TABLE OF CONTENTS

FACTS FOR COMMUNITY MEMBERS

SCOPE OF THE PROBLEM ................................................................. 3

STRATEGIES TO PREVENT OVERDOSE DEATHS ....................... 4

RESOURCES FOR COMMUNITIES ................................................... 6

REFERENCES .................................................................................. 7

ACKNOWLEDGEMENTS ................................................................ 8

Also see the other components of this Toolkit:

★ Five Essential Steps for First Responders
★ Information for Prescribers
★ Safety Advice for Patients & Family Members
★ Recovering from Opioid Overdose:
  Resources for Overdose Survivors & Family Members
SCOPE OF THE PROBLEM

opioid overdose continues to be a major public health problem in the United States. It has contributed significantly to accidental deaths among those who use, misuse or abuse illicit and prescription opioids.

In fact, U.S. overdose deaths involving prescription opioid analgesics increased to about 17,000 deaths a year in 2010 [1, 2], almost double the number in 2001 [1]. This increase coincided with a nearly fourfold increase in the use of prescribed opioids for the treatment of pain [3].

WHAT ARE OPIOIDS? Opioids include illegal drugs such as heroin, as well as prescription medications used to treat pain such as morphine, codeine, methadone, oxycodone (OxyContin®, Percodan®, Percocet®), hydrocodone (Vicodin®, Lortab®, Norco®), fentanyl (Duragesic®, Fentora®), hydromorphone (Dilaudid®, Exalgo®), and buprenorphine (Subutex®, Suboxone®).

Opioids work by binding to specific receptors in the brain, spinal cord and gastrointestinal tract. In doing so, they minimize the body’s perception of pain. However, stimulating the opioid receptors or “reward centers” in the brain also can trigger other systems of the body, such as those responsible for regulating mood, breathing and blood pressure.

HOW DOES OVERDOSE OCCUR? A variety of effects can occur after a person takes opioids, ranging from pleasure to nausea, vomiting, severe allergic reactions (anaphylaxis) and overdose, in which breathing and heartbeat slow or even stop.

Opioid overdose can occur when a patient deliberately misuses a prescription opioid or an illicit drug such as heroin. It also can occur when a patient takes an opioid as directed, but the prescriber miscalculated the opioid dose or an error was made by the dispensing pharmacist or the patient misunderstood the directions for use.

Also at risk is the person who takes opioid medications prescribed for someone else, as is the individual who combines opioids — prescribed or illicit — with alcohol, certain other medications, and even some over-the-counter products that depress breathing, heart rate, and other functions of the central nervous system [4].

WHO IS AT RISK? Anyone who uses opioids for long-term management of chronic cancer or non-cancer pain is at risk for opioid overdose, as are persons who use heroin [5]. Others at risk include persons who are:

- Receiving rotating opioid medication regimens (and thus are at risk for incomplete cross-tolerance).
- Discharged from emergency medical care following opioid intoxication or poisoning.
- At high risk for overdose because of a legitimate medical need for analgesia, coupled with a suspected or confirmed history of substance abuse, dependence, or non-medical use of prescription or illicit opioids.
- Completing mandatory opioid detoxification or abstinent for a period of time (and presumably with reduced opioid tolerance and high risk of relapse to opioid use).
- Recently released from incarceration and a past user or abuser of opioids (and presumably with reduced opioid tolerance and high risk of relapse to opioid use).

_Tolerance_ develops when someone uses an opioid drug regularly, so that their body becomes accustomed to the drug and needs a larger or more frequent dose to continue to experience the same effect.

_Loss of tolerance_ occurs when someone stops taking an opioid after long-term use. When someone loses tolerance and then takes the opioid drug again, they can experience serious adverse effects, including overdose, even if they take an amount that caused them no problem in the past.
STRATEGIES TO PREVENT OVERDOSE DEATHS

STRATEGY 1: Encourage providers, persons at high risk, family members and others to learn how to prevent and manage opioid overdose. Providers should be encouraged to keep their knowledge current about evidence-based practices for the use of opioid analgesics to manage pain, as well as specific steps to prevent and manage opioid overdose.

Federally funded Continuing Medical Education courses are available to providers at no charge at http://www.OpioidPrescribing.com (six courses funded by the Substance Abuse and Mental Health Services Administration) and on Medscape (two courses funded by the National Institute on Drug Abuse).

Helpful information for laypersons on how to prevent and manage overdose is available from Project Lazarus at http://www.projectlazarus.org/ or from the Massachusetts Health Promotion Clearinghouse at http://www.maclearinghouse.org.

STRATEGY 2: Ensure access to treatment for individuals who are misusing or addicted to opioids or who have other substance use disorders. Effective treatment of substance use disorders can reduce the risk of overdose and help overdose survivors attain a healthier life. Medication-assisted treatment, as well as counseling and other supportive services, can be obtained at SAMHSA-certified and DEA-registered opioid treatment programs (OTPs), as well as from physicians who are trained to provide care in office-based settings with medications such as buprenorphine and naltrexone.

Information on treatment services available in or near your community can be obtained from your state health department, state alcohol and drug agency, or from the federal Substance Abuse and Mental Health Services Administration (see page 7).

STRATEGY 3: Ensure ready access to naloxone. Opioid overdose-related deaths can be prevented when naloxone is administered in a timely manner. As a narcotic antagonist, naloxone displaces opiates from receptor sites in the brain and reverses respiratory depression that usually is the cause of overdose deaths [5]. During the period of time when an overdose can become fatal, respiratory depression can be reversed by giving the individual naloxone [4].

On the other hand, naloxone is not effective in treating overdoses of benzodiazepines (such as Valium®, Xanax®, or Klonopin®), barbiturates (Seconal® or Fiorinal®), clonidine, Elavil®, GHB, or ketamine. It also is not effective in overdoses with stimulants, such as cocaine and amphetamines (including methamphetamine and Ecstasy). However, if opioids are taken in combination with other sedatives or stimulants, naloxone may be helpful.

Naloxone injection has been approved by FDA and used for more than 40 years by emergency medical services (EMS) personnel to reverse opioid overdose and resuscitate persons who otherwise might have died in the absence of treatment [6].
Naloxone has no psychoactive effects and does not present any potential for abuse [1, 4]. Injectable naloxone is relatively inexpensive. It typically is supplied as a kit with two syringes, at a cost of about $6 per dose and $15 per kit [7]. These kits require training on how to administer naloxone using a syringe. The FDA has also approved a naloxone automated injector, called Evzio® which does not require special training to use because it has verbal instructions which are activated when the cap is removed from the device. This autoinjector can deliver a dose of naloxone through clothing when placed on the outer thigh muscle. The per dose cost of naloxone via the autoinjector is not yet determined.

For these reasons, it is important to determine whether local EMS personnel or other first responders have been trained to care for overdose, and whether they are allowed to stock naloxone in their drug kits. In some jurisdictions, the law protects responders from civil liability and criminal prosecution for administering naloxone. So called “Good Samaritan” laws are in effect in 10 states and the District of Columbia, and are being considered by legislatures in at least a half-dozen other states [8]. Such laws provide protection against prosecution for both the overdose victim and those who respond to overdose. To find states that have adopted relevant laws, visit the CDC’s website at: http://www.cdc.gov/HomeandRecreationalSafety/Poisoning/laws/immunity.html.

STRATEGY 4: Encourage the public to call 911. An individual who is experiencing opioid overdose needs immediate medical attention. An essential first step is to get help from someone with medical expertise as quickly as possible [9, 10]. Therefore, members of the public should be encouraged to call 911. All they have to say is, “Someone is not breathing” and give a clear address and location.

STRATEGY 5: Encourage prescribers to use state Prescription Drug Monitoring Programs (PDMPs). State Prescription Drug Monitoring Programs (PDMPs) have emerged as a key strategy for addressing the misuse and abuse of prescription opioids and thus preventing opioid overdoses and deaths. Specifically, prescribers can check their state’s PDMP database to determine whether a patient is filling the prescriptions provided and/or obtaining prescriptions for the same or similar drug from multiple prescribers.

While a majority of states now have operational PDMPs, the programs differ from state to state in terms of the exact information collected, how soon that information is available to prescribers, and who may access the data. Therefore, information about the program in a particular state is best obtained directly from the state PDMP or from the board of medicine or pharmacy.
RESOURCES FOR COMMUNITIES

Resources that may be useful to local communities and organizations are found at the following websites:

**Substance Abuse and Mental Health Services Administration (SAMHSA)**
- National Treatment Referral Helpline
  1-800-662-HELP (4357) or 1-800-487-4889 (TDD — for hearing impaired)
- National Substance Abuse Treatment Facility Locator:
  [http://www.findtreatment.samhsa.gov/TreatmentLocator/](http://www.findtreatment.samhsa.gov/TreatmentLocator/) to search by state, city, county, and zip code
- Buprenorphine Physician & Treatment Program Locator:
  [http://www.buprenorphine.samhsa.gov/bwns_locator](http://www.buprenorphine.samhsa.gov/bwns_locator)
- State Substance Abuse Agencies:
- Center for Behavioral Health Statistics and Quality (CBHSQ):
  1-877-SAMHSA (1-877-726-4727)

**Centers for Disease Control and Prevention (CDC)**
- [http://www.cdc.gov/Features/VitalSigns/PainkillerOverdoses](http://www.cdc.gov/Features/VitalSigns/PainkillerOverdoses)
- [http://www.cdc.gov/HomeandRecreationSafety/Poisoning](http://www.cdc.gov/HomeandRecreationSafety/Poisoning)

**White House Office of National Drug Control Policy (ONDCP)**
State and Local Information: [http://www.whitehouse.gov/ondcp/state-map](http://www.whitehouse.gov/ondcp/state-map)

**Association of State and Territorial Health Officials (ASTHO)**
Prescription Drug Overdose: State Health Agencies Respond (2008):
[http://www.astho.org/PreventingPrescriptionDrugOverdose](http://www.astho.org/PreventingPrescriptionDrugOverdose)

**National Association of State Alcohol and Drug Abuse Directors (NASADAD)**
State Substance Abuse Agencies, Prescription Drug Abuse, and Heroin Abuse: Results from a NASADAD Membership Inquiry.

**American Association for the Treatment of Opioid Dependence (AATOD)**
REFERENCES

1. Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. CDC WONDER Online Database, 2012.


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