



# Prescription Drug Abuse and Overdose: Public Health Perspective

*[Residency educators may use the following slides for their own teaching purposes.]*

*CDC's Primary Care and Public Health Initiative*

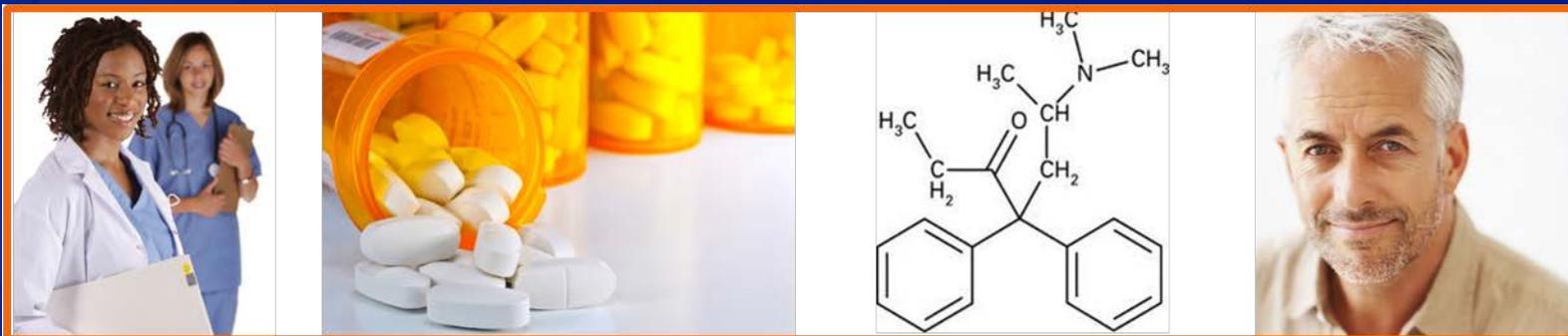
*October 24, 2012*

# Overview of Presentation

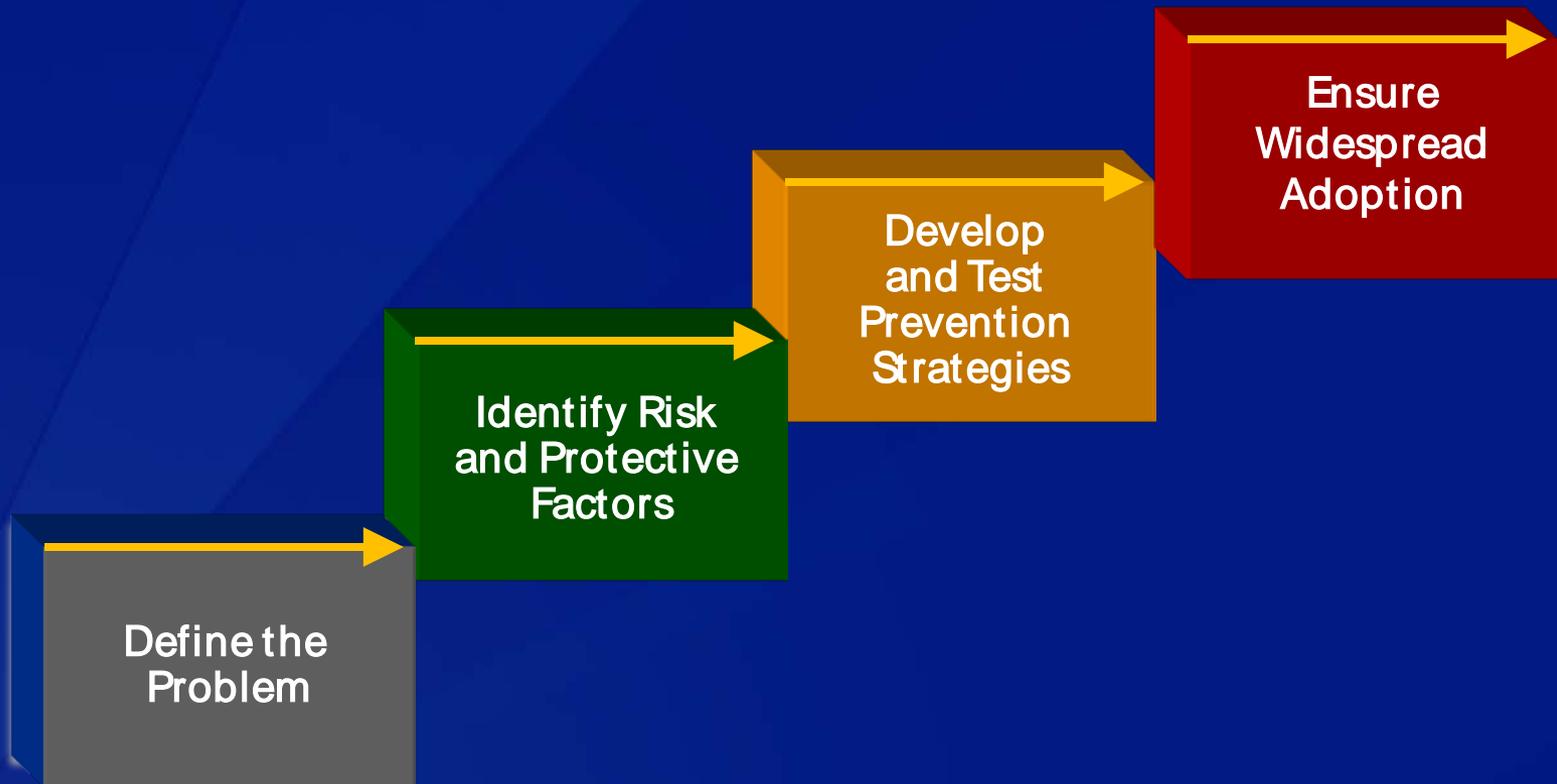
- ❑ CDC prescription drug abuse and overdose goal
- ❑ Public health approach to prescription drug abuse and overdose
  - Define the problem
  - Identify risk and protective factors
  - Develop and test prevention strategies
  - Ensure widespread adoption
- ❑ Additional resources

# CDC Goal

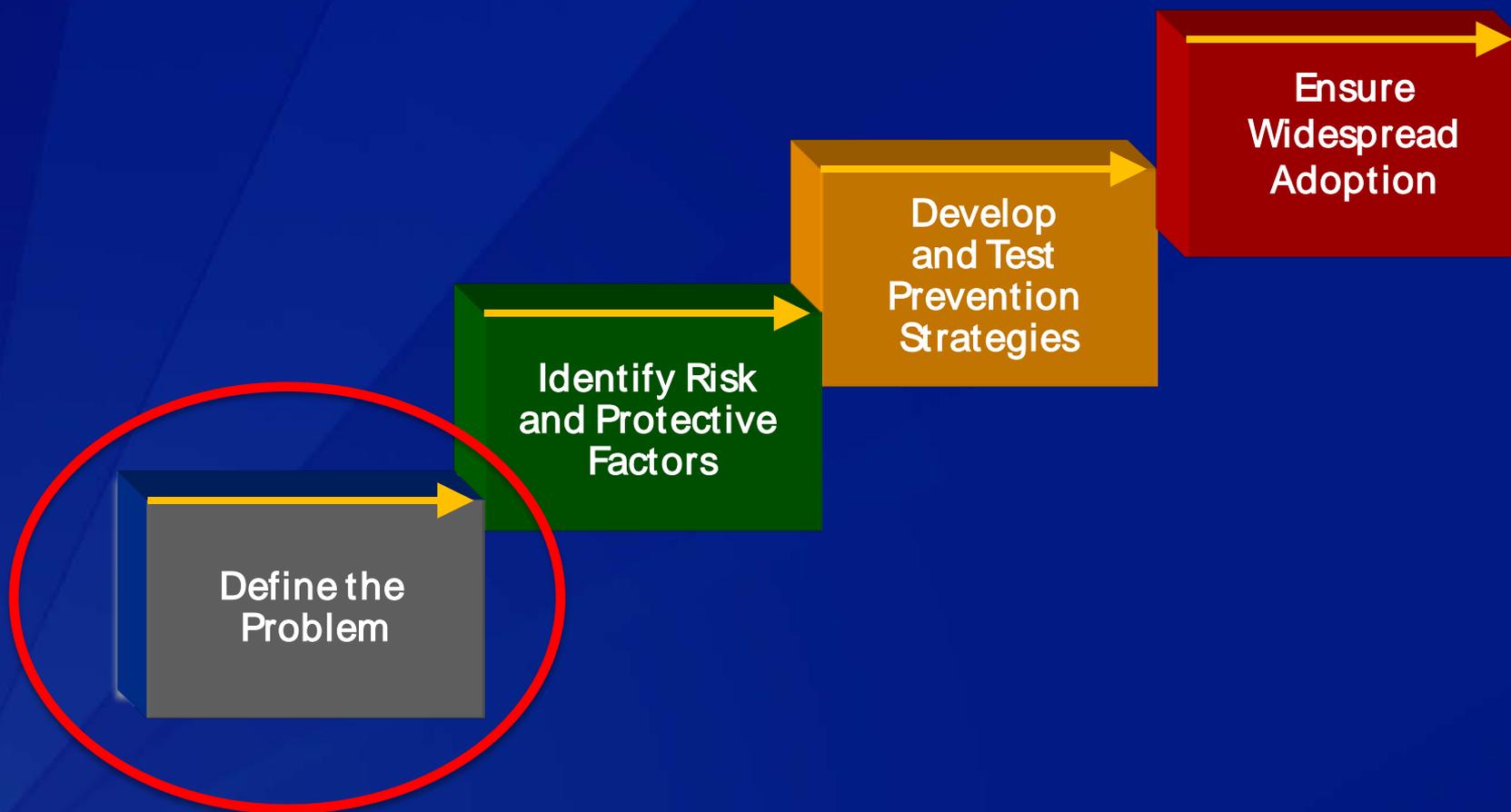
- ❑ Reduce abuse and overdose of opioids and other controlled prescription drugs while ensuring patients with pain are safely and effectively treated.



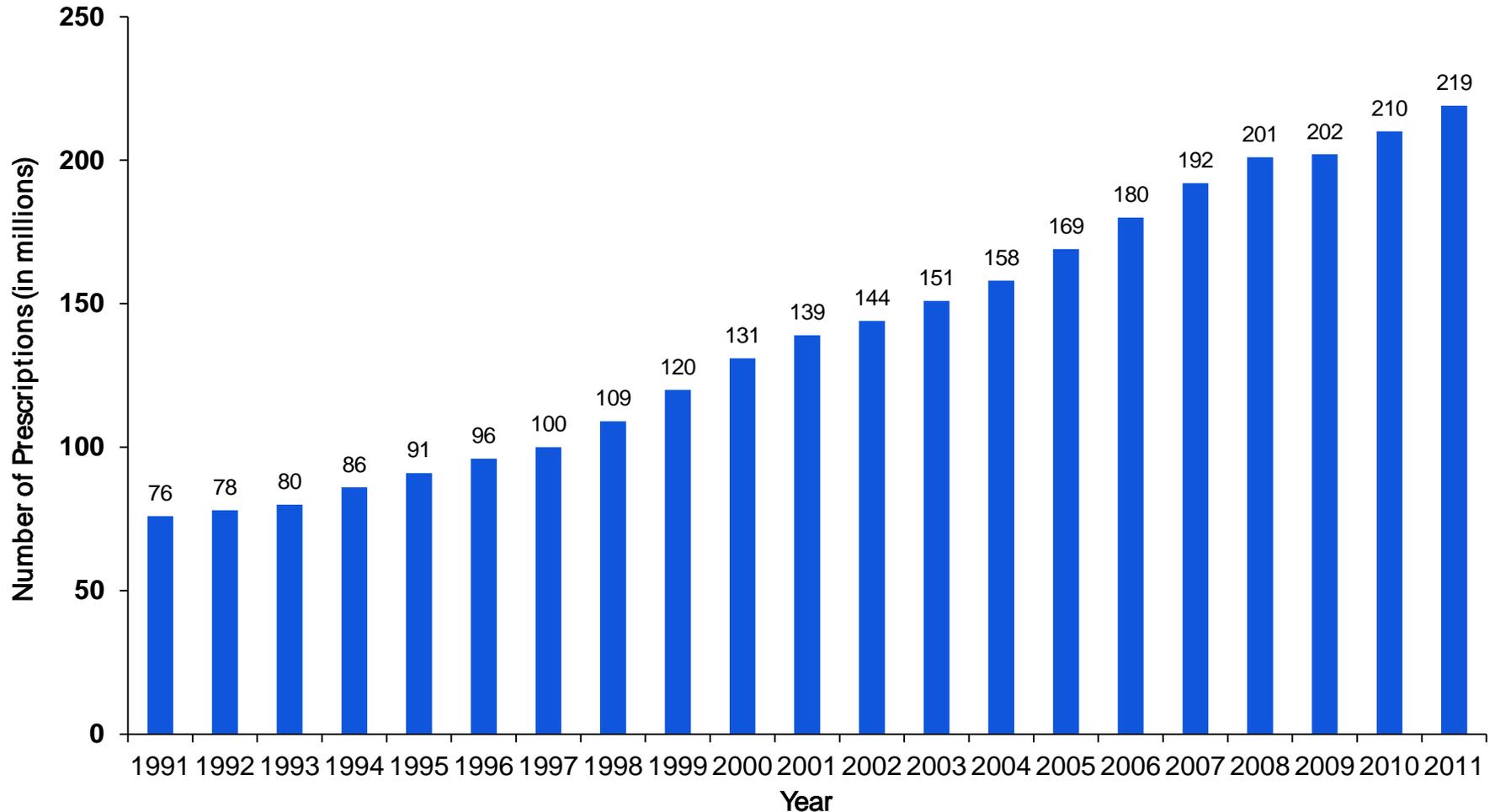
# The Public Health Approach to Prevention



# The Public Health Approach to Prevention

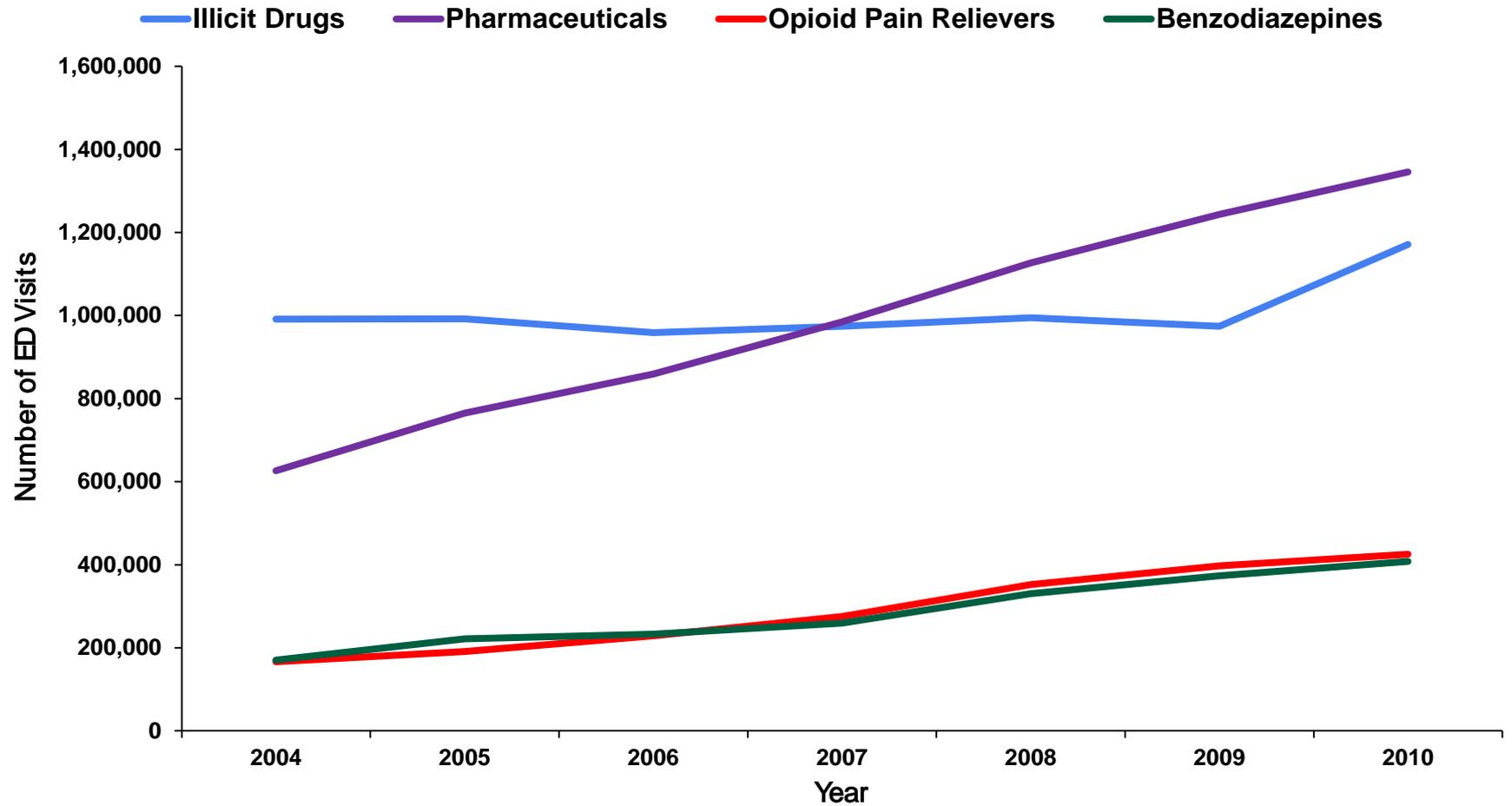


# Opioid Prescriptions Dispensed by Retail Pharmacies—United States, 1991–2011

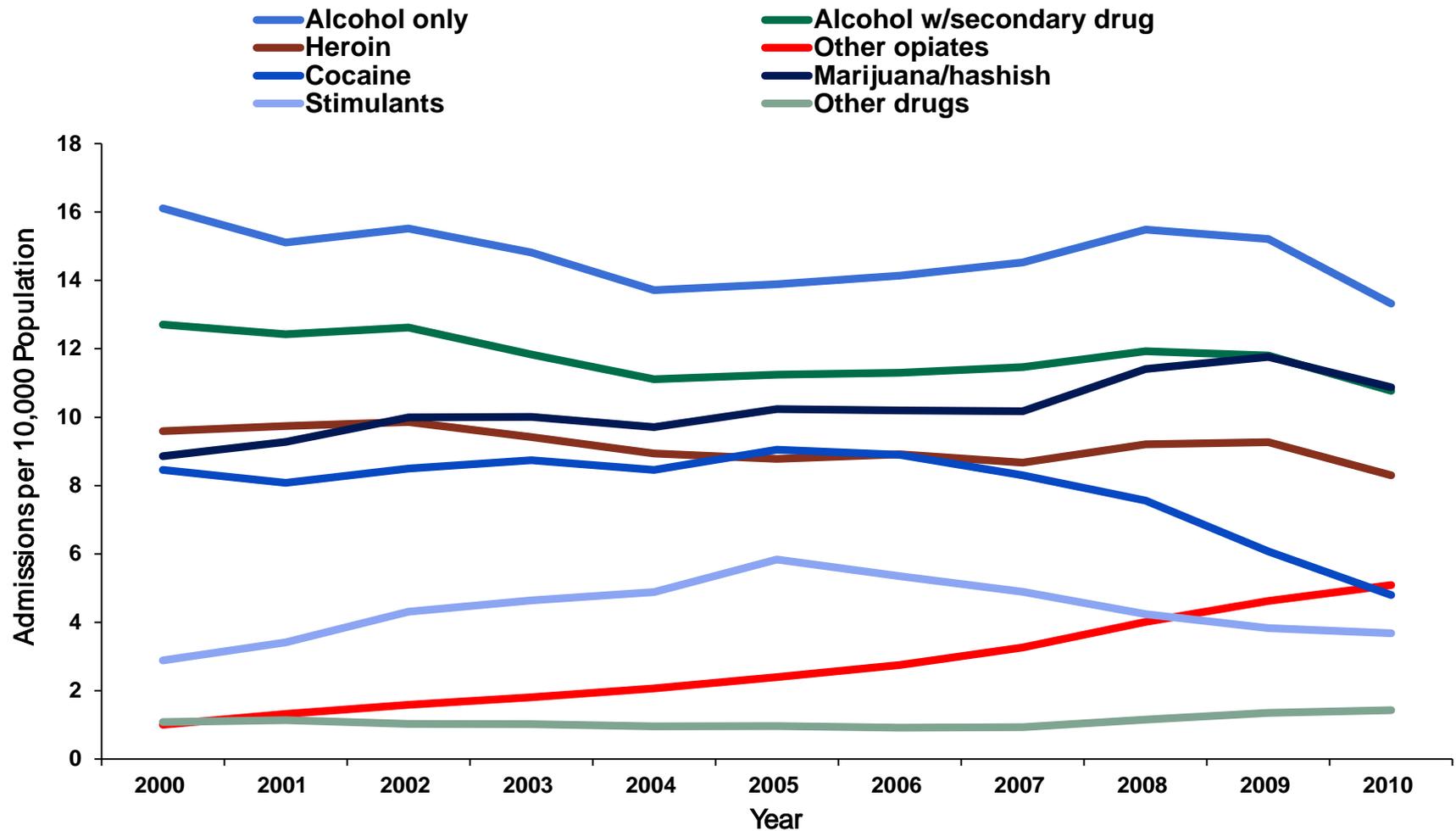


IMS Vector One. From "Prescription Drug Abuse: It's Not what the doctor ordered." Nora Volkow National Prescription Drug Abuse Summit, April 2012. Available at <http://www.slideshare.net/OPUNITE/nora-volkow-final-edits>.

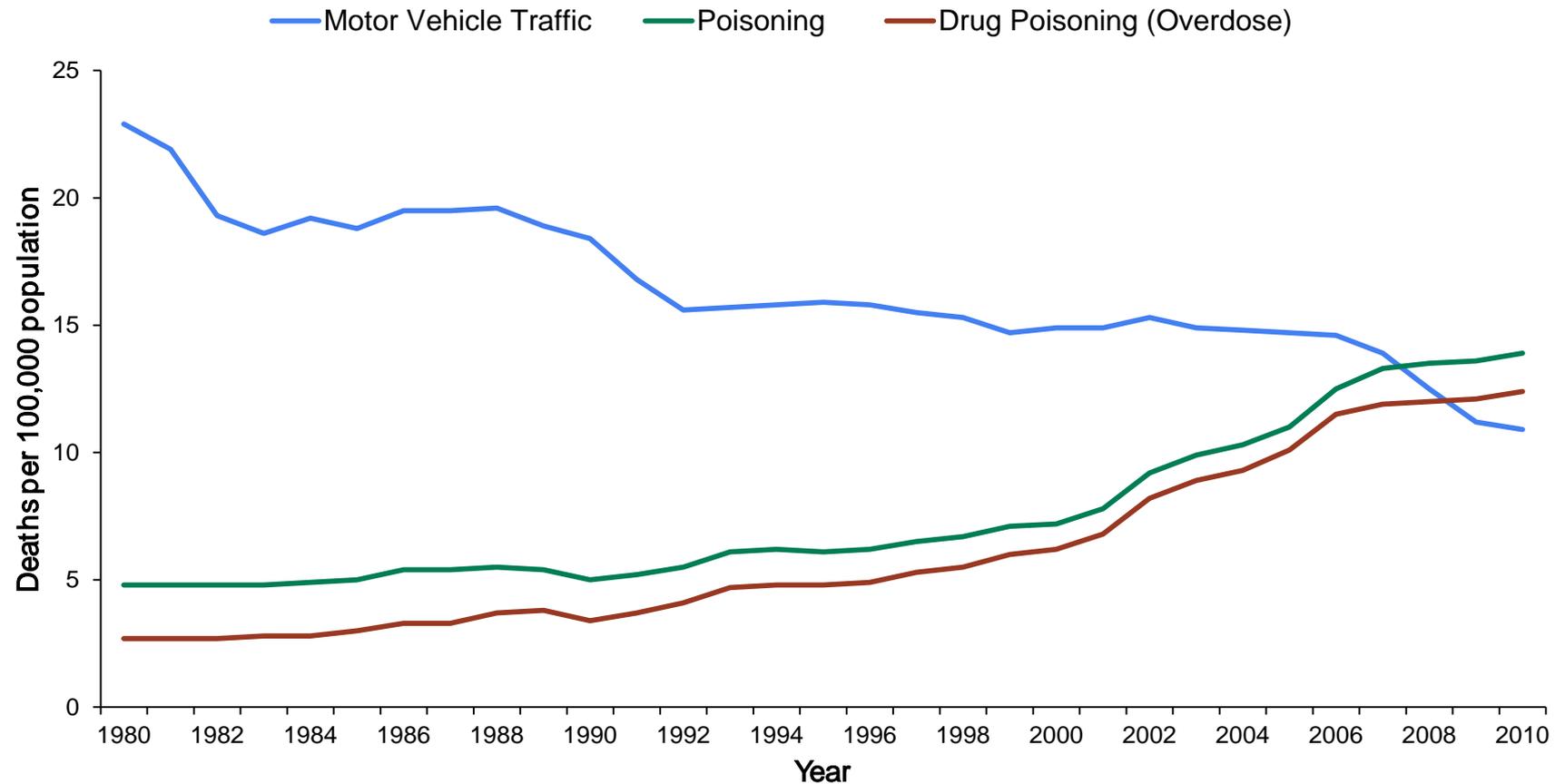
# Emergency Department Visits Related to Drug Misuse or Abuse—United States, 2004–2010



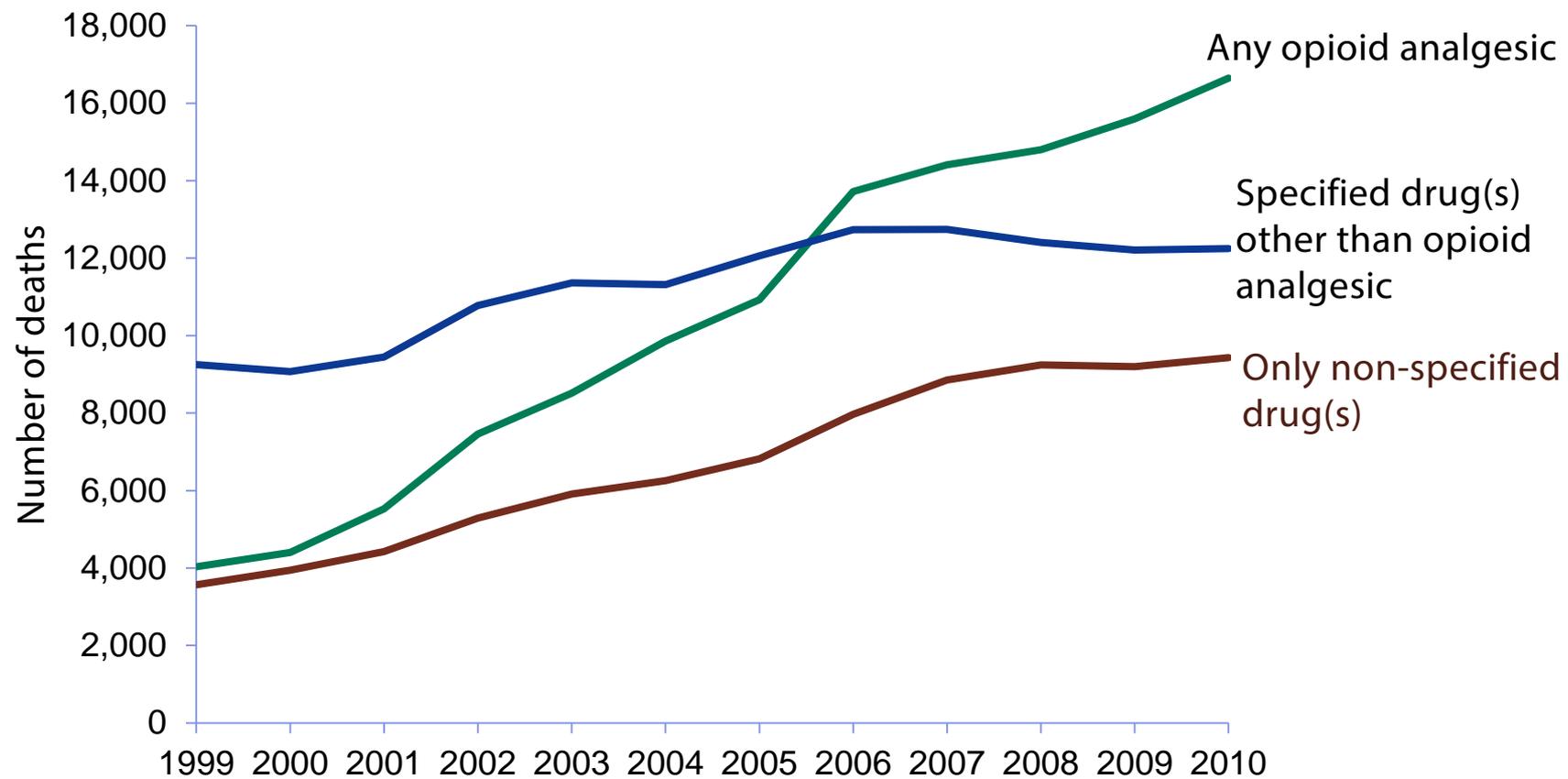
# Primary Substance of Abuse at Treatment Admission—United States, 2000–2010



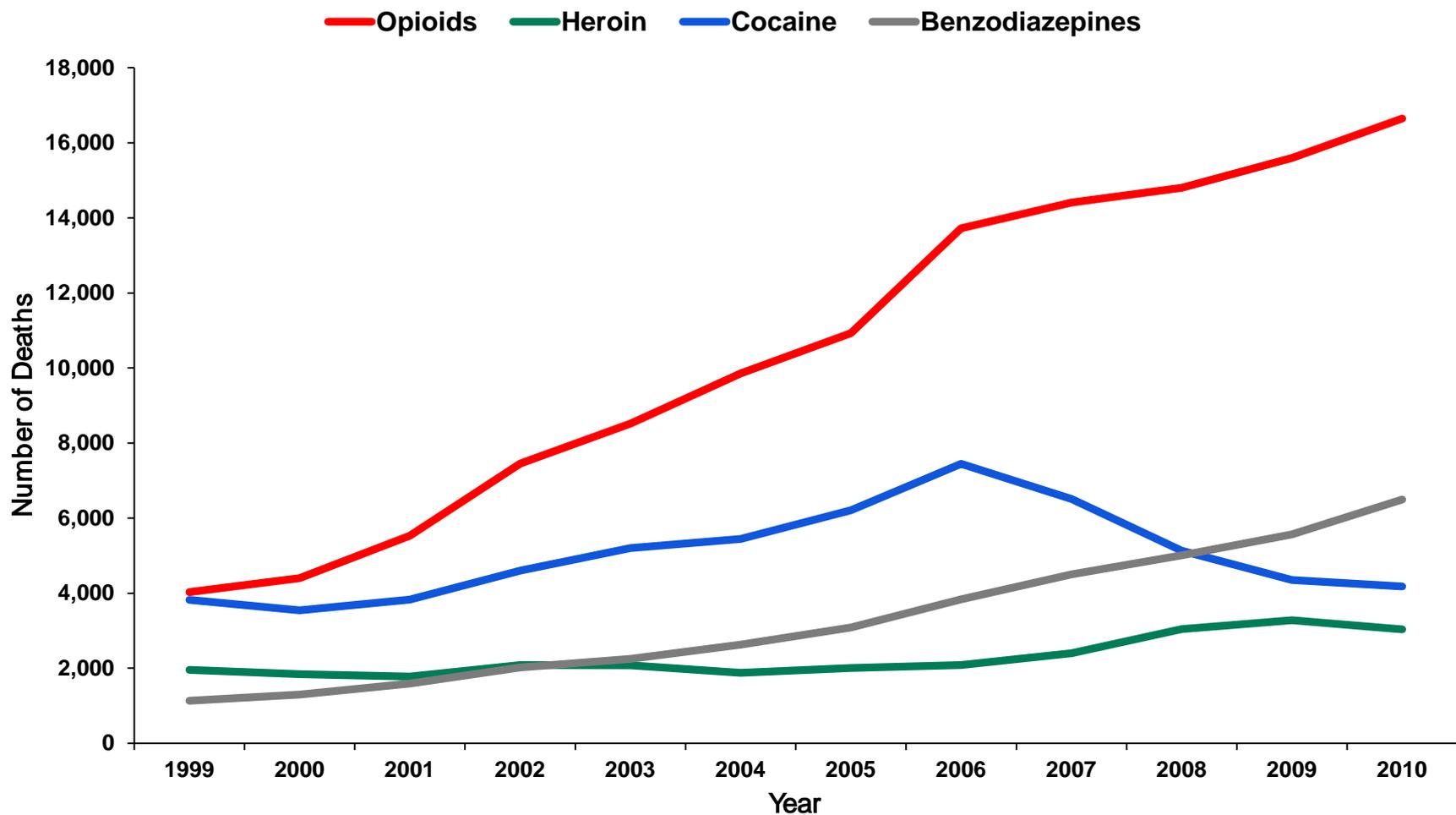
# Motor Vehicle Traffic, Poisoning, and Drug Poisoning (Overdose) Death Rates United States, 1980–2010



# Number of Drug Overdose Deaths Involving Opioid Pain Relievers and Other Drugs United States, 1999–2010

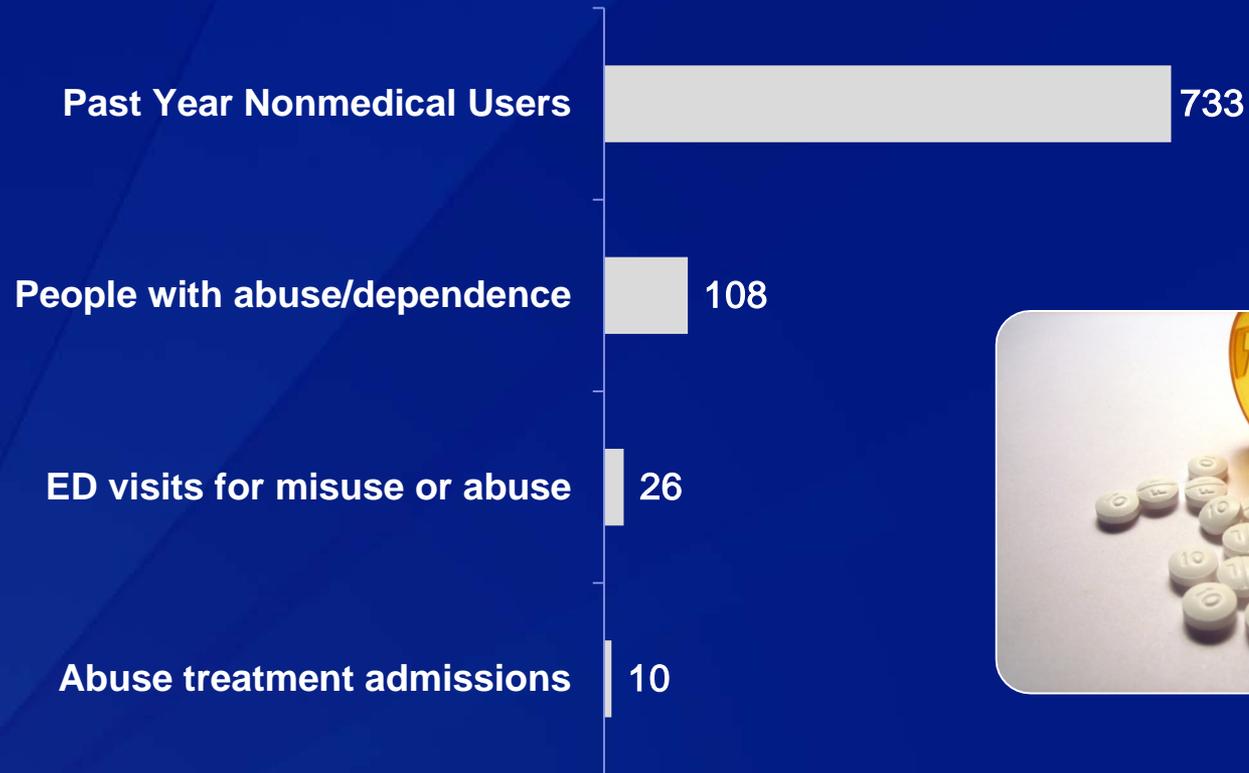


# Drug Overdose Deaths by Major Drug Type, United States, 1999–2010



# Public Health Impact of Opioid Use

For every 1 overdose death in 2010, there were



Treatment admissions are for primary use of opioids from Treatment Exposure Data set.  
Emergency department visits are from DAWN (Drug Abuse Warning Network), <https://dawninfo.samhsa.gov/default.asp>.  
Abuse/dependence and nonmedical use in the past month are from the National Survey on Drug Use and Health.

# Economic Costs

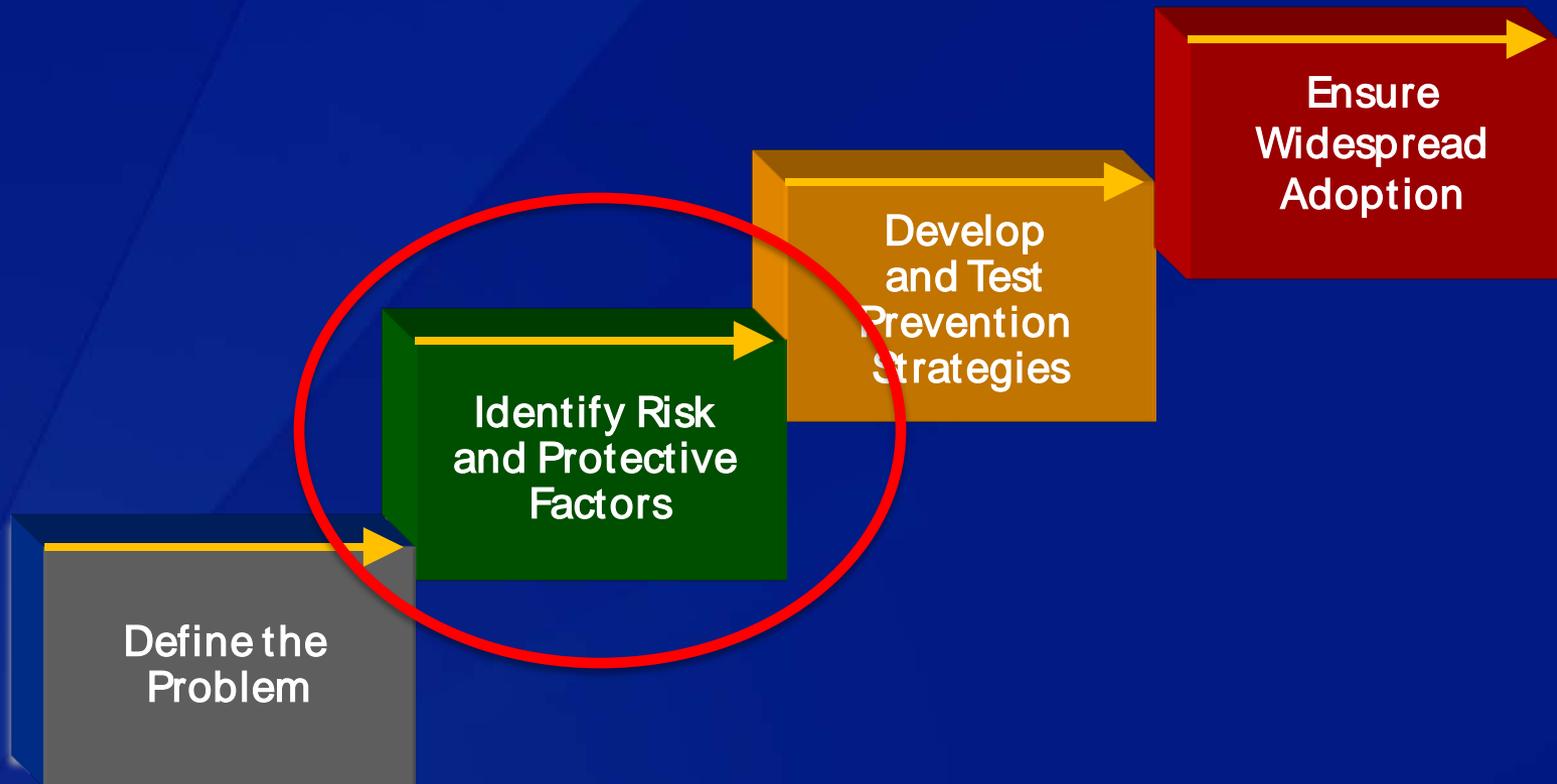
- ❑ \$72.5 billion in health care costs<sup>1</sup>
- ❑ Opioid abusers generate, on average, annual direct health care costs 8.7 times higher than nonabusers<sup>2</sup>



1. Coalition Against Insurance Fraud. Prescription for peril: how insurance fraud finances theft and abuse of addictive prescription drugs. Washington, DC: Coalition Against Insurance Fraud; 2007.

2. White AG, Birnbaum, HG, Mareva MN, et al. Direct costs of opioid abuse in an insured population in the United States. *JManag Care Pharm* 2005;11(6):469-479.

# The Public Health Approach to Prevention



# High Risk Populations

- ❑ People taking high daily doses of opioids
- ❑ People who “doctor shop”
- ❑ People using multiple abuseable substances like opioids, benzodiazepines, other CNS depressants, illicit drugs
- ❑ Low-income people and those living in rural areas
- ❑ Medicaid populations
- ❑ People with substance abuse or other mental health issues

White AG, Birnbaum HG, Schiller M, Tang J, Katz NP. Analytic models to identify patients at risk for prescription opioid abuse. *Am J Managed Care* 2009;15(12):897-906.

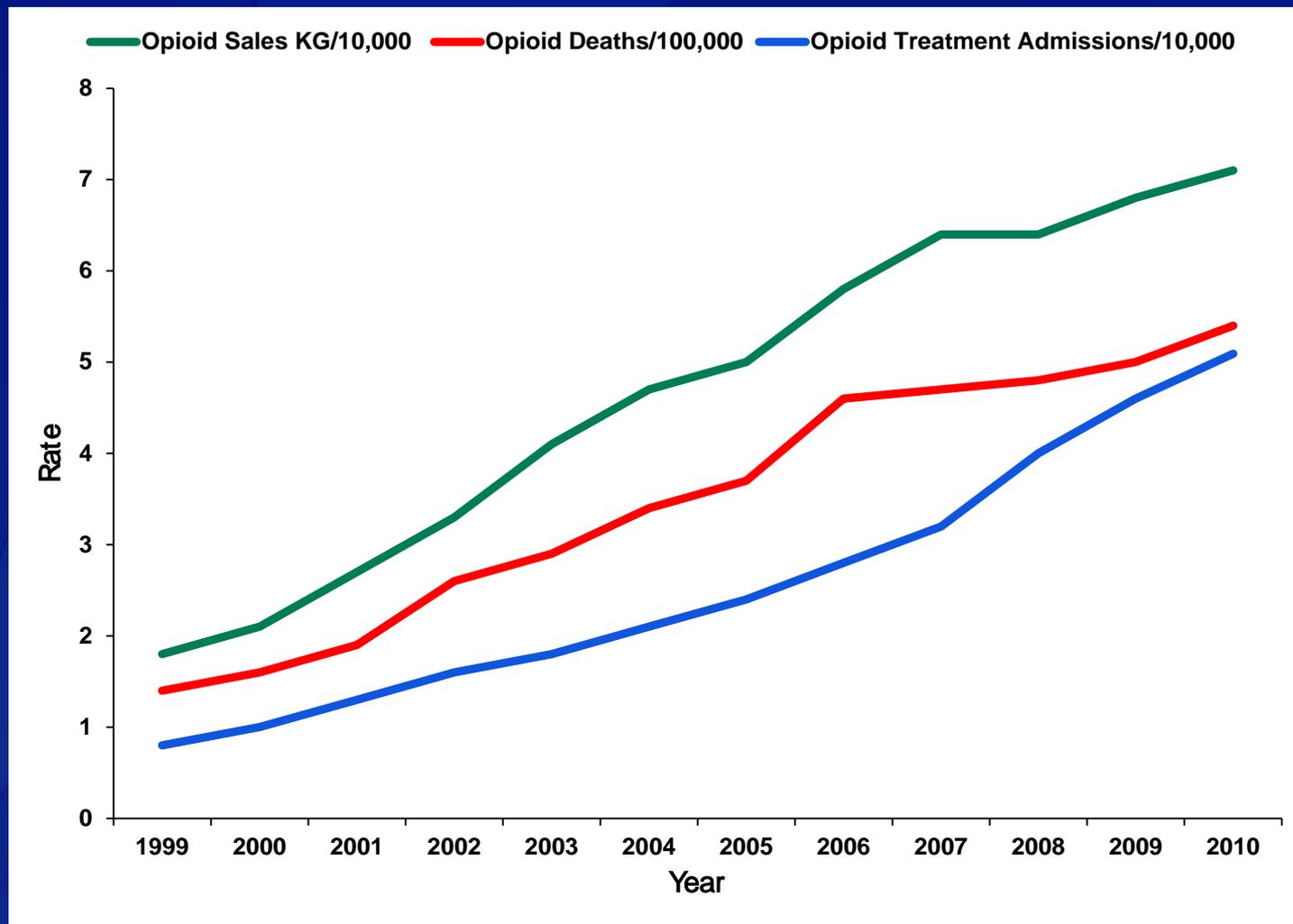
Hall AJ, Logan JE, Toblin RL, Kaplan JA, Kraner JC, Bixler D, et al. Patterns of abuse among unintentional pharmaceutical overdose fatalities. *JAMA* 2008;300(22):2613-20.

Paulozzi LJ, Logan JE, Hall AJ, et al. A comparison of drug overdose deaths involving methadone and other opioid analgesics in West Virginia. *Addiction* 2009;104(9):1541-8.

Dunn KM, Saunders KW, Rutter CM, Banta-Green CJ, Merrill JO, Sullivan MD, et al. Opioid prescriptions for chronic pain and overdose: a cohort study. *Ann Intern Med* 2010;152(2):85-92.

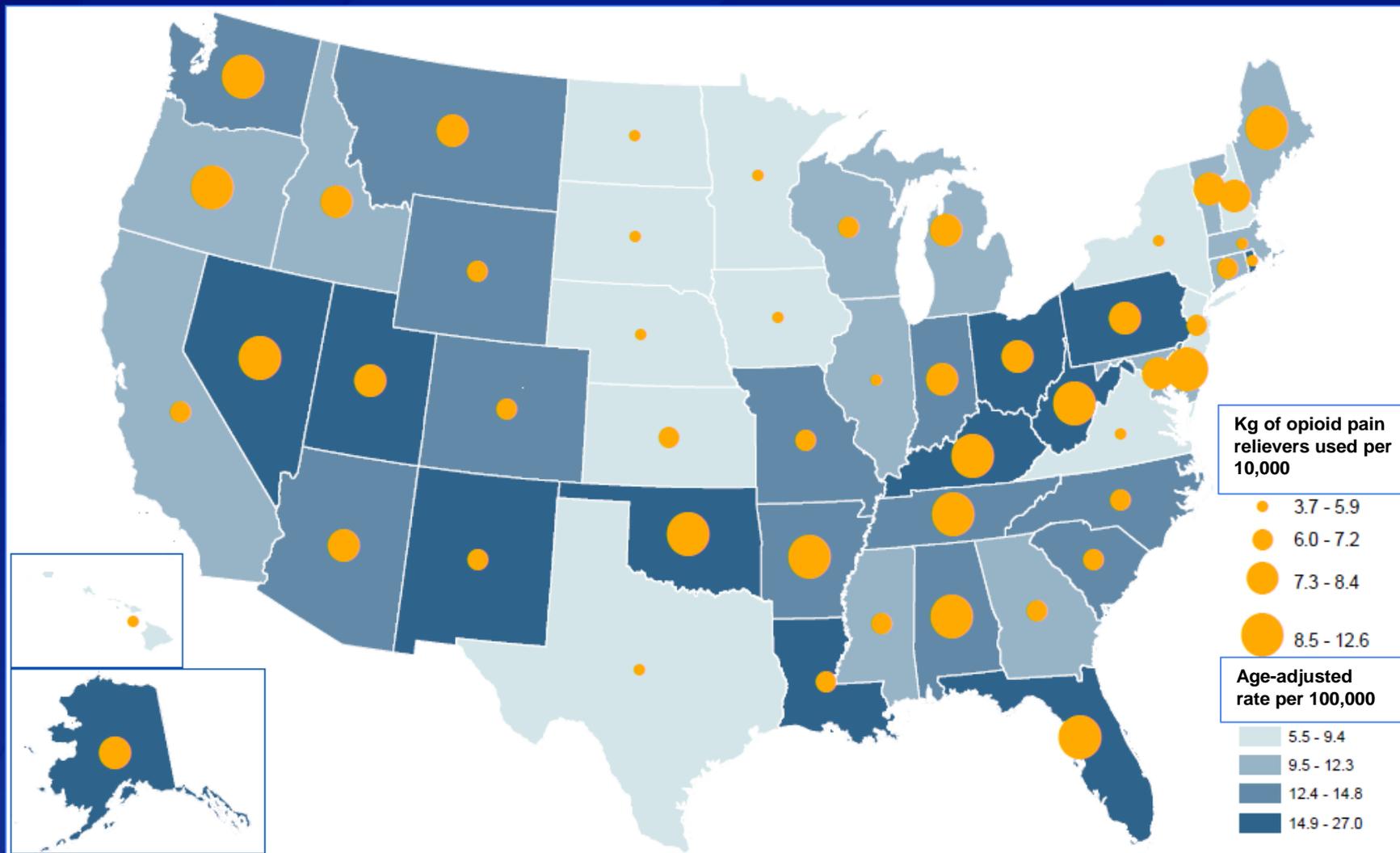
Bohnert AS, Valenstein M, Bair MJ, Ganoczy D, McCarthy JF, Ilgen MA, et al. Association between opioid prescribing patterns and opioid overdose-related deaths. *JAMA* 2011;305(13):1315-1321.

# Rates of Opioid Overdose Deaths, Sales, and Treatment Admissions, United States, 1999–2010



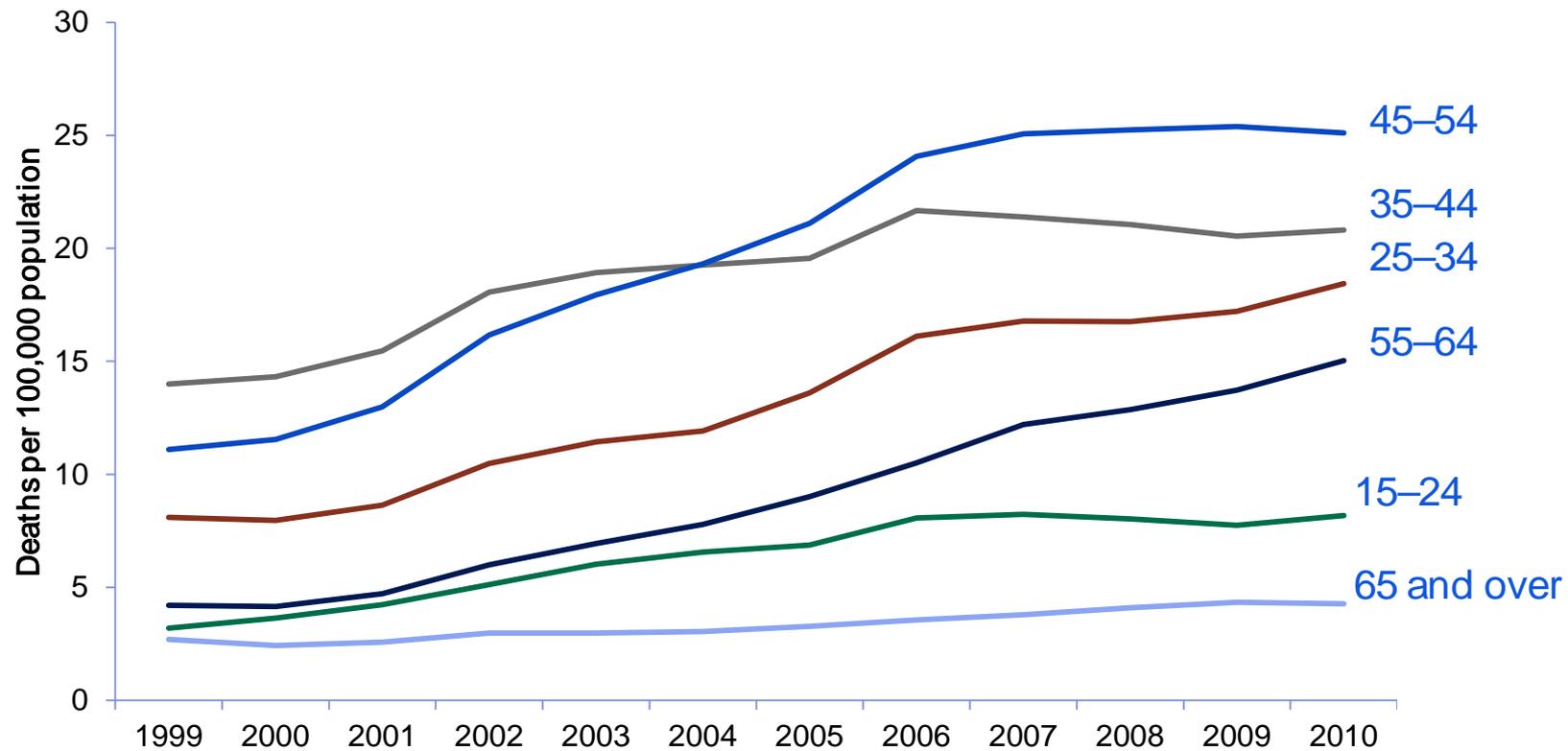
CDC. *MMWR* 2011. [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm60e1101a1.htm?s\\_cid=mm60e1101a1\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm60e1101a1.htm?s_cid=mm60e1101a1_w). Updated with 2009 mortality and 2010 treatment admission data.

# Drug Overdose Death Rate, 2008, and Opioid Pain Reliever Sales Rate, 2010

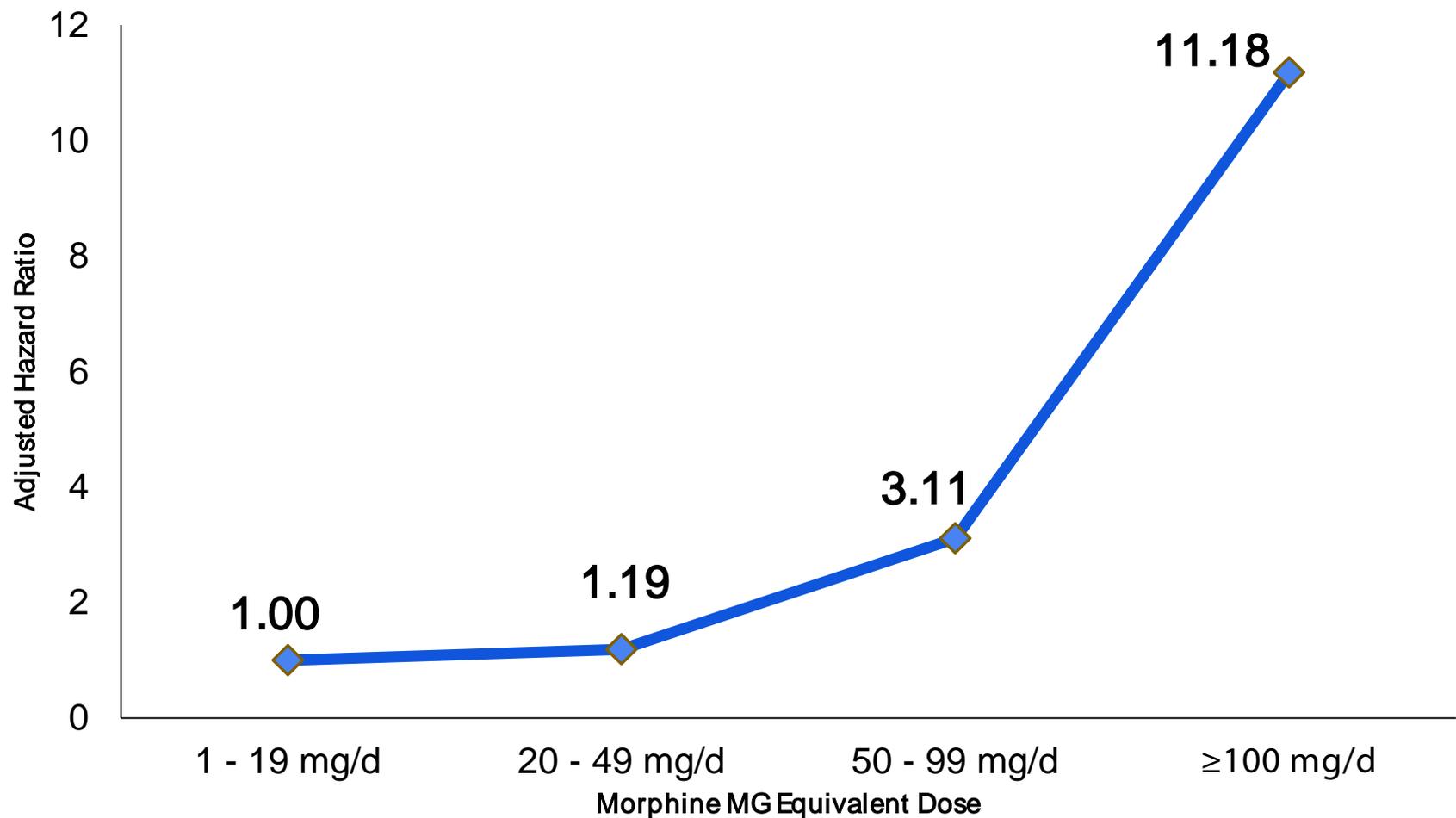


National Vital Statistics System, 2008; Automated Reports Consolidated Orders System, 2010.

# Drug Overdose Death Rates by Age— United States, 1999–2010

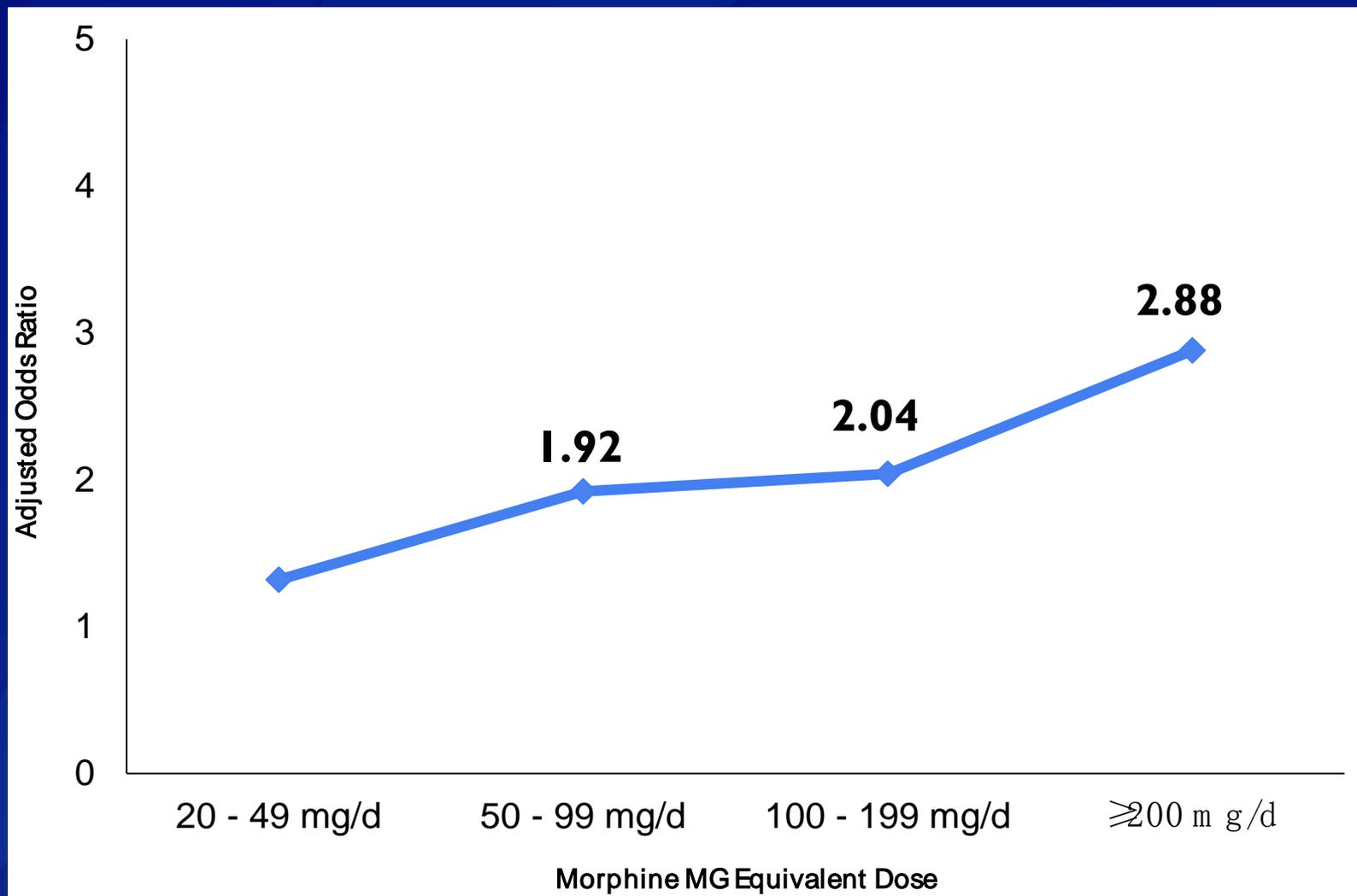


# High Opioid Dose and Overdose Risk



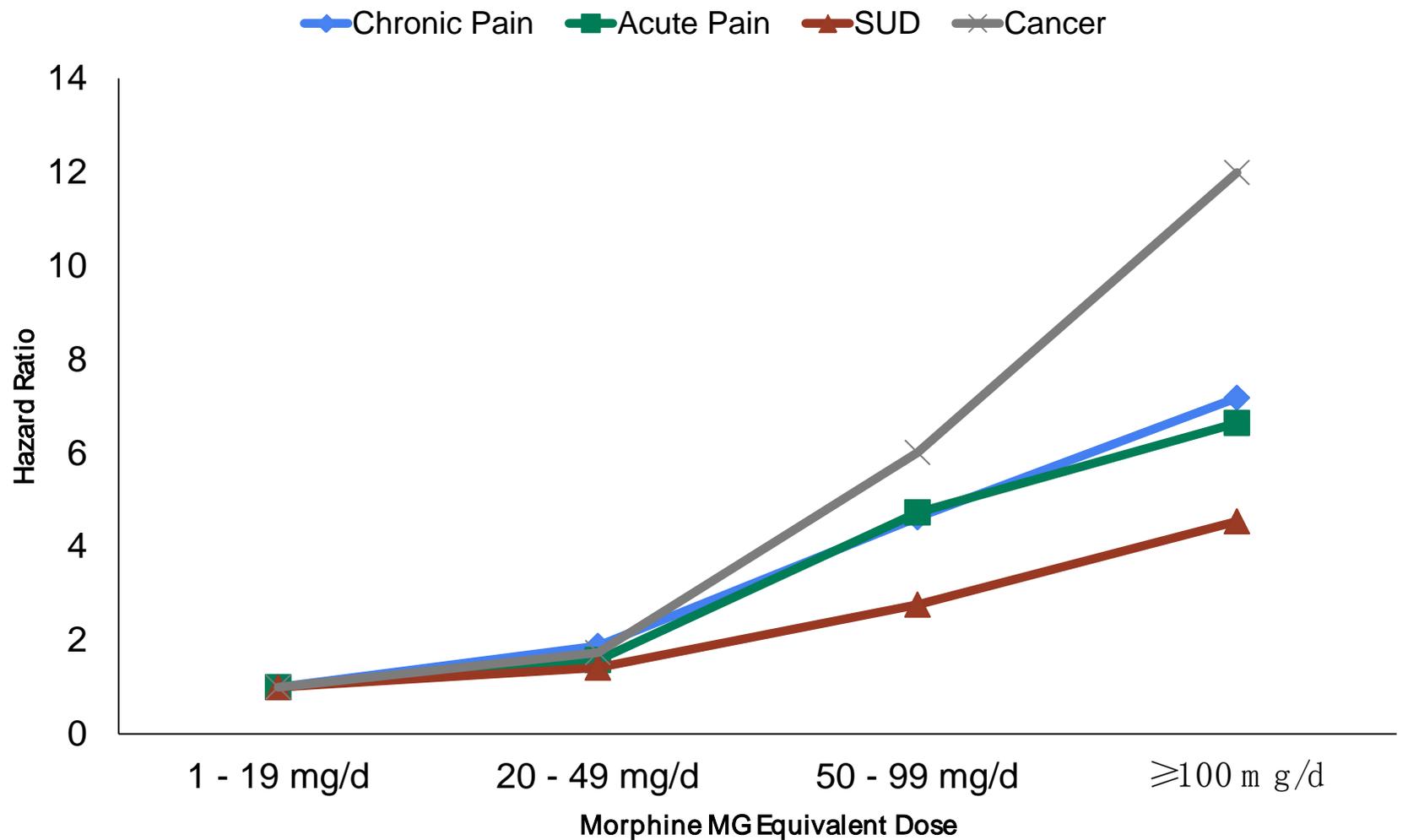
\* Overdose defined as death, hospitalization, unconsciousness, or respiratory failure.

# High Opioid Dose and Overdose Risk



\* Overdose defined as defined cases as people who died of an opioid-related cause.

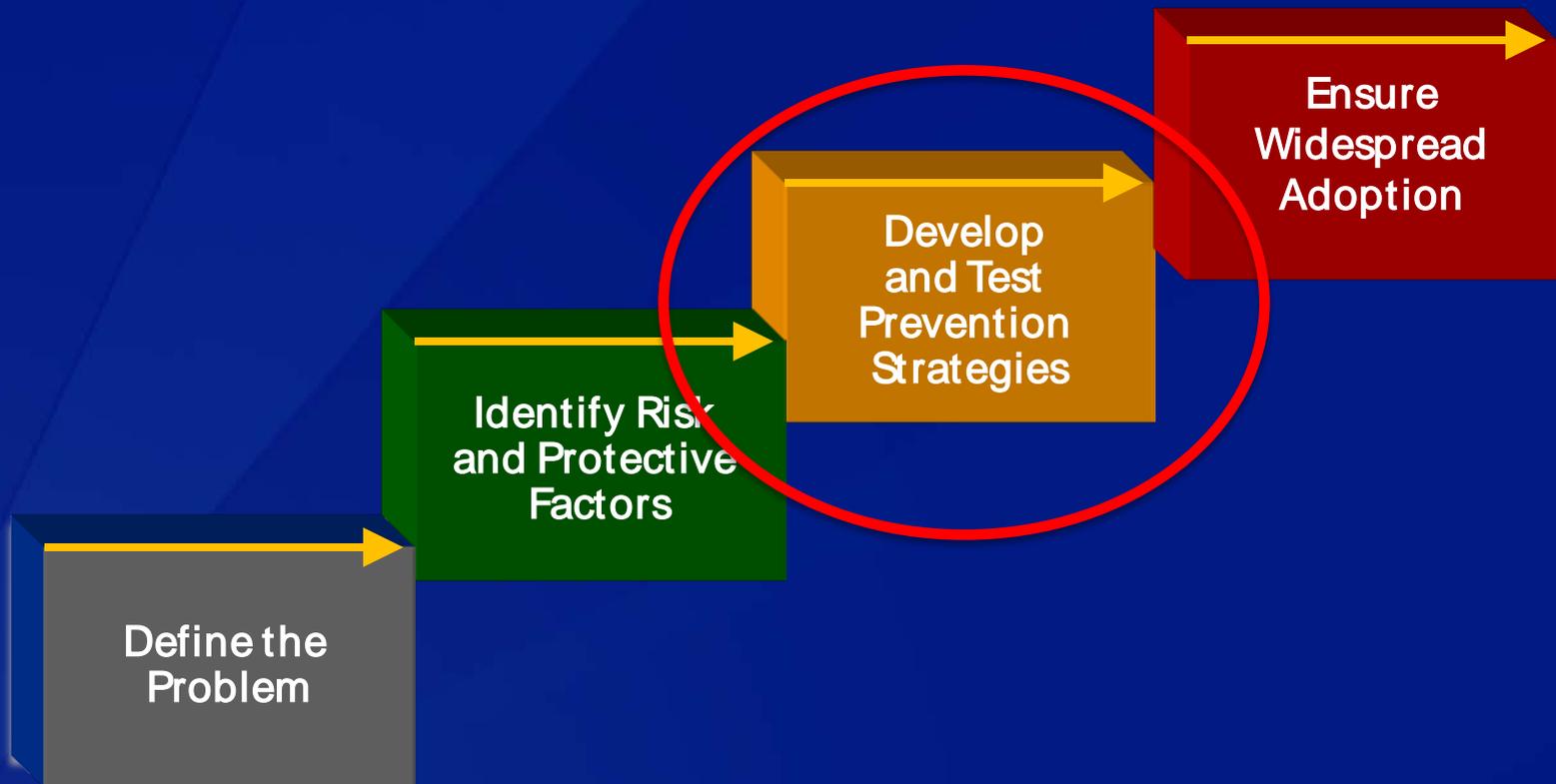
# High Opioid Dose and Overdose Risk



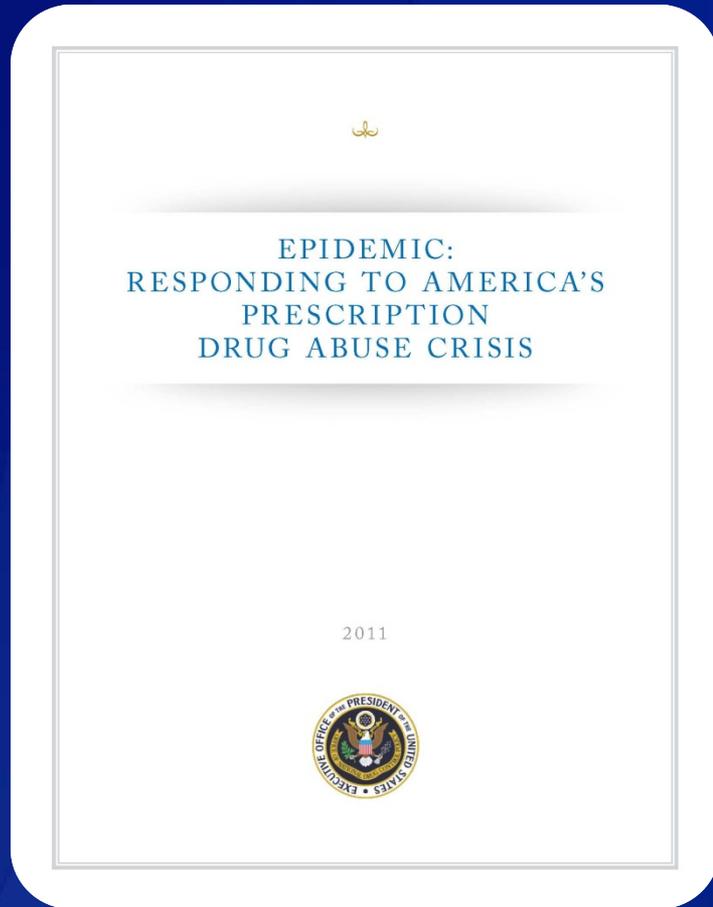
\* Overdose defined as death with an underlying cause-of-death code from the *ICD-10* of X42, X44, Y12, or Y14

Bohnert et al. Association between opioid prescribing patterns and opioid overdose-related deaths. *JAMA* 2011;305(13):1315-1321.

# The Public Health Approach to Prevention



# CDC in Context of National Response



- ❑ Blueprint for federal government
- ❑ Focus areas
  - I. Education
  - II. Monitoring
  - III. Disposal
  - IV. Enforcement
- ❑ CDC role : fits within our mission and complements other federal agencies

# CDC Strategic Focus Areas

- ❑ Enhance surveillance
- ❑ Inform policy
- ❑ Improve clinical practice

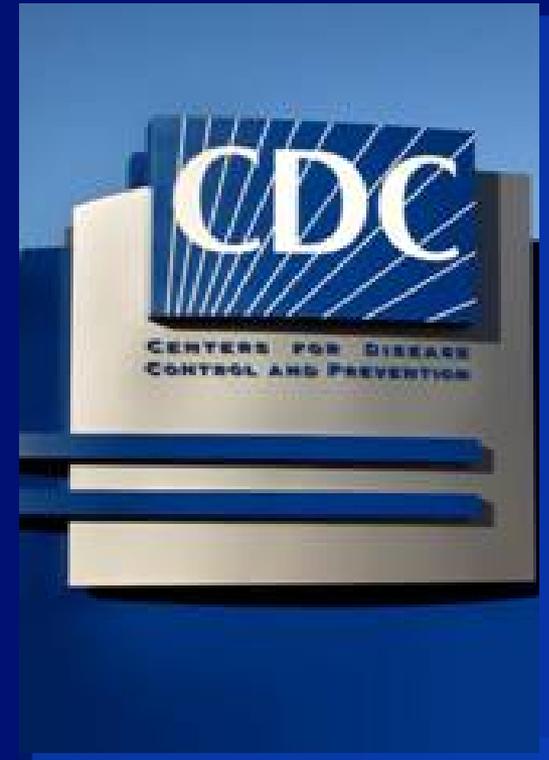


# Intervention Points

- ❑ Pill mills
- ❑ Problem prescribing
- ❑ General prescribing
- ❑ EDs and hospitals
- ❑ Pharmacies
- ❑ Insurer and pharmacy benefit managers
- ❑ General patients & the public
- ❑ People at high risk of overdose

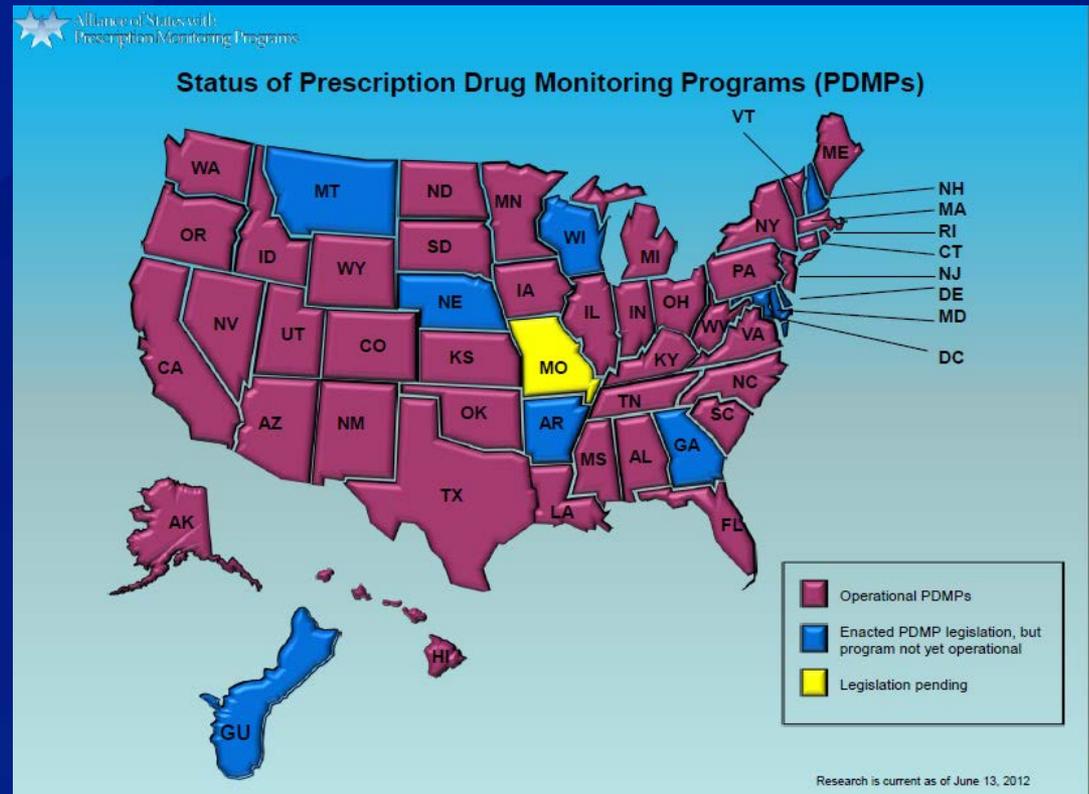
# Intervention Recommendations

- ❑ Prescription drug monitoring programs
- ❑ Patient review and restriction programs
- ❑ Laws/regulations/policies
- ❑ Insurers and pharmacy benefit managers mechanisms
- ❑ Clinical guidelines



# Prescription Drug Monitoring Programs (PDMPs)

- ❑ Operational in 42 states
- ❑ Focus PDMPs on
  - Patients at highest risk of abuse and overdose
  - Prescribers who clearly deviate from accepted medical practice
- ❑ Implement PDMP best practices



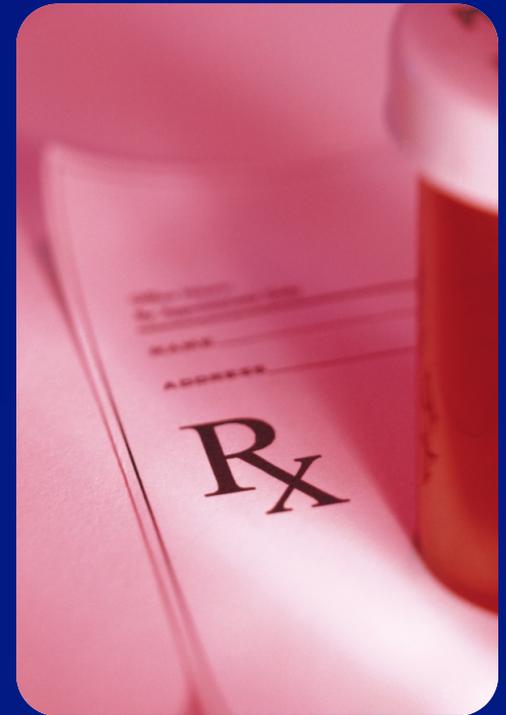
# Patient Review and Restriction Programs (aka “Lock-In” Programs)

- ❑ Applies to patients with inappropriate use of controlled substances
- ❑ 1 prescriber and 1 pharmacy for controlled substances
- ❑ Improve coordination of care and ensure appropriate access for patients at high risk for overdose
- ❑ Evaluations show cost savings as well as reductions in ED visits and numbers of providers and pharmacies



# Laws/Regulations/Policies

- ❑ Some states have enacted laws and policies aimed at reducing diversion, abuse, and overdose
- ❑ Policies can strengthen health care provider accountability
- ❑ Safeguard access to treatment when implementing policies
- ❑ Rigorous evaluations to determine effectiveness and identify model aspects



# Insurer/Pharmacy Benefit Manager (PBM) Mechanisms

- ❑ Reimbursement incentives/disincentives
- ❑ Formulary development
- ❑ Quantity limits
- ❑ Step therapies/prior authorization
- ❑ Real-time claims analysis
- ❑ Retrospective claims review programs



# Clinical Guidelines

- ❑ Improve prescribing and treatment
- ❑ Basis for standard of accepted medical practice for purposes of licensure board actions
- ❑ Several consensus guidelines available
- ❑ Common themes among guidelines



## Opioid Treatment Guidelines

### Clinical Guidelines for the Use of Chronic Opioid Therapy in Chronic Noncancer Pain

Roger Chou,<sup>1</sup> Gilbert J. Fanciullo,<sup>2</sup> Perry G. Fine,<sup>3</sup> Jeremy A. Adler,<sup>4</sup> Jane C. Ballantyne,<sup>5</sup> Pamela Davies,<sup>6</sup> Marilee I. Donovan,<sup>7</sup> David A. Fohrman,<sup>8</sup> Kathy M. Foley,<sup>9</sup> Jeffrey Fudin,<sup>10</sup> Aaron M. Gilson,<sup>11</sup> Alexander Keltner,<sup>12</sup> Alexander Mouskos,<sup>13</sup> Patrick G. O'Connor,<sup>14</sup> Steven D. Passik,<sup>15</sup> Gavril W. Pasternak,<sup>16</sup> Russel K. Portenoy,<sup>17</sup> Ben A. Rich,<sup>18</sup> Richard G. Roberts,<sup>19</sup> Knox H. Todd,<sup>20</sup> and Christie Miskowksi,<sup>21</sup> FOR THE AMERICAN PAIN SOCIETY—AMERICAN ACADEMY OF PAIN MEDICINE OPIOIDS GUIDELINES PANEL

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- <sup>4</sup> Pacific Pain Medicine Consultants, Encinitas, California.
- <sup>5</sup> Division of Pain Medicine, Department of Anesthesia and Critical Care, Massachusetts General Hospital, Boston.
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- <sup>7</sup> Pain Management Clinic, Kaiser Permanente Northwest, Portland, Oregon.
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- <sup>10</sup> Samuel S. Stratton Department of Veterans Affairs Medical Center, and Albany College of Pharmacy & Health Sciences, Albany, New York.
- <sup>11</sup> Pain and Policy Studies Group, Paul P. Carbone Comprehensive Cancer Center, University of Wisconsin, Madison.
- <sup>12</sup> Epidemiology and Prevention for Injury Control (EPIC) Branch, California Department of Health Services, Sacramento, California (retired 2005).
- <sup>13</sup> New York Headache Center, New York, New York.
- <sup>14</sup> Section of General Internal Medicine, Yale University School of Medicine and Yale-New Haven Hospital, New Haven, Connecticut.
- <sup>15</sup> Department of Psychiatry and Behavioral Sciences, Memorial Sloan-Kettering Cancer Center, New York, New York.
- <sup>16</sup> Laboratory of Molecular Neuropharmacology, Department of Molecular Pharmacology and Chemistry, Memorial Sloan-Kettering Cancer Center, New York, New York.
- <sup>17</sup> Department of Pain Medicine and Palliative Care, Beth Israel Medical Center, New York, New York.
- <sup>18</sup> School of Medicine, Division of Biometrics, University of California Davis.
- <sup>19</sup> School of Medicine and Public Health, University of Wisconsin, Madison.
- <sup>20</sup> Pain and Emergency Medicine Institute, Beth Israel Medical Center, New York, New York.
- <sup>21</sup> Department of Physiological Nursing, University of California, San Francisco.

**Abstract:** Use of chronic opioid therapy for chronic noncancer pain has increased substantially. The American Pain Society and the American Academy of Pain Medicine commissioned a systematic review of the evidence on chronic opioid therapy for chronic noncancer pain and convened a multidisciplinary expert panel to review the evidence and formulate recommendations. Although evidence is limited, the expert panel concluded that chronic opioid therapy can be an effective therapy for

This article is based on research funded by the Oregon Evidence-based Practice Center, supported by the American Pain Society (APS). The authors are equally responsible for the content of this article and therefore do not accept liability for any errors or omissions. Address reprint requests to Roger Chou, MD, 3145 SW Jefferson Park Road, Mail Code 5022, Portland, OR 97239. E-mail: chou@ohsu.edu



## Interagency Guideline on Opioid Dosing for Chronic Non-cancer Pain:

An educational aid to improve care and safety with opioid therapy  
2010 Update

### What is New in this Revised Guideline

- New data, including scientific evidence to support the 120mg MED dosing threshold
- Tools for calculating dosages of opioids during treatment and when tapering
- Validated screening tools for assessing substance abuse, mental health, and addiction
- Validated two-item scale for tracking function and pain
- Urine drug testing guidance and algorithm
- Information on access to monitoring and consultations (including reimbursement options)
- New patient education materials and resources
- Guidance on coordinating with emergency departments to reduce opioid abuse
- New clinical tools and resources to help streamline clinical care

You can find this guideline and related tools at the Washington State Agency Medical Directors' site at [www.agencymeddirectors.wa.gov](http://www.agencymeddirectors.wa.gov)



December 2011 The New York City Department of Health and Mental Hygiene Vol. 35(4):23-30

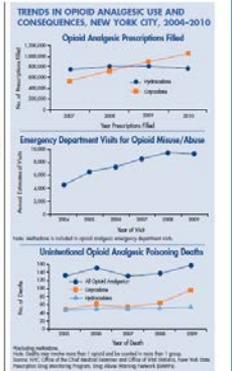
## PREVENTING MISUSE OF PRESCRIPTION OPIOID DRUGS

- Physicians and dentists can play a major role in reducing risks associated with opioid analgesics, particularly fatal drug overdose.
- For acute pain:
  - If opioids are warranted, prescribe only short-acting agents.
  - A 3-day supply is usually sufficient.
- For chronic noncancer pain:
  - Avoid prescribing opioids unless other approaches to analgesia have been demonstrated to be ineffective.
  - Avoid whenever possible prescribing opioids in patients taking benzodiazepines because of the risk of fatal respiratory depression.

The use of prescription opioids to manage pain has increased 10-fold over the past 20 years in the United States! Although opioids are indicated and effective in the management of certain types of acute pain and cancer pain, their role in treating chronic noncancer pain is not well established.<sup>1</sup>

Concomitant with the growth in opioid prescribing, opioid-related health problems have increased. Between 2004 and 2009, the number of emergency department visits for opioid analgesic misuse and abuse in New York City (NYC) more than doubled, rising from approximately 4300 to more than 9000 visits.<sup>2</sup> In 2009, 1 in every 4 unintentional drug poisoning (overdose) deaths in NYC involved prescription opioid analgesics, excluding methadone. In NYC, one-third of unintentional drug poisoning overdose death involve a benzodiazepine<sup>3</sup>; the most common is alprazolam (Xanax).<sup>3</sup> Risk of unintentional poisoning may be increased when opioids are taken with benzodiazepines because both cause respiratory depression.<sup>4</sup>

The use of prescription opioid in manner other than prescribed and the use of these medications without prescription are serious public health problems.<sup>5</sup>



# Additional Information



<http://www.cdc.gov/HomeandRecreationalSafety/pdf/PolicyImpact-PrescriptionPainkillerOD.pdf>

Morbidity and Mortality Weekly Report

## Vital Signs: Risk for Overdose from Methadone Used for Pain Relief — United States, 1999–2010

On July 3, 2012, this report was posted as an MMWR Early Release on the MMWR website (<http://www.cdc.gov/mmwr>).

### Abstract

**Background:** Vital statistics data suggest that the opioid pain reliever (OPR) methadone is involved in one third of OPR-related overdose deaths, but it accounts for only a few percent of OPR prescriptions.

**Methods:** CDC analyzed rates of fatal methadone overdoses and sales nationally during 1999–2010 and rates of overdose death for methadone compared with rates for other major opioids in 13 states for 2009.

**Results:** Methadone overdose deaths and sales rates in the United States peaked in 2007. In 2010, methadone accounted for between 4.5% and 18.5% of the opioids distributed by state. Methadone was involved in 31.4% of OPR deaths in the 13 states. It accounted for 39.8% of single-drug OPR deaths. The overdose death rate for methadone was significantly greater than that for other OPR for multidrug and single-drug deaths.

**Conclusions:** Methadone remains a drug that contributes disproportionately to the excessive number of opioid pain reliever overdoses and associated medical and societal costs.

**Implications for Public Health Practice:** Health-care providers who choose to prescribe methadone should have

Centers for Disease Control and Prevention

# MMWR

Morbidity and Mortality Weekly Report

Early Release / Vol. 60

November 1, 2011

## Vital Signs: Overdoses of Prescription Opioid Pain Relievers — United States, 1999–2008

### Abstract

**Background:** Overdose deaths involving opioid pain relievers (OPR), also known as opioid analgesics, have increased and now exceed deaths involving heroin and cocaine combined. This report describes the use and abuse of OPR by state.

**Methods:** CDC analyzed rates of fatal OPR overdoses, nonmedical use, sales, and treatment admissions.

**Results:** In 2008, drug overdoses in the United States caused 36,450 deaths. OPR were involved in 14,800 deaths (73.8%) of the 20,044 prescription drug-overdose deaths. Death rates varied fivefold by state. States with lower death rates had lower rates of nonmedical use of OPR and OPR sales. During 1999–2008, overdose death rates, sales, and substance abuse treatment admissions related to OPR all increased substantially.

**Conclusions:** The epidemic of overdoses of OPR has continued to worsen. Wide variation among states in the nonmedical use of OPR and overdose rates cannot be explained by underlying demographic differences in state populations but is related to wide variations in OPR prescribing.

**Implications for Public Health Practice:** Health-care providers should only use OPRs in carefully screened and monitored patients when non-OPR treatments are insufficient to manage pain. Insurers and prescription drug monitoring programs can identify and take action to reduce both inappropriate and illegal prescribing. Third-party payers can limit reimbursement in ways that reduce inappropriate prescribing, discourage efforts to obtain OPR from multiple health-care providers, and improve clinical care. Changes in state laws that focus on the prescribing practices of health-care providers might reduce prescription drug abuse and overdoses while still allowing safe and effective pain treatment.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6043a4.htm>

[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6126a5.htm?s\\_cid=mm6126a5\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6126a5.htm?s_cid=mm6126a5_w)

The findings and conclusions in this report are those of the author and do not necessarily represent the views of the Centers for Disease Control and Prevention.

