

Center *for* Mississippi
Health Policy

CHART BOOK:

FATAL UNINTENTIONAL
DRUG OVERDOSES
IN MISSISSIPPI

September 2013

Introduction and Overview

Center for Mississippi
Health Policy

ISSUE BRIEF
PREScription DRUGS
Impacts of Misuse and Accidental Overdose in Mississippi
PUBLISHED SEPTEMBER 2013

Nanomedical use of prescription drugs has been identified as a growing public health problem and increasingly common cause of accidental death. Drug overdose now kills more people than motor vehicle crashes in the United States. This brief highlights the impact of misuse and accidental overdose of prescription drugs in the state and outlines policy options to address the issue.

The death rate from drug overdose in the United States has tripled since 1991, and prescription drugs are cited as the primary cause of this increase.¹ Of particular concern are opioid pain relievers (e.g., oxycodone, methadone, and hydrocodone). There are now more overdose deaths due to opioid pain medications than the total number caused by both cocaine and heroin.² In 2009, opioid pain relievers were responsible for at least 40 percent of U.S. drug poisoning deaths.³ The problem may be even greater, as research indicates that unintentional poisoning death rates may be underreported by up to 61 percent.⁴

FIGURE 1. MOTOR VEHICLE CRASH, POISONING AND DRUG POISONING DEATHS IN THE U.S. (1989-2010)

TYPES OF DRUGS INVOLVED IN ACCIDENTAL DRUG POISONING DEATHS IN MISSISSIPPI (2011)

In 2011, 232 deaths in Mississippi were classified as resulting from unintentional poisoning by drugs.⁵ Of those deaths, 78 percent were caused by drugs that were not specified on the death certificate.⁶ Ninety percent of the decedents in this group were white, with an average age of 42.5 years (ranging from 16 to 96 years of age), and equally divided by male and female gender.⁷

Analysis of death rates by public health district (see Figure 2) shows variation in unintentional drug poisoning deaths around the state over a five year period. The highest death rate is on the Coast (District IX), which during 2007-2011 was 19.9 deaths per 100,000 population. This is 3.2 times higher than the average rate for all other districts and 5.2 times the lowest death rate over that same time period, which is in the Delta (District III) at 3.8 deaths per 100,000 population. Some of the geographic variation among these rates is attributable to racial distribution in the population, as it was noted earlier that death rates from unintentional drug poisoning are much higher for whites than blacks.

Source: Missouri VMI Statistics, 2011, (2012).
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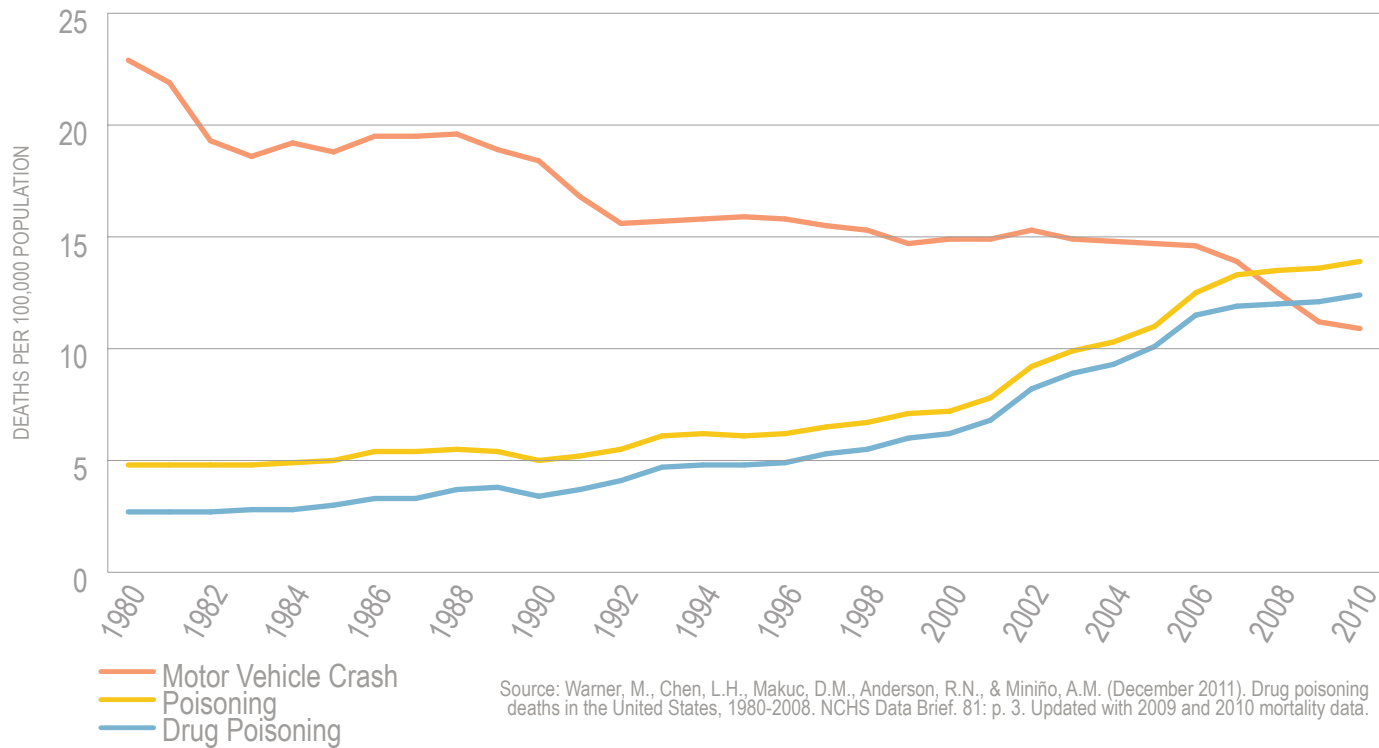
In September 2013, The Center for Mississippi Health Policy published an Issue Brief detailing the impact of prescription drug misuse and accidental overdose in Mississippi. The Brief described a project administered jointly between the Center, the Mississippi State Department of Health's Office of Vital Records and the Mississippi State Board of Pharmacy's Prescription Monitoring Program (MS PMP) which examined deaths in Mississippi related to drug use.

Of the 232 unintentional drug overdose deaths in Mississippi (2011), 52 decedents did not have records listed in the MS PMP.

- 40 of these did not have any record in MS PMP at all
- 12 of these had records in the MS PMP but not within the two years prior to death

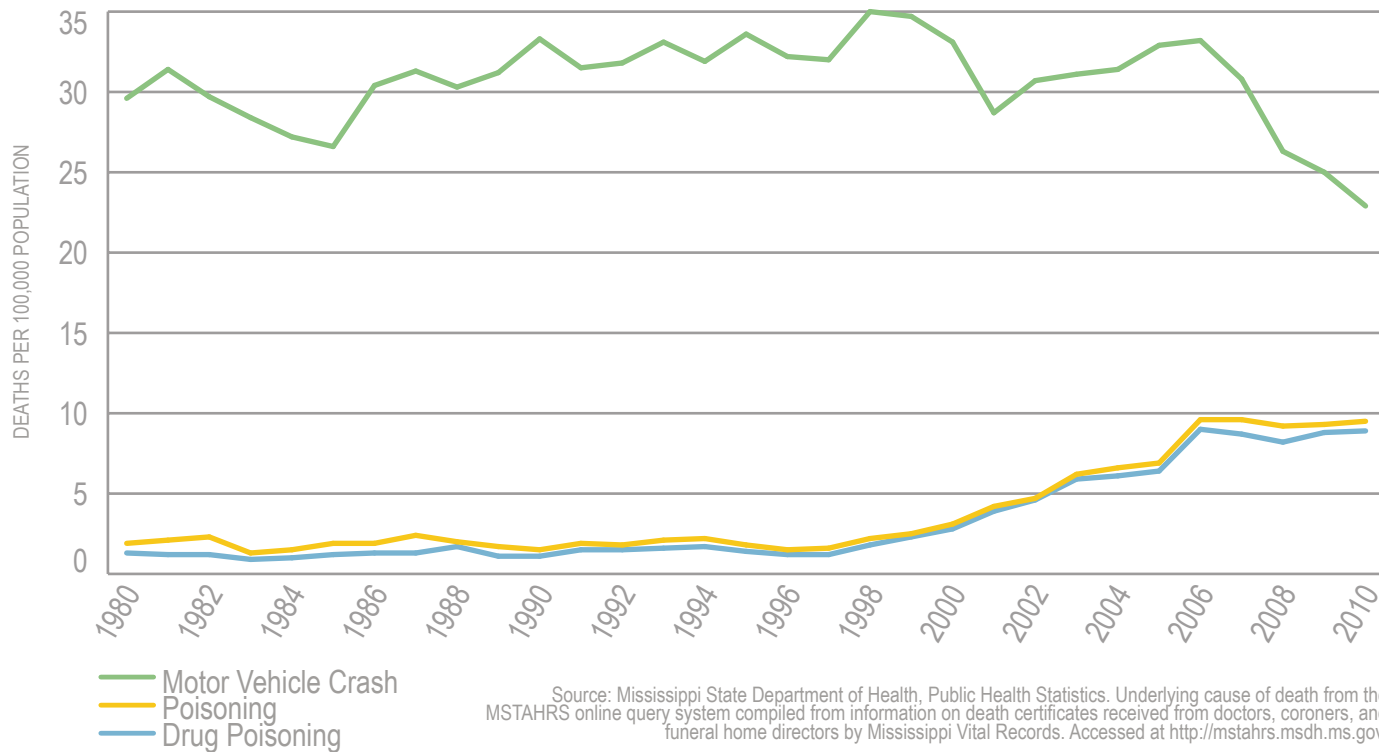
The remaining 180 individuals had records of controlled substances dispensed in Mississippi in the two years prior to death, and provide the basis for "Project Findings" described hereafter.

Poisoning and Motor Vehicle Deaths Trends in United States (1980-2010)



Poisoning has surpassed motor vehicle accidents as a leading cause of accidental death in the United States. This trend has been driven at least in part by the increasing drug poisoning deaths.

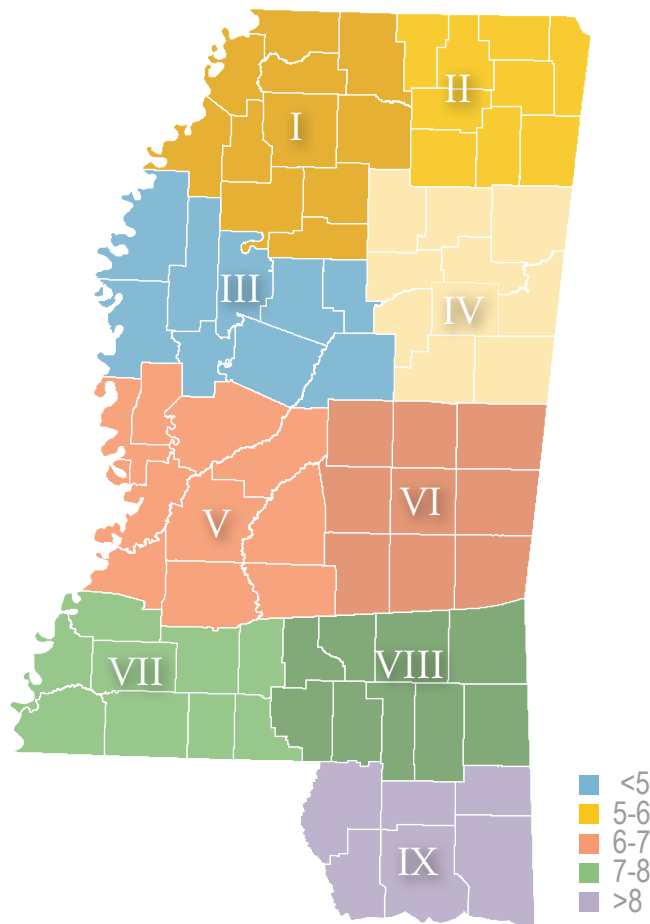
Poisoning and Motor Vehicle Deaths Trends in Mississippi (1980-2010)



In Mississippi, poisoning deaths have increased over time, driven largely by accidental drug poisoning deaths. The state's rate of motor vehicle crash deaths is still higher than poisoning deaths, but the trend appears to be moving in the same direction as national data.

Unintentional Drug Poisoning Deaths Distribution by Public Health District (2007-2011)

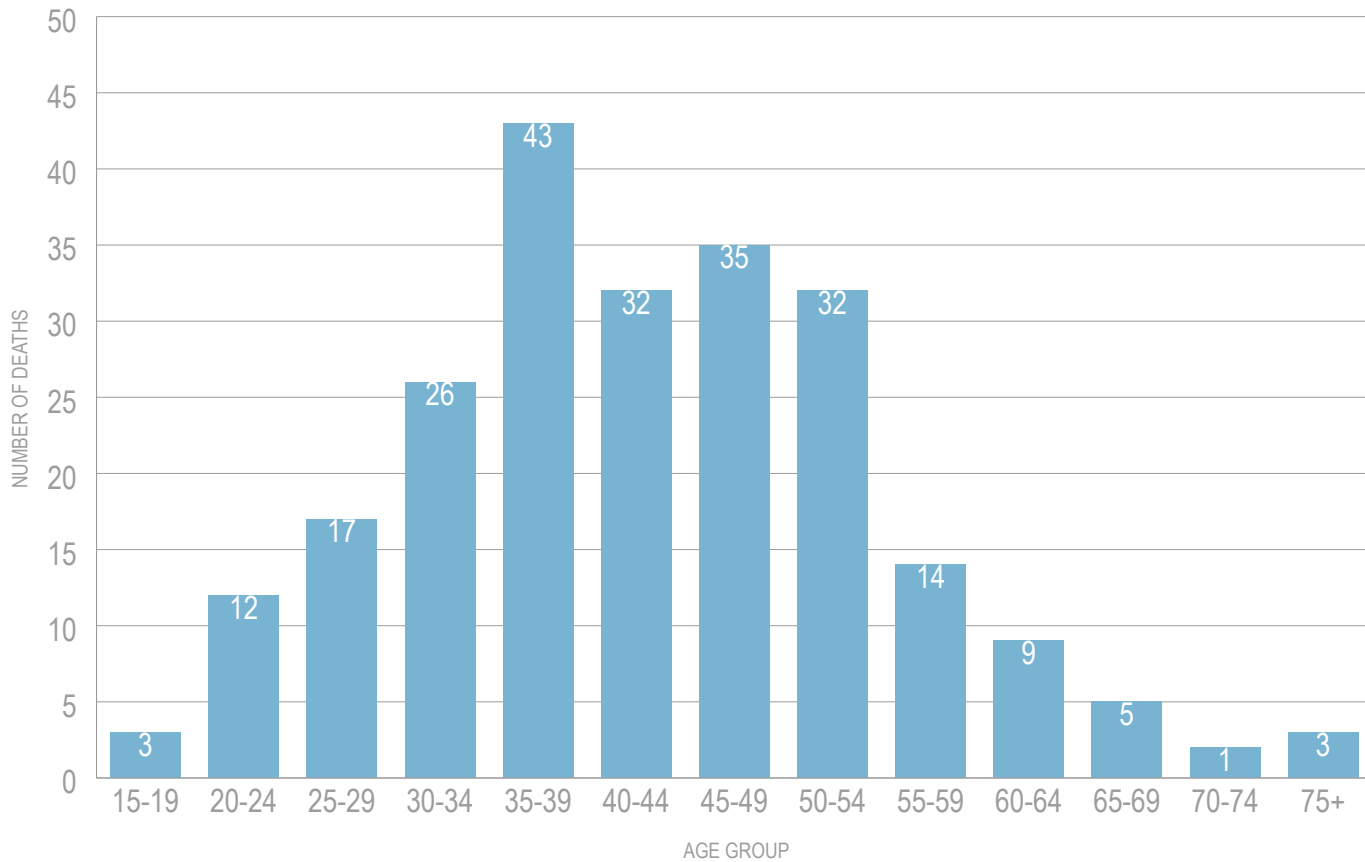
	NUMBER	RATE
District I (Northwest)	105	6.6
District II (Northeast)	121	6.8
District III (Delta/Hills)	43	3.8
District IV (Tombigbee)	64	5.2
District V (West Central)	187	5.9
District VI (East Central)	76	6.2
District VII (Southwest)	63	7.2
District VIII (Southeast)	116	7.7
District IX (Coastal Plains)	454	19.9
Total	1,229	8.3



Analysis of death rates by public health district shows variation in unintentional drug poisoning deaths around the state over a five year period. The highest rate is on the coast (District IX), which at 19.9 deaths per 100,000 is three times higher than the average rate for all other districts, and five times higher than the lowest rate, which is in the Delta (District III). Some of the geographical variation among these rates is attributable to racial distribution of the population. The death rates from unintentional drug poisoning are much higher for whites than blacks.

Source: Mississippi State Department of Health, Public Health Statistics. Underlying cause of death from the MSTAHRs online query system compiled from information on death certificates received from doctors, coroners, and funeral home directors by Mississippi Vital Records. Accessed at <http://mstahrs.msdh.ms.gov>. Rate is per 100,000 population.

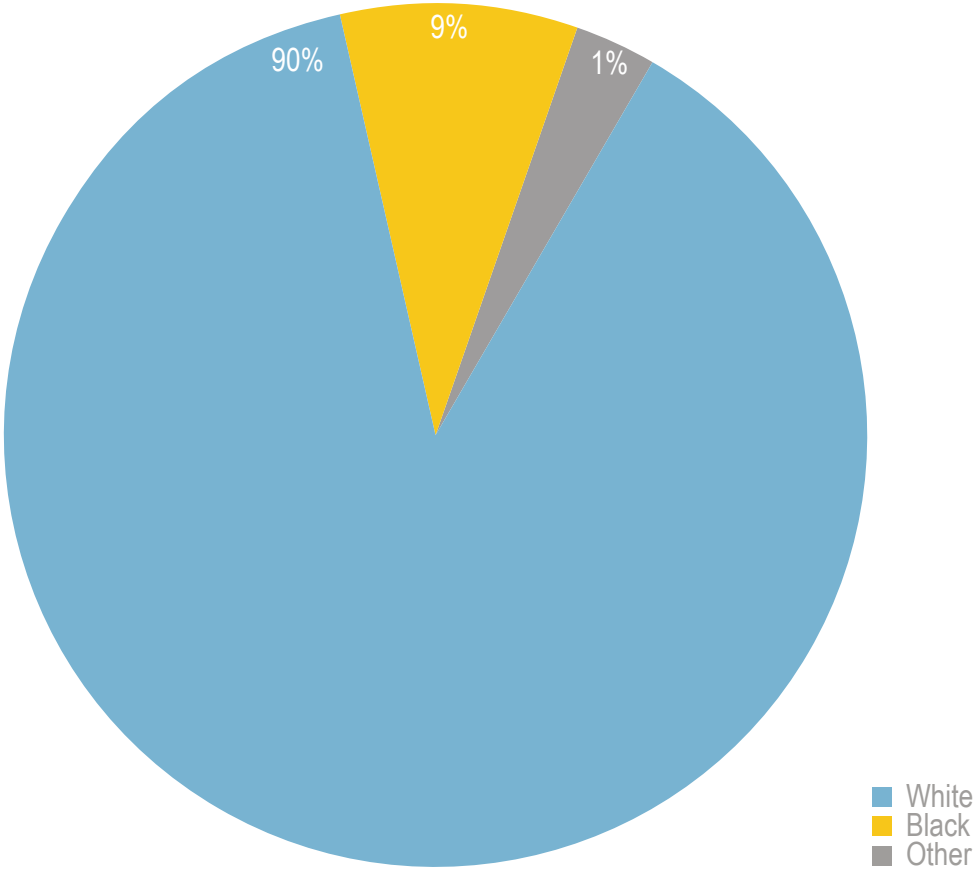
Unintentional Drug Poisoning Deaths Distribution by Age in Mississippi (2011)



Of the 232 Mississippians whose deaths were classified as accidental poisoning by drugs in 2011, decedents' ages ranged from 16 to 86 years, with an average age of 42.5 years of age. Over half of the decedents that year were under 45 years of age, and another one-third were between 45-55 years of age.

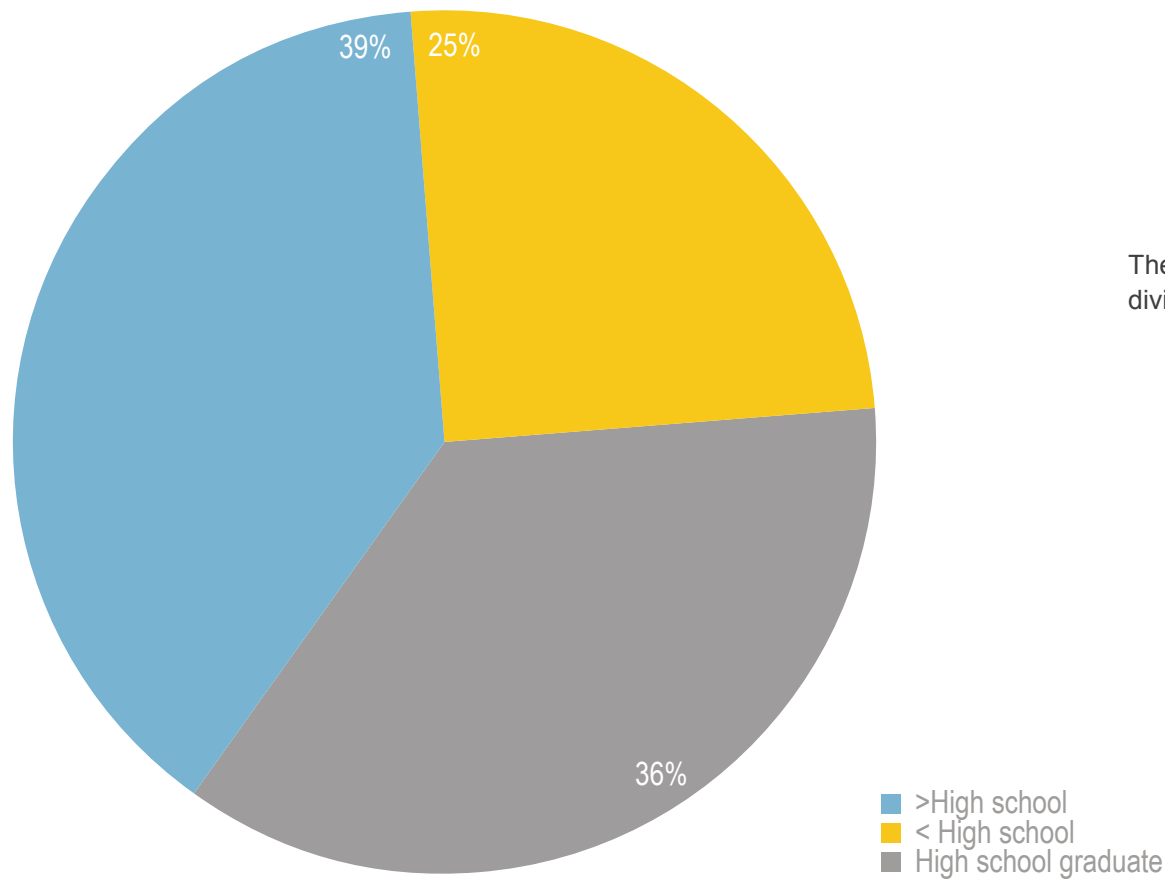
N=232

Unintentional Drug Poisoning Deaths Distribution by Race in Mississippi (2011)



Of the 232 unintentional drug poisoning deaths in Mississippi in 2011, 209 decedents (90%) in this group were white.

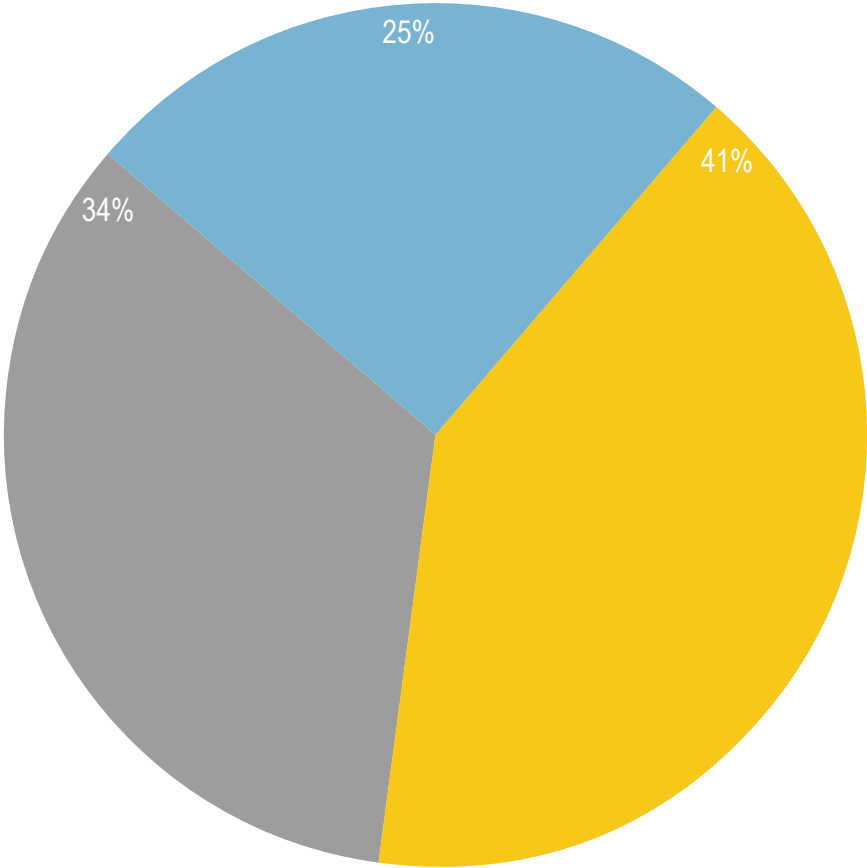
Unintentional Drug Poisoning Deaths Distribution by Level of Education in Mississippi (2011)



The level of education of decedents was divided:

- The largest group (39%) had completed some level of education beyond high school
- About as many (36%) had completed education at the high school level
- One quarter (25%) of decedents had not completed high school

Drug Poisoning Deaths By Drug Type in the United States (2008)

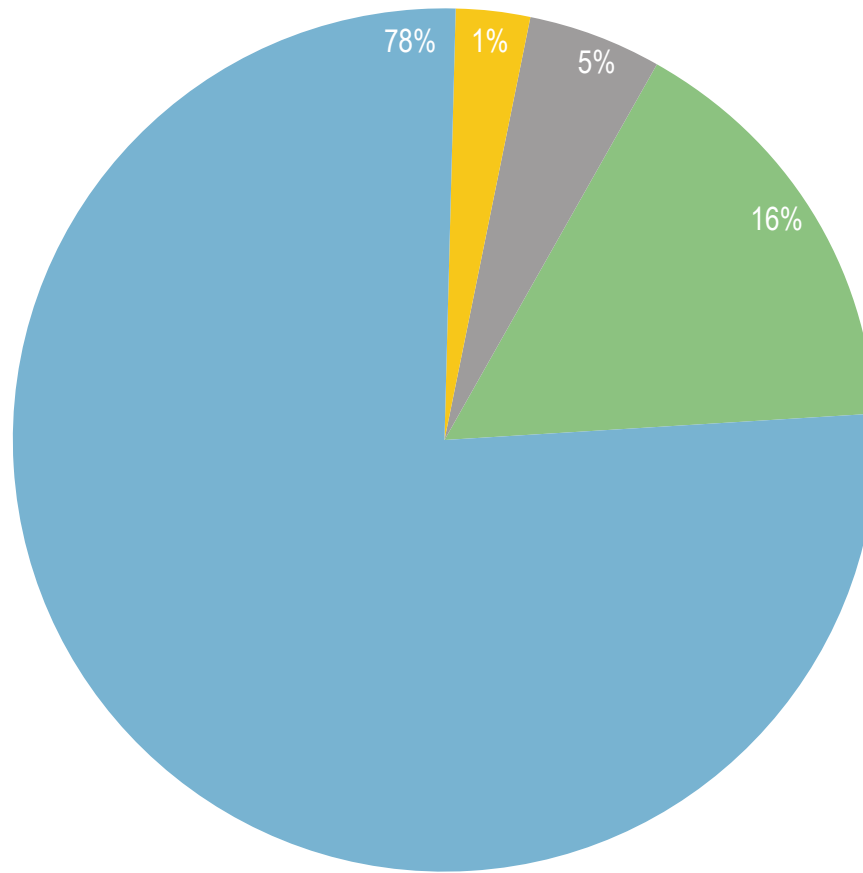


National data shows that opioid analgesics were listed as the type of drug causing poisoning deaths in about two out of five (41%) poisoning deaths in 2008. One in four (25%) poisoning deaths were caused by a drug that was not specified on the death certificate.

- Drug-related (drug not specified) (9,242)
- Opioid analgesics (14,000)
- Non-opioid drugs (12,408)

Source: Warner, M., Chen, L.H., Makuc, D.M., Anderson, R.N., & Miniño, A.M. (December 2011). Drug poisoning deaths in the United States, 1980-2008. NCHS Data Brief. 81: p. 2

Unintentional Drug Poisoning Deaths Distribution by Primary Cause (Type of Drug) in Mississippi (2011)

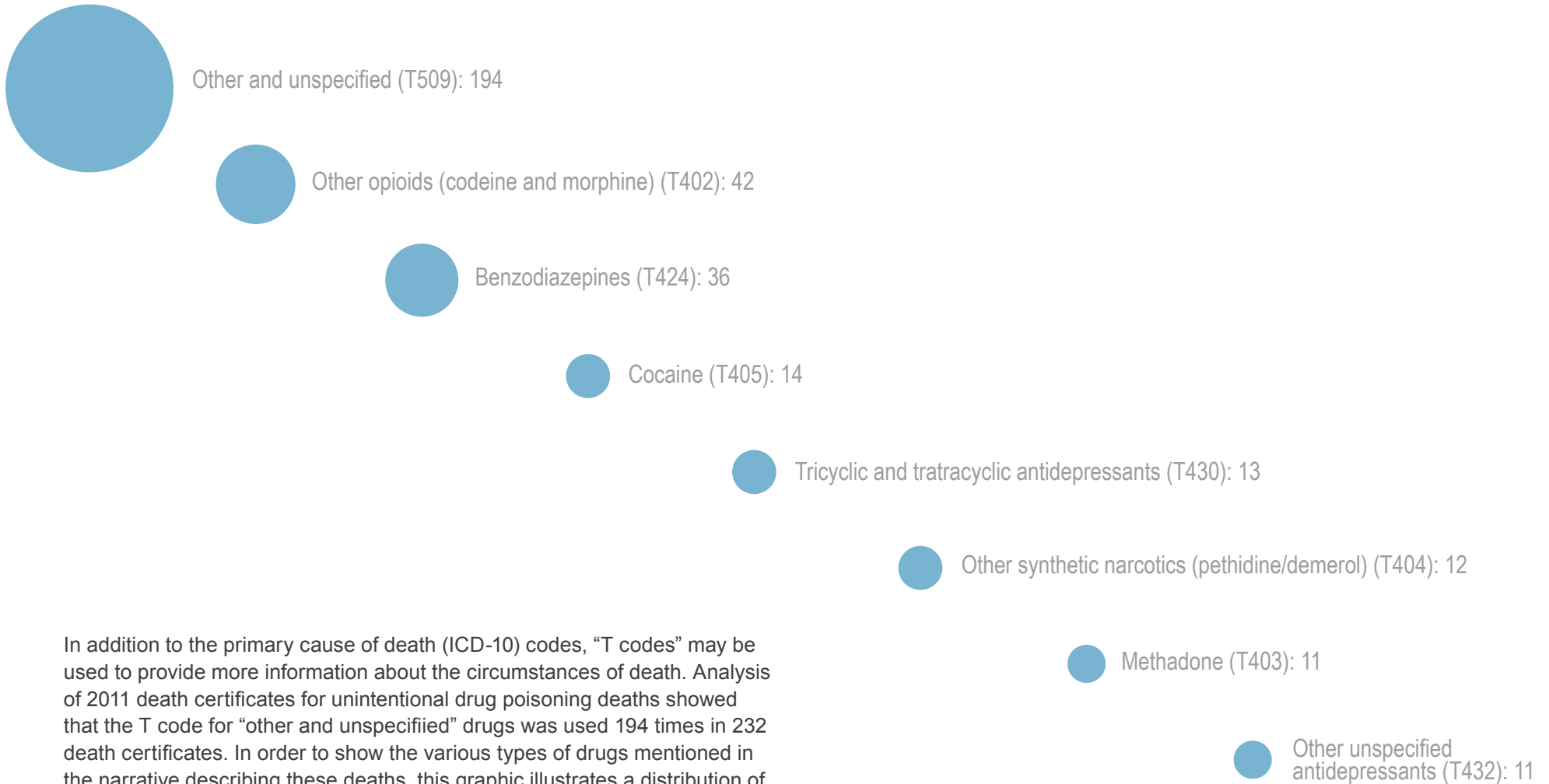


ICD-10 CODE

- x44: Unspecified drugs, medicaments, & biological substances
- x40: Non-opioid analgesics, antipyretics, & antiheumatics
- x41: Anti-epileptic, sedative-hypnotic, antiparkinsonism, & psychotropic drugs
- x42: Narcotics and psychodysleptics (hallucinogens)

More than three-fourths (78%) of unintentional drug poisoning deaths in Mississippi (2011) have no information on the type of drug given in the primary cause of death. This lack of specificity is problematic when attempting to address causes of accidental drug overdose deaths in the state.

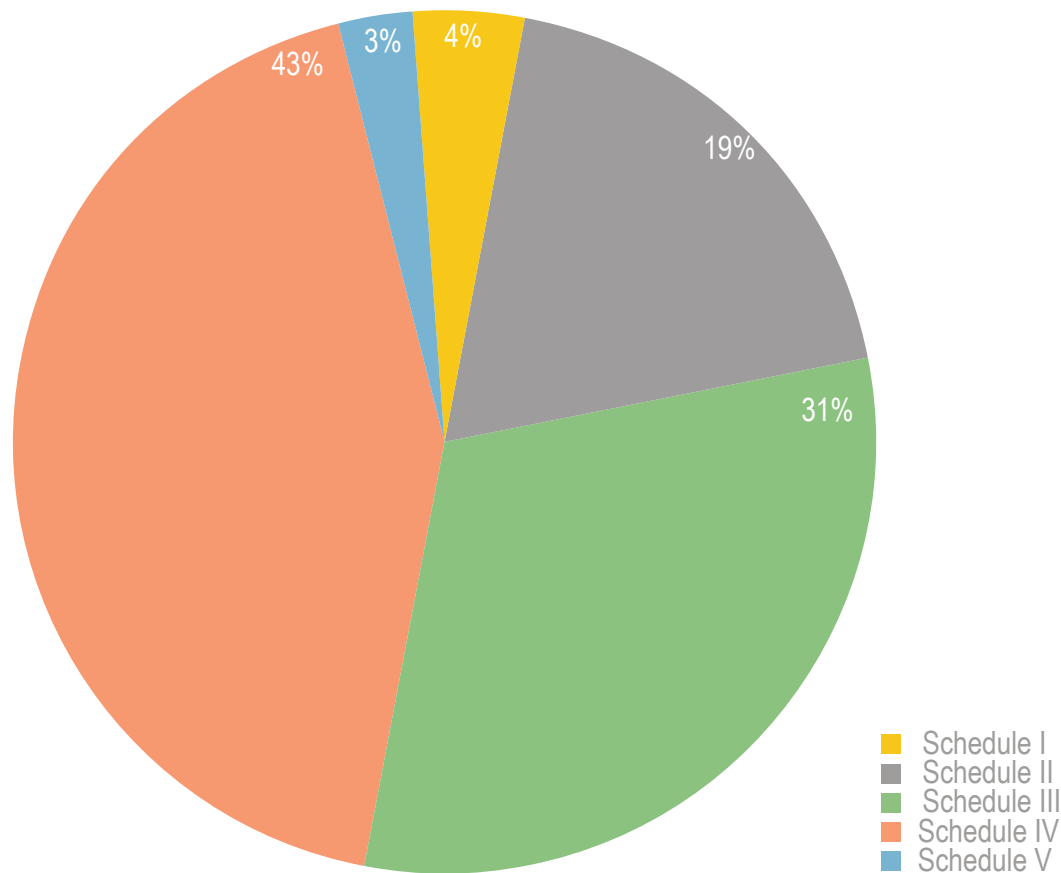
Unintentional Drug Poisoning Top Drugs Indicated on Death Certificates in Mississippi (2011)



In addition to the primary cause of death (ICD-10) codes, “T codes” may be used to provide more information about the circumstances of death. Analysis of 2011 death certificates for unintentional drug poisoning deaths showed that the T code for “other and unspecified” drugs was used 194 times in 232 death certificates. In order to show the various types of drugs mentioned in the narrative describing these deaths, this graphic illustrates a distribution of all T codes used on this set of death certificates. More than one T code can be listed on a record, at the discretion of the coroner.

Source: Mississippi State Department of Health, Public Health Statistics. (2013).

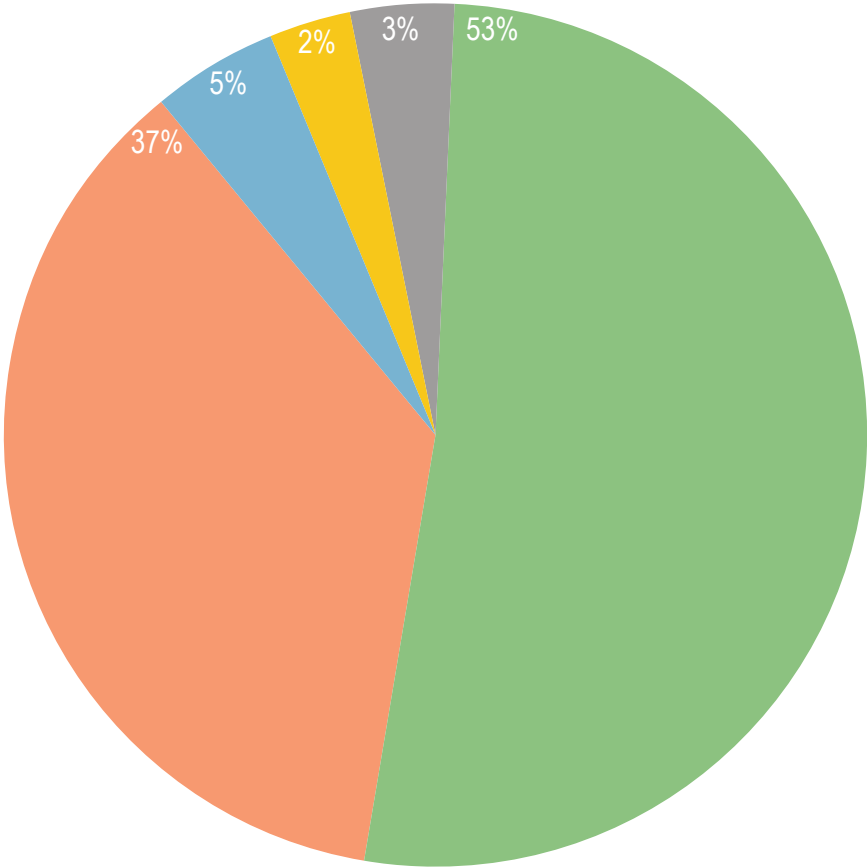
Project Findings: Distribution by Drug Schedule



The Controlled Substances Act created five schedules of drugs to categorize substances based on two factors: acceptability for medical use and potential for abuse. Lower numbers indicate a higher level of restriction. For example, Schedule I drugs have a high potential for abuse and no accepted medical use, while Schedule V have a low risk of abuse and dependence when weighed against the acceptable medical uses.

Prescriptions for the two years prior to death for the 180 decedents whose PMP records were available were analyzed by drug schedule. The largest percentage were Schedule IV drugs (43%), followed by Schedule III (31%), Schedule II (19%) and Schedule I (3%). Schedule V drugs only made up 3 percent of the prescriptions for this group.

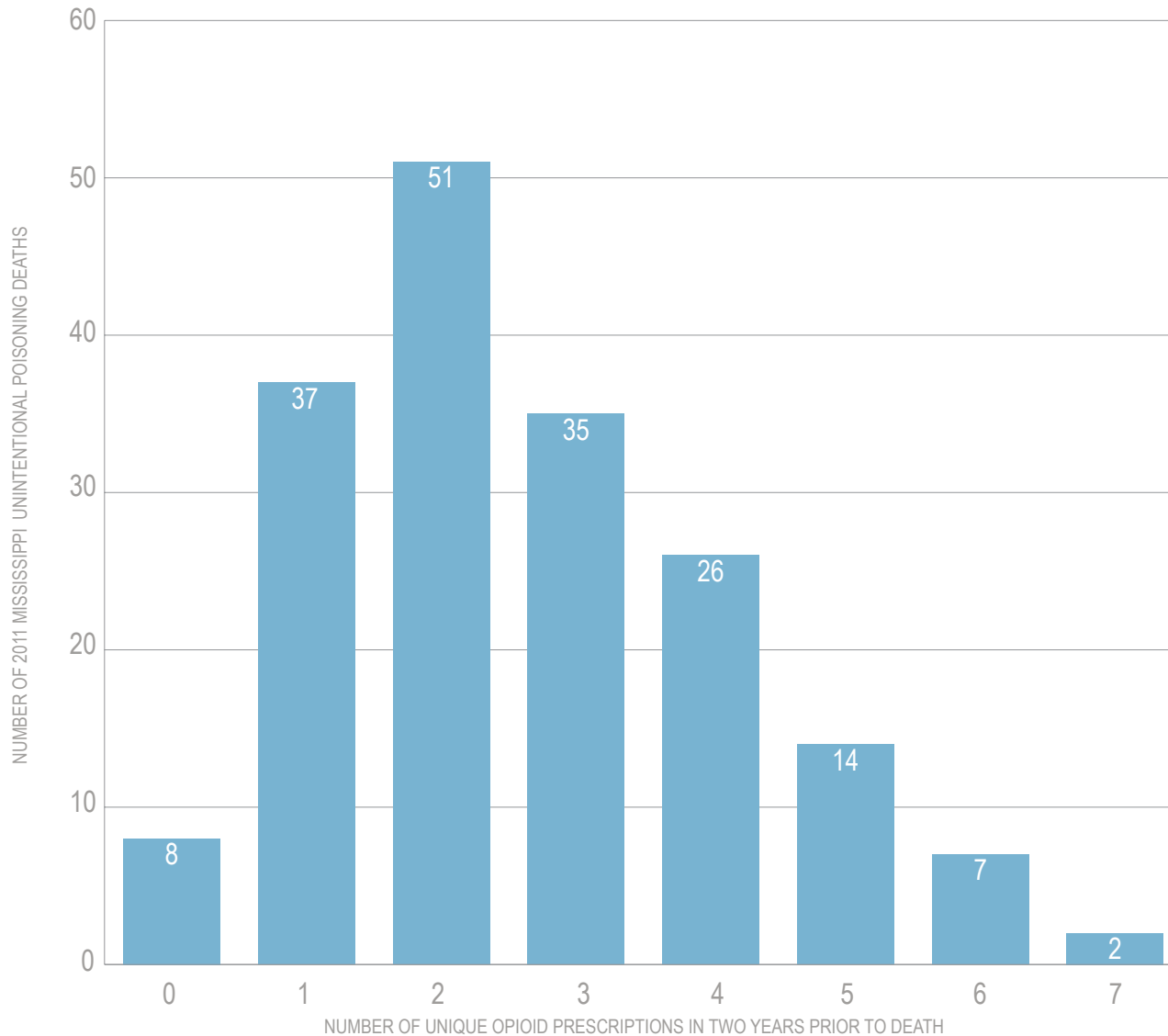
Project Findings:
Prescriptions by Drug Category



- Muscle Relaxers
- Stimulants
- Other
- Pain Killers
- Sedatives

The Mississippi State Department of Health's Pharmacy Division created categories to classify the study population's controlled substance prescriptions in the two years prior to death. Of these prescriptions, over half (53%) were for pain killers, and more than one third (37%) were for sedatives.

Project Findings: Number of Unique Opioid Prescriptions

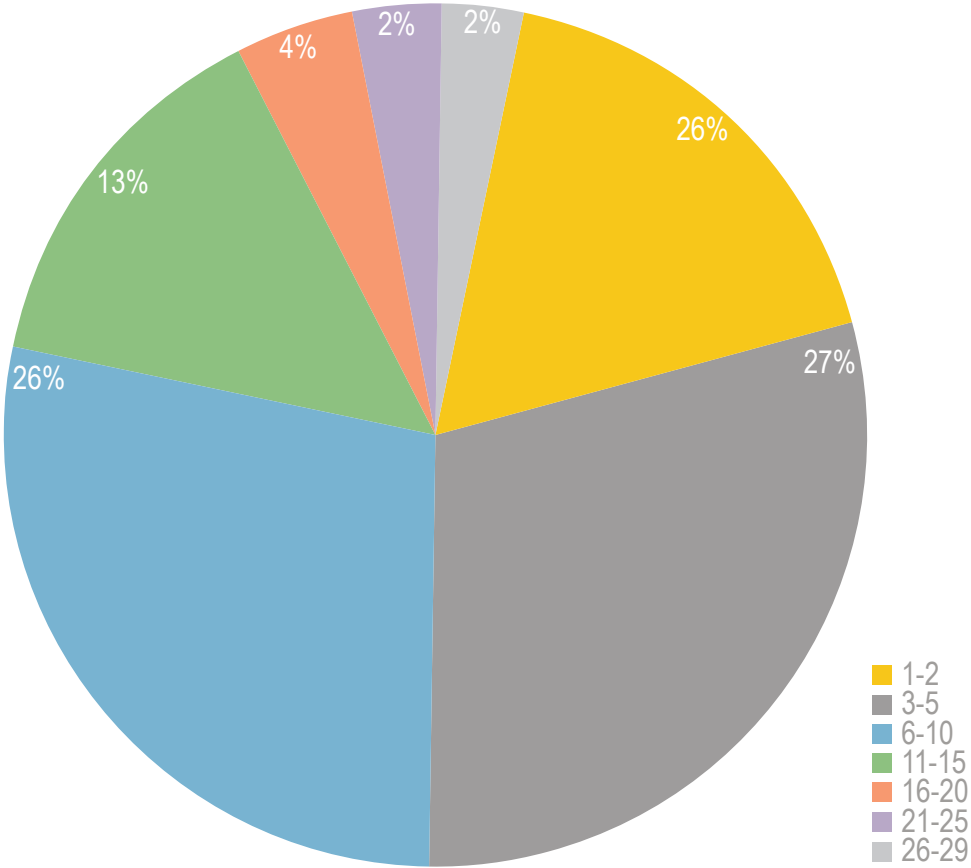


Looking at just opioid prescriptions in the study population during the study time period, analysis showed the number of unique opioid prescriptions for each decedent in the two years prior to death.

- Only 8 decedents with any PMP record were found to have no opioid prescriptions
- Approximately half (49%) of unintentional drug poisoning decedents with PMP records in two years prior to death had at least 1-2 unique opioid prescriptions

*Note: a “unique opioid prescription” is any prescription containing an opioid but which has a formula that is different from the other opioids prescribed to the same patient. For example, drugs with differing amounts of hydrocodone and acetaminophen would be considered unique opioids, as would other types of opioids.

Project Findings: Number of Prescribers per Decedent

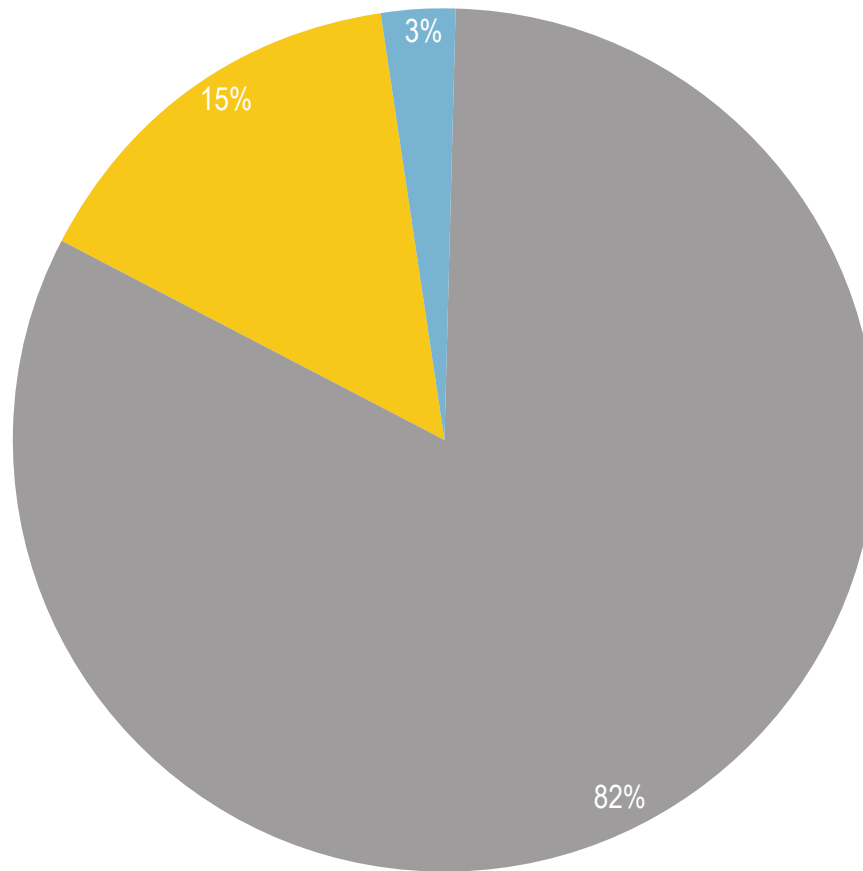


The number of prescribers per decedent in the study population within the two year time frame varied:

- Approximately one-quarter (26%) had controlled substance prescriptions from 1-2 prescribers
- Another one-quarter (27%) had controlled substance prescriptions from 3-5 prescribers
- One-quarter more (26%) had controlled substance prescriptions from 6-10 prescribers

Smaller percentages were seen with larger numbers of prescribers.

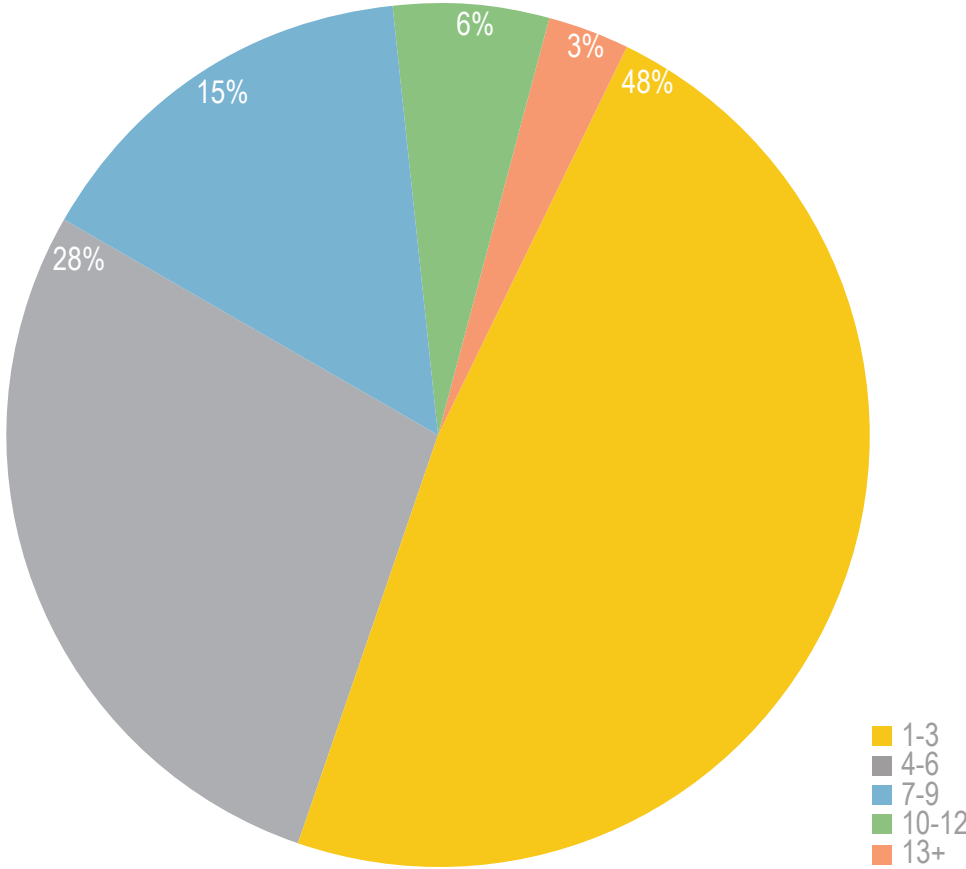
Project Findings: Prescriptions Written per Prescriber



When examined by the number of total prescriptions written by each prescriber found in the study population (those who wrote any controlled substance prescription to individuals whose 2011 deaths were classified as accidental drug overdose), only 3 percent of prescribers wrote more than 50 controlled substance prescriptions in the study group. Many more of the prescribers (82%) wrote 10 or fewer controlled substance prescriptions for the study group.

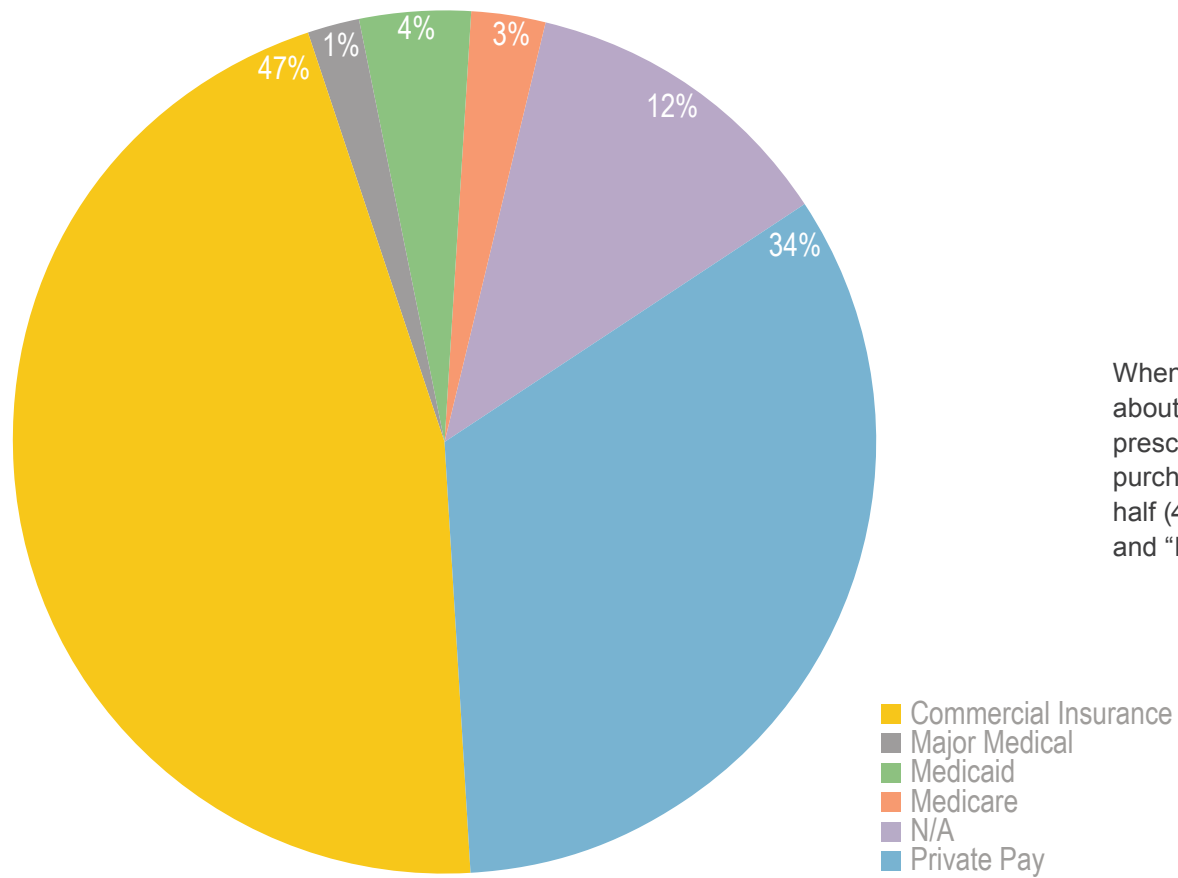
- More than 50 prescriptions
- 11-49 prescriptions
- Less than 10 prescriptions

Project Findings:
Number of Dispensers per Decedent



Almost half (48%) of decedents in the study population filled controlled substance prescriptions at one to three dispensers in two years prior to death. Another 28 percent used four to six dispensers in the study time period.

Project Findings: Source of Payment



When examined by source of payment, about half (47%) of the controlled substance prescriptions in the study population were purchased with commercial insurance. Nearly half (46%) were bought with cash (“private pay” and “N/A”).

*Note: percentages may not total to 100% due to rounding.

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