

Maryland Opioid Overdose Prevention Plan

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- Executive Summary..... 2
- Purpose & Problem Definition 3
- Epidemiology of Opioid Overdose 4
- Key Initiatives..... 5
 - 1. Enhanced Epidemiology..... 5
 - 2. Substance Use Disorder Treatment..... 5
 - 3. Public Health Focus on Overdoses..... 6
 - 4. Efforts to Address Overdoses of Pharmaceutical Opioids..... 6
 - 5. Naloxone 8
 - 6. Emergency Response Plan 9
- Timeline..... 10
- Appendix A: National Epidemiology 11
- Appendix B: DHMH Factsheet, “Heroin Overdose Deaths on the Rise, Rx Opioid Overdose Deaths Down” 14
- Appendix C: Methodology for Identifying Drug-Related Overdose Deaths 17
- References 19

Executive Summary

Drug overdoses are a serious public health challenge in Maryland and across the country. During the past decade, national increases in the number of fatal overdoses have been driven primarily by an epidemic of pharmaceutical opioid abuse. In Maryland, deaths related to pharmaceutical opioids increased during this time, while those involving illicit drugs declined. However, in 2012, Maryland experienced a shift from pharmaceutical opioids to heroin, mirroring a trend being reported in other states. This emerging trend underscores the importance of continuing to provide support for substance use disorder treatment and recovery services while simultaneously meeting new challenges.

The Department of Health and Mental Hygiene (DHMH) is coordinating a number of key initiatives to help reduce opioid-related overdoses in Maryland, including:

- Analyzing data on overdose and opioid abuse trends;
- Supporting broad access to substance use disorder treatment, including evidence-based treatment of opioid dependence with methadone and buprenorphine;
- Instituting a public health focus on opioid overdose that includes local, multidisciplinary reviews of fatal overdose incidents;
- Pursuing initiatives that focus on reducing pharmaceutical opioid-related overdoses, including clinical guidance and education for prescribers and dispensers, the Prescription Drug Monitoring Program (PDMP) and the Controlled Dangerous Substance Integration Unit (CDSIU);
- Developing a plan to address public health emergencies created by an abrupt change in the prescribing, dispensing or use of opioids at the community level; and,
- Supporting jurisdictions that seek to implement overdose prevention activities involving naloxone.

As part of the state's public health approach, jurisdictions will be required to develop a local overdose prevention plan based on local data, a local needs assessment, and identification of specific interventions and responses.

Purpose & Problem Definition

The goal of the Maryland Opioid Overdose Prevention Plan is to reduce unintentional, life-threatening poisonings related to the ingestion of opioids, including both illicit opioid drugs (i.e. heroin) and pharmaceutical opioid analgesics. The plan encompasses efforts to reduce poisonings related to the ingestion of opioids alone or in combination with other substances, as well as both fatal and non-fatal poisonings. The term “overdose” is used to describe poisonings that meet these criteria.

Data used to determine all overdose death figures for Maryland presented herein were provided by the Office of the Chief Medical Examiner (OCME). The methodology used to determine Maryland overdose death figures was developed by the Vital Statistics Administration in consultation with OCME; the Alcohol and Drug Abuse Administration (ADAA); the Maryland Poison Center at the University of Maryland, Baltimore, School of Pharmacy; and the Baltimore City Health Department.¹

¹ The methodology is available online at <http://dhmh.maryland.gov/vsa/Documents/Methods--drug-report.pdf> and included below as Appendix C.

Epidemiology of Opioid Overdose

Review of national- and state-level data indicates that opioid overdose is a serious and growing public health problem. Although heroin-related overdoses declined in Maryland from 2007 to 2011, the state witnessed a significant rise in overdoses related to pharmaceutical opioid analgesics during this period. Early data from 2012 suggests resurgence in heroin-related overdoses concurrent with the first reduction in pharmaceutical opioid-related overdoses in years.² Chronic opioid use at high dosage levels is a primary risk factor for overdose,³ as is simultaneous multi-drug use. Individuals with substance use disorders and co-occurring mental-health disorders are at high risk.⁴ Persons with pharmaceutical opioid-related substance use disorders are disproportionately white, female, young and residents of rural communities compared to those with substance use disorders related to illicit drugs.

The Department will publish a more detailed review of the epidemiology of overdose in Maryland in February, 2012.

² Maryland Department of Health and Mental Hygiene Fact Sheet, “Heroin Overdose Deaths on the Rise, Rx Opioid Overdose Deaths Down,” December, 2012. See Appendix B, below. Also available online at: http://adaa.dhmh.maryland.gov/Documents/content_documents/PDMP/StatewideOverdoseDeathTrendFactsheetFINAL.pdf

³ Bohnert, et. al., 2011.

⁴ Hall, et. al., 2008.

Key Initiatives

1. Enhanced Epidemiology

The Department's Virtual Data Unit (VDU), housed within the Vital Statistics Administration, will oversee enhanced surveillance of overdoses. The VDU will coordinate with multiple DHMH administrations and other state entities to increase access to and analysis of overdose-related datasets at the state and local level. Specific efforts will include:

- A review of statewide overdose fatality data from OCME including jurisdiction- and region-specific breakdowns, as appropriate, to be published by early February, 2013;
- More detailed review of OCME data to identify patterns of overdose activity and key risk factors; and,
- Development of ongoing overdose surveillance through the DHMH Electronic Surveillance System for the Enhanced Notification of Community-Based Epidemics (ESSENCE), the Maryland Poison Center, the Maryland Institute for Emergency Medical Services Systems (MIEMSS) and other sources of data, to include nonfatal overdose information.

2. Substance Use Disorder Treatment

Treating individuals with substance use disorders is the foundation of Maryland's approach to reducing opioid-related overdoses. In FY2012, nearly 50,000 persons received treatment services supported through Medicaid or grant-funded opportunities. According to the 2011 Joint Chairmen's Report, Medicaid payments for outpatient treatment are projected to increase 190% from \$33,663,362 in FY2009 to \$97,520,628 in FY2012. The total number of individuals accessing services either through the Medicaid system or the ADAA grant-funded system has increased by 32% over a three-year period, from 63,834 (FY2009) to 84,429 (projected FY2012).

Of special relevance to the reduction in overdose is expansion of treatment capacity using evidence based therapies including methadone and buprenorphine.

A large body of evidence supports the effective treatment of opioid dependence with methadone, particularly when combined with counseling. However, this form of treatment is only available in heavily regulated, specialized treatment programs. Buprenorphine is approved for the treatment of opioid dependence in an office-based setting as part of general medical

care, therefore providing greater flexibility compared to methadone. Buprenorphine, a partial opioid agonist, offers a lower potential for overdose than methadone, a full opioid agonist. In 2008, ADAA launched a Statewide Buprenorphine Initiative to increase the availability of buprenorphine maintenance treatment and create links with counseling and care coordination services. Nearly 3,600 treatment admissions involved administration of buprenorphine in FY2012, up 11% from the previous year. From July 2010 to July 2012 the number of Medicaid enrollees filling prescriptions for buprenorphine increased by 38%.

Maryland will seek continued expansions of access to treatment and will monitor access as the behavioral health care system evolves.

3. Public Health Focus on Overdoses

Reducing drug-induced deaths is a key health outcome for Maryland as part of the State Health Improvement Process (<http://dhmh.maryland.gov/SHIP>). Many localities have programs in place to prevent opioid overdoses. These include creating a multi-disciplinary overdose prevention coordination council, incorporation of overdose prevention education into treatment plans for mental health and substance use disorder clients, working with local hospitals to institute Screening, Brief Intervention and Referral to Treatment (SBIRT) in the emergency department and establishing fixed medication drop boxes for the collection and disposal of unused or expired prescription drugs.

To support local action, DHMH will provide regular updates to Maryland counties on overdoses within their jurisdictions or regions, as appropriate. These updates will be sent to the health officers as well as to the addiction coordinators.

In addition, DHMH will require jurisdictions to develop a local overdose prevention plan, based on local data, a local needs assessment, and identification of specific interventions and responses.

4. Efforts to Address Overdoses of Pharmaceutical Opioids

Clinical Education and Training

The Board of Physicians is planning to provide guidance to physicians on appropriate prescribing of opioid analgesics and associated medications. This guidance is expected to

describe a “safe harbor” for appropriate and necessary prescribing for pain as well as explain red flags for inappropriate prescribing.

The University of Maryland, School of Pharmacy, under contract with the Division of Drug Control, is developing clinical guidance to aid pharmacists in making determinations regarding the appropriateness of controlled dangerous substance (CDS) dispensing. This will include instruction on the clinical uses of CDS in pain management and the treatment of other medical conditions, tools to identify fraudulent prescriptions, access to and use of the PDMP and resources for information sharing.

Prescription Drug Monitoring Program

Housed within ADAA, Maryland’s PDMP will monitor the prescribing and dispensing of Schedule II-V CDS, including most commonly used opioid analgesics, and make comprehensive patient CDS prescription history information available in real-time to healthcare providers that prescribe or dispense CDS. Importantly, data disclosure to providers will take place through the statewide health information exchange (HIE), thereby combining two major public health initiatives and facilitating the integration of PDMP data access into provider workflow. The PDMP will also make prescription information available, upon authorized request, to law enforcement agencies, health professional licensing boards and four units of DHMH⁵ to support investigations into improper professional practice, prescription fraud and illegal CDS diversion. De-identified PDMP data will be available for research, public education and reporting purposes. In collaboration with the Advisory Board on Prescription Drug Monitoring; the Boards of Physicians, Nursing and Pharmacy; the University of Maryland, School of Pharmacy; the Governor’s Office of Crime Control & Prevention (GOCCP); Chesapeake Regional Information System for Our Patients (CRISP); and other DHMH agencies and professional organizations, ADAA will provide PDMP training and education on issues related to prescription drug abuse and overdose to an array of stakeholders, including healthcare providers, law enforcement, public health professionals and the general public.

The estimated timeframe for implementation of a fully operational PDMP is 3rd Quarter, 2013.

⁵ Office of the Chief Medical Examiner, Office of Health Care Quality, Office of the Inspector General and Maryland Medical Assistance

Controlled Dangerous Substance Integration Unit

The CDSIU has been implemented within DHMH as a “fusion center” for the sharing and analysis of information relating to the prescribing, dispensing and use of controlled substances. The purpose of forming a CDSIU is to:

- Identify the prescription CDS-related data sets and indicators of potentially problematic prescribing, dispensing and use currently available to each relevant administrative unit of the Department;
- Identify the policies and procedures in place within each unit that govern the analysis of these data sets and indicators and the responses taken;
- Establish policies and procedures for data sharing between units that take into account current restrictions on disclosure and properly balance the need to protect confidential information with the Department’s responsibility to protect public health;
- Conduct strategic planning and implement comprehensive responses to identified CDS-related public health threats; and,
- Establish policies and procedures for data disclosure to and operational coordination with external public health authorities, healthcare providers and federal, state and local law enforcement agencies that have concordant CDS-related responsibilities.

Medical Assistance Quality Assurance/Fraud Detection Programs

Maryland Medical Assistance (MA), in both the Fee-For-Service Program (FFS) and Managed Care Organizations (MCO), currently employs procedures to identify and remedy activities of both recipients and providers that could contribute to the misuse of pharmaceutical opioids. Although these programs have been developed primarily for the purpose of quality assurance, cost containment and fraud detection, they will be utilized as a component of strategies to reduce opioid overdose. These programs include a corrective care management program and prospective drug utilization review.

5. *Naloxone*

Naloxone, an opioid antagonist long used in emergency medicine to rapidly reverse opioid related sedation and respiratory depression, is being made available to opioid users through community-based harm-reduction programs (including needle-exchange and community-health programs), substance use disorder treatment providers and others that have contact with high-

risk populations. These programs typically train opioid users on risk factors associated with overdose, overdose recognition, naloxone administration and overdose response techniques (including differentiating between beneficial responses like rescue breathing and contacting emergency services and ineffectual/potentially harmful “street remedies” like ice baths, burning fingers and slapping/hitting). Users are also provided with a prescription for and kit containing naloxone (IM injection or intranasal administration). As of 2010, there were 48 known programs in the United States representing 188 community-based sites in 15 states and Washington, DC.

Since 2004, the Baltimore City Health Department’s Staying Alive Drug Overdose Prevention and Response Program (the only program in Maryland) has trained more than 3,000 injection drug users, drug-treatment patients and providers, prison inmates, and corrections officers about how to prevent drug overdoses using naloxone, with more than 220 documented overdose reversals. The Department will work with localities interested in exploring clinical and public health approaches to naloxone.

6. Emergency-Response Plan

The University of Maryland, School of Pharmacy, under contract with ADAA, is developing a plan for coordination between state and local public health authorities, healthcare providers, professional organizations, law enforcement agencies and other stakeholders in response to public health emergencies created by an abrupt change in the prescribing, dispensing or use of opioids at the community level. Emergency situations could include a significant disruption of the heroin market in a region or the closure of a medical practice, opioid treatment program or other provider due to DHMH administrative enforcement actions, the death of a practitioner, natural disaster, etc. The plan will be tailored to geographic areas (particularly rural counties), include a mechanism to identify at-risk individuals and coordinate the provision of overdose treatment and prevention services.

The plan will also address critical issues including timely access to patient medical records and identification of treatment capacity in the area.

Timeline

Activity	Date
Maryland Opioid Overdose Prevention Plan released and notification memo sent to jurisdictional health officers, substance use disorder treatment coordinators and Core Service Agency directors	January 2013
Jurisdictional/Regional Overdose Report: The DHMH Virtual Data Unit will disseminate an analysis of OCME data to each jurisdiction.	February 2013
Overdose Fatality Review Pilots: DHMH will establish process to disclose OCME investigative reports and other available information related to overdose incidents to authorized jurisdictional review teams.	February 2013
Conference: DHMH will hold a conference on overdose prevention best practices and plan development for jurisdictional leaders.	March 2013
Draft Jurisdictional Overdose Prevention Plans Due	April 30, 2013
Final Jurisdictional Overdose Prevention Plans Due	June 30, 2013

Appendix A: National Epidemiology

In 2008, poisoning became the leading cause of injury death in the United States with nearly 9 out of 10 poisoning deaths caused by drugs. During the past three decades, the number of drug poisoning deaths increased six-fold, from about 6,100 in 1980 to 36,500 in 2008. In 2008, about 77% of drug poisoning deaths were unintentional, 13% were suicides, and 9% were of undetermined intent.⁶

Although heroin use continues to be a significant risk factor for overdose across the United States, chronic non-medical use/abuse of pharmaceutical opioid analgesics is likely the most significant single factor in the increasing number of overdose deaths.⁷ Drug poisoning deaths involving opioid analgesics more than tripled from about 4,000 in 1999 to 14,800 in 2008. Opioid analgesics were involved in more than 40% (14,800) of all drug poisoning deaths in 2008, up from about 25% in 1999.⁸ The number of heroin-related deaths has been relatively stable for nearly a decade.

Importantly, multi-drug intoxication, including concurrent use of alcohol, non-opioid pharmaceuticals (sedative-hypnotics, muscle relaxers, and anxiolytics such as benzodiazepines) and other illicit street drugs with heroin and/or pharmaceutical opioids, appears to be a factor in the majority of fatal overdoses.⁹

Of particular note is the impact of methadone. The number of drug poisoning deaths nationally involving methadone increased seven-fold from about 800 deaths in 1999 to roughly 5,500 in 2007. Between 2007 and 2008, the number of deaths involving methadone decreased by nearly 600, the first decrease since 1999.

The large increase in the prescribing of methadone for the treatment of pain (rather than opioid dependence) has been the primary factor contributing to the increasing number of

⁶ Data from the National Vital Statistics System as reported through the Centers for Disease Control and Prevention's online WONDER system.

⁷ Webster, et. al., 2011; Green, et. al., 2011.

⁸ For about one-third (12,400) of the drug poisoning deaths in 2008, the type of drug(s) involved was specified on the death certificate but it was not an opioid analgesic. The remaining 25% involved drugs, but the type of drugs involved was not specified (for example, "drug overdose" or "multiple drug intoxication" was written on the death certificate). From 1999 to 2008, the number of drug poisoning deaths involving only unspecified drugs increased from about 3,600 to about 9,200. Some drug poisoning deaths for which the drug was not specified may involve opioid analgesics.

⁹ CDC, "CDC Grand Rounds...", 2012; Webster, et. al., 2011; Green, et. al., 2011; Warner, et. al., 2011.

methadone-related overdoses.¹⁰ Methadone has a complex pharmacology with multiple medication interactions and a long-half life, making its prescribing for pain by inexperienced physicians risky.

Although ADAA has not identified a national data source that specifically tracks non-fatal opioid overdose trends, increases in opioid-related admissions to hospital emergency departments (ED) indicate that non-fatal overdoses across the U.S. are increasing at a rate similar to fatal overdoses. Although the rate of ED admissions (per 100,000 people) for heroin decreased from 73 in 2004 to 72.6 in 2010, the rate of admissions for misuse/abuse of oxycodone and hydrocodone products increased 255% and 149%, respectively.¹¹ Admissions for “adverse reactions” to pharmaceuticals prescribed to the patient increased from 1.2 million in 2005 to 2.28 million in 2009 (82.9% rate increase).¹²

The highest rates of drug poisoning death are among persons of middle age. In 2008, the drug poisoning death rate was higher for males, people aged 45–54 years, and non-Hispanic white and American Indian or Alaska Native persons than for females and those in other age and racial/ethnic groups. Poisoning death rates were the highest in the Appalachian and Southwest regions, with elevated rates in the South and New England. In 2008, poisoning was the leading cause of injury death in 30 states, including Maryland.

Research indicates that chronic opioid users with a history of substance use and mental health disorders are likely those at greatest risk of overdose, with individuals being prescribed high doses of opioids (>100mg/day morphine equivalent) for extended periods of time also being at high risk.¹³ Increases in the number of individuals seeking treatment for pharmaceutical opioid-related substance use disorders have been concurrent with increases in pharmaceutical opioid-related overdoses. Although heroin-related admission rates (per 100,000 people) decreased by 5% from 1999 to 2009, admission rates for opioids other than heroin increased 430% during the same time period.¹⁴ A primary cause of the increase in pharmaceutical opioid abuse has been drastically increased availability. Drug distribution through the pharmaceutical supply chain increased more than 600% between 1997 and 2007, from 96 mg of morphine to 700 mg per person in 2007,¹⁵ enough for every US citizen to take a typical 5 mg dose of Vicodin every 4

¹⁰ CDC, “Prescription Painkiller Overdoses...”, 2012.

¹¹ SAMHSA, “*The DAWN Report: Highlights of the 2010 Drug Abuse Warning Network (DAWN) Findings...*”, 2012.

¹² SAMHSA, “*The DAWN Report: Highlights of the 2009 Drug Abuse Warning Network (DAWN) Findings...*”, 2010.

¹³ Webster, et. al., 2011.

¹⁴ SAMHSA, “TEDS: 1999-2009.”

¹⁵ CDC, “CDC Grand Rounds...”, 2012.

hours for 3 weeks. The total societal costs of prescription opioid abuse in the United States are estimated at \$55.7 billion. Workplace costs accounted for \$25.6 billion, health care costs accounted for \$25.0 billion, and criminal justice costs accounted for \$5.1 billion. Patients with opioid addiction accounted for over 92% of excess medical and drug costs. Of the workplace costs, the cost of premature death was the largest component, accounting for \$11.2 billion.¹⁶ Medicaid patients and caregivers combined contributed approximately one-third of total excess medical and drug costs.

Although fatal overdoses, ED visits and treatment admissions related to pharmaceutical opioids have increased substantially over the past decade, both the general prevalence and rate of initiation of non-medical use has been stable since the early 2000s. According to SAMHSA's National Survey of Drug Use and Health, reported past month non-medical use of "pain relievers" (persons aged 12 or older) was steady between 2002 (1.9%) and 2010 (2%). Similarly, the number of new non-medical users of pain relievers decreased from 2.3 million in 2002 to 2 million in 2010 after experiencing a slight rise in the mid-2000s. However, there has been a significant increase in non-medical pain reliever use at levels indicative of dependence or addiction. The number of persons reporting 200-365 days of non-medical use in the past year increased 74.6%, while the number reporting use of 1-29 days, 30-99 days or 100-199 days did not increase.

Increasing rates of pharmaceutical opioid abuse and addiction appear to be driving an alarming increase in heroin use. Anecdotal reports from law enforcement and treatment providers across the country suggest that people who became opioid-dependent through the abuse of pharmaceutical opioids are initiating heroin use due to its high potency, wide availability and minimal cost compared to pharmaceuticals. The NSDUH has tracked increases in past year heroin use, past year initiation of heroin use and past year heroin dependence since 2007. A larger proportion of individuals who have initiated heroin use in recent years report prior non-medical pain reliever use or dependence than those who initiated heroin during the mid-2000s. The heroin initiation rate is now 20 times greater among individuals who have prior non-medical pain reliever use than those who do not. Rates of initiation of heroin use among those with prior non-medical pain reliever use peak about four years after first non-medical use of pharmaceutical opioids.

¹⁶ Birnbaum, et. al., 2011.

**Appendix B: DHMH Factsheet, “Heroin Overdose Deaths on the Rise,
Rx Opioid Overdose Deaths Down,” December, 2012**



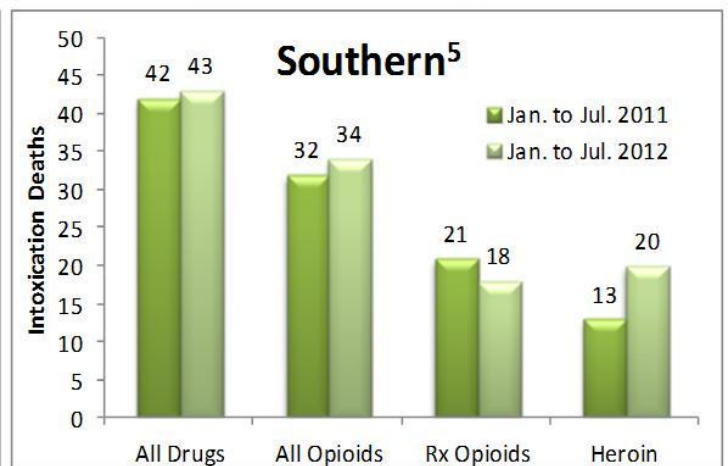
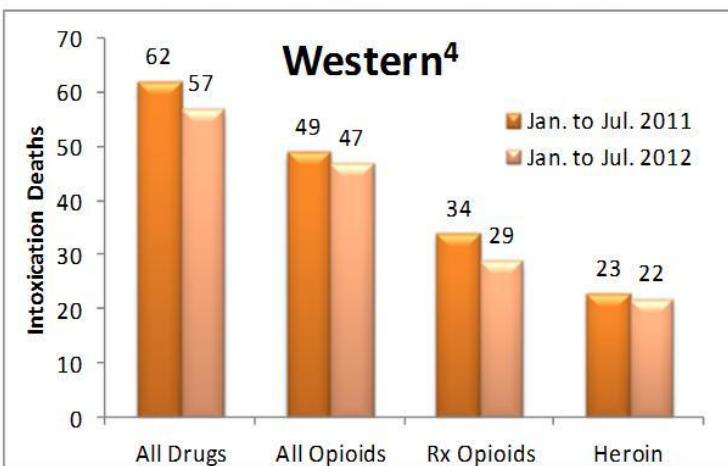
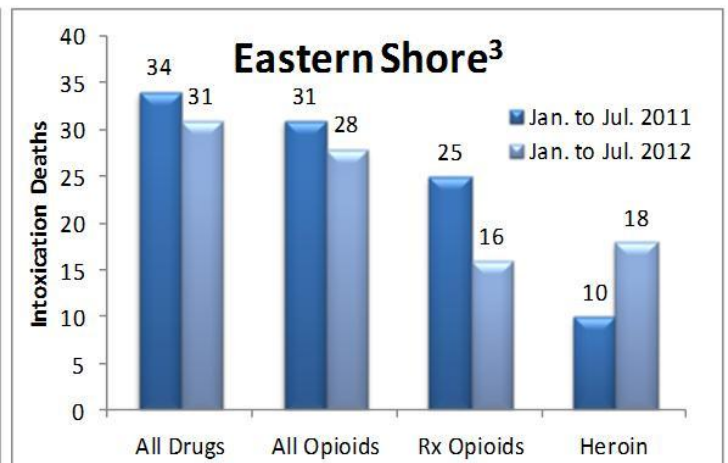
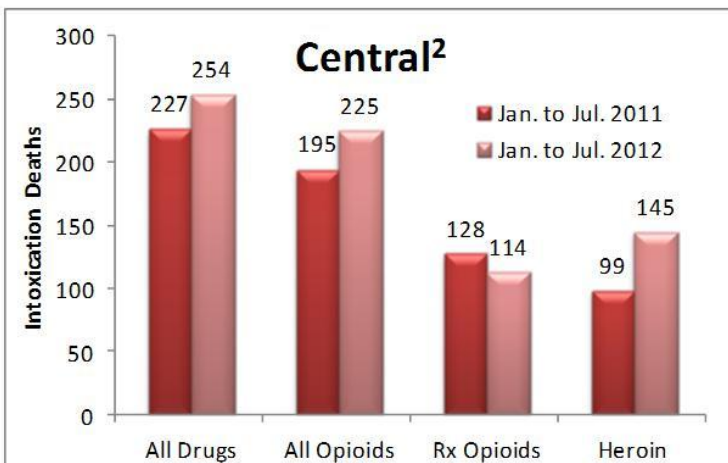
December 2012

Heroin Overdose Deaths on the Rise, Rx Opioid Overdose Deaths Down

The Department of Health and Mental Hygiene has identified a shift from prescription opioids to heroin among drug overdose deaths¹ in Maryland. During the first seven months of 2012, there were 41% more drug overdose deaths related to heroin than during the same period in 2011. This increase coincides with a 15% reduction in the number of prescription opioid-related overdose deaths. Overall, the number of drug overdose deaths has increased 6%, from 365 deaths to 385 deaths.

The largest number of heroin-related deaths continue to occur in Central Maryland (including the Baltimore Metro area), which experienced a 47% increase. Southern Maryland and the Eastern Shore have also seen substantial increases of 54% and 80%, respectively. All Maryland regions had declines in prescription opioid-related deaths with the largest in the Eastern Shore (36%), followed by Western (15%), Southern (14%) and Central (11%) Maryland.

Although the largest proportion of Marylanders that die from drug overdose are of middle age, the largest increases in fatal heroin-related overdoses have been among younger age groups, including a 53% increase among ages 15-24 and a 59% increase among ages 35-44. The reduction in prescription opioid-related deaths have been driven by decreases among ages 15-24 (50%) and 45-54 (32%). Increases in heroin-related deaths have been roughly proportional for whites (42%) and African Americans (43%) as well as for men (40%) and women (46%).



1. Data used to determine all overdose death figures comes from the Office of the Chief Medical Examiner. The methodology used for determining overdose death figures was developed by the Vital Statistics Administration and is available online at: <http://dhmh.maryland.gov/vsa/Documents/Methods--drug-report.pdf>.

2. Includes Anne Arundel County, Baltimore City, Baltimore County, Carroll County, Harford County and Howard County.

3. Includes Caroline County, Cecil County, Dorchester County, Kent County, Queen Anne's County, Somerset County, Talbot County, Wicomico County and Worcester County.

4. Includes Allegany County, Frederick County, Garrett County, Montgomery County and Washington County.

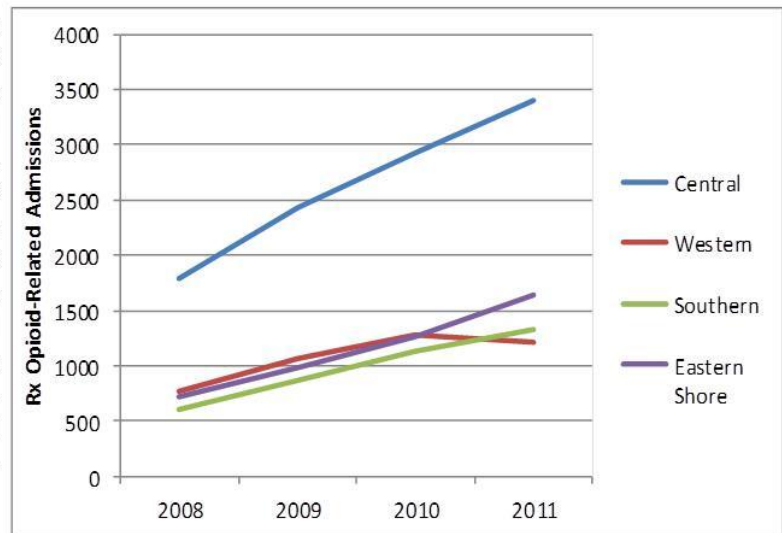
5. Includes Calvert County, Charles County, Prince George's County and St. Mary's County.

A Potential Connection Between Abuse of Rx Opioids and Heroin Use

Like many other states, Maryland has experienced rising rates of prescription drug abuse in recent years. Admissions to substance abuse treatment programs related to prescription opioids like oxycodone, hydrocodone and methadone have risen steadily since 2008 (see Figure). Studies and media reports from states as diverse as Ohio⁷, Minnesota⁸, Delaware⁹, New Jersey¹⁰, New York and California¹¹ suggest that individuals who abuse prescription opioids increasingly may be initiating heroin use. For individuals who have developed addiction through prescription opioid abuse, heroin provides a relatively cheap, potent and accessible alternative to pharmaceuticals. Local law enforcement officials have reported that this may be a factor in the increase in heroin-related overdose deaths.¹²

Action by public health and law enforcement authorities has cut down on the supply of diverted pharmaceuticals and raised awareness among healthcare providers and the general public of the dangers of prescription drug abuse. Pharmaceutical manufacturers have developed abuse-deterrent formulations for some of the most commonly abused prescription opioids. Although these efforts have demonstrated success in recent reductions in the number of prescription opioid-related overdose deaths, the recent increase in heroin-related deaths presents a serious threat to public health and safety.

Figure: Prescription Opioid-Related Admissions to Publicly-Funded Substance Use Disorder Treatment Services in Maryland, by Region, 2008-2011⁶



Maryland's public health response to this challenge will include:

- **Outreach to physicians and other health care providers to help them identify potential heroin users and refer them to effective treatment**
- **Support for innovative local efforts to respond to drug overdose across the state**
- **Development of the Prescription Drug Monitoring Program (PDMP) to provide support for referral to treatment**

6. Data from the Department of Health and Mental Hygiene, Alcohol and Drug Abuse Administration, State of Maryland Automated Record Tracking (SMART) system. SMART records patient and treatment information reported by publicly-funded, certified substance use disorder treatment providers in Maryland. Privately funded treatment providers are not required to report.

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Appendix C: Methodology for Identifying Drug-Related Overdose Deaths, December 2012

The methodology for identifying drug-related overdose deaths in Maryland was developed by the DHMH Vital Statistics Administration with assistance from the DHMH Alcohol and Drug Abuse Administration, the Office of the Chief Medical Examiner (OCME) and the Maryland Poison Center. Assistance was also provided by authors of a Baltimore City Health Department report on intoxication deaths.¹⁷ Currently, this methodology is used to identify all drug-related overdose deaths, as well as deaths that are opioid, heroin, or prescription opioid-related.

Source of data

Data used to identify overdose deaths are obtained from OCME. Maryland law requires OCME to investigate all deaths occurring in the State that result from violence, suicide, casualty, or take place in a suspicious, unexpected or unusual manner. In these instances, information compiled during an investigation is used to determine the cause or causes of death. Depending on the circumstances, an investigation may involve a combination of scene examination, witness reports, review of medical and police reports, autopsy, and toxicological analysis of autopsy specimens. Toxicological analysis is routinely performed when there is suspicion that a death was the result of a drug or alcohol overdose.

Identification of drug-related overdose deaths

A death is considered to be a drug-related overdose death if:

1. The cause of death includes the string “intox” (short for intoxication, which is likely to indicate an overdose); and
2. The cause of death identifies the death as drug-related; and
3. The manner of death is accidental or undetermined.

Identification of opioid-related deaths

Opioids include heroin, an illicit drug, and prescription drugs such as morphine, oxycodone, hydrocodone, hydromorphone, methadone, fentanyl, tramadol and codeine. An opioid is considered to be associated with a death if a specific opioid drug is indicated in the cause of death. If the cause of death does not identify a specific drug (e.g., the cause of death indicates “narcotic overdose”), toxicology results are reviewed to determine whether the presence of any opioid drug was detected. If so, the cause of death is considered to be opioid-related, regardless of the level of the drug.

¹⁷ Office of Epidemiology and Planning, Baltimore City Health Department. Intoxication Deaths Associated with Drugs of Abuse or Alcohol. Baltimore City, Maryland: Baltimore City Health Department. January 2007.

Identification of heroin-related deaths

Cause of death information, toxicology results, and scene investigation reports are reviewed to identify deaths that are heroin-related. These deaths are classified as either “confirmed” or “suspected.” A death is considered to be a confirmed heroin-related death if:

1. “Heroin” is mentioned in the cause of death; or
2. The toxicology screen shows a positive result for 6-monacetylmorphine; or
3. The toxicology screen shows positive results for both morphine and quinine; or
4. The death is identified as heroin-related through scene investigation.

Since heroin is rapidly metabolized into morphine, deaths that do not meet the criteria above, but are associated with morphine through either cause of death information or toxicological results are considered to be heroin-related. Since it is likely, but not certain, that these deaths are heroin-related, they are considered to be ‘suspected’ heroin deaths.

Identification of prescription opioid-related deaths

Prescription opioid-related deaths are defined as deaths that involve one or more prescription opioids, as identified through cause of death information when a specific drug is indicated, and through toxicology results when the cause of death is nonspecific. This includes deaths that involve both a prescription opioid and heroin, but not deaths that result from heroin alone. Since a death may be associated with both heroin and prescription opioids, the sum of the number of prescription opioid deaths and the number of heroin deaths is greater than the overall number of opioid-related deaths.

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