

Appendix 1 (as supplied by the authors): Updated unit costs used for At Home/Chez soi economic analyses (in 2016 Canadian dollars)

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Notes on costing approach

This unit cost list was developed for economic analyses derived from the At Home / Chez Soi project, which evaluated a Housing First intervention for homeless and mentally ill individuals. The unit costs estimated for the At Home / Chez Soi project may serve for other economic evaluation of health and social services, including justice-related services. This list may be useful to other health economic evaluations adopting a societal perspective. This unit cost list was produced with funding from the Mental Health Commission of Canada.

Overall approach

We sought to estimate the average cost of services. Both direct and indirect costs were included in unit cost estimates. Direct costs are all costs that can be directly related to the production of one unit of service, such as health service provider wage and materials used. Indirect costs include all costs that cannot be directly related to the production of one unit of service, such as administrative costs (ex: human resources department, financial services department, etc.), electricity, maintenance, rent or building capital costs.

Average unit costs *per service* were estimated, as average costs are equal to marginal costs in the long run. Generally, a top-down approach was used for estimating unit costs, whereby total expenses were divided by the total number of units (e.g., yearly shelter expenses divided by bed-nights per year). In some cases (e.g., visits to health, social, and justice service provider; see section 4), a bottom-up approach required accumulating information on components of total expenses. When estimates were calculated for us by representatives of organizations, we ensured that both direct and indirect costs were included.

We calculated unit costs at a high degree of specificity, contacting dozens of providers at each site. In order to keep the work to a manageable level, however, we did introduce some simplifications. In some cases, one or a few frequently-used providers had quite clearly different unit costs and we estimated separate unit costs for each. In other cases, however, several providers were considered similar, and a common unit cost was estimated for them. In yet other cases, we calculated a weighted average of the unit costs of several higher-volume providers and used that for all the providers in that category.

Opportunity cost of land and buildings

For the sake of consistency, the unit costs we developed also included the opportunity cost of land and buildings. Services delivered in facilities such as shelters or hospitals occupy a building and land that could be put to other uses if their services were no longer needed. Costing of hospital services typically does not take this into account. In contrast, the expenditure statements of buildings that community organizations occupy often do include costs such as rent. We tried to treat this component of the unit cost in a consistent manner. It can be considered as the foregone capital value of the land and property where services are offered, annuitized over the lifetime of the building.

In many cases, capital cost information was not available. Most government institutions report only operational costs and no information on property value. The book value reported in most community organizations' financial statements does not represent the true opportunity cost. The true opportunity cost of the building requires information on the building's *market* value. Often, the property may have been sold to the community organization at a discounted price, as part of a donation, or the building may have been acquired many years ago, when real estate prices were much lower than today.

For government institutions, capital cost percentages estimated by Rosenheck (1994) were used. Rosenheck estimated that capital costs represent 4% of outpatient clinic operational costs and 6% of hospitalisation operational costs. These percentages were added to health institutions' operating costs. Unfortunately, no more recent estimates were available at the time this list was produced and no other capital cost estimate was identified for governmental institutions. Thus, the percentages estimated by Rosenheck were applied to other institutions financed by the government: In the case where sleeping accommodations were involved, the rate of 6% was added; in the case where visits or contacts did not require sleeping accommodations, the rate of 4% was used.

For community organizations, we calculated the rent that they could collect if they were to rent out the building. This rent value represents the opportunity cost. To estimate this rent, the city capital rate for commercial properties (Colliers International Canada, 2010) was multiplied by the city property assessment value¹. Estimates of capital costs from Rosenheck (1994) were also applied to community organizations when property assessment values were not available.

Inflation

The base year for unit cost calculations at the outset was 2011. If necessary, when unit costs were first developed (for the At Home/Chez Soi interim and final reports), they were adjusted based on the consumer price index (CPI) to represent 2011 costs. Subsequently, for

¹ Unfortunately, there is no city property assessment value for many government-financed institutions (ex: hospitals, prisons, police departments) and so it was not possible to use a capital rate on government-financed institutions.

final analyses, all costs were inflated to 2016 using the city-specific increase in the CPI obtained from Statistics Canada.²

Confidentiality

In this document, in order to protect the confidentiality of several of the providers, we do not report our estimated costs for individual providers but provide a range of unit costs only. The assignment of costs thus makes use of more precise data than is reported here.

² We applied the following inflation rates, from August 2011 to August 2016, using the monthly CPI by city (for Moncton we used the average for New Brunswick): Moncton: 6.88%; Montreal: 6.43%; Toronto: 8.8%; Winnipeg: 9.24%; Vancouver: 6.71%. The CPI almost certainly understates the growth in medical costs, partly because the relative price of services tends to rise in comparison to that of manufactured goods (because automation, to date, has allowed productivity to increase much more in manufacturing than in labor-intensive sectors such as health and social services), and partly because of the progressive introduction of increasingly costly drugs and other technologies. However, we do not know of a clearly preferable alternative.

1. Ambulatory services

	Moncton	Montreal	Toronto	Vancouver	Winnipeg
Outpatient or Day hospital services	\$265	\$30 – \$980 ^a	\$281	\$292	\$319
Mobile crisis team	248	219	257	273	299
ER visits	372	350	379	419	599
Ambulance transport	984	434	581	667	626
Food bank	6	6	6	6	6
Police contact, including if detained or taken somewhere other than a police cell	160	145	193	181	153
Police cell	257	271	442	442	118
Police arrest	683	620	824	774	653
Court appearance	3283	3269	3342	3278	3356
Drop-in Centres, Community Centres, Meal Programs					
1. Day Centre	35	37	33	21	29
2. Meal program	2	11	4	2	7
3. Other	11	32	25	19	17

Notes

Outpatient or day hospital services

- These unit costs reflect the nature of outpatient clinic visits made by homeless patients with mental illness. They were estimated specifically for the At Home / Chez Soi project, using the research project's data. They are based on the weighted average of outpatient visits costs of the project's Montreal site. The Montreal site data contained specific information on the nature of every outpatient visit. The project data for the other sites did not specify the nature of these visits. The unit costs for other sites were estimated by adjusting the Montreal cost based on a ratio of hospitalisation costs between provinces (province's site hospitalisation cost / Quebec hospitalisation cost).

- The Montreal site unit cost was the hospital cost estimated from Montreal hospitals (Agence de la santé et des services sociaux de Montréal), fee for service for each specialty (Régie de l'assurance maladie du Québec, 2010) and weighting based on the Montreal site At Home/Chez Soi data

ER visits

Values for direct costs per visit were obtained from various governmental sources. The unit cost is the same whether the ER visit involved an overnight stay or not.

- Direct and total emergency room visit costs were only available for the province of Quebec. Using the ratio of total cost to direct cost for Quebec (1.3129), total hospital emergency visit costs were estimated.
- Since emergency room patients usually do not stay overnight, we used 4% of total costs to account for the capital component of the cost of providing overnight stay.
- For Quebec: we used Ministère de la santé et des services sociaux du Québec 2009-2010 data. Fee-for-service cost to account for the cost of physician services delivered as part of the ER visits was provided by the Canadian Institute for Health Information (CIHI) (2014).
- Vancouver: hospital cost is the average of other provinces (Manitoba, Ontario, Quebec and New Brunswick); fee-for-service costs come from (CIHI, 2014).
- Winnipeg: direct hospital costs provided by correspondence with the Manitoba Ministry of Health, using Winnipeg Regional Health Authority (WRHA) Emergency Program. Fee-for-service costs are from (CIHI, 2014).
- Toronto: (Office of the Auditor General of Ontario, 2012) for the hospital cost and (Ontario Ministry of Health and Long-Term Care, 2012) for the fee-for-service cost.
- For New Brunswick: (Government of New Brunswick 2012) for hospital direct cost and (CIHI, 2008) for the fee-for-service cost, adjusted for inflation to 2011 (CIHI, 2014)

Ambulance transports

The values represent unit costs of ambulance dispatches by emergency medical service teams, with or without patient transport. All unit costs were calculated by dividing the average daily expenses for ground ambulance operations by the estimated daily average number of dispatch services.

- To account for capital costs, 4% was added to ambulance dispatch costs.
- For Vancouver: British Columbia provincial average (British Columbia Ambulance Service, 2010)
- For Winnipeg: City of Winnipeg average (City of Winnipeg, 2012)
- For Toronto: City of Toronto average (City of Toronto, 2012)
- For Montreal: City of Montreal average (Urgences-santé, 2010)
- For Moncton: New Brunswick provincial average (Government of New Brunswick, 2012)

Note: The cost for the province of New Brunswick is much higher than that for the other sites. Differing population density may account for this discrepancy. Large cities have a higher population density and more hospitals in a smaller perimeter compared to the rural region covered by the New Brunswick ambulance service.

Day centre visits

“Day centres provide an ‘open access’ building based facility; offer a variety of services usually involving a mix of support, advice, information, food and practical help; are committed to equal opportunities, maintaining a safe and welcoming environment and empowering service users; and have a primary focus on working with homeless, vulnerable or insecurely housed people” (Cooper, 2001). Other specific examples of services that day centres provide include advocacy/housing/legal workers, referrals, nursing staff, literacy programs and other workshops, and computer, phone, laundry, or shower access.

- Because the number and type of services provided by day centres vary from one centre to another, costs per visit may vary substantially from one day centre to another. To best reflect overall service use by homeless people with mental illness, we estimated unit costs based on day centres representing over 50% of total visits by participants in each site of the At Home / Chez Soi project. Costs were estimated as an average weighted by each day centre’s number of visits.
- Amortization expenses were replaced by annuitized land and property market value to account in a consistent way for the capital component of the cost of providing overnight stay.
- For Vancouver: Personal communication with directors or published annual reports of 9 day centres in Vancouver.

- For Winnipeg: Information on 3 day centres in Winnipeg obtained from publicly available figures (opencharity.ca) and budget allocations details from the Social Context of Homeless and Mentally Ill study (Alain Lesage et al.).
- For Toronto: Information on 7 day centres in Toronto obtained from annual reports, financial statements, other publicly available figures (opencharity.ca) and personal communication with directors.
- For Montreal: 2009-2010 annual reports from 12 day centers (Accueil Bonneau 2010, Centre d'amitié autochtone 2010, Chez Doris 2010, Chic Resto Pop 2010, Mission Bon Accueil 2010, Mission Toît Rouge 2010, Multi-Caf 2010, Open Door 2010, Rézo 2010, Rue des femmes 2010, Sac-à-dos 2010, Comité social Centre-Sud 2010.)
- For Moncton: Information on 2 day centres in Moncton obtained from personal communication with directors and budget allocations details from the Social Context of Homeless and Mentally Ill study.

Police contacts

- The values were obtained by multiplying average intervention time by estimated police costs per hour.
- Police time data were provided by Yanick Charette who undertook a study on police intervention time in Montreal (Charette et al., 2011, Charette et al., 2014), including average intervention times by offense type.
- Police costs per hour were calculated by dividing Police department yearly operating expenses by the number of yearly officer work hours.
- For Vancouver: Vancouver Police Department Administrative Report (2012) and Police Resources in Canada (Statistics Canada, 2011b).
- For Winnipeg: Winnipeg Police Service Annual Report (2011)
- For Toronto: Toronto Police Service Annual Statistics Report (2011)
- For Montreal: Service de police de la ville de Montréal, 2009; Service de police de la ville de Montréal, 2012
- For Moncton : City of Moncton Policing Services Study Summary by Perivale & Taylor Consulting (2010)

See Appendices 1 and 2 for details.

Court appearances

- Court costs can vary greatly. A case trial can take 15 minutes or may remain unfinished after one court trial session. Many cases can be heard in one trial for one person. The number of hours worked by the prosecution and the legal aid office will also vary. Consequently, although the costs per criminal court appearance presented here represent average criminal court costs per appearance, they may not represent true total costs.
- Costs include 4% capital costs
- Due to the time needed to derive such unit costs for Montreal alone, costs for Montreal were assumed to be representative of other sites. Final costs used differ by city only because of different inflation rates from 2011 to 2016.
- For Montreal: court cost per appearance was estimated by dividing court criminal matters expense (Ville de Montréal 2010) by the number of planned trial sessions (Cour municipale de la ville de Montréal 2008). Prosecution cost was estimated by multiplying average court cost by the ratio of prosecution cost to court cost (79%). This ratio was estimated using the Cost of Crime report produced by the Department of Justice Canada (Zhang 2008). Total legal aid expenses were divided by the number of demands (Commission des services juridiques 2010). The total was calculated from the total of expenses detailed above.

2. Costs (per hour except for physicians and dentists) of visits to or by health or social service providers in their office (O) or in community (C) settings

Type of professional	Moncton		Montreal			Toronto		Vancouver		Winnipeg	
	O	C	O1	O2 ^a	C	O	C	O	C	O	C
Addictions Counselor	\$98	\$76	-	-	\$96	\$118	\$92	\$121	\$94	\$134	\$104
Art Therapist	-	-	135	141	106	-	-	-	-	-	-
Case manager	142	124	151	157	115	166	140	152	132	156	135
CFS Worker	-	-	-	-	-	-	-	-	-	156	121
Community worker, Follow-up worker, Street worker	73	56	93	97	73	128	100	100	77	83	64
Conditional Release Officer	-	-	177	185	109	176	137	-	-	-	-
Court worker	142	110	0	0	0	166	128	152	118	156	121
Dentist (per visit)	134	-	133	-	-	136	-	133	-	137	-
Deputy curator or curator	-	-	145	151	114	-	-	-	-	-	-
Family doctor/GP (per visit)	46	46	48	48	48	38	38	37	37	41	41
Life skills worker	98	76	93	97	73	118	92	121	94	134	104
Mental health worker, Housing worker, Outreach worker	73	56	130	135	102	128	100	100	77	83	64
Midwife	-	-	-	-	-	-	-	-	-	193	150
Nurse	178	138	162	169	127	196	152	189	146	193	150
Nutritionist/dietician	152	118	148	154	116	164	128	169	131	156	121
Occupational therapist	173	134	146	152	115	182	141	188	146	171	132
Peer support worker	73	56	110	114	80	128	100	100	77	83	64
Physiotherapist	176	136	162	169	127	190	147	191	148	175	136
Psychoeducator	98	76	125	130	98	118	92	121	94	134	104
Probation officer	137	106	177	185	139	196	152	167	130	179	139
Psychiatrist (per visit)	59	59	75	75	75	51	51	52	52	101	101
Psychologist	174	135	139	144	109	151	117	176	136	193	151
Public Trustee	-	-	145	151	114	-	-	-	-	144	112
Social worker	142	110	146	152	115	166	128	152	118	156	121
Specialist doctor (not Psychiatrist or	58	58	55	55	55	64	64	56	56	55	55

Psychologist) (per visit)										
Radiology Technologist	-	-	157	163	123	-	-	-	-	-
Spiritual advisor/ counselor /healer, Aboriginal elder, Clergy	83	64	132	137	103	114	89	110	85	106
Therapist or counselor	98	76	139	144	109	118	92	121	94	134
Welfare worker	73	56	107	111	112	128	100	100	77	83
Work/vocational counselor, IPS counselor	107	83	134	140	105	123	96	106	82	126

^a O2 represents a visit to a provider in an institutional (such as a CLSC), as opposed to a community-based, setting. Questionnaires at other sites did not allow such a distinction to be made.

Notes

Costs per hour for face-to-face visits with health, social and justice service providers are presented above in terms of hours of face-to-face office visits and face-to-face visits in the community. Costs were estimated using a bottom-up approach.

Direct cost

Wages represent the median salary, by city, of different health, social, and justice service providers, obtained from the National Occupation Classification of Canada (Government of Canada, 2012). In cases where city-wide median salaries were not available, provincial medians³ were used. For professions where median salaries were not available, wage information from providers working in similar functions were used.

Indirect cost

To direct costs were added employee leave (vacation, illness, holidays, etc.), employee benefits (health insurance, life insurance, etc.), administration costs and capital costs. These costs are represented as a percentage of employee hourly wages. The percentages are based on Montreal community health centres' outpatient clinics (CLSC) (Agence de la santé et des services sociaux de Montréal). These rates were also applied to social and justice service providers whose working conditions are not administered by a health ministry. However, these working conditions are comparable to those found in the civil service. See Appendix 3 for details.

Accounting for time not spent face to face with the client

³ Average salaries were not provided.

- Other than face to face contacts with clients, health, social and justice providers also spend time doing administrative tasks and interventions on behalf of the client. Based on limited available information from mental health clinical teams and scientific literature, we estimated that office-based providers spent on average 38% of their time in face-to-face contacts. The corresponding figure is 49% for community treatment teams. Thus, to account for non-face-to-face time per contact, provider costs were divided by 0.38 and 0.49, respectively. These percentages were also applied to justice providers as an approximation. See Appendix 4 for details.

Costs of physician services

- The physician costs per visit were added to community health clinic visit costs. These were based on the Montreal costs per visit, adjusted per city based on CIHI average hospitalization costs for each city (CIHI, 2014).
- Family doctor, Specialist doctor, and Psychiatrist fee come from tables 3.1, 3.2, and 3.5, respectively, in the Physicians in Canada: Fee-for-Service Utilization 2012-2013 report, and were subsequently inflated to 2016. (Canadian Institute for Health Information, 2014). Community health clinic costs are based on Montreal community health clinic costs (Espace montréalais d'information sur la santé 2010), adjusted per city based on CIHI hospitalization costs.

3. Crisis or Health Lines

	Moncton	Montreal	Toronto	Vancouver	Winnipeg
Telecare	\$41	-	-	-	-
Other help lines	47	42	49	52	53
911 (emergency)	14	14	14	14	14
Info-Santé	-	36	-	-	-
Suicide help lines	-	71	-	-	-
Conjugal violence help line	-	27	-	-	-
Info-Social	-	90	-	-	-
211 Community Information	-	-	42	-	-
Telehealth Ontario	-	-	42	-	-
Crisis Intervention & Suicide help line	-	-	-	89	-
Manitoba Suicide Line	-	-	-	-	91
Clinic Health Centre and Crisis Lines	-	-	-	-	49

Helpline calls

- For Montreal: Health-line costs were based on 2009-2010 Centre de santé et de services sociaux de la Montagne (Agence de la santé et des services sociaux de Montréal), and Suicide information line costs were based on Suicide action Montréal 2010. Quebec crisis-line costs were based on Centre de crise de Québec.
- Capital costs of 4% were added

Mobile crisis team intervention

- The unit costs are representative of mobile crisis team interventions of community organisations in Quebec. These may not be representative of the cost of a mobile crisis team operating from a hospital or a community health centre, which may provide higher wages for its employees.
- For Montreal, costs were from Centre de crise de Québec.
- Capital costs of 4% were added

911 calls

- This unit cost is limited to the call-centre costs. It does not include the cost of further interventions by other services (ex: ambulance, fire services, police intervention, etc.)
- For Montreal, we used call centre expenses (Service de police de la ville de Montréal) divided by the number of calls (Montréal 2008).
- This unit cost is used for other sites as well.

4. Temporary/transitional board and care/group home settings, per night; Long-term group home or Room in long-term congregate setting with supports

	Moncton	Montreal	Toronto	Vancouver	Winnipeg
	cost	cost note	cost note	cost	cost note
Temporary/transitional board and care/group home settings, per night	\$65	\$20	\$92	\$88	\$73-95 Depending on site
Long-term group home or Room in long-term congregate setting with supports	\$65	\$20 Certain group homes \$51 Other long-term congregate settings with supports	\$58-143	\$82	\$95 Depending on group home (most common is \$92)

Notes

Group Homes refers to shared residences providing living accommodations for individuals with various kinds of disabilities where staff provide supervision, life skills support, and related services, either as temporary or long-term setting.

- Listed costs do not include private residences receiving no public funding in which expenses are fully borne by participants. To have included such costs would have resulted in double counting since participants' social assistance payments are considered costs.
- 6% was added to the costs to account for the capital component of the cost of providing overnight stay
- For Vancouver: Report from the Centre for Applied Research in Mental Health and Addiction (Patterson et al., 2007), adjusted for inflation.
- For Winnipeg: From communication with director of a Winnipeg non-profit organization providing a group home program used by At Home/Chez Soi participants.
- For Toronto: Weighted average unit costs based on 2010-2011 financial statements, annual reports, and communication with directors of 5 non-profit organizations providing group home programs used by At Home/Chez Soi participants.
- For Montreal: Based on two Montreal psychiatric hospitals' 2009-2010 expenses; Douglas Mental Health University Institute and the Institut universitaire en santé mentale de Montréal (Agence de la santé et des services sociaux de Montréal). Psychiatric hospitals manage allocations for mental health residential stays (with or without support services). Unit cost includes allocation and hospital administration cost.
- For Moncton: From unaudited financial statements (www.opencharity.ca) and communication with director of a Moncton non-profit organization providing a group home program used by At Home/Chez Soi participants. (No private organizations were used in Moncton)

5. Single-room occupancy (SRO) (with support services) and non-market housing

Moncton	Montreal		Toronto		Vancouver		Winnipeg	
cost	cost	note	cost	note	cost	note	cost	note
\$45	\$144	Female	\$33-96	Depending on specific SRO	\$14-47	Depending on specific SRO	\$10-73	Depending on specific SRO
	\$95	Male						

Notes

Single Room Occupancy (SRO) & non-market housing refers to a combination of SROs, “rooming houses and residential hotels containing small single rooms where residents share common bathrooms and sometimes cooking facilities” and publicly funded, non-market housing with rent geared to income (City of Vancouver, 2010). Levels of services vary from high to low care.

- Listed costs do not include private residences receiving no public funding in which expenses are fully borne by participants
- 6% was added to the costs to account for the capital component of the cost of providing overnight stay
- For Vancouver: weighted averages of reported stays in low service or high service non-market housing and single room occupancy hotels (SROs) run by local non-profit organizations or by the city of Vancouver. Costs obtained from communications with directors or publicly available figures.
- For Winnipeg: Weighted average unit costs based on 2010-2011 annual reports or communication with directors of 3 non-profit organizations providing various types of supportive housing programs used by At Home/Chez Soi participants.

6. Rooming house, with or without meal service

Moncton		Montreal	Toronto		Vancouver		Winnipeg	
cost	note	cost	cost	note	cost	note	cost	note
\$53-65	Depending on specific rooming house	\$20	\$43-96	Depending on specific rooming house	\$47-144	Depending on specific rooming house	\$80-82	Depending on specific rooming house

7. Hospitalizations and other settings involving stays of one or more nights

	Moncton	Montreal		Toronto	Vancouver		Winnipeg	
Type of place	cost	cost	note	cost	cost	note	cost	note
Transitional Housing	\$72	\$72		\$74	\$48		\$74	
Emergency shelter	121	59		69	94		24	
Crisis housing	83	301 558	if Dollard-Cormier	69	94		131	
Detox facility	566	127 404	if Dollard Cormier	159	370		362	
Nursing home/Long-term care facility	190	219		175	185		187	
Drug/alcohol/addiction treatment (incl. gambling etc.) or residential recovery program	57	127 404	if Dollard Cormier	172	129 473	if Burnaby	178	
Psychiatric rehabilitation residential program	65	75 398	if Levinschi	172	53 473	if Burnaby	95 484	if Selkirk
Psychiatric Residential Care	105		•	158	-		161 or 223	
Corrections half-way house	106	106		109	107		110	
Hospitalization: General hospital – physical, per day	1131	990		1176	1238		1349	
Hospitalization: General hospital – psychiatric, per day	891	597		812	908		759	
Hospitalization: Psychiatric hospital, per day	980	637		919	999		834	
Jail or prison								
Police detention cell	257	271		402	442		118	
Provincial jail	154	158	if for men	212	194		197	
		192	If for women					
Federal penitentiary	366	365		373	366		375	

Notes

Emergency shelters

Emergency shelters typically provide aggregate sleeping, i.e. many individuals on cots/mats or bunk beds in the same room. The values represent average unit costs of a bed day in emergency shelters.

- Unit costs, with the exception of that for Toronto, were estimated by dividing total shelter expenses by total number of bed days.
- Amortization expenses were replaced by annuitized land and property value to account for the capital component of the cost of providing overnight stay (see introduction)
- For Vancouver, we used 2010-2011 financial statements, annual reports, online statistics, BC Housing estimates, and media reports on the expenses of 4 Vancouver non-profit organizations operating a total of 9 yearly and seasonal emergency shelters.
- For Winnipeg, we used 2010-2011 financial statements, annual reports, and online statistics of 2 Winnipeg non-profit organizations providing emergency shelters. The Social Context of Homeless and Mentally Ill study (Lesage et al., 2011) provided information on percentage of budget allocated to emergency shelters for one Winnipeg organization in our study.
- For Toronto, we relied on information from the Shelter, Support and Housing Administration of Toronto.
- For Montreal, we relied on financial and activity statements from one of the 3 main men's shelters. We were unable to isolate the shelter cost of other shelters. That being said, this estimate coincided for our reference year, 2011, with the shelter unit cost of \$55 estimated by the three largest shelters in Montreal (Mission Bon Accueil, Old Brewery Mission, and Maison du Père).
- For Moncton, we used the 2010-2011 financial statements and online information of a Moncton non-profit organization providing emergency shelter.

Detox facilities

These facilities consist of inpatient withdrawal management programs associated with hospitals as well as programs run by non-profit organizations providing overnight detox beds.

- The value for Winnipeg comes from communication with Manitoba Health Ministry, providing direct costs of a Winnipeg non-profit organization detox unit. Adjustment for indirect costs based on information from the Centre de Réadaptation en Dépendance de Montréal (36%).
- For Toronto, information was obtained from the director of Withdrawal Management Services of one Toronto Hospital. Given its incongruence with costs of other sites, the validity of this cost was assessed by evaluating the calculations performed by our source.
- The higher value for Montreal comes from the Centre de Réadaptation en Dépendance de Montréal 2009-2010 annual report (Agence de la santé et des services sociaux de Montréal).
- The value for Moncton comes from communication with the Addiction, Mental Health, Primary Health Care and Extra-Mural Program branch of the Department of Health (Godin, 2013). 2012 unit cost adjusted for inflation to represent 2011 costs.

Nursing and long term care facilities

Here are meant “nursing homes, homes for the aged and other facilities providing services and care for the aged. Not included are homes for senior citizens or lodges where no care is provided” (Statistics Canada, 2010)

- 6% was added to account for the capital component of the cost of providing overnight stay
- For Vancouver: Statistics Canada (2010). Costs represent the total expenses per bed day of care 143 facilities serving the “aged” across British Columbia.
- For Winnipeg: Statistics Canada (2010). Costs represent the total expenses per bed day of care 63 facilities serving the “aged” across Manitoba.
- For Toronto: Statistics Canada (2010). Costs represent the total expenses per bed day of care 235 facilities serving the “aged” across Ontario.
- For Montreal: Based on 2010/2011 annual reports from 10 long-term care facilities in Montreal (Agence de la santé et des services sociaux de Montréal). Cost was estimated by dividing total facility expenses by total facility bed days.
- For Moncton: Statistics Canada (2010). Costs represent the total expenses per bed day of care 60 facilities serving the “aged” across New Brunswick.

Addiction treatment or residential recovery programs

Here are intended institutionally administered or charity-based residential addiction treatment programs, i.e. “recovery homes” / “sober houses”. For Statistics Canada values, unit costs represent bed days in facilities primarily serving “residents requiring treatment for problems with alcohol or drug addiction”.

- 6% was added to account for the capital component of the cost of providing overnight stay
- For Vancouver: Statistics Canada (2010). Cost represents the total expenses per bed day of 50 facilities caring for “addiction” across British Columbia. The institutional cost of Burnaby Centre for Mental Health and Addiction was based on review published for the Provincial Health Services Authority by Raymond Chabot Grant Thornton & Cie (2011).
- For Winnipeg: Statistics Canada (2010). Cost represents the total expenses per bed day of 14 facilities caring for “addiction” across Manitoba.
- For Toronto: Statistics Canada (2010). Cost represents the total expenses per bed day of 77 facilities caring for “addiction” across Ontario.
- For Montreal: Average of Centre de Réadaptation Portage (Portage, 2010) and Welcome Hall Mission Addiction Rehabilitation Program (Mission Bon Accueil, 2010). The institutional cost was based on the Centre de Réadaptation en Dépendance de Montréal 2009-2010 annual report (Agence de la santé et des services sociaux de Montréal).
- For Moncton : Based on 2010/2011 per diem cost of a recovery centre funded by the Horizon NB Health Network, obtained by email correspondence.

Psychiatric rehabilitation programs

Psychiatric rehabilitation programs refer to centres offering specialized inpatient care for mental health and psychiatric rehabilitation services in institutional settings.

- Unit costs were estimated by dividing total expenses by total bed days.
- 6% was added to account for the capital component of the cost of providing overnight stay (Section 1.2)
- For Vancouver: Cost of Burnaby Centre for Mental Health and Addiction. Based on review published for the Provincial Health Services Authority by Raymond Chabot Grant Thornton & Cie (2011).
- For Winnipeg: Cost of Selkirk Mental Health Centre obtained from 2010-2011 Annual Report of Manitoba Minister of Health
- For Montreal: Based on Douglas Mental Health University Institute Maison Levinschi 2009-2010 cost per day (Agence de la santé et des services sociaux de Montréal)

Psychiatric residential care

Psychiatric Residential Care is provided in facilities with four beds or more that are funded, licensed or approved by provincial/territorial departments of health and/or social services” providing care for the “psychiatrically disabled” as reported in Statistics Canada’s Residential Care Facilities Survey (Statistics Canada, 2010). Levels of services vary from high to low care.

- For Vancouver: Statistics Canada (2010). Costs represent the total expenses per bed day of 29 low-care **or** 20 high-care facilities serving the “psychiatrically disabled” across British Columbia.
- For Toronto: Statistics Canada (2010). Cost represents the total expenses per bed day of 25 low-care facilities serving the “psychiatrically disabled” across Ontario.
- For Moncton: Statistics Canada (2010). Cost represents the total expenses per bed day of 12 low-care facilities serving the “psychiatrically disabled” across New-Brunswick.

Corrections half-way houses

Corrections half-way houses are facilities run by non-profit organizations providing temporary rooms and reintegration services to individuals released from federal or provincial correctional institutions, either on parole, statutory release, or probation.

- Unit costs were estimated by dividing total expenses by total bed days.
- Amortization expenses were replaced by an annuitized land and property value to account for the capital component of the cost of providing overnight stay (section 1.1.2)
- For Winnipeg and Moncton, 2010-2011 financial statements and online information of a corrections halfway house in each city were obtained. We obtained \$101 and \$99, respectively.
- Toronto and Vancouver unit costs were set to that obtained for Winnipeg, while the Montreal unit cost was set to that for Moncton.

Hospitalizations

- Hospitalization costs per day are the sum of average hospital costs and average physician costs.
- 6% was added to account for the capital component of the cost of providing overnight stay

Non-psychiatric hospitalizations

- We assumed that one medical service was used per day.
- Indirect cost allocation methodology description for values provided by CIHI is described in “Methodology for Calculation of Inpatient Ward and ICU Hospital Per Diem Rates Using the 2009-2010 Canadian MIS Database” (Canadian Institute for Healthcare Information, 2010b). Indirect cost allocation methodology was not available for the estimate provided by the *Ministère de la santé et des services sociaux du Québec*.
- For Vancouver, British Columbia provincial average hospital costs were obtained from Canadian Institute for Healthcare Information (2010a) & fee-for-service costs were obtained from the Canadian Institute for Healthcare Information (2014)
- For Winnipeg, Manitoba provincial average hospital costs were obtained from Canadian Institute for Healthcare Information (2010a) & fee-for-service costs were obtained from the Canadian Institute for Healthcare Information (2014)
- For Toronto, Ontario provincial average hospital costs were obtained from Canadian Institute for Healthcare Information (2010a) & fee-for-service costs were obtained from the Canadian Institute for Healthcare Information (2014)
- For Montréal, provincial average hospital cost provided by the *Ministère de la Santé et des Services sociaux* of Quebec (Ministère de la santé et des services sociaux 2010) and the Régie de l'Assurance maladie du Québec (2010) for the fee-for-service cost
- New Brunswick provincial average hospital costs were obtained from Canadian Institute for Health Information (2010a) & fee-for-service costs were obtained from the Canadian Institute for Health Information (2014)
- Based on Hwang et al (2011), which estimated the difference between hospitalization costs per day for homeless vs non-homeless people, by type of hospitalization (psychiatric vs non-psychiatric), unit costs for all sites were reduced by 17%.

Psychiatric hospitalizations in psychiatric hospitals

- By interviewing three medical chiefs at the Douglas Mental Health Institute, we estimated that doctors visited psychiatric patients twice a week. Thus, it was assumed that the equivalent of 2/7 of psychiatrist service was used per day.
- For Toronto, estimate was based on Jacobs, Dewa et al. 2010.
- For Montreal, city average was estimated by calculating the weighted average of Montreal's two psychiatric hospitals: Douglas Mental Health Institute and the Montreal Mental Health Institute (Agence de la santé et des services sociaux de Montréal). The fee-for-service costs were obtained from the Canadian Institute for Healthcare Information (2014)

- We were unable to access the necessary data to estimate the costs per day in a psychiatric hospital in Vancouver, Winnipeg and Moncton. Using Toronto and Montreal unit costs for psychiatric care in a psychiatric hospital and a general hospital, we estimated that the ratio of psychiatric care in a psychiatric hospital to psychiatric care in a general hospital was 1.0698 in Montreal and 1.1350 in Toronto. The average between these two ratios, 1.1024 was used to estimate the cost of a psychiatric hospitalisation in a psychiatric hospital in the other cities.
- Based on the Hwang et al. (2011) study mentioned above, unit costs for psychiatric hospitalizations were *increased* by 9.6% (all sites).

Psychiatric hospitalizations in general hospitals

- By interviewing three medical chiefs at the Douglas Mental Health Institute, we estimated that doctors visited psychiatric patients twice a week. Thus, it was assumed that the equivalent of 2/7 of psychiatrist service was used per day.
- For Vancouver, British Columbia provincial average hospital costs were obtained from the Canadian Institute for Health Information (2010a), the fee-for-service cost were obtained from the Canadian Institute for Healthcare Information (2014).
- For Winnipeg, Manitoba provincial average hospital costs were obtained from the Canadian Institute for Health Information (2010a), the fee-for-service costs were obtained from the Canadian Institute for Health Information (2014).
- For Toronto, Ontario provincial average for hospital cost comes from “The cost of mental health and substance abuse services in Canada MHCC report” (Jacobs, Dewa et al. 2010) and fee-for-service costs were obtained from the Canadian Institute for Health Information (2014).
- For Montreal, a city average was estimated by calculating the weighted average cost of three Montreal general hospitals: *Centre hospitalier de l’Université de Montréal*, the *Centre hospitalier de l’Université McGill* and the *Hôpital Sacré-cœur (Agence de la santé et des services sociaux de Montréal)* and the fee-for-service cost were obtained from the Canadian Institute for Health Information (2014).
- For Moncton, New Brunswick provincial average hospital costs were obtained from the Canadian Institute for Health Information (2010a), the fee-for-service costs were obtained from the Canadian Institute for Health Information (2014).
- Based on the Hwang et al. (2011) study mentioned above, unit costs for psychiatric hospitalizations were *increased* by 9.6% (all sites).

Police detention cells

“Police detention cells” are holding cells used within police departments for detaining individuals. “Intoxicated Persons’ Detention Cell” or drunk tank are detention facilities meant for individuals who are intoxicated and detained for a maximum of 24 hours. Although police cells may also be used as intoxicated persons’ detention cells, drunk tanks are used specifically for intoxicated persons causing disruption in the community. In Manitoba, the City of Winnipeg has subcontracted drunk tanks to a community organization. Police officers and other peace officers may bring an intoxicated person causing disruption in such a drunk tank under the Intoxicated Persons’ Detention Act of Manitoba (Government of Manitoba, 1988).

- The unit cost for Winnipeg is based on operating costs of specialized detention cell administered by a Winnipeg non-profit organization. The unit cost was estimated by dividing total expenses by occupancy of detention centre.
- The higher unit cost for Vancouver is based on a source who did not wish to be disclosed.
- The unit cost for Montreal is based on a personal communication with the Service de Police de la Ville de Montréal (amount charged to correctional services for detained individual).

Provincial jails costs per day

- 6% was added to account for the capital component of the cost of providing overnight stay (Section 1.1.2)
- For all cities except Montreal, Statistics Canada’s 2008-2009 Adult correctional services survey was used and then inflated.
- For Montreal, the Ministère de la sécurité publique : Études des crédits 2011-2012 provided costs per day for the Bordeaux prison (for men) and the Tanguay prison (for women)

Federal penitentiaries

- 6% was added to account for the capital component of the cost of providing overnight stay
- Statistics Canada’s 2008-2009 Adult correctional services survey was used, yielding the same average cost for all federal penitentiaries.

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Appendix 1. Police time

Police time data were provided by the Yanick Charette who undertook a study on police intervention time in Montreal (Charette, Crocker et al. 2011, Charette, Crocker et al. 2014), including average intervention times by offense type.

Police intervention time involving individuals with or without mental illness, with or without arrest, in minutes (arithmetic mean)

Sample	Outcome	n	Mean	Standard deviation	Median
No presence of mental illness	Arrest	189	322.51	226.95	276.00
	Other outcome	5667	71.27	149.16	39.10
	Total	5856	79.38	158.60	40.63
Presence of mental illness	Arrestation	11	335.49	208.24	367.03
	Other outcome	261	135.79	197.22	84.35
	Total	272	143.86	201.17	85.87
Total	Arrestation	200	323.23	225.49	276.27
	Other outcome	5928	74.11	152.15	40.60
	Total	6128	82.24	161.26	42.22

Use of police time during interventions involving individuals with and without mental illness, in minutes (arithmetic mean) (Charette, 2014)

Reason	Without presence of mental illness			With presence of mental illness			Total		
	n	Mean	Standard deviation	n	Mean	Standard deviation	n	Mean	Standard deviation
Offense against person	213	242.07	386.89	11	216.35	224.94	224	240.8	380.26
Offense against property	496	137.8	138.17	6	131.76	150.02	502	137.73	138.15
Other criminal offense	238	181.3	177.93	6	215.98	98.11	244	182.15	176.36
Potential offense	3784	54.4	134.83	84	106.41	104.72	3868	55.53	134.45
Individual in distress	139	158.76	206.33	93	196.35	296.91	232	173.83	246.74
Noncriminal incident	986	74.93	105.16	72	103.68	99.3	1058	76.88	104.97
Total	5856	79.38	158.6	272	143.86	201.17	6128	82.24	161.26

Appendix 2. Police cost per hour

- Police cost per hour was calculated by dividing Police department yearly operating expenses by the number of yearly officer work hours.
- Cost figures take into account vacations and holidays. Based on the Service de sécurité publique de la ville de Montréal, it is estimated that police officers work 1456 hours a year.
- Capital costs of 4% were added to the unit cost
- Note that these figures are for 2011 and unit costs were later inflated to 2016

Site	Cost per hour	Source
Vancouver	118.52	Vancouver Police Department Administrative Report (July 2012) and Police Resources in Canada (Statistics Canada, 2011).
Winnipeg	97.72	Winnipeg Police Service Annual Statistics Report (2011)
Toronto	123.76	Toronto Police Service Annual Statistics Report (2011)
Montreal	95.21	SPVM
Moncton	104.38	City of Moncton Policing Services Study Summary (2010)

Appendix 3. Indirect costs as a percentage of hourly wage of health, social and justice service providers

Indirect cost	% estimated for office visits	% estimated for home visits and in the community	Sources and comments
Vacation, holidays and sick days	12%	12%	Employees in the health institutions usually have 20 vacation days, 6 sick days and 13 holidays, for a total of 39 days. 39 days of paid absence / (365 paid days – 39 days of paid absence) = 12%
Social benefit / Wage	35%	47%	All Montreal community health centres. (Agence de la santé et des services sociaux de Montréal, 2012)
Material costs / Wage	16%	7%	This ratio is based on external clinic cost of all community health centres in Montreal. (Agence de la santé et des services sociaux de Montréal, 2012)
Administration cost / Wage	17%	14%	Indirect cost include teaching, general administration, technical services, computer services, reception, security, maintenance and repairs. Indirect costs were allocated directly to external clinic costs based on number of hours worked, using a direct allocation method. (Agence de la santé et des services sociaux de Montréal, 2012)
Capital Cost	4%	4%	(Rosenheck & Frisman, 1994)

Appendix 4. Estimating proportion of time worked spent face-to-face with clients

1. Office-based providers

Percentages of face-to-face time with clients

Source	%	Comment
Clinical nurse specialist care manager's time commitments in a disease-management program for bipolar disorder (Glick, 2004)	40	Pro: Data based Con: Specific program, VA.
Amine Saadi (chief of psychotic disorders program, CIUSSS Ouest-de-l'Île-de-Montréal)	60 – 70%	Based on subjective estimate.
André Mpiana (Chief of Douglas outpatient clinic THAI)	Nurse: 36% Other professionals: 38%	The % of time spent face to face with a client will vary with the number of visits. However, it is their objective to meet 4 clients a day. Interviews last between 30 to 50 minutes (average 40 minutes). Nurses work 7 ½ hours and other professionals work 7 hours.
Toronto (program contacted by Brianna Kopp, then with the MHCC)	37.5%	Contacted by Brianna Kopp. Office visits: 15 hours per week of face to face time out of 40 hours of work time.

Note: All these percentages do correspond to face-to-face time with clients, thus not all direct time as usually defined.

We obtained a convenience sample of percentages of time spent by professionals providing face-to-face care to clients in office-based, clinical services. Except for the 60% estimate which we discount as overly optimistic and unreliable, the four other percentages obtained ranged from 36% to 40%, with a mean of 38%.

Note: Using Work Sampling to investigate time allocation in community mental health centers in Washington state, Stevenson et al. (99) found 51% (+/- 3.03%) as the % of time spent in client-related care activities, including phone contacts and client-related meetings as well as face-to-face time with clients. Since this is a broader measure, it is not inconsistent with it to use 38% for face-to-face time with clients alone.

2. Community outreach programs

Percentages of face-to-face time with clients

Source	%	Comment
Toronto (same service provider as above, this here is for outreach services only)	62.5%	25 hours per week of face to face time out of 40. Only 4 hours of travel time. Relatively long face-to-face contacts.
Chez Soi CSSS JM ICM team	41.4%	This is based on time spent in face-to-face contacts divided by our best estimate of hours actually worked (ie, vacation time taken out as the value of vacation time is built into the cost estimate later).
Chez Soi Diogène ICM team	24.7%	This is based on time spent in face-to-face contacts divided by our best estimate of hours actually worked (ie, vacation time taken out as the value of vacation time is built into the cost estimate later).
Claire Thiboutot: EMRII team	Average: 57% Note: one provider said it that 45% of the time was spent face to face + 15% of transport time.	This is a team that intervenes in situations involving homeless people and the police.

We obtained a convenience sample of percentages of time spent by professionals providing face-to-face care to clients in programs focusing on community outreach. The four percentages obtained ranged from 25% to 62.5%, with the average of the two middle values being 49%.

A. Broader definitions of direct time

Source	%	Comment
Direct and indirect time inputs on ACT (Dewa, 2003)	ACT 1: 54% ACT 2: 60% ACT 3: 51.4% ACT 4: 68.6%	Direct time defined as support given either directly with a client or on behalf of a client that can be apportioned to a specific client.

The fact that 49% is below this set of estimates that include all direct time makes the figure seem more reasonable. It may seem somewhat surprising that percentages for outreach services would be higher than for in-office services. In the case of the Toronto program, this can be explained by the length of time of client visits. For example, during the initial weeks of client interaction, some people might prefer shorter visits (15 minutes). Outreach workers, on the other hand, seem to be meeting fewer clients for longer periods of time