for this concept is 7.2%. In this case we include hospitalization, physician services, outpatient and community mental health, addictions services, First Nations services, and publicly paid pharmaceuticals. If we add social service spending to our health sample ($327), the ratio is 9.8%. It is not clear which is the correct ratio but it probably lies closer to 7.2%. This is because the social services include employment support and all forms of publicly provided housing, which often are funded by non-health ministries. In a previous study for 2003-4 (Jacobs, 2006), we estimated the mental health to total health spending ratio at 6.2%. In the previous estimate, we excluded long term care and First Nations services, and most outpatient services. Those omissions, and differences in the valuation of hospital care in Quebec, account for most of the discrepancy.

Figure 4: Mental health expenditures as a percentage of total health spending



There is no universally "right" spending ratio for mental health. Any such ratio would have to incorporate national values as well as technologies, outcomes, and costs. According to the Mental Health Economics European Network (MHEEN, 2002), the ratio of 5% is a danger point and anything below this is considered to be too low. However, there is no justification for this ratio, other than it is the lowest ratio of the European countries that were in their study. Nor is there an indication as to which services are included in each measure.

LIMITATIONS OF THE ANALYSIS

Reporting for mental health is complete in the areas of fee for service payments to physicians, inpatient hospital care, and total pharmaceuticals. Aside from these, there are considerable reporting gaps which we address in this section.

1. **Alternative funding for family doctors:** Most provinces do not collect data on mental health services provided by family doctors who are paid under alternative forms of payment. In Quebec, mental health costs of primary care clinics are reported and these are about 20%

of the cost of mental health services provided by family doctors. These costs may include nursing components as well. For the other provinces, we estimated that if GPs performed mental health services under APP in the same proportion as under FFS, about 25% of GP mental health costs would be missing from our estimate (see Appendix A: Methods).

2. **Psychiatric drugs by type of payer:** The amount of drug costs by public and private source is an important statistic. We obtained drug data from IMS Health, which could only provide data on *total* drug expenditures for each province. Individual provinces keep pharmaceutical prescription data for persons covered by the provincial drug plans. We did not obtain this data. Rather, we estimated the proportion of psychiatric drugs that were public and private, based on the public to private ratio of all drug costs (psychiatric and all other) in each province.

3. **Inpatient hospital per diem costs:** Inpatient cost per day for general hospitals is calculated the same way for all provinces, except for Quebec. Estimates for Quebec were obtained directly from the ministry, but there were large differences between costs for Quebec and those for the remaining provinces. Some of this may have been due to different data systems and cost allocation methods between Quebec and other provinces. Therefore, we developed an alternative way to estimate Quebec hospital costs, based on interprovincial differences in costs of resources (see Appendix A: Methods).

4. **Inpatient days:** There is no direct data for psychiatric inpatient days during a single year. This is because we can only obtain patient - level data on patients discharged *during* the year. We therefore could not count the days of care of those who remained in the hospital at the end of the year. This number can be large, especially in psychiatric hospitals, where some patients stay for many years. We made an adjustment to approximate these offsetting factors, but we could not validate this estimate.

5. **Emergency room data:** Emergency room utilization data, by diagnosis, is only available for Ontario and Alberta.

6. **Community mental health services:** If we include in this category all specialized mental health services that are not provided on an inpatient bases, then this encompasses a wide array of services. Currently, there is no common definition for community mental health

services, which often will be funded by ministries such as those dealing with social services, childrens' services, and seniors' services.

7. **Addictions:** Addictions are being integrated into mental health services and, although addictions and mental health formerly followed different treatment models, it is no longer always possible to distinguish between the two types of services.
8. **Housing for the mentally ill:** Housing for people living with mental illness is part of the basket of community mental health services. Shelters (homeless shelters, YMCA's, Salvation Army units) can be considered as alternative forms of mental healthcare service providers (that is, they are substitutes for the residential component of hospitalization) so we should include shelter costs for people with mental illness who are also homeless. Data on shelter costs for homeless persons who have a mental illness was only available for British Columbia, in a one-time study.
9. **Non – profit organizations:** Non-profit organizations commonly provide community mental health services. These services are largely funded by the provincial government. Government contracts with non-profit organizations are often included in provincial expenditure reports on community mental health services. We obtained data on the full cost of community mental health services as well as on the full cost of non-profit organizations which provide mental health services. If we included both of these amounts, we would exaggerate the cost of resources used in mental health. To avoid double counting, we included the full cost of government–funded community mental health services and for non-profits. We included only the amount that was raised from sources other than provincial governments.
10. **Employment programs:** Employment support programs are usually organized for all disabled persons and they do not always report the number who have a disability related to a mental illness. We have only included data for employment programs in those provinces which separately reported the number of persons with psychiatric disability who were served.
11. **Income support programs:** Some provincial income support programs do not separately report on the number of persons who have a mental illness. We could therefore only include costs of those programs which distinguished its clients by type of disability.

12. **Short term disability:** Canada's Employment Insurance (EI) program provides short-term support for those who have lost their jobs due to a disability. Support lasts for 50 weeks (45 during the year of our study). Those who have permanently lost their jobs due to a psychiatric disability can apply for support from the Canada Pension Plan. The EI program does not keep data on the reason for disability and, therefore, estimates are not available for the costs for those who temporarily lose their jobs due to mental illness. Also, we do not include the private income replacement disability insurance costs for short- and long-term disability leaves that are provided by employers.
13. **Educational system:** Mental health services and educational system services for people with a mental illness are often not integrated. Further, children with mental illness often receive services through social services departments, outside of the mental health area. These costs are not included in this report.
14. **Data on persons served and services provided:** The data in this report should be of use to planners. However, despite the spate of studies on health care costs, very few population–based studies report the number of services and number of persons served. Planners would benefit considerably from having this data, so they could project aggregate level costs by shifting or adding services.
15. **The criminal justice system.** Departments of corrections and justice and police departments devote a good deal of resources to mental health. We had a great deal of difficulty in locating any such data, and we regard this as a major gap.

For most kinds of services, we were not able to obtain data on persons served and services provided. However, because the primary users of this data will be health planners and policy analysts, we recommend that future studies incorporate this data, much of which could be made available.

APPENDIX A: METHODS

Services

Physician payments for mental health services

2006-07 provincial physician payments for mental health services were obtained from the National Physician Database, 2006-2007 Data Release[1] of the Canadian Institute for Health Information (CIHI). The data release contained two databases: Physician payment 2006-07[2] and Physician Utilization 2006-07[3]. The Physician payments data was the billing data submitted to each health ministry. The fee-for-service payment was the compensation paid for psychotherapy and counseling services provided by family physicians and all specialists, as well as all other billings for psychiatrists (from Physician Utilization 2006-07.xls).

CIHI also captures the alternative physician payments from most of the provinces (except Nova Scotia, Alberta, and B.C. for the 2006-07 data). Payment data is grouped by specialty. Data for alternative payments to psychiatrists were obtained from Physician payment 2006-07.xls.

We adjusted the 2006-07 physician payments to 2008 dollars using the provincial Consumer Price Index.[4]

Although general practitioners and specialists other than psychiatrists who receive alternative payments may also provide psychotherapy and counseling, such services cannot be identified through the payment arrangements. We estimated the missing counseling costs for GPs who are under alternative payment schemes by applying the percentage of counseling and psychotherapy GP billings to total GP billings in each province (Source: CIHI, Physician payment, 2008) to the total APP payments to GPs in each province. These numbers are shown in the following table.

Table A.1: Estimates of mental health cost using general physician payments and payment percentages

PROVINCE	TOTAL GP ALTERNATVE PAYMENTS ($MILLION)	PERCENT MENTAL HEALTH PAYMENTS UNDER FFS	ESTIMATES OF MENTAL HEALTH COSTS UNDER ALTERNATIVE PAYMENTS FOR GP'S ($MILLION)
NF	28	1.3%	$0.4
PE	7.4	6.6%	$0.5
NS	NA	3.0%	
NB	45	3.8%	$1.7
QC	314.6	5.4%	$17.1
ON	823.1	9.3%	$76.3
MB	90	1.7%	$1.6
SK	59.6	4.2%	$2.5
AB	NA	6.1%	
BC	136.1	3.9%	$5.3
TOTAL			**$105.3**

The ratio of counseling to total billings ranged from 1.3% in Newfoundland to 9.3% in Ontario. When applying total APP payments to GPs, the estimated counseling costs were $105 million in the eight provinces which reported data. Total FFS payments for counseling in these eight provinces was $283 million. Therefore, we estimate that by excluding counseling under APP arrangements, we are missing $105 million in costs.

Inpatient hospitalization

Inpatient days

Inpatient days for general and psychiatric hospitals were obtained from the CIHI annual data on mental health hospitalizations. CIHI provided us with a measure of the total psychiatric hospital days for each province for 2007. They based this measure on the length of stay from the hospital discharge abstracts. Some patients who were discharged from psychiatric facilities in 2007 had been admitted in prior years. We wanted to exclude these days of stay from prior years because they do not measure services provided during 2007. We therefore developed a cut-off (i.e., a maximum length of stay) of 365 days for any discharged patient. In the following table we show

the number of days patients stayed in psychiatric hospitals for each province (except Quebec) before and after the cut-off was applied. For most provinces, the number of days that were eliminated from the measure of 2007 production was substantial.

Table A.2: Number of patient days in psychiatric hospitals with and without 365 – day cutoff per discharged case, 2005/06

Province	No cut-off	365 Day cut-off	Excess days
NFL	61,914	39,632	22,282
PEI	7,274	6,819	455
NS	25,140	20,448	4,692
NB	41,090	13,609	27,481
QUE		**NA**	
ONT	1,145,678	668,068	477,610
MB	73,410	31,021	42,389
SASK	77,931	14,259	63,672
AB	293,267	183,795	109,472
BC	236,568	74,596	161,972
Total	**1,962,272**	**1,052,247**	**910,025**

The estimated number of days, even after applying the 365 day cut-off, is still a generous estimate for total days of stay for *discharged* patients during the year of discharge because most long-stay patients who were discharged during the year would have been discharged before the end of the year. However, at year's end, there were still many patients in the hospitals, and their stays would not be recorded in the discharge abstracts of that year. Therefore, the overcompensation of days using our 365 day cut-off would offset the under-estimate due to patients remaining at year's end. However, the offset is not perfect. Data from Saskatchewan, which had actual bed day counts during the year, indicates that we have underestimated the number of bed days with this method.

There was no data on patient days in psychiatric hospitals in Quebec for 2005/6. We therefore extrapolated using CIHI data from 2003/4, the last year for which Quebec data was available.

The discharge rate from psychiatric hospitals was about the same for Quebec and Canada prior to 2003/4. We therefore used the 2005/6 Canada discharge rate for psychiatric hospitals (79.5 per 100,000) applied to the Quebec 2007 population (7,535,000) to yield 5990 discharges. We used the 365 day cut-off length of stay for 2003/4 (316,380 days) to yield an estimate of 320,440 patient days in psychiatric hospitals.

Cost per day

All provinces (except Quebec) report hospital inpatient discharge information and three provinces provide case costing data to the CIHI. Using these data, CIHI has developed unit cost measurements for inpatient cases. We calculated the mental health inpatient cost by using components provided by CIHI. The components included the 2008 Resource Intensity Weight (RIW) per day (that is Per Diem Weight or PDW, for all reporting cases) (personal communication, Deborah Ross, BC Mental Health and Addictions), 2006-07 Cost per Weighted Case (CPWC, for all provinces)[5] and 2005-06 total inpatient days with a cut-off value for each case at 365 days,[6] both for general hospitals and psychiatric hospitals.

CIHI has developed a Case Mix Group (CMG+) diagnostic classification system[5] and an accompanying PDW assigned to each age group for each CMG. We combined the number of cases for each age group from CMG+ 670 to 704 (mentally disorders) and the associated base PDW in order to calculate the weighted average PDW (0.1316). We then multiplied the weighted average PDW by the total number of inpatient days for each province to obtain an approximation for the total resource use (that is, total RIWs) for the mentally disorders in each province. We adjusted the 2005-06 expenditures to 2008 dollars using the provincial Consumer Price Index.[4]

We used the CIHI calculations as per diems for psychiatric cases in general hospitals. We used data from the Ontario Case Costing Distribution Methodology to derive per diem costs for psychiatric hospitals. According to this method the inpatient per diem was $681 for psychiatric hospitals and $600 for psychiatric cases in general hospitals. We used this ratio (681/600, or 1.135) as the adjustment for psychiatric hospitals. That is, for each province, each CIHI per diem was assumed to be the per diem cost in general hospitals. The per diem cost in psychiatric hospitals was this value multiplied by 1.135.

There is no *comparable* per diem measure for Quebec. The per diems in Quebec were generated using different methods. Rather than use these, we adjusted the Ontario per diems for inter-

provincial wage differences to estimate Quebec per diems. In Quebec, nursing wages are about 73% of those in Ontario ($51,000 compared to $70,000). According to the JPPC, wages and benefits make up 60% of hospital expenses. We assumed the remaining 40% of expenses to be the same in both provinces. Therefore, the Quebec per diems that we used in the analysis were 82.8% of Ontario per diems, both for general and psychiatric hospitals.

Hospital emergency departments

Alberta and Ontario report emergency department (ED) visits. Alberta data was obtained from Block (2008) for 2005/6 and updated to 2007/8 using the Alberta Consumer Price Index. For Ontario, ED costs were calculated using the National Ambulatory Care Reporting System (NACRS) dataset. Total emergency visits were calculated by facility using the most responsible diagnosis involving mental health for fiscal years 2007/8. The total per diem cost for an ED outpatient visit was used as the unit cost for an ED visit. The unit cost was calculated using the Ontario Hospital Cost Distribution Methodology (OCDM) and taken from the OCDM Facility Comparison Summaries (MS – Excel) (see Ontario Ministry of Health and Long Term Care (2008). Ontario Hospital Cost Distribution Methodology by Service category. Version 2007/2008 Data).

Community mental health

We reviewed provincial definitions of community mental health and found a variation between provinces. We found a common goal of supporting people with mental illnesses to live and participate in the community.

Community mental health services flow from several different provincial agencies, including childrens' services, addictions, justice, and the healthcare system, as well as from non-governmental organizations. Specific programs, such as crisis response or housing supports, are omitted from some definitions of community mental health. This does not imply that these programs do not exist in the province, only that this service was not specifically mentioned in the province's definition of community mental health.

The following is a summary of community mental health services from provincial websites. In the absence of information on "community mental health," the services provided at community

mental health centers was used. In all cases these are not comprehensive lists of services for each province.

What is the target population for Community Mental Health?

- People with mild to moderate mental health problems (Prince Edward Island).
- People with severe/persistent mental illness who have not responded to traditional programs or treatments, and have difficulty living in the community, have significant impairments, are high-risk, and frequently have under-recognized needs for medical care (Nova Scotia).
- Adults whose condition requires short-term intervention and adults with serious mental health problems and long-standing functional disorders (New Brunswick).
- People with a diagnosis of a mental illness, a long duration of illness, and significant disability in daily functioning (Ontario).
- People with mental health difficulties (Manitoba).
- People with severe addictions and mental illness (British Columbia).

What programs are included in Community Mental Health?

The services that were identified in the provincial lists are as follows:

Table A.3: Services included in provincial list of "community mental health" services

	NF	PE	NS	NB	QC	ON	MB	SK	AB	BC
Assessment	Included	Included	Included	Included			Included	Included	Included	Included
Treatment, counseling		Included	Included	Included	ACT	Included ACT, TT	Included	Family therapy and violence, sexual offender	Included	Included, ACT, perinatal svcs., eating disorder, early psychosis, urgent/ emergency
Education, promotion, prevention		Included	Included			Included, early psychosis Interv.	Included			
Case management			Included	Included	Included	Included				Included
Crisis intervention		Included				Included	Included	Included		
Housing	Included		Included			Included			Included	
Employment support	Included		Included			Included			Included	
Income support	Included									
Addictions								Gambling		

Offender interventions						Included		Included	Included	
Outreach			Included							
Geriatric				Included		Included				
Primary care					Included					
Inpatient specialized					Included					

Legend: ACT – assertive community treatment, Interv – intervention, TT – treatment teams

While an exact definition for community mental health is still elusive, the actual services in each province have some strong similarities.

Location – Community Mental Health is comprised of the services which take place within a community, rather than in institutional setting. This can occur in community mental health clinics operated by the provincial government, a large organization such as the Canadian Mental Health Association, or smaller non-governmental organizations.

In this category, we include those costs that are delivered or funded through the general health departments. Some services, notably support, are provided by social service departments and non–profit organizations, as well as by health departments. Services provided through other ministries, where available, are reported elsewhere. Sources of data for community mental health expenditures are as follows:

- PEI: PEI Estimates 2007-2008, Department of the Provincial Treasury, pg. 109;
- NB: Personal Communication with NB Addictions, Mental Health, and Primary Healthcare Services;
- QC: Quebec data was obtained from the Quebec Ministry of Health and Social Services (2007-2008) annual financial reports (which include information on services of activity and associated expenditures from each health and social services institution in Quebec. Expenditures include $24.1 million for day care, $370.9 for outpatient clinics, $170.4 for supportive housing;
- ON: Office of the Auditor General Report 2006-2007, pg. 174, 2006-2008 CPI conversion;
- Manitoba: Regional Health Authority websites/annual reports for “Community-based mental health services.” This does not include information for RHA’s for which community-based mental health services were not available, or were included with other services;
- SK: Saskatchewan community program profile 2008, pg. 10 (Saskatchewan Health) and includes $3 million for supportive housing;

- Alberta data was obtained for 2005/6 and updated using the Alberta Consumer Price Index (Block, 2008).

Supportive housing

The Centre for Applied Research in Mental Health and Addiction (2007) in Vancouver conducted a study of the cost of supportive housing for the mentally ill in British Columbia.[7] The authors provided estimates of the number of persons with severe mental illness who received various levels of supportive housing and unit costs (page 44). Estimates of costs for the homeless who were supported in shelters *and* who had a mental illness are reported separately.

The annual cost in British Columbia for supportive housing is calculated as follows:

	Persons	Annual	Total dollars
	Number	Unit cost	Total costs
Residential care			
Licensed	1472	$44,895	$66,085,440
Family care homes	174	$20,988	$3,651,912
Independent supportive housing			$0
Low barrier			$0
High support	256	$21,900	$5,606,400
Low support	520	$7,665	$3,985,800
Supported	4270	$17,338	$74,033,260
BC Housing services	1029	$3,469	$3,569,601
	7721		**$156,932,413**

Data for supportive housing were also available for Quebec and Saskatchewan (see above). In Quebec, supportive housing is financed through institution budgets. These costs are covered under specific activity centres which use annual expenditures and number of days present and number of users are reported in annual budget reports. These are presented annually to the Quebec Ministry of Health and Social Services.

Addictions

Provincial budgets for addictions were obtained from either government officials or departmental annual reports from the provinces.

It is important to note that these available provincial addictions budgets do not reflect the scope of addictions treatment throughout the health system. Addictions services are delivered by many different organizations, such as Employee Assistance Programs, the criminal justice system, and nonprofit organizations. Within the provinces, the budgets also vary, as in some provinces, research and administration costs are included, and in others only direct service costs are reflected in the budget.

Data was collected from the following sources:

- Prince Edward Island Estimates 2007-2008 (Department of the Provincial Treasury),
- Nova Scotia Estimates 2007-2008 (Nova Scotia Finance),
- New Brunswick Department of Health Annual Report 2007-2008,
- Ontario Office of the Auditor General Report 2008,
- The Addictions Foundation of Manitoba 2007-2008,
- Saskatchewan Community Program Profiles 2007-2008 (Community Care Branch), and
- the Alberta Alcohol and Drug Abuse Commission Annual Report 2007-2008.

First Nations mental health and addictions services

The First Nations and Inuit Health Branch of Health Canada provides a number of mental health services for Natives. These include the National Aboriginal Youth Suicide Prevention Program, the National Native Alcohol and Drug Abuse Program, the Youth Solvent Abuse Program, the Indian Residential Schools Resolution Health Support Program (IRS RHSP), Building Healthy Communities, Brighter Futures, and Non-insured Health Benefits (NHIB) Crisis Counselling Services. Expenditure data for the Atlantic provinces in total, and for each of the other provinces, was obtained from the First Nations and Inuit Health Branch, Community Programs Directorate. Two items were excluded from the above total of $166 million. These excluded items were $11.4 m. for the Northern region and $7.7 m. for administration. In addition, approximately $40 million are provided to self – governed units operating under transfer agreements are excluded.

Pharmaceuticals

IMS (Canada) (www.imshealthcanada.com) maintains a national database (called CompuScript) which measures the number of prescriptions dispensed by Canadian retail pharmacies. Product information is presented according to therapeutic class and each individual product. The data collected can be used to ascertain product prescription volume and share, for trending purposes, thereby providing a measure of product utilization.

The CompuScript sample is drawn from the IMS prescription database panel, which now comprises over 4400 pharmacies or nearly two-thirds of all retail pharmacies in Canada. Over 2100 stores are used in the CompuScript panel, each stratified by province, type (chain or independent), and size (large or small). Sample data collected from this panel are projected to the universe in each province, and provincial totals are added together to provide a national estimate. We obtained this data for 2007.

A list of the drugs included in our study follows:

TRICYCLICS	**MINOR TRANQUILIZERS, OTHERS**
Trimipramine	Tryptophan
Nortriptyline	Meprobamate
Maprotiline	Hydroxyzine
Imipramine	Buspirone
Doxepin	
Desipramine	**SLEEP INDUCERS**
Clomipramine	Doxylamine
Amitriptyline	Diphenhydramine

MAJOR TRANQUILIZERS, OTHERS	SEIZURE DISORDERS, OTHERS
Zuclopenthixol	Vigabatrin
Thiothixene	
Risperidone	SEIZURE DISORDERS, ORAL LIQUIDS
Quetiapine	Valproic Acid
Pimozide	Phenytoin
Paliperidone	Phenobarbital
Olanzapine	Oxcarbazepine
Loxapine	Ethosuximide
Haloperidol	Carbamazepine
Droperidol	
Clozapine	SEIZURE DISORDERS, INJECTABLE
	Phenytoin
SEROTONIN REUPTAKE INHIBITORS	Phenobarbital
Venlafaxine	Magnesium
Trazodone	
Sertraline	SEIZURE DISORDERS, CAPS&TABS
Paroxetine	Vigabatrin
Nefazodone	Valproic Acid
Fluvoxamine	Trimethadione
Fluoxetine	Topiramate
Escitalopram	Primidone
Citalopram	Pregabalin
	Phenytoin
SEDATIVES, NON-BARBITURATES, OTHERS	Phenobarbital
Zopiclone	Paramethadione
Zaleplon	Oxcarbazepine
Triazolam	Methsuximide
Temazepam	Levetiracetam
Nitrazepam	Lamotrigine
Flurazepam	Gabapentin

Ethchlorvyhol	Ethosuximide
	Divalproex
SEDATIVES, NON-BARBITURATES, CHLORAL	Clonazepam
Chloral Hydrate	Clobazam
PSYCHOTHERAPEUTICS, OTHERS	**PSYCHOSTIMULANTS/TRANQUILIZERS**
Atomoxetine	Amitriptyline & Perphenazine
PHENOTHIAZINE DERIVATIVES	**LITHIUM PRODUCTS**
Trifluoperazine	Lithium
Thioridazine	
Thioproperazine	**DEPOT NEUROLEPTICS**
Promethazine	Zuclopenthixol
Perphenazine	Pipotiazine
Periciazine	Haloperidol
Methotrimeprazine	Fluphenazine
Fluphenazine	Flupentixol
Flupentixol	
Chlorpromazine	**BENZODIAZEPINES**
	Oxazepam
ANTI-DEPRESSANTS, OTHERS	Midazolam
Moclobemide	Lorazepam
Mirtazapine	Diazepam
Bupropion	Clorazepate
	Chlordiazepoxide
ANALEPTICS	Bromazepam
Modafinil	Alprazolam
Methylphenidate	
Dextroamphetamine	**AMINO OXIDASE INHIBITORS**
Amphetamine & Dextroamphetamine	Tranylcypromine
	Phenelzine

Employment Programs

Some provinces have employment and vocational programs for people with disabilities that may allow them to work and build independence. These programs can include job search assistance, education support, and vocational training.

Where available, mental health caseload information for these programs was obtained. Budgets for employment programs were obtained from government officials and departmental annual reports. Data was obtained from the Quebec Ministry of Health and Social Services, the Department of Family Services and Housing in Manitoba, and estimates from the Prince Edward Island Department of the Provincial Treasury.

Other government services

Some provinces have dedicated mental health programs that are funded by ministries other than the health ministries. The Ontario Ministry of Community and Social Services funds family health teams specifically to provide mental health services for homeless people. Expenditures are provided to non–profit organizations ($4.75 million in 2007/8) (Source: table from ministry). The Ontario Ministry of Childrens' and Youth Services funds a Child and Youth Mental Health program. Expenditures were $502 million in 2007/8 (Source: Ontario Ministry of Childrens' and Youth Services.)

The British Columbia Ministry of Children and Family Development operate a Child and Youth Mental Health program. Expenditures in 2007/8 were $80 million (Source: British Columbia Ministry of Children and Family Development, Factsheet, Child and Youth Mental Health, May 5, 2008).

Nonprofit Organizations

All non-profit organizations annually submit a registered charity information form (form T-3010) to the Canada Revenue Agency. This form contains detailed information on revenues and expenditures, and is the basis for our estimates.

Nonprofit organizations for addictions and mental health are widely scattered, so multiple strategies were used to identify them. We included charities that were performing direct mental health services, including treatment and education, and excluded research or professional organizations. We excluded hospitals, as their expenditures were captured elsewhere in this analysis. Organizations that did not exclusively focus on mental health or addictions were also excluded. Services for autism or developmental disabilities were excluded, as these were outside the scope of this study.

A list of organizations was obtained from the website of the Canada Revenue Agency on March 27, 2009 (http://www.cra-arc.gc.ca/ebci/haip/srch/advancedsearch-eng.action). According to the website, the listings were last reviewed in January 2007. Revoked or suspended charities were excluded, as their tax records were no longer available. It is only possible to search by name, so organizations performing mental health services may have been excluded.

Search terms used were: “addictions” “rehab” “drug” “alcohol” “substance” “detox*” and the category of “temperance associations” “psych*” “mental health” “depression” “anxiety” “schizophrenia” “bipolar” “eating disorder” “suicide” “mood” in Canada. Corresponding French terms were also used. If the results were extensive (50+), the search was limited by “Services other than hospitals” or “organizations providing care other than treatment” or “welfare organizations (not else classified)” or “community organizations (not else classified)” or “support of schools and education.” Website homepages of the organizations were then searched to see if they fit the inclusion criteria.

People working in the mental health and/or nonprofit field also contributed individual lists for their province and these lists went through the same screening process. For Quebec, we supplemented the list with a list of mental health nonprofits (Regroupement des ressources alternatives en santé mentale du Quebec, web address: www.rrasmq.com).

The following data were obtained from each organization: revenues from provincial, federal, and municipal government, and total revenues. Although the correct variable to use is expenses, in most cases revenues and expenses were very close to each other. Using this data for each province, we isolated revenues from municipal governments and non-government revenues. These are unlikely to have been reported in any other category. Federal and provincial expenditures may have been captured in areas such as community mental health services and addictions. We therefore have not included these in the main table.

Table A-4: Mental health expenditures of nonprofit organizations and major sources of funds (millions of dollars), 2007-08

	Provincial	Municipal	Federal	Sales	Other	Total
Newfoundland and Labrador	$5.3	$0.1	$0.9	$0.0	$1.5	$7.8
Nova Scotia	$1.1	$0.2	$0.3	$0.0	$1.8	$3.4
Prince Edward Island	$1.2	$0.0	$0.5	$0.1	$0.6	$2.4
New Brunswick	$1.5	$0.0	$0.1	$0.1	$0.6	$2.2
Québec	$27.3	$0.8	$4.8	$0.7	$7.2	$40.8
Ontario	$638.6	$15.1	$11.5	$3.4	$95.9	$764.6
Manitoba	$9.4	$0.0	$0.2	$0.8	$2.3	$12.7
Saskatchewan	$24.3	$1.4	$12.0	$0.9	$3.5	$42.1
Alberta	$117.4	$14.4	$9.5	$6.7	$37.5	$185.4
British Columbia	$21.8	$1.4	$1.2	$2.1	$8.7	$35.2

Education

A survey was conducted by Calder, Solsey, Jacobs (2009)[8] of the services performed by teachers and mental health professionals that were provided in Alberta schools and oriented towards mentally ill students. Of all the services that were oriented towards mentally ill students, the following were considered as “mental health” rather than education services: services for the severely mentally ill, services provided by trained counselors, and transport services.

Income support

Disability payments (government)

Canada pension plan – disability

The Canada Pension Plan (CPP) disability benefit is available to people who have made enough previous work contributions to qualify for a CPP pension, and whose disability prevents them from working at any job on a regular basis. The disability must be long lasting or likely to result in death. People who qualify for disability benefits from other programs may not qualify for the CPP disability benefit.

The distribution of persons who received CPP disability benefits for mental disorders in 2007/8, by province is as follows:

Province	Recipients	Payments ($ millions)		Province	Recipients	Payments ($ millions)
BC	15,486	$146.9		QC	421	$4.
AB	9470	$89.8		NB	3769	$35.7
SK	1793	$17		NS	6131	$58.1
MB	3959	$37.5		PE	872	$8.2
ON	50,033	$474.7		NF	2379	$22.5
TOTAL	**94,313**					

Source: Helen Redican, Canada Pension Plan Disability Policy, Income Security and Social Development Branch, Canada Department of Human Resources and Social Development

Work-related mental disorder lost time claims and cost

Worker Compensation Boards (WCBs) across Canada provide compensation to workers for workplace injuries and occupational diseases. Since 2003/4 work-related mental disorders and syndromes have become valid kinds of injuries to be considered for compensation by the WCBs. The WCB definition of mental disorder was developed by the National Work Injuries Statistics Program (NWISP) of the Association of Workers' Compensation Boards of Canada (AWCBC). The injury and disease codes were standardized for all WCBs.

The WCBs' definition of mental disorders includes only work-related mental problems. For example, it includes post-trauma stress and panic disorder which are induced by work conditions or accidents which are witnessed by the workers at the workplace.

After a work related accident, the worker will file a claim reporting to the WCB. If the worker requires day(s) off work, the claim will become a lost time claim.

In 2007, there were 109 mental-disorder injuries which were accepted as lost time claims by the Alberta WCB (see Table A.5 for a breakdown). Anxiety, stress, and neurotic disorders were the nature of injury group with the highest number of lost time claims (89 claims, or 82% of the total). Post-traumatic stress accounted for 15 claims (14%). Mental disorder or syndrome, panic disorder, adjustment disorder, and substance-induced mental disorder accounted for 4% of the total claims.

Table A.5: Mental-disorder lost time claims in Alberta, accident year 2007

Nature of injury	Accident year 2007
Anxiety, stress, neurotic disorders	89
Post–traumatic stress	15
Mental disorder or syndrome	2
Panic disorder	1
Adjustment disorder	1
Substance–induced mental disorder	1
Total	**109**

Source: WCB, Alberta

In some incidents, the accidents/injuries occurred in 2007 and claims were submitted to the WCB in a later year. These claims are included in revised data for the accident year 2007. Such claims account for a small portion of the total claims.

Across Canada, there were 2223 mental-disorder lost time claims in 2007. Data by province is shown below.

Table A.6: Mental-disorder lost time claims and costs, by province, 2007

	Claims	Total costs ($)
Newfoundland	7	$13,781
Prince Edward Island	1	NA
Nova Scotia	25	$152,016
New Brunswick	12	$39,883
Quebec	1176	$15,404,999
Ontario	437	$6,093,384
Manitoba	64	$516,817
Saskatchewan	67	$2,617,119
Alberta	109	$1,482,547
British Columbia	319	$10,140,629
Yukon	3	
Northwest Territories	3	
Canada	**2223**	

Source: NWISP. National Work Injuries Statistical Program. National Work Injury, Disease and Fatality Statistics (2005-2007)

Each province has its own claim policy and cost coding system. Although all provinces use the same set of injury/disease codes, differences in claims policies and cost coding system will make provincial comparison difficult.

The cost of a lost time claim include: short term disability compensation, medical, and rehabilitation treatment. For more severe or fatal cases, the costs include long term disability pension and fatal pension. The BC WCB provided a 3-year total cost on short- and long-term disability, as well as pension. We adjusted the annual cost using their number of lost time claims. Other reporting provinces provided costs on short-term disability, medical and rehabilitation treatment.

Workers' Compensation mental health coding system

Mental disorders or syndromes: This major group is comprised of neurotic, psychotic, and organic mental disorders or syndromes. For example, if the individual is experiencing acute depression as a result of chronic pain from a back injury, it is considered as a back injury claim.

However, if a mental disorder is secondary to a traumatic incident—witnessing a traumatic amputation of another person—it is a mental disorder claim.

Provincial income support

Provincial income support for people with a disability is needs-tested and not necessarily based on the applicant's disability, in some provinces. In addition, not every province collects information on the caseload of persons with a mental illness. There were five provinces for which we were able to obtain this data: Newfoundland, Prince Edward Island, Quebec, Ontario, and Saskatchewan. We obtained data from the Department of Labour and Employment in Newfoundland, estimates from the Department of the Provincial Treasury in Prince Edward Island, the Ministry of Community and Social Services in Ontario, and the Saskatchewan Ministry of Social Services.

There were two methods of determining the portion of the budget of provincial income support for people disabled by a mental illness. The first method was to divide the caseload of people with a mental illness by the entire income support caseload. We then multiplied this percentage by the total annual budget for income assistance. The second method was to directly obtain the caseload for persons with a mental illness. We then multiplied the caseload by the maximum rate for a single disabled person. Caseload information and budgets were obtained either through government officials or departmental annual reports.

Some provinces provide additional support for people receiving disability benefits, such as increased benefits or coverage for equipment and/or prescription drugs. This data was excluded in this analysis, which focused on direct income support.

Private markets

Employee assistance plans (EAP): We assume all benefits through employee assistance plans are related to mental health. According to national estimates, there are 5 million employees covered for EAPs in Canada, with coverage being largest in employers with over 1000 employees and somewhat less with employers with coverage between 500 and 1000 employees. The monthly cost per employee is $4, or $48 annually (Source: Shepell fgi, Rod Phillips, personal communication). We estimated the provincial costs as a proportion of provincial employment (Source: Statistics Canada, 2006 Census of Population, obtained from

www40.statcan.gc.ca/cbin/fl/cstprintglag.cgi accessed August 4, 2009). Estimates are shown in the following table.

Table A.7: Estimated EAP coverage and expenditures by province

Province	EAP Coverage (estimated)	Total employment	EAP costs ($ million)*
Canada	5,000,000	**16,021,180**	$240.00
Newfoundland and Labrador	63,205	**202,525**	$3.0
Prince Edward Island	20,865	**66,855**	$1.0
Nova Scotia	135,006	**432,590**	$6.5
New Brunswick	107,598	**344,770**	$5.2
Quebec	1,165,802	**3,735,505**	$56.0
Ontario	1,923,780	**6,164,245**	$92.3
Manitoba	180,296	**577,710**	$8.7
Saskatchewan	154,452	**494,900**	$7.4
Alberta	580,469	**1,859,960**	$27.9
British Columbia	653,124	**2,092,765**	$31.3
Yukon	5,404	**17,315**	$0.3
Northwest Territories	6,663	**21,350**	$0.3
Nunavut	3,330	**10,670**	$0.2

* Estimated as a proportion of national costs

Private disability insurance

Private disability insurance plans cover mental health. There are both short term and long term plans. In 2007, 4.6 million working Canadians were covered for short term disability and 10.9 million for long term disability. The total benefits paid for short term disability for all causes was $1 billion. Between 18% and 30% of these benefits were for mental health reasons, so that total benefits were between $180 million and $300 million. The private insurance industry paid out $4.5 billion in long term disability benefits for all causes. About 30% of this was for mental health disabilities. The total estimate for annual long term disability payments was $1.35 billion. Estimates were obtained from the Canadian Life and Health Insurance Association, Inc.

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The economic impact of mental illness and addictions is felt throughout society – in the health care system, the social services system, education, criminal justice and the workplace. In this booklet we conducted a provincial and national level analysis of the expenditures on mental health and addictions in Canada.

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