



2014

Drug Overdose Deaths,
Hospitalizations, Abuse &
Dependency among Oregonians

Oregon Health Authority
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Drug Overdose Deaths, Hospitalizations, Abuse and Dependency among Oregonians

Acknowledgements

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Executive summary

Oregonians use a wide variety of medications and drugs (including alcohol) to treat medical and psychiatric conditions and for recreation. Medicine and drug use is highly regulated by the federal government and states to protect people from harm. Regulations require pharmaceutical companies to place warnings on packaging of over the counter and prescribed medicines. Federal and state regulations control who can prescribe medicines that have a high risk for abuse. Medical training institutions teach students to prescribe controlled substances and over the counter medicines safely. Schools of pharmacy teach pharmacists to dispense medicines safely. Pharmaceutical boards regulate the practice of dispensing medicines. Most states require prescriber education on pain and the use of pharmaceutical medicines to control pain. States regulate the age at which individuals can legally purchase and consume alcohol. Federal and state laws establish penalties to control and punish infractions of laws and regulations by individuals (patients, prescribers, and pharmacists), institutions, corporations, and criminal organizations that promote and control drug trade. Yet all of these laws and regulations have not prevented misuse, abuse, addiction, and overdoses due to the use of prescribed medicines, alcohol, and illegal drugs.

Since 1999, statistics show a dramatic increase in prescription controlled substance sales, illicit and prescribed drug use, misuse, dependency, and overdose due to drugs of all types in Oregon. New data from Oregon's Prescription Drug Monitoring Program show that prescribed opioid use is endemic among Oregonians. In 2013, almost 1 in 4 Oregonians received a prescription for opioid medications, households in every community, many unused, potentially harmful medicines are stored unsafely.

While many drugs and medicines have potential for overdose, the use of both prescription opioids and heroin (often taken in combination with other medicines and drugs) has increased since 1999. With increased use of opioids communities have seen increases in overdose hospitalizations and deaths, and need for treatment. Data on the sales of legally prescribed medicines (opioids in particular) and data on overdose hospitalizations and deaths can be used to illustrate the progression of an epidemic of overdose hospitalizations and deaths in Oregon.

Public health, behavioral health, health systems, academic institutions, policy makers, and law enforcement officials are working to reduce this problem. However, the problem is complex. The etiology of drug overdose is as complex as individuals who use drugs and medicines. For example, the death of an 80 year old from a pain medicine taken in combination with a cardiac drug and alcohol, the death of a 4 year old from an ingestion of a grand parent's pain medicine, the death of a 26 year old ingestion of alcohol causing acute alcohol poisoning, and the death of a 45 year old from heroin are each distinct phenomena.

This report on unintentional and undetermined drug overdose, abuse, and dependency is written for researchers, epidemiologists, members of the health and behavioral health community, and policy makers who have a basic understanding of the science and drug policy. The information provided will raise questions for further analysis and study, and provide information for the public health, the medical community, and public officials to

help inform policy discussions, plan interventions and monitor progress. The data contained in this report were drawn from death certificates, hospital discharge data, the Oregon Prescription Drug Monitoring Program, the National Household Survey on Drug Use and Health, and the Treatment Episode Data Set.

Note to the reader on the definition of commonly misunderstood terms: “Poisoning” and “overdose” are used interchangeably in this report – poisoning is a scientific classification term and overdose is a term more often used in healthcare and addictions programs. “Unintentional” means “accidental” and “undetermined” means “medical examiners could not determine if the death was accidental, suicide, or homicide”. Alcohol is included in this report as a drug that causes poisoning, addiction, overdose deaths and overdose hospitalizations.

Findings

Between 2000 and 2012, 4,182 people died in Oregon due to unintentional and undetermined drug overdose (322 per year).

Unintentional and undetermined drug overdose death rates appear to have peaked in 2007 at 11.4 per 100,000 and declined to 8.9 per 100,000 in 2012. Nonetheless, the overdose death rate in 2012 remains 1.9 times higher than in 2000.

Unintentional and undetermined prescription opioid deaths appear to have peaked in 2006 (6.5 per 100,000) and declined to 4.2 per 100,000 in 2012. Nonetheless, deaths due to unintentional and undetermined prescription opioid overdose in 2012 remain 3 times higher than in 2000. In 2012, over 900,000 Oregonians (24%) received a prescription for an opioid.

Unintentional and undetermined heroin overdose deaths have increased more than three fold since 2000. The rates of death increased from 0.8 per 100,000 to 2.9 per 100,000. Unlike other drug types, heroin deaths and overdose have not peaked.

Unintentional and undetermined deaths due to methadone (which is frequently prescribed for pain) overdose peaked in 2006 (3.8 per 100,000) and declined to 1.7 per 100,000 in 2012. Nonetheless, the methadone overdose death rate is still almost three times higher than the rate in 2000.

The rate of death due to unintentional drug overdose averages 1.5 times higher among males when compared to females.

The highest death rates due to unintentional and undetermined drug overdose occurred among Oregonians ages 45-54 years, followed by adults aged 35-44, and 25-34 years.

The highest rates of death due to unintentional and undetermined drug overdose occurred among Caucasian and non-Latino Oregonians for every type of drug.

Veterans died of unintentional and undetermined drug overdose in increasing numbers since 2000 with 29 deaths in 2000, a peak of 52 deaths in 2006 and 47 deaths in 2012. Among veterans, 198 males died compared to 17 females between 2008 and 2012.

Between 2000 and 2012, 15,230 people were hospitalized in Oregon due to an unintentional and undetermined drug overdose (1,171 per year).

Unintentional and undetermined overdose hospitalizations due to all drugs have increased from 663 in 2000 to 1,499 hospitalizations in 2012 (38.4 per 100,000 population).

The average rate of hospitalization due to unintentional drug overdose among females was 1.2 times the rate among males.

The highest rates of hospitalization due to unintentional and undetermined drug overdose occurred among Oregonians ages 85 years of age and older followed by adults aged 45-54, 75-84, 55-64, and 65-74 years of age.

In 2012, 92 children aged 0-4 years were hospitalized due to drug overdose. The leading types of drugs involved in these hospitalizations included: antiepileptic, sedative hypnotic, and psychotropic drugs (38); prescription opioids (9); and benzodiazepines (8).

The highest rates of hospitalization due to unintentional and undetermined drug overdose occurred among Caucasian and non-Latino Oregonians for every type of drug.

In 2012, hospitalization charges for unintentional and undetermined drug overdose care totaled \$31,117,204, ranging from \$16,000 to \$29,000 per hospitalization. The length of stay ranged from 2.2 days to 2.9 days. The leading primary drug type listed in diagnostic codes among hospitalized Oregonians was anti-depressants and psychotropics among 1,624 patients, pharmaceutical opioid among 584 patients, benzodiazepines among 518 patients, psychostimulants among 144 patients, heroin among 101 patients, alcohol among 97 patients, methadone among 97 patients, and other unspecified among 831 patients.

Drug abuse or dependency are not always the primary diagnoses but may be included as one of multiple diagnoses identified in patients in hospital admissions. In 2012, the leading specified drug type among drug abuse or dependency diagnoses were pharmaceutical opioid (4,501), followed by psychostimulants (3,348), antidepressants, psychotropics (2,957), benzodiazepines (414), methadone (248), heroin (169), and alcohol (151).

Oregon has taken strides to address the problem of drug overdose. In 2009, the state Legislature enacted legislation to establish a Prescription Drug Monitoring Program. In 2013, the legislature passed a law that allows establishment of a medically-supervised lay person naloxone rescue program. In addition, in 2013, the legislature amended the PDMP statute to allow delegates of healthcare providers and pharmacists to use the PDMP. Oregon's state Pharmacy Program removed methadone from the state's formulary. The Governor's Office assembled a team to attend the National Governor's

Association Prescription Drug Abuse Policy Academy and that team created a policy brief to direct state action. Two counties – Jackson and Multnomah - are working on a variety of projects that include: an Opioid Prescribers Group; opioid prescribing guideline implementation; and naloxone lay rescue. Throughout Oregon, Coordinated Care Organizations are working to implement their mandate to integrate primary care and behavioral healthcare. Law enforcement agencies are sponsoring events known as drug take-back days to address the need to provide a secure opportunity for patients to dispose of their unused medications.

Recommendations

The Centers for Disease Control and Prevention recommend that states maximize Prescription Drug Monitoring Programs in several ways:

- States should use Prescription Drug Monitoring Program Data to create routine reports to assist prescribers to track high risk behavior, prescribing thresholds, and dangerous co-prescribing, and use of multiple prescribers and pharmacies.
- PDMPs should automate prescriber notifications that identify when medicines dispensed to patients might endanger patient safety and health.
- States should establish best practice recommendations for the use of the PDMP.
- States should monitor overdose by producing annual reports and special reports.

Recommendations from Oregon's National Governor's Association Task Force on Prescription Drug Abuse include:

Recommendations from Oregon's representatives to the National Governor's Association Task Force of Prescription Drug Abuse include:

1. Reduce the number of pills in circulation using the following approaches:
 - Remove methadone for chronic pain from the Oregon Health Plan formulary.
 - Encourage full use of the Prescription Drug Monitoring Program (PDMP) by prescribers who write prescriptions for controlled substances.
 - Educate prescribers about the dangers of overdose and addiction.
 - Encourage CCOs and other prescribers to increase the use of non-opioid pain management.
 - Help the prescriber say no to patient drug seeking behavior.
 - Support efforts by the Oregon Medical Association and OHSU to build education programs for prescribers about the risk of these medications.
 - Encourage CCOs to adopt Prescribing Guidelines similar to those used by the Southern Oregon's Opioid Prescribers Group.
2. Educate the public in the following ways:
 - Help patients understand the limitations and risks of prescription controlled substances, particularly for pain.
 - Encourage patients to safeguard their prescription controlled substances.
 - Increase student awareness that prescription opioids are no safer than "street" drugs.
 - Partner with OHSU, OMA and PhRMA to develop patient education.
3. Help get rid of unwanted prescription drugs using the following approaches:
 - Help patients return unused prescription controlled drugs for destruction through take-back programs at both community and pharmacy levels.
 - Approach pharmaceutical companies about the role they can play in take-back efforts.
4. Provide treatment for people who are addicted to prescription drugs:
 - Identify patient misuse and abuse of prescription drugs early.
 - Provide effective, evidence-based, up-to-date treatment for addictions.

- Promote co-prescriptions of naloxone whenever prescribing opioid analgesics.
 - Monitor pre-natal evidence of prescription drug misuse.
 - Provide team-based, integrated and coordinate behavioral and physical healthcare so that individuals with an addiction disorder have access to all appropriate health care.
 - Promote integration and new partnerships between physical and behavioral healthcare
5. Develop and maintain high-level state involvement:
- Develop an evaluation process to measure the efficacy of the above policies.

Methods and Definitions

The effort to categorize and study drug overdoses (also known as poisonings), and drug misuse, abuse and dependency is often complicated by the variety of language enshrined in law, medical practice, and research and epidemiology. It is difficult for professionals from different disciplines to discuss drugs and drug policy unless a great deal of care is taken in defining terms and methods. This report was prepared by public health professionals using medical terminology and classification systems. We have prepared this report primarily for other scientists and researchers but we also hope that the data can be useful for policy makers and professionals working in health and behavioral health systems. We recognize that while the medical model frameworks used in this report make sense to professionals in our world they might be challenging for some readers. We encourage the reader to contact the technical experts listed in the acknowledgements of this report to discuss any questions regarding the data below.

Data in this report are drawn from administrative data sets using the World Health Organization's coding framework known as the International Classification of Diseases, Tenth Edition, and the International Classification of Diseases, Ninth Edition, Clinical Modification. The use of this coding framework allows researchers and epidemiologists to analyze data using an agreed upon set of coding that makes it possible to compare data from community to community, community to state, state to state, state to the nation, and nation to nation and the world.

Hospitalization data are from the Oregon Hospital Discharge Index. Death data are from the Oregon Center for Health Statistics. Population estimates used for rate calculation are from the National Center for Health Statistics. Hospitalization and death data in this report include all unintentional (accidental) and undetermined (unknown manner/intent) overdoses. Hospitalization and death data in this report do not include nonfatal intentional self-harm, suicide, intentional non-fatal injury to others by poisoning, or homicide poisonings.

The Controlled Substance Act (CSA) is the federal drug policy under which the manufacture, importation, possession, use and distribution of certain substances is regulated. A controlled substance is a drug or other substance, or immediate precursor, included in schedule I, II, III, IV, or V of part B of the U.S. CSA. Oregon's Prescription Drug Monitoring Program collects data on Schedules I, II, III, and IV.

Unintentional injury is a term used in classifying the intent or manner of injury (injury includes poisoning also known as overdose). Unintentional is sometimes used interchangeably with accident. There are six manners or intents by which deaths are classified by medical examiners or coroners: unintentional (also known as accident), suicide (also known as intentional self-harm), homicide (also known as intentional injury), natural, undetermined, and legal intervention. An undetermined death is a death in which the medical examiner or coroner was unable to determine whether the death was due to suicide, homicide, natural causes, or legal intervention. Injury is classified by manner or intent and cause or mechanism. An overdose death could be classified as a suicide, a homicide, an undetermined, or an unintentional death. This report focuses on unintentional and undetermined intent deaths.

Note to Reader:

The report findings include a section on deaths followed by deaths by various drug types where the drug type is directly related to the death.

Because it is common for individuals to take more than one drug at the same time the overall count of 346 deaths in 2012 is not equal to the sum of the deaths by drug type (658).

This means that in the drug specific sections individuals may be counted in more than one drug type category.

Findings

Oregonians use a wide variety of medicines and drugs that are classified as controlled substances (Table 1). Drug and medicine use among Oregonians has caused a sharp rise since 2000 in drug overdose deaths (Table 4, Figure 4), overdose and overdose related hospitalizations (Table 5, Figure 55), drug abuse, dependency, and illegal activity such as diversion and non-medical use of medicines classified as controlled substances (Figure 1, Table 2). Public health, behavioral health, primary care, and law enforcement officials are working to reduce this problem. This report on unintentional and undetermined drug overdose, abuse, and dependency is written for researchers, epidemiologists, members of the health and behavioral health community, and policy makers who have a basic understanding of the science and drug policy. The information provided will raise questions for further analysis and study, and provide information for the public health, medical community, and public officials to address policy questions, plan interventions and monitor progress.

Drug use occurs in a variety of contexts including: legitimate and medically necessary care, treatment for behavioral health conditions, recreational drug use, and drug misuse, abuse and addiction. A variety data from surveys, healthcare data, and prescription drug monitoring data suggest that at least half of the population uses controlled substances that are legally prescribed medicines, illegal drugs, and alcohol. While not everyone who uses alcohol, prescribed controlled substance medicines, and illegal drugs is at risk for unintentional overdose, many factors increase risk for a variety of adverse consequences that include: death due to unintentional overdose, hospitalization, misuse of alcohol, drugs, and medicines, drug and alcohol abuse, addiction, and death.

Prescribed Controlled Substances Dispensed in Oregon

Oregon's Prescription Drug Monitoring Program (PDMP) data illustrate the number of medicines classified as controlled substances that are dispensed in Oregon. According to the PDMP almost one in four Oregonians received a prescription for an opioid in 2012 (Table 1).

Table 1. Prescription Controlled Substances Dispensed to Oregonians in 2012

Controlled Substance	Prescription recipient count in 12 months*	Number of prescriptions dispensed in 12 months*	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
Opioids¹	908,162	3,495,888	3.8	233.8	900.1
Hydrocodone	676,105	1,947,074	2.9	174.1	501.3
Oxycodone	334,805	1,122,642	3.4	86.2	289.1
Morphine	40,004	234,233	5.9	10.3	60.3
Hydromorphone	22,998	68,274	3	5.9	17.6
Methadone ²	16,259	123,665	7.6	4.2	31.8
Fentanyl	14,941	88,331	5.9	3.8	22.7
Benzodiazepines³	413,754	1,833,426	4.4	106.5	472.1
Lorazepam	132,705	416,302	3.1	34.2	107.2
Zolpidem	123,824	530,485	4.3	31.9	136.6
Alprazolam	99,024	373,609	3.8	25.5	96.2
Diazepam	70,421	184,657	2.6	18.1	47.5
Clonazepam	63,783	328,373	5.1	16.4	84.6
Temazepam	15,836	69,202	4.4	4.1	17.8
Opioid and Benzodiazepine at the same time Combination⁴	182,763	1,111,838	6.1	47.1	286.3

1 Opioids include: Hydrocodone, Oxycodone, Morphine, Hydromorphone, Methadone, and Fentanyl.

2 Does not include methadone used to treat addiction.

3 Benzodiazepines include: Lorazepam, Zolpidem, Alprazolam, Diazepam, Clonazepam, and Temazepam.

4 Opioids include all listed above. Benzodiazepines include all listed above except Zolpidem which represents a chemically different class of benzodiazepine, and in which the risk of combination with opioids is thought to be somewhat lower.

5 Opioid and Benzodiazepine at the same time combination is not additive. Category totals (for Opioids and Benzodiazepines) are less than the sum of the sub-categories because individual recipients may have received a prescription for more than one medication per category.

*Category totals for opioids and benzodiazepines are less than the sum of the sub-categories because individual recipients may have received a prescription for more than one medication per category.

Source: Oregon Prescription Drug Monitoring Program

Prevalence of Use, Abuse and Dependency on Alcohol and Illicit Drugs among Oregonians

In 2012, Oregon had the highest rate of non-medical use of prescription pain relievers in the nation. The National Survey on Drug Use and Health provides estimates of the prevalence of alcohol and drug use, misuse, abuse and dependency among Oregonians compared to the nation (Table 2).

Table 2. Prevalence of use, abuse and dependency of alcohol, illicit drugs and nonmedical use of pain relievers among Oregonians, average annual percent 2011 - 2012

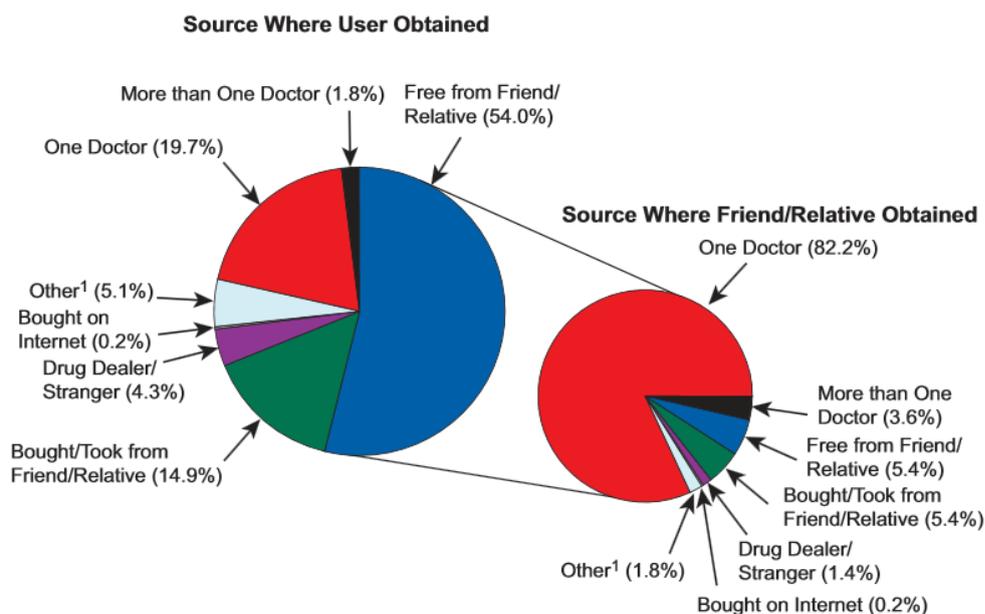
Condition among those aged 12 years and older	Percent in Oregonians	Percent in U.S.
Alcohol use in the past month	59.08	51.94
Binge alcohol use in past month	22.39	22.80
Alcohol abuse or dependency in the past month	7.53	6.64
Nonmedical use of pain relievers in past year	5.72	4.57
Illicit drug use other than marijuana in the past month	3.81	3.27
Dependence or abuse of illicit drugs in past year	3.00	2.67
Dependence or abuse of illicit drugs or alcohol in the past year	9.24	8.27

Source: National Survey on Drug Use and Health, 2011-2012

Self-Reported Nonmedical Use of Pain Relievers

Surveys reveal that diversion of prescription drugs is endemic in communities. Diversion takes place in many contexts, most often when friends and relatives share their prescription pain relievers (Figure 1). Fifty-four percent of those surveyed in the U.S. reported the source of the pain relievers that they used non-medically was free from their family and friends.

Figure 1. Self-Reported Source of Pain Relievers for Most Recent Nonmedical Use in the Past Year among Individuals Aged 12 or Older, US, 2011–2012



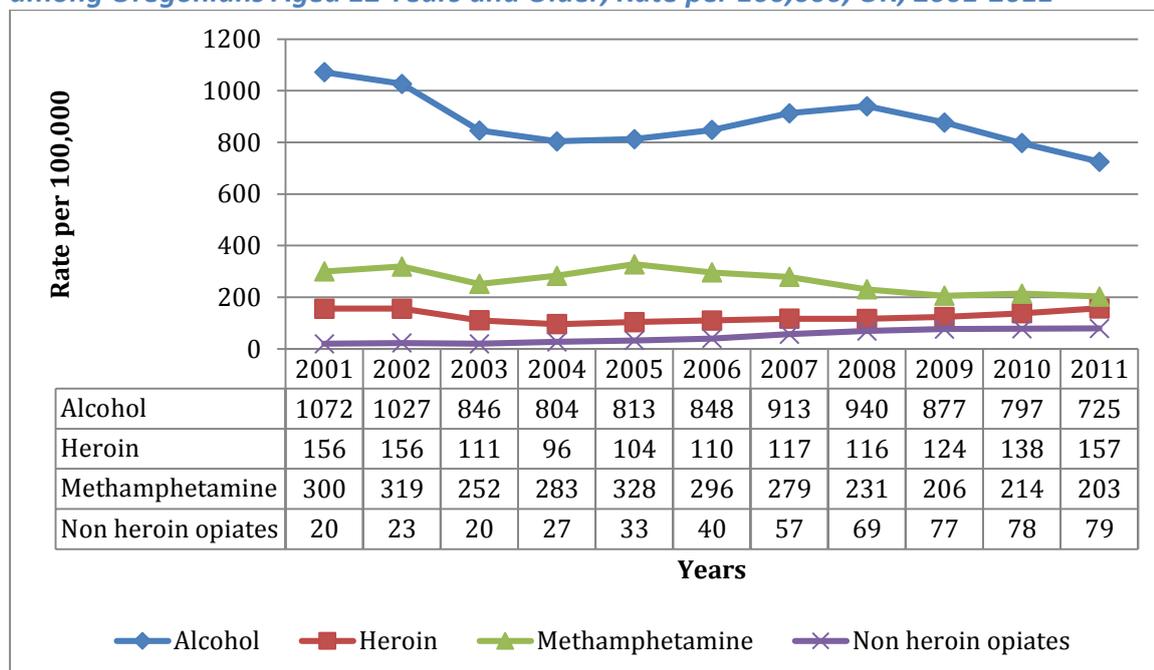
¹The Other category includes the sources "Wrote Fake Prescription," "Stole from Doctor's Office/Clinic/Hospital/Pharmacy," and "Some Other Way."

Source: 2012 National Survey on Drug Use and Health: Summary of National Findings

Admissions for Treatment of Abuse and Dependency

The Substance Abuse and Mental Health Services Administration collects survey data from states as part of the Treatment Episodes Data Survey (TEDS). According to estimates from TEDS, the rate of admissions for alcohol dependency has decreased in Oregon while the rate of admissions for treatment of non-heroin opiates has increased almost four-fold (Figure 2).

Figure 2. Primary Admissions for Treatment by Primary Drug Type for Selected Drugs among Oregonians Aged 12 Years and Older, Rate per 100,000, OR, 2001-2011



Source: Treatment Episode Data Set, 2001-2011, SAMHSA, DHHS

Need for Treatment

There is an unmet need for treatment for alcohol and illicit drug abuse and dependency in Oregon with 2.7% of Oregonians reporting they had an unmet need for treatment for illicit drug use and 7.1 percent of Oregonians reporting they had an unmet need for treatment for alcohol (Table 3). There are no data on the unmet need for treatment for prescription drug abuse and dependency.

Table 3. Need for Treatment in Oregon and the US, Average Annual Percent 2001 - 2012

Needing but not receiving treatment in the past year	Percent in Oregonians	Percent in U.S.
Illicit drug use	2.7	2.4
Alcohol	7.1	6.3

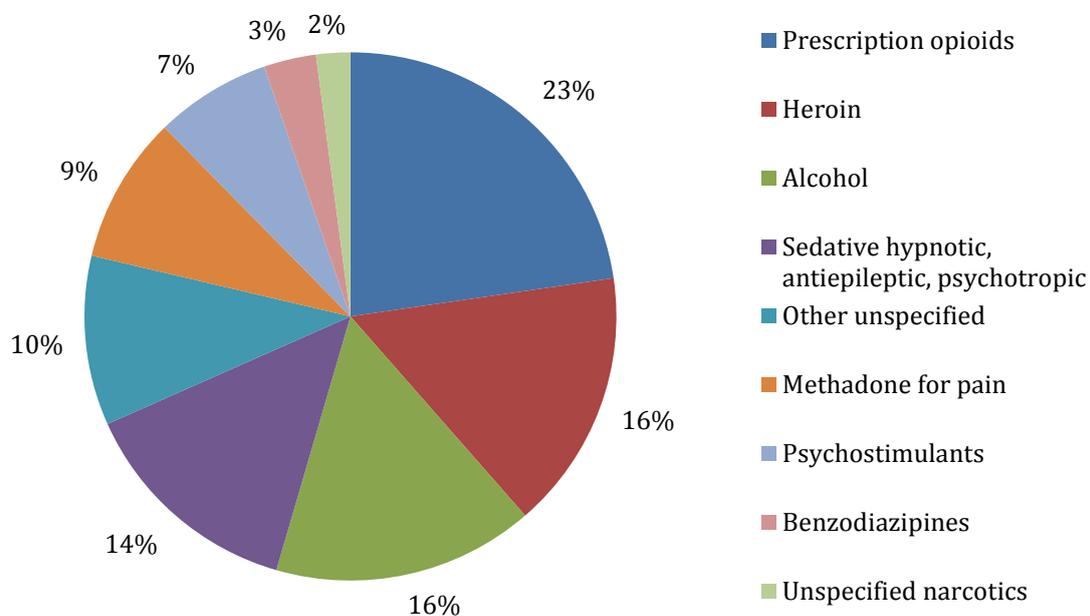
Source: National Survey on Drug Use and Health, 2011-2012

The following tables and figures provide data on deaths and death rates and hospitalizations and hospitalization rates among Oregonians due to unintentional and undetermined overdose by all drugs, by drug types, and by demographic factors.

Unintentional and Undetermined Overdose Deaths – All Drugs

In 2012, a total of 346 individuals died due to drug overdose in Oregon. To illustrate the broad classifications of the types of illicit drugs, medicines, and alcohol that were identified as the primary cause of death on death certificates we used the first drug listed as the cause of death by the medical examiner or physician who completed the death certificate in Figure 3.

Figure 3. Percent of Unintentional and Undetermined Overdose Deaths by ICD-10 Classification of Drug, All Drugs – Prescribed, Illicit, and Alcohol, Oregon, 2012



Source: Oregon Center for Health Statistics

Note: All drugs, illicit, prescribed, and alcohol are included in this figure

Among those who died by drug overdose it was common to find that they had used multiple drugs and or medicines and or alcohol at the time of their overdose. Categorizing deaths due to overdose (also referred to throughout this report as poisoning) is complicated by the fact that many individuals will use more than one type of drug or medicine at the same time. Those medicines and drugs include prescription medicines, illicit drugs, and alcohol in a variety of combinations. About a third of

individuals who died due to an unintentional and undetermined drug overdose in Oregon in 2012, had taken two or more drugs (Figure 4).

Figure 4. Unintentional and Undetermined Deaths by Number of Drugs Involved in Overdose, OR, 2000-2012

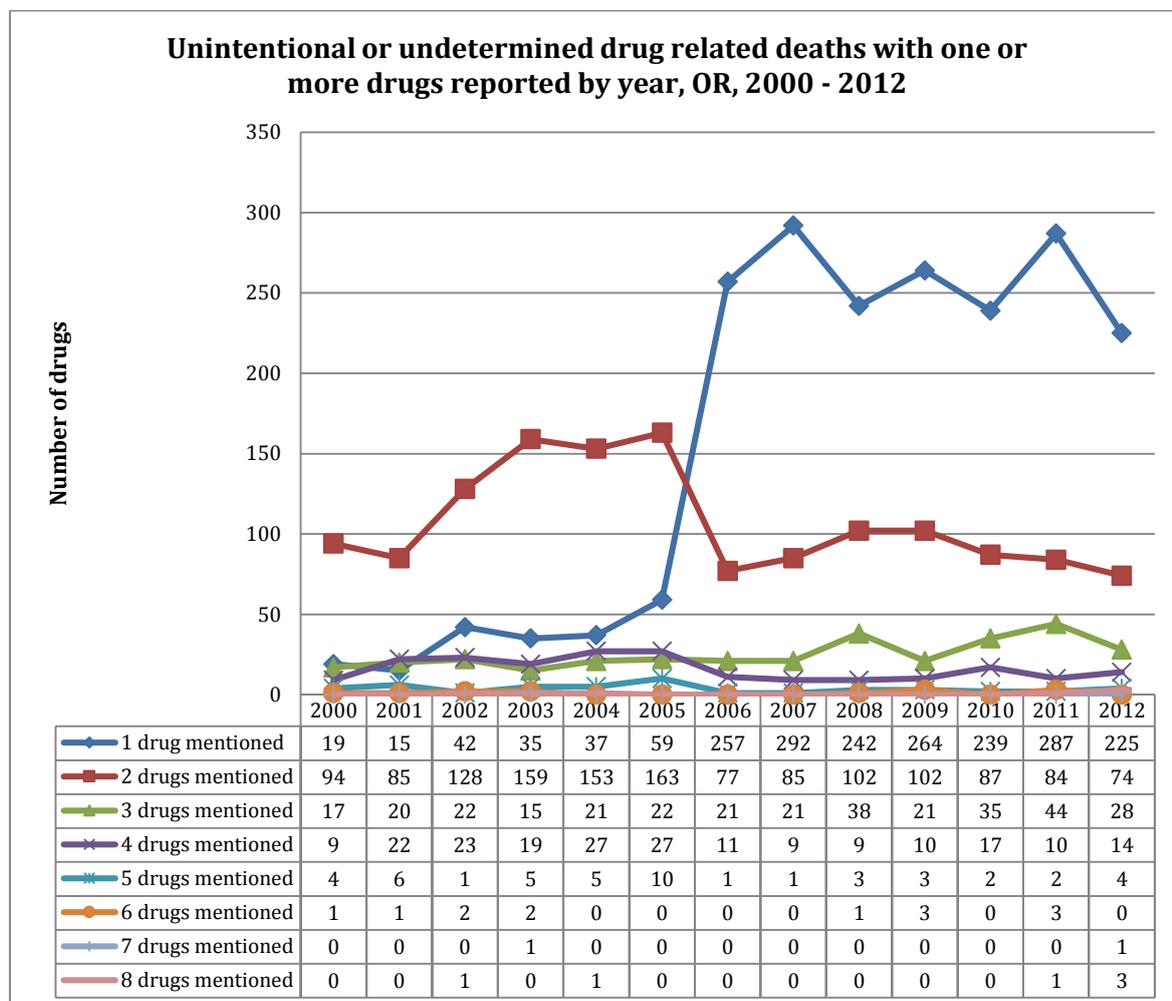


Table 4. Number of patients filling prescriptions for Schedule II-IV prescribed medications from four or more prescribers and four or more pharmacies, OR, 7/1/12 to 12/31/12

Count of Patients	
Four or more prescribers and four or more pharmacies over six consecutive months	4,481*
Total number of patients who received at least one prescription	866,383**

Source: Oregon Prescription Drug Monitoring Program Report accessed at:

[http://www.orpdmp.com/orpdmpfiles/PDF Files/Reports/Statewide2012.pdf](http://www.orpdmp.com/orpdmpfiles/PDF%20Files/Reports/Statewide2012.pdf)

*Evidence indicates that observation in six month time periods is the best practice.

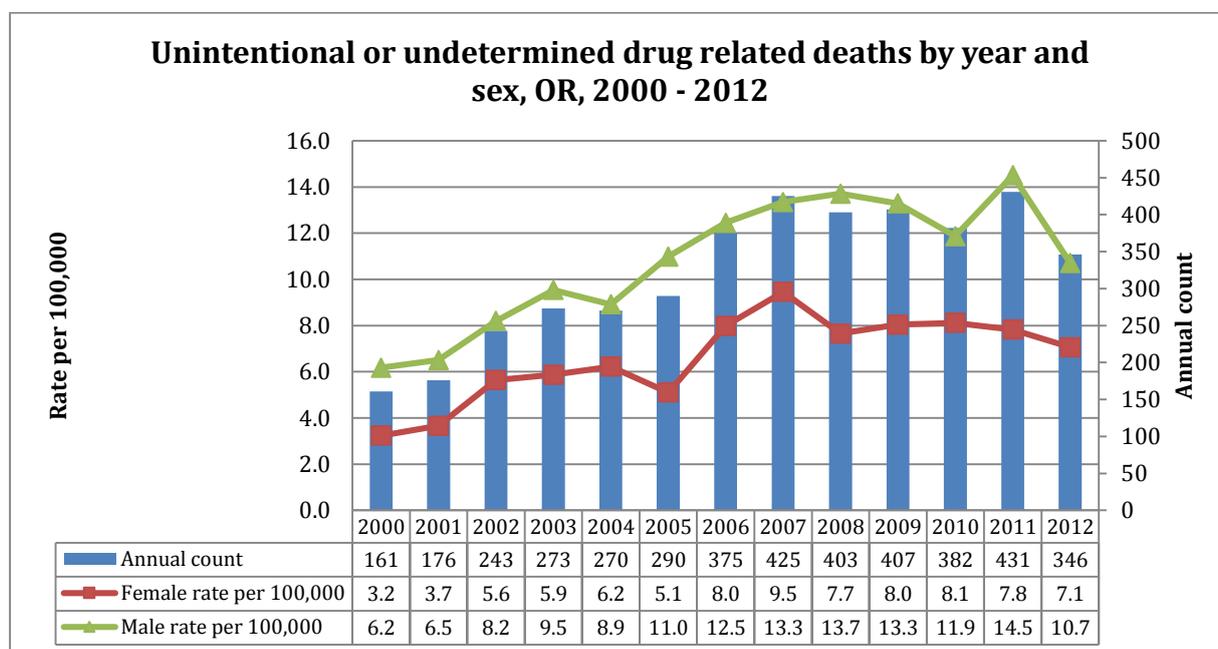
**Six month period.

Table 5. Unintentional and Undetermined Overdose Death Rates per 100,000 – All Drugs, Oregon, 2000-2012

Type of drug	Year												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Opioid	1.4	1.8	3.0	3.5	3.3	4.4	6.5	5.5	5.7	5.4	5.2	5.7	4.2
Methadone	0.7	1.0	2.0	2.0	2.2	3.0	3.8	3.3	3.6	2.7	2.4	2.4	1.7
Heroin	0.8	0.9	1.0	0.9	1.2	1.1	1.6	2.9	2.5	3.1	1.9	3.2	2.9
Benzodiazepine	0.1	0.1	0.3	0.1	0.1	0.2	0.4	0.4	0.6	0.7	0.7	1.0	0.6
Antiepileptic, sedative hypnotic, psychotropic	1.0	1.4	1.8	1.2	1.7	1.7	1.5	1.9	1.9	2.2	2.4	3.3	2.6
Psychostimulant	0.5	0.4	0.6	0.5	0.8	1.0	0.5	0.5	0.6	0.9	0.8	1.5	1.3
Unspecified narcotic	0.7	0.6	0.6	0.3	0.5	0.9	0.9	0.7	1.3	0.6	0.4	0.5	0.4
Alcohol	0.5	0.4	0.4	0.5	0.6	0.7	0.4	2.3	3.3	3.0	3.4	3.2	2.9
Benzodiazepine/opioid combination	0	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.4	0.5	0.5	0.8	0.5
unspecified drugs	1.1	1.5	1.9	2.6	2	1.2	1.9	1.6	2.8	2.6	3.4	2.1	1.9
All drugs	4.7	5.1	6.9	7.7	7.6	8	10.2	11.4	10.7	10.6	10	11.1	8.9

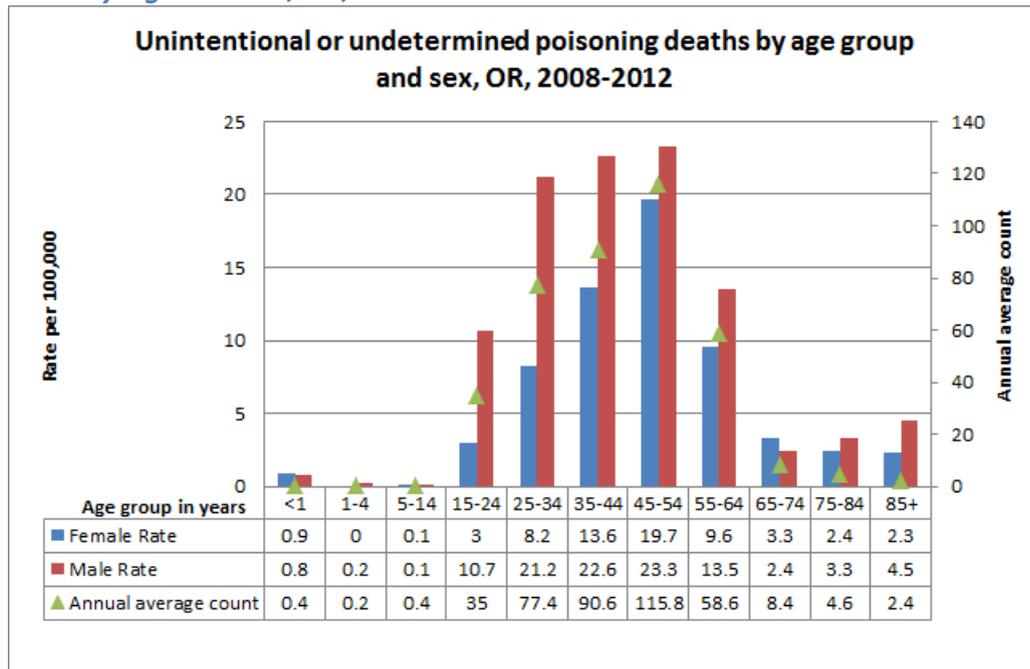
The overall rate of all drug unintentional and undetermined overdose death has increased from 4.7 per 100,000 in 2000 to 8.9 per 100,000 in 2012 (Table 5). The highest rate of unintentional and undetermined overdose death due to all drugs was observed among males in 2011 (14.5 per 100,000) (Figure 5).

Figure 5. Unintentional and Undetermined Overdose Deaths and Rates by Year and Sex, OR, 2000-2012



Note: All drugs, illicit, prescribed, and alcohol are included in this figure

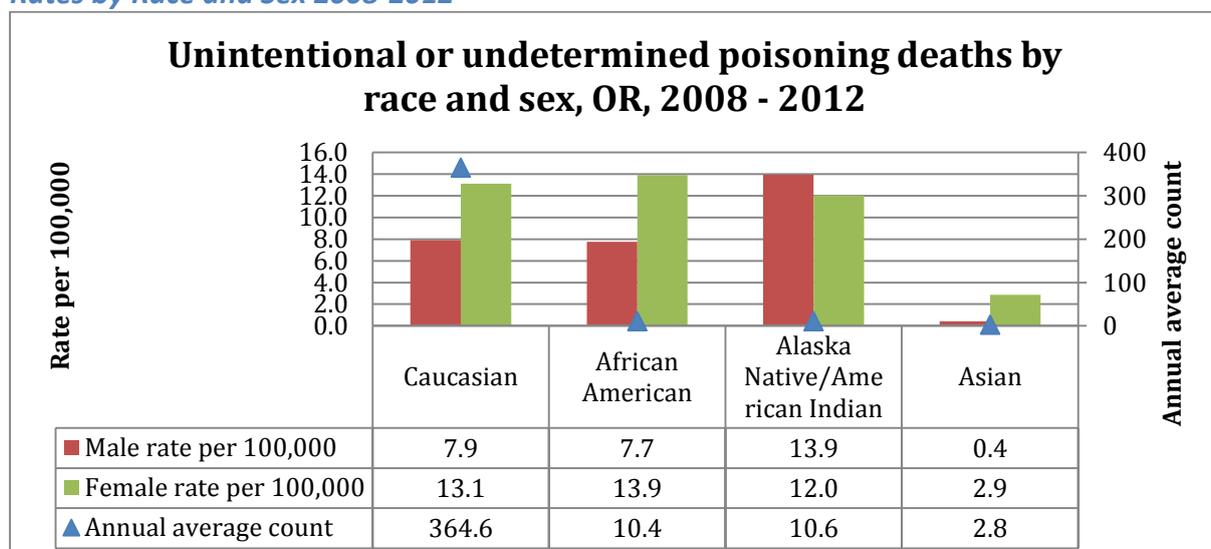
Figure 6. Five Year Average Unintentional and Undetermined Overdose Deaths and Death Rates by Age and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Note: All drugs, illicit, prescribed, and alcohol are included in this figure

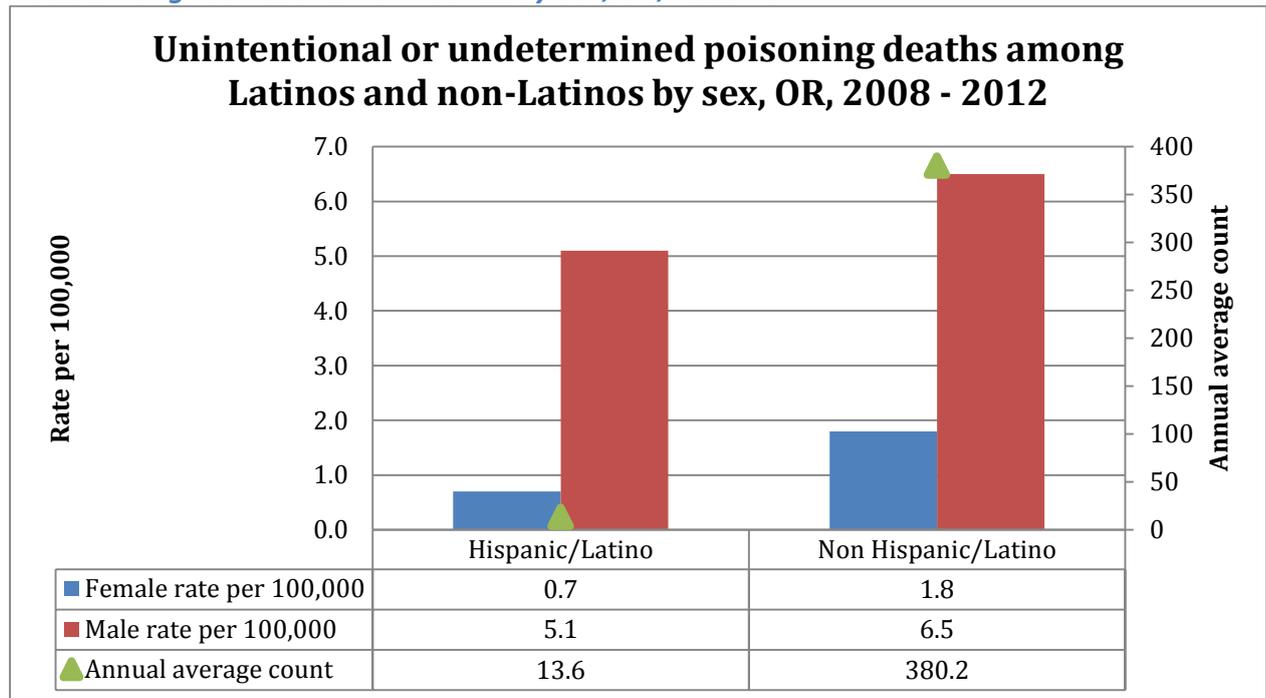
Figure 7. Five Year Average Unintentional and Undetermined Overdose Deaths and Death Rates by Race and Sex 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Note: All drugs, illicit, prescribed, and alcohol are included in this figure

Figure 8. Five Year Average Unintentional and Undetermined Overdose Deaths and Death Rates among Latinos and non-Latinos by Sex, OR, 2008-2012



Note: All drugs, illicit, prescribed, and alcohol are included in this figure

*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Note to Reader:

The following sections provide data on unintentional and undetermined drug deaths by drug type where the drug type is directly related to the death.

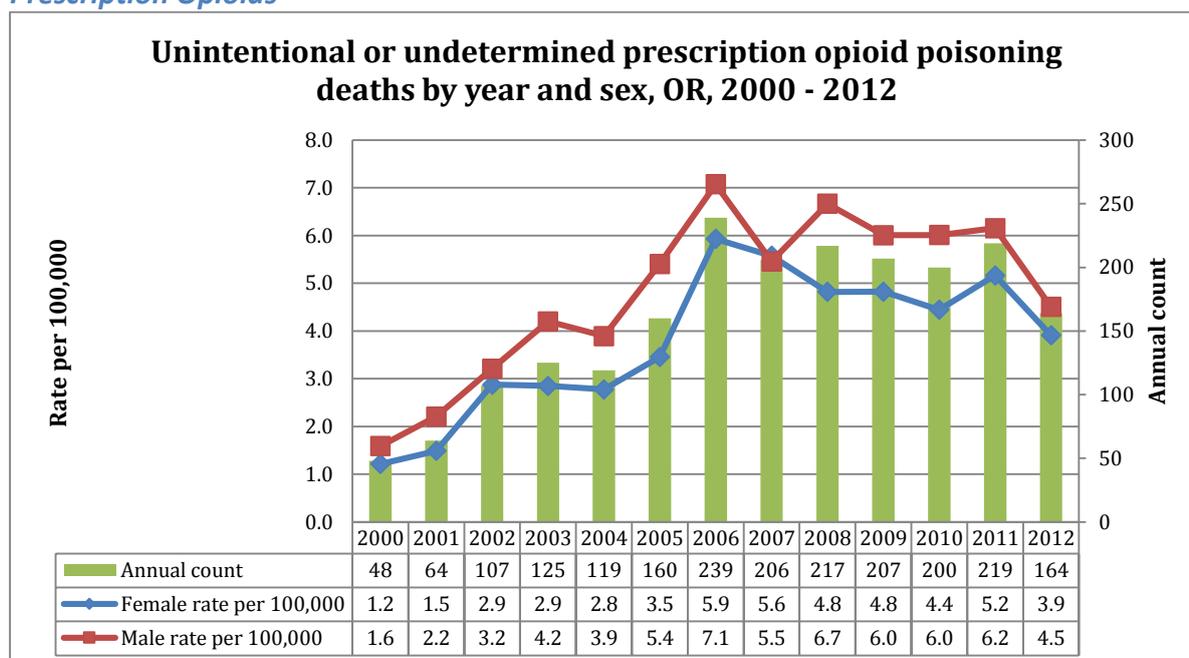
Because it is common for individuals to take more than one drug at the same time the overall count of 346 deaths in 2012 is not equal to the sum of the deaths by drug type (658).

This means that in the following sections individuals may be counted in more than one drug type category.

Unintentional and Undetermined Prescription Opioid¹ Overdose Deaths

Prescription opioids comprise a group of drugs that include all synthetic opioids. There were 164 unintentional and undetermined prescription opioid overdose deaths among Oregonians in 2012. Unintentional and undetermined overdose death rates due to prescription opioids peaked in 2006. The death rate leveled and decreased to 4.2 per 100,000 in 2012. The rate of death in 2012 is three times higher than the rate in 2000. PDMP data report 908,000 individuals in Oregon received at least one prescription for an opioid in 2012.

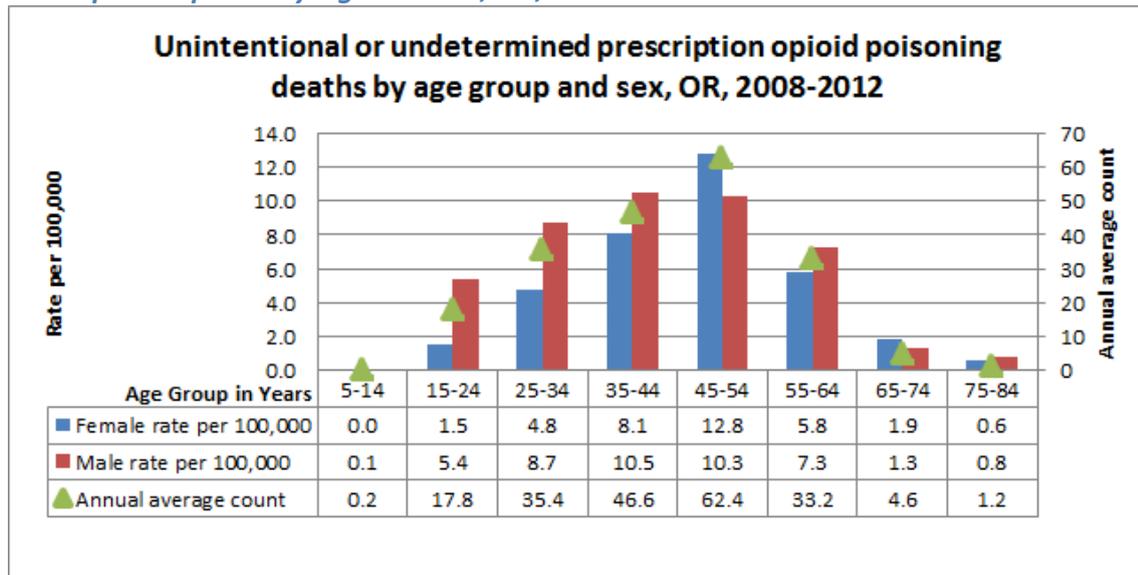
Figure 9. Unintentional and Undetermined Overdose Deaths and Death Rates due to Prescription Opioids



The highest average death rates (from 2008-2012) occurred among Oregonians ages 45-54 years. Males had higher rates of death due to prescription opioid poisoning for all age groups except ages 45-54 years.

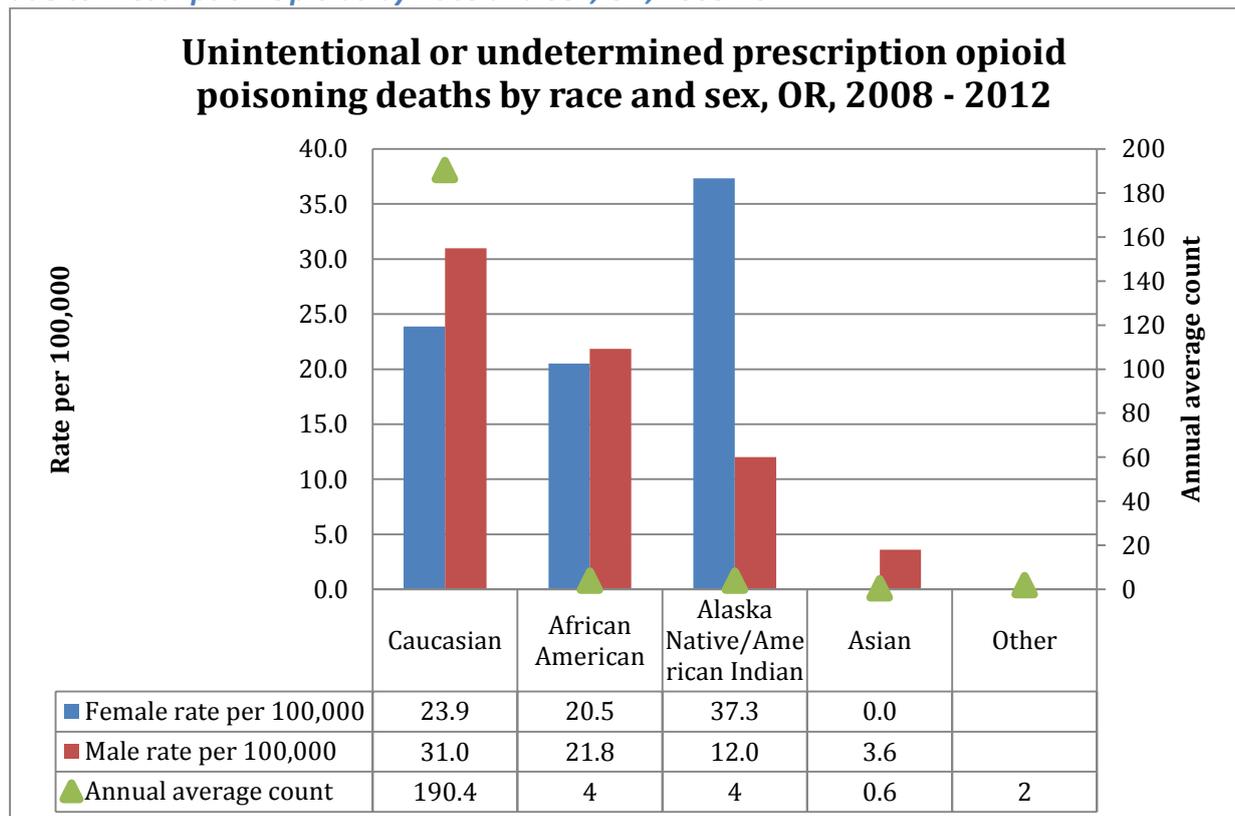
¹ Opioids are synthetic drugs used for pain relief. Examples include hydrocodone (Vicodin®), oxycodone (OxyContin®, Percocet®), fentanyl (Duragesic®, Fentora®), methadone, and codeine. Although the term *opiate* is often used as a synonym for *opioid*, the term *opiate* is properly limited to the natural alkaloids found in the resin of the opium poppy, while *opioid* refers to both opiates and synthetic substances. In this report prescribed controlled substance opioids exclude illicit drugs such as heroin. Heroin is included when all opioids are referenced in figures and tables.

Figure 10. Unintentional and Undetermined Overdose Deaths and Death Rates due to Prescription Opioids by Age and Sex, OR, 2008-2012*



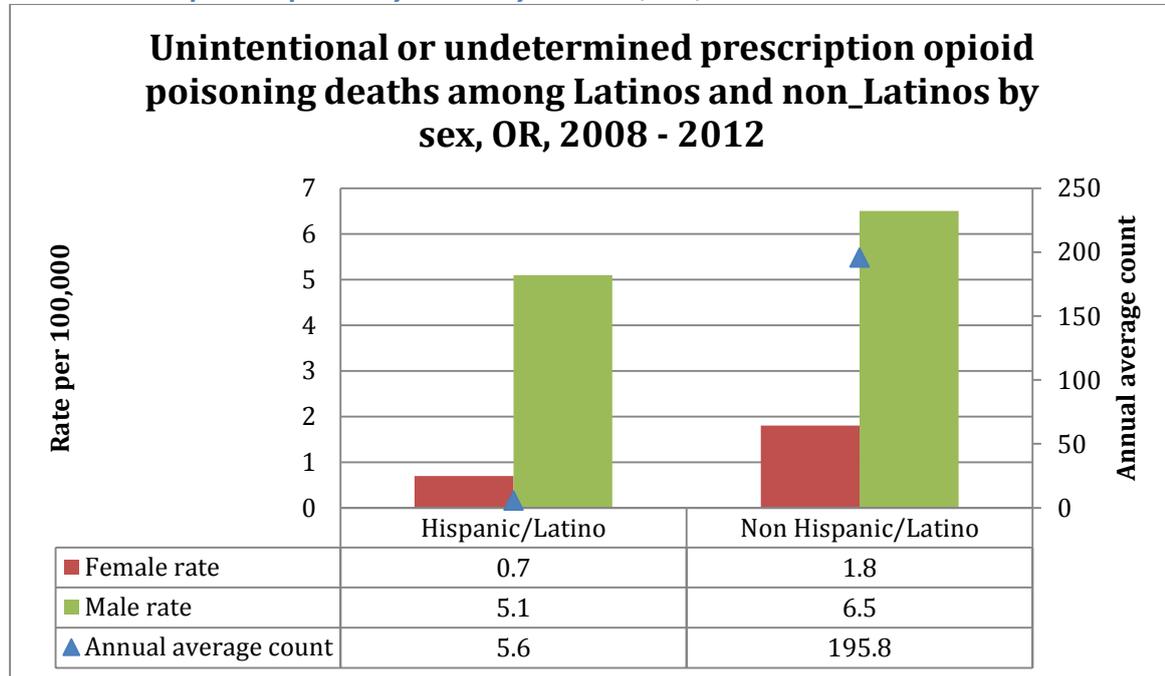
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 11. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Prescription Opioids by Race and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 12. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Prescription Opioids by Ethnicity and Sex, OR, 2008-2012

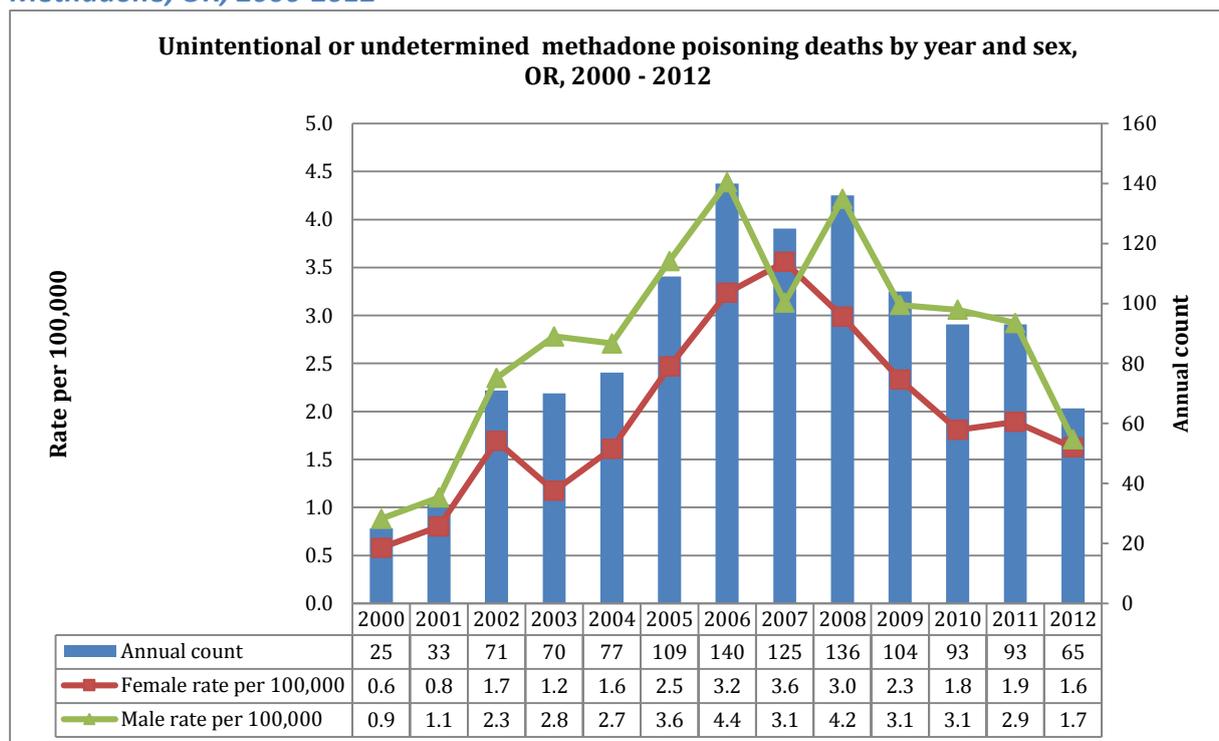


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Prescription Methadone² Overdose Deaths (Methadone Prescribed for Pain Relief)

Methadone (prescribed for pain) accounted for 65, (40%) of the 164 prescription opioid deaths in 2012. Methadone overdose death rates peaked in 2006 and have declined since 2006-2008. However, the rates in 2012 are nearly double the rates in 2000. PDMP data report that 16,259 individuals had at least one prescription for methadone in 2012.

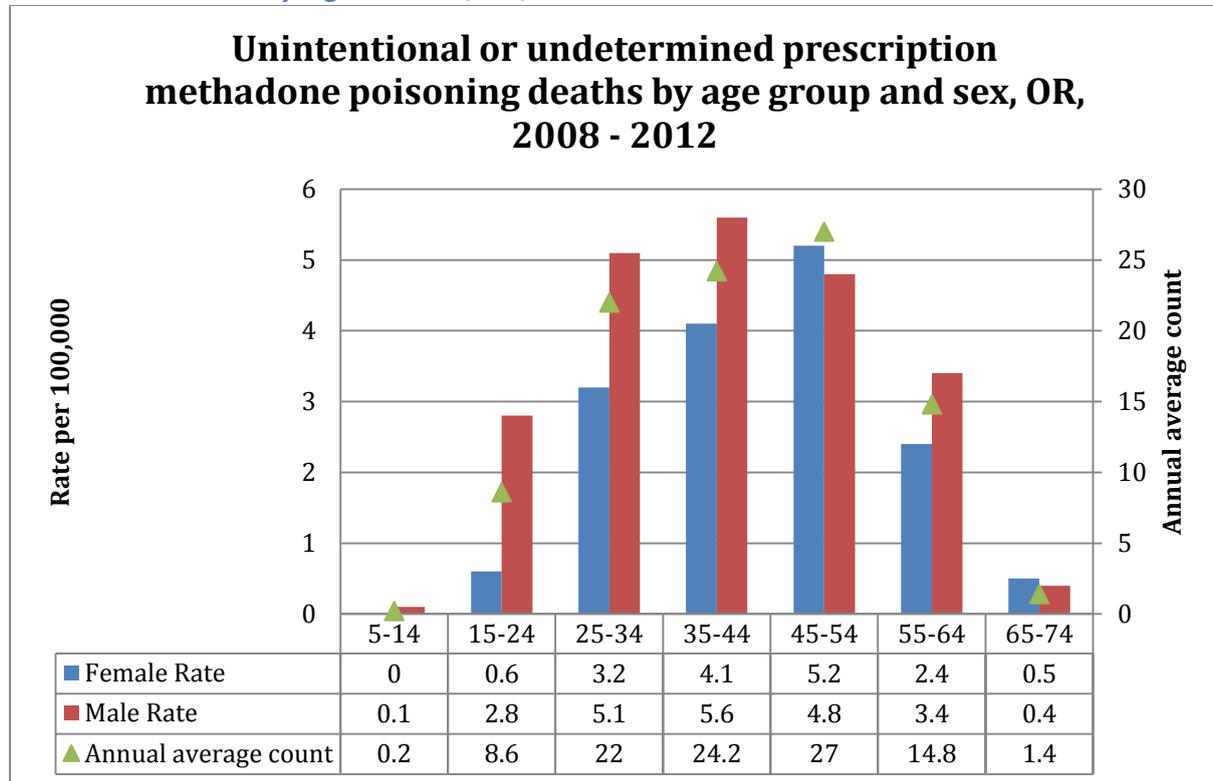
Figure 13. Unintentional and Undetermined Overdose Deaths and Death Rates due to Methadone, OR, 2000-2012



² Methadone is a synthetic opioid used medically to relieve pain and is also used in maintenance anti-addictive treatment for patients with opioid dependency. This report references methadone that is prescribed for pain relief. In this report methadone is segregated from other opioids due to the high risk of overdose associated with this long acting pain reliever.

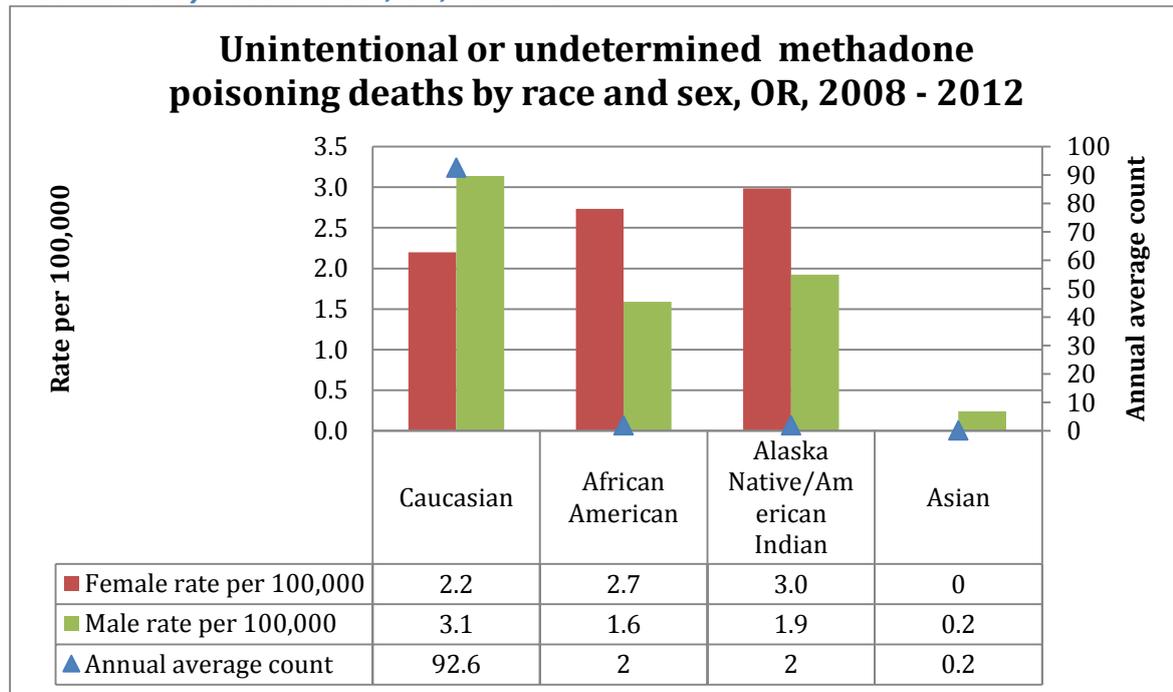
The highest five year average death rates during 2008-2012 were observed among Oregonians ages 25-54 years. Males are more likely to die from methadone overdose in all age groups except women ages 45-54 years.

*Figure 14. Unintentional and Undetermined Overdose Deaths and Average Death Rates due to Methadone by Age and Sex, OR, 2008-2012**



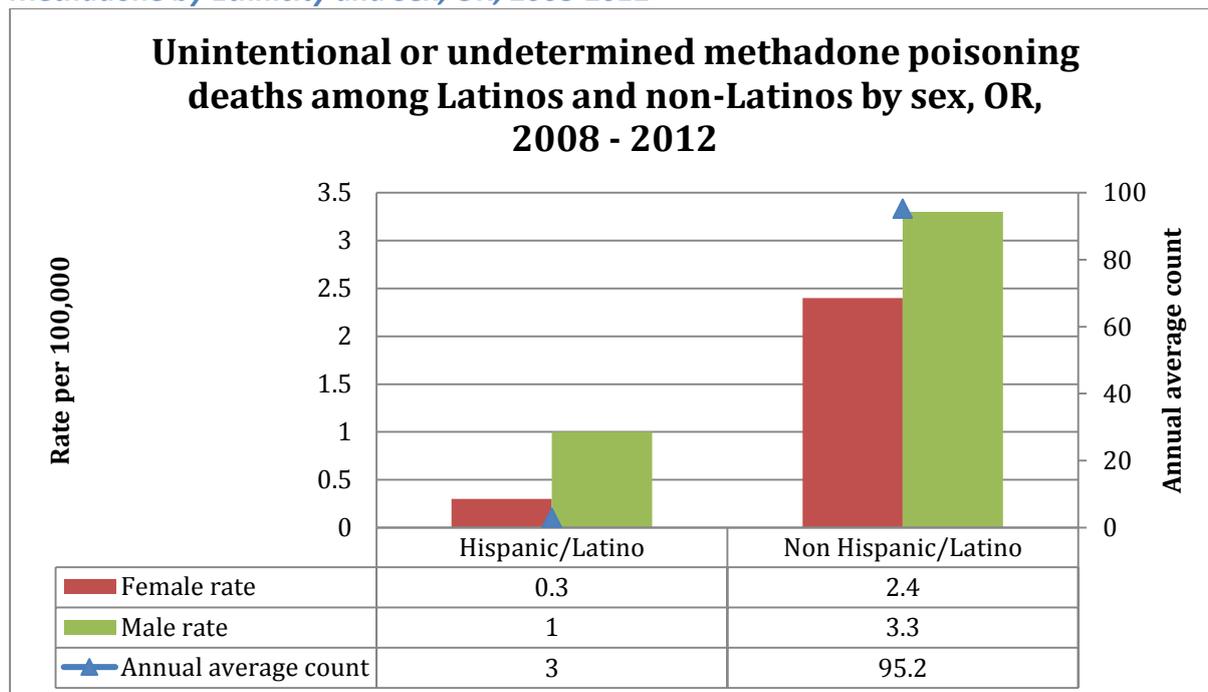
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 15. Unintentional and Undetermined Overdose Death and Death Rates due to Methadone by Race and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 16. Unintentional and Undetermined Overdose Death and Death Rates due to Methadone by Ethnicity and Sex, OR, 2008-2012*

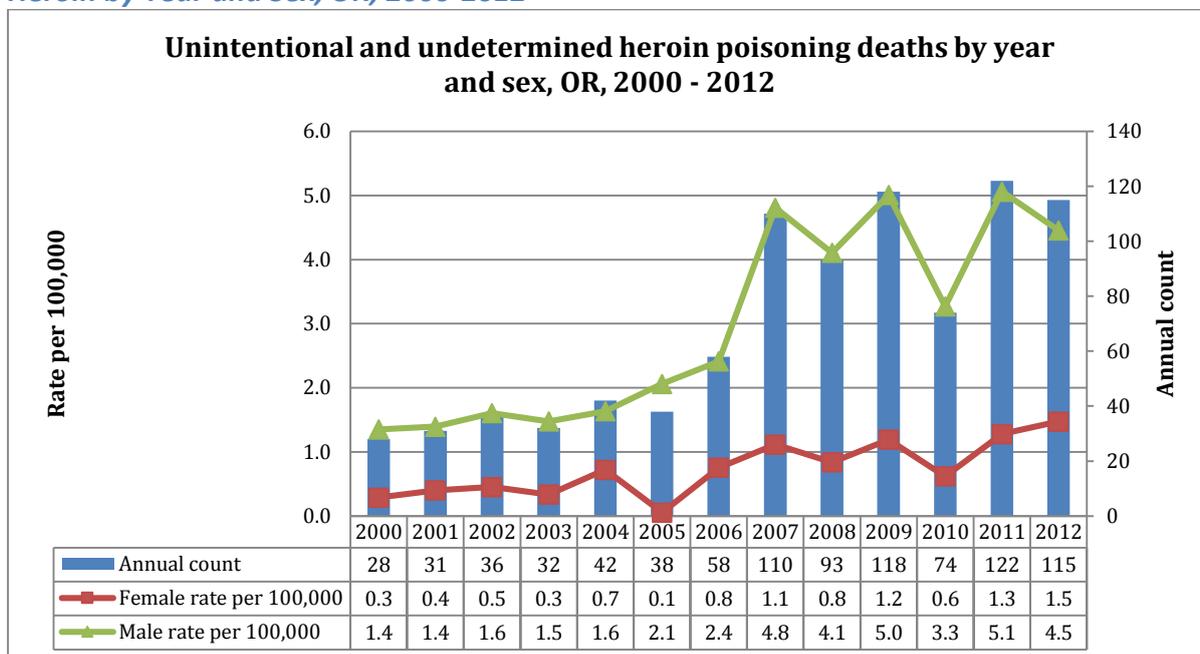


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Heroin Overdose Deaths

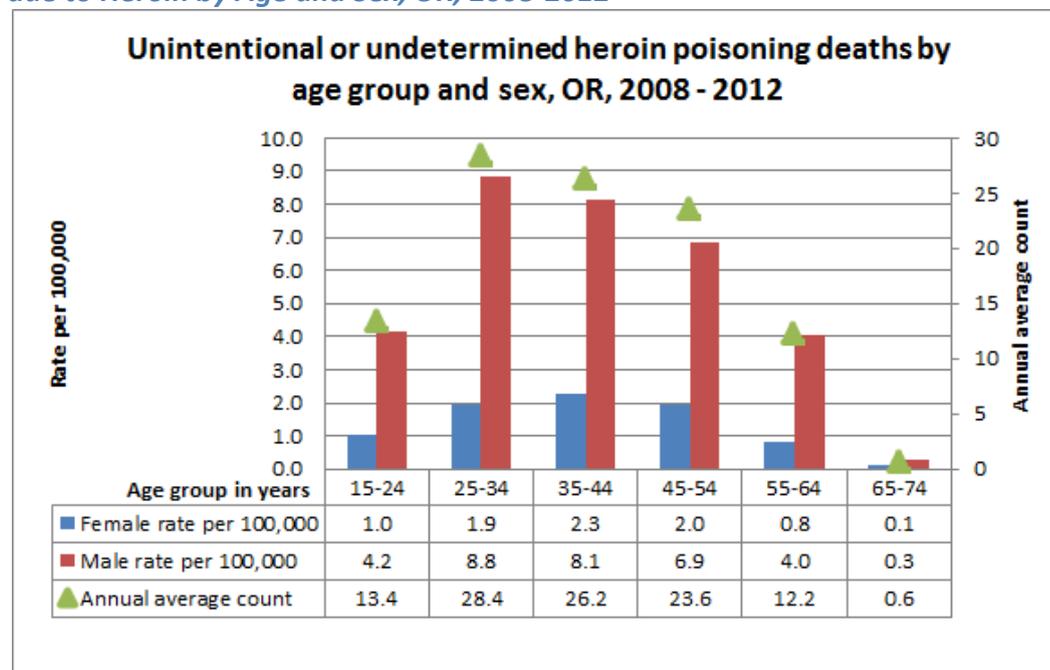
Heroin death rates have increased steadily since 2000.

Figure 17. Unintentional and Undetermined Overdose Deaths and Death Rates due to Heroin by Year and Sex, OR, 2000-2012



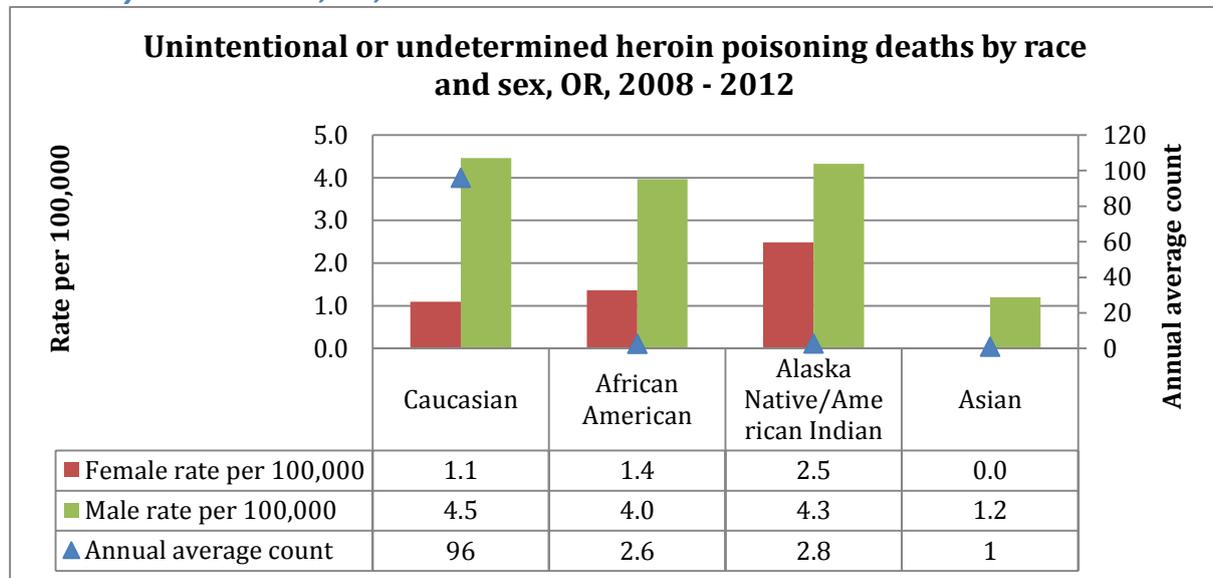
During 2008-2012, heroin overdose deaths and death rates were highest among males ages 25-34 years (Figure 18).

*Figure 18. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Heroin by Age and Sex, OR, 2008-2012**



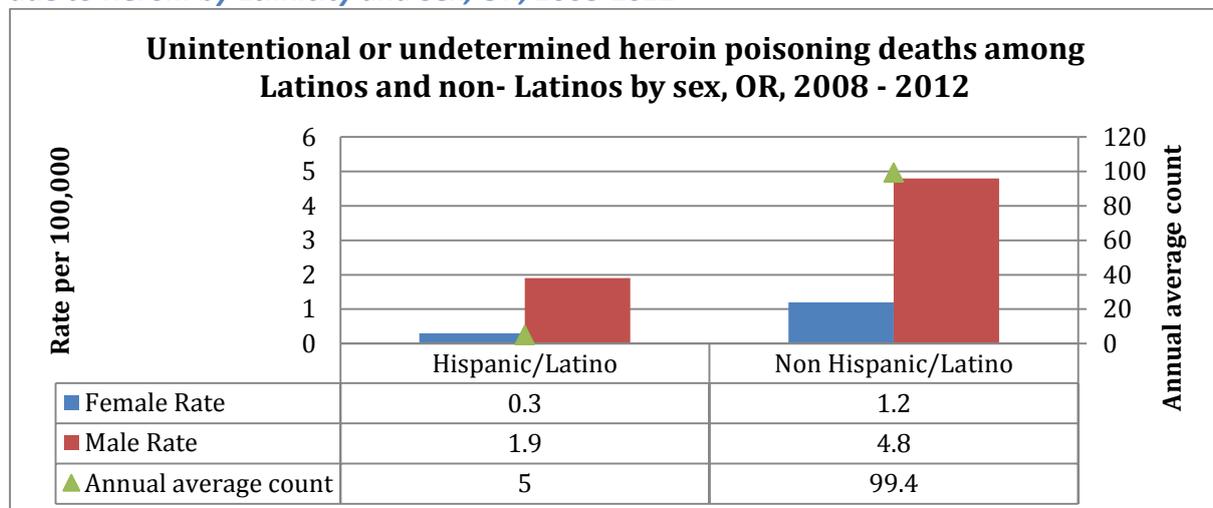
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 19. Unintentional and Undetermined Overdose Death and Death Rates due to Heroin by Race and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 20. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Heroin by Ethnicity and Sex, OR, 2008-2012*

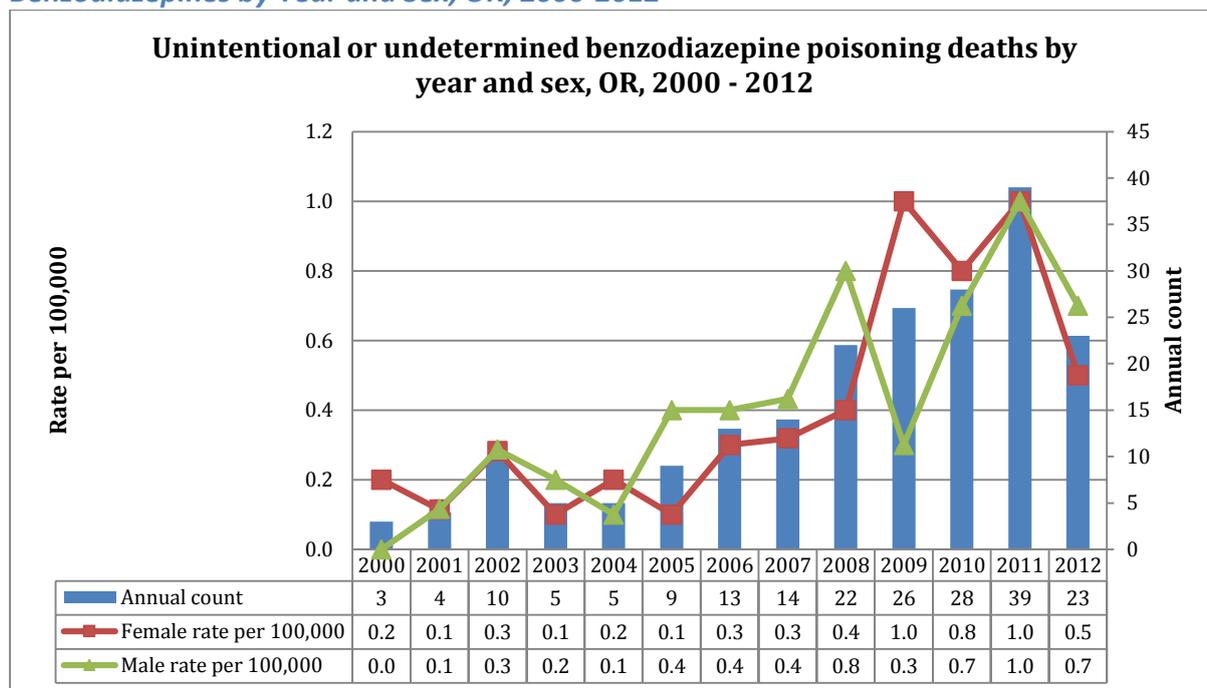


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Benzodiazepine³ Overdose Deaths

Benzodiazepine overdose deaths all occurred in combination with other drugs, such as alcohol or an opioid. Deaths and death rates rose between 2000 and 2011 with a decrease in 2012. PDMP data report 413,754 individuals in Oregon received at least one prescription for a benzodiazepine in 2012.

Figure 21. Unintentional and Undetermined Overdose Deaths and Death Rates due to Benzodiazepines by Year and Sex, OR, 2000-2012

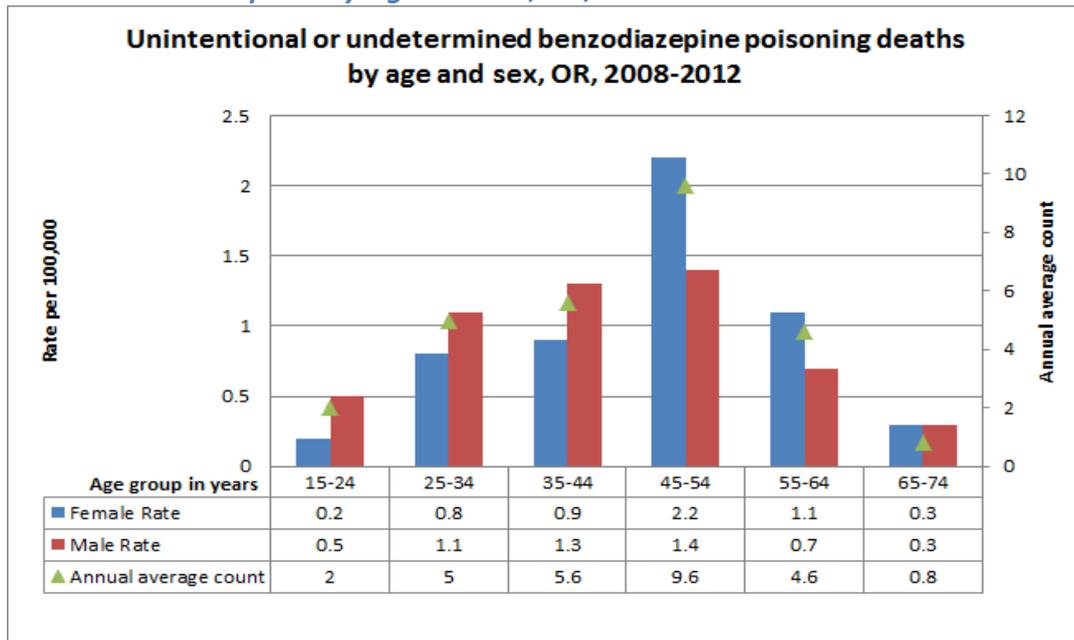


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

During 2008-2012, benzodiazepine overdose-related deaths rates were highest among those aged 45-54 years. Males had higher rates of death due to benzodiazepine related overdose for ages 15-44 years; death rates among females were higher than males for those aged 45 years and older (Figure 22).

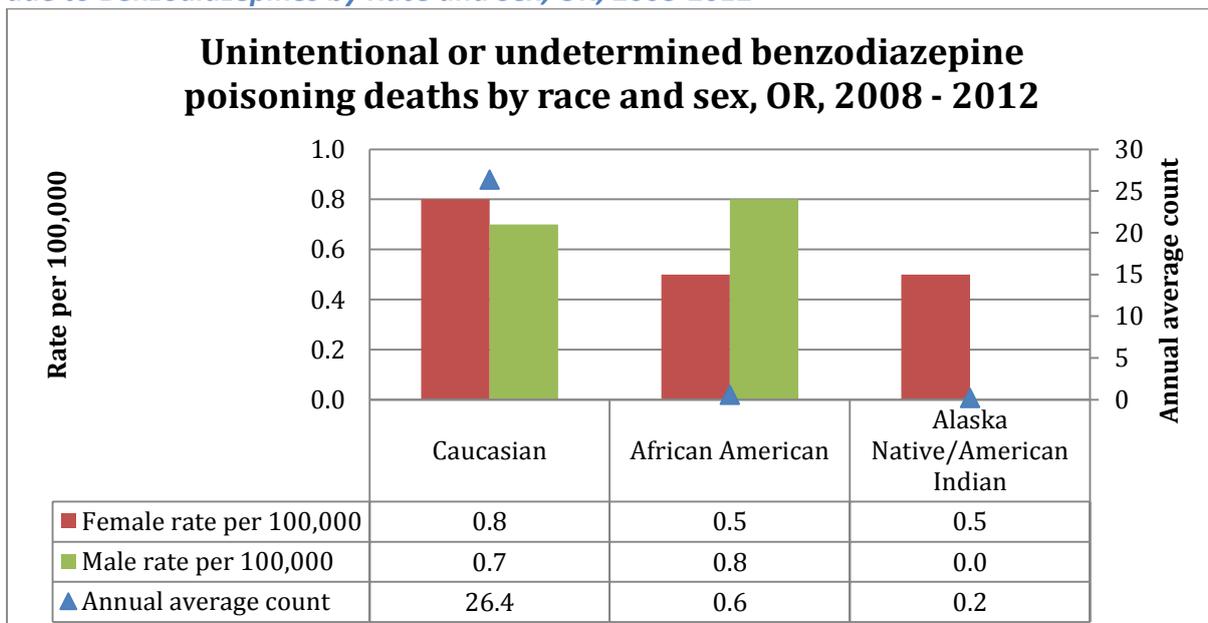
³ Benzodiazepines are medicines that help relieve nervousness, tension, and other symptoms by slowing the central nervous system. They possess sedative, hypnotic, anxiolytic, anticonvulsant, muscle relaxant and amnesic actions. These medicines are grouped together in the coding of external cause of injury in the International Classification of Diseases, 10th edition (ICD-10) and in the ICD 9th edition Clinical Modification (ICD-9 CM). Central nervous system depressants used as sedatives, to induce sleep, prevent seizures, and relieve anxiety. Examples include alprazolam (Xanax®), diazepam (Valium®), and lorazepam (Ativan®).

Figure 22. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Benzodiazepines by Age and Sex, OR, 2008-2012*



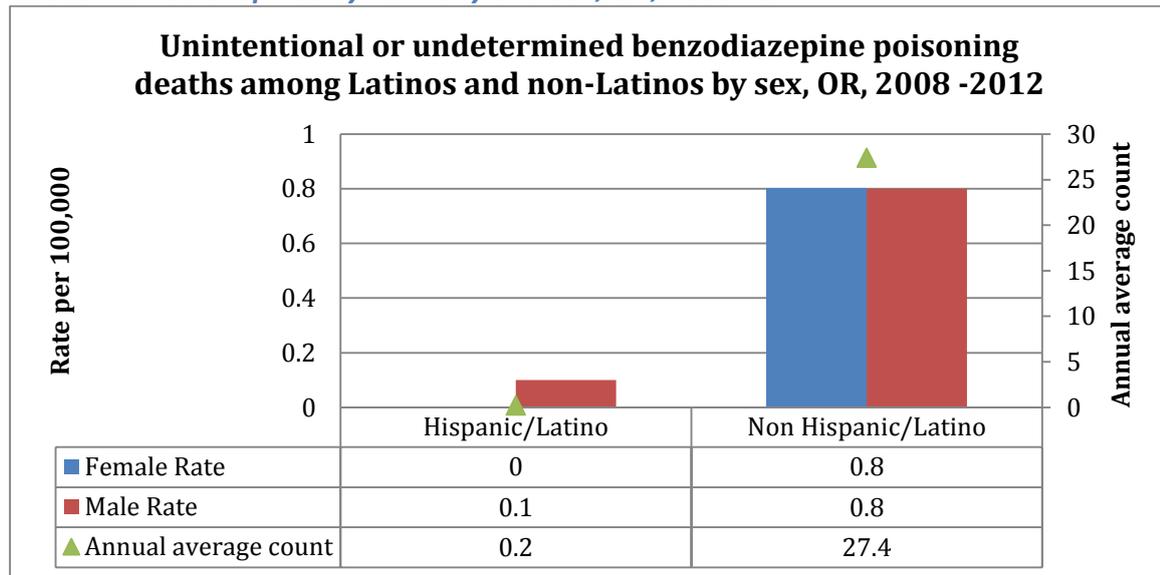
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 23. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Benzodiazepines by Race and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 24. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Benzodiazepines by Ethnicity and Sex, OR, 2008-2012*

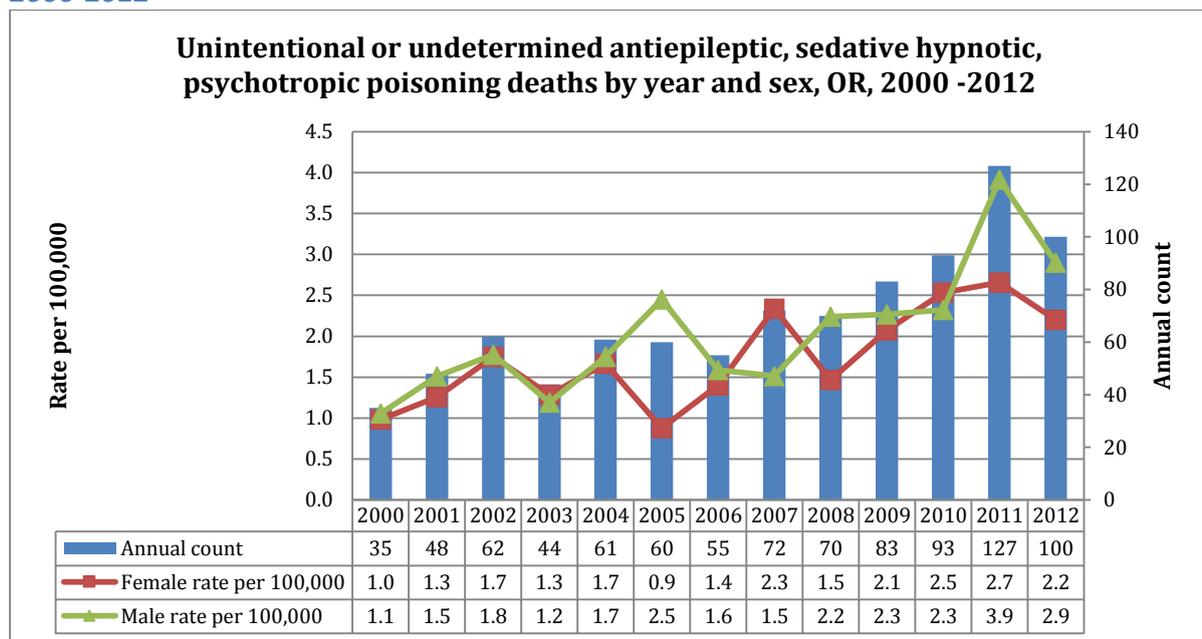


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Deaths and Death Rates due to Antiepileptic, Sedative-hypnotic, Anti-Parkinson’s, Psychotropic⁴ Drugs

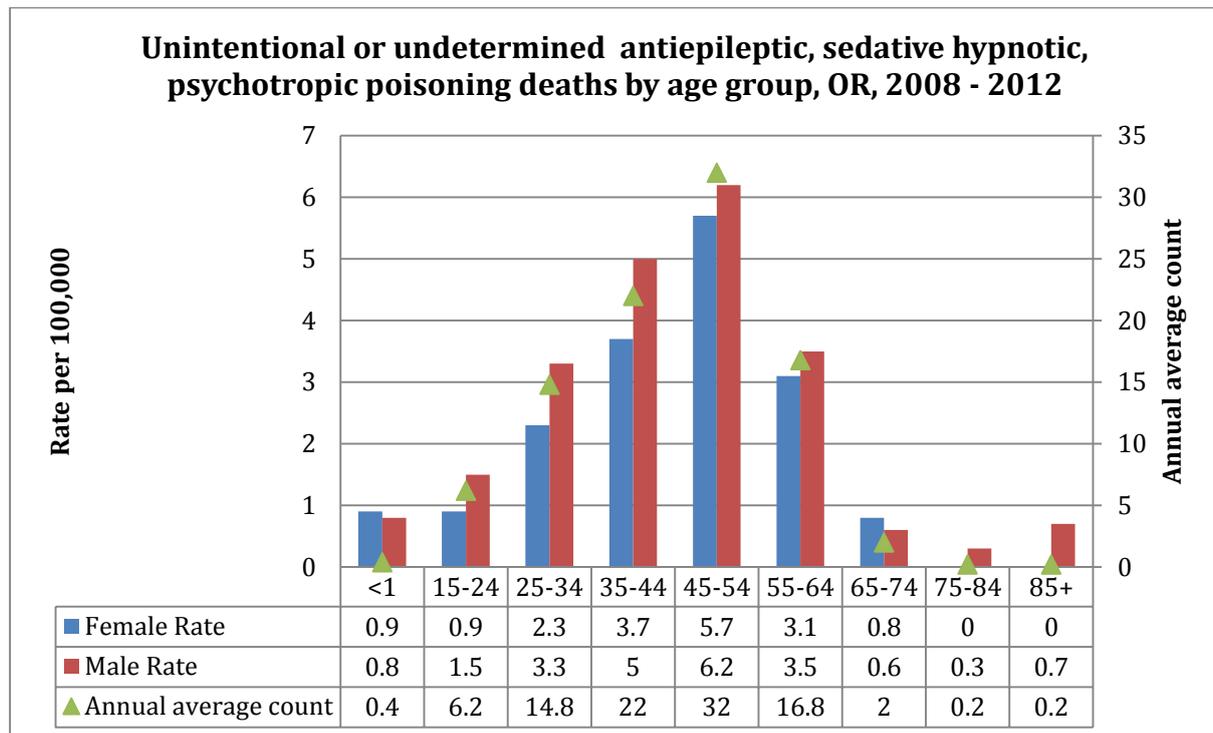
Deaths and death rates due to antiepileptic, sedative-hypnotic, anti-Parkinson’s, psychotropic drugs peaked in 2011.

Figure 25. Unintentional and Undetermined Overdose Deaths and Death Rates due to Antiepileptic, Sedative-hypnotic, Anti-Parkinson, Psychotropic Drugs by Year and Sex, OR, 2000-2012



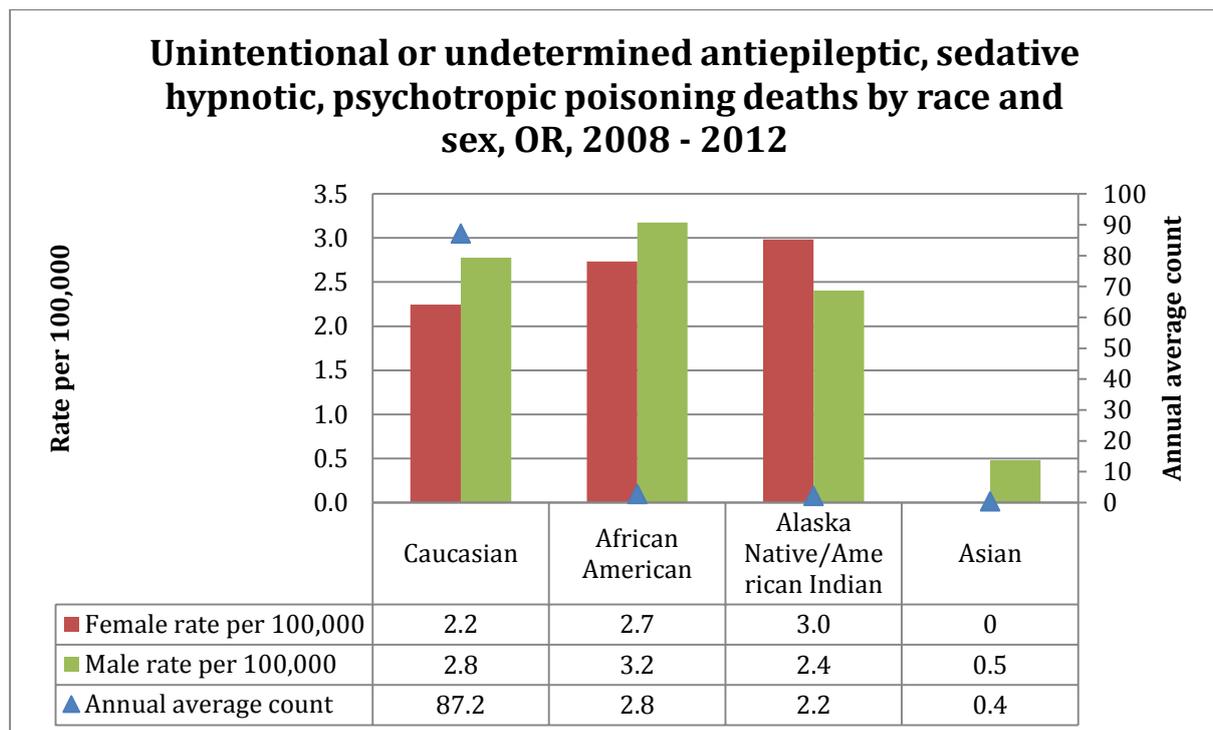
⁴ Antiepileptic, sedative hypnotic, antiparkinson, and psychotropic drugs work on the central nervous system to treat anxiety, epilepsy, insomnia, and mental illness.

Figure 26. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Antiepileptic, Sedative-hypnotic, Anti-Parkinson, Psychotropic Drugs by Age and Sex, OR, 2008-2012*



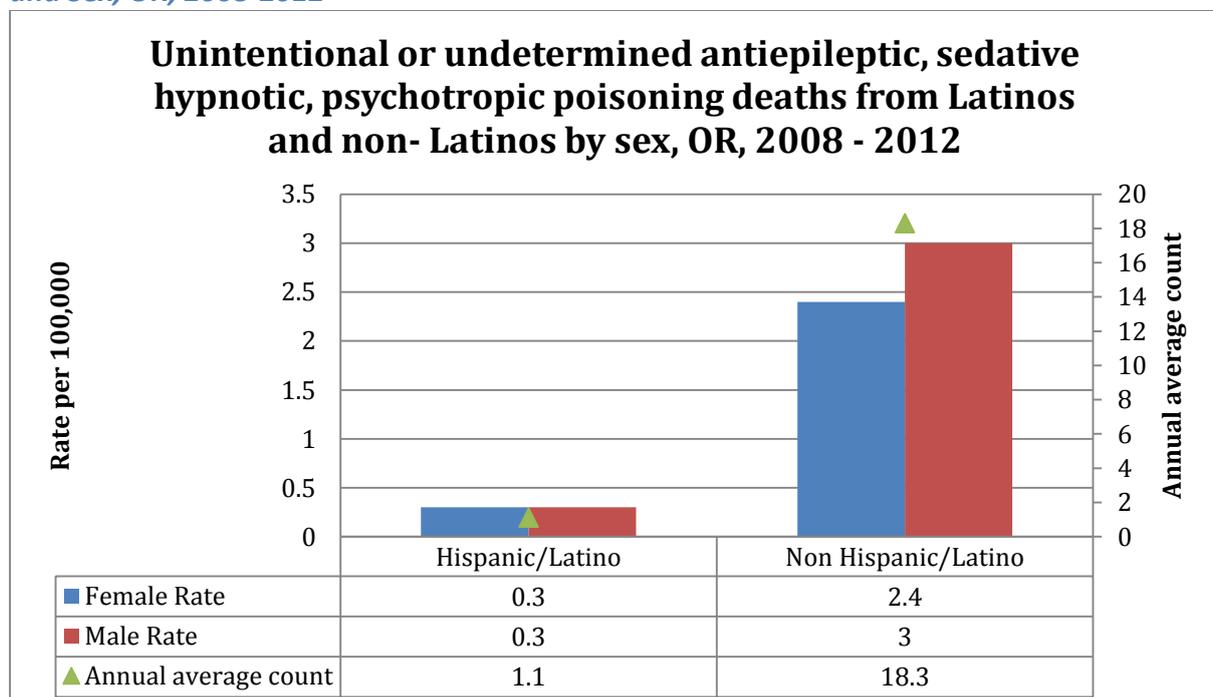
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 27. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Antiepileptic, Sedative-hypnotic, Anti-Parkinson, Psychotropic Drugs by Race and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 28. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Antiepileptic, Sedative-hypnotic, Anti-Parkinson, Psychotropic Drugs by Ethnicity and Sex, OR, 2008-2012*

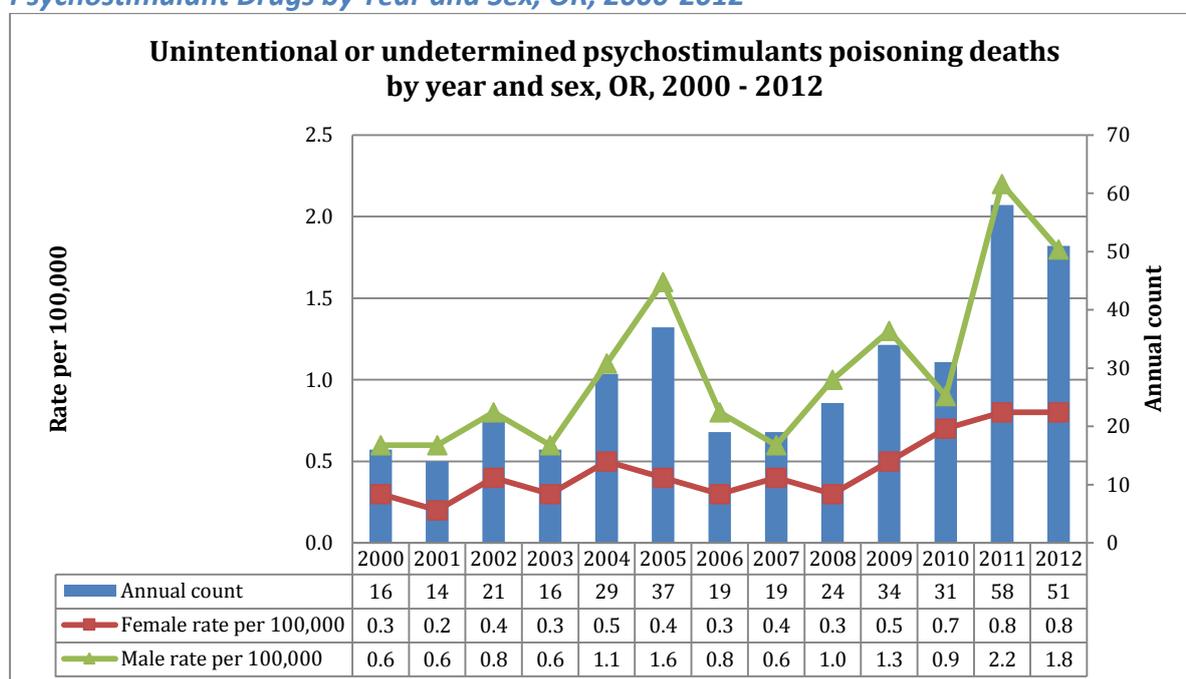


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Deaths and Death Rates due to Psychostimulant⁵ Drugs

Unintentional and undetermined overdose death rates due to psychostimulant drugs peaked in 2011. Higher death rates occurred consistently among males. The PDMP data report that 88,647 individuals received at least one prescription for methylphenidate or Adderall (the most often prescribed psychostimulants). This drug type also includes illicit stimulants.

Figure 29. Unintentional and Undetermined Overdose Deaths and Death Rates due to Psychostimulant Drugs by Year and Sex, OR, 2000-2012

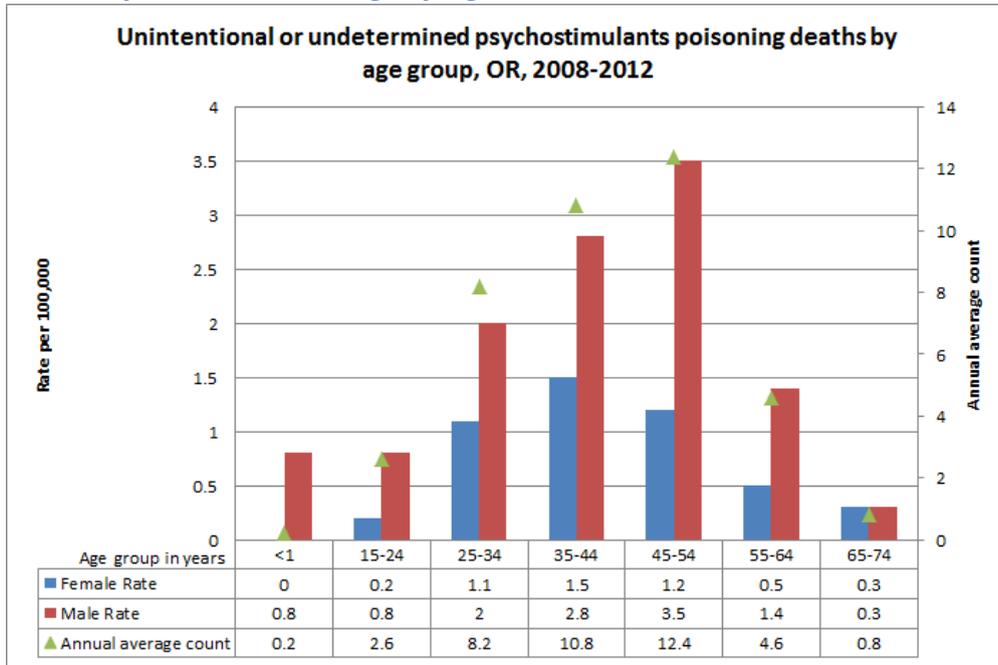


⁵ Psychostimulants are controlled substances that stimulate the central nervous system and induce temporary increase in psychomotor activity and can elevate mood. Central nervous system stimulants are used to treat attention deficit hyperactivity disorder (ADHD). Examples include dextroamphetamine/amphetamine (Adderall®, Adderall XR®), and methylphenidate (Ritalin®, Concerta®). Illicit psychostimulants include cocaine, amphetamine, and methamphetamine. The ICD - 10 and 9 CM classify psychostimulants as a group of prescribed medicines and illicit drugs that stimulate the central nervous system.

*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

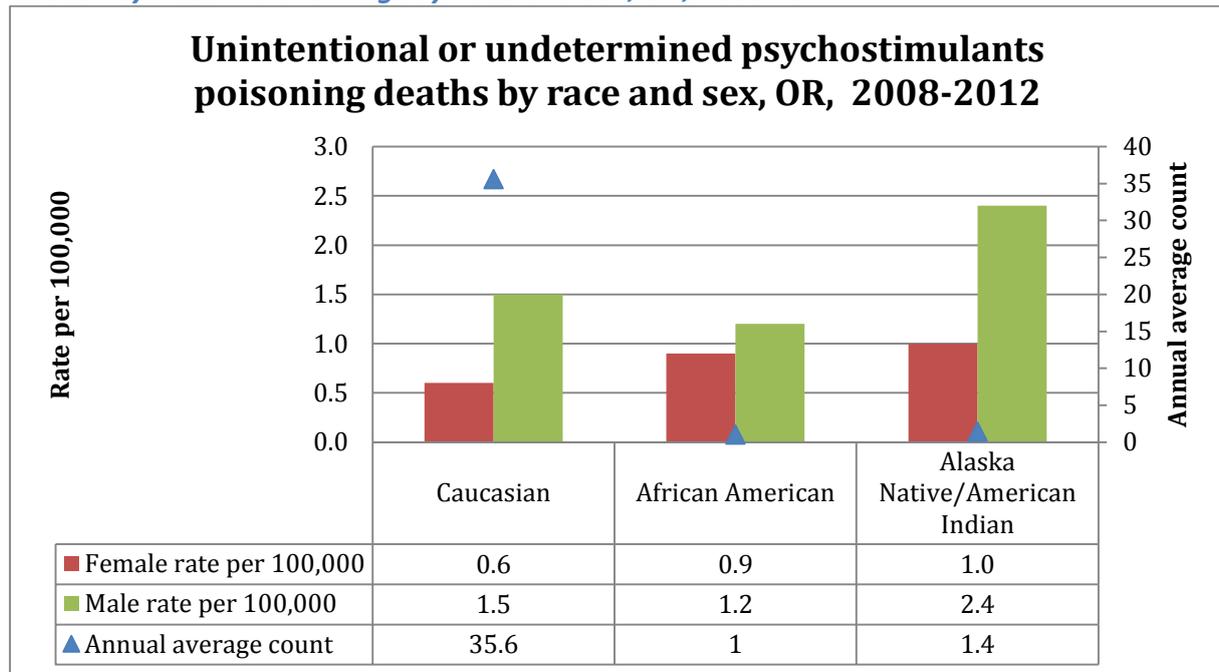
The highest death rates due to unintentional and undetermined overdose due to psychostimulants occurred among males aged 45-54 years during 2008-2012.

Figure 30. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Psychostimulant Drugs by Age and Sex, OR, 2000-2012*



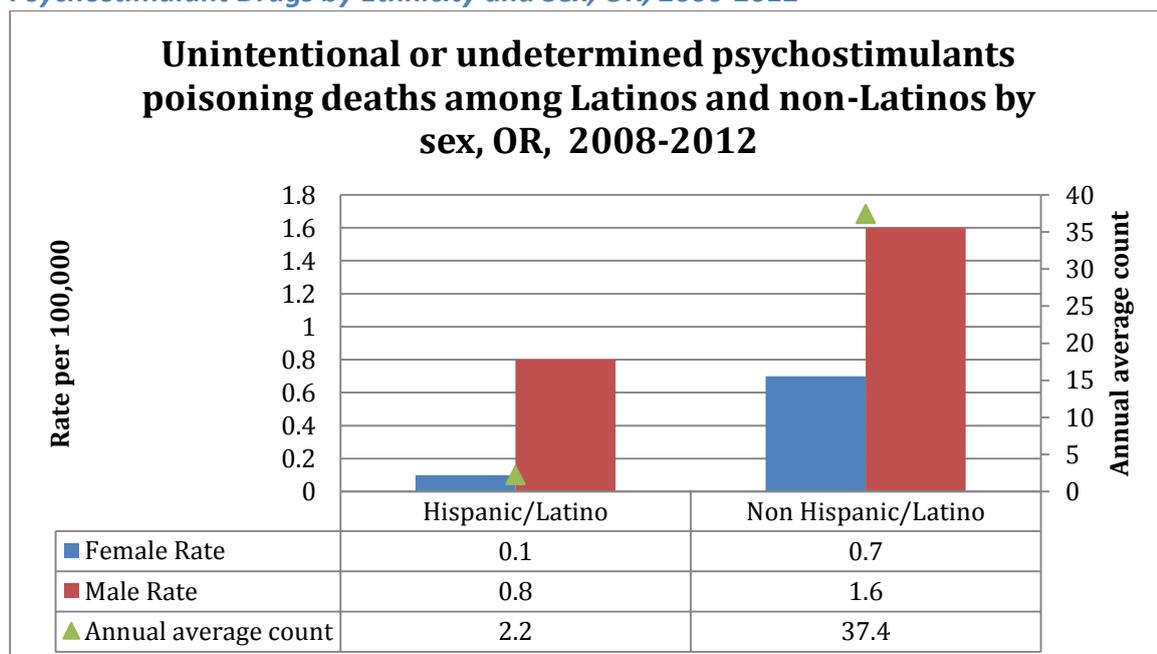
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 31. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Psychostimulant Drugs by Race and Sex, OR, 2000-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

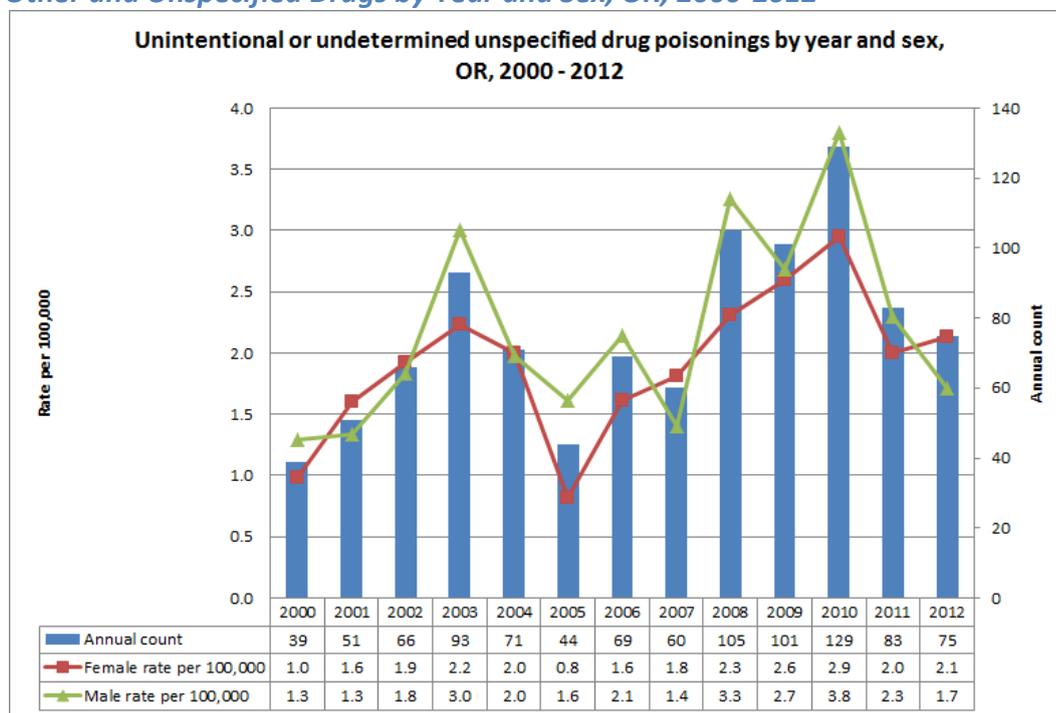
Figure 32. Unintentional and Undetermined Overdose Deaths and Death Rates due to Psychostimulant Drugs by Ethnicity and Sex, OR, 2000-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Deaths and Death Rates due to Other and Unspecified⁶ Drugs

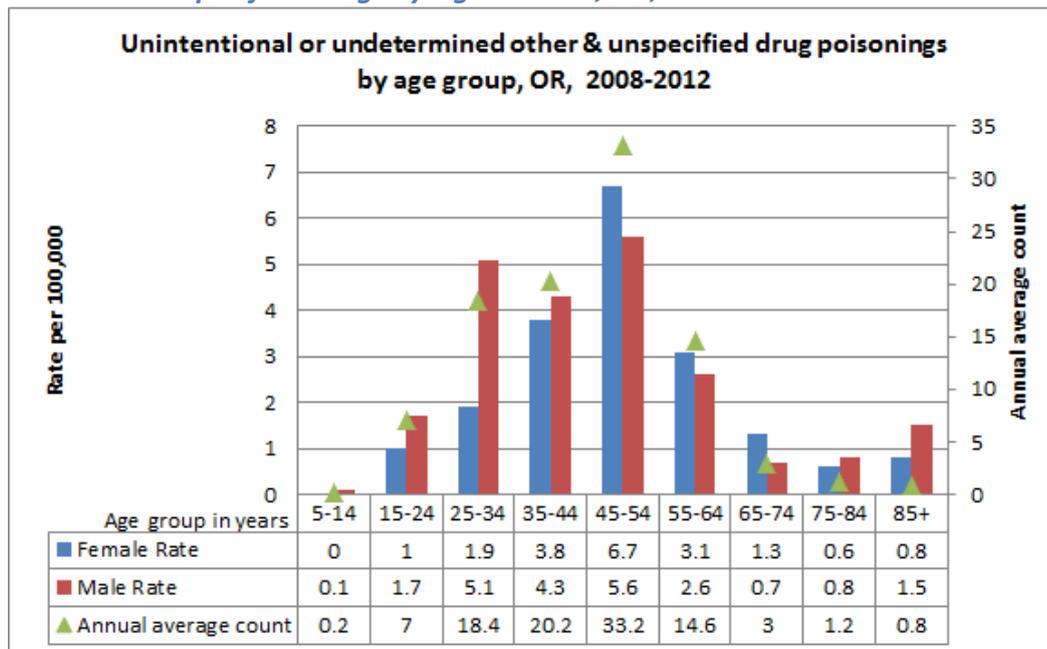
Figure 33. Unintentional and Undetermined Overdose Deaths and Death Rates due to Other and Unspecified Drugs by Year and Sex, OR, 2000-2012



⁶ *Other specified drugs*- This classification is used to group drugs into a single category when the cell sizes for the different drugs are small. This classification is used in this report to ensure that include all cases of overdose death are included while still highlighting the drugs that most commonly lead to overdose deaths when sufficient information is available.

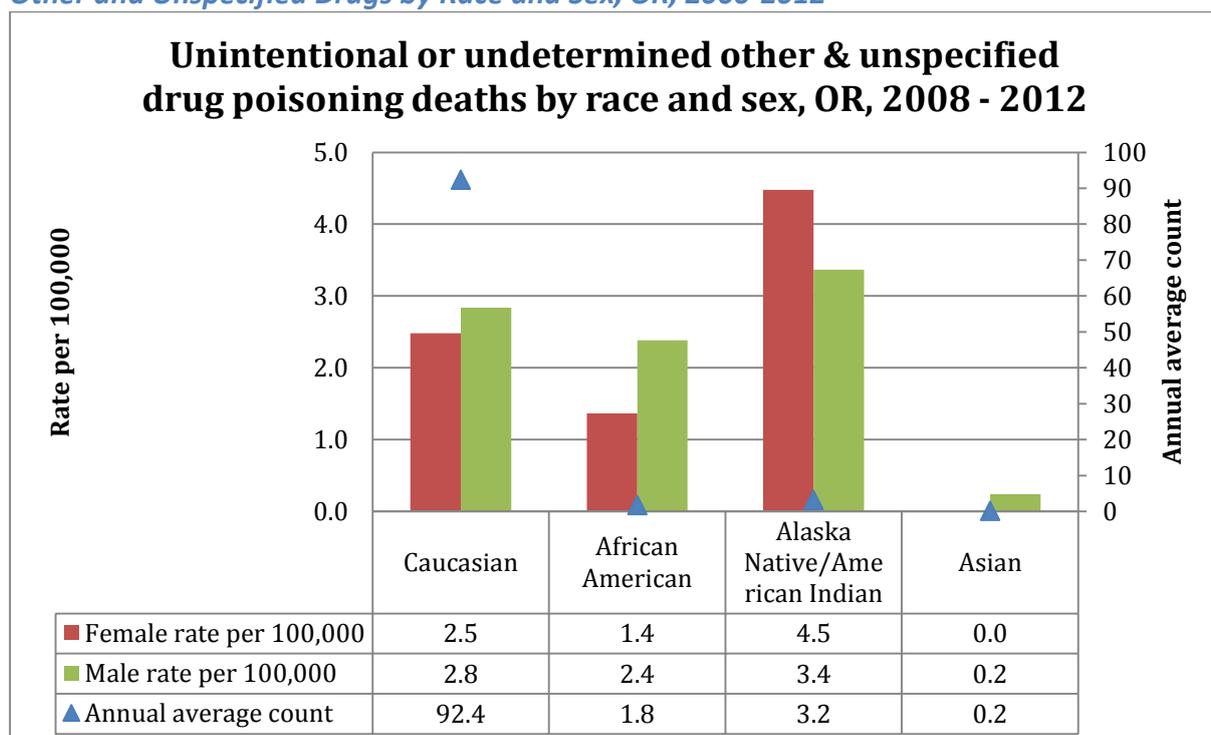
Other unspecified drugs- This classification is used to group together drugs into a single category when there is no specification of the drug that caused the overdose or poisoning. This classification is used in this report to ensure that all cases of overdose deaths are included, while still highlighting the drugs that most commonly lead to overdose deaths, when sufficient information is available.

Figure 34. Unintentional and Undetermined Overdose Deaths and Death Rates due to Other and Unspecified Drugs by Age and Sex, OR, 2000-2012*



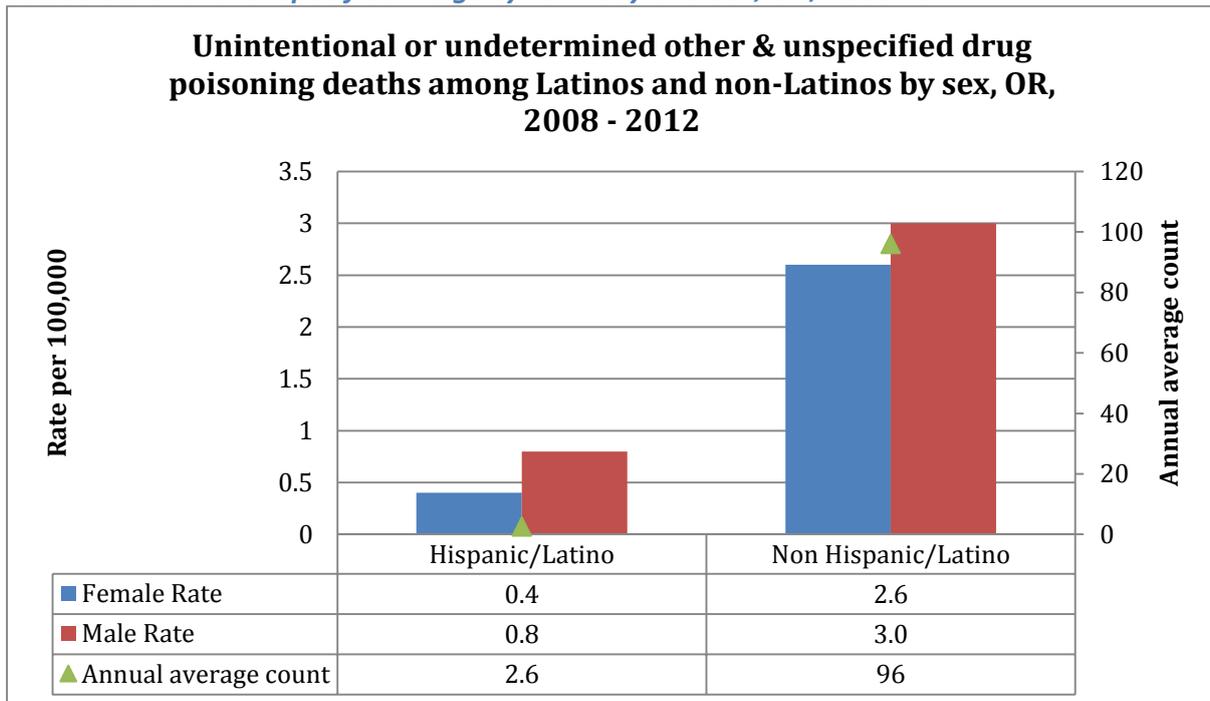
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 35. Unintentional and Undetermined Overdose Deaths and Death Rates due to Other and Unspecified Drugs by Race and Sex, OR, 2000-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 36. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Other and Unspecified Drugs by Ethnicity and Sex, OR, 2000-2012*



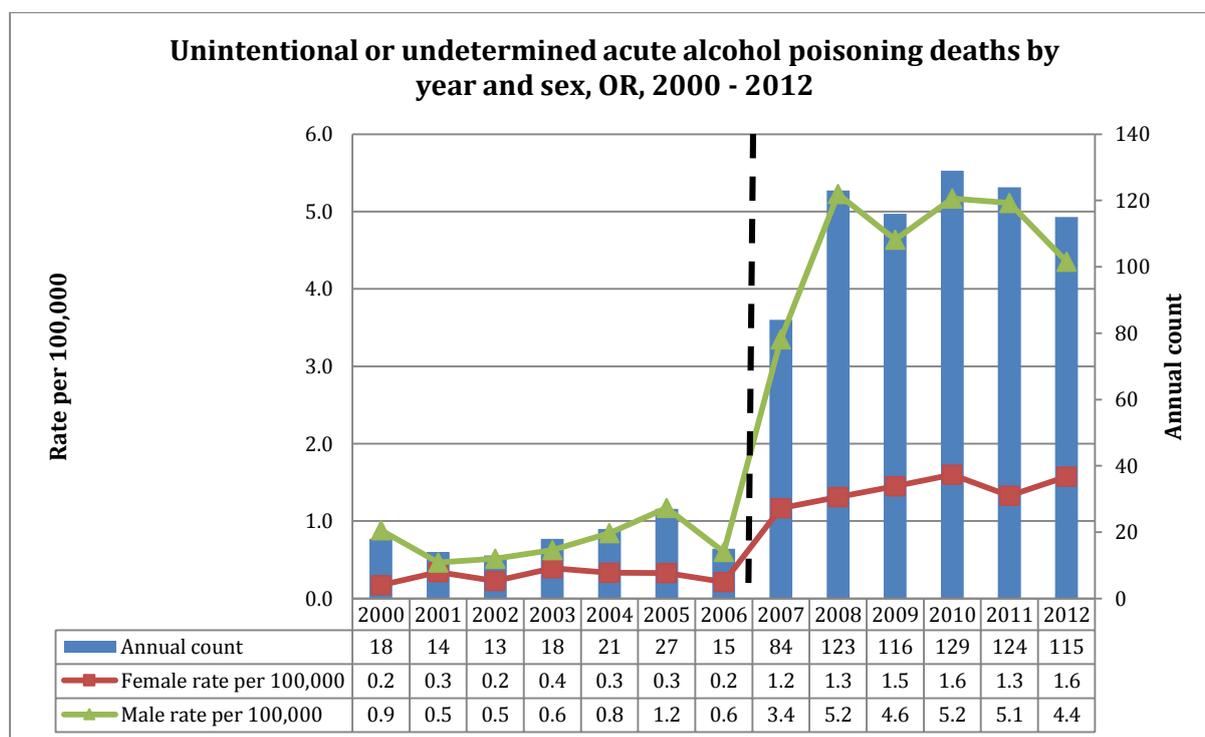
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Deaths and Death Rates due to Acute Alcohol Poisoning

Acute alcohol poisoning deaths and death rates were stable between 2000 and 2006 and between 2007 and 2012. In 2007 a shift in coding methods accounts for the variance in counts and rates between the two periods. In 2006, the World Health Organization’s Mortality Reference Group ratified a major mortality rule change to the ICD-10 classification system for accidental poisoning in drug/alcohol dependency. Pre-2007, the underlying cause was coded to F10-F19 in the mental and behavioral disorders chapter of ICD-10. After 2006, if the death certificate has language that includes words that would have resulted in an underlying cause code of F10-F19 with a 4th digit of ‘0’, the new rule results in coding to an underlying external poisoning code for alcohol instead of a mental and behavioral disorder code. The effect of this coding change was a dramatic increase in the rate of acute alcohol poisoning cases coded to X45 in death certificate data beginning in 2007. This change in coding allows us to observe more accurately the burden of death due to unintentional and undetermined acute alcohol poisoning.

The National Survey on Drug Use and Health survey data indicate that 59 percent of Oregonians aged 12 years and older reported alcohol use in the past month. Binge alcohol use was reported among 22.4 percent of Oregonians 12 years and older; 7.8 percent of Oregonians aged 12-17 years; 39.4 percent among Oregonians aged 18-25 years; and 21.33 among Oregonians aged 26 years and older.

*Figure 37. Unintentional and Undetermined Overdose Deaths and Death Rates due to Acute Alcohol Poisoning by Year and Sex, OR, 2000-2012**

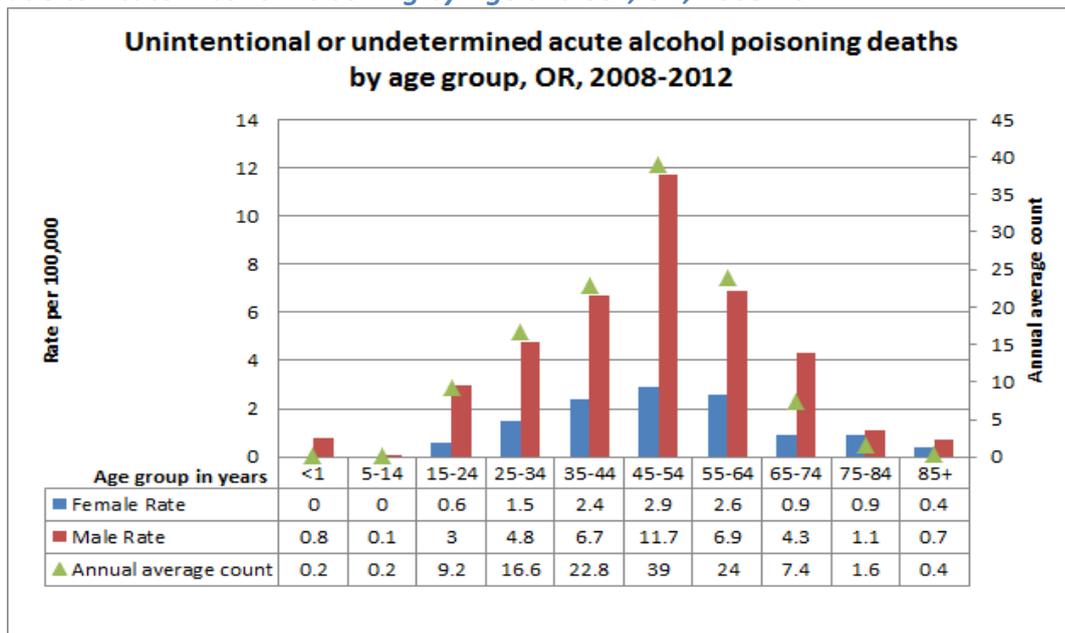


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Note: There was a change in methods and reporting at the National Center for Health Statistics from 2007 forward. Only rates from 2000 to 2006 and 2007 to 2012 are comparable.

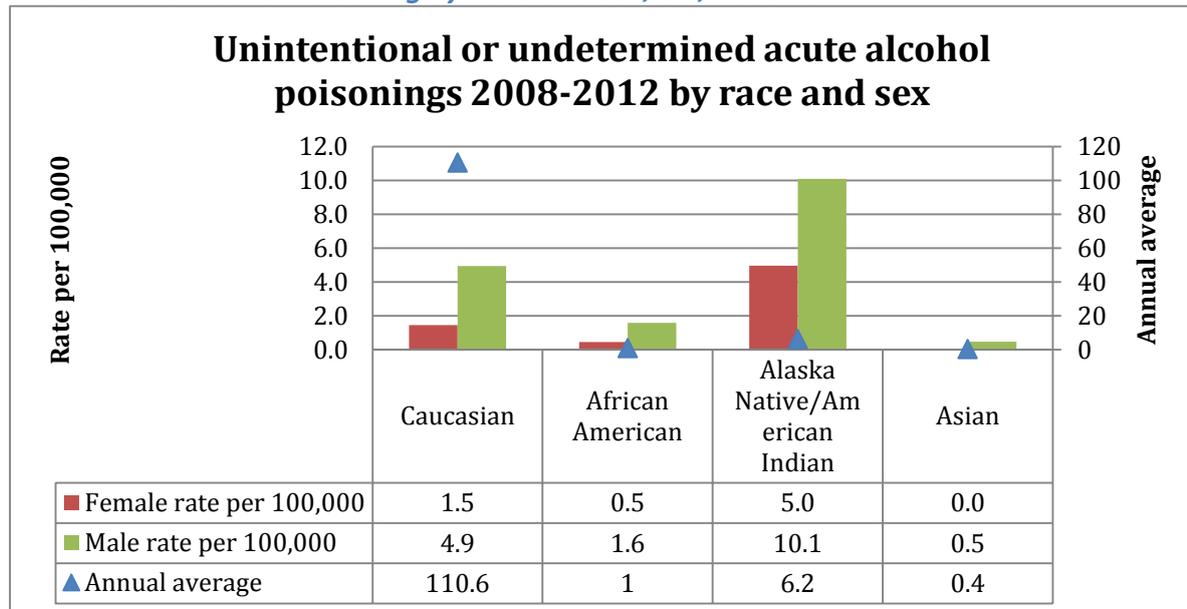
The highest acute alcohol poisoning death rate during 2008-2012, occurred among males aged 45-54 years. Death rates among males were higher than those for women for all age groups (Figure 38).

Figure 38. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Acute Alcohol Poisoning by Age and Sex, OR, 2008-2012*



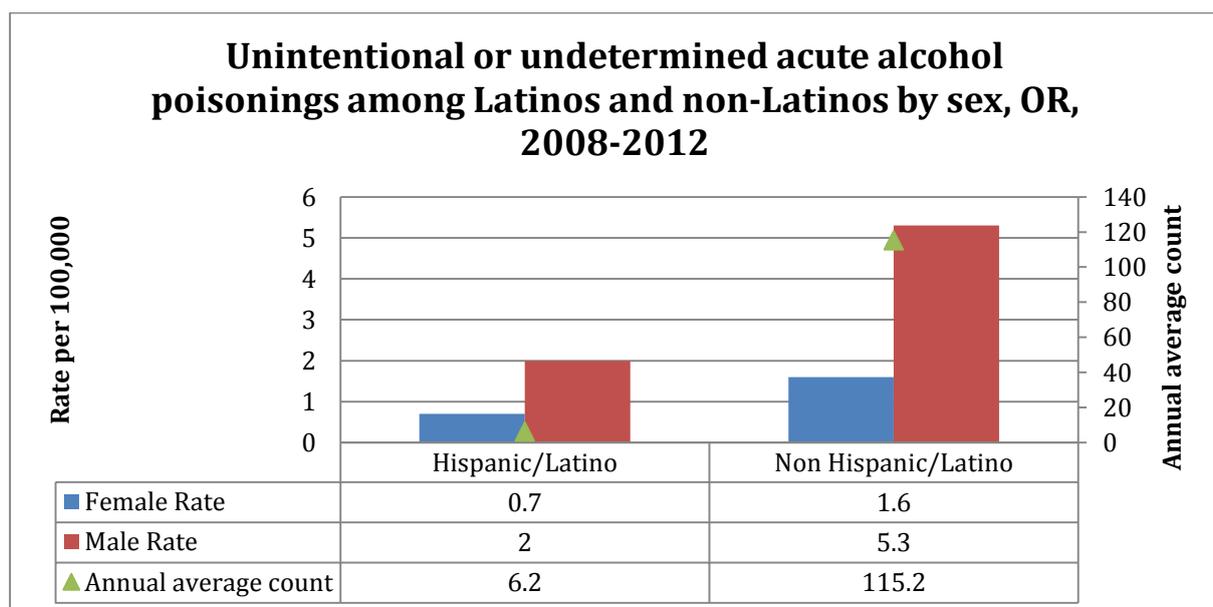
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 39. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Acute Alcohol Poisoning by Race and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

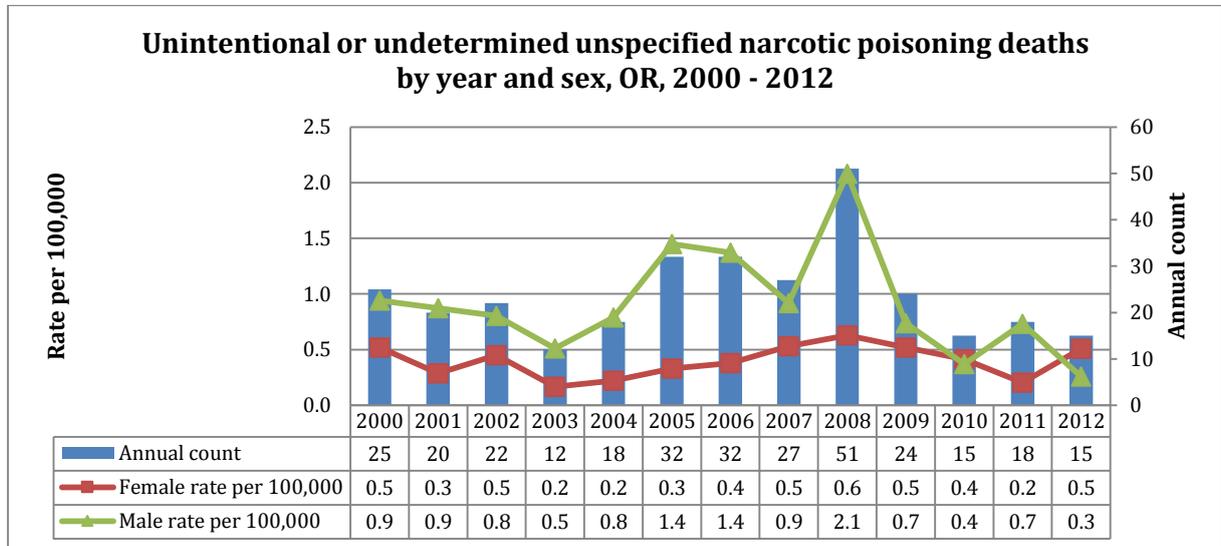
Figure 40. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Acute Alcohol Poisoning by Ethnicity and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

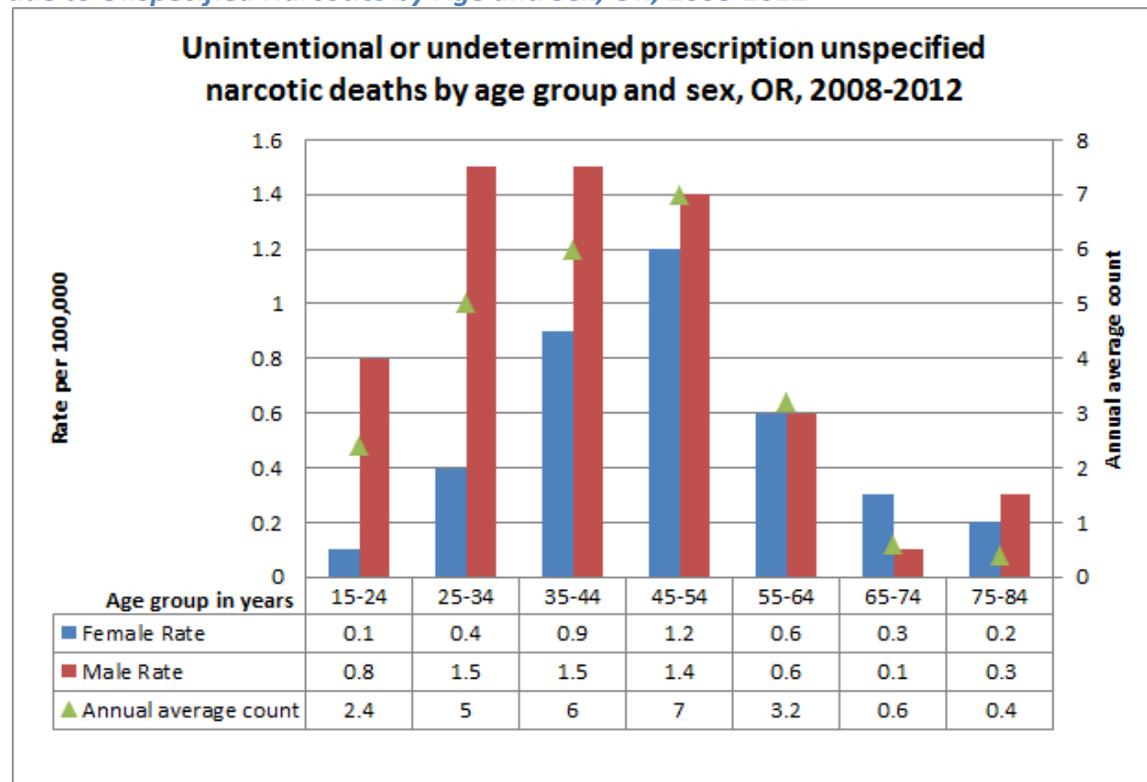
Unintentional and Undetermined Overdose Deaths and Death Rates due to Unspecified Narcotic Drugs

Figure 41. Unintentional and Undetermined Overdose Deaths and Death Rates due to Unspecified Narcotic Drugs by Year and Sex, OR, 2000-2012*



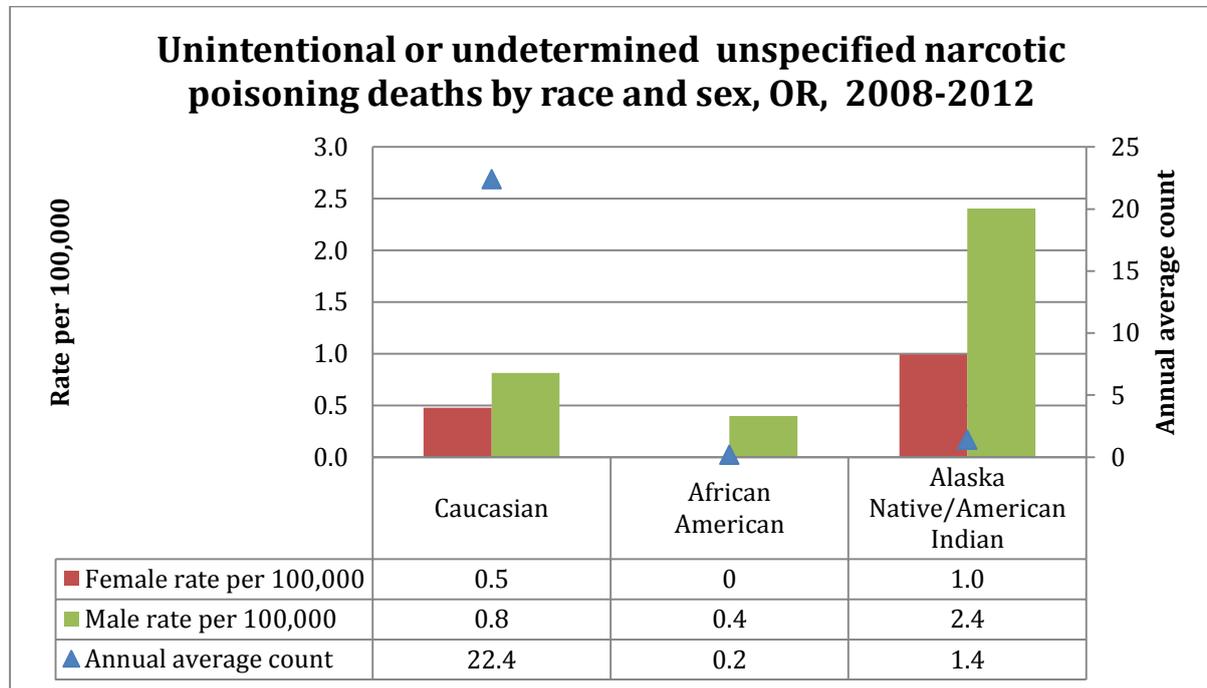
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 42. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Unspecified Narcotics by Age and Sex, OR, 2008-2012*



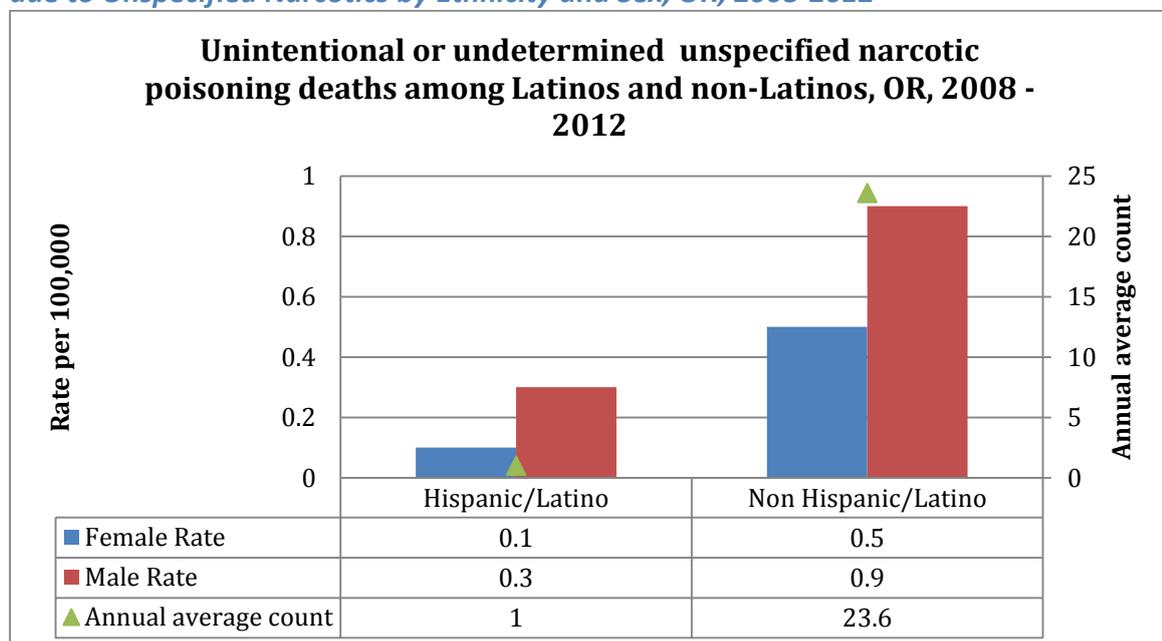
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 43. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Unspecified Narcotics by Race and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 44. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Unspecified Narcotics by Ethnicity and Sex, OR, 2008-2012*

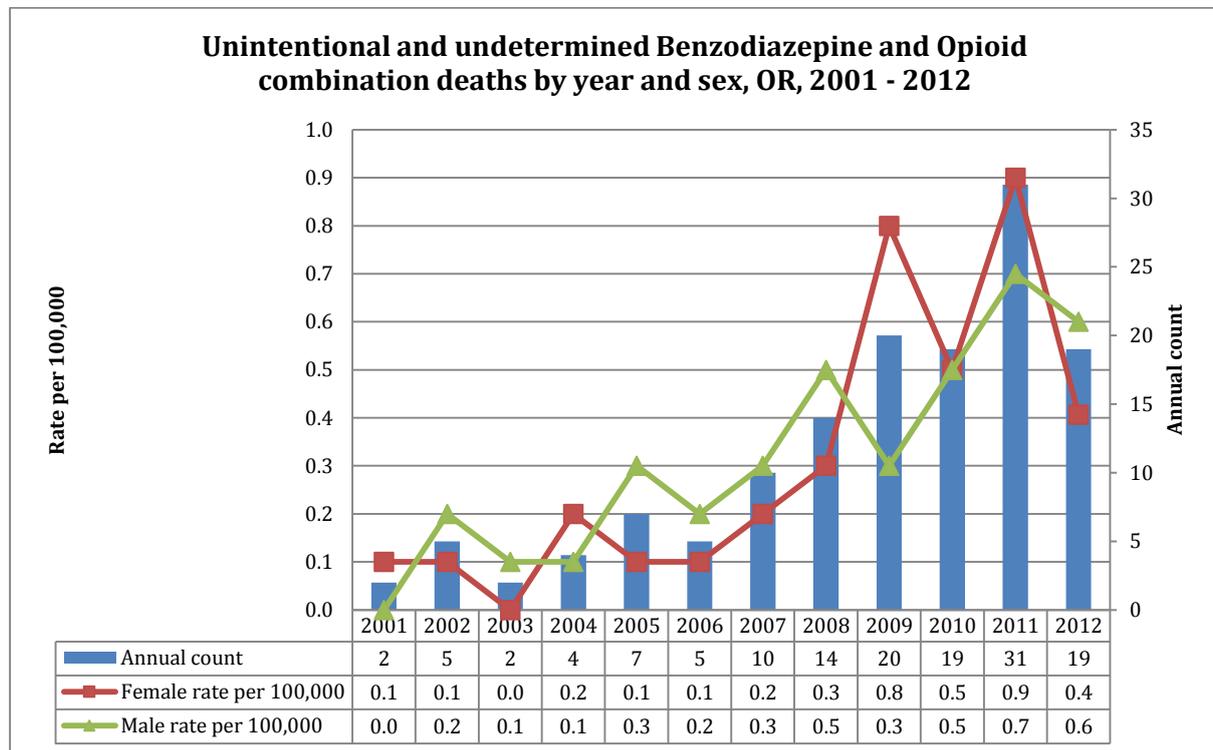


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Deaths and Death Rates due to Combined Benzodiazepine and Opioid Use

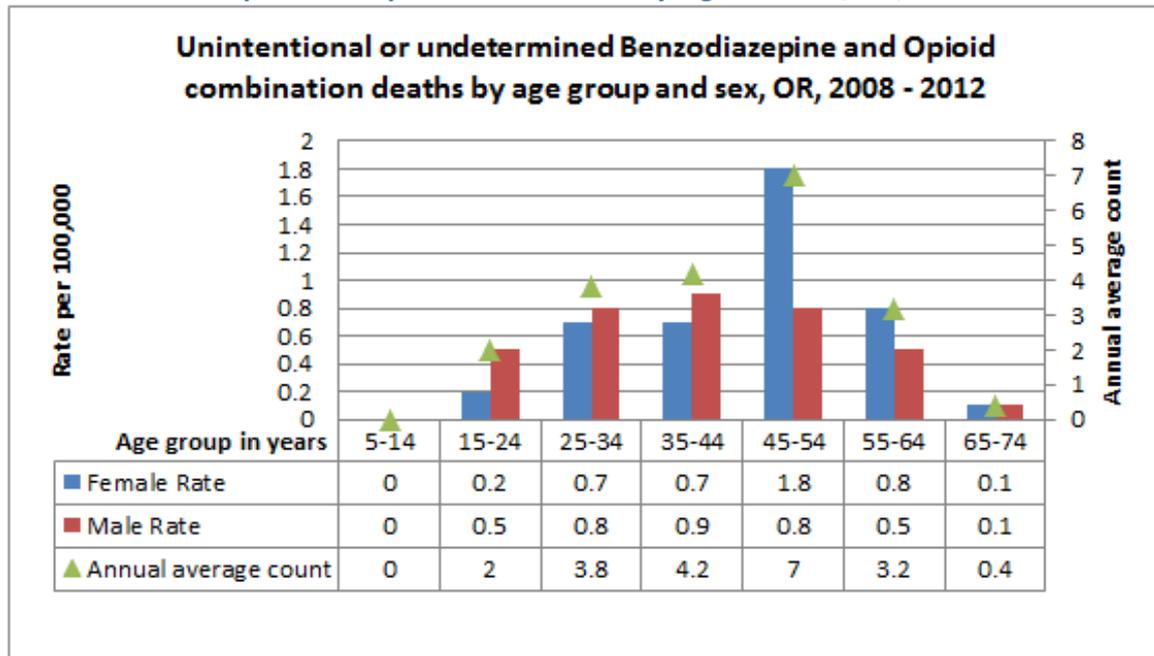
The combination of benzodiazepines and opioids is known to be a dangerous drug combination. In 2012, nineteen individuals in Oregon died taking this combination of medicines. PDMP data report 182,763 individuals in Oregon received at least one prescription for an opioid and a benzodiazepine at the same time in 2012.

*Figure 45. Unintentional and Undetermined Overdose Deaths and Death Rates due to Combined Benzodiazepine and Opioid by Year and Sex, OR, 2000-2012**



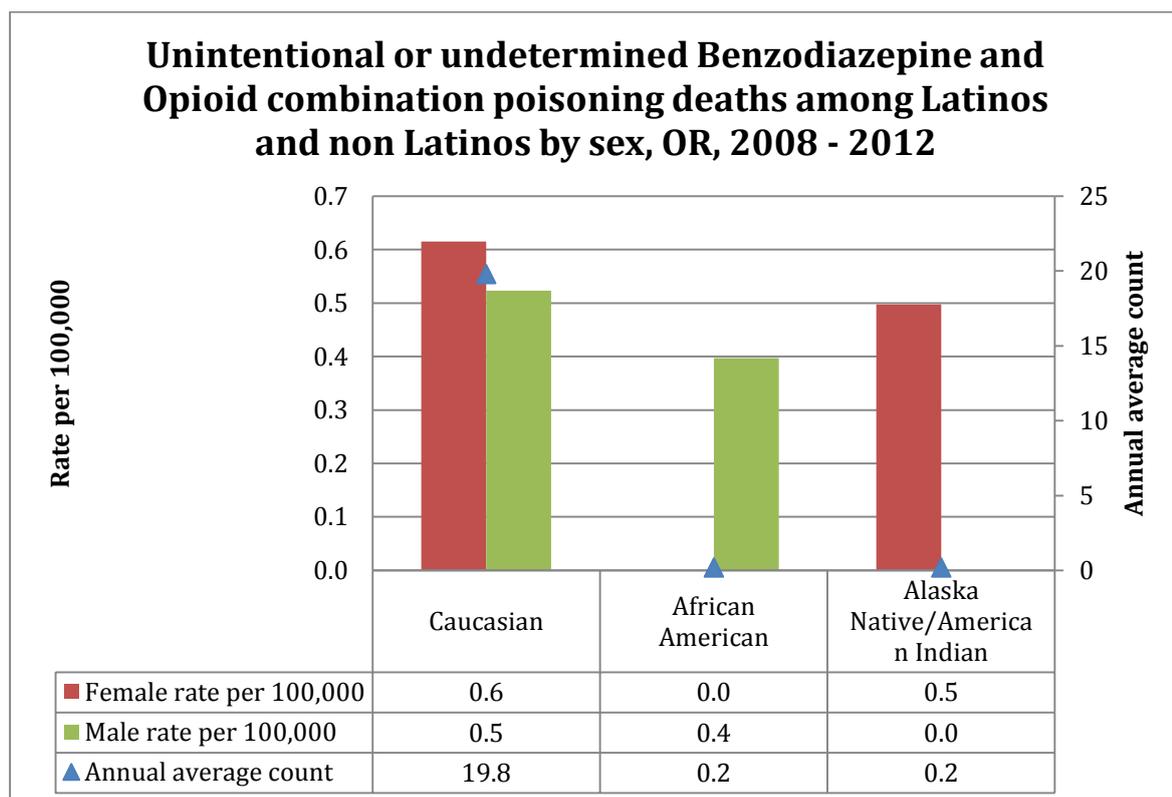
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 46. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Benzodiazepine and Opioid Combination by Age and Sex, OR, 2008-2012*



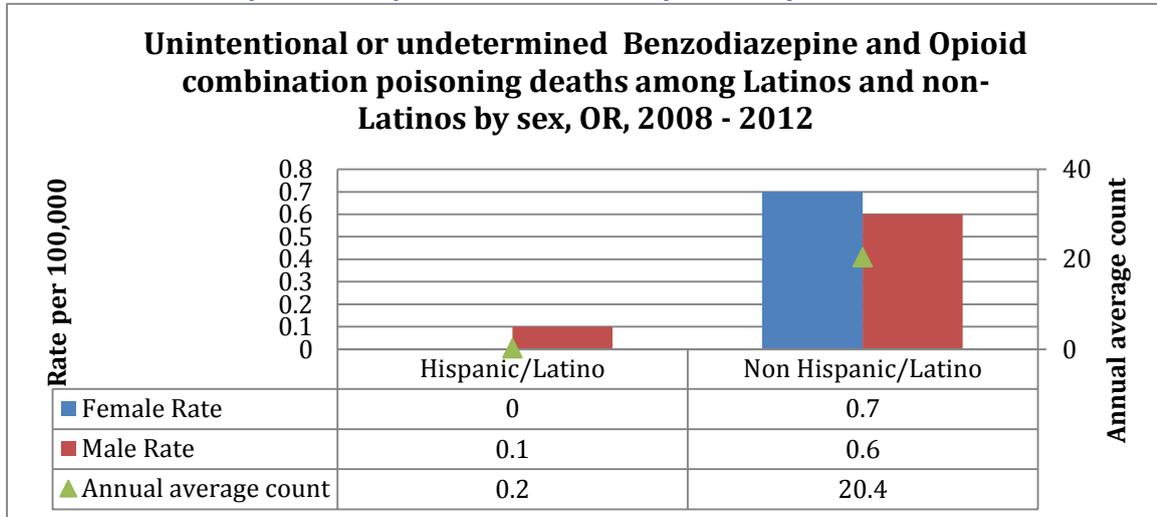
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 47. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Benzodiazepine and Opioid Combination by Race and Sex, OR, 2008-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 48. Average Unintentional and Undetermined Overdose Deaths and Death Rates due to Benzodiazepine and Opioid Combination by Ethnicity and Sex, OR, 2008-2012*

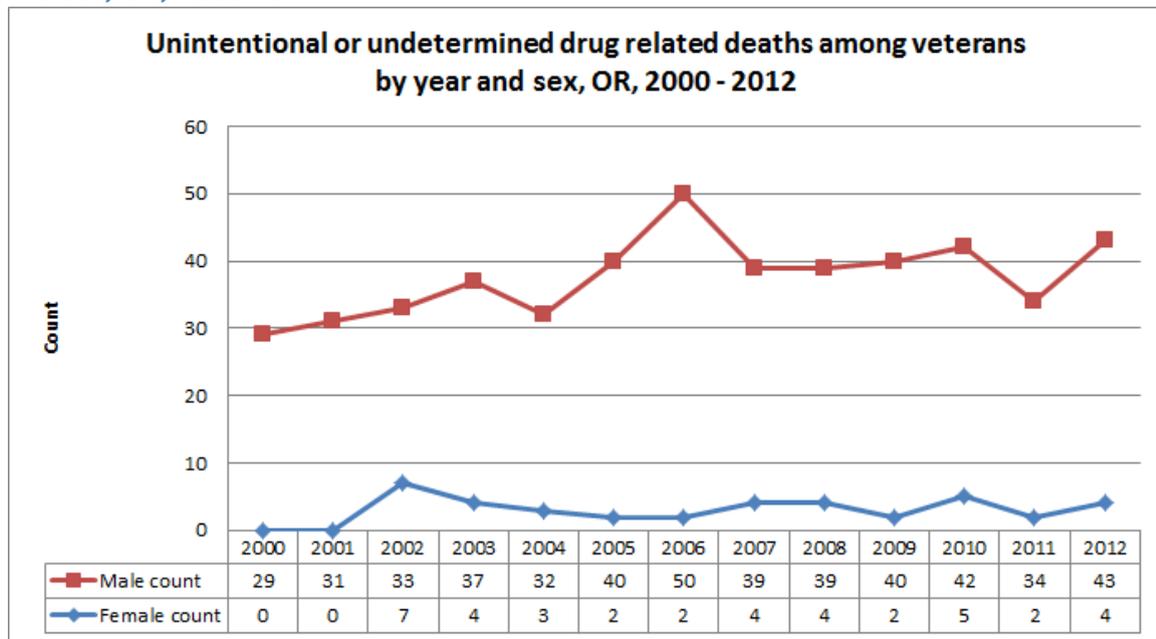


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Deaths among Veterans

Deaths due to unintentional poisoning (overdose) are a serious unrecognized problem among veterans. The estimate of veterans living in Oregon was nearly 333,000 between 2008 and 2012. Veterans constituted 8.7 percent of Oregon’s population and accounted for 14% of unintentional and undetermined overdose deaths in 2012.

Figure 49. Unintentional and Undetermined Overdose Deaths among Veterans by Year and Sex, OR, 2000-2012



The largest number of unintentional and undetermined drug overdose deaths occurred among male veterans aged 45-54 years (Figure 50). The largest number of unintentional and undetermined acute alcohol poisoning deaths occurred among male veterans aged 55-64 years (Figure 51).

Figure 50. Unintentional and Undetermined Overdose Deaths due to Prescription Drugs by Year and Sex, OR, 2000-2012

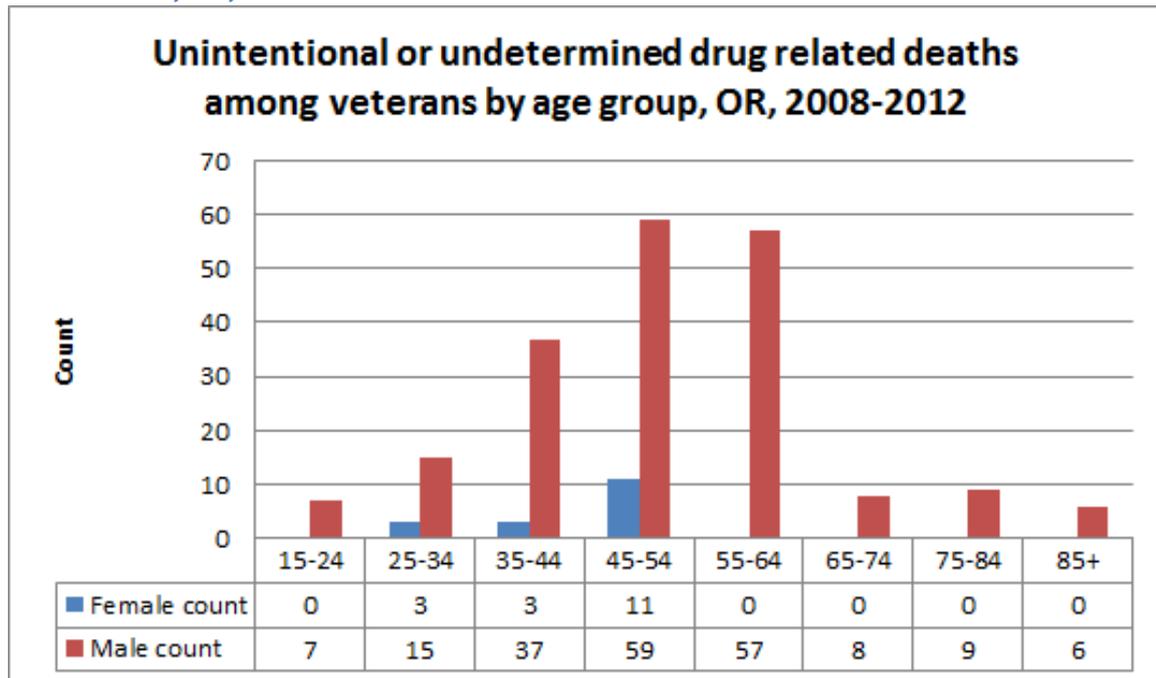


Figure 51. Unintentional and Undetermined Overdose Deaths among Veterans due to Acute Alcohol Poisoning by Year and Sex, OR, 2000-2012

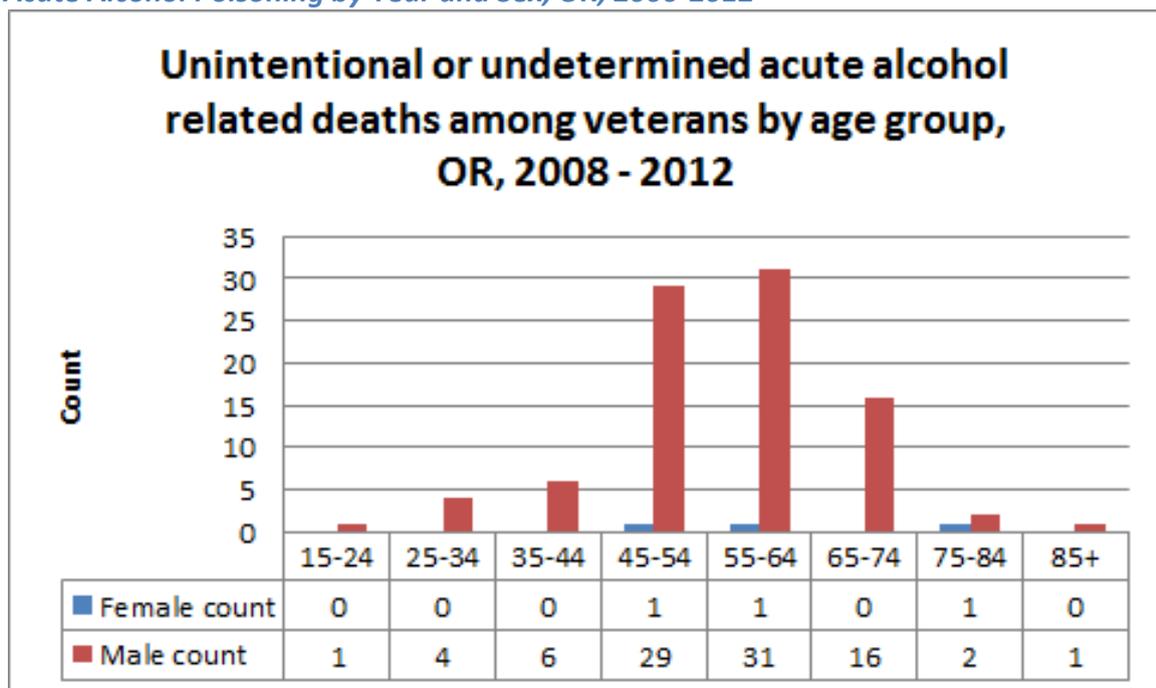
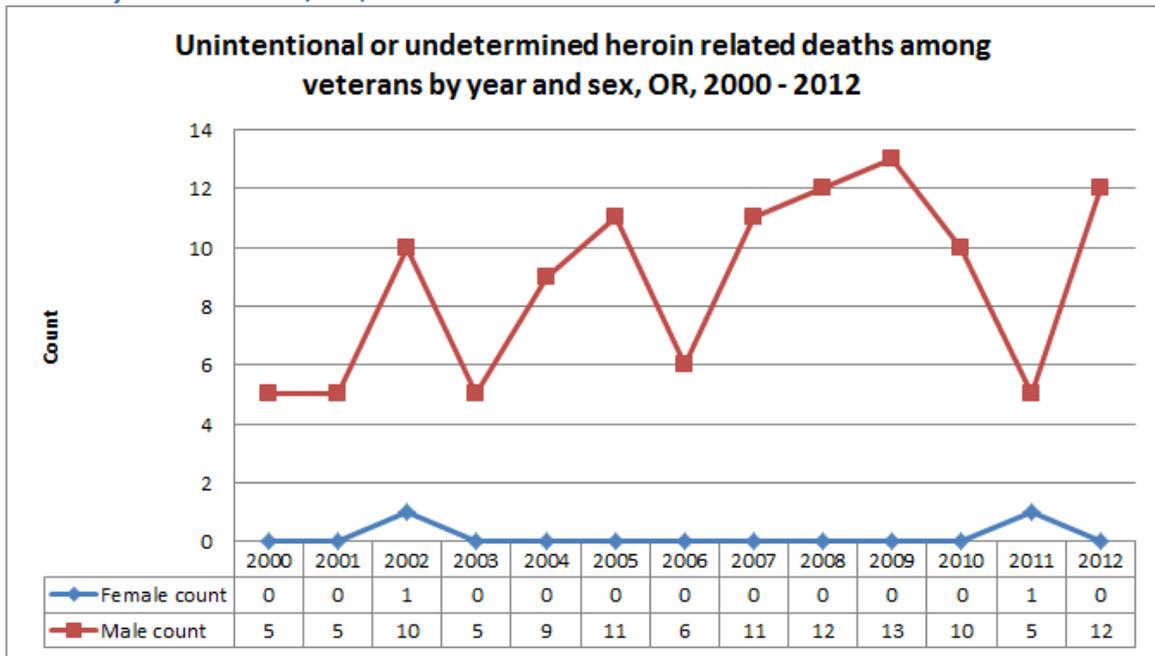


Figure 52. Unintentional and Undetermined Overdose Deaths among Veterans due to Heroin by Year and Sex, OR, 2000-2012



Use of Prescription Drug Monitoring Program Data to Create Denominators for Exposure Groups

The prescription information in the Prescription Drug Monitoring Program (PDMP) is a new resource that can be used to better approximate the true exposure group for calculating death rates. The PDMP data allow program staff to provide annual estimates of the number of prescriptions for medicines that are dispensed and the number of individuals in whose name those prescriptions were dispensed. Access the 2012 PDMP data report and county level data report at:

[http://www.orpdmp.com/orpdmpfiles/PDF Files/Reports/Statewide2012.pdf](http://www.orpdmp.com/orpdmpfiles/PDF%20Files/Reports/Statewide2012.pdf). The figure below provides an example of rates based on denominators drawn from PDMP data.

While comparatively few Oregonians received prescriptions for methadone in 2012 (16,259 compared to 891,903 receiving prescriptions for all other opioids), the rate of death among those who took methadone was 380.2 per 100,000 compared to 17.1 per 100,000 for all other opioids combined.

It is customary to use rates per 100,000 for deaths. To calculate the rate for deaths for the following figures, do this calculation:

$\frac{\text{Number of deaths from poisoning by specific drug in 2012}}{\text{Estimated Oregon state population in 2012}} \times 100,000$

$\frac{\text{Number of deaths from poisoning by specific drug in 2012}}{\text{Overdose deaths among those receiving prescription of specific drug from PDMP data}} \times 100,000$

Figure 53. Unintentional or undetermined Opioids (without Methadone) related deaths among PDMP exposure group and Oregon population, OR, 2012

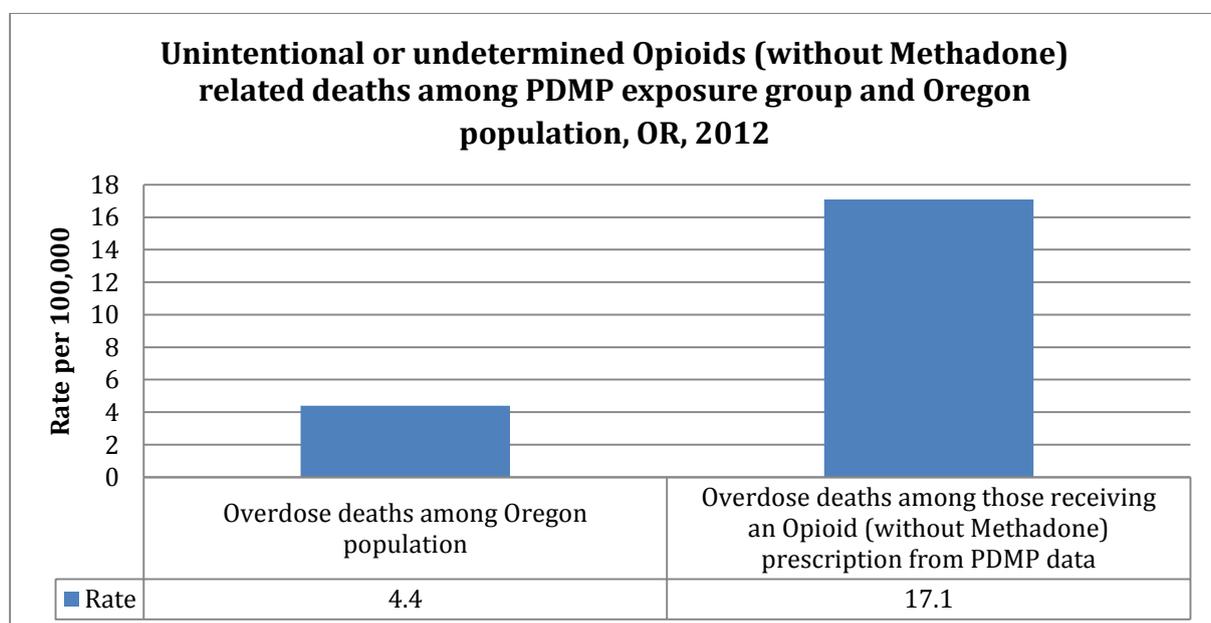


Figure 54. Unintentional or undetermined Methadone related deaths among PDMP exposure group and Oregon population, OR, 2012

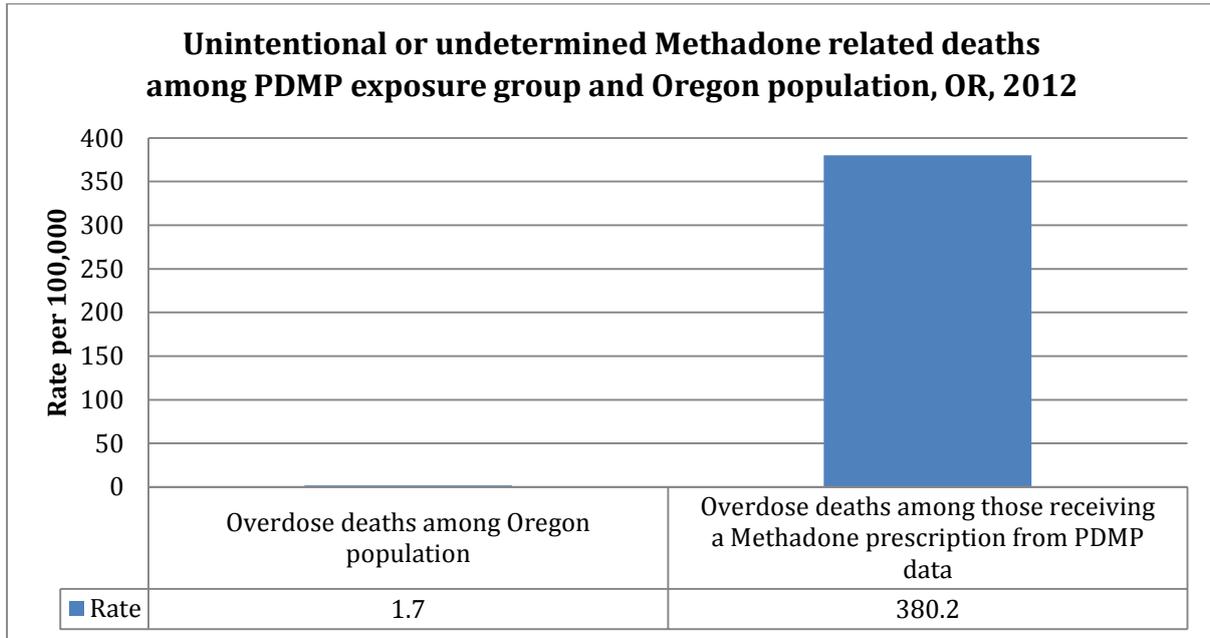


Figure 55. Unintentional or undetermined Benzodiazepine related deaths among PDMP exposure group and Oregon population, OR, 2012

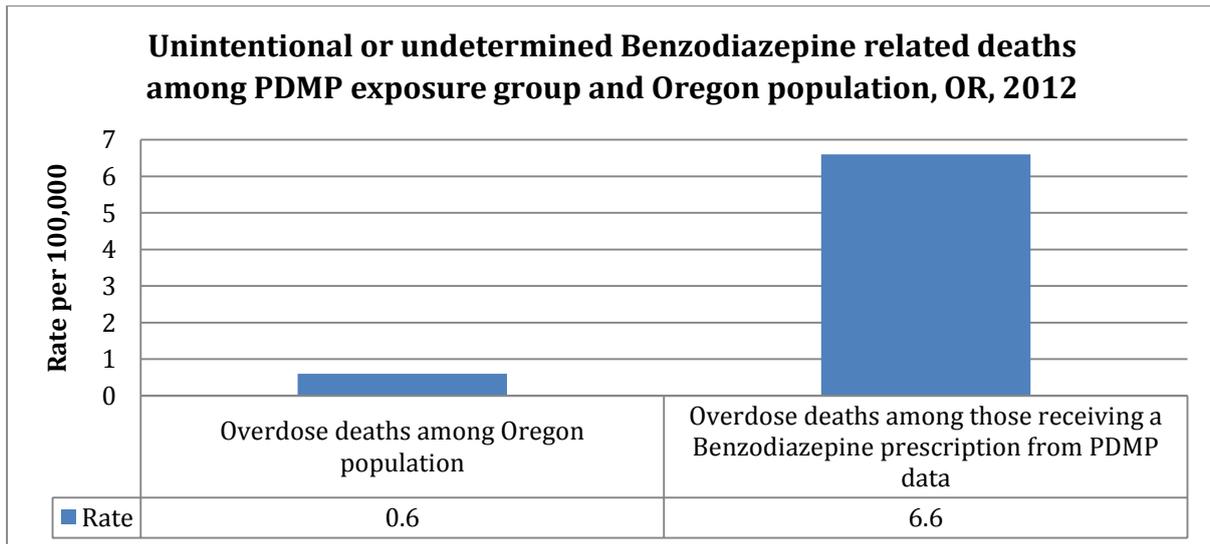
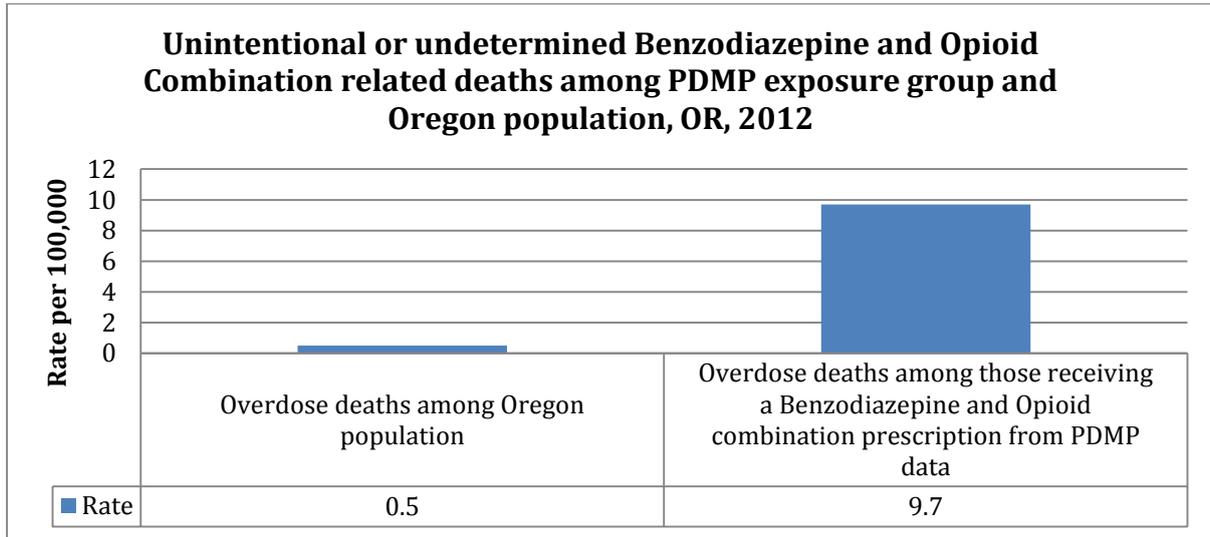


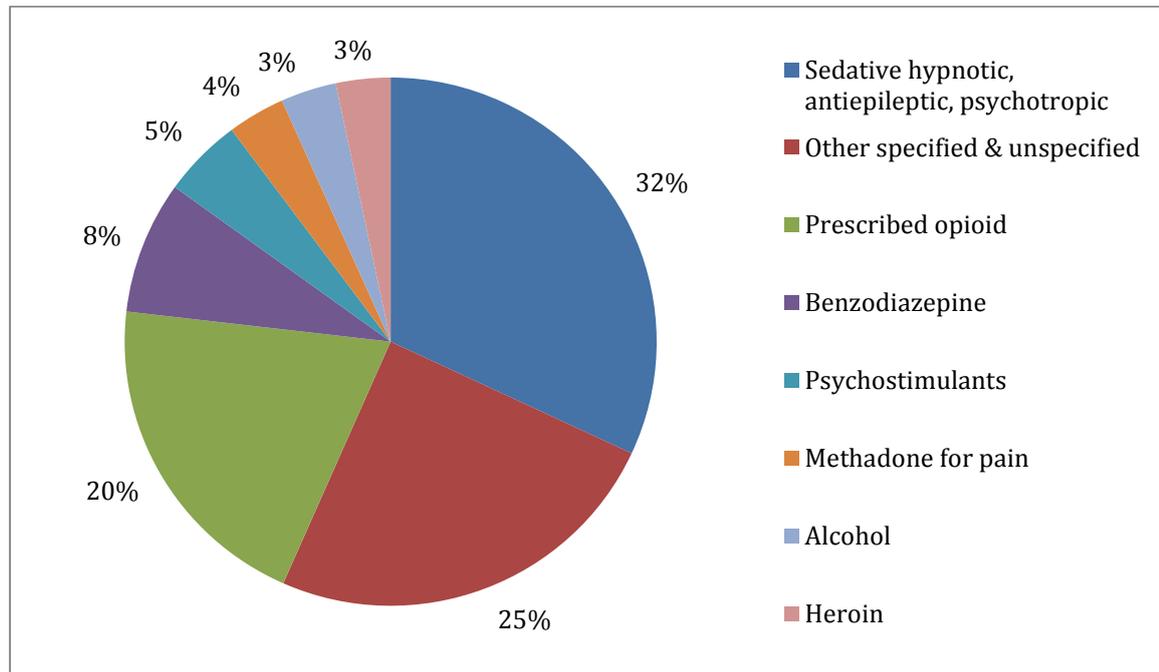
Figure 56. Unintentional or undetermined Benzodiazepine and Opioid combination related deaths among PDMP exposure group and Oregon population, OR, 2012



Hospitalizations due to Unintentional and Undetermined Overdose – All Drugs (Prescribed, Illicit, and Alcohol)

There were 1,499 hospitalizations due to unintentional and undetermined overdose in 2012. Fifty-four percent of hospitals were due to two drug classes: sedative hypnotic, antiepileptic, psychotropic drugs and prescriptions opioids.

Figure 57. Unintentional and Undetermined Overdose Hospitalizations by Drug Type, OR, 2012



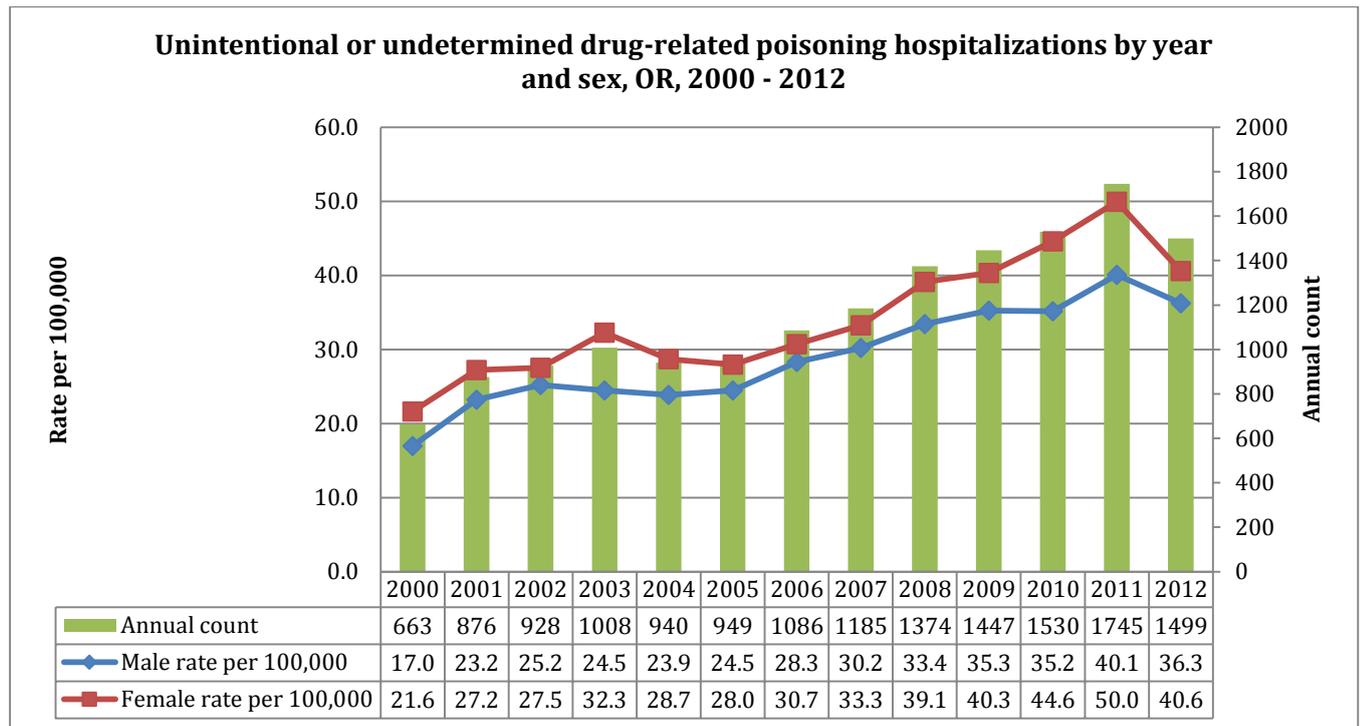
Hospitalization rates per 100,000 by drug type and all drugs are reported in Table 5.

Table 5. Unintentional overdose hospital discharge Rates per 100,000 by Type of Drug, OR, 2000-2012

Type of drug	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Opioid	2.0	3.4	4.0	4.6	4.3	4.9	6.1	7.0	8.8	9.0	9.8	10.0	8.7
Methadone	0.3	0.6	1.0	1.5	1.4	1.4	1.8	2.4	2.7	2.7	2.5	2.4	1.5
Heroin	0.6	0.4	0.7	0.7	0.9	0.7	0.7	0.8	1.0	1.3	1.2	1.8	1.4
Benzodiazepine	1.3	2	2.1	2.2	2.2	2.4	2.8	2.8	3.1	3.6	3.3	3.9	3.5
Antiepileptic, sedative hypnotic, psychotropic	7.9	10.3	9.6	10.8	10.1	10.2	10.5	9.9	11.6	12.6	12.7	15.7	13.8
Psychostimulant	0.8	1.0	1.4	1.7	1.6	1.8	1.4	0.9	0.8	1.1	1.3	2.0	2.1
Alcohol	0.7	1.1	0.9	1.8	1.2	1.2	1.2	1.4	1.7	1.5	1.3	1.2	1.5
All drugs	19.3	25.2	26.4	28.4	26.3	26.2	29.5	31.7	36.3	37.8	39.9	45.1	38.4

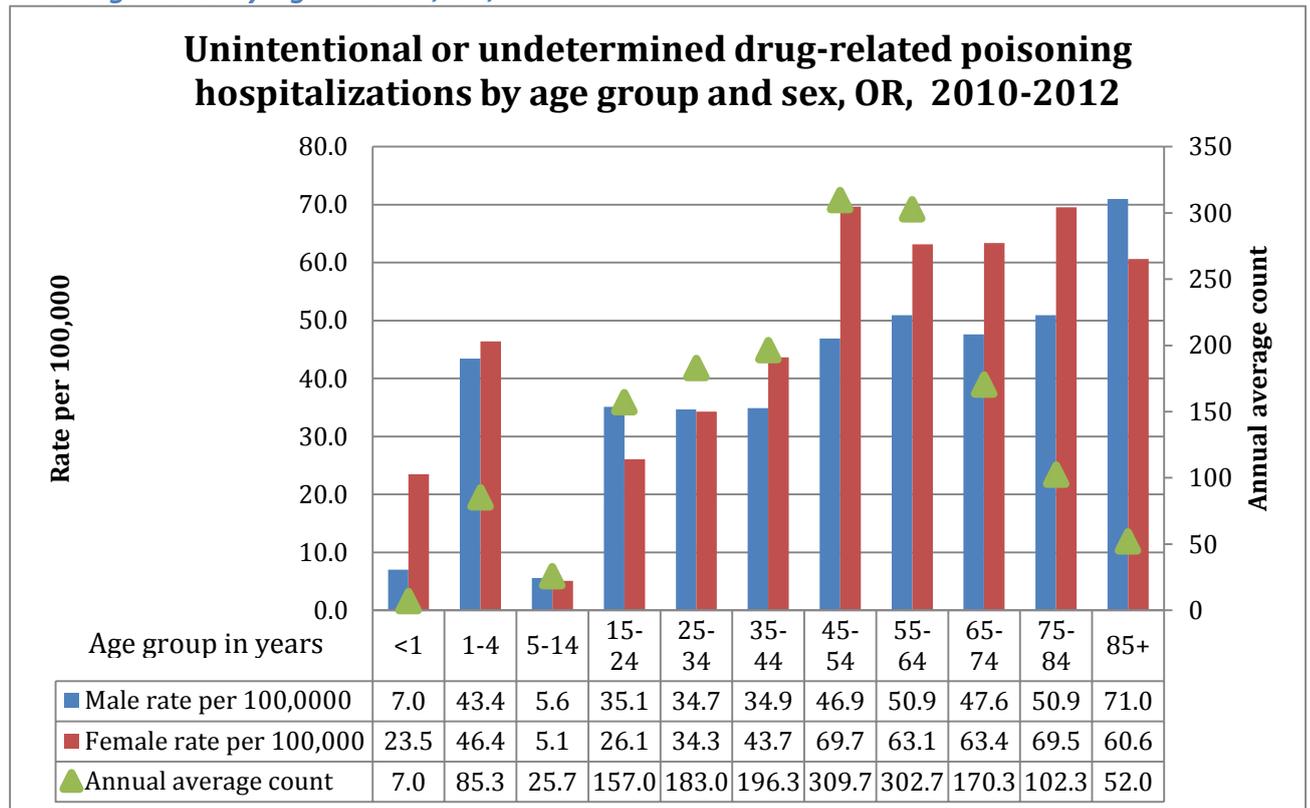
Hospitalizations due to unintentional or undetermined drug overdose nearly doubled between 2000 and 2012.

Figure 58. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates by Year and Sex, OR, 2000-2012



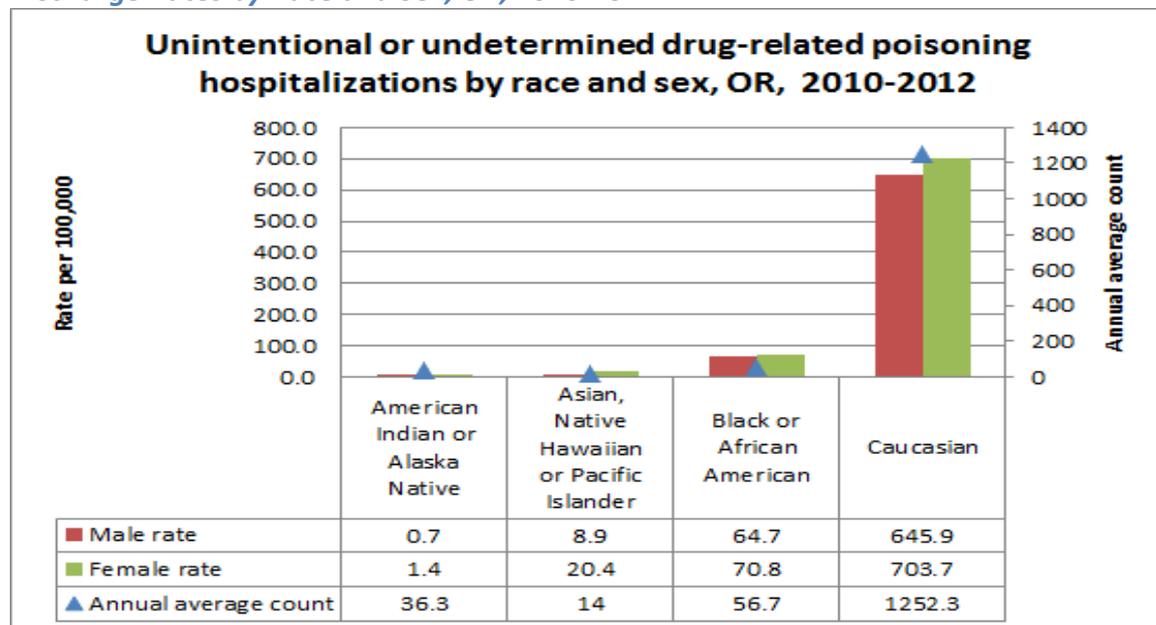
The highest rates of hospitalization due to unintentional and undetermined overdose were among individuals ages 45 years and older and young children ages 0-4 years. The annual average number of children aged 0-4 for years hospitalized due to unintentional and undetermined overdose was 92.3 between 2010 and 2012.

Figure 59. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates by Age and Sex, OR, 2010-2012*



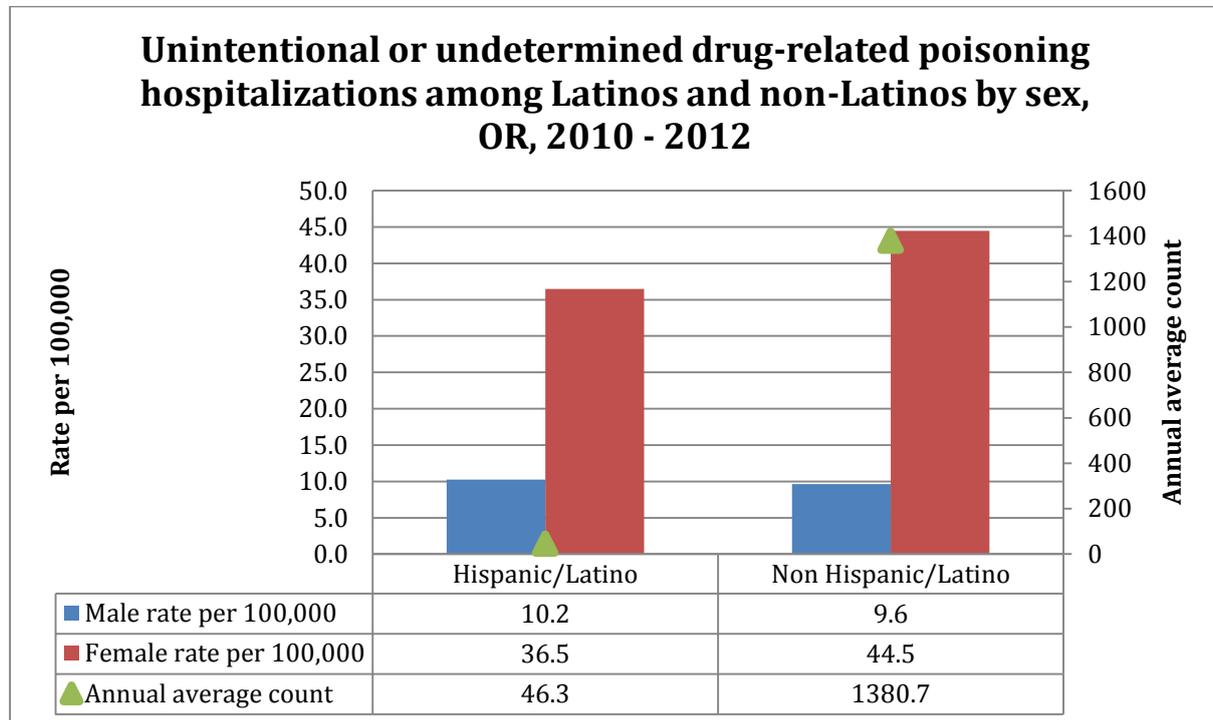
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 60. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 61. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates by Ethnicity and Sex, OR, 2010-2012



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Note to Reader:

The following sections provide data on unintentional and undetermined drug overdose hospitalizations by drug type where the drug type is directly related to the death.

Because it is common for individuals to take more than one drug at the same time the overall count of 1,499 hospitalizations in 2012 is not equal to the sum of the deaths by drug type.

This means that in the following sections individuals may be counted in more than one drug type category.

Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Prescription Opioids

Figure 62. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Prescription Opioids by Year and Sex, OR, 2000-2012

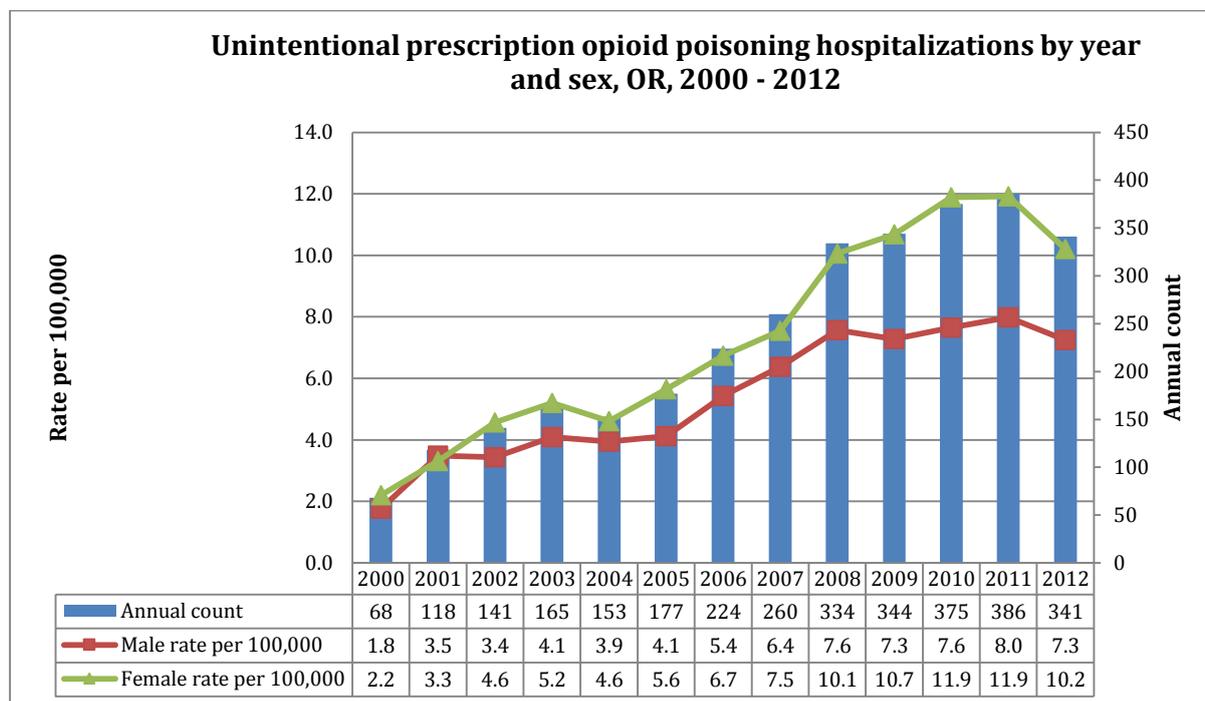
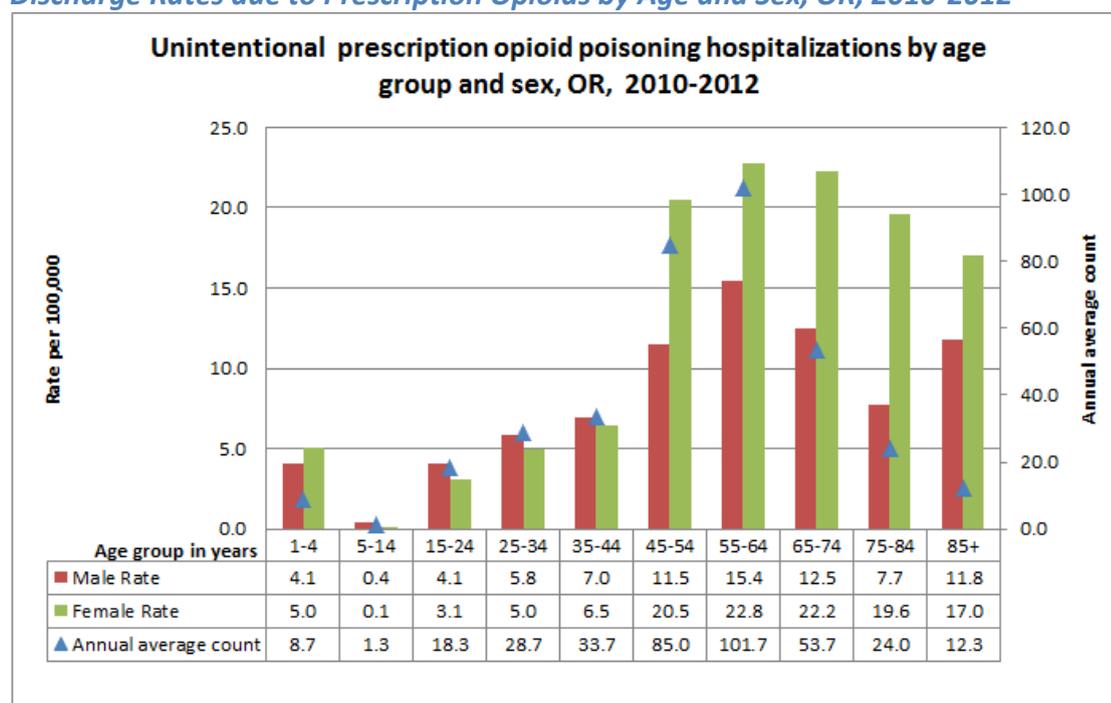
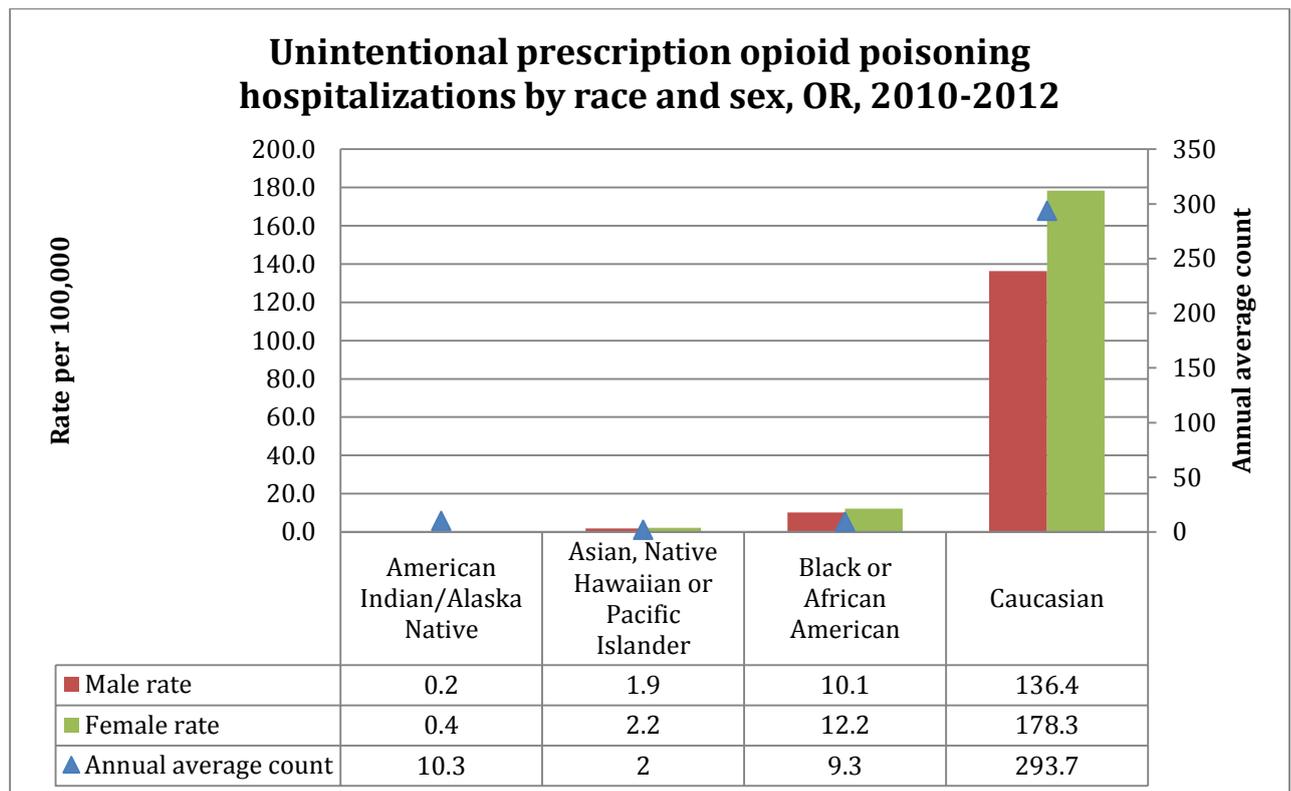


Figure 63. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Prescription Opioids by Age and Sex, OR, 2010-2012*



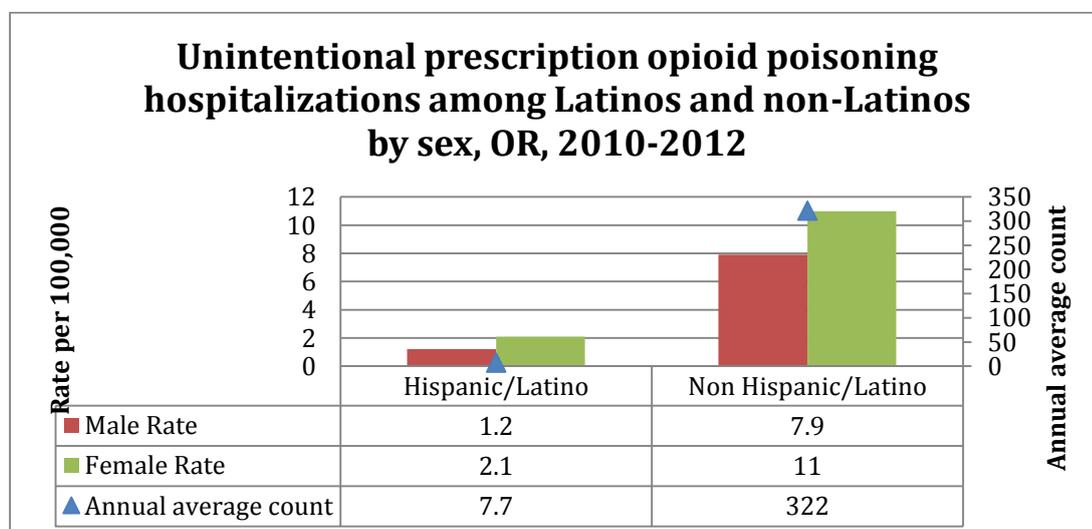
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 64. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Prescription Opioids by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

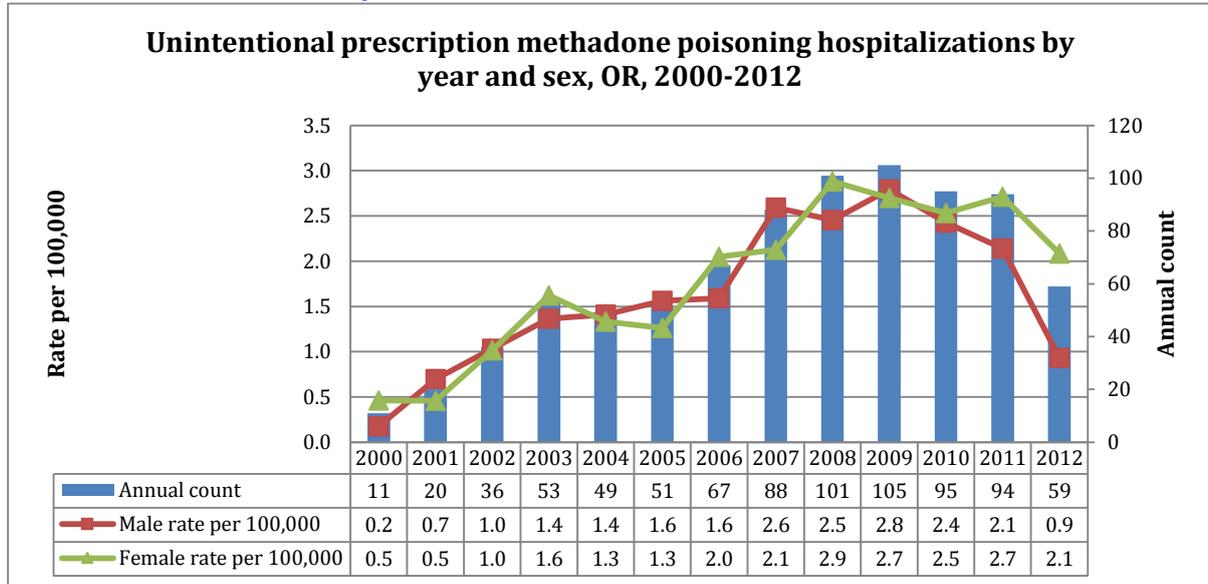
Figure 65. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Prescription Opioids by Ethnicity and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

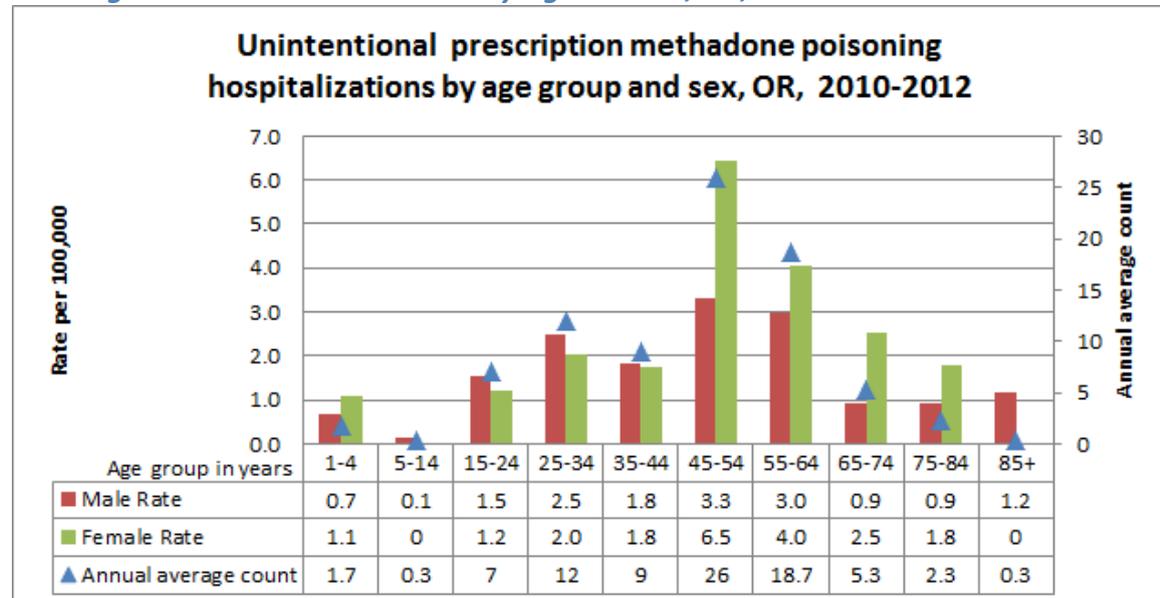
Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Methadone Prescribed for Pain Relief

Figure 66. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Methadone by Year and Sex, OR, 2000-2012



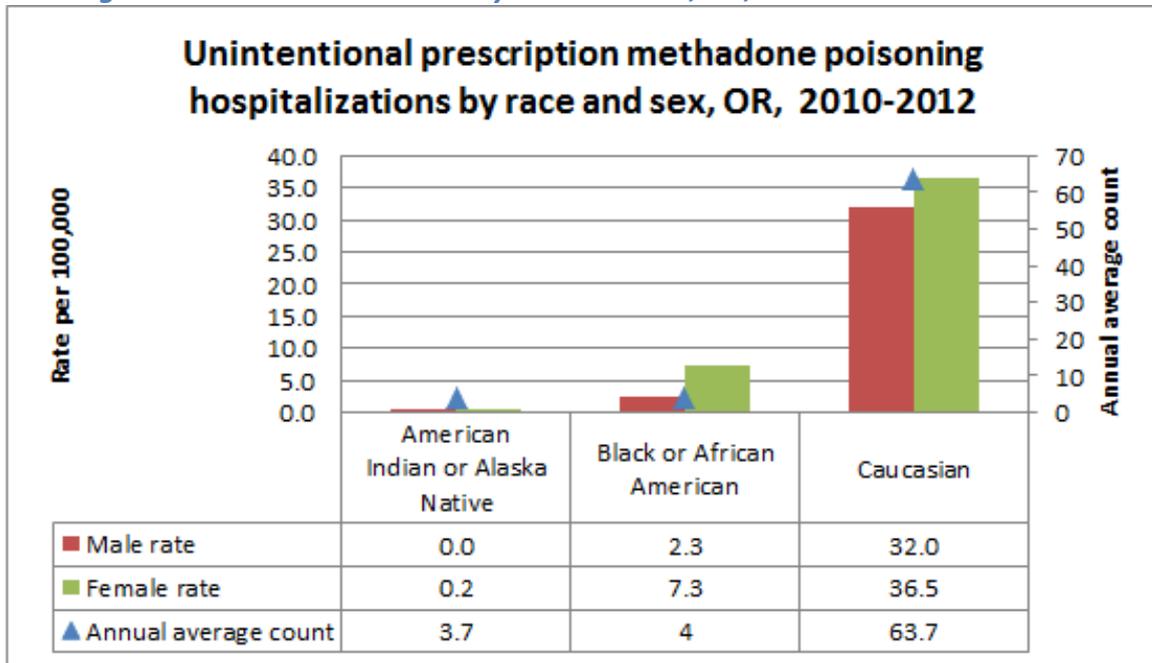
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 67. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Methadone by Age and Sex, OR, 2010-2012*



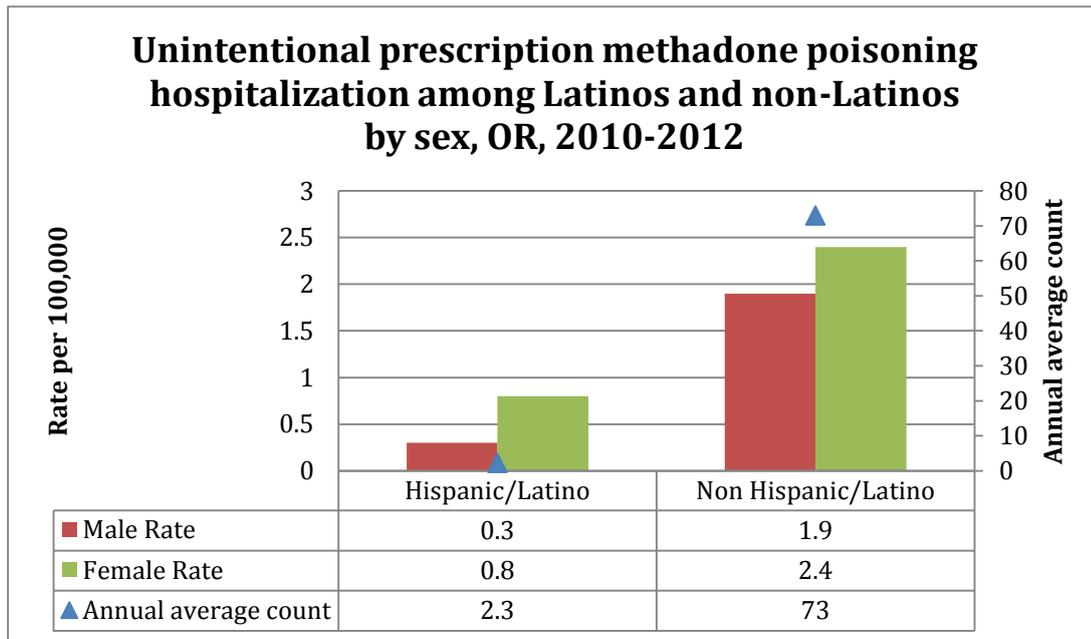
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 68. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Methadone by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 69. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Methadone by Ethnicity and Sex, OR, 2010-2012*

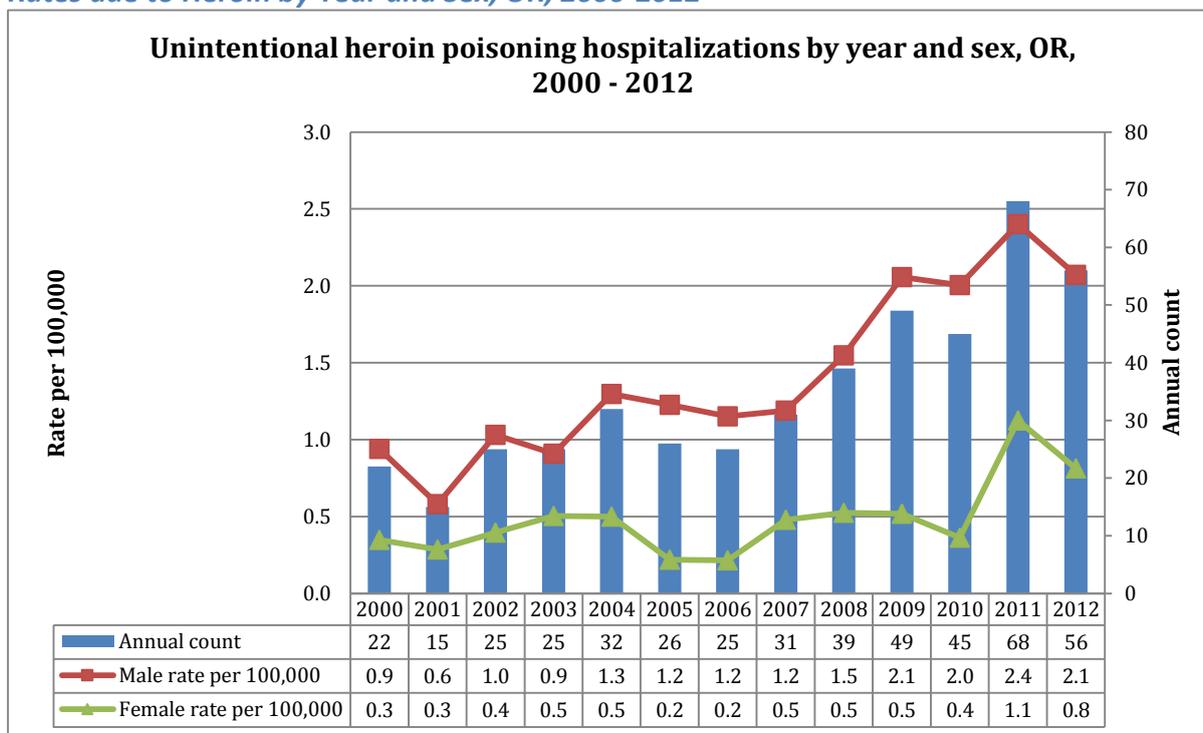


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Heroin

The rate of hospitalization due to unintentional and undetermined heroin overdose has increased since 2000 from 0.6 per 100,000 to 1.4 per 100,000 in 2012. Fifty-six individuals were hospitalized for unintentional and undetermined heroin overdose in 2012.

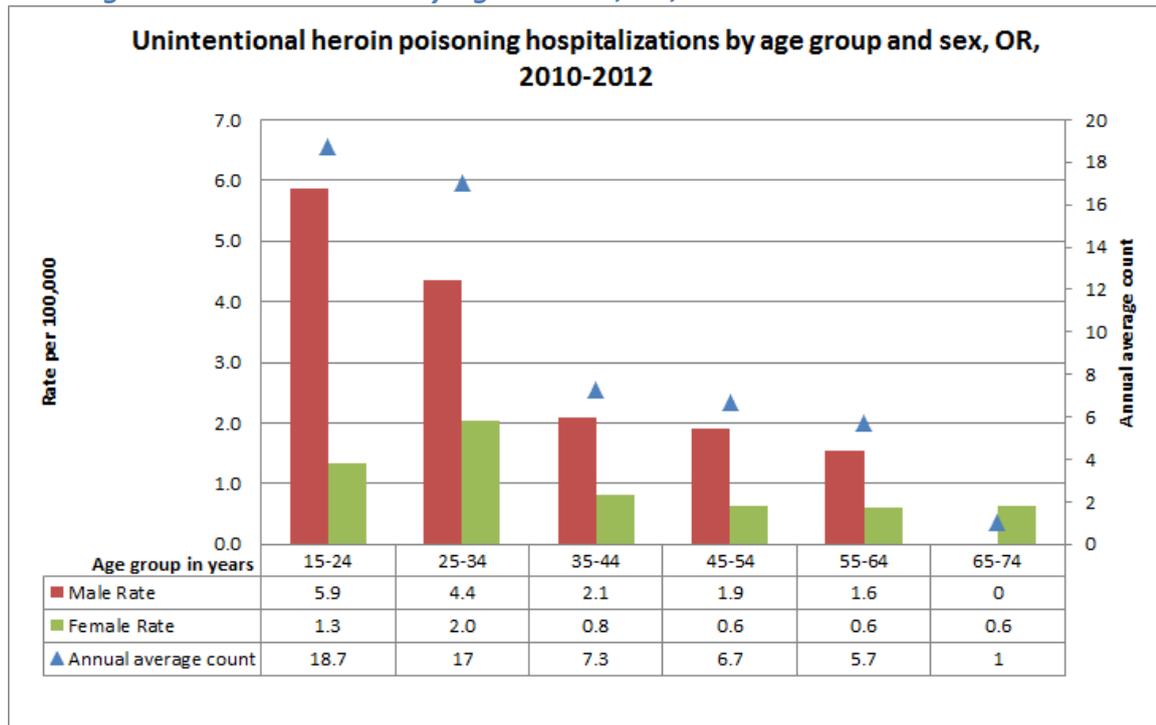
Figure 70. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Heroin by Year and Sex, OR, 2000-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

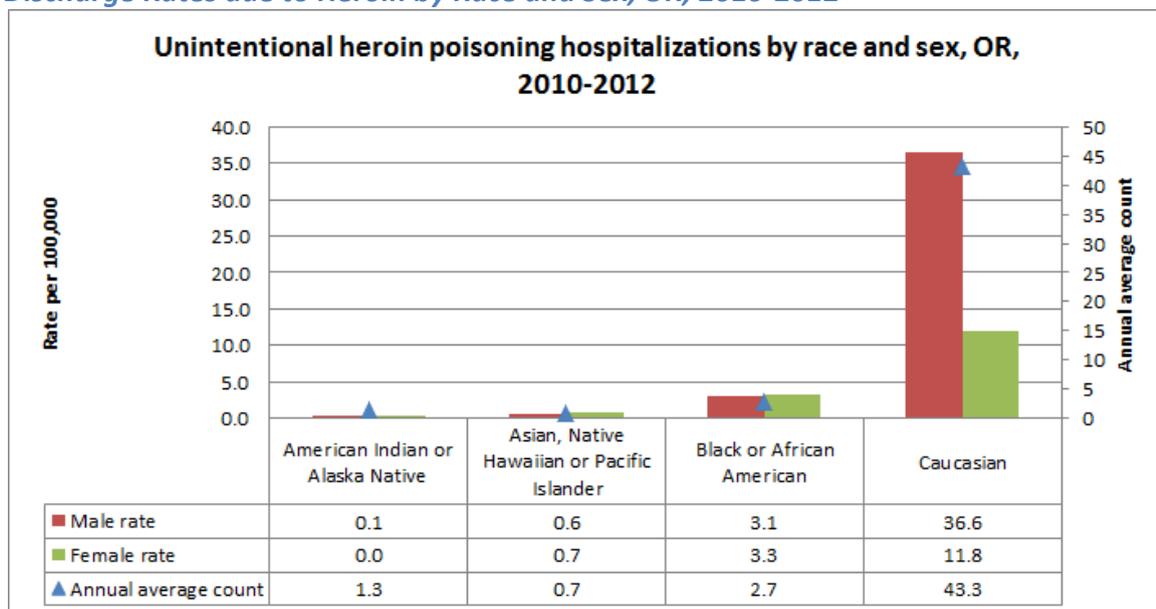
Sixty-two percent of unintentional and undetermined heroin overdose hospitalization occurred among young males aged 15-24 years and 25-34 years.

Figure 71. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Heroin by Age and Sex, OR, 2010-2012*



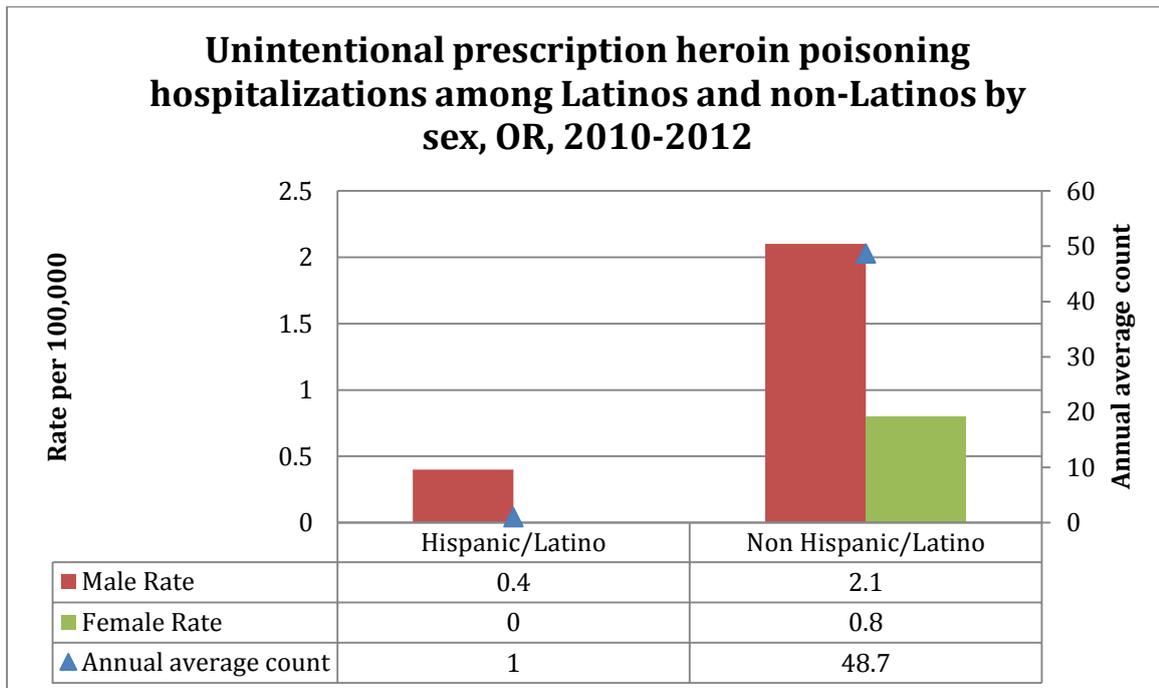
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 72. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Heroin by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 73. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Heroin by Ethnicity and Sex, OR, 2010-2012*

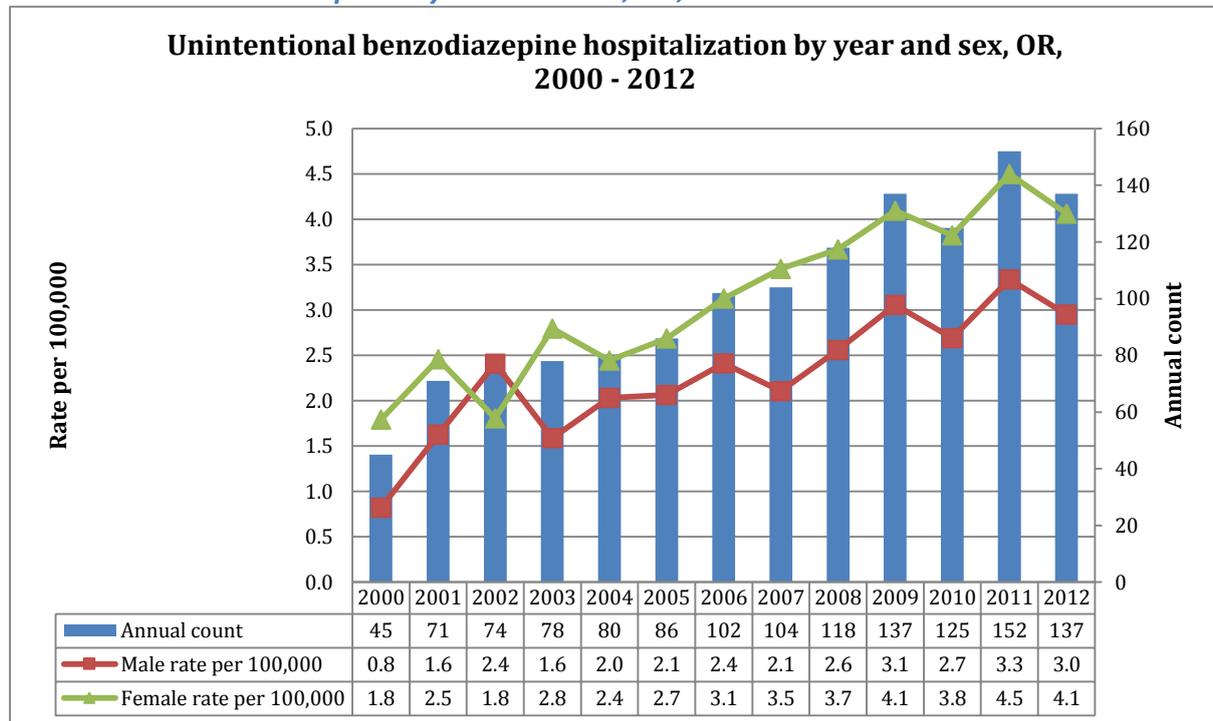


*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Benzodiazepines

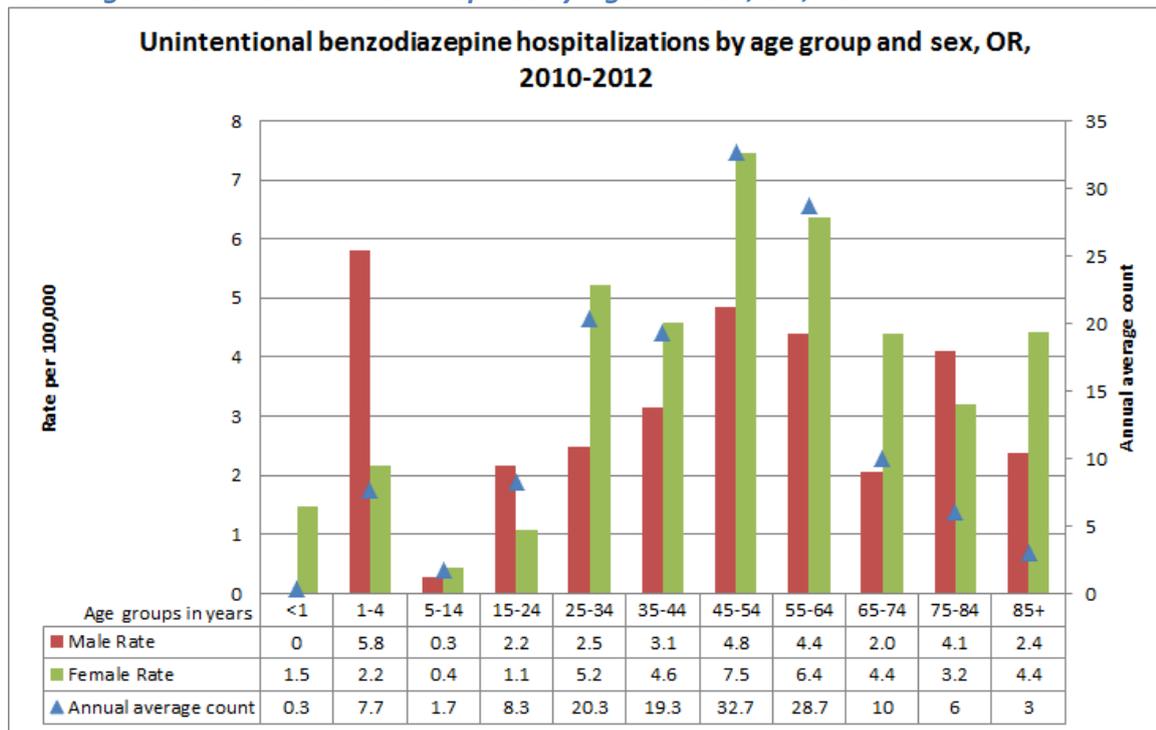
Since 2000, hospitalization rates due to benzodiazepines have increased; females have higher rates than males.

Figure 74. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Benzodiazepines by Year and Sex, OR, 2000-2012



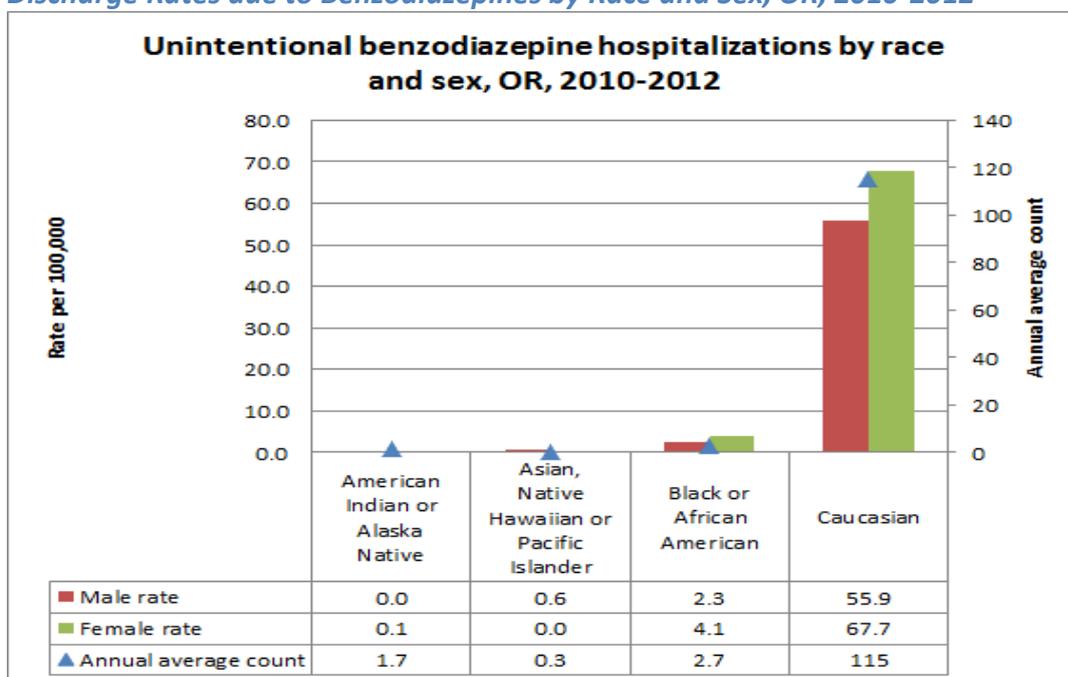
The highest hospitalization rates occurred among females ages 45-54 years.

Figure 75. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Benzodiazepines by Age and Sex, OR, 2010-2012*



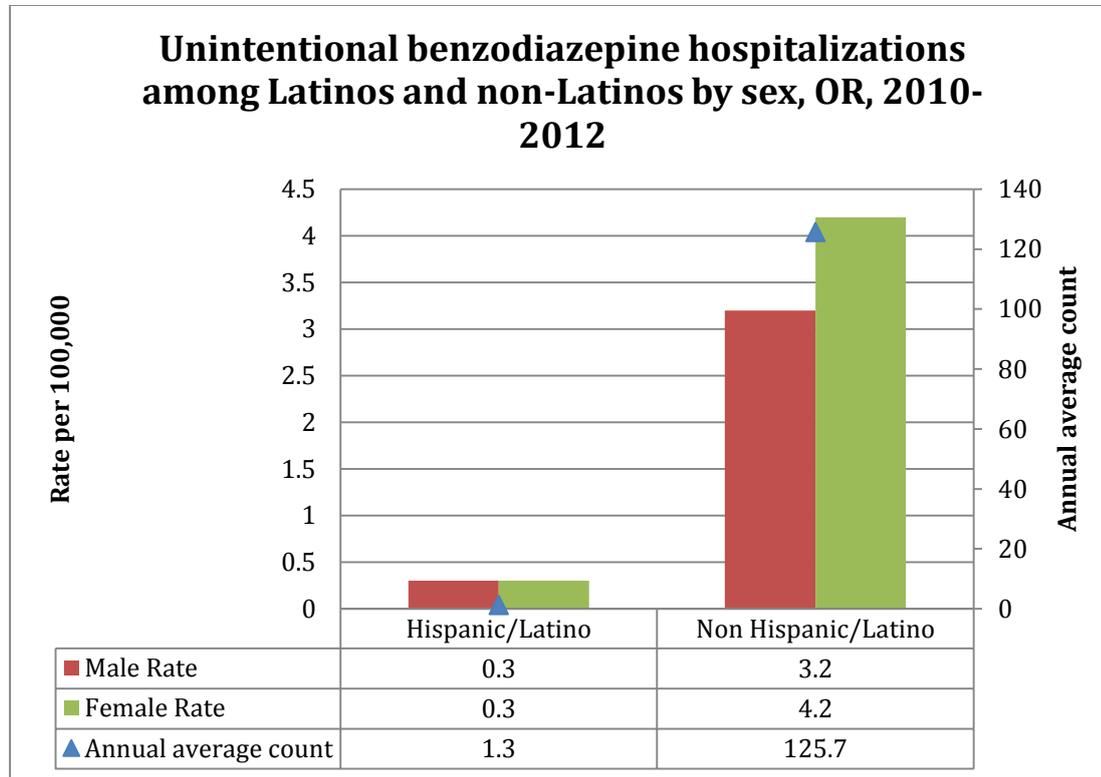
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 76. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Benzodiazepines by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 77. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Benzodiazepines by Ethnicity and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Antiepileptic, Sedative Hypnotic or Psychotropic Drugs

Figure 78. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Antiepileptic, Sedative Hypnotic or Psychotropic Drugs, by Year and Sex, 2000-2012

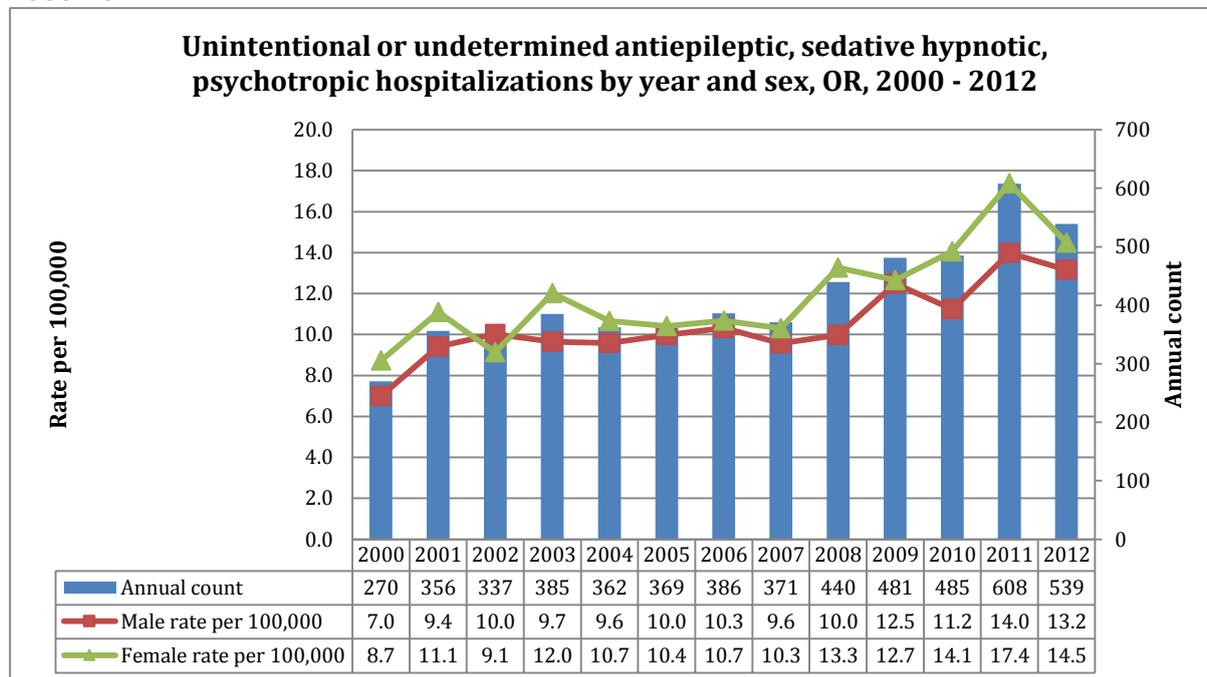
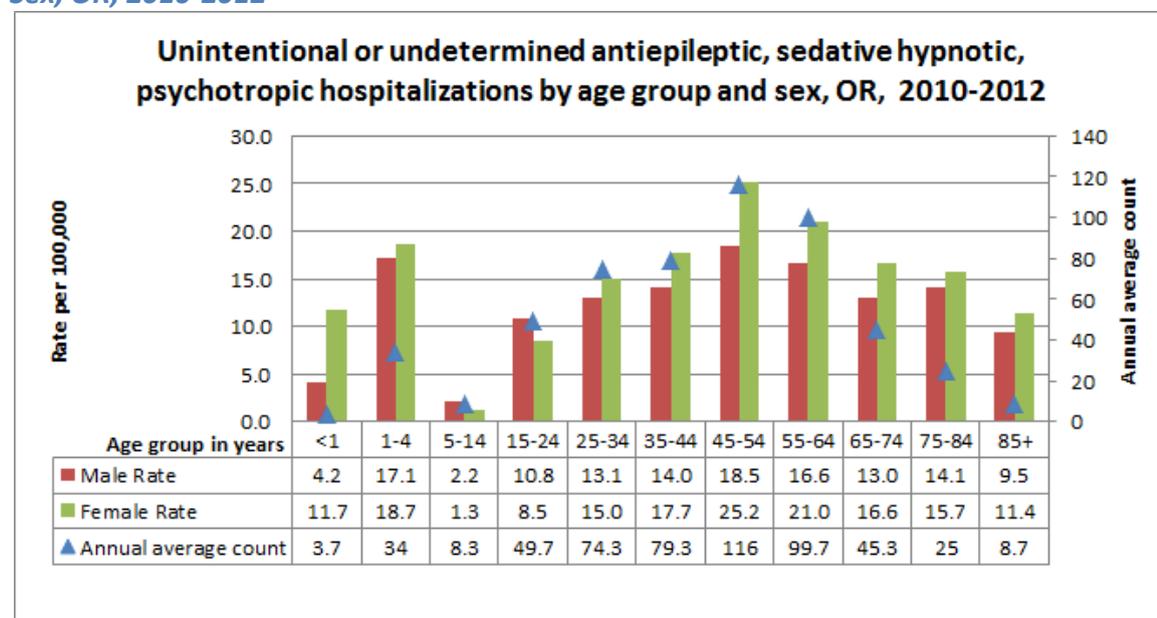
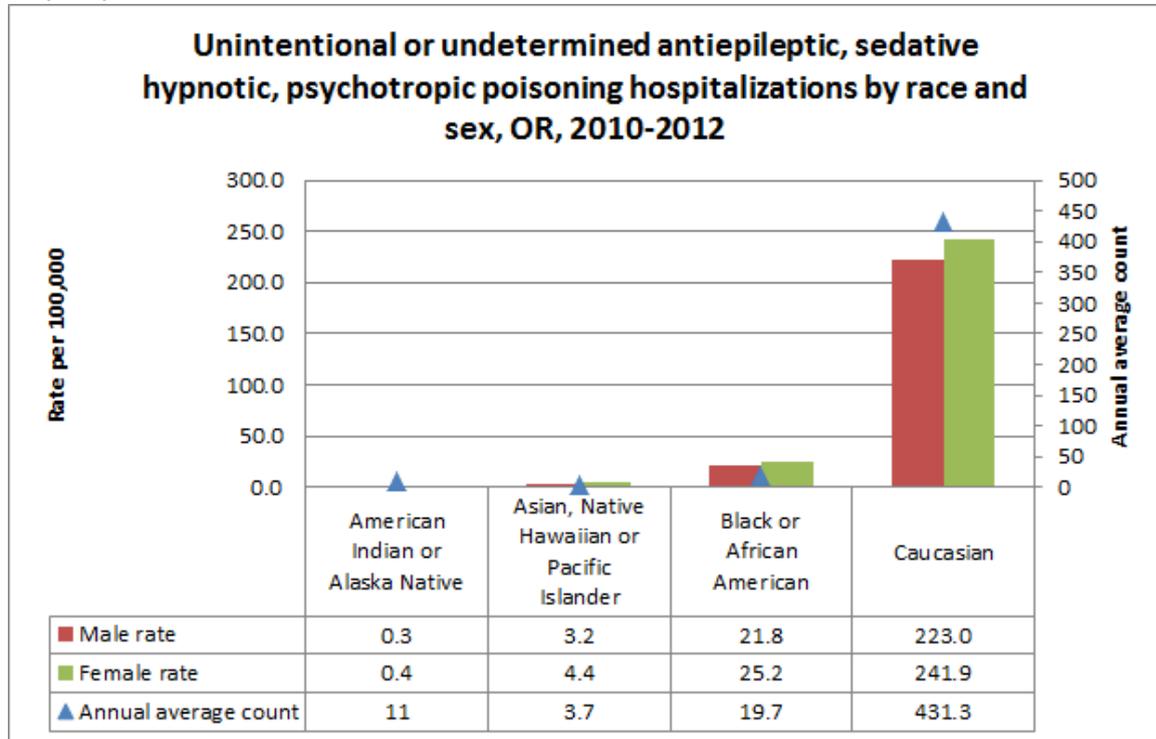


Figure 79. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Antiepileptic, Sedative Hypnotic or Psychotropic Drugs by Age and Sex, OR, 2010-2012*



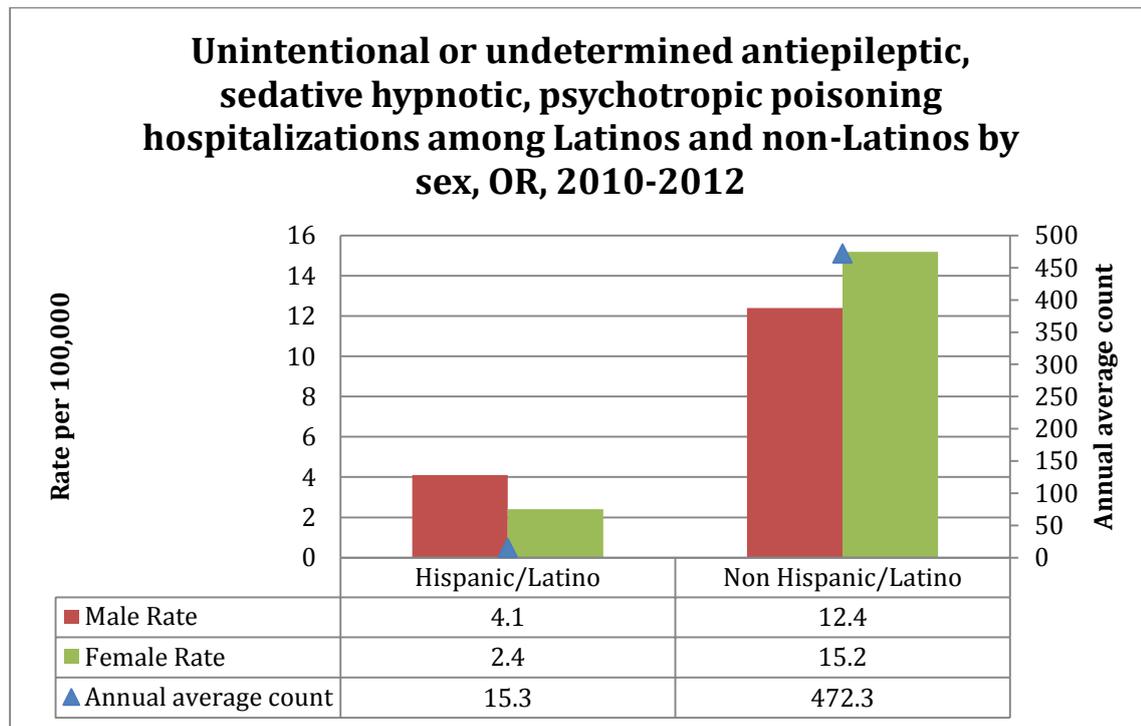
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 80. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Antiepileptic, Sedative Hypnotic or Psychotropic Drugs by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

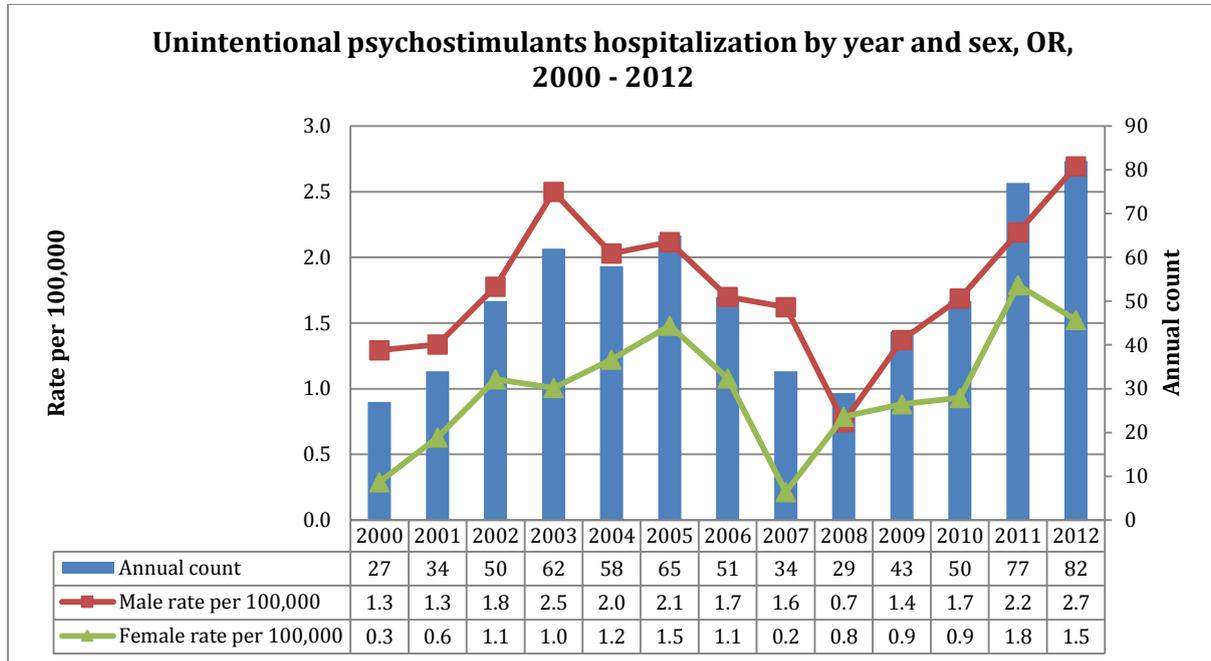
Figure 81. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Antiepileptic, Sedative Hypnotic or Psychotropic Drugs by Ethnicity and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

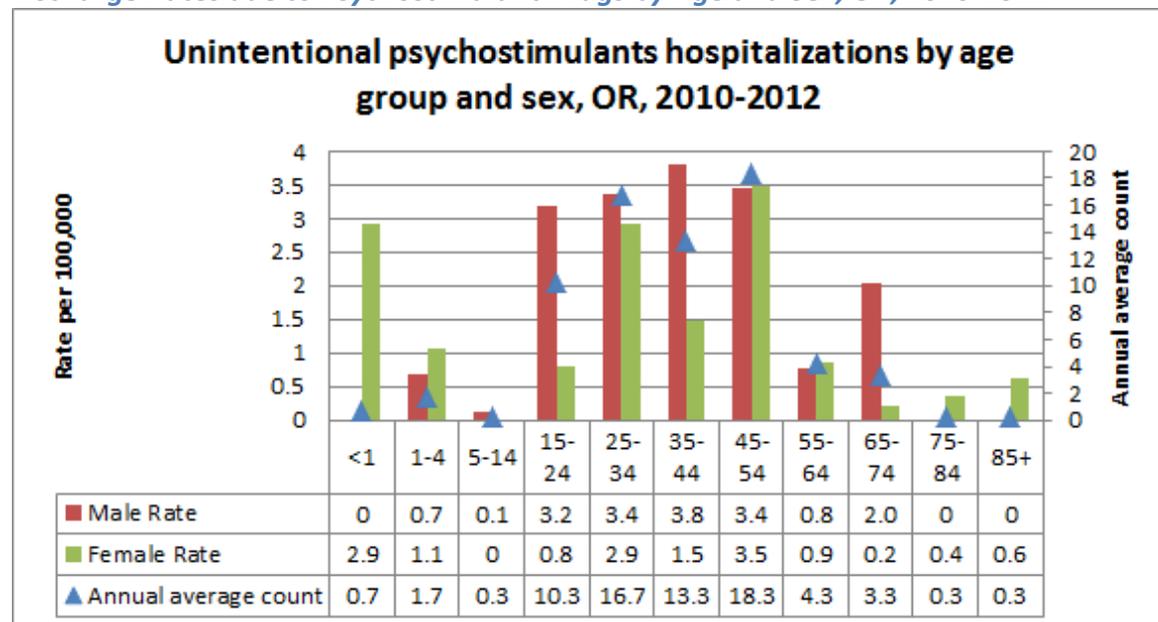
Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Psychostimulant Drugs

Figure 82. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Psychostimulant Drugs, by Year and Sex, 2000-2012*



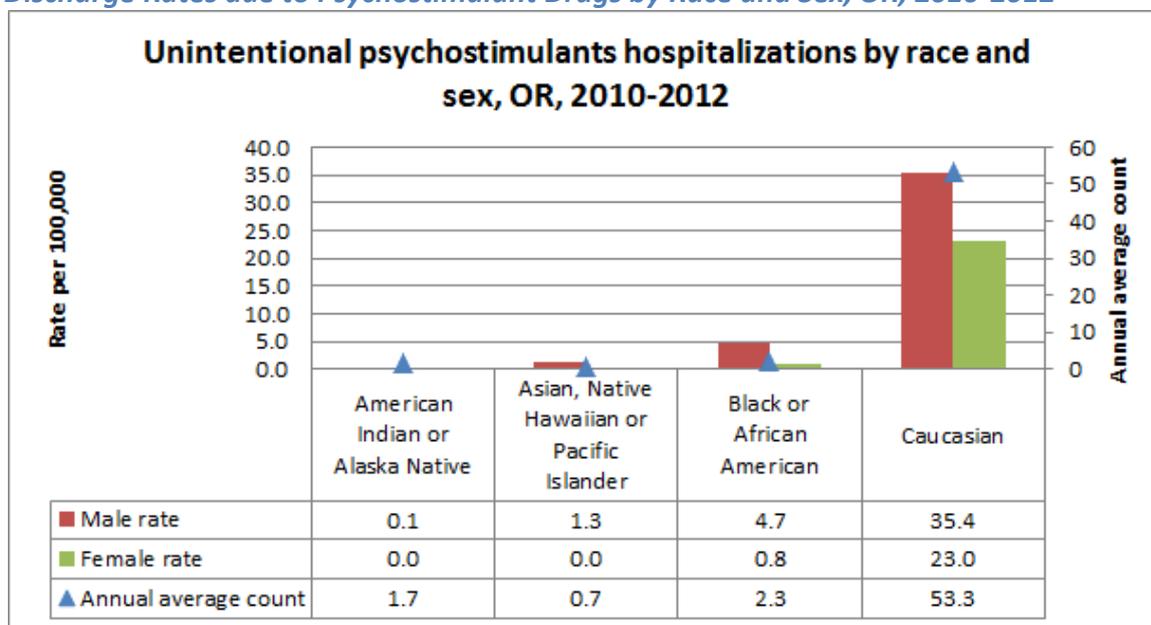
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 83. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Psychostimulant Drugs by Age and Sex, OR, 2010-2012*



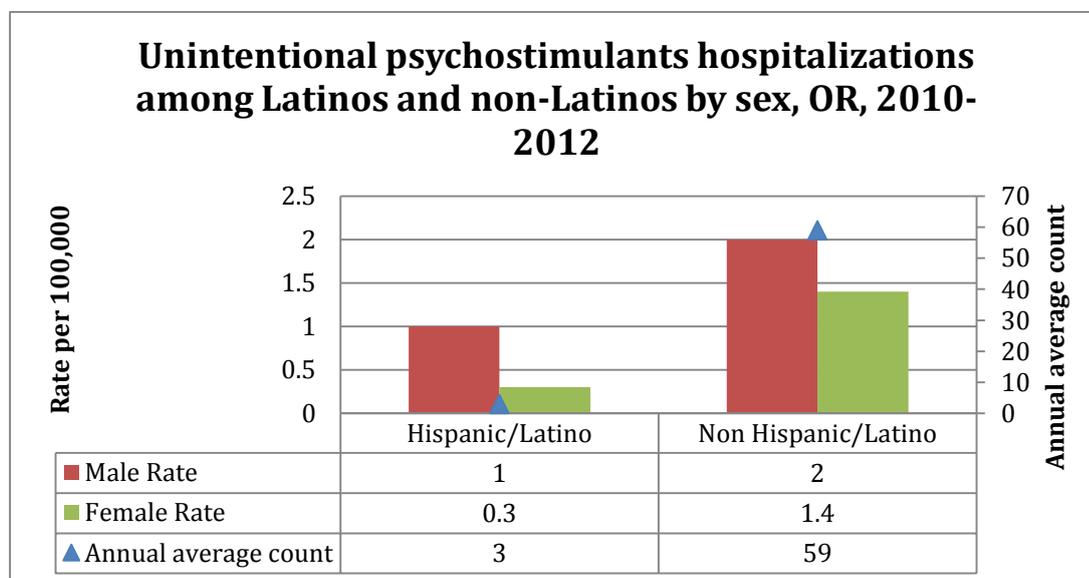
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 84. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Psychostimulant Drugs by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 85. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Psychostimulant Drugs by Ethnicity and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Other Specified and Unspecified Drugs

Figure 86. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Other Specified and Unspecified Drugs, by Year and Sex, 2000-2012

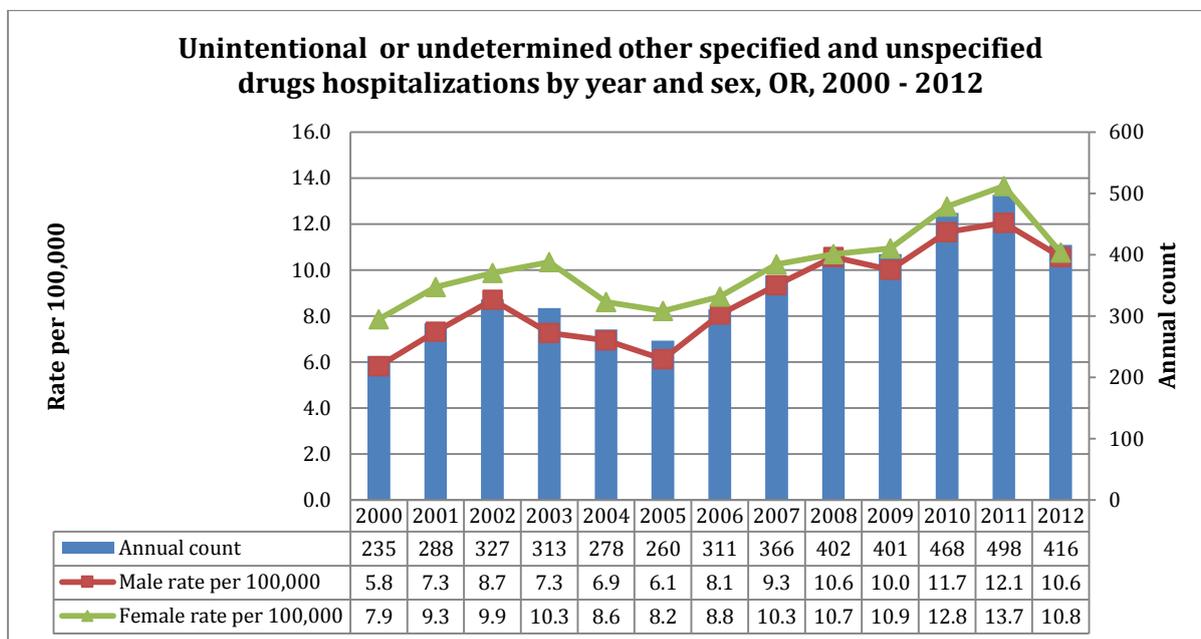
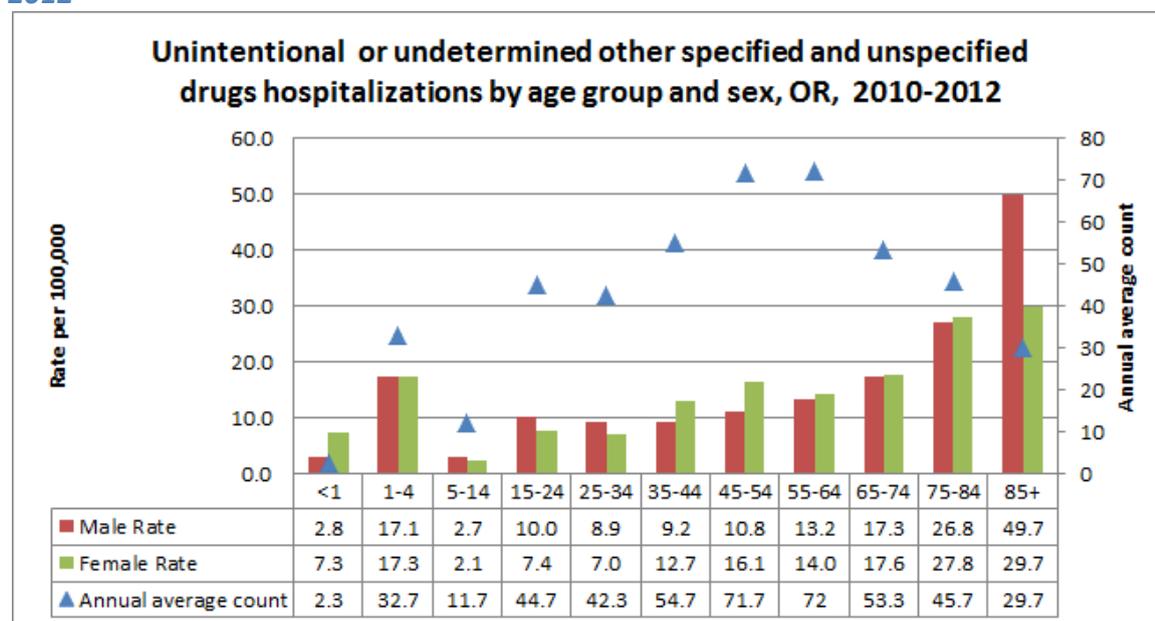
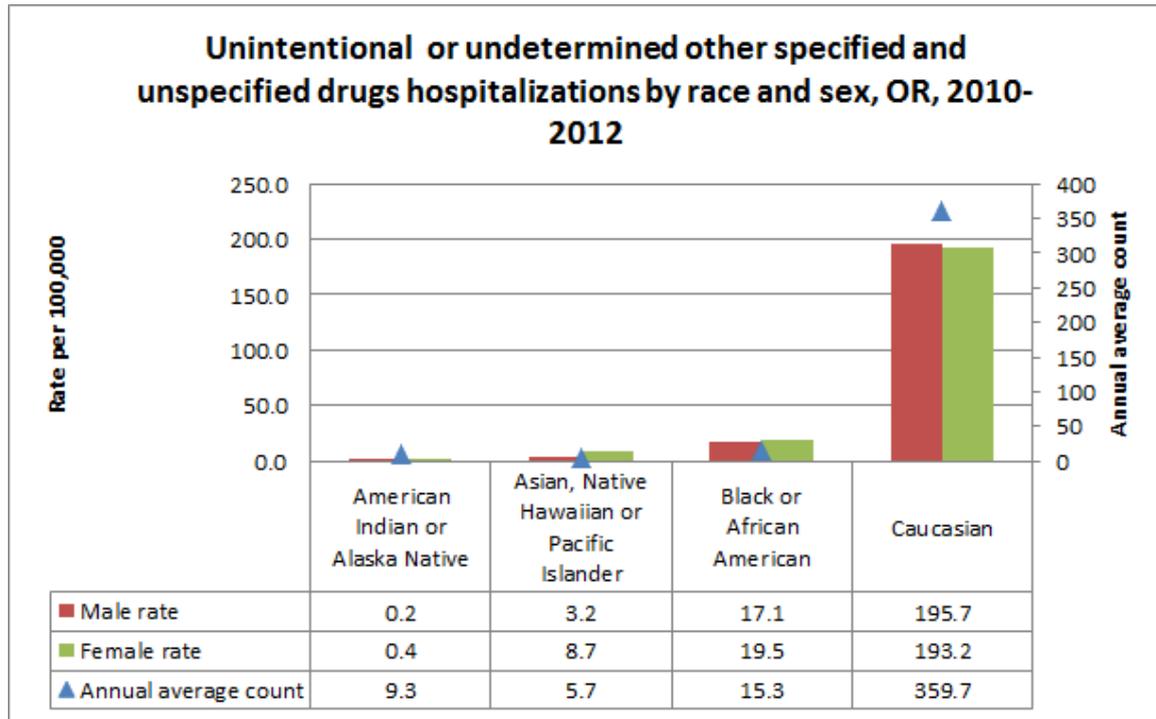


Figure 87. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Other Specified and Unspecified Drugs by Age and Sex, OR, 2010-2012*



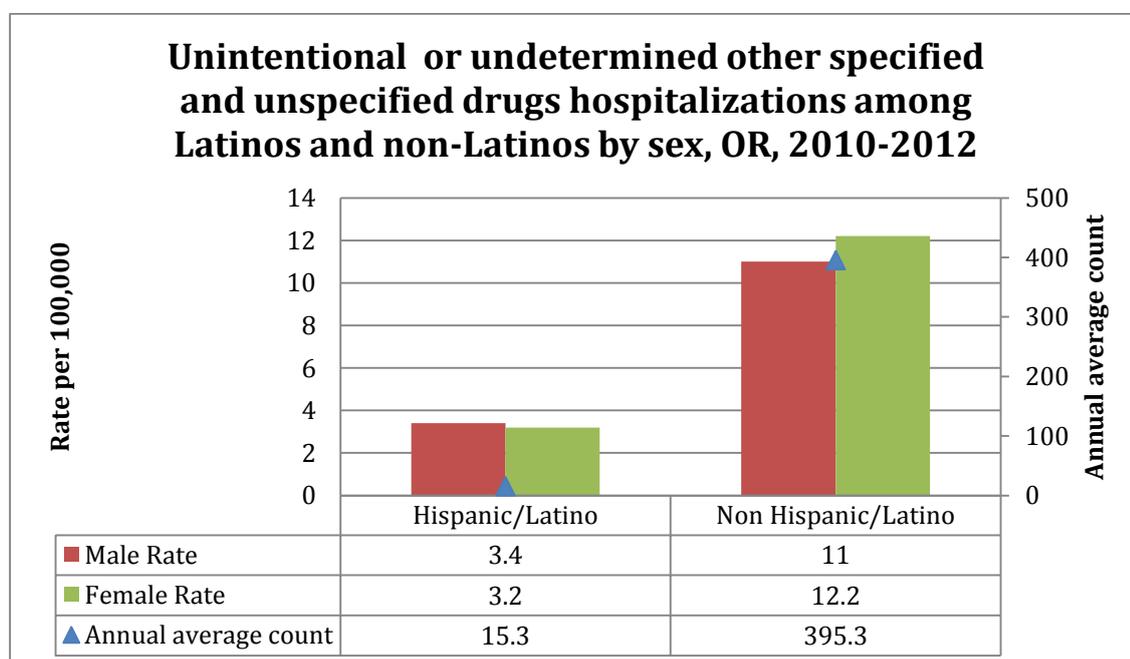
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 88. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Other Specified and Unspecified Drugs by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

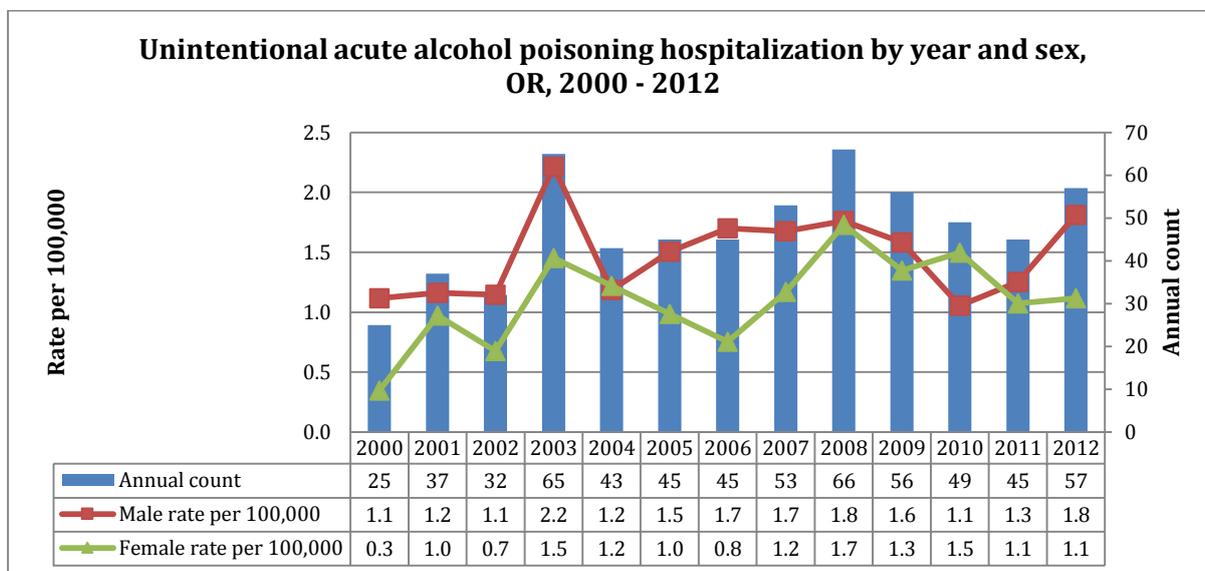
Figure 89. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Other Specified and Unspecified Drugs by Ethnicity and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

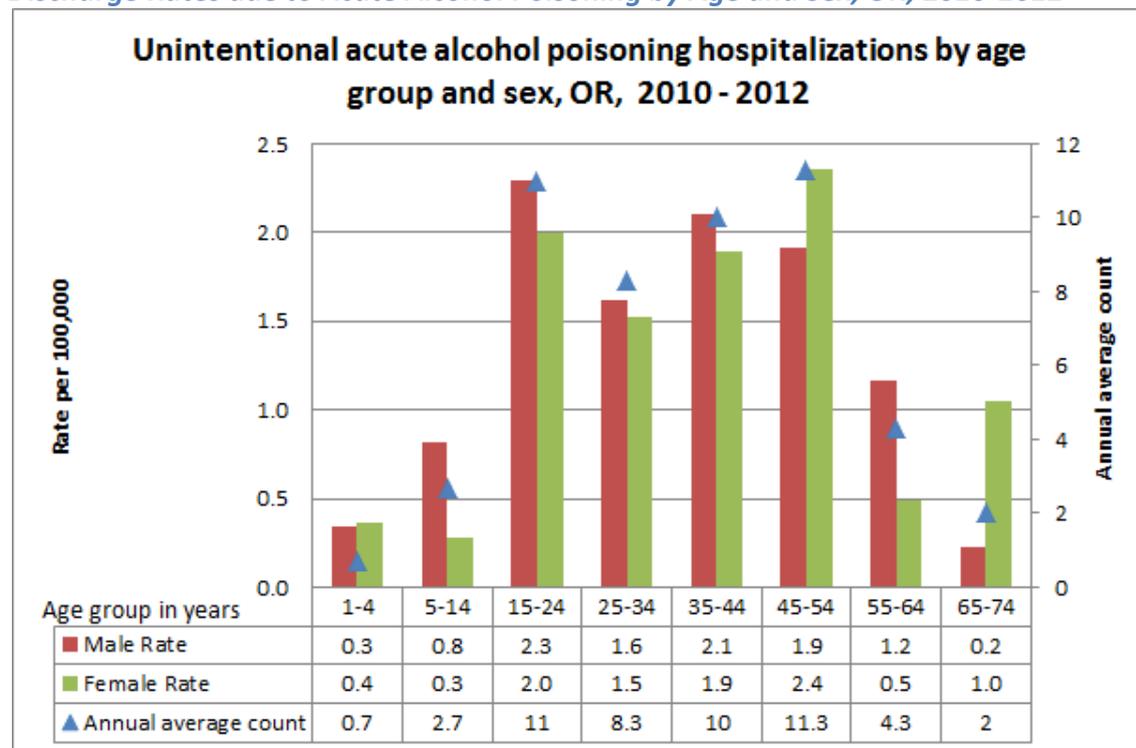
Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Acute Alcohol Poisoning

Figure 90. Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Acute Alcohol Poisoning by Year and Sex, 2000-2012



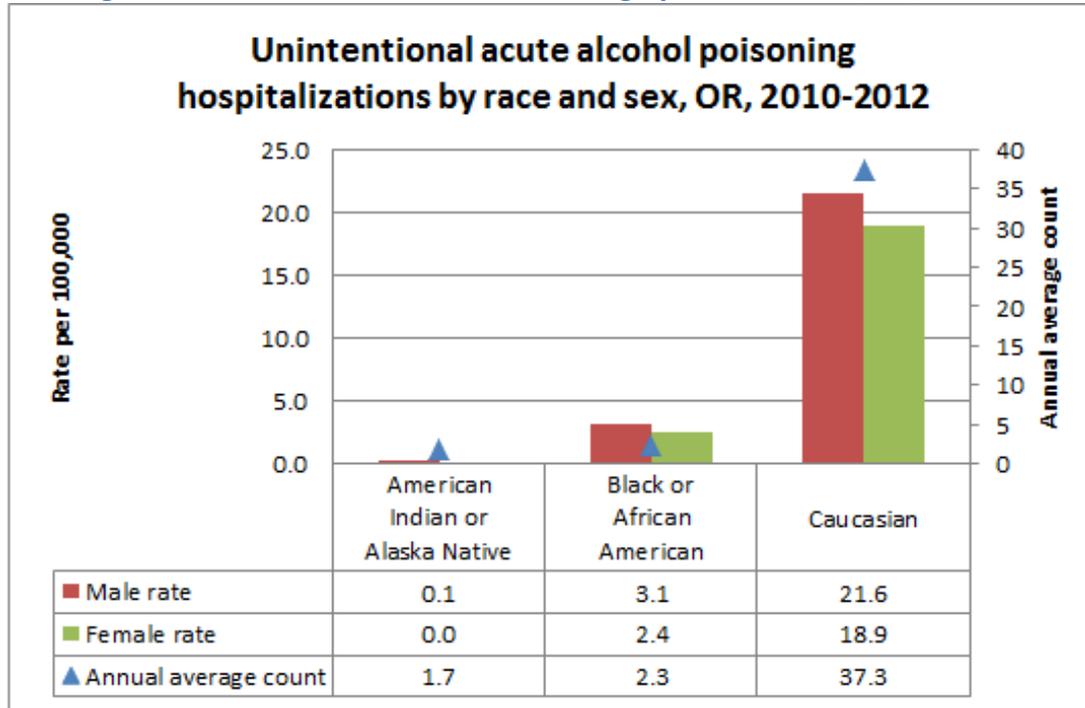
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 91. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Acute Alcohol Poisoning by Age and Sex, OR, 2010-2012*



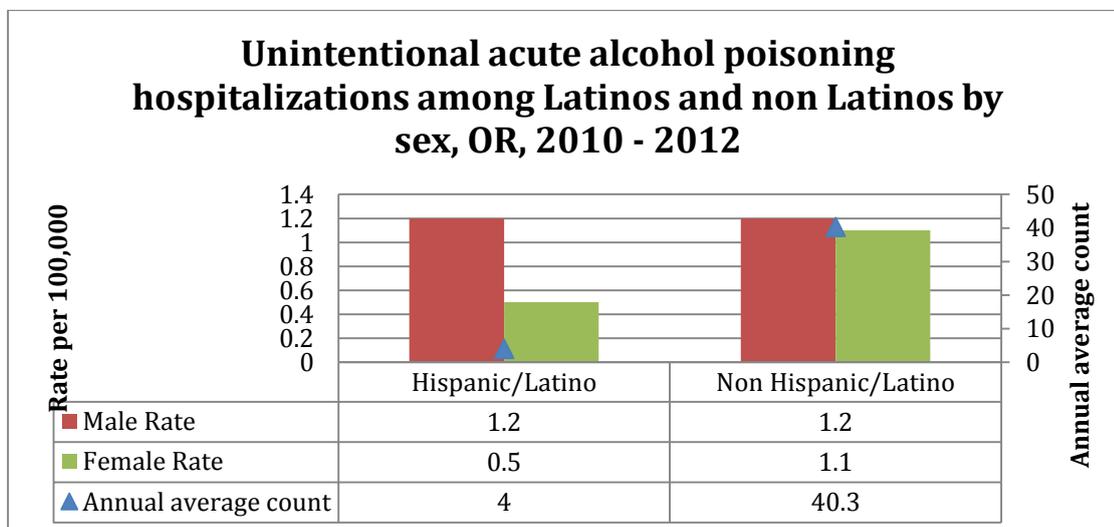
*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 92. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Acute Alcohol Poisoning by Race and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Figure 93. Average Unintentional and Undetermined Overdose Hospital Discharges and Discharge Rates due to Acute Alcohol Poisoning by Ethnicity and Sex, OR, 2010-2012*



*When rates are based on less than 20 individual cases it is impossible to predict if the rates reflect a true value and the rates may vary dramatically from year to year due to very small changes in individual counts.

Selected Drug Overdose Rates Comparing Difference in Exposure Groups in the Denominators Drawn from PDMP Data and from the Oregon Population

To calculate the rate for hospitalizations for the following figures, do this calculation:

$\frac{\text{Number of hospitalizations from poisoning by specific drug in 2012}}{\text{Estimated Oregon state population in 2012}} \times 100,000$

$\frac{\text{Number of hospitalizations from poisoning by specific drug in 2012}}{\text{Overdose hospitalizations among those receiving prescription of specific drug from PDMP data}} \times 100,000$

Figure 94. Unintentional or undetermined Opioids (without Methadone) poisoning hospitalizations among PDMP exposure group and Oregon population, OR, 2012

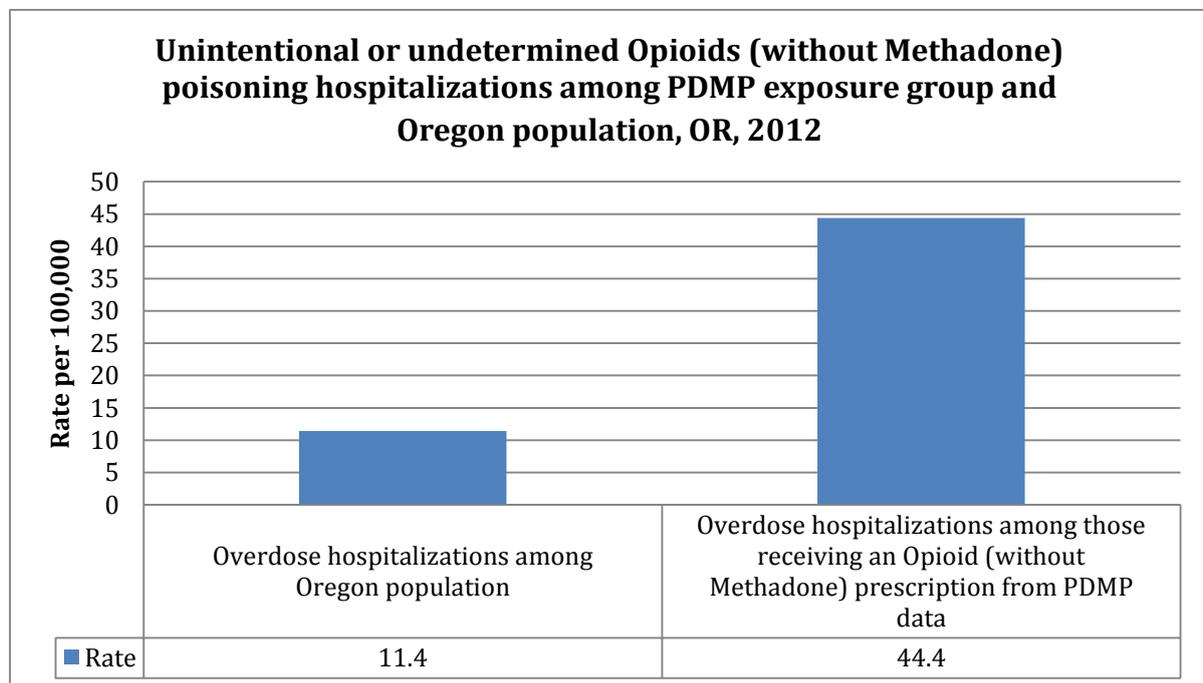


Figure 95. Unintentional or undetermined Methadone poisoning hospitalizations among PDMP exposure group and Oregon population, OR, 2012

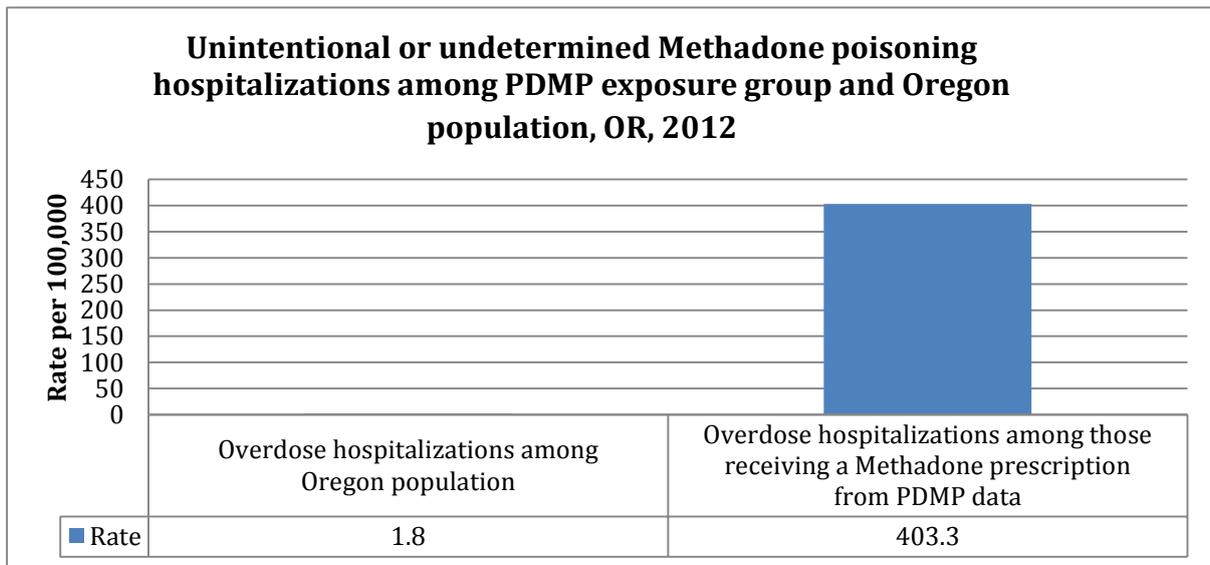
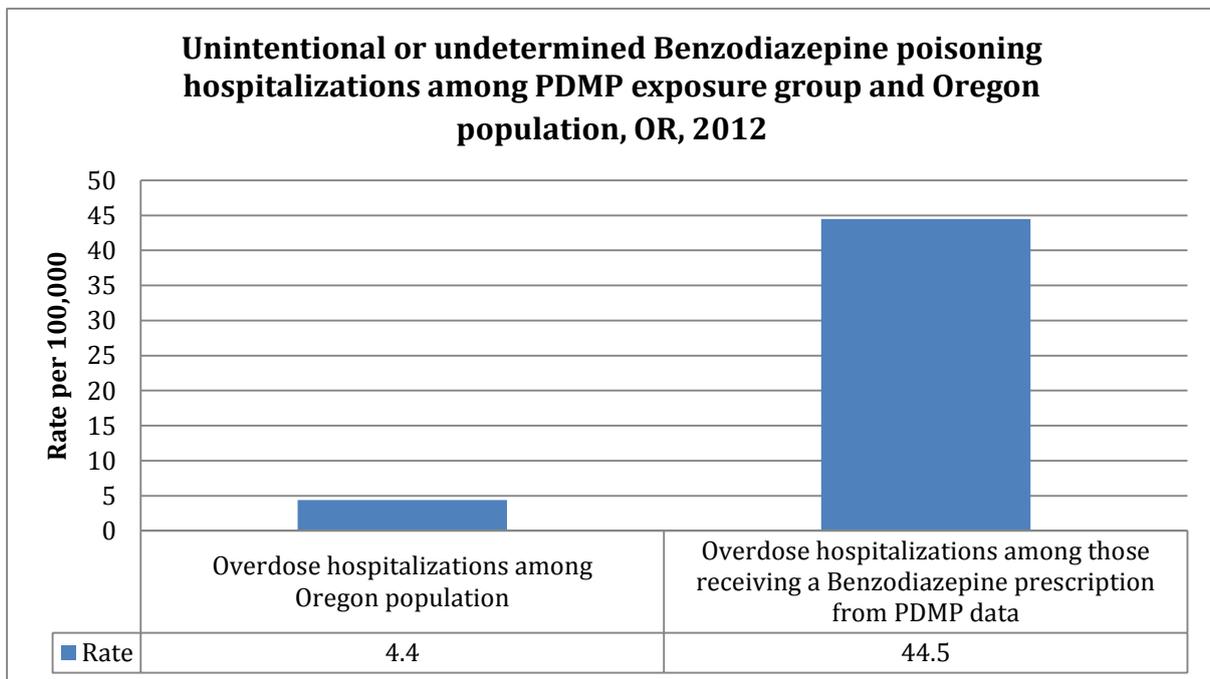


Figure 96. Unintentional or undetermined Benzodiazepine poisoning hospitalizations among PDMP exposure group and Oregon population, OR, 2012



Reported Billed Charges for Hospitalization and Length of Stay (LOS) by Reported Drug Type

Hospitalization charges for direct medical cost of care due to unintentional and undetermined overdose due to all drugs is estimated at over \$31 million in Oregon in 2012, with an estimated total length of stay of 4,333 days.

Table 6. Reported Hospitalization Billed Charges for Unintentional and Undetermined Drug Overdose by Type of Drug, OR, 2012

Type of drug	Total charge	Median charge	Mean charge	Standard deviation
Alcohol	1,187,357	16,004	20,831	17,487
Antiepileptic, sedative hypnotic, psychotropic	9,156,592	12,175	16,988	19,573
Benzodiazepines	2,159,364	10,648	15,762	17,959
Heroin	1,609,243	15,740	28,736	39,190
Pharmaceutical opioid	6,524,315	13,924	19,133	19,874
Psychostimulant	1,691,846	14,173	20,632	30,190
Methadone	1,060,333	13,550	17,972	19,070
Other specified	7,728,155	12,023	18,577	30,211
Total charges	31,117,204			

Table 7. Reported Length of Stay (LOS) in Days, for Hospitalizations due to Unintentional and Undetermined Drug Overdose by Type of Drug, OR, 2012

Type of drug	Total LOS	Median LOS	Mean LOS	Standard deviation LOS
Alcohol	125	1.0	2.2	2.6
Antiepileptic, sedative hypnotic	1,330	2.0	2.5	2.4
Benzodiazepines	297	1.0	2.2	1.9
Heroin	165	1.0	2.9	4.0
Pharmaceutical opioid	948	2.0	2.8	2.8
Psychostimulant	220	1.0	2.7	3.1
Methadone	142	2.0	2.4	2.4
Other specified	1,106	2.0	2.7	3.2
Total days	4,333			

Examination of Unintentional and Undetermined Overdose Codes Appearing in the Second through the Tenth ICD-9 Diagnostic Code Fields in Hospitalization Records

Patients can receive a primary diagnosis of drug overdose or other diagnoses as the primary diagnosis. The table below illustrates how additional diagnostic codes for drug abuse and dependency can be found in nine additional fields.

Table 8. Comparison of Primary Diagnosis Codes for Overdose with Hospitalizations Referencing Drug Abuse and Drug Dependence in up to 10 Diagnoses Listed, OR, 2012

Drug Type	Primary ICD-9 diagnosis count	Primary and 2-10 ICD-9 diagnosis field count
Heroin	101	117
Pharmaceutical opioid	584	884
Psychostimulant	144	256
Methadone	97	131
Antidepressants, psychotropics, NEC	1,624	1,793
Benzodiazepines	518	914
Other unspecified	831	1,101
Alcohol	97	402
Total count	3,996	5,598

Non-primary ICD-9 Codes for Hospitalizations where Dependency or Abuse Hospitalization are noted

Hospitalizations where abuse and dependency is a non-primary diagnostic code illustrates that this chronic condition is seen more often than hospitalizations with a primary diagnosis for overdose.

Table 9. Frequency of Drug Abuse or Dependency Diagnoses as Non-Primary Diagnoses, by Drug Type, OR, 2012

Drug Type	Abuse or dependency count
Heroin	169
Pharmaceutical opioid	4,501
Psychostimulant	3,348
Methadone	248
Antidepressants, psychotropics, NEC	2,957
Benzodiazepines	414
Other unspecified	5,994
Alcohol	151

Discussion

This report and the data produced by the PDMP suggest that the state must take action to reduce an epidemic of drug overdose – the tip of an iceberg of a much larger problem. Oregonians use a wide variety of medications and drugs (including alcohol) to treat medical and psychiatric conditions and for recreation. The dramatic increase in prescription controlled substance sales, illicit and prescribed drug use, misuse, dependency, and overdose due to drugs of all types has left nearly 3,500 dead in Oregon since 2000.

New data from Oregon's Prescription Drug Monitoring Program show that prescribed opioid use is endemic among Oregonians - over 900,000 Oregonians received a prescription for opioid medications in 2012. Another 400,000 individuals in the state received prescriptions for benzodiazepines to treat anxiety. Most of these prescriptions are medically necessary by today's standards. However, one unintended consequence is a stream of unused medicines in bathrooms and bedrooms throughout the state that find their way into the hands of youth who then take them and experience their first opioid high. There is some evidence to suggest that the epidemic of heroin use that has taken up residence in Oregon's urban areas among young males may have its roots in their easy access to prescription opioids from home or the homes of their friends.

Oregon communities are awash with medicines and drugs that are used to control pain and reduce anxiety. The price of this decade and a half of promotion of drug use by pharmaceutical companies and public policy encouraging an increase in prescribing by healthcare providers is not yet fully realized. The deaths and hospitalizations due to unintentional drug overdoses are the tip of an iceberg of cost to individuals, families, communities, businesses, and the state. Drug epidemics in the 1970's, 1980's, and 1990's have shown that drug use, for a certain portion of the population, will lead individuals to jails, institutions, and possibly death. Another larger proportion of the population will experience a life-long struggle with drug use that will impact their employment, their relationships, their families, and their communities.

To stem the tide of the unintended consequences of the promotion of drug use it will be necessary for health systems, clinicians, academics, epidemiologists, patients, pharmacists, communities, law enforcement, and pain specialists to work together. The state must engage partners across disciplines and business and community sectors to: reduce easy access to medicines in homes; promote the use of the PDMP as a best practice; implement guidelines for prescribing opioids; make patients responsible and accountable for safely storing prescribed controlled substances; institutionalize drug take back; increase insurance coverage and reimbursement for non-pharmaceutical pain control; provide access to evidence based treatment for addiction; improve the ability of primary care providers to identify drug misuse and abuse among patients and get patients referred for behavioral healthcare; and strengthen the integration of primary care and behavioral healthcare in health systems.

The key measures of success have yet to be defined. Monitoring the problem using data from all available sources will be one of the keys to progress. Evaluation of progress is also needed to avoid spending state resources on activities that are not proven to work.

The drug overdose problem and the burgeoning prescription drug abuse and dependency problem among Oregonians are the result of healthcare practice. There is a critical need to create local and statewide initiatives to organize and strengthen a health sector approach that can result in reducing drug overdose deaths, hospitalizations, abuse and dependency. Oregon has taken strides to address the problem of drug overdose with these steps:

1. The state Legislature enacted legislation to establish a Prescription Drug Monitoring Program in 2009; in 2013 the legislature passed a law that allows establishment of medically-supervised lay person naloxone rescue as well as a measure that allows the state to enhance the utility of the state PDMP by allowing delegates of healthcare providers and pharmacists to use the PDMP.
2. The Governor's office sent a team to the National Governor's Association Policy Academy on Prescription Drug Abuse. The team developed a policy paper to guide policy development in Oregon.
3. Local communities have implemented periodic drug take back days but those efforts are labor and resource-intensive with unevaluated results.
4. Local public health authorities and Coordinated Care Organizations should organize prescriber groups such as the Jackson County Opioid Prescribers Group to improve practice, increase patient safety, and coordinate efforts across systems of care.
5. The Oregon Public Health Division (PHD) will pilot the use of syndromic surveillance to identify outbreaks and clusters in real time. The Public Health Division will expand the use of the PDMP and mine data to monitor the problem. The State Health Officer and Public Health Administrator have signed on to an Association of State Health Officers initiative to reduce prescription drug abuse and overdose.
6. The State Pharmacy Program removed methadone from the state formulary for pain control.
7. The Addictions and Mental Health Services Program is expanding the use of a brief screening and intervention tool known as Screening Brief Intervention, Referral and Treatment (SBIRT) statewide.
8. Members of Oregon's academic community and medical researchers are engaged in activities to develop and disseminate knowledge about drug overdose, pain care, drug and alcohol abuse and dependency, and drug policy.

The state of Oregon can build upon a solid beginning by considering recommendations to enact evidence based policy and practice recommendations and evaluate the outcomes and impacts of new initiatives as they are implemented.

Recommendations

The Centers for Disease Control and Prevention recommend that states maximize Prescription Drug Monitoring Programs in several ways:

- States should use Prescription Drug Monitoring Program Data to create routine reports to assist prescribers to track high risk behavior, prescribing thresholds, and dangerous co-prescribing, and use of multiple prescribers and pharmacies.
- PDMPs should automate prescriber notifications that identify when medicines dispensed to patients might endanger patient safety and health.
- States should establish statewide best practice recommendations for the use of the PDMP.
- States should monitor overdose by producing annual reports and special reports.

Recommendations from Oregon's National Governor's Association Task Force on Prescription Drug Abuse include:

1. Reduce the number of pills in circulation using the following approaches:
 - Encourage full use of the Prescription Drug Monitoring Program (PDMP) by prescribers who write prescriptions for controlled substances.
 - Educate prescribers about the dangers of overdose and addiction.
 - Encourage Coordinated Care Organizations (CCOs) and other prescribers to increase the use of non-opioid pain management.
 - Help the prescriber say no to patient drug seeking behavior.
 - Support efforts by the Oregon Medical Association (OMA) and Oregon Health Sciences University to build education programs for prescribers about the risk of these medications.
 - Encourage CCOs to adopt Prescribing Guidelines similar to those used by the Southern Oregon's Opioid Prescribers Group.
2. Educate the public in the following ways:
 - Help patients understand the limitations and risks of prescription controlled substances, particularly for pain.
 - Encourage patients to safeguard their prescription controlled substances.
 - Increase student awareness that prescription opioids are no safer than "street" drugs.
 - Partner with Oregon Health Science University, Oregon Medical Association, and Pharmaceutical Research and Manufacturers of America develop patient education.
3. Help get rid of unwanted prescription drugs using the following approaches:
 - Help patients return unused prescription controlled drugs for destruction through take-back programs at both community and pharmacy levels.
 - Approach pharmaceutical companies about the role they can play in take-back efforts.

4. Provide treatment for people who are addicted to prescription drugs:
 - Identify patient misuse and abuse of prescription drugs early.
 - Provide effective, evidence-based, up-to-date treatment for addictions.
 - Promote co-prescriptions of naloxone whenever prescribing opioid analgesics.
 - Monitor pre-natal evidence of prescription drug misuse.
 - Provide team-based, integrated and coordinate behavioral and physical healthcare so that individuals with an addiction disorder have access to all appropriate health care.
 - Promote integration and new partnerships between physical and behavioral healthcare

5. Develop and maintain high-level state involvement:
 - Develop an evaluation process to measure the efficacy of the above policies.

References and Data Sources:

Population estimates: National Center for Health Statistics (NCHS) Vital Statistics System: http://www.cdc.gov/nchs/nvss/bridged_race.htm

Oregon Deaths: Oregon Center for Health Statistics, Public Health Division, Oregon Health Authority:
<http://public.health.oregon.gov/PHD/Directory/Pages/program.aspx?pid=98>

Oregon Hospitalizations: Hospital Discharge Index – Public Health Division – Oregon Health Authority: <http://www.oregon.gov/oha/OHPR/RSCH/Pages/index.aspx>

Source Where Pain Relievers Were Obtained: Results from the 2012 National Survey on Drug use and Health: Summary of National Findings at:
<http://www.samhsa.gov/data/NSDUH/2012SummNatFindDetTables/NationalFindings/NSDUHresults2012.pdf>

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