

BC METHADONE MAINTENANCE SYSTEM

Performance Measures *2011/2012*



Office of the Provincial Health Officer

With contributions by:

Pharmaceutical Services Division &
Population and Public Health Division
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1. INTRODUCTION

Opioid dependence is a chronic, recurrent medical illness associated with co-morbid mental illness, transmission of infectious diseases (such as HIV/AIDS and hepatitis C), and premature mortality.¹ Methadone maintenance 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 methadone maintenance 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.

British Columbia's *Healthy Minds, Healthy People: A Ten-Year Plan to Address Mental Health and Substance Use in British Columbia*² outlines key actions and outcomes that relate to BC's Methadone Maintenance System:

- Enhance and improve BC's methadone maintenance treatment system (including medical, pharmaceutical and psychosocial support components)
- By 2015, 90% of methadone prescribers will adhere to optimal dose guidelines and 60% 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 Methadone Maintenance 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 Methadone Maintenance System: the College of Physicians and Surgeons of British Columbia (CPSBC) and the College of Pharmacists of British Columbia (CPBC).

CPSBC oversees the prescribing component through its Methadone Maintenance Program, under the advisement of its Methadone Maintenance Committee, composed of physicians with expertise in addictions medicine and opioid substitution treatment. 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.

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,³ and meet the necessary practice requirements prior to providing methadone-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.⁴ Psychosocial services and supports are an integral part of methadone maintenance and are provided by health authorities, private physicians, counsellors, and other allied health professionals.

This report presents data related to the prescribing and dispensing components of British Columbia's Methadone Maintenance System and addresses the recommendation in the Centre for Addictions Research of BC report, *Methadone Maintenance Treatment in British Columbia, 1996-2008*⁴ to report regularly on the province's Methadone Maintenance System. The indicators that are reported on reflect available Ministry of Health provincial-level data, and may not capture all aspects of methadone maintenance services. Data tables for the figures in this report will be made available on the website of the Office of the Provincial Health Officer: <http://www.health.gov.bc.ca/pho/>

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

Data Sources

Data in this report was drawn from the Ministry of Health's 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)

The report does not include data on methadone maintenance services provided to on-reserve First Nations patients, whose health services and medications for eligible clients are provided through Health Canada's non-insured health benefits program.

Acknowledgements: The Ministry of Health would like to thank Dr. Bohdan Nosyk (BC Centre for Excellence in HIV/AIDS) and his colleagues at UBC's Centre for Health Evaluation and Outcome Sciences for their earlier work in analyzing methadone maintenance data in BC, which provided some of the methodological foundations for this report. The Ministry would also like to thank Ray Ghouse, Christine Voggenteiter, Patrick Day, Brett Wilmer, Kenneth Tupper and River Chandler for their work developing this report. Special thanks to the Centre for Addictions Research of BC for its assistance with layout and production of the report.

2. METHADONE MAINTENANCE SYSTEM MEASURES

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

2.1 Methadone Maintenance Patients

Figure 1. Methadone Maintenance Patients by Local Health Area, 2011/2012

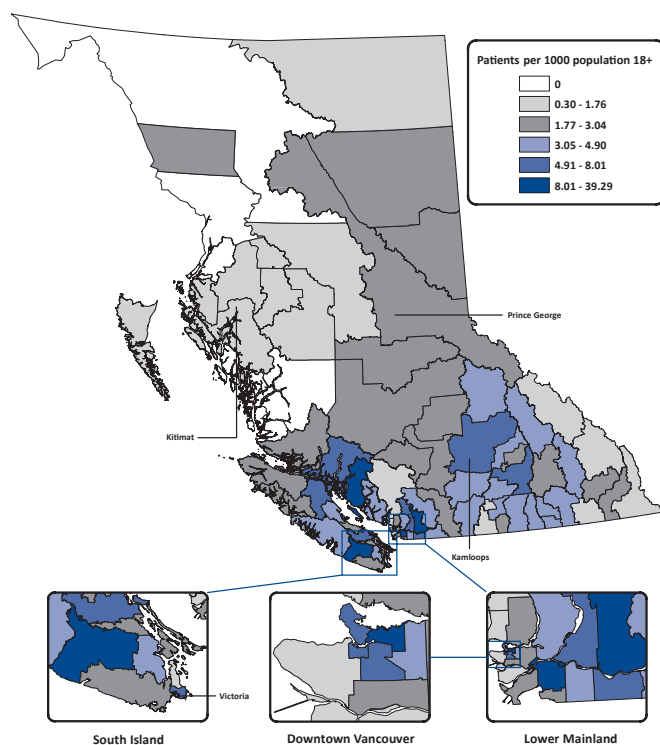


Figure 1 shows the rates of engagement in methadone maintenance across the province in 2011/2012. Higher rates are found in BC's larger urban areas such as the Lower Mainland, Victoria, Nanaimo and Kamloops. However, high rates (i.e., 5 to 8 patients per 1,000) also exist in smaller population centres such as Powell River, Lake Cowichan and Campbell River.

In 2011/2012, PharmaCare provided coverage for methadone maintenance pharmacy costs for 13,894 patients. This is a 9 per cent increase from the previous year and a 79 per cent increase from 2001/2002, which was the first year of a new payment structure for methadone maintenance pharmacies. Figures 2 and 3 break down methadone maintenance patient counts by health authority.

Figure 2. Methadone Maintenance Patients by Health Authority, BC, 2001/2002 to 2011/2012

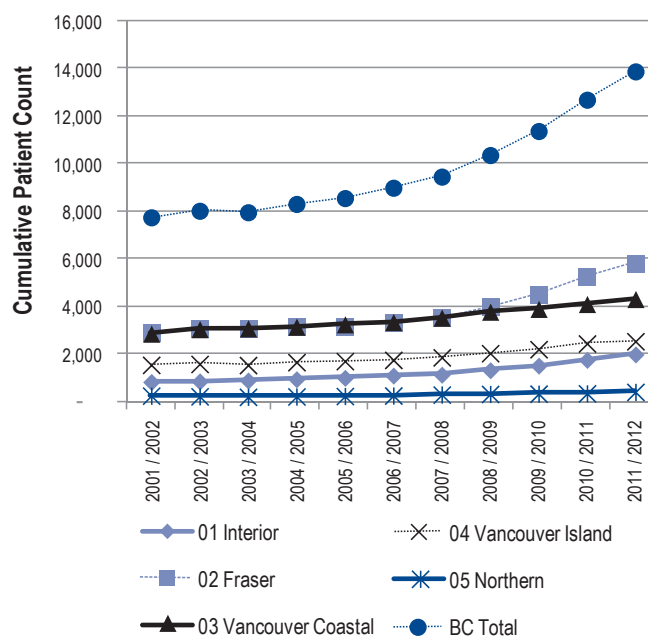
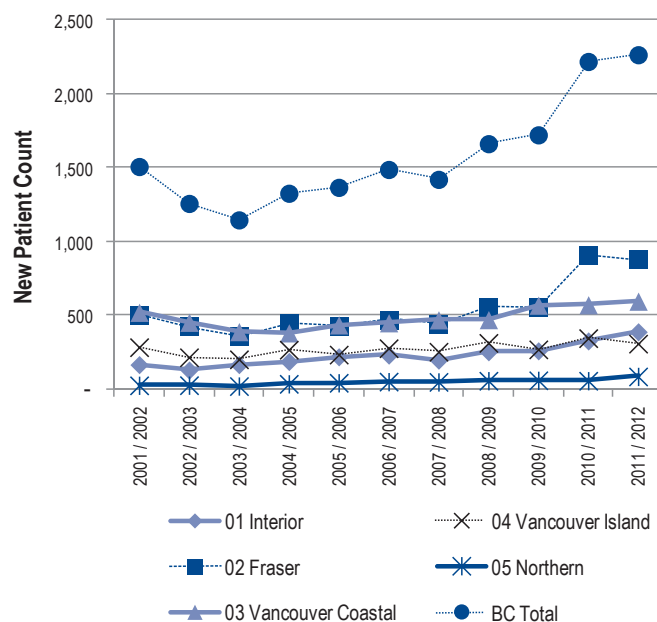


Figure 3. New Methadone Maintenance Patients by Health Authority, BC, 2001/2002 to 2011/2012

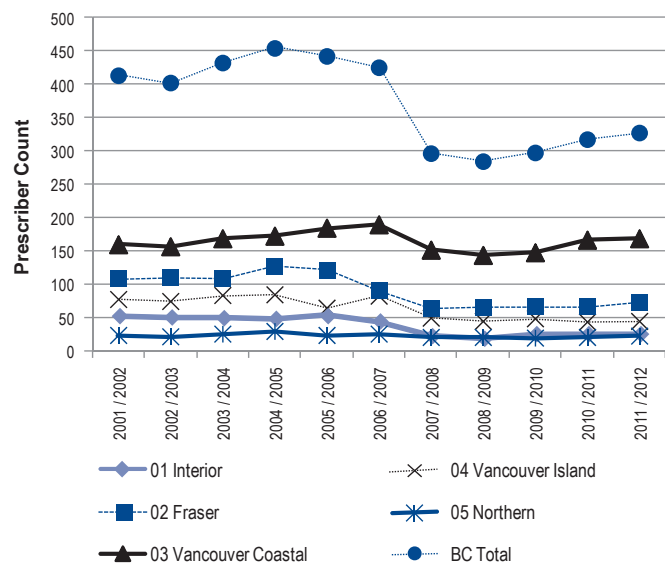


2.2 Methadone Maintenance Program Prescribers

Physicians who want to prescribe methadone for maintenance purposes are required to receive authorization by CPSBC. The requirements for authorization include attending a day-long certification course, complying with prescribing guidelines (which are monitored by CPSBC) and re-certification on an ongoing basis.

In 2011/2012, there were 11,980 professionally active physicians in British Columbia. Of these, 433 were authorized to prescribe methadone for maintenance purposes, and 327 actually prescribed for patients during that 12-month period, 168 (51 per cent) of whom were based in Vancouver Coastal Health Authority. Figure 4 provides the annual physician prescriber count by health authority since 2001/2002.

Figure 4. Methadone Maintenance Program Active Prescribers by Health Authority, BC, 2001/2002 to 2011/2012



As shown in Figure 4, there was a decrease of over 100 prescribers between 2006/2007 and 2007/2008. This decline in methadone prescribers appears to have little effect on the numbers of patients initiating methadone maintenance; on average, physicians continuing to prescribe methadone have individually taken on more patients. The Ministry of Health is investigating the reasons for this decrease and the Office of the Provincial Health Officer will provide an online update to this report when these are determined.

2.3 Methadone Maintenance Pharmacists and Pharmacies

Similar to prescribing physicians, pharmacists in BC must meet specific training and certification requirements to be eligible to dispense methadone 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.

The numbers of BC pharmacists and pharmacies dispensing methadone for maintenance purposes have more than doubled since 2001/2002. Figures 5 and 6 plot these numbers by health authority.

Figure 5. Methadone Maintenance Pharmacists by Health Authority, BC, 2001/2002 to 2011/2012

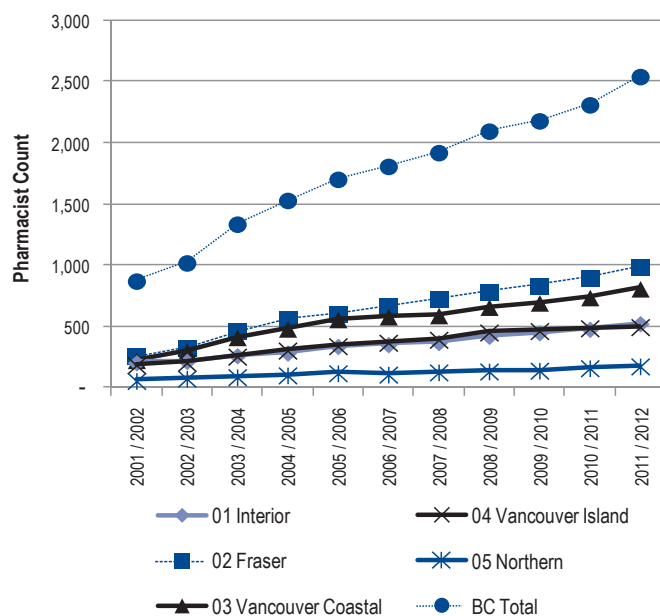
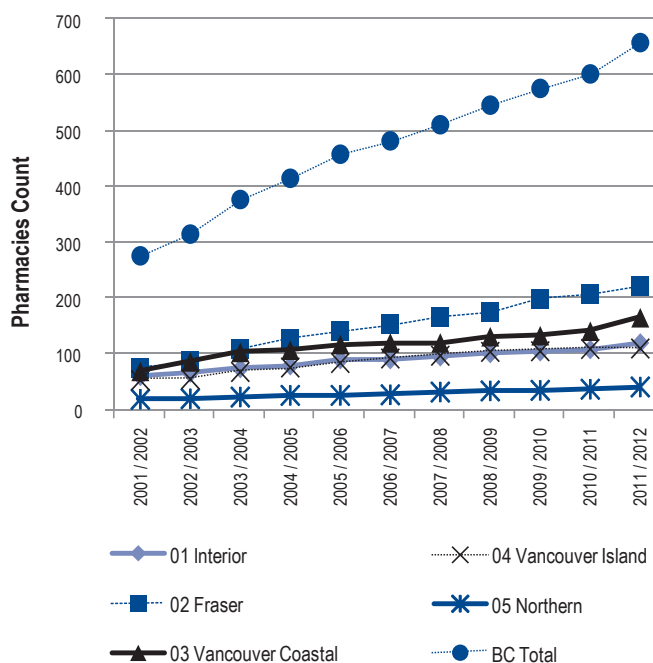


Figure 6. Methadone Maintenance Pharmacies by Health Authority, BC, 2001/2002 to 2011/2012

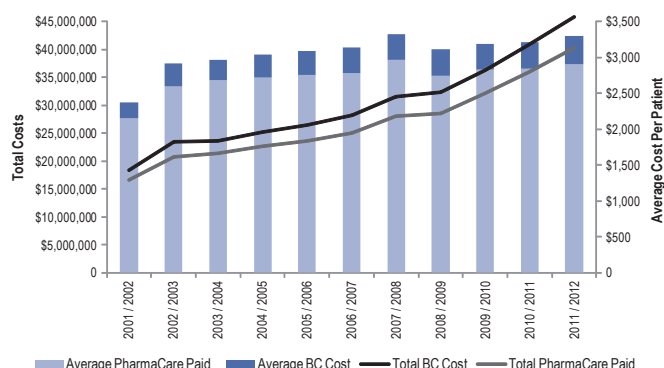


2.4 Methadone Maintenance Expenditures

PharmaCare helps British Columbians with the cost of eligible prescription drugs and designated medical supplies. PharmaCare reimburses methadone ingredient costs and dispensing fees, as well as interaction fees for pharmacists who witness ingestion on-site. Patients registered with PharmaCare Plan C (for recipients of BC income assistance) are eligible for full reimbursement of their methadone costs for prescribing and dispensing. Patients registered with Fair PharmaCare pay deductibles and co-pays, based on family income. For some patients, private insurance will cover a portion of these costs.

The total pharmacy costs for methadone maintenance in BC reached nearly \$46 million in 2011/2012, \$40 million of which was paid by PharmaCare. Figure 7 summarizes the trend in costs over time.

Figure 7. Provincial Government and PharmaCare Methadone Expenditures, BC, 2001/2002 to 2011/2012

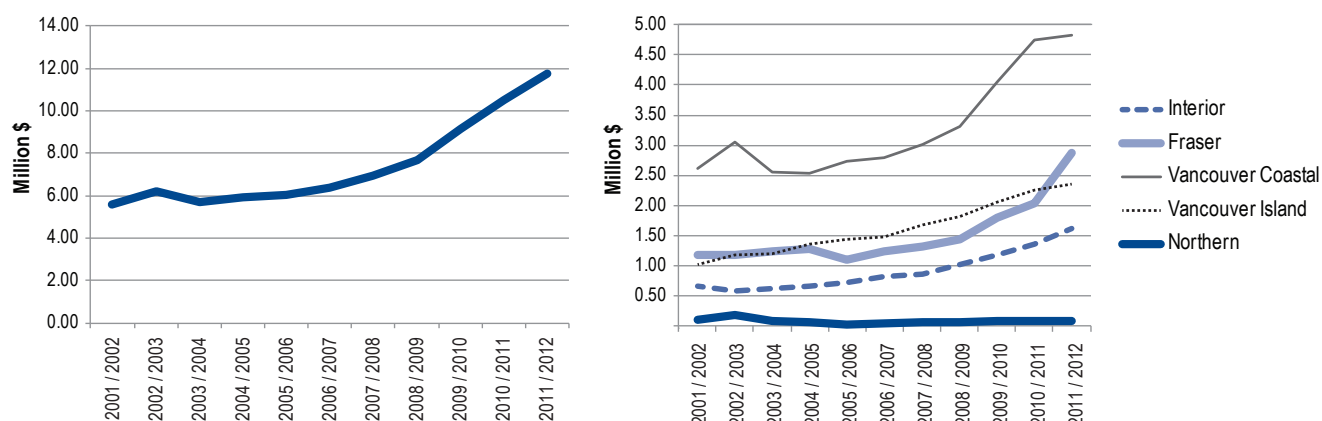


Note: Methadone costs include costs of ingredients, dispensing fees and interaction fees. Total costs in BC include payments made by PharmaCare, patients, and third party insurers. Payments for interaction fees are made in bulk to pharmacies; therefore, it is difficult to disaggregate costs to patient by health authority.

As shown in Figure 7, average per patient pharmacy costs have dropped slightly from 2007/2008 levels. In 2011/2012, average annual methadone costs per patient were \$3,301 (\$2,899 of which was paid by PharmaCare). This decline is likely due to the Frequency of Dispensing policy, which limits the number of dispensing fees that PharmaCare will pay on a daily basis. The increase in overall costs may be due to inflation, patient population growth, and more complex care needs.

Medical Services Plan (MSP) payments for physician fee-for-service claims have seen an equivalent increase since fiscal year 2001/2002 (see Figure 8).

Figure 8. Medical Services Plan Methadone Expenditures for Methadone Maintenance Treatment Only, by Health Authority (right), BC (left), 2001/2002 to 2011/2012



Note: Includes only MSP payment for physician fee-for-service claims specifically for the purposes of methadone maintenance treatment (and Suboxone as a limited coverage benefit of November 2010) (fee item 39). Excludes alternative payments and physician salaries.

A Ministry of Social Development (MSD) supplement provides income assistance clients with up to \$500 per calendar year (average of \$41.67 per month) for costs of substance use counselling or related services where no other resources are available. This includes user fees charged by some methadone clinics. The MSD

supplement pays for user fees ostensibly for services not paid for by MSP. The total annual expenditure by MSD for the addiction counselling supplement in 2011/2012 was \$2.37 million (a majority of which goes to methadone patients).

3. SYSTEM OUTCOME MEASURES

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

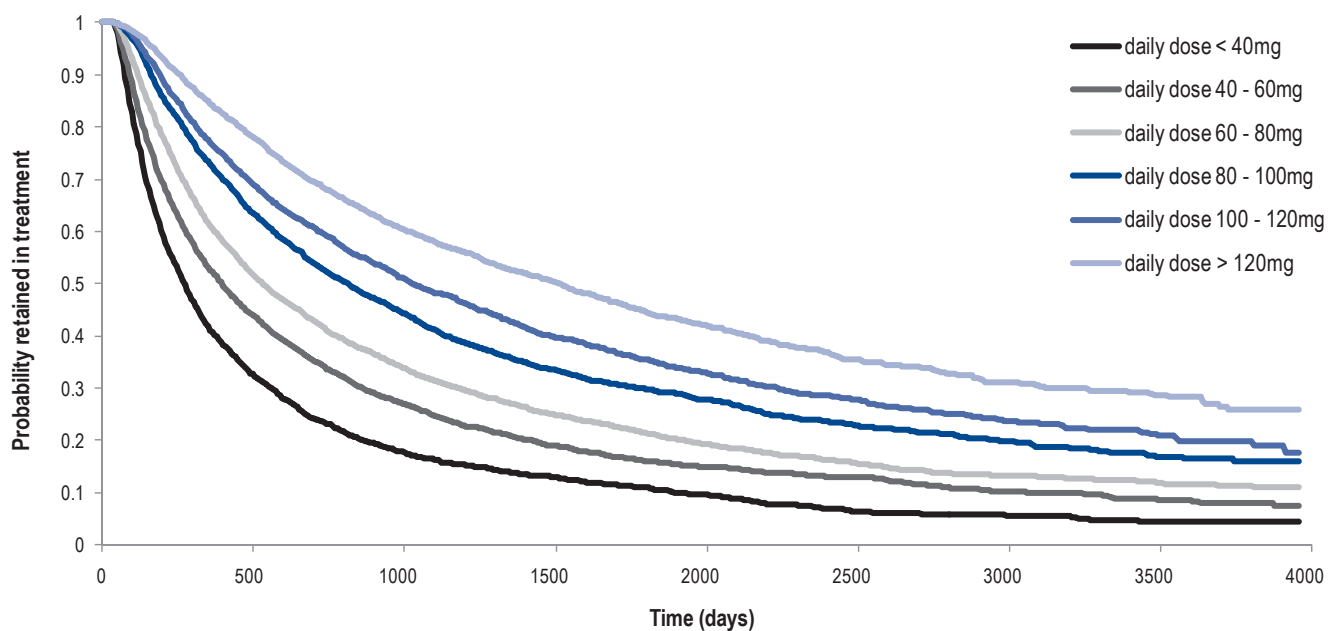
All outcome measures presented here are for episodes of methadone maintenance treatment, defined as continuous dispenses of methadone (plus additional days supplied for off-site use). A gap of more than 30 consecutive days determines the end of an episode of treatment.

An important caveat for this section is that the outcome measures were obtained without an attempt to isolate the effect of methadone maintenance (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 Methadone Maintenance Duration and Retention

Methadone maintenance 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, with probability of being retained in treatment lowest for patients receiving maintenance doses below 40mg per day and highest for patients receiving above 100mg per day (CPSBC, 2009, *Methadone Maintenance Handbook* recommends stabilization doses of between 60 to 120 mg per day as optimal for most patients).

Figure 9. Effect of Daily Dose on Methadone Maintenance Treatment Retention (Kaplan-Meier Curve)

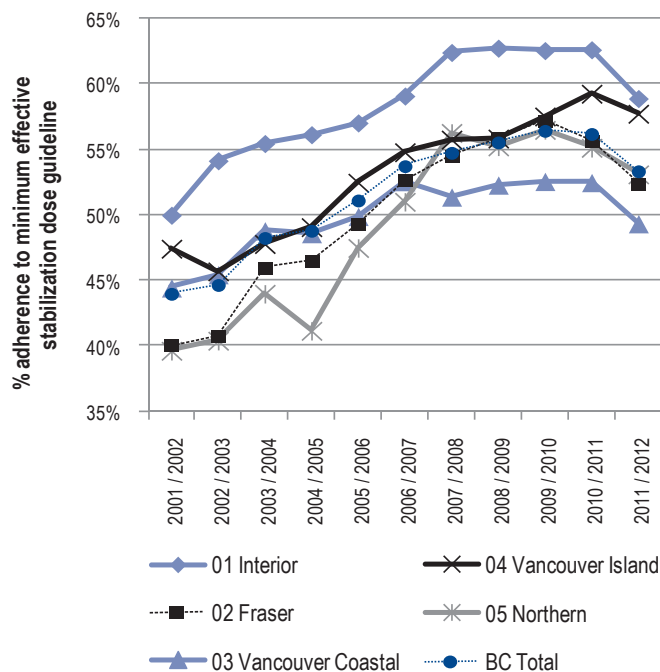


In Figure 9, daily dose is calculated as the average amount (in milligrams) of methadone prescribed during the maintenance period of each treatment episode. To examine the effect of the daily dose on the probability of remaining in treatment, episodes were categorized into the following six daily dose levels:

1. Episodes with a mean dose <40mg
2. Episodes with a mean dose 40-60mg
3. Episodes with a mean dose 60-80mg
4. Episodes with a mean dose 80-100mg
5. Episodes with a mean dose 100-120mg
6. Episodes with a mean dose >120mg

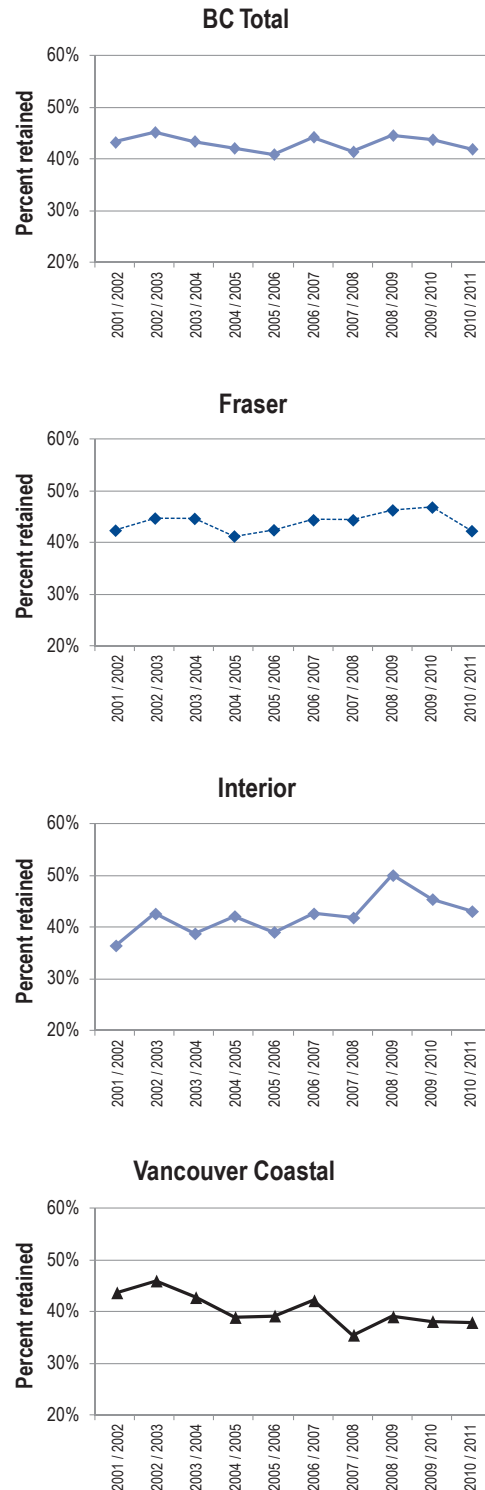
Figure 9 shows the probability of remaining in treatment over time by daily dose category as defined above. At the start of an episode, the patient has a high probability of remaining in treatment. As time passes, however, the probability of remaining in treatment declines for all daily dosage categories. Episodes with daily doses greater than or equal to 120mg had the highest probability of being retained in treatment at every time point. That is, these episodes had the longest duration. By contrast, episodes for which the mean dose was below 40mg per day discontinued the earliest. Figure 10 shows the percentage of physicians who adhere to CPSBC's minimum recommended stabilization dose of 60 mg/day.

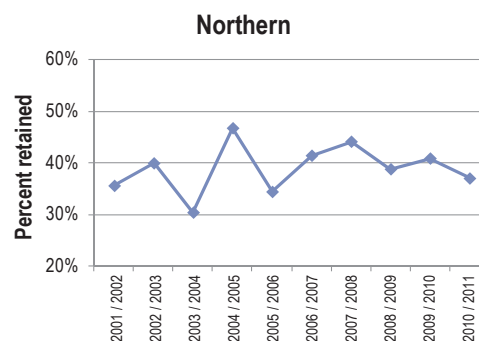
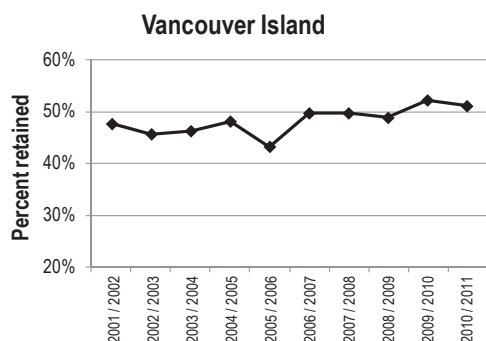
Figure 10. Adherence to Minimum Effective Dose Guideline, by Health Authority, BC, 2001/2002 to 2011/2012



Methadone maintenance retention rates in Vancouver Island Health Authority are consistently higher than the BC average, while rates in Vancouver Coastal appear lower than the average in more recent years (see Figure 11).

Figure 11. Percentage of People Started on Methadone Maintenance Treatment Retained at 12 Months, by Health Authority, BC, 2001/2002 to 2010/2011





3.2 Hospitalizations and Costs

This section examines methadone patients' hospitalizations (for any cause) and the costs associated with hospitalizations. Table 1 summarizes the incidence and cost of hospitalizations while patients are engaged in methadone maintenance treatment.

The total cost of hospitalizations for patients engaged in methadone maintenance reached a high of \$14.5 million in 2008/2009. The average cost per patient was \$1,721. While

the corresponding total cost for total hospitalization in 2010/2011 increased again to \$14.2 million (up from \$12.6 million in 2009/2010), the average cost per patient was at its lowest level since 2002/2003 at \$1,299.

Figure 12 shows the number of hospitalizations per 100 person years for patients engaged in methadone maintenance.

Table 1. Hospitalizations and Costs During Methadone Maintenance by Fiscal Year, 2001/2002 to 2010/2011

	No. of Admissions		Hospital Cost	
	Total	Rate per 100 person years	Total	Average
2001/2002	299	31.0	\$2,739,177	\$1,039
2002/2003	650	28.0	\$4,038,741	\$1,032
2003/2004	935	33.0	\$6,383,645	\$1,422
2004/2005	1,179	34.0	\$8,372,147	\$1,583
2005/2006	1,339	34.0	\$9,682,807	\$1,635
2006/2007	1,688	37.0	\$11,775,471	\$1,770
2007/2008	1,802	34.0	\$13,314,521	\$1,817
2008/2009	1,955	33.0	\$14,452,144	\$1,721
2009/2010	2,022	29.0	\$12,566,345	\$1,323
2010/2011*	2,249	28.0	\$14,192,650	\$1,299

*Note: 2010/2011 figures may be incomplete because patients admitted to hospitals in 2009/2010 but not discharged until 2011/2012 will not appear in 2010/2011 data. Median costs were \$0 because fewer than 50 per cent of patients were hospitalized each fiscal year.

Figure 12. Hospitalizations per 100 Person Years During Methadone Maintenance, by Health Authority, BC, 2001/2002 to 2010/2011

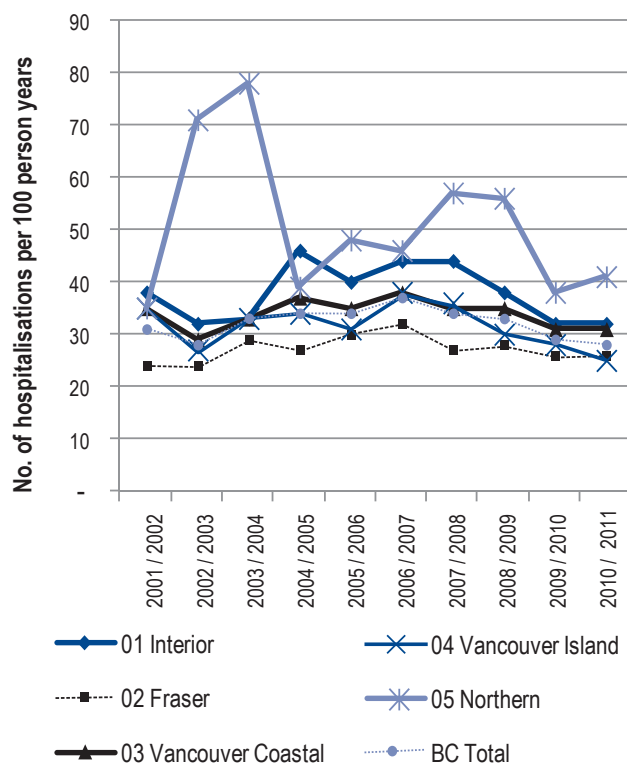
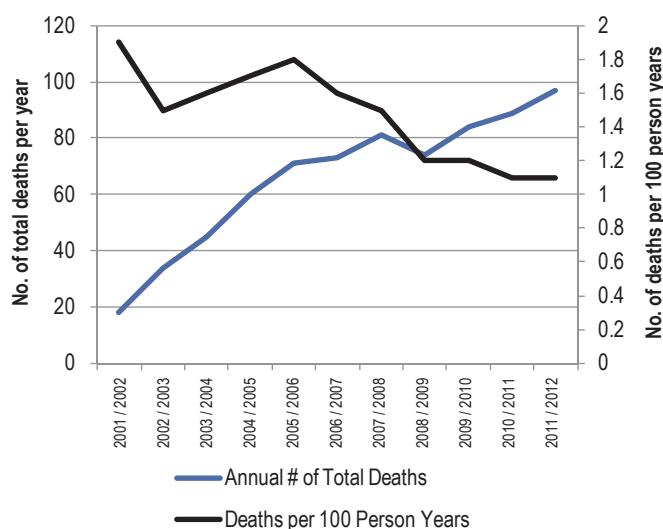


Figure 13. All-cause Mortality During Methadone Maintenance Treatment, by Fiscal Year, BC, 2001/2002 to 2011/2012



3.3 Mortality

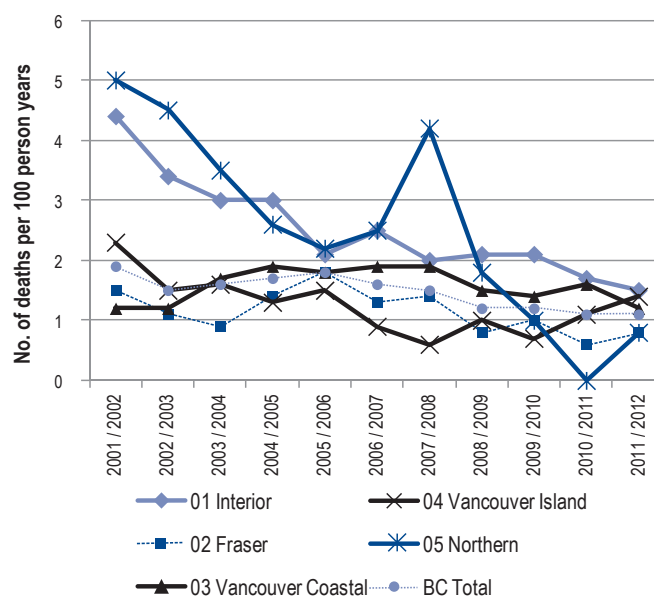
This section provides measures of mortality during methadone maintenance. Mortality is measured in terms of deaths from any cause recorded within 30 days of an episode of methadone maintenance.

Table 2. All-cause Mortality During Methadone Maintenance Treatment, by Fiscal Year, 2001/2002 to 2011/2012

	No. of Deaths	
	Total	Rate per 100 person years
2001/2002	18	1.9
2002/2003	34	1.5
2003/2004	45	1.6
2004/2005	60	1.7
2005/2006	71	1.8
2006/2007	73	1.6
2007/2008	81	1.5
2008/2009	74	1.2
2009/2010	84	1.2
2010/2011	89	1.1
2011/2012	97	1.1

Although the number of patient deaths has increased between 2001/2002 and 2011/2012 (reflecting overall growth of the patient population during this period), the rate per 100 person years on methadone has decreased (see Table 2 and Figure 14). These unadjusted rates cannot be used to draw conclusions about the effectiveness or risks of methadone maintenance therapy. However, Figure 13 shows that the number of patients engaged in methadone maintenance increased without a proportional increase in rates of death, providing some reassurance of the relative safety of methadone maintenance in BC.

Figure 14. Deaths by Any Cause per 100 Person Years During Methadone Maintenance by Health Authority, BC, 2001/2002 to 2011/2012



4. CONCLUSION

Methadone maintenance treatment for opioid dependence in British Columbia has undergone significant growth over the past decade. Greater access to methadone maintenance, along with other harm reduction initiatives, has helped contribute to the lower incidence of HIV infection among people who inject drugs.⁵ 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.

RESOURCES

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

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