BC OPIOID SUBSTITUTION TREATMENT SYSTEM

Performance Measures 2012/2013

Office of the Provincial Health Officer

With contributions by:

Medical Beneficiary & Pharmaceutical Services Division &
Population and Public Health Division
British Columbia Ministry of Health

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BRITISH COLUMBIA | Office of the Provincial Health Officer

CONTENTS

1. INTRODUCTION

Opioid dependence is a chronic, recurrent medical illness often associated with co-morbid mental illness, transmission of infectious diseases (such as HIV/AIDS and hepatitis C), and premature mortality.[1] Opioid substitution treatment is widely regarded as both a highly effective treatment for opioid dependence and an evidence-based harm reduction intervention to prevent the transmission of blood-borne pathogens. Additionally, numerous studies have found that opioid substitution reduces harms associated with non-medical opioid use, including injection-related risks and criminal activity, and increases the social functioning and quality of life of patients.[2,3]

The Government of BC uses the term "opioid substitution treatment" (OST) to include the use of methadone and suboxone (buprenorphine and naloxone formulation) for maintenance treatment. This report presents overall OST data, along with separate methadone and suboxone data where relevant.

British Columbia's *Healthy Minds, Healthy People: A Ten-Year Plan to Address Mental Health and Substance Use in British Columbia*[4] outlines key actions and outcomes that relate to BC's OST system:

- Enhance and improve BC's methadone maintenance treatment system (including medical, pharmaceutical and psychosocial support components).
- By 2015, 90 per cent of methadone prescribers will adhere to optimal dose guidelines and 60 per cent of people started on methadone maintenance treatment will be retained at 12 months.
- Where appropriate, expand the reach and range of harm-reduction services that prevent and reduce the health, social and fiscal impacts of illegal drug use.
- By 2015, more people living with mental illness and/or substance dependence will report that they feel a sense of belonging within their communities.

The effectiveness of the province's OST system depends on a multidisciplinary approach with three key components: prescribing, dispensing, and counselling or other adjunct services and supports. Two professional regulatory bodies are responsible for the prescribing and dispensing components of the OST system: the College of Physicians and Surgeons of British Columbia (CPSBC) and the College of Pharmacists of British Columbia (CPBC).

CPSBC oversees the methadone and suboxone prescribing component through its Methadone Maintenance Program, under the advisement of its Methadone Maintenance Committee, composed of physicians with expertise in addictions medicine and OST. The objective of CPSBC's program is to support physicians to safely and effectively prescribe methadone for maintenance purposes. CPSBC develops guidelines and provides education to physicians for prescribing methadone and submits applications on behalf of physicians to the federal Minister of Health for exemptions to the *Controlled Drugs and Substances Act* so that methadone can be legally prescribed. The CPSBC Methadone Maintenance Treatment Handbook was revised in February 2014 (https://www.cpsbc.ca/files/pdf/MMP-Clinical-Practice-Guideline-2014-02.pdf).

CPBC licenses and regulates pharmacists, pharmacy technicians and the places in which they practice. CPBC provides policy guidance and training for pharmacists who purchase and dispense methadone. Pharmacists must complete the College's Methadone Maintenance Treatment training as identified in the 2010 CPBC Policy Guide,[5] and meet the necessary practice requirements prior to providing methadone and suboxone-related pharmacy services.

A 2010 review of methadone maintenance in BC identified the delivery of the psychosocial services component as one of the system's biggest challenges.[6] Psychosocial services and supports are an integral part of OST and are provided by health authorities, physicians, nurses, counsellors and other allied health professionals.

This report presents data related to the prescribing and dispensing components of British Columbia's OST system and addresses the recommendation in the Centre for Addictions Research of BC report *Methadone Maintenance Treatment in British Columbia, 1996-2008*,[6] to report regularly on the province's system. The indicators that are reported on reflect available Ministry of Health provincial-level data, and may not capture all aspects of methadone/suboxone maintenance services. The data do not include health services provided to on-reserve First Nations patients.

Data related to suboxone prescribing and dispensing are provided for three years only, reflecting the Ministry of Health's decision to add suboxone to the PharmaCare formulary in 2010.

The performance measures in this report are provided on a fiscal year basis (April 2012 – March 2013), and are based in part on the methodology in *An Evaluation of Methadone Maintenance Treatment in British Columbia: 1996-2007*, by Nosyk et al.[1]

Data Sources

Data in this report were drawn from the Ministry of Health, HealthIdeas Data Warehouse. The databases from which specific Ministry program area data were drawn are as follows:

i. PharmaNet (records of prescription drug claims dispensed at community pharmacies).

ii. MSP Genesis (Medical Services Plan fee-for-service claims).

iii. DAD (hospital discharge abstract data).

iv. HealthIdeas Client Registry (client age, gender, date of death).

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2. OPIOID SUBSTITUTION TREATMENT – SYSTEM MEASURES

The reach of BC's Opioid Substitution Treatment (OST) system can be summarized by reporting on key indicators of participation in OST outlined in this section. These include numbers of patients with methadone and suboxone maintenance prescriptions (whose medication is covered by PharmaCare), numbers of physician prescribers of methadone/suboxone for maintenance purposes, and numbers of methadone/suboxone-dispensing pharmacists and pharmacies. This section also provides a summary of the direct costs of methadone/suboxone maintenance and the PharmaCare program associated with BC's OST system.

2.1 Opioid Substitution Treatment Patients

Figure 1. **Opioid Substitution Treatment Patients by Local Health Area, 2012/2013**

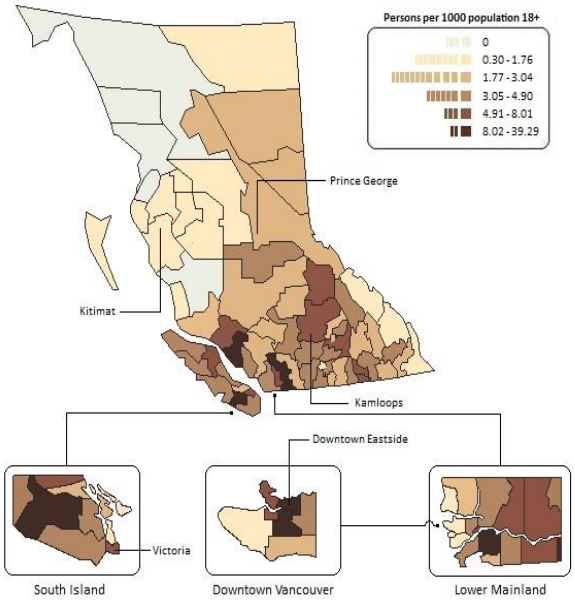
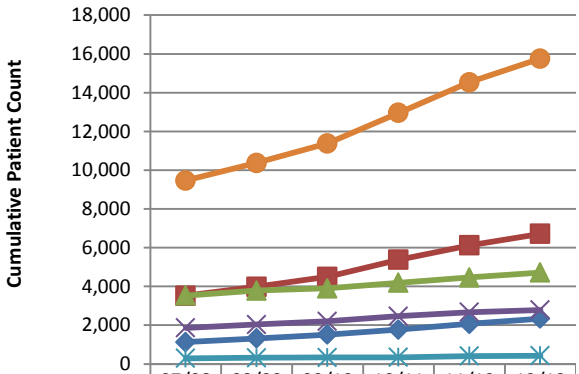


Figure 1 shows the rates of OST in Local Health Areas across the province in 2012/2013 (number of patients per 1,000 population). Higher rates are found in BC's larger urban areas such as the Lower Mainland, Victoria, Nanaimo and Kamloops. However, relatively high rates (i.e., 5 to 8 patients per 1,000) also exist in smaller population centres such as Powell River, Lake Cowichan and Campbell River.

Figure 2. Opioid Substitution Patients by Health Authority, BC, 2007/2008 to 2012/2013[a]



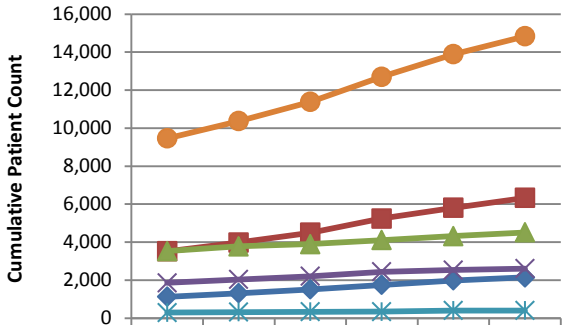
	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	1,128	1,317	1,512	1,774	2,067	2,338
02 FHA	3,521	3,983	4,494	5,381	6,120	6,716
03 VCHA	3,530	3,784	3,901	4,187	4,464	4,722
04 VIHA	1,860	2,034	2,202	2,469	2,674	2,787
05 NHA	294	320	333	347	410	430
06 BC Total	9,466	10,372	11,385	12,959	14,534	15,754

In 2012/2013, there were 15,754 patients receiving OST in the province. This is an 8 per cent increase from the previous year and an approximately 66 per cent increase from 2007/2008. Figure 2 also shows that the greatest rise in patient numbers came in the Fraser Health Authority, with approximately 90 per cent more patients engaged in OST since 2007/2008.

[a] IHA=Interior Health; FHA=Fraser Health; VCHA=Vancouver Coastal Health; VIHA=Island Health; NHA=Northern Health

Figures 3 and 4 break down the overall number of OST patients to methadone maintenance and suboxone treatment numbers, respectively.

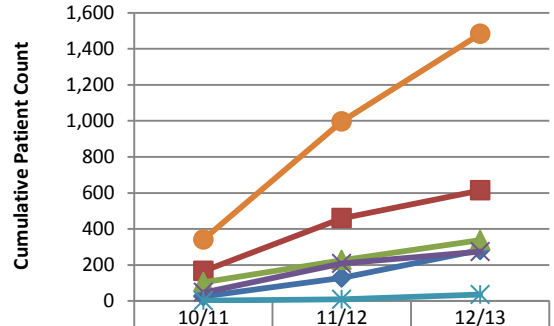
Figure 3. Methadone Maintenance Treatment Patients, by Health Authority, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	1,128	1,317	1,512	1,755	1,984	2,143
02 FHA	3,521	3,983	4,494	5,247	5,812	6,331
03 VCHA	3,530	3,784	3,901	4,106	4,318	4,510
04 VIHA	1,860	2,034	2,202	2,443	2,538	2,614
05 NHA	294	320	333	345	406	408
06 BC Total	9,466	10,372	11,385	12,703	13,895	14,833

Figure 3 shows that the number of patients on methadone increased approximately 7 per cent from the previous year and 57 per cent from 2007/2008. The greatest rise in number of patients was seen in Fraser Health, with an 80 per cent increase since 2007/2008.

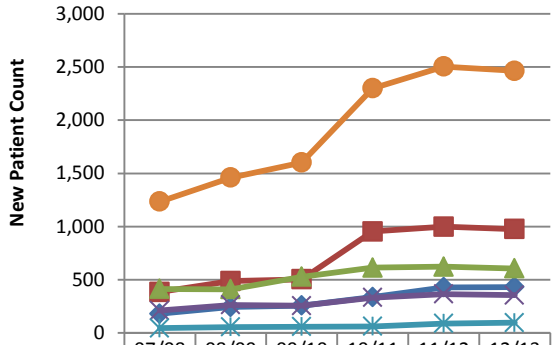
Figure 4. Suboxone Treatment Patients, by Health Authority, BC, 2010/2011 to 2012/2013



	10/11	11/12	12/13
01 IHA	26	129	283
02 FHA	166	459	614
03 VCHA	104	227	338
04 VIHA	47	208	274
05 NHA	2	9	36
06 BC Total	341	997	1,482

The cumulative number of patients on suboxone treatment has increased steadily since 2010 (see Figure 4).

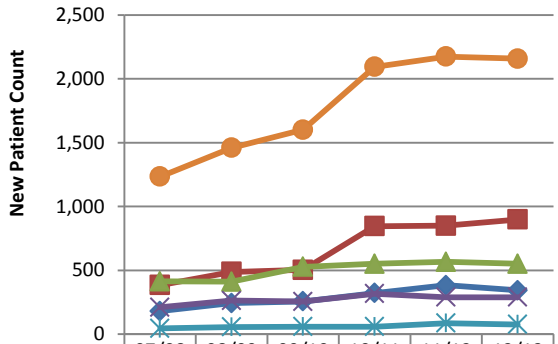
Figure 5. New Opioid Substitution Treatment Patients, by Health Authority, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	180	243	257	337	429	431
02 FHA	385	487	504	954	999	976
03 VCHA	413	411	527	614	623	606
04 VIHA	211	263	255	332	366	355
05 NHA	45	56	59	62	88	96
06 BC Total	1,234	1,460	1,602	2,299	2,505	2,464

As seen in Figure 5, the number of new OST patients in 2012/2013 was similar to the past few years. This shows a steady rate of increase in engaging patients in treatment.

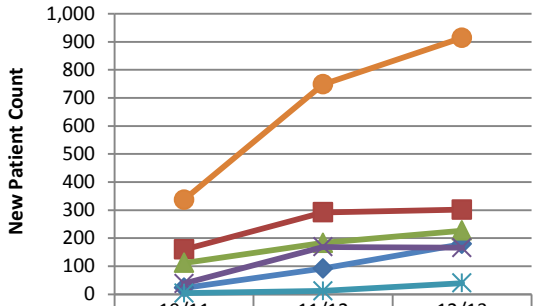
Figure 6. New Methadone Maintenance Treatment Patients, by Health Authority, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	180	243	257	322	383	343
02 FHA	385	487	504	846	850	899
03 VCHA	413	411	527	551	567	551
04 VIHA	211	263	255	317	289	289
05 NHA	45	56	59	59	86	76
06 BC Total	1,234	1,460	1,602	2,095	2,175	2,158

Figure 6 shows that the number of new patients in methadone maintenance treatment in 2012/2013 was similar to the past few years.

Figure 7. New Suboxone Treatment Patients, by Health Authority, BC, 2010/2011 to 2012/2013



	10/11	11/12	12/13
01 IHA	23	92	179
02 FHA	160	292	302
03 VCHA	112	183	227
04 VIHA	38	169	166
05 NHA	4	12	40
06 BC Total	337	748	914

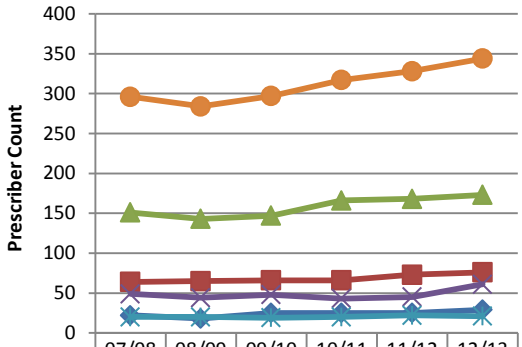
As seen in Figure 7, the number of new patients receiving suboxone in BC has increased steadily since suboxone was approved for inclusion in PharmaCare in 2010.

2.2 Prescribers of Opioid Substitution Treatment

Physicians who want to prescribe methadone or suboxone for maintenance purposes are required to receive authorization by the College of Physicians and Surgeons of British Columbia (CPSBC). The requirements for authorization include attending a day-long certification course, completing a preceptorship, undertaking annual continuing medical education in addiction medicine, and re-certification on an ongoing basis.

In 2012/2013, there were 344 physicians who prescribed for patients during that 12-month period, 173 (50 per cent) of whom were based in the Vancouver Coastal Health Authority. Figure 8 provides the annual physician prescriber count by health authority since 2007/2008.

Figure 8. Opioid Substitution Treatment Active Prescribers, by Health Authority, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	22	18	25	25	25	29
02 FHA	64	65	66	66	73	76
03 VCHA	151	143	147	166	168	173
04 VIHA	49	44	48	43	45	61
05 NHA	20	20	19	20	22	21
06 BC Total	296	284	297	317	328	344

As Figure 8 shows, following the period from 2007-2010 when the number of active prescribers in the province stayed about the same, there has been a small but steady increase in recent years. There are currently 48 more physicians actively prescribing at least one form of OST than there were in 2007/2008. However, this number also includes hospitalist and temporary exemptions, so the actual number of physicians providing regular ongoing medical care for OST patients is estimated to be fewer than 300.

2.3 Opioid Substitution Pharmacists and Pharmacies

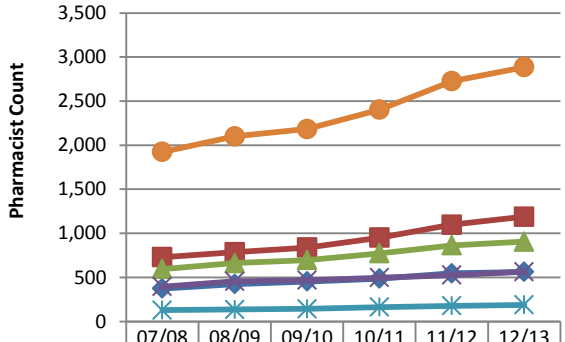
Similar to OST prescribing physicians, pharmacists in BC must meet specific training and certification requirements to be eligible to dispense opioids for maintenance purposes. Pharmacists dispense measured doses of methadone in liquid form for witnessed oral ingestion on-site or in carry-out packaging as appropriate for certain patients as determined by the prescribing physician. Pharmacists dispense suboxone as a sublingual tablet, typically dispensed on a daily basis.

Effective February 1, 2014, PharmaCare began covering Methadose for methadone maintenance treatment and pain, with a transition period from February 1 to 28, 2014, during which time Methadose and compounded methadone were both dispensed for

methadone maintenance treatment and reimbursed by the PharmaCare program. Effective March 1, 2014, only Methadose is to be dispensed for maintenance purposes and will be reimbursed by PharmaCare.

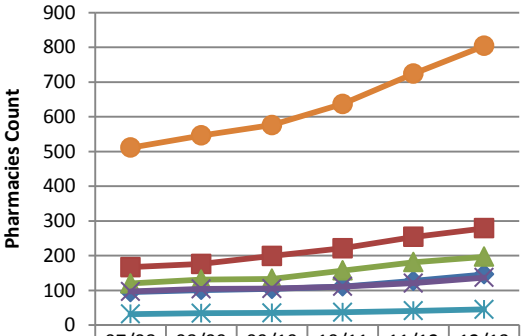
Figures 9 and 10 show that the number of BC pharmacists and pharmacies dispensing methadone and suboxone for maintenance purposes has increased substantially since 2007/2008.

Figure 9. Opioid Substitution Treatment Pharmacists, by Health Authority, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	373	424	453	486	546	563
02 FHA	730	786	838	950	1,098	1,188
03 VCHA	594	662	697	772	864	906
04 VIHA	396	455	467	496	525	564
05 NHA	129	136	143	163	178	189
06 BC Total	1,924	2,100	2,184	2,404	2,726	2,886

Figure 10. Opioid Substitution Treatment Pharmacies, by Health Authority, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	95	101	104	111	127	146
02 FHA	167	176	199	221	254	279
03 VCHA	120	131	133	157	181	197
04 VIHA	97	104	105	111	121	137
05 NHA	32	34	35	37	41	45
06 BC Total	511	546	576	637	724	804

2.4 Opioid Substitution Treatment Expenditures

PharmaCare helps British Columbians with the cost of eligible prescription drugs and designated medical supplies. PharmaCare reimburses opioid substitution ingredient costs and dispensing fees, as well as interaction fees for pharmacists who witness ingestion on-site. The interaction fee is payable to enrolled pharmacies for all PharmaCare-eligible claims (except for Plan B claims), including those above or below the Fair PharmaCare deductible. PharmaCare does not pay an interaction fee to pharmacists for witnessing the ingestion of suboxone. Patients registered with PharmaCare Plan C (for recipients of BC income assistance) are eligible for full reimbursement of their opioid substitution costs for prescribing and dispensing. Patients registered with Fair PharmaCare pay deductibles and co-payments, based on family income. For some patients, private insurance will cover a portion of these costs.

The total pharmacy costs for OST in BC was more than $51 million in 2012/2013, $44 million of which was paid by PharmaCare. Figure 11 summarizes the trend for the province in costs over time.

Figure 11. Provincial Pharmacy and PharmaCare Opioid Substitution Expenditures, BC, 2007/2008 to 2012/2013

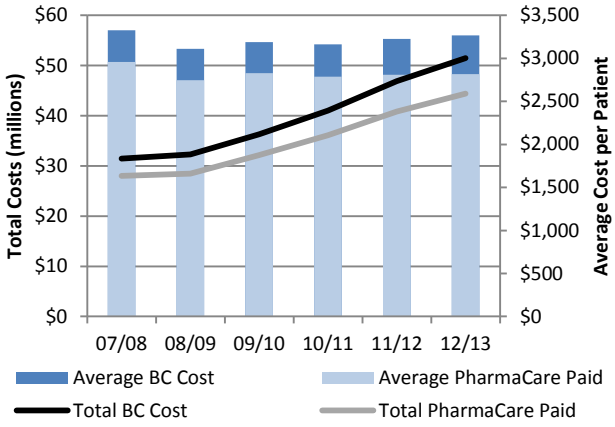
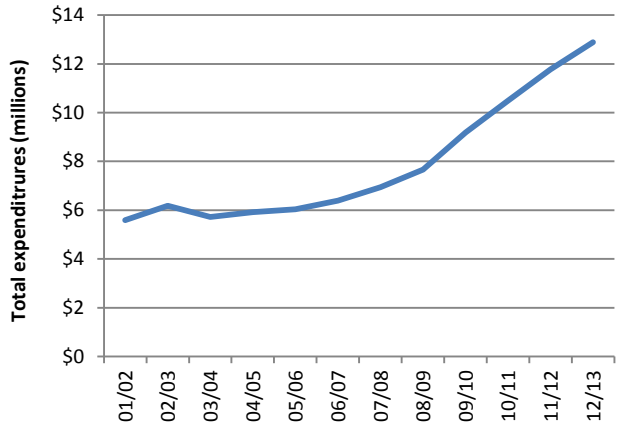


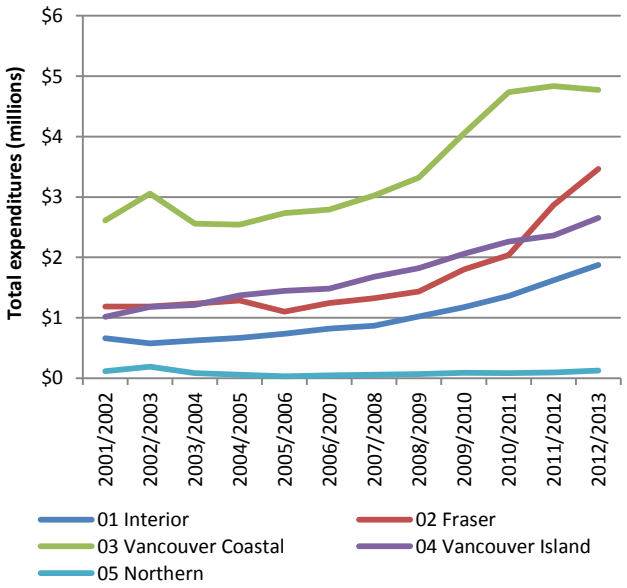
Figure 11 also shows that average per patient pharmacy costs have not increased significantly from 2007/2008 levels. In 2012/2013, the average annual cost of OST per patient was $3,268 (approximately the same as 2007/2008). The increase in overall costs may be due to patient population growth and the addition of suboxone as a limited coverage benefit in November 2010.

Figure 12. Medical Services Plan Expenditures for Opioid Substitution Treatment (Fee Item "Methadone Maintenance Treatment Only")[b], BC, 2007/2008 to 2012/2013



For opioid substitution treatment, Medical Services Plan payments for physician fee-for-service claims have increased significantly since 2007/2008 (see Figure 12), especially in the Interior, Vancouver Island, Vancouver Coastal, and Fraser Health Authorities (Figure 13). The total Medical Services Plan expenditures for OST in the province in 2012/2013 was $12.8 million.

Figure 13. Medical Services Plan Expenditures for Opioid Substitution Treatment (Fee Item "Methadone Maintenance Treatment Only")[b], by Health Authority, BC, 2007/2008 to 2012/2013



A Ministry of Social Development and Social Innovation supplement provides income assistance clients with up to $500 per calendar year (average of $41.67 per month) toward the cost of substance use counselling or related services where no other resources are available. The supplement can be used to cover user fees charged by some methadone clinics, which are generally described as fees for patient services not billable to Medical Services Plan. The total annual expenditure by the Ministry of Social Development and Social Innovation for the addiction counselling supplement in 2012/2013 was $2.48 million (a majority of which went to clients engaged in OST).

[b] Although the fee item is called "Methadone Maintenance Treatment Only", it is used by physicians billing for both methadone and suboxone for maintenance purposes.

3. OPIOID SUBSTITUTION TREATMENT – OUTCOME MEASURES

This section summarizes system outcome measures that are indirectly associated with BC's opioid substitution treatment (OST) system through the impacts of methadone/suboxone maintenance on the underlying health conditions (including opioid dependence) of participants in the program.

All outcome measures presented here are for episodes of methadone or suboxone maintenance treatment, defined as continuous dispenses of methadone or suboxone (and additional doses supplied as take-away carries). A gap of more than 30 consecutive days determines the end of an episode of treatment.

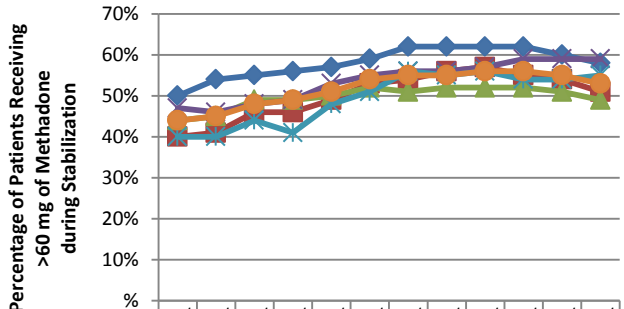
An important caveat for this section is that the outcome measures were obtained without an attempt to isolate the effect of opioid substitution (versus no treatment or other treatments). Therefore, the material presented here is intended to be hypothesis-generating and may initiate further analysis of more specific outcomes using observational study designs.

3.1 Duration and Retention on Opioid Substitution Treatment

Opioid substitution treatment duration is measured in days of maintenance per episode, and is an important indicator of treatment effectiveness. Studies referenced in Nosyk et al.[1] suggest that longer treatment duration is associated with improved post-treatment outcomes. Nosyk et al.[1] also found a significant correlation between dose and treatment retention: the probability of being retained in treatment was lowest for patients receiving maintenance doses below 40 mg per day and highest for patients receiving above 100 mg per day of methadone. The College of Physicians and Surgeons of British Columbia's 2014 Methadone Maintenance Program's Clinical Practice Guideline states that most patients will achieve stability on maintenance doses of between 60 to 120 mg of methadone daily. For the purposes of this report, treatment retention is defined as a continuous period of treatment without a gap of more than 30 consecutive days.

Figure 14 shows the percentage of BC's methadone patients receiving a stabilization dose of more than 60 mg. This percentage has been somewhat stable at a little over 50 per cent for the past several years.

Figure 14. Percentage of Patients Receiving a Stabilization Dose of Methadone >60 mg, by Health Authority, BC, 2001/2002 to 2012/2013



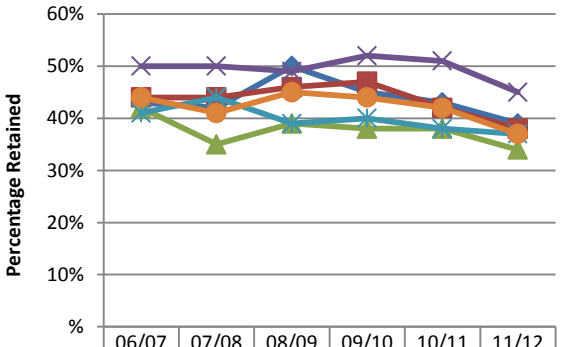
	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	50	54	55	56	57	59	62	62	62	62	60	58
02 FHA	40	41	46	46	49	53	54	56	57	55	54	51
03 VCHA	44	45	49	49	50	52	51	52	52	52	51	49
04 VIHA	47	46	48	49	53	55	56	56	57	59	59	59
05 NHA	40	40	44	41	48	51	56	55	56	54	54	55
06 BC Total	44	45	48	49	51	54	55	55	56	56	55	53

Longer retention in OST is correlated with better long-term health outcomes for people seeking treatment for opioid dependence. Figure 15 shows a little more than one-third (37 per cent) of new BC patients are retained in treatment after one year. Rates of retention for new patients at 12 months in the Island Health region continue to be higher (45 per cent) than the BC average, while rates in Vancouver Coastal appear lower (34 per cent). By comparison, the mean rates of retention in methadone maintenance treatment after one year in the province of Ontario have been reported

as approximately 55 per cent.[7] Possible reasons for these low retention rates include the following:

a) People registered in methadone maintenance treatment care in hospitals or jails may re-register in the community upon release.
b) At clinics, multiple doctors might submit multiple registrations.
c) Transitioning between methadone and suboxone might include re-registration.

Figure 15. Percentage of People Started on Methadone Maintenance Treatment Retained at 12 Months, by Health Authority, BC, 2006/2007 to 2011/2012

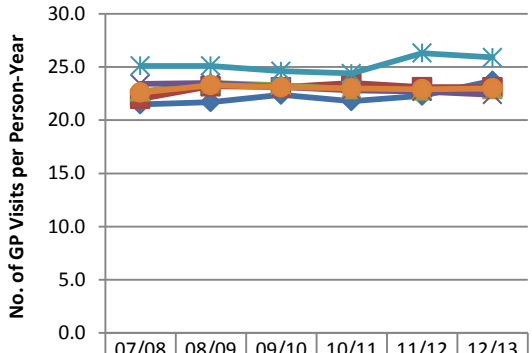


	06/07	07/08	08/09	09/10	10/11	11/12
01 IHA	43	42	50	45	43	39
02 FHA	44	44	46	47	42	38
03 VCHA	42	35	39	38	38	34
04 VIHA	50	50	49	52	51	45
05 NHA	41	44	39	40	38	37
06 BC Total	44	41	45	44	42	37

3.2 General Practitioner Visits and Hospitalization Costs for People on Opioid Substitution Treatment

Figure 16 shows the number of times that a person in OST contacts their general practitioner, for any reason, per year. Since many people on OST may have complex health needs, these numbers are higher than that of the general population, with a provincial average of 23 visits per year.

Figure 16. Number of General Practitioner Visits per Person-Year in Treatment, by Health Authority, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	21.5	21.7	22.4	21.8	22.3	23.7
02 FHA	22.0	23.2	23.1	23.5	23.1	23.1
03 VCHA	22.7	23.5	23.3	22.9	22.8	22.9
04 VIHA	23.4	23.5	23.1	22.8	22.7	22.4
05 NHA	25.1	25.1	24.6	24.4	26.3	25.9
06 BC Total	22.6	23.3	23.1	23.0	22.9	23.0

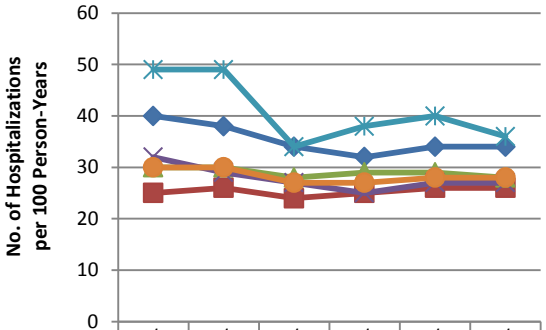
Table 1 summarizes the number and cost of hospitalizations while patients are engaged in OST. The total cost of hospitalizations for patients engaged in OST reached a high of $15.2 million in 2012/2013, which reflects the growth in the OST patient population. However, the average cost of hospitalization per patient continues to decline.

Table 1. Hospitalizations and Costs during Opioid Substitution Treatment, by Fiscal Year, 2007/2008 to 2012/2013

	No. of Admissions		Hospital Cost	
	Total	Rate per 100 Person-Years	Total	Average
07/08	2,282	30	$13,260,500	$1,357
08/09	2,416	30	$13,136,321	$1,226
09/10	2,465	27	$12,114,282	$1,013
10/11	2,728	27	$13,220,841	$981
11/12	3,111	28	$14,320,783	$950
12/13	3,322	28	$15,165,367	$932

Figure 17 shows a plateau in recent years in the number of hospitalizations per 100 person-years for patients engaged in OST.

Figure 17. Hospitalizations per 100 Person-Years during Opioid Substitution Treatment, by Health Authority, BC, 2007/2008 to 2012/2013



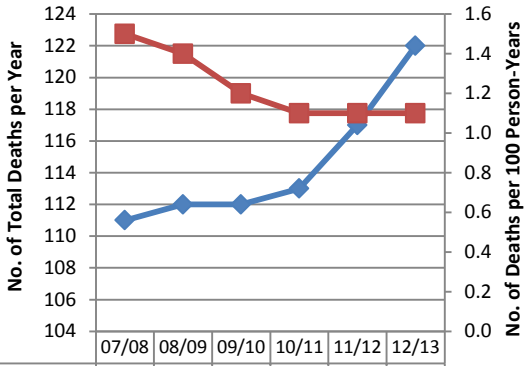
	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	40	38	34	32	34	34
02 FHA	25	26	24	25	26	26
03 VCHA	30	30	28	29	29	28
04 VIHA	32	29	27	25	27	27
05 NHA	49	49	34	38	40	36
06 BC Total	30	30	27	27	28	28

3.3 Mortality

This section provides measures of mortality during OST. Mortality is measured in terms of deaths from any cause recorded during or within 30 days of an episode of OST.

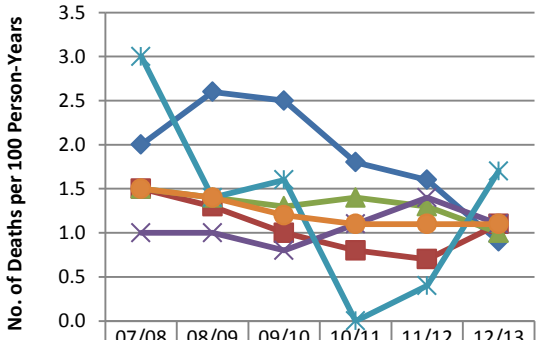
Although the number of patient deaths has increased between 2007/2008 and 2012/2013 (reflecting overall growth of the patient population during this period), the rate of mortality for people on methadone maintenance has decreased to 1.1 per 100 person-years (see Figure 18). These unadjusted rates cannot be used to draw conclusions about the effectiveness or risks of OST. However, Figure 18 shows that the number of patients engaged in OST increased without a proportional increase in rates of death, providing some reassurance of the relative safety of OST in BC. By comparison, mortality rates among regular or dependent users of street heroin are estimated to be 2.09 per 100 person-years.[8] Figure 19 shows all-cause mortality rates (deaths per 100 person-years) of OST patients by health authority.

Figure 18. All-cause Mortality during Opioid Substitution Treatment, by Fiscal Year, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
Total Deaths in OST Treatment	111	112	112	113	117	122
Deaths per 100 Person-Years	1.5	1.4	1.2	1.1	1.1	1.1

Figure 19. Deaths by Any Cause per 100 Person-Years during Opioid Substitution Treatment, by Health Authority, BC, 2007/2008 to 2012/2013



	07/08	08/09	09/10	10/11	11/12	12/13
01 IHA	2.0	2.6	2.5	1.8	1.6	0.9
02 FHA	1.5	1.3	1.0	0.8	0.7	1.1
03 VCHA	1.5	1.4	1.3	1.4	1.3	1.0
04 VIHA	1.0	1.0	0.8	1.1	1.4	1.1
05 NHA	3.0	1.4	1.6	0.0	0.4	1.7
06 BC Total	1.5	1.4	1.2	1.1	1.1	1.1

Note that small numbers of OST patients in Northern Health means there can be large changes in the annual all-cause mortality rate.

4. CONCLUSION

Methadone and suboxone maintenance treatment for opioid dependence in British Columbia has undergone significant growth over the past decade. Greater access to opioid substitution treatment, along with other harm reduction initiatives, has helped contribute to the lower incidence of HIV infection among people who inject drugs.[9] This report provides relevant data on key indicators of BC's methadone maintenance system, although further work needs to be done on aspects of the system and indicators that are not covered here (such as psychosocial supports). The information it presents is important for improving health service delivery and health system planning—and, ultimately, achieving better health outcomes for opioid-dependent people—in the province.

5. RESOURCES

The websites listed below provide relevant information about BC's opioid substitution treatment system.

British Columbia Methadone Program Websites

BC Ministry of Health
www.health.gov.bc.ca/cdms/methadone.html

College of Physicians & Surgeons of BC
www.cpsbc.ca/node/94

College of Pharmacists of BC
www.bcpharmacists.org/about_us/key_initiatives/index/articles144.php

6. REFERENCES

[1] Nosyk B, Sun H, Sizto S, Marsh D, Anis A. An evaluation of methadone maintenance treatment in British Columbia: 1996-2007. Vancouver, BC: University of British Columbia; 2009.

[2] Centers for Disease Control. Methadone maintenance treatment. Atlanta, GA: Centers for Disease Control ; 2002 [cited 2014 Apr 14]. Available from: http://www.cdc.gov/idu/facts/Methadone.htm.

[3] Health Canada. Literature review: methadone maintenance treatment. Ottawa, ON: Health Canada; 2002 [cited 2014 Apr 15]. Available from: http://www.hc-sc.gc.ca/hc-ps/alt_formats/hecs-sesc/pdf/pubs/adp-apd/methadone/litreview_methadone_maint_treat.pdf.

[4] Ministry of Health Services, Ministry of Children and Family Development. Healthy minds, healthy people: a 10-year plan to address mental health and substance use in British Columbia. Victoria, BC: Ministry of Health Services; 2010 [cited 2014 Apr 14]. Available from: http://www.health.gov.bc.ca/library/publications/year/2010/healthy_minds_healthy_people.pdf.

[5] College of Pharmacists of British Columbia. Policy guide: methadone maintenance treatment – professional practice policy #66. Vancouver, BC: College of Pharmacists of British Columbia; 2010 [cited 2014 Apr 14]. Available at: http://library.bcpharmacists.org/A-About_Us/A-8_Key_Initiatives/1029-PPP66_Policy_Guide_MMT.pdf.

[6] Centre for Addictions Research BC. Methadone maintenance treatment in British Columbia, 1996-2008. Vancouver, BC: Centre for Addictions Research BC; 2010 May [cited 2014 Apr 14]. Available from: http://www.health.gov.bc.ca/library/publications/year/2010/Methadone_maintenance_treatment_review.pdf.

[7] Strike CJ, Gnam W, Urbanoski K, Fischer B, Marsh D, Millson M. Retention in methadone maintenance treatment: a preliminary analysis of the role of transfers between methadone prescribing physicians. The Open Addiction Journal. 2008;1:1-10.

[8] Degenhardt L, Bucello C, Mathers B, Briegleb C, Ali H, Hickman M, et al. Mortality among regular or dependent users of heroin and other opioids: a systematic review and meta-analysis of cohort studies. Addiction. 2011;106(1):32-51.

[9] Gilbert M, Buxton JA, Tupper KW. Decreasing HIV infections among people who use drugs by injection in British Columbia: potential explanations and recommendations for further action. Victoria, BC: Office of the Provincial Health Officer; 2011 [cited 2014 Apr 14]. Available from: http://www.health.gov.bc.ca/library/publications/year/2011/decreasing-HIV-in-IDU-population.pdf.