

Summary

- Discrepancies between the perceived problem of prescription drug misuse in Vermont and several pertinent data sets prompted a broader and more thorough look at relevant data.
- The most recent population-level survey data indicates that the prevalence of prescription (Rx) drug misuse in Vermont is declining or remaining steady for all drug categories including Rx opiates. This appears to be a consistent pattern across several independent surveys.
- Treatment admissions for Rx opiates are increasing at a rapid rate, putting a substantial strain on treatment and medical system resources.
- Deaths involving prescription opiates as a proportion of all drug deaths have declined over the past several years.
- Potentially more important than prevalence data might be the monetary cost to society of prescription drug abuse/dependence (e.g., the corrections and treatment system) as well as the psychological and emotional cost incurred for an individual who misuses prescription drugs and his/her family. This brief does not report on that data, but the SEOW is collaborating with other agencies to access and report on that information.
- The SEOW suggests a continued monitoring of relevant data sets. We note that there is a distinction between the concepts of prescription drug misuse and opiate abuse or dependence, which may explain some of the discrepancies between treatment data (mostly abuse/dependence) and prevalence data (misuse).

Introduction

The State Epidemiological Outcomes Workgroup (SEOW) has devoted several meetings to discussing prescription drug misuse in Vermont. These discussions were generated by a noted discrepancy between the perception of the extent of the prescription drug misuse problem in Vermont and data that appeared inconsistent with this perception. When discussing the issue of prescription drug misuse the SEOW determined that the commonly understood definition is usually limited to misuse of narcotic pain relievers. While the misuse of other prescription medications is a part of the overall problem, the focus appears to be on opiates. Prescription drug misuse is defined as either taking a prescription medicine that was not prescribed to you or taking a prescription medicine in greater amounts than prescribed. In other words, it is the use of a prescription medication in a nonmedical manner.

This *Issue Brief* summarizes those discussions including as much data from as many relevant sources as could be ascertained to examine the issue from multiple perspectives. We have divided this report into logical sections:

1. Population Prevalence Data
2. Treatment Data
3. Mortality Data
4. Morbidity Data
5. Prescription Drugs in the Community
6. Summary and Conclusions

1. Prevalence

The SEOW has three major sources of prevalence data available for examination: National Survey on Drug Use and Health (NSDUH), Youth Risk Behavior Survey (YRBS), and the Behavioral Risk Factor Survey System (BRFSS).

A. National Survey on Drug Use and Health (NSDUH)

Table 1 presents U.S. and Vermont specific prevalence rate trends for non-medical use of pain relievers in the past year (excluding methadone) from the National Survey on Drug Use and Health (NSDUH), a representative household sample of residents aged 12 and up. Vermont rates have declined or remained relatively stable since 2002-3. For the 12-17 year old group the rates in 2010-2011 represent a significant decline since 2002-3 ($p < .05$). For 2010-11 National rates declined so Vermont rankings were relatively higher. We note also that there are no regional differences within the state according to the latest NSDUH substate data (not shown).

Table 1: Vermont/US Prevalence of Nonmedical Use of Pain Relievers (Past Year %) 2002- 2011
 (Source: Substance Abuse and Mental Health Services Administration)

	Total %		AGE GROUP (Years)					
			12-17		18-25		26+	
	VT	U.S.	VT	U.S.	VT	U.S.	VT	U.S.
2002-2003	5.4	4.8	8.9	7.6	14.6	11.7	3.3	3.2
2003-2004	5.0	4.8	8.1	7.5	13.4	12.0	3.1	3.2
2004-2005	4.9	4.8	7.3	7.1	13.4	12.1	3.1	3.2
2005-2006	5.1	4.8	7.2	7.0	14.7	12.4	3.2	3.4
2006-2007	4.8	5.1	6.6	6.9	13.9	12.3	3.0	3.6
2007-2008	4.7	4.9	6.4	6.6	13.3	12.0	3.1	3.4
2008-2009	4.6	4.8	5.6	6.5	13.6	11.9	3.0	3.4
2009-2010	4.9	4.9	6.0	6.4	13.3	11.5	3.3	3.5
2010-2011	5.1	4.6	6.5	6.1	13.0	10.4	3.6	3.6

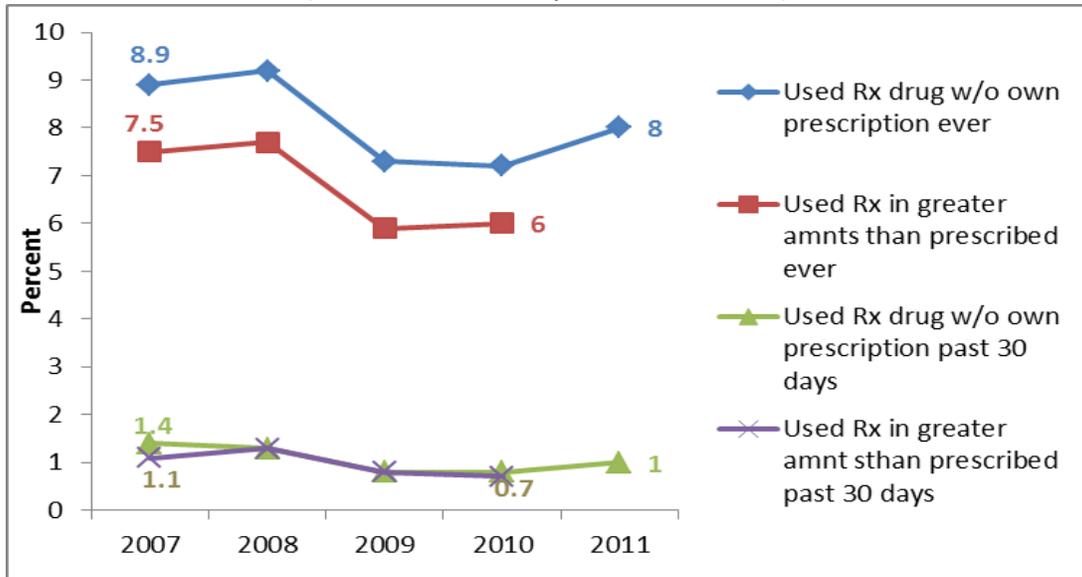
B. Youth Risk Behavior Survey (YRBS)

The Youth Risk Behavior Survey (YRBS) is a biennial survey of public school students in grades 9-12. A question concerning prescription drug misuse was added in the 2007 administration. Results from that survey indicated that 17% had taken a prescription drug not prescribed for them sometime in their lifetime. Prevalences were comparable for male and female students. In the 2009 and 2011 YRBS we asked about lifetime misuse of prescription stimulants and pain relievers separately. In 2009, the overall prevalence for both combined remained 17%. In 2011, 14% of 9th to 12th graders reported ever misusing a prescription opiate or stimulant. This was a significant decrease from 2009. An analysis of the 14 Vermont counties determined that YRBS reports of prescription drug misuse were significantly higher in Windham County compared to other counties and the overall state prevalence. This was the only significant regional difference among all substances being tracked.

C. Behavioral Risk Factor Survey System (BRFSS)

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual random digit dial survey of a representative sample of Vermonters age 18 and older. Questions concerning prescription drug misuse in general were asked for the first time in 2007. The data are summarized in Figure 1. We note a decline over time.

Figure 1: BRFSS Prevalence of Prescription Drug Misuse, 2007- 2011¹ (Percent)
(Source: Vermont Department of Health)



¹ Due to space constraints on the BRFSS, both the lifetime and 30 day use of prescription drugs in greater amounts than prescribed were dropped from the 2011 and subsequent administrations.

2. Treatment

The number of people treated for opiate use problems² has increased since 2000 according to the Vermont Substance Abuse Treatment Information System (SATIS), which reflects only people receiving treatment at state-funded treatment facilities (Figure 2). For comparison purposes Figure 3 shows the number of people in treatment for several substances. These rates are subject to a number of exogenous pressures including funding levels and the establishment of methadone maintenance clinics for opiate abuse/dependence in five counties of the state (Caledonia [2006], Chittenden [2004], Orleans [2006], Washington [2008], Windham [2008]). Also of note is that in 1996 the narcotic pain reliever OxyContin® became available, and the average amount of time elapsed between initial opiate use and seeking treatment in Vermont is eight years. Whatever the main cause, this rapid increase in treatment demand has put a strain on treatment and medical system resources.

Figure 2: People Treated for Opiate Use Problems in Vermont by Fiscal Year
(Source: Vermont Department of Health)

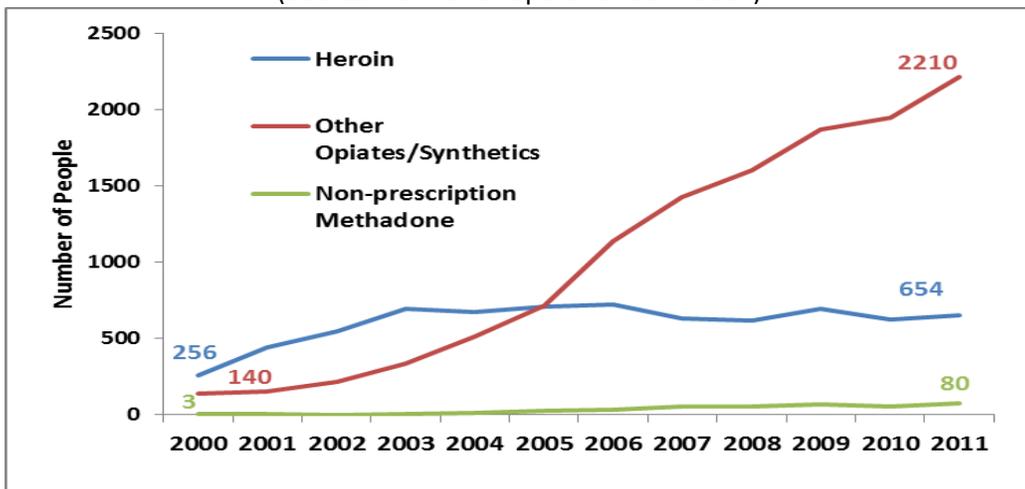
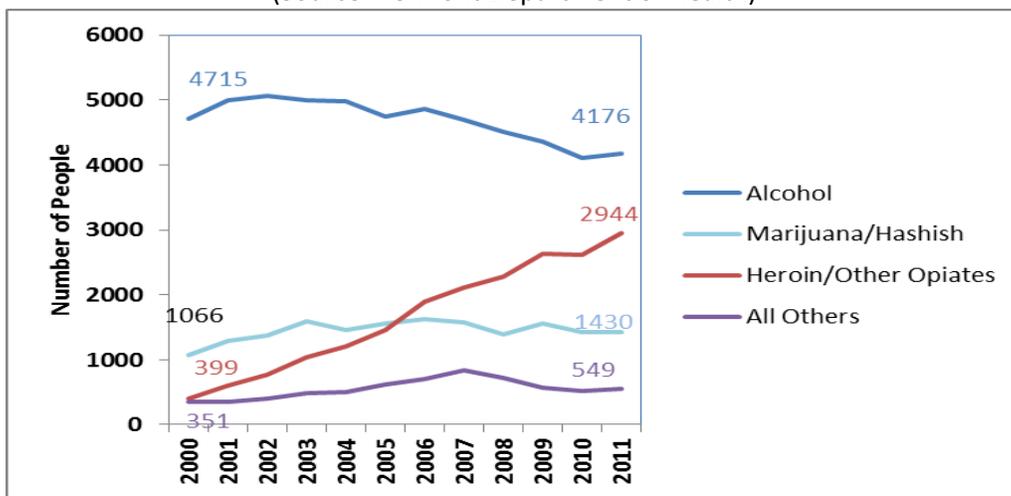


Figure 3: People Treated for Substance Use Problems in Vermont by Fiscal Year
(Source: Vermont Department of Health)

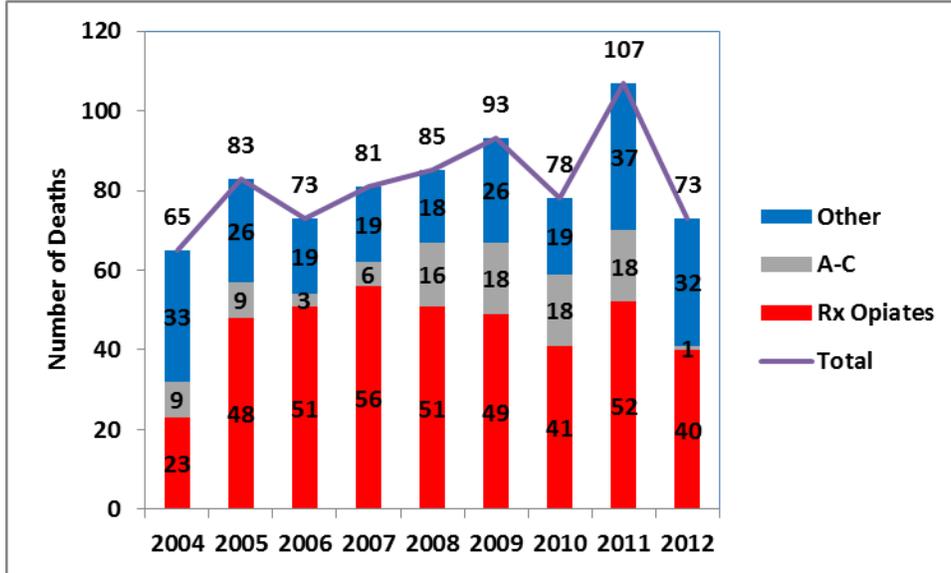


² Note that “problem” includes the formal diagnostic criteria for abuse and dependence which differs from the informal concept of misuse as we defined it earlier.

3. Mortality Data

Data made available by the Office of the Chief Medical Examiner for drug-related deaths for the years 2004-2012 provide another perspective on the most severe consequence of drug misuse. The data include deaths resulting as a consequence of all suspected drugs including anticoagulants (blood thinners, usually the drug Coumadin®) commonly given to reduce the chances of blood clots following a cerebral vascular event or a myocardial infarction. Anticoagulants are not drugs with abuse potential³. Figure 4 shows the number of deaths due to prescription opiate drugs, those due to anticoagulants, and those associated with other substances from 2004-2012.

Figure 4: Deaths Caused by Prescription Opiates, Anticoagulants, and Other Drugs, 2004-2012⁴
(Source: Office of the Chief Medical Examiner, Vermont Department of Health)



³ Edwards, E. M., Searles, J. S., 7 Shapiro, S. L. (2011). Deaths involving Drugs in Vermont, 2004 through 2010. *Archives of Internal Medicine*, 171, 1676-1678.

⁴ It is important to note that the OCME does not routinely process deaths related to alcohol use. Deaths attributed at least in part to excessive alcohol use (e.g., disease exacerbation, accidents, etc.) exceed those resulting from all drugs combined.

4. Morbidity

A. Neonatal Withdrawal Syndrome

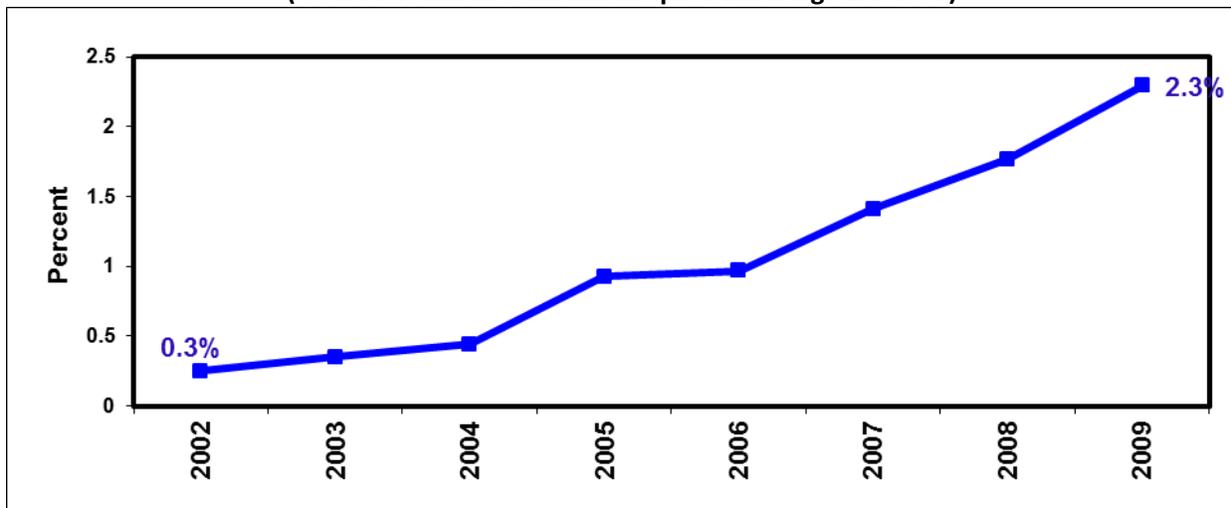
Another marker of an increase in use and subsequent consequences of opiates in general may be the incidence of neonatal withdrawal syndrome (NWS) defined as “drug withdrawal syndrome in infant of dependent mother.” (ICD-9). We examined this issue from two different perspectives:

a) the general incidence of NWS over time and b) the linked mother-infant data from the Medicaid database.

i. NWS in the Vermont Uniform Hospital Discharge Data Set (2002-2010)

We searched the diagnostic fields of the VUHDDS for ICD-9 code 779.5 (NWS) for the years 2002-2010. These data are presented in Figure 5. This graph should be interpreted with great caution, while there is an apparent increase in the number of NWS diagnoses recorded over time it is unclear whether this is due to an actual increase of the syndrome or an increase in awareness (and therefore reporting) by physicians, nurses, or other care givers in the birth process. In 2009, 2.5% of all live births (as determined by Vermont vital records) were assigned an NWS diagnosis.

Figure 5: Percent of Neonatal Withdrawal Syndrome (ICD-9 779.5) from Vermont Hospitals 2002-2009
(Source: Vermont Uniform Hospital Discharge Data Set)

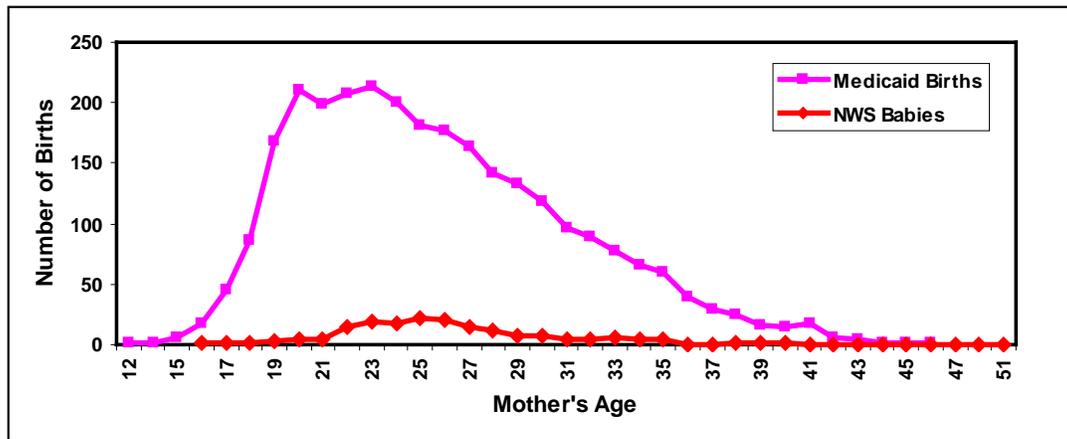


ii. Linked Maternal-Infant Data from Medicaid Database (2010)

The data obtained from VUHDDS described above does not allow for the ability to link Mother and infant. We wanted to examine mother’s age in relation to NWS; the only data available to allow for this linkage is the Medicaid data. Figure 6 shows the results of our Medicaid analysis for the calendar year 2010. For comparison purposes, we also include Medicaid mother’s age of all live births in Vermont for 2010. Sixty-eight percent of NWS babies were born to mother’s who were between the ages of 22 and 30 at the time of the birth of an NWS infant (mean age = 26.1 years). This compares to a mean maternal age of 28.4 years for all births in 2010⁵. Overall 6.2% of Medicaid births in 2010 (total number of births =508) were assigned an NWS diagnosis compared to 2.5% of all births (total number of births = 6683).

⁵ We do not have parity data on the mother’s so we do not know how many previous children if any the mothers have had.

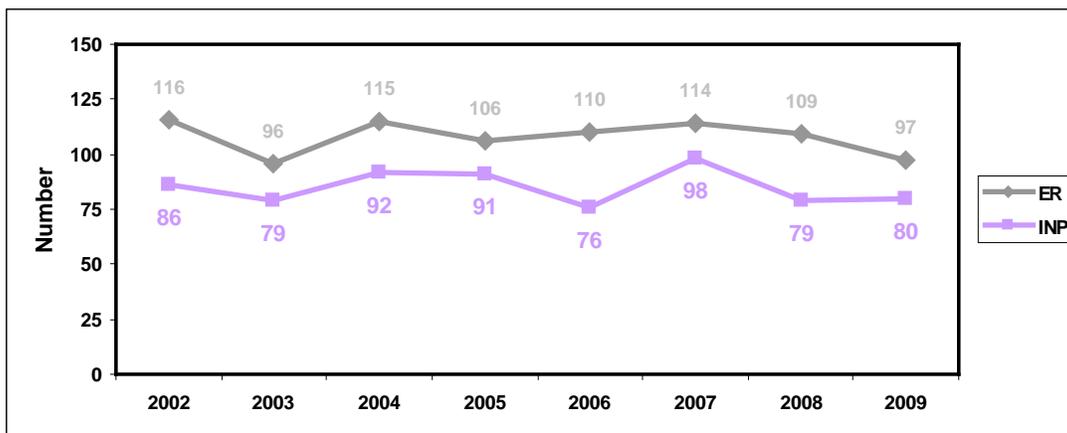
Figure 6: Age of Mother of NWS Infants born in 2010
(Source: Medicaid Database)



B. Opiate Related Overdoses

Figure 7 shows the number of opiate overdoses over time in both the inpatient and Emergency Room discharge databases for all hospital/ERs in Vermont⁶. These data suggest no dramatic changes in the number people with opiate overdoses across the time frame.

Figure 7: Opiate Overdoses from Vermont Hospitals and Emergency Rooms 2002-2009
[ICD 9 codes 965.0, 965.01, 965.02, 965.09]
(Source: Vermont Uniform Hospital Discharge Data Set)



⁶ There is one exception - the Veterans Administration Hospital in White River Junction, VT does not contribute data.

C. Accidental Opiate Poisonings

We examined both the inpatient and Emergency Department data bases for accidental poisonings of opiates other than heroin and methadone. These data are shown in Figure 8. In order to provide a complete picture, Figure 9 presents ER and inpatient discharge data for accidental poisonings from heroin and methadone. No overall substantive changes are evident from either graph.

Figure 8: Accidental Opiate Poisonings in Vermont Hospitals and Emergency Rooms 2002-2009
[ICD 9 E-code 850.2 – Excludes heroin and methadone]
(Source: Vermont Uniform Hospital Discharge Data Set)

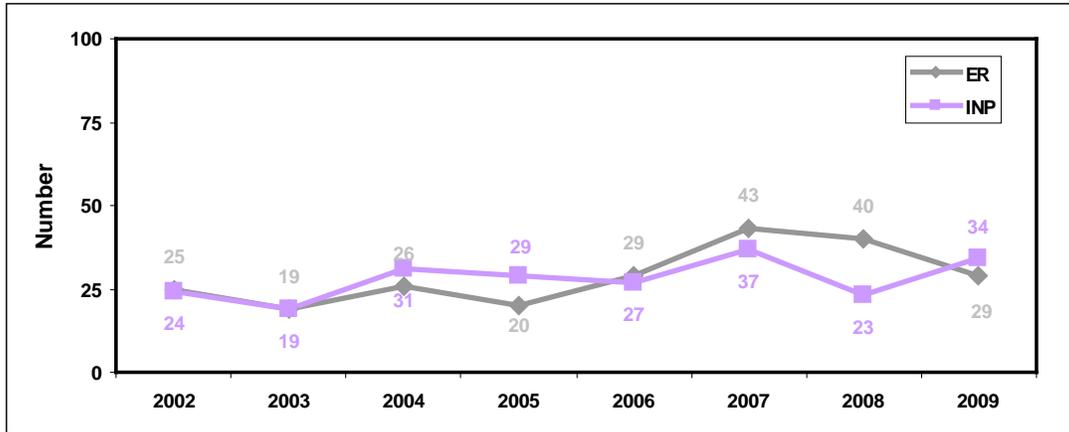
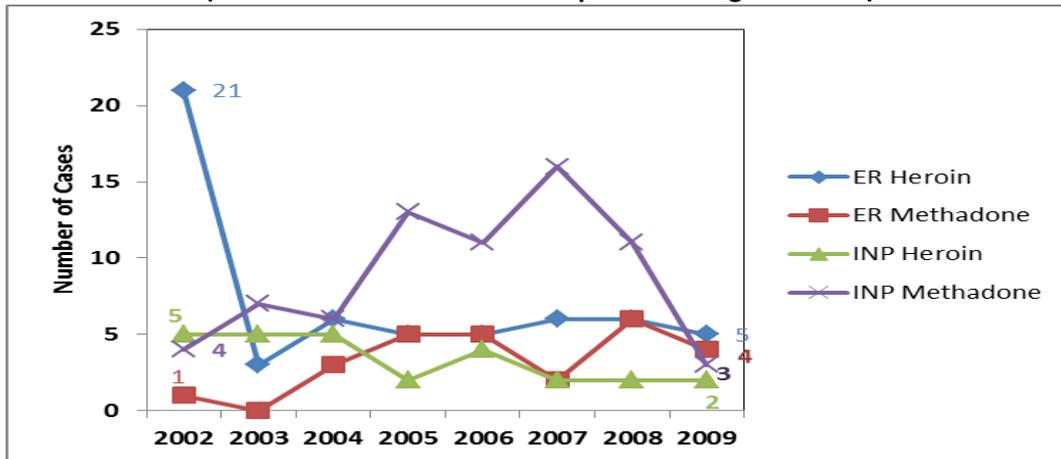


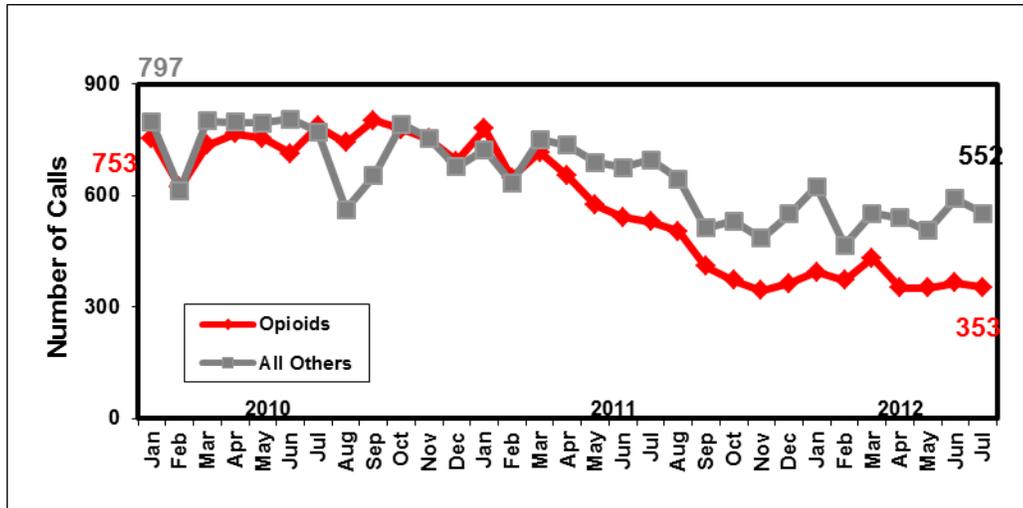
Figure 9: Accidental Heroin & Methadone Poisonings in Vermont Hospitals and Emergency Rooms 2002-2009
[ICD 9 E-code 850.0 {Heroin} & 850.1 {Methadone}]
(Source: Vermont Uniform Hospital Discharge Data Set)



C. Northern New England Poison Center (NNEPC)

NNEPC reports monthly on the number of calls received from Vermont by drug type. Figure 10 presents data on opioid and non-opioid calls for the period 1/10 – 7/12. We note that there has been a decrease in the number of calls for all drug type over time including opioids.

Figure 10: Number of Non-Law Enforcement Medication Verification Calls in VT 1/2010 – 7/2012
(Source: Northern New England Poison Center)



5. Drugs in the Community

A. Vermont Prescription Monitoring System (VPMS)

The VPMS was established by Legislative authority (Act 205) in 2006 and was made operational in April, 2009. The act requires all pharmacies serving Vermont residents to submit all prescriptions of controlled substances (Schedule II-IV) to a central data base every week. The database contains all prescriptions of controlled substances written on or after July 1, 2008. As of August 22, 2012, 97% of pharmacies licensed by the State are in compliance and 1600 prescribers and pharmacists have registered to use the service. VPMS was designed as a tool for prescribers to both identify potential misuse and to offer medical assistance and support for individuals with possible substance abuse/dependence.

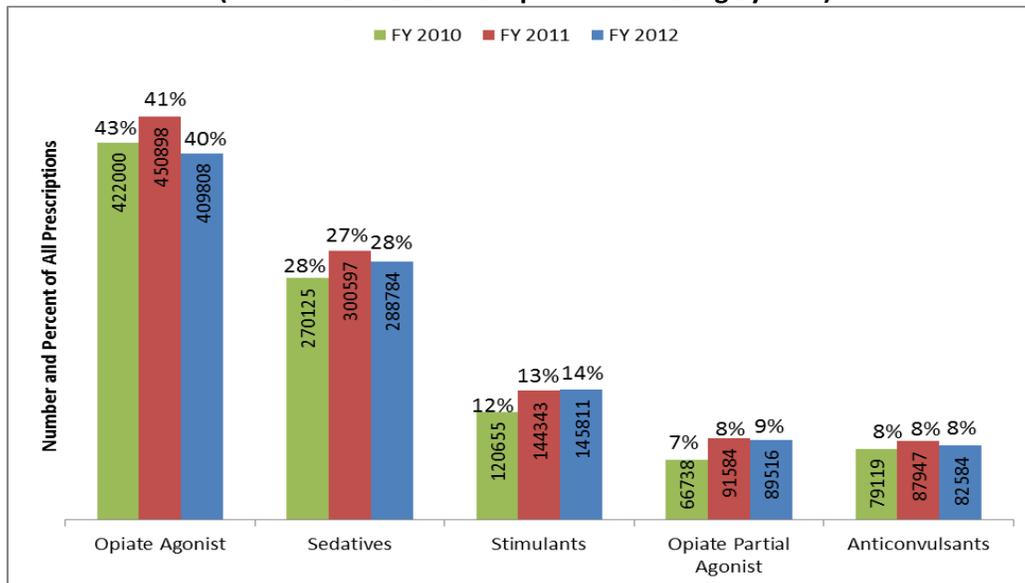
Figure 11 contains the total number of prescriptions and people receiving prescriptions for schedule II-IV drugs by fiscal year. Of note, over one million prescriptions are filled each fiscal year in Vermont. Data from FY2010 is most likely not complete as the law was still taking effect and pharmacies were not yet fully reporting to the system.

Figure 11: Total # of people receiving, and total number of schedule II-IV prescriptions

	Fiscal Year 2010	Fiscal Year 2011	Fiscal Year 2012
Total # of People	190,833	192,740	185,761
Total # of Prescriptions	979,472	1,096,797	1,037,101

Figure 12 shows the number of prescriptions filled by Vermont pharmacies for FY 2010, FY2011 and FY2012 by drug class. These five classes of drugs represent 98% of all scheduled prescriptions in the VPMS. There has been little change between classes over the three years measured (note again that the FY2010 data is most likely incomplete).

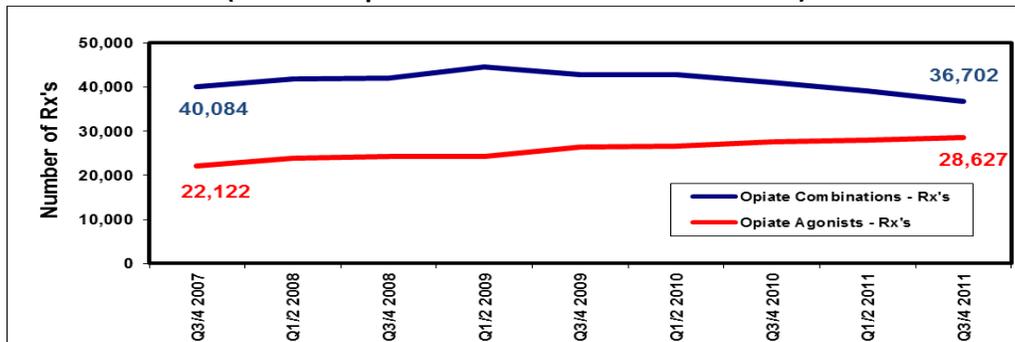
Figure 12: Number of Prescriptions by Therapeutic Class and Fiscal Year
(Source: Vermont Prescription Monitoring System)



B. Medicaid Data from the Department of Vermont Health Access (DVHA)

DVHA tracks opiate prescriptions for Medicaid clients in Vermont. DVHA separates opiate agonists (e.g., oxycodone, fentanyl, hydromorphone) and opiate combinations (typically with acetaminophen, e.g., Percocet, Vicodin). Figure 13 shows the trend of prescriptions for each category from 2007 to 2011 by 6-month periods. These data indicate that opiate agonist prescriptions are increasing (+29%) while opiate combination Rx's are decreasing (-8.4%). The Medicaid prescriptions represent 29% of all the narcotic pain reliever prescriptions reported in the 2011 VPMS.

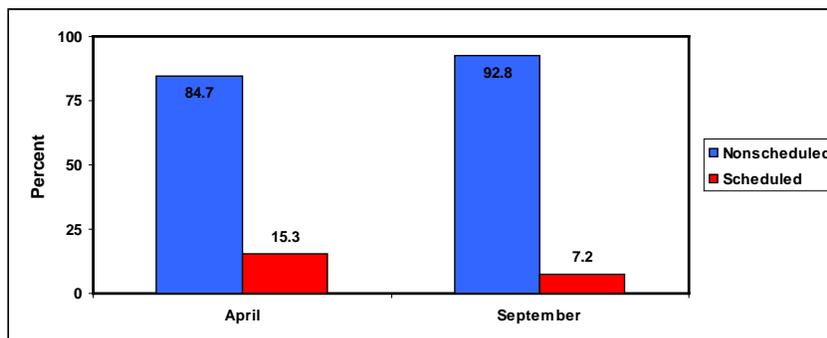
Figure 13: Number of Medicaid Opiate Agonist and Opiate Combination Rx's 2007-2011
(Source: Department of Vermont Health Access)



C. Take-Back Day

Every few months local police departments in conjunction with the Drug Enforcement Administration sponsors a "Take-Back Day" so that citizens can safely dispose of unwanted, outdated medicines. While federally sponsored, the program is implemented at the local level. Typically, this results in impressive amounts of medications being returned and safely disposed of. Until recently, it was unclear what proportion of the medicines being returned were scheduled drugs. The Burlington Partnership for a Healthy Community (a local prevention coalition) secured the volunteer services of two pharmacists to actually inspect about half the drugs that were returned during the take-back day on April 26, 2012 and September 29, 2012. Figure 14 presents the results of this inspection. Scheduled drugs accounted for 15.3% in April and 7.2% in September of the number of drugs inspected. Of the scheduled drugs returned and inspected, in April 98% and in September 87% were narcotic pain relievers.

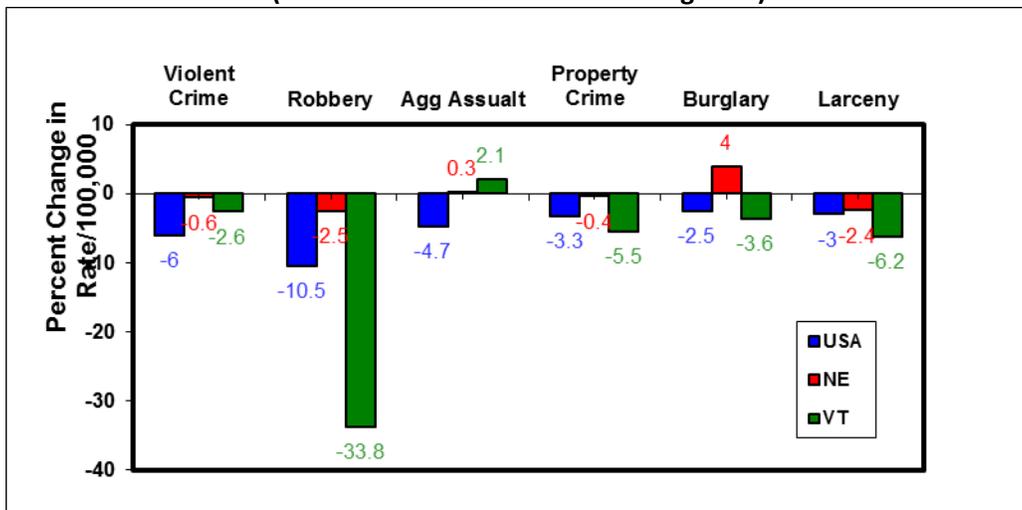
Figure 14: Proportion of Scheduled and Non-Scheduled Drugs Inspected on Burlington Take-Back Day 4/26/12 and 9/29/12
(Source: Burlington Partnership for a Healthy Community)



D. Crime Associated with Prescription Drugs

The police chiefs of several communities in Vermont have indicated that prescription medications (specifically opiates) have contributed to a rise in associated crimes (e.g., robbery, burglary). This is primarily qualitative data since there is little if any quantitative data on the topic. We note that at the suggestion of the SEOW, the Chief of Police in Burlington is now (as of July 1, 2012) collecting data specifically on drug- and alcohol-related crime activities. Once data have accumulated sufficiently, we will be able to report it. In the meantime, the crime data from the Uniform Crime Reports compiled by the Federal Bureau of Investigation are the best data available. Figure 15 shows the change in selected crime categories for the US, Northeast Region, and Vermont from 2009-2010. For Vermont, all categories except aggravated assault have decreased. Furthermore, Vermont is annually ranked among the lowest of all states in all crime-rate categories⁷.

Figure 15: Change in Crime Rate Per 100,000 Residents from 2009-2010
(Source: Federal Bureau of Investigation)



⁷ <http://www.infoplease.com/us/statistics/crime-rate-state.html>

6. Summary and Conclusions

Several states are experiencing a dramatic surge in prescription drug misuse and associated consequences (particularly drug-related deaths). The Office of National Drug Control Policy has declared prescription drug misuse an epidemic. Prevalence data in Vermont do not show increases in the misuse of prescription drugs over the past several years for any age group. In fact among adolescents 12-17 year old the data demonstrate a significant decrease in prescription drug misuse over the past several years in multiple data sets.

However, the treatment data show something quite different, especially in terms of burden to the system. It is important to understand that there is a substantial difference in “prescription drug misuse” and a diagnosis of substance abuse or dependence. The former condition requires a minimal behavioral event – e.g., taking a pain reliever prescribed for one condition (e.g., dental work) for another condition (e.g., severe headache) for which it was not prescribed; or taking two pills instead of one (more than prescribed). Abuse and dependence are criteria based concepts that by definition are serious and often chronic conditions requiring medical attention. That is to say that “misuse” and “abuse/dependence” may not ultimately be useful to compare. The fact that prevalence data are low and steady across time while treatment utilization has substantially increased supports this notion.

In July of 2012, pursuant to 18 V.S.A § 5(3), the Commissioner of Health created the Unified Pain Management Advisory Council to discuss best practices related to the appropriate use of controlled substances in treatment of chronic, non-cancer pain and addiction, and in preventing prescription drug abuse, including creation of guidelines for the use of VPMS.

In 1996 the narcotic pain reliever OxyContin® became available and since 2001 it has been the top selling drug in its class and one of the most prescribed drugs in the United States.⁸ Since January, 2001 ambulatory care facilities (i.e. hospitals) have been required by the accrediting agency to assess and treat pain in patients. This combination of required pain treatment and narcotic availability along with aggressive (and subsequently determined to be illegal) marketing by the manufacturer may be at least partially driving misuse through increased access and risk for abuse/dependence through drug diversion.

It is notable that misuse, abuse/dependence and associated consequence rates are significantly higher in some states than others. This is particularly evident in mortality data: Rhode Island, West Virginia, New Mexico, and Nevada have drug-related death rates (deaths per 100,000) 2 to 2½ times that of Vermont.⁹ There also appears to be some regionalization in prescription drug misuse as defined by rates of nonmedical use of pain relievers in the past year for ages 12 and older – the states with the highest prevalences are (in order) Oklahoma, Oregon, Arizona, Colorado, Washington, Idaho, and Nevada, while Vermont is ranked 28th (out of 50 States & the District of Columbia).¹⁰ The reasons for this “Western bias” in the nonmedical use of prescription pain relievers are not immediately obvious.

The SEOW has devoted several meetings in the past year with no firm answers emerging. One thing is quite clear – there is a widely held perception in Vermont that prescription drug misuse (especially opioids) is a serious and

⁸ <http://www.drugs.com/stats/top100/sales>

⁹ <http://graphics.latimes.com/usmap-state-drug-deaths/>

¹⁰ National Survey on Drug Use and Health 2009/2010

<http://www.samhsa.gov/data/NSDUH/2k10State/NSDUHsae2010/NSDUHsaeAppB2010.htm>

growing problem that needs to be addressed on multiple levels. The SEOW will continue to collect and analyze relevant data that shed light on this issue.

For questions or additional information, please contact:

John S. Searles, Ph.D.
Chair, State Epidemiological Outcomes Workgroup
Alcohol and Drug Abuse Programs
Vermont Department of Health
108 Cherry Street, P.O. Box 70
Burlington, VT 05402-0070
(802) 657-4264
John.searles@state.vt.us

Shayla Livingston, MPH
Public Health Analyst
Vermont Department of Health
108 Cherry Street
Burlington, VT 05402
(802) 863-6337
shayla.livingston@state.vt.us