PRESCRIBING PRACTICE IN UTAH

2002-2015

Violence & Injury Prevention Program, UDOH
4/30/2016

Prescribing Practice in Utah is a partner publication of the Utah Department of Health and Utah Department of Commerce Division of Occupational and Professional Licensing. The following Utah Department of Health programs contributed to this report: Center for Health Data & Informatics, Department of Technology Services, Executive Director's Office, Health Informatics Program, Office of Health Care Statistics, and Violence and Injury Prevention Program.

This report was supported by the Prescription Drug Overdose Prevention for States Grant from the U.S. Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.

Suggested Citation: Violence and Injury Prevention Program. Prescribing Practice in Utah 2002-2015. Salt Lake City, UT: Utah Department of Health 2016.

Utah Division of Occupational & Professional Licensing

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ACKNOWLEDGMENTS

A special thank you to the Utah Division of Occupational and Professional Licensing for their support, encouragement, and partnership with the Utah Department of Health to utilize prescribing data as a public health tool to help inform prescription drug abuse prevention and intervention efforts.
The following are acknowledged for their contribution in the development of this report:
Report Authors:

- **Anna Fondario, MPH**
  Violence and Injury Prevention Program
  Utah Department of Health
- **Emily Varner, MPH**
  Center for Health Data & Informatics
  Utah Department of Health
- **Elizabeth Brutsch, MPH**
  Violence and Injury Prevention Program
  Utah Department of Health

Other Contributors:

- **David Arcilesi, BS**
  Department of Technology Services
  Utah Department of Health
- **Kailah Davis, PhD**
  Health Informatics Program
  Utah Department of Health
- **Jeffrey Duncan, PhD**
  Health Informatics Program
  Utah Department of Health
- **David Furlong, Chief Investigator**
  Division of Occupational and Professional Licensing
  Utah Department of Commerce
- **Robert Rolfs, MD, MPH**
  Executive Director's Office
  Utah Department of Health
- **Luz Seoane, MPH**
  Health Informatics Program
  Utah Department of Health
- **Marvin Sims, CSD Administrator**
  Division of Occupational and Professional Licensing
  Utah Department of Commerce
- **Mark Steinagel, MPA**
  Division of Occupational and Professional Licensing
  Utah Department of Commerce
- **Ray Walker, JD**
  Division of Occupational and Professional Licensing
  Utah Department of Commerce
- **Wu Xu, PhD**
  Center for Health Data & Informatics
  Utah Department of Health

EXECUTIVE SUMMARY

The Utah Controlled Substance Database is one of many tools that can be used to understand Utah's prescription drug abuse, misuse, and overdose problem. This report was developed as a result of the following legislative requirement:

The Legislature intends that the Department of Health shall report to the Office of the Legislative Fiscal Analyst by April 30, 2016, on the total amount of opioid pain medications dispensed per capita, as morphine equivalent dosages, and may include other measures of risky opioid prescribing that the Department determines to be useful for understanding the influence of opioid prescribing on overdose deaths in Utah. Data shall be shared as far as is readily available back through 2000.

The Prescribing Practice in Utah report contains summary statistics on the rate of prescription opioids dispensed from 2002 to 2015 from the Controlled Substance Database as data prior to 2002 is unreliable. From 2002 to 2015, there has been a significant increase in the rate of opioid prescriptions dispensed relative to the population (from 686.4 to 888.5 per 1,000 population, respectively). In January 2016, there were 210,054 opioid prescriptions written by 9,013 prescribers for a monthly average of 23.3 prescriptions per prescriber. There has been a slight decrease in the number of patients in the Controlled Substance Database from 2002 to 2014 (1,290,517 to 1,196,621, respectively), but there has been a great increase in number of prescriptions in the same time period (3,189,960 to 5,961,441, respectively). Since 2002, the average number of prescriptions per patient has doubled from 2.98 prescriptions per person to 4.98 prescriptions per person in 2014.

This report serves as a foundation to understand the role of opioid prescribing in Utah's prescription opioid abuse epidemic. This report is preliminary and a work in progress. Limited data cleaning was performed to compile this report; more extensive data cleaning, de-duplication, and linkage with other data sources are in progress but not able to be completed within the timeframe of this report. Further data analysis and future reports will afford policymakers the opportunity to understand the overall impact of opioid prescribing.

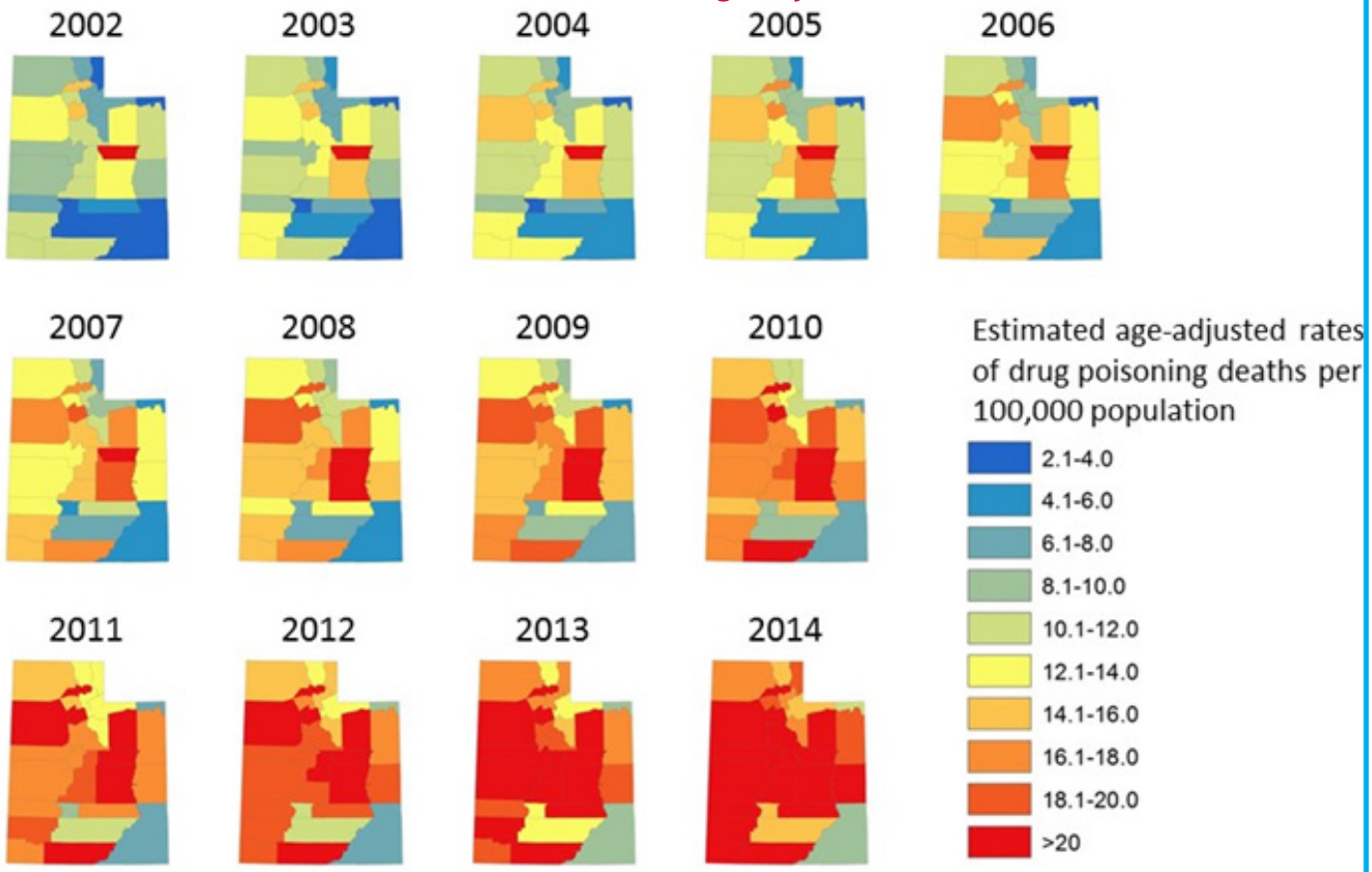
Prescribing rates were examined by age, sex, and morphine milligram equivalents (MME). From 2002 to 2015, there has been a 76.4% increase in the total MME dispensed. When comparing the total MME dispensed to variations in population size, there was only a 37.3% increase in the rate of total MME dispensed per 1,000 population from 2002 to 2015. Opioid prescriptions were categorized into high- or low-dose based on MME (MME>90 or ≤90, respectively). Overall, females received more opioid prescriptions than males, but males received more high-dose opioids than females. Utahns aged 65 and older received the highest rates of opioid prescriptions, but Utahns aged 25-64 had the highest rates of high-dose opioid prescriptions. From 2002 to 2015, the overall percentage of high-dose (MME>90) opioid prescriptions increased by 24.2% while low-dose (MME≤90) opioid prescriptions decreased by 2.7%. There was a 69.9% increase in high-dose opioids prescribed to those 25-34 from 2002 to 2015, the greatest increase across all age groups. Utahns under 18 years old experienced the greatest decrease in high-dose opioid prescriptions; a 63.3% decrease from 2002 to 2015.

In response to the current drug overdose epidemic in Utah, HCR 4 – Concurrent Resolution Declaring Drug Overdose Deaths to be a Public Health Emergency was passed during the 2016 Legislative Session. HCR 4 emphasizes the importance of the lives of all people living in Utah; recognizes Utah's high rates of overdose death compared to most states in the country; and strongly urges Utah's Department of Health, Department of Human Services, and Department of Public Safety to recognize this public health crisis and direct resources to reduce the number of overdose deaths in Utah.

INTRODUCTION

Since 2002, the rate of drug poisoning deaths has increased at an alarming rate in Utah (**Figure 1**). This preventable public health problem has outpaced deaths due to firearms, falls, and motor vehicle crashes in Utah.[1] From 2012 to 2014, Utah ranked 4th in the U.S. for drug poisoning deaths with an age-adjusted rate of 22.4 per 100,000 population behind West Virginia (33.3 per 100,000 population), New Mexico (24.8 per 100,000 population), and Kentucky (24.5 per 100,000 population).[2] Every month, 49 Utahns die as a result of a drug poisoning, 82.3% of which are accidental or of undetermined intent, and of these, 74.8% involve opioids.[1]

Figure 1. Rate of Drug Poisoning Deaths per 100,000 Population by County, Utah, 2002-2014 (age-adjusted)



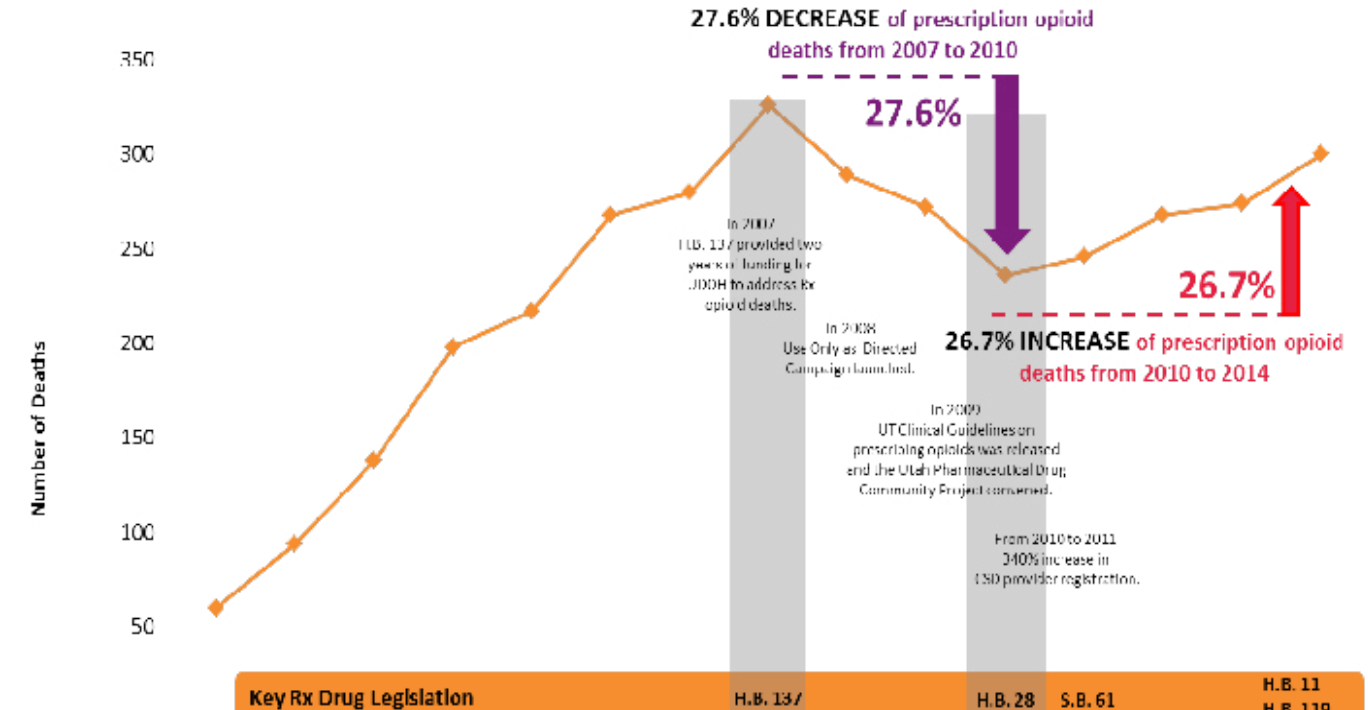
Utah continues to be disproportionately affected by prescription opioids; 65.1% of overdose deaths have substance abuse as a contributing factor, and 60.9% have physical health problem as a contributing factor.[3] In 2014, 32.3% of Utah adults reported using at least one prescribed opioid pain medication during the preceding 12 months, an increase of 55.3% since 2008.[4] Furthermore, the prevalence of Utah adults who reported using prescription opioids that had not been prescribed to them increased 77.8% from 2008 (1.8%) to 2014 (3.2%).[4] In 2012, Utah ranked 15th highest in the nation for high-dose opioid prescribing.[5] A number of factors have contributed to the increase and widespread availability of prescription opioids. In the early 1990s, physicians were urged to be more attentive in identifying and aggressively treating pain. In addition, the pharmaceutical industry aggressively marketed the use of prescription opioids to providers. Consequently, opioid pain relievers, such as oxycodone and hydrocodone, gained widespread acceptance. Health care professionals prescribed opioid pain relievers more frequently as part of patient care. The increase in prescription pain medication prescribing resulted in these medicines being kept in home medicine cabinets, providing in an increased opportunity for theft or misuse.

INTRODUCTION

Prescription drug abuse has resulted in premature deaths, contributed to significant economic burdens through increased health care costs and substance abuse treatment, and fueled the rise in heroin addiction. The mission of the Utah Department of Health (UDOH) is to protect the public's health through preventing avoidable illness, injury, disability and premature death; assuring access to affordable, quality health care; and promoting healthy lifestyles.[6] Drug poisoning death is one of several indicators identified to measure the UDOH's strategic goal of being the healthiest people in the country.

In 2007, the Utah State Legislature authorized the UDOH to establish a Prescription Pain Medication Program (PPMP) to coordinate statewide initiatives and receive access to the Controlled Substance Database (CSD) to reduce deaths and other harm from prescription opiates. During 2007-2010, the PPMP received funding and with several community partners, including the DOPL, UDOH conducted a "Use Only As Directed" media campaign, developed the Utah Clinical Guidelines on Prescribing Opioids, launched a statewide provider education intervention where physicians had the opportunity to receive continuing medical education for participation in small and large group presentations, provided academic detailing, and produced analytic profiles for Utah drug overdose deaths. Drug overdose deaths decreased from 2007-2010 but have since increased (**Figure 2**).

Figure 2. Number of Occurrent Prescription Opioid Deaths and Prescriber Education Strategy by Year, Utah, 2002-2014



UTAH CONTROLLED SUBSTANCE DATABASE

The Utah Controlled Substance Database (CSD) was legislatively created and has been in operation since 1995 (see Appendices A & B). The CSD is managed by the Division of Occupational and Professional Licensing (DOPL) in the Utah Department of Commerce. The Utah Controlled Substance Database Program tracks and collects data on dispensing of Schedule II-V drugs by all retail, institutional, and outpatient hospital pharmacies and in-state/out-of-state mail order pharmacies.[7] The data is disseminated to medical and law enforcement professionals and used to identify potential cases of drug over-utilization, misuse, and over-prescribing of controlled substances throughout the state.[7] **Table 1** contains record, report, and user information from State Fiscal Year 2015.

Table 1. Controlled Substance Database State Fiscal (SFY) Year 2015[7]

Prescription Records	Count
Total prescription records as of 6/30/2015	63,997,376
Total prescriptions entered in SFY 2015	5,987,647
Report Types	
Online reports (SFY 2015)	1,001,028
In-house reports (SFY 2015)	8,921
Hospital Overdose Reports	905
Court Reports regarding DUI Conviction	364
To Practitioners	
Overdose Reports	2,846
DUI Reports	679
Doctor Shopper letters	3,216
To Law Enforcement	
Doctor Shopper letters	252
Registered User Types	
Pharmacists	2,280
Practitioners	16,615
Other	331

KEY LEGISLATION RELATING TO PRESCRIBING PRACTICES

Utah has implemented several legislative measures that impact the implementation of the CSD database and prescribing practices. The key legislative measures related to prescribing practice from the 2016 Legislative Session and descriptions are included below. A complete controlled substance database legislative history can be found in Appendix C; complete bills can be found at **le.utah.gov/.**[8]

- 2016 SB 58 (Sponsor: Sen. Hinkins) – Nurse Practitioner Amendments: Allows an advanced practice registered nurse to prescribe a Schedule II controlled substance without a consultation and referral plan if the advanced practice registered nurse: meets certain experience requirements; consults the Controlled Substance Database; when treating an injured worker, follows prescribing for chronic pain guidelines developed by the Workers' Compensation System; prohibits an advanced practice registered nurse from establishing an independent pain clinic without a consultation and referral plan.
- 2016 HB 114 (Sponsor: Rep. Ward) – Controlled Substance Reporting: Amends the requirement for a general acute hospital to report to the Division of Occupational and Professional Licensing admissions for poisoning or overdose involving a prescribed controlled substance and other amendments.
- 2016 HB 149 (Sponsor: Rep. Daw) – Death Reporting and Investigation Information Regarding Controlled Substances: Requires the medical examiner to provide a report to the Division of Occupational and Professional Licensing (DOPL) when the medical examiner determines that a death resulted from poisoning or overdose involving a prescribed controlled substance; requires that, when DOPL receives a report described in the preceding paragraph, DOPL shall notify each practitioner who may have written a prescription for the controlled substance involved in the poisoning or overdose.
- 2016 HB 239 (Sponsor: Rep. McKell) – Access to Opioid Prescription Information via Practitioner Data Management Systems: Requires the Division of Occupational and Professional Licensing within the Department of Commerce to make opioid prescription data information in its controlled substance database accessible to an opioid prescriber or pharmacist via the prescriber's or pharmacist's electronic data system; limits access to and use of the information by an electronic data system, a prescriber, or a pharmacist in accordance with rules established by the division.
- 2016 HB 375 (Sponsor: Rep. Christensen) – Prescription Drug Abuse Amendments: Amends the Controlled Substances Database Act to promote utilization of the controlled substances database to prevent opioid abuse; requires a dispenser to contact the prescriber if the controlled substance database suggests potential prescription drug abuse; limits liability for prescribers and dispensers who contribute to and use the database.
- 2016 HB 400 (Sponsor: Rep. Redd) – Methadone Treatment Amendments: Requires a prescriber at an opioid treatment program that is certified under federal law, to periodically check the database before administering an opioid replacement drug to a patient; requires coordination between the Division of Substance Abuse and Mental Health and the Division of Occupational and Professional Licensing to establish the interval for checking the database.

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According to the Centers for Disease Control and Prevention (CDC), prescription drug monitoring programs (PDMPs), such as the CSD, are a promising state-level intervention that can be used as a tool to inform and improve prescribing practices.[9] In addition, it can be helpful in identifying individuals who misuse, abuse, or overdose from opioids while, at the same time, making sure patients have access to effective and safe pain management treatments. Patient safety is a key outcome to prescribing opioids, and providers should be equipped with data and tools to make informed decisions regarding a patient's history of controlled substance use.

CDC has indicated that evaluations of state PDMPs have shown changes in prescribing behaviors, use of multiple providers by patients, and decreased substance abuse treatment admissions. Using the CSD to explore prescribing practices in Utah will allow providers the opportunity to understand their role in this epidemic and that responsible prescribing can save lives. Efforts to maximize the utilization of the CSD in Utah, which also align with CDC's designation of promising practices, include:

- Universal Use: The CSD is a promising tool for health care providers to understand patients' prescribing histories to inform their prescribing decisions. During the 2016 General Session, HB 375 – Prescription Drug Abuse Amendments sponsored by Representative Christensen passed promoting the utilization of the controlled substance database to prevent opioid abuse by indicating that a prescriber or dispenser of an opioid for individual outpatient usage shall access and review the database as necessary in the prescriber's or dispenser's professional judgement.
- Real-Time: Timely data maximizes the utility of the prescription history data, with significant implications for patient safety and public health. During the 2015 General Session, HB 395 passed requiring real-time submission of data into the controlled substance database and 24-hour daily or next business day batch submission of data. It also required pharmacists to comply with these amendments by January 1, 2016.
- Actively Managed: As a public health tool, the CSD can be used by state health departments to understand the behavior of the epidemic and inform and evaluate interventions. The Controlled Substance Database Act allows the Utah Department of Health access to CSD "to conduct scientific studies regarding the use or abuse of controlled substances, if the identity of the individuals and pharmacies in the database are confidential and are not disclosed in any manner to any individual who is not directly involved in the scientific studies."[10]
- Easy to Use and Access: Promising practices to increase use and access include integrating CSD into electronic health record (EHR) systems, permitting physicians to delegate PDMP access to other allied health professionals in their office, and streamlining the process for providers to register with the PDMP. During the 2012 Legislative Session, HB 257 passed authorizing delegated users of the CSD and providing emergency room access to the CSD when treating a patient. Most recently, HB 239 passed during the 2016 Legislative Session requiring DOPL to make CSD data available to providers through their electronic data system, and this project is currently underway.

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Utah Prescribing Guidelines

The "Utah Clinical Guidelines on Prescribing Opioids for Treatment of Pain" (Guidelines) provide recommendations for the use of opioids for management of pain that are intended to balance the benefits of use against the risks to the individual and society, and to be useful to practitioners. The target audience for the guidelines includes all clinicians who prescribe opioids in their practice. In collaboration with the Utah Attorney General's Office, the Labor Commission, and the Division of Occupational and Professional Licensing, the Utah Department of Health was charged to educate health care providers, patients, insurers, and the general public on the appropriate management of pain and identify medical treatment and quality care guidelines. The Guidelines were published in 2009 and describe the opioid overdose problem, recommendations for prescribers, and in-depth explanation of recommendations with sources.[11] The summary recommendations are divided into treatment for acute and chronic pain and are listed below.

Opioid Treatment for Acute Pain

1) Opioid medications should only be used for treatment of acute pain when the severity of the pain warrants that choice and after determining that other non-opioid pain medications or therapies will not provide adequate pain relief.
2) When opioid medications are prescribed for treatment of acute pain, the number dispensed should be no more than the number of doses needed based on the usual duration of pain severe enough to require opioids for that condition.
3) When opioid medications are prescribed for treatment of acute pain, the patient should be counseled to store the medications securely, to not share with others, and to dispose of medications properly when the pain has resolved in order to prevent non-medical use of the medications.
4) Long duration-of-action opioids should not be used for treatment of acute pain, including post-operative pain, except in situations where monitoring and assessment for adverse effects can be conducted. Methadone is rarely, if ever, indicated for treatment of acute pain.
5) The use of opioids should be reevaluated carefully, including assessing the potential for abuse, if persistence of pain suggests the need to continue opioids beyond the anticipated time period of acute pain treatment for that condition.

Opioid Treatment for Chronic Pain

1) A comprehensive evaluation should be performed before initiating opioid treatment for chronic pain.
2) Alternatives to opioid treatment should be tried (or adequate trial of such treatment by a previous provider documented), before initiating opioid treatment.
3) The provider should screen for risk of abuse or addiction before initiating opioid treatment.
4) When opioids are to be used for treatment of chronic pain, a written treatment plan should be established that includes measurable goals for reduction of pain and improvement of function.
5) The patient should be informed of the risks and benefits and any conditions for continuation of opioid treatment, ideally using a written and signed treatment agreement.
6) Opioid treatment for chronic pain should be initiated as a treatment trial, usually using short-acting opioid medications.
7) Regular visits with evaluation of progress against goals should be scheduled during the period when the dose of opioids is being adjusted (titration period).
8) Once a stable dose has been established (maintenance period), regular monitoring should be conducted at face-to-face visits during which treatment goals, analgesia, activity, adverse effects, and aberrant behaviors are monitored.

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9) Continuing opioid treatment after the treatment trial should be a deliberate decision that considers the risks and benefits of chronic opioid treatment for that patient. A second opinion or consult may be useful in making that decision
10) An opioid treatment trial should be discontinued if the goals are not met and opioid treatment should be discontinued at any point if adverse effects outweigh benefits or if dangerous or illegal behaviors are demonstrated.
11) Clinicians treating patients with opioids for chronic pain should maintain records documenting the evaluation of the patient, treatment plan, discussion of risks and benefits, informed consent, treatments prescribed, results of treatment, and any aberrant behavior observed.
12) Clinicians should consider consultation for patients with complex pain conditions, patients with serious co-morbidities including mental illness, patients who have a history or evidence of current drug addiction or abuse, or when the provider is not confident of his or her abilities to manage the treatment.
13) Methadone should only be prescribed by clinicians who are familiar with its risks and appropriate use and who are prepared to conduct the necessary careful monitoring.

Daily Morphine Milligram Equivalents (MME)

Morphine milligram equivalents are "the amount of morphine an opioid dose is equal to when prescribed, often used as a gauge of the abuse and overdose potential of the amount of opioid that is being given at a particular time."[12] Using MME allows for comparison across opioid prescriptions of varying doses, durations, and drug type by standardizing the prescription to a daily morphine equivalent. For this analysis, daily MME were calculated for each prescription, and all prescriptions were categorized as high- or low-dose (MME>90 or MME≤90, respectively). The 2016 CDC prescribing guidelines were used to determine 90 MME/day as the dichotomizing value for prescriptions.[13] Prescribers are encouraged to "use the lowest effective dose… and should avoid increasing dosage to ≥90 MME/day or carefully justify a decision to titrate dosage to ≥90 MME/day."[12] The risk for overdose increases as daily MME increases; Baumblatt, et al found that the odds of overdose death was almost 30 times greater for those receiving an average daily MME of 81-100 compared to those receiving an average daily MME<20.[14] For this report, daily MME were calculated for each prescription, not for each patient; this is cause for concern and warrants further investigation as a considerable number of individual opioid prescriptions dispensed have a daily MME>90. The proportion of patients receiving a daily MME>90 is only expected to increase when a patient's cumulative daily MME can be calculated after de-duplication and linkage are performed. In the future, we intend to look at the percent of patients receiving a total daily MME>90. **Figures 13-15** represent variations in MME dispensed by age and sex. For reference, the following prescription examples each equal a daily MME of 90:

- 90 mg of hydrocodone (9 tablets of hydrocodone/acetaminophen 10/325)
- 60 mg of oxycodone (12 tablets of hydrocodone/acetaminophen 7.5/300)
- ~20 mg of methadone (4 tablets of methadone 5 mg)[15]

Prescribing Practice by Year

From 2002 to 2015, there was a 29.4% increase in the rate of prescription opioids dispensed (686.4 to 888.5 per 1,000 population, respectively). From 2002 to 2008, there was a 25.0% increase in the rate of dispensed opioid prescriptions with significant annual increases.

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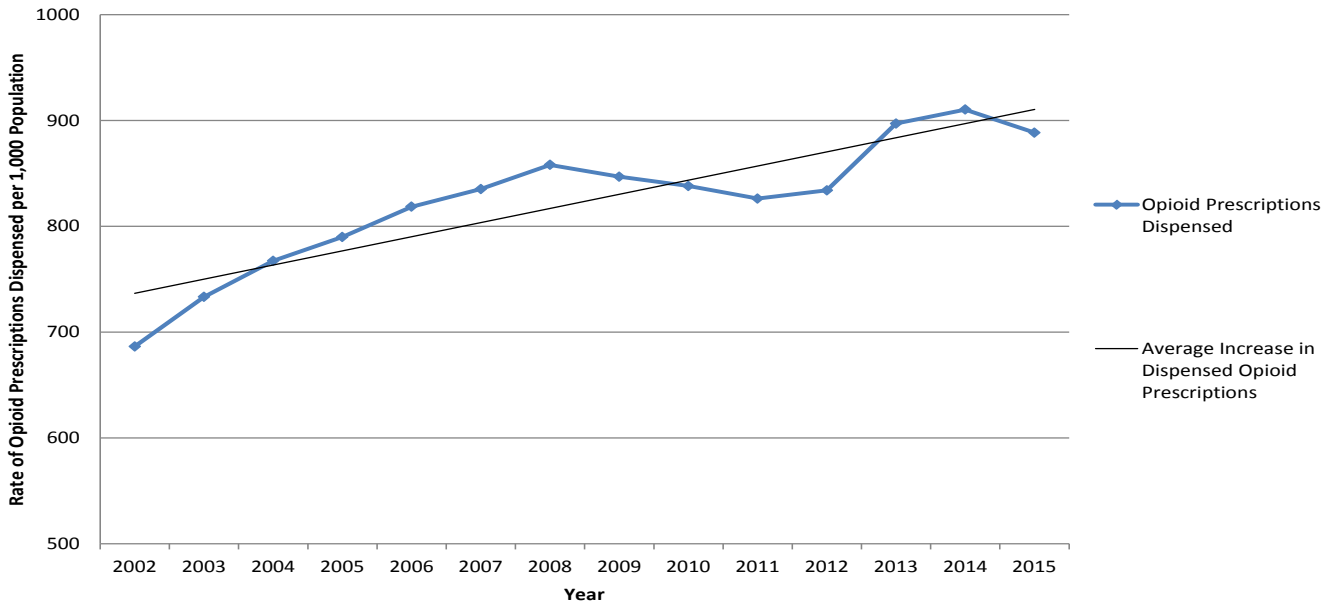
2009 was the first year with a significant decrease (3.7%) in the rate of opioid prescriptions dispensed (859.7 per 1,000 population in 2008 to 828.2 in 2009); the rate of dispensed opioid prescriptions continued to decrease through 2011. The rate of dispensed prescription opioids rose significantly again from 2012-2014 but decreased significantly in 2015. These results are represented in **Table 2**. **Figure 3** graphically represents the annual rates of dispensed opioid prescriptions with a black trend line showing the average increase in dispensed prescriptions over the 14 year period.

Table 2. Rate of Opioid Prescriptions Dispensed per 1,000 Population by Year, Utah, 2002-2015

Year	Number of Opioid Prescriptions Dispensed	Population	Rate of Opioid Prescriptions Dispensed per 1,000 Population (95% CI)
2002	1,595,781	2,324,815	686.4 (685.3, 687.4)
2003	1,730,509	2,360,137	733.2 (732.1, 732.3)
2004	1,842,931	2,401,580	767.3 (766.2, 768.4)
2005	1,941,491	2,457,719	789.9 (788.8, 791.0)
2006	2,067,158	2,525,507	818.5 (817.3, 819.6)
2007	2,169,816	2,597,746	835.2 (834.1, 836.3)
2008	2,285,164	2,663,029	858.1 (856.9, 859.2)
2009	2,306,619	2,723,421	846.9 (845.8, 839.1)
2010	2,325,157	2,774,346	838.0 (837.0, 839.1)
2011	2,325,903	2,815,324	826.1 (825.0, 827.2)
2012	2,381,186	2,855,194	833.9 (832.9, 835.0)
2013	2,604,144	2,902,787	897.1 (896.0, 898.2)
2014	2,678,995	2,942,902	910.3 (909.2, 911.4)
2015	2,654,608	2,987,628	888.5 (887.4, 889.6)

Figure 3. Rate of Opioid Prescriptions Dispensed per 1,000 Population, Utah, 2002-2015



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Prescribing Practice by Age Group and Sex

From 2002 to 2015, females were prescribed opioids at a significantly higher rate than males across all age groups (**Figure 4**). Since 2002, the rates of opioid prescriptions dispensed have increased for both sexes. Females experienced a 23.9% increase in opioid prescriptions dispensed from 2002 to 2015 while males experienced a 37.9% increase.

Figure 4. Rate of Opioid Prescriptions Dispensed per 1,000 Population by Sex and Year, Utah, 2002-2015

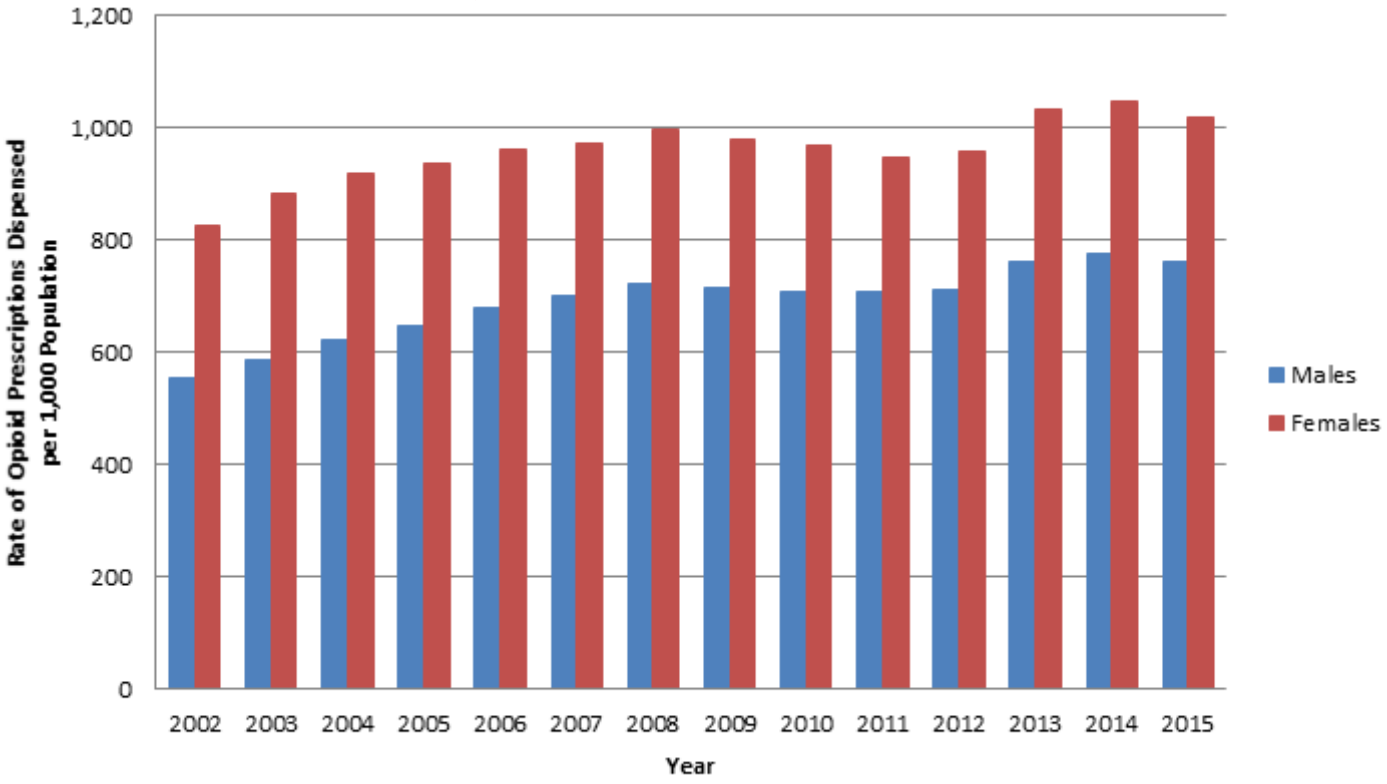


Table 3 represents the percent change in the rate of dispensed prescription opioids from 2002 to 2015 by age and sex. The overall rates of opioid prescriptions dispensed for those under 18, 18-24, and 25-35 years old decreased from 2002 to 2015. For the total population, there were significant increases in dispensed opioid prescription rates for those 35-44, 45-54, 55-64, and 65 years and older from 2002 to 2015. For males 25 and older, there were significant increases in the rates of opioid prescriptions for all age groups from 2002 to 2015. For females, there were significant increases in dispensed prescription opioid rates for all age groups 35 and older from 2002 to 2015. The greatest increases in rates of prescription opioids dispensed were for those 55 and older. Of those 55 and older, males were dispensed opioid prescriptions at an 82.9% increase from 2002 to 2015 while females experienced a 52.1% over the same time period. See Appendix D for data tables.

Table 3. Percent Change in the Rate of Opioid Prescriptions Dispensed by Age Group and Sex from 2002 to 2015, Utah

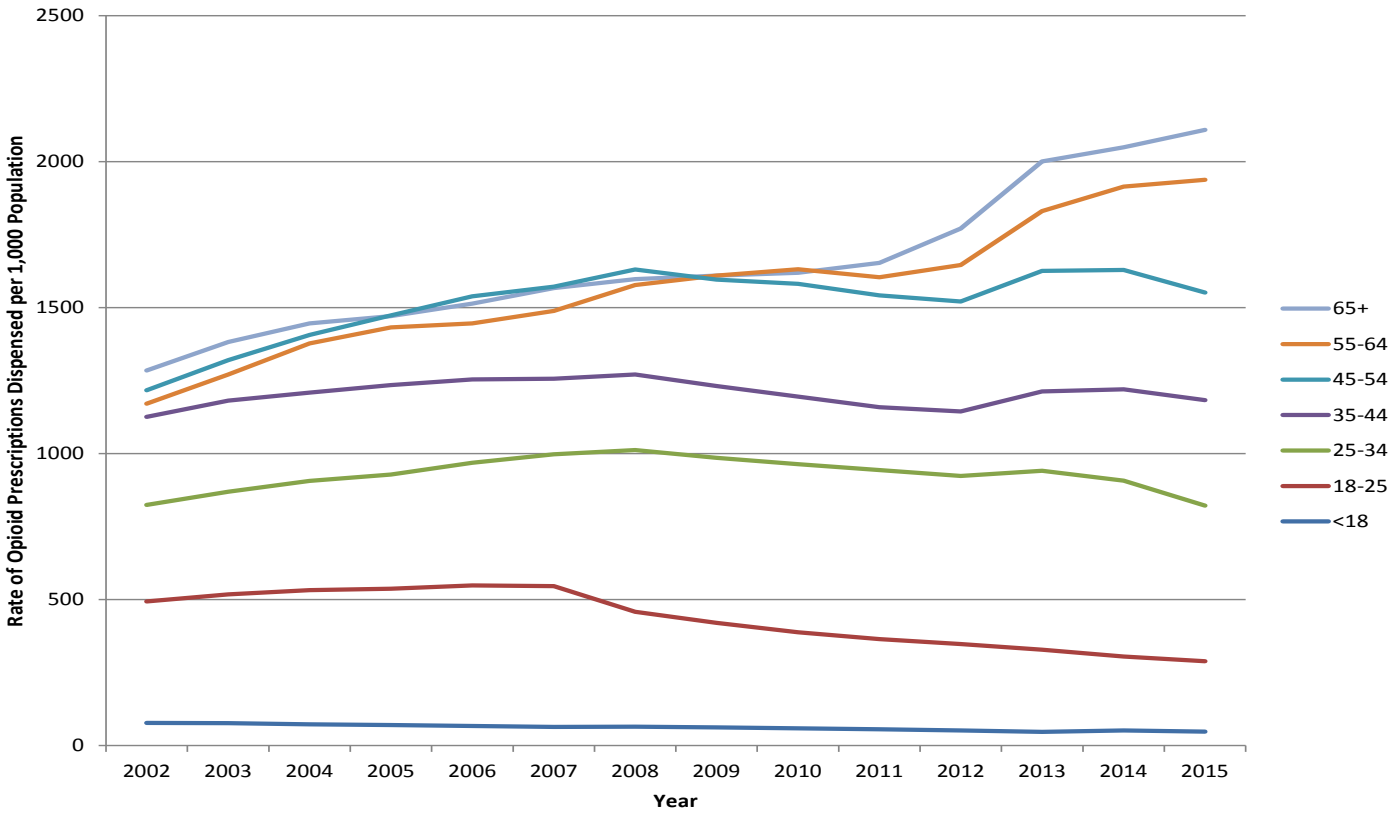
Age Group	Overall	Males	Females
Overall	29.4% ↑	37.9% ↑	23.9% ↑
< 18	38.6% ↓	45.7% ↓	33.2% ↓
18-24	41.5% ↓	30.1% ↓	26.1% ↓
25-34	0.2% ↓	11.8% ↑	7.6% ↓
35-44	5.1% ↑	10.4% ↑	1.6% ↑
45-54	27.5% ↑	28.3% ↑	27.0% ↑
55-64	65.4% ↑	83.7% ↑	52.9% ↑
65+	64.1% ↑	83.5% ↑	55.4% ↑

↑ =increase in rate of opioid prescriptions dispensed

↓ =decrease in rate of opioid prescriptions dispensed

Figure 5 represents the rate of opioid prescriptions dispensed per 1,000 population by age group. Utahns aged 65 and above have the highest rate of dispensed opioid prescriptions compared to all other age groups. Those under 18 years old are prescribed opioids at a significantly lower rate than those 18 years and older across all age groups.

Figure 5. Rate of Opioid Prescriptions Dispensed per 1,000 Population by Age Group and Year, Utah, 2002-2015



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Figures 6-12 compare the rate of prescription opioids dispensed for males and females by each age group. Caution should be exercised when comparing figures as the y-axes are not scaled equivalently across all figures but were scaled consistently when possible.

From **Figure 6**, it is evident that for those under 18 years old, females are dispensed prescription opioids at higher rates than males, and this trend has been consistent from 2002 to 2015. From 2002 to 2015, there has been a 45.7% decrease in the rate of dispensed opioid prescriptions in males and a 33.2% decrease in females.

Figure 6. Rate of Opioid Prescriptions Dispensed per 1,000 Population Less than 18 Years of Age by Sex, Utah, 2002-2015

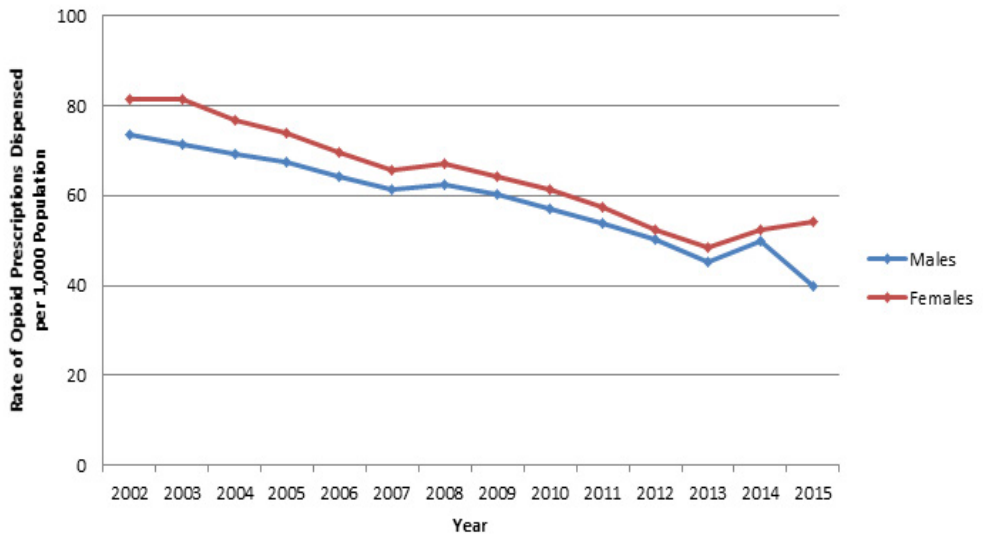

Figure 7 represents the rates of opioid prescriptions dispensed for those aged 18-24. From 2002 to 2015, there has been a 30.1% decrease in opioid prescriptions dispensed to males and a 26.1% decrease in females. Again, females are prescribed opioids at a significantly higher rate than males.

Figure 7. Rate of Opioid Prescriptions Dispensed per 1,000 Population Ages 18-24 by Sex, Utah, 2002-2015

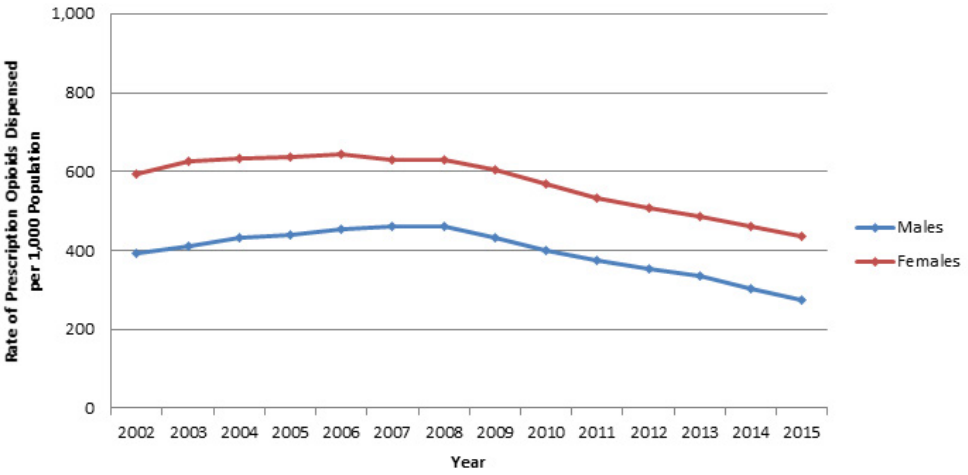

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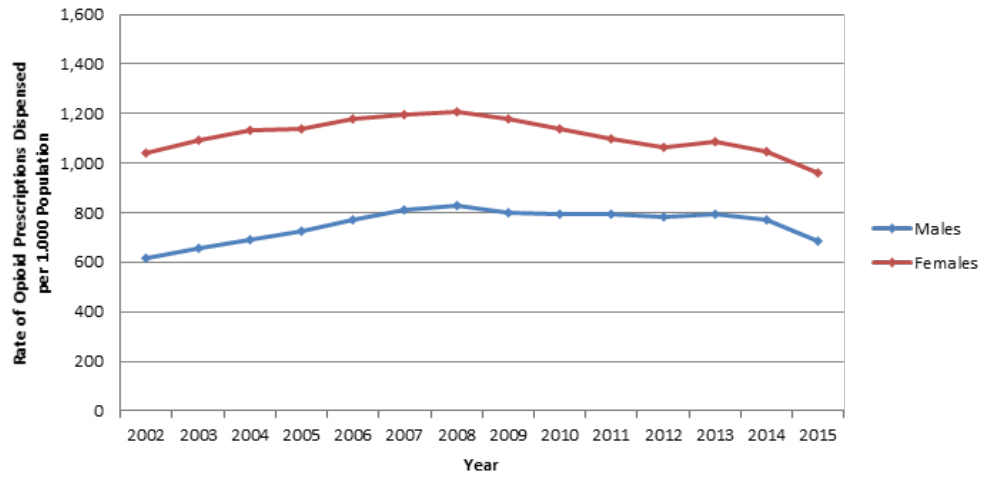
Figure 8. Rate of Opioid Prescriptions Dispensed per 1,000 Population Ages 25-34 by Sex, Utah, 2002-2015



Those 25-34 are represented in **Figure 8**. Females received significantly more opioid prescriptions than males. From 2002 to 2015, males experienced an increase of 11.8% in dispensed prescription opioids while females experiences a 7.6% decrease.

Figure 9. Rate of Opioid Prescriptions Dispensed per 1,000 Population Ages 35-44 by Sex, Utah, 2002-2015

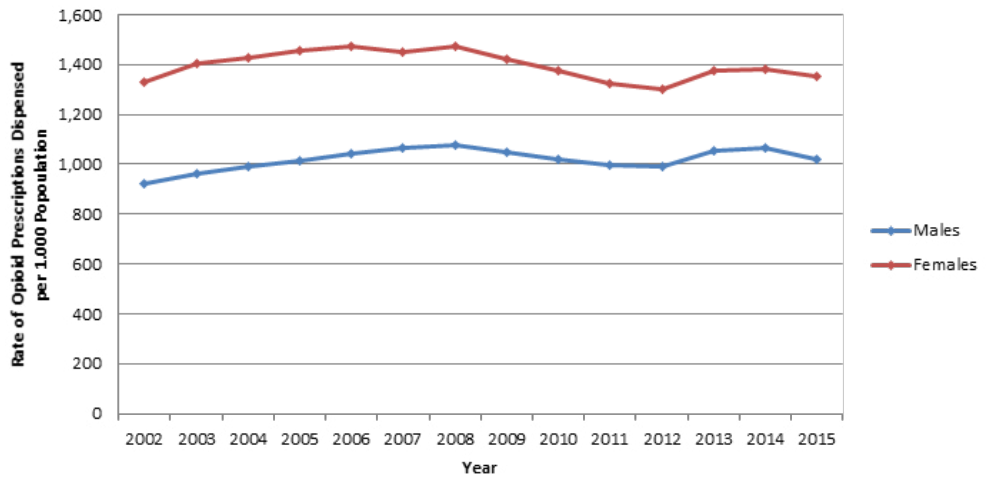
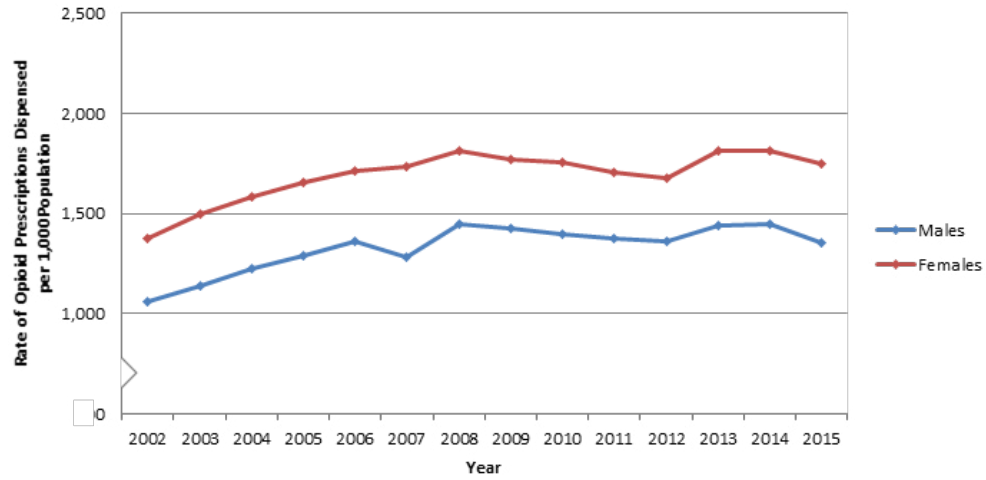


Figure 9 represented those 35-44 years old. Both males and females experienced an increase in prescription opioids dispensed (10.4% and 1.6%, respectively). Again, females received higher rates of prescription opioids than males.

Figure 10. Rate of Opioid Prescriptions Dispensed per 1,000 Population Ages 45-54 by Sex, Utah, 2002-2015

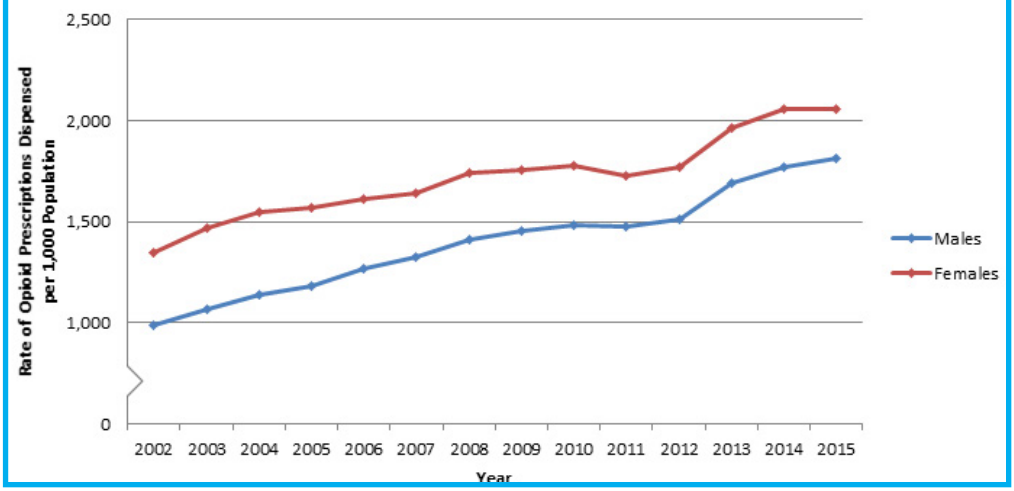


Those aged 45-54 are represented in **Figure 10**. Females received significantly higher rates of prescription opioids than males. From 2002 to 2015, males experienced a 28.3% increase in prescription opioids, and females experienced a 27.0% increase.

PRESCRIBING PRACTICES

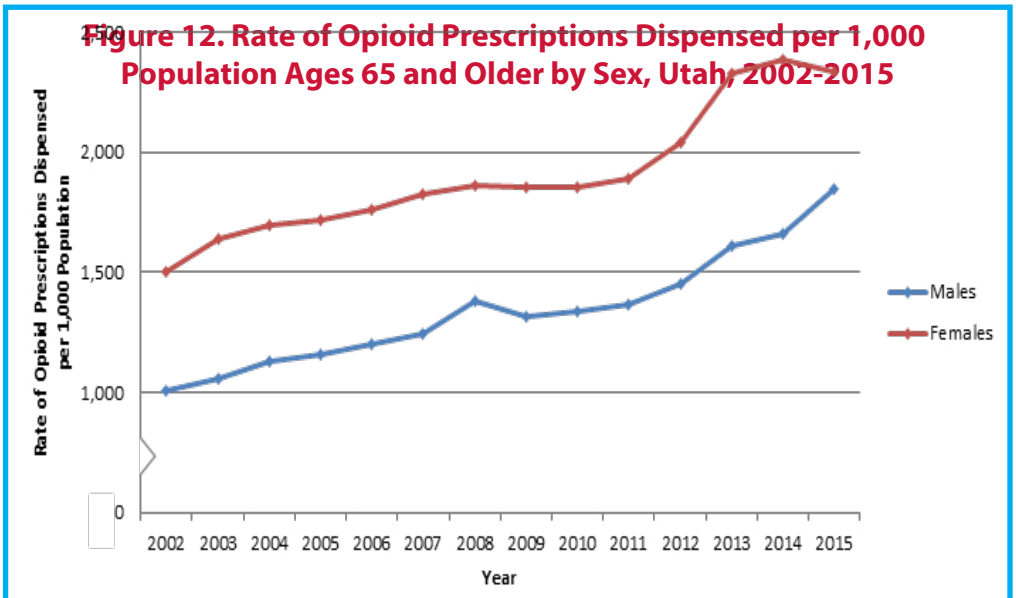
Figure 11 represents those 55-64 years old. Both sexes experienced a significant increase in prescription opioids from 2002 to 2015. Males experienced an 83.7% increase while rates of opioid prescriptions dispensed increased by 52.9% for females.

Figure 11. Rate of Opioid Prescriptions Dispensed per 1,000 Population Ages 55-64 by Sex, Utah, 2002-2015



Those aged 65 and older are represented in **Figure 12**. Like those aged 55-64, both sexes experienced significant increases in rates of dispensed prescription opioids. Males experienced an increase of 83.5% from 2002 to 2015 while females experienced a 55.4% increase.

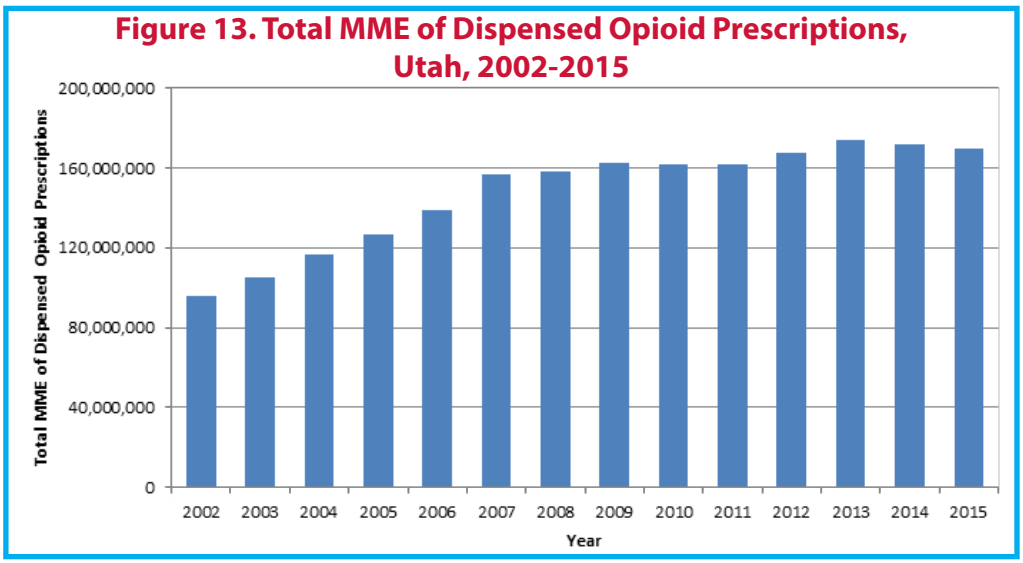
Figure 12. Rate of Opioid Prescriptions Dispensed per 1,000 Population Ages 65 and Older by Sex, Utah, 2002-2015



Prescribing Practice by Morphine Milligram Equivalents (MME)

For every year from 2002 to 2015, an annual total morphine milligram equivalents (MME) was calculated and is represented in **Figure 13**. From 2002 to 2015, there has been a 76.4% increase in total MME dispensed (96,025,233 to 169,423,298).

Figure 13. Total MME of Dispensed Opioid Prescriptions, Utah, 2002-2015



PRESCRIBING PRACTICES

Figure 14. Total MME of Dispensed Opioid Prescriptions by Sex, Utah, 2002-2015

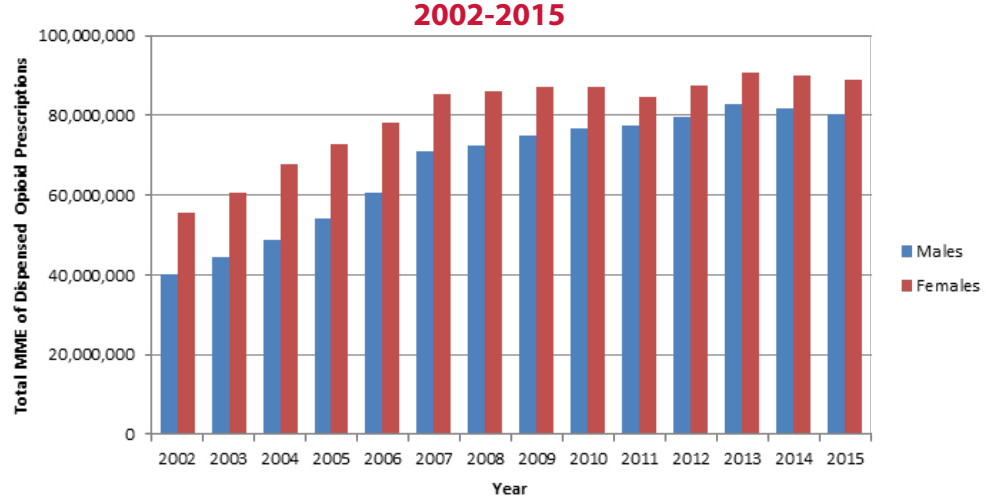
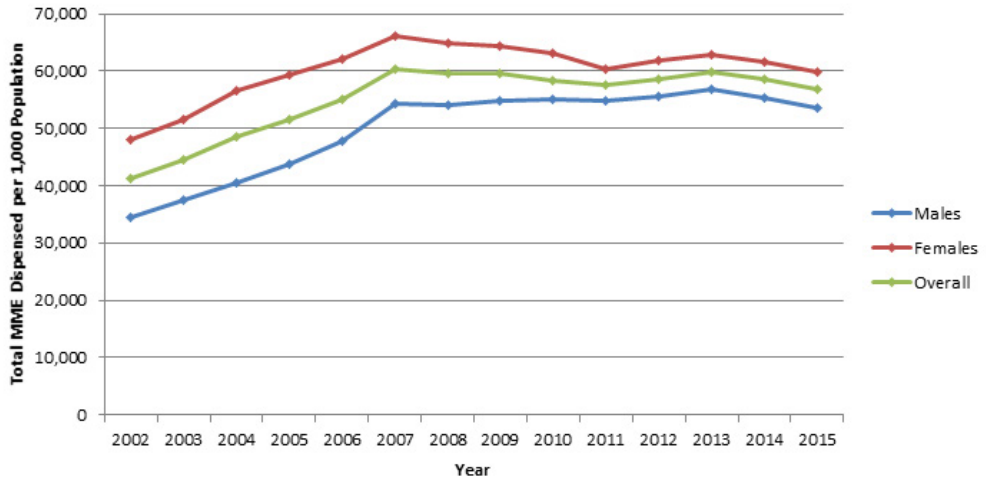


Figure 14 contains total MME of dispensed prescription opioids by sex for 2002 to 2015. Females received more total MME than males from 2002 to 2015. This trend follows that found in **Figure 4**; females receive higher rates of opioid prescriptions than males, and their total annual MME received are higher as well. Males experienced a 99.7% increase in total MME from 2002 to 2015 while females experienced a 59.8% increase.

Figure 15. Total MME per 1,000 population by Sex, Utah, 2002-2015



Examination of the results from **Figures 13 & 14** relative to the population size changes from 2002 to 2015 is represented in **Figure 15**. **Figure 15** represents the annual rates of MME dispensed per 1,000 population by sex. Females experienced higher rates of MME dispensed per 1,000 population than males from 2002 to 2015. Males experienced a 55% increase in dispensed MME per 1,000 population while females experienced a 24.7% increase from 2002 to 2015.

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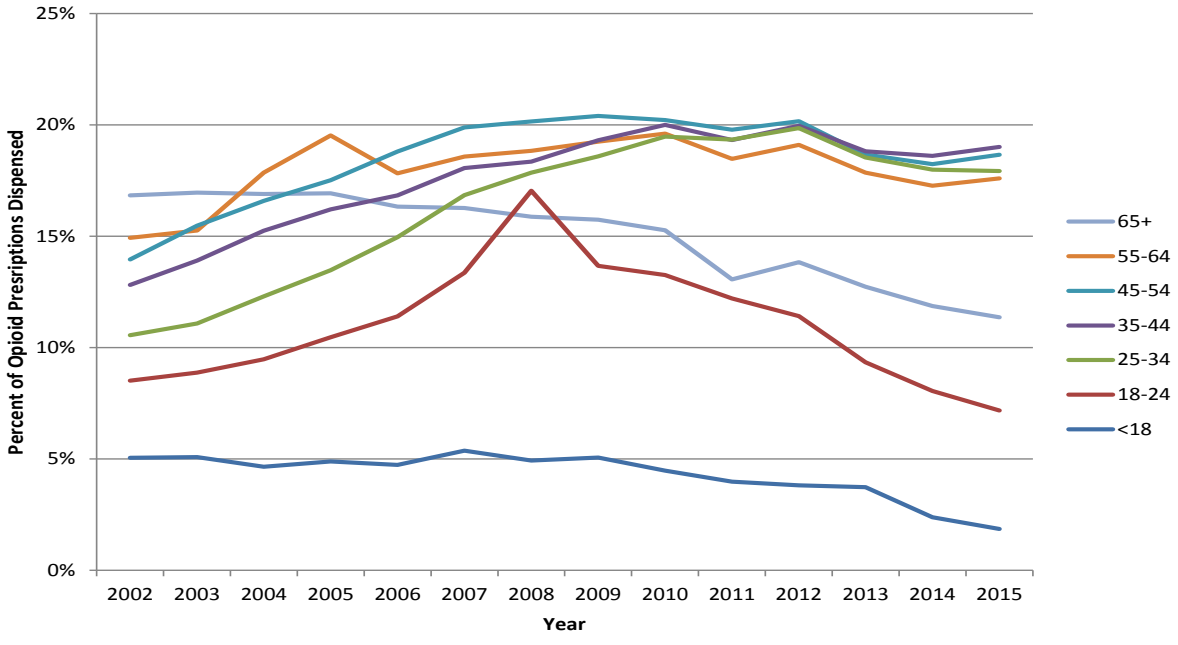
Opioid prescriptions from the CSD were categorized as high- or low-dose (MME>90 or ≤90, respectively). **Figures 16 & 17** represent percent of high-dose opioid prescriptions (opioid prescriptions with a daily MME>90) by age and sex, respectively. Again of note for these figures and daily MME results, the percent of opioid prescriptions dispensed with a daily MME>90 represent individual prescriptions, not individual patients. More information on MME can be found above in the "Daily Morphine Milligram Equivalents (MME)" section.

For the overall population, from 2002 to 2015, the percentage of opioid prescriptions with a daily MME>90 increased 24.2% while the percentage of opioid prescriptions with a daily MME≤90 decreased only 2.7% during the same time period. Those aged 25-34 experienced the greatest increase in prescription opioids with a daily MME>90 with a 69.9% increase from 2002 to 2015. Those under 18 years old experienced the greatest decrease in prescription opioids with a daily MME>90 from 2002 to 2015 with a 63.3% decrease.

The percent of dispensed opioid prescriptions with a daily morphine milligram equivalent (MME) greater than 90 by age group is shown in **Figure 16**. As represented in Figure 16, Utahns aged 25-64 had the highest percentages of opioid prescriptions with a daily MME>90; although Utahns aged 65 and older had the highest rate of opioid prescriptions dispensed compared to all age groups (**Figure 5**). Those under 18, 18-24, and 65 and older experienced overall decreases in the percent of high-dose (MME>90) opioid prescriptions dispensed from 2002 to 2015. Those aged 18-24 experienced a steep increase in rates of high-dose opioids dispensed from 2002 to 2008 and then experienced a steady decrease from 2009-2015. Those aged 25-34, 35-44, 45-54, and 55-64 experienced increases in the percent of high-dose opioids from 2002 to 2015.

Figure 16. Percent of Dispensed Opioid Prescriptions with a Daily MME>90 by Age Group, Utah, 2002-2015



PRESCRIBING PRACTICES

Figure 17. Percent of Dispensed Opioid Prescriptions with a Daily MME>90 by Sex, Utah, 2002-2015

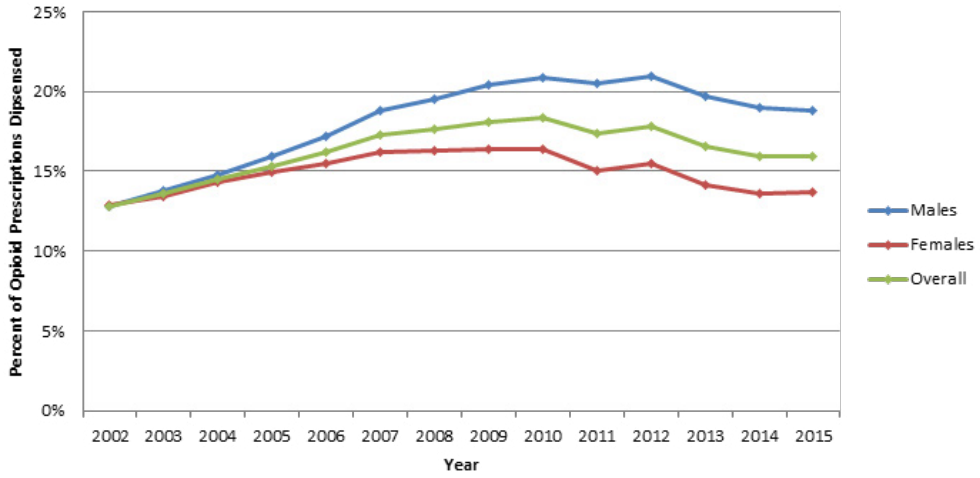


Figure 17 represents the percent of opioid prescriptions dispensed with a daily MME>90 by sex. Males have consistently had a higher rate of high-dose opioid prescriptions compared to females while females received higher rates of opioid prescriptions than males (**Figure 4**).

RECOMMENDATIONS

This analysis allows for limited conclusions but identifies many areas needing further investigation. Areas of note are the significant difference in overall opioid prescription rates between females and males, difference in high-dose (daily MME>90) prescription rates for males compared to females, increase in total MME & MME dispsened per 1,000 population, and overall increase in opioid prescription rates. Efforts aimed at improving prescriber practices should focus on reducing the prescribing of high-dose opioids (daily MME>90) and can be more specifically targeted to prescribers with patients 25-64 years old as those age groups had the highest rates of high-dose opioid prescriptions dispensed.

Future analyses should be stratified by geography (county, local health district, and small area) to determine if these trends are consistent across all of Utah. Identification of opioid prescription "hot-spots" would allow for targeted interventions in those communities. Further analysis is needed to obtain a comprehensive understanding of opioid prescribing practices in Utah.

APPENDIX A: CONTROLLED SUBSTANCES DATABASE ACT

The Controlled Substance Database Act (58-37f) authorizes the creation and maintenance of the Controlled Substance Database. For brevity, only of Part 2 of the Act is included below. The complete CSD Act can be found using the references. For the complete CSD Act, see the references.

58-37f-203. Submission, collection, and maintenance of data. Effective 7/1/2015.[16]

(1) (a) The division shall implement on a statewide basis, including non-resident pharmacies as defined in Section 58-17b-102, the following two options for a pharmacist to submit information:
(i) real-time submission of the information required to be submitted under this part to the controlled substance database; and
(ii) 24-hour daily or next business day, whichever is later, batch submission of the information required to be submitted under this part to the controlled substance database.
(b) (i) On and after January 1, 2016, a pharmacist shall comply with either:
(A) the submission time requirements established by the division under Subsection (1)(a)(i); or
(B) the submission time requirements established by the division under Subsection (1)(a)(ii).
(ii) Prior to January 1, 2016, a pharmacist may submit information using either option under this Subsection (1).
(c) The division shall comply with Title 63G, Chapter 6a, Utah Procurement Code.

(2) (a) The pharmacist in charge of the drug outlet where a controlled substance is dispensed shall submit the data described in this section to the division:
(i) in accordance with the requirements of this section;
(ii) in accordance with the procedures established by the division; and
(iii) in the format established by the division.
(b) A dispensing medical practitioner licensed under Chapter 17b, Part 8, Dispensing Medical Practitioner and Dispensing Medical Practitioner Clinic Pharmacy, shall comply with the provisions of this section and the dispensing medical practitioner shall assume the duties of the pharmacist under this chapter.

(3) The pharmacist described in Subsection (2) shall, for each controlled substance dispensed by a pharmacist under the pharmacist's supervision other than those dispensed for an inpatient at a health care facility, submit to the division the following information:
(a) the name of the prescribing practitioner;
(b) the date of the prescription;
(c) the date the prescription was filled;
(d) the name of the individual for whom the prescription was written;
(e) positive identification of the individual receiving the prescription, including the type of identification and any identifying numbers on the identification;
(f) the name of the controlled substance;
(g) the quantity of the controlled substance prescribed;
(h) the strength of the controlled substance;
(i) the quantity of the controlled substance dispensed;
(j) the dosage quantity and frequency as prescribed;
(k) the name of the drug outlet dispensing the controlled substance; and
(l) the name of the pharmacist dispensing the controlled substance.

APPENDIX A: CONTROLLED SUBSTANCES DATABASE ACT

(4) An individual whose records are in the database may obtain those records upon submission of a written request to the division.

(5) (a) A patient whose record is in the database may contact the division in writing to request correction of any of the patient's database information that is incorrect. The patient shall provide a postal address for the division's response.

(b) The division shall grant or deny the request within 30 days from receipt of the request and shall advise the requesting patient of its decision by mail postmarked within 35 days of receipt of the request.

(c) If the division denies a request under this Subsection (5) or does not respond within 35 days, the patient may submit an appeal to the Department of Commerce, within 60 days after the postmark date of the patient's letter making a request for a correction under this Subsection (5).

(6) The division shall make rules, in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, to establish submission requirements under this part, including the electronic format in which the information required under this section shall be submitted to the division.

(7) The division shall ensure that the database system records and maintains for reference:

(a) the identification of each individual who requests or receives information from the database;

(b) the information provided to each individual; and

(c) the date and time that the information is requested or provided.

APPENDIX B: LEGISLATIVE RULE R384-203

Legislative Rule R384-203: Prescription Drug Database Access outlines the circumstances by which the Utah Department of Health can access the Prescription Drug Database and, for brevity, subsections R384-203-1 and R384-203-3 are included below.

R384-203-1. Authority and Purpose. Effective April 1, 2016.[17]

This rule establishes procedures and application processes pursuant to Title 58-37f-301(2)(d) for Utah Department of Health Executive Director to allow access to the Prescription Drug database by a designated and assigned person to conduct scientific studies regarding the use or abuse of controlled substances, who is not an employee of the Department of Health.

R384-203-3. Criteria for Application to Access Prescription Drug Database.

(1) The study must fit within the responsibilities of the Department for health and welfare.

(2) De-identified prescriber, patient and pharmacy data will meet the research needs.

(3) The research facility designee must provide:

(a) written assurances that the studies are not conducted for and will not be used for profit or commercial gain;

(b) written assurances that the designee shall protect the information as a business associate of the Department of Health; and

(c) documentation of an Institutional Review Board approval.

APPENDIX C: CONTROLLED SUBSTANCE DATABASE LEGISLATIVE HISTORY

Year	Laws of Utah	Summary of Legislation
1995	L. 1995, ch. 333 § 3 S.B. 42	Enacted the Controlled Substance Database (CSD) as part of the Controlled Substances Act. The fiscal note for the bill was extensive with three or four FTE's including a Program Manager and CSD Specialists. The funding also included the one-time and ongoing funding necessary to create and maintain the CSD. Available funding of fiscal note was reduced repeatedly on the last day of the Session and only $50,000 of one time money was ultimately funded, with approval of DOPL, as opposed to the fiscal note amount. DOPL decided to initially pull investigator away from DOPL Investigations and assign him to be the CSD Database Administrator and attempt to get additional funding in future years.
1996	L. 1996, ch. 247, § 44	Substituted "58-17a-102" for "58-17-2" in Subsection 58-37-7.5(1)(e); and added "and" at the end of Subsection 58-37-7.5(8)(e). The bracketed word "substance" was inserted in Subsection 58-37-7.5(1)(b) by the compiler for clarity.
1998	L. 1998, ch. 13, § 56 S.B. 125	Inserted "substance" in Subsection 58-37-7.5(1)(b).
1999	L. 1999, ch. 39 § 1 H.B. 43	Inserted "or receives" in Subsection 58-37-7.5 (6)(b)(i); substituted in Subsection 58-37-7.5 (6)(b)(iii) "the information is requested or provided" for "of each request"; inserted in Subsection 58-37-7.5 (7)(b) "or receiving information without request"; deleted in Subsections 58-37-7.5(8)(c) and (8)(d) "requested" after "information" and made two stylistic changes.
2002	L. 2002, ch. 84 § 1 S.B. 86	Substituted "Commerce Service Fund" for "General Fund" in Subsection 58-37-7.5(12)(b); in Subsection 58-37-7.5(14) Substituted in place of Subsection 58-37-7.5(1) Subsection (14)(a) providing that "Funding for this Section shall be appropriated without the use of any resources within the Commerce Service Fund."
2003	L. 2003, ch. 33, § 4 S.B. 53	Added the phrase "beginning as a dedicated" in Subsections 58-37-7.5(11)(c) and (12)(b) and substituted "General Fund" for "Commerce Service Fund" in Subsection 58-37-7.5(12(b).
2004	L. 2004, ch. 280, § 54 S.B. 114	Deleted former Subsection 58-37-7.5(1)(e) defining "drug outlet," redesignating existing Subsection 58-37-7.5(1)(f) as (e); added new Subsection 58-37-7.5(1)(f); and substituted "pharmacy" for "drug outlet" in Subsections 58-37-7.5(5)(d) and (15).
2005	L. 2005, ch. 248, § 3 S.B. 50	Deleted former Subsections 58-37-7.5(3)(a) and (b), creating the Controlled Substance Database Advisory Committee; redesignated former Subsection 58-37-7.5(3)(c) as Subsection (3), renumbering its subsections accordingly; substituted "Utah State Board of Pharmacy created in Section 58-17b-201" for "committee in Subsection 58-37-7.5(3); and added Subsection 58-37-7.5(8)(c), renumbering subsections accordingly.
2006	L. 2006, ch. 46, § 46 S.B. 143	Deleted former Subsection 58-37-7.5(1)(a), which defined "committee," made related redesignations, and in the beginning of Subsection 58-37-7.5(7), deleted "in collaboration with the committee" after "rules."
2007	L. 2007, ch. 293, § 1 H.B. 6 Sponsor: Rep Menlove	Added Subsections 58-37-7.5(8)(d)(ii), (8)(d)(iii), and (8)(f)(ii), making related changes.

APPENDIX C: CONTROLLED SUBSTANCE DATABASE LEGISLATIVE HISTORY

2007	L. 2007, ch. 200, § 1 H.B. 137 Sponsor: Rep Daw	Enacted Section 26-1-36 to the Utah Health Code requiring the Department of Health to develop and implement a two-year program in coordination with DOPL, the Utah Labor Commission, and the Utah Attorney General to (a) investigate the causes and risk factors for death and nonfatal complications of prescription opiate use in Utah for chronic pain utilizing the CSD created in Section 58-37-7.5 (b) study the risks, warning signs, and solutions to the risks associated with prescription opiate medications for chronic pain, including risks and prevention of misuse and diversion of those medications; and (c) provide education to health care providers, patients, insurers, and the general public on the appropriate management of chronic pain, including the effective use of medical treatment and quality care guidelines that are scientifically based and peer reviewed. The Department of Health was required to report to the Business and Labor Interim Committee no later than the November interim meetings in 2007 and 2008 to report on: (a) recommendations on: (i) use of the CSD created in Section 58-37-7.5 to identify and prevent: (A) misuse of opiates; (B) inappropriate prescribing; and (C) adverse outcomes of prescription opiate medications; (ii) interventions to prevent the diversion of prescription opiate medications; and (iii) medical treatment and quality care guidelines that are: (A) scientifically based; and (B) peer reviewed; and (b)(i) a measure of results against expectations under the program as of the date of the report; and (ii) an analysis of the application of the program, used of the ap propriated funds, and the impact and results of the use of the funds.
2008	L. 2008, ch. 313, § 2 H.B. 119 Sponsor: Rep. Daw	Added 58-37-7.5(1)(a), (10)(b), and (16); in the introductory language of 58-37-7.5(3), substituted "board" for "Utah State Board of Pharmacy created in Section 58-17b-2-1"; in the introductory language of 58-37-7.5(8)(f), added "and state and local prosecutors"; and made related redesignations and stylistic changes.
2008	L. 2008, ch. 313, § 3 & 4 H.B. 119 Sponsor: Rep. Daw	**Enacted pilot program** in Section 58-37-7.8 for real-time reporting and later statewide implementation. **Pilot program funding included** $650,000 of one-time funding from the General Fund to develop a real time controlled substance database on a statewide basis and $175,000 of ongoing money to maintain and operate the Controlled Substance Database. It also included the appropriation of the $300,000 from the General Fund for the Department of Health to assist with tracking and education outreach programs.

APPENDIX C: CONTROLLED SUBSTANCE DATABASE LEGISLATIVE HISTORY

2009	Appropriations Bill H.B. 3	**Removed 2008 pilot program funding** for real-time reporting and later statewide implementation funding due to significant budget down turn.
2009	L. 2009, ch. 41§ 1 H.B. 106 Sponsor: Rep. Daw	**Defined terms.** Expanded the purposes for which a practitioner or pharmacist may access information on the controlled substance database: • **Granted access to the CSD to a mental health therapist** under certain circumstances. • **Permitted a practitioner to designate up to three employees,** subject to approval by the DOPL, who can access the controlled substance database on the practitioner's behalf. • **Provided that a practitioner,** or an employee of the practitioner, who obtains information from the CSD **may include the information from the CSD in a patient's medical chart** or file and may provide the information to others in accordance with the requirements of the Health Insurance Portability and Accountability Act of 1996. • **Granted rulemaking authority** to DOPL. • **Permitted DOPL to impose a fee** on practitioners who designate an employee to access the controlled substance database, in order to recover the cost of determining whether the employee is a security risk. • **Provided** that a person who is a licensed practitioner or a mental health therapist shall be denied access to the database when the person is no longer licensed. • **Provided** that a person who is a relative of a deceased individual is not entitled to access information from the database relating to the deceased individual based on the fact or claim that the person is related to, or subrogated to the rights of, the deceased individual. Made technical changes.
2010	L. 2010, ch. 287 H.B. 28 Sponsor: Rep. Daw	**Defined terms; recodified provisions relating to the CSD into a new chapter known as the Controlled Substance Database Act at Title 57, Chapter 37f**; modified provisions relating to accessing database information for certain legal proceedings; required an individual, other than a veterinarian, who is licensed to prescribe a controlled substance, who is applying for a license, or who is renewing a license to: (1) register to use the CSD; and (2) take a tutorial and pass a test relating to the CSD and the prescribing of controlled substances; required the division to impose an annual database registration fee on and individual who registers to use the database, to pay the startup and ongoing costs of the division for complying with the requirements of the preceding paragraph; described the penalties that may be imposed by the DOPL on an individual who fails to comply with the requirements described in the preceding paragraph; required DOPL to develop an online tutorial and test relating to the use of the database and the prescribing of a controlled substance; required DOPL to impose a fee on an individual who takes the test described in this bill to pay the costs incurred by DOPL to fulfill the requirements described in this bill; granted rulemaking authority to DOPL; and makes technical changes. **The bill also extended the beginning and ending date of the pilot program in Section 58-37f-801 by two years** and made related changes.

APPENDIX C: CONTROLLED SUBSTANCE DATABASE LEGISLATIVE HISTORY

2010	L. 2010, ch. 290 § 2 renumbered as § 702 by L. 2010, ch. 290 § 3 H.B. 35 Sponsor: Rep. Daw	Section 26-21-26 & Section 58-37f-702 requires that beginning July 1, 2012, when a person who is 12 years of age or older is admitted to a general acute hospital for poisoning by, or overdose of, a prescribed controlled substance, the general acute hospital must report he poisoning or overdose, or other information, to DOPL; requires that, when DOPL receives a report described in the preceding paragraph, DOPL must notify each practitioner that may have written a prescription for the controlled substance of the poisoning or overdose and certain information relating to the poisoning or overdose; requires the division to increase the licensing fee for manufacturing, producing, distributing, dispensing, administering, or conducting research, to pay the startup costs of the division for complying with the requirements of the preceding paragraph; and makes technical changes. Note: $36,500 of one-time money was not funded in H.B. 3, Bill of Bills. Note: $30,000 of on-going money was funded in H.B. 3, Bill of Bills.
2010	L. 2010, ch. 109 § 3 renumbered as § 703 by L. 2010, ch. 109 § 5 H.B. 36 Sponsor: Rep. Daw	Section 58-37f-703 requires that beginning July 1, 2012, a court to report certain information to DOPL when a person is convicted of driving under the influence or of impaired driving, if there is evidence that the person's driving was under the influence of, or impaired by, a prescribed controlled substance; requires that, when DOPL receives a report described in the preceding paragraph, DOPL must notify each practitioner that may have written a prescription for the controlled substance of the conviction and certain information relating to the conviction; requires DOPL to increase the licensing fee for manufacturing, producing, distributing, dispensing, administering, or conducting research, to pay the startup costs of DOPL for complying with the requirements of the preceding paragraph; and makes technical changes. Note: $8,100 of on-going money was funded in H.G. 3, Bill of Bills.
2010	L. 2010, ch. 391 § 21 H.B. 353 Sponsor: Rep. Bigelow	Deleted former Subsection 58-37f-601(5) which read: "All funding of the controlled substance database as defined under Section 58-37-7.5 is nonlapsing."
2011	L. 2011, ch. 23 § 2 H.B. 15 Sponsor: Rep. Daw	Added Subsection 58-37f-401(3)(a) and redesignated former Subsection (3) as (3)(b). The new Subsection (3)(a) provides that an individual who is not a veterinarian, who obtains a new license to prescribe a controlled substance, shall, within 30 days after the day on which the individual obtains a license to prescribe a controlled substance from the DEA, register with the division to use the CSD; reinstates authority of DOPL to take administrative action, under the Pharmacy Practice Act, for a violation of the Controlled Substance Database Act; and makes technical changes. "Beginning on July 1, 2010" is deleted from the beginning of Subsection (3)(b) and "renew a license" is substituted for "obtain or renew a license."
2011	L. 2011, ch. 151 § 3 H.B. 84 Sponsor: Rep. Clark	Added Subsection 58-37f-301(2)(j) granting CSD access to the inspector general, or a designee of the inspector general, of the Office of Inspector General; of Medicaid Services, for the purpose of fulfilling the duties described in Title 63J, Chapter 43a, Part 2, Office Duties and Powers.

APPENDIX C: CONTROLLED SUBSTANCE DATABASE LEGISLATIVE HISTORY

2011	L. 2011, ch. 340 § 33 H.B. 163 Sponsor: Rep. Dee	Substituted "Section 58-37f-201" for "this section" in Subsection 58-37f-102(2)(b).
2011	L. 2011, ch. 38 § 1 H.B. 358 Sponsor: Rep. Eliason	Added "or provider" in Subsection 58-37f-301(2)(c)(ii); Added Subsection 58-37f-301(2)(h) granting CSD access to employees of the Office of Internal Audit and Program Integrity within the Department of Health who are engaged in their specified duty of ensuring Medicaid program integrity under Section 26-18-2.3. Redesignated former Subsection 58-37f-301(2)(h) and (2)(i) as (2)(i) and (2)(j) and made related changes.
2011	L. 2011, ch. 226 § 1 S.B. 248 Sponsor: Sen. Bramble	Added Subsection 58-37f-301(2)(l) granting CSD access to the following licensed physicians for the purpose of reviewing and offering an opinion on an individual's request for worker's compensation benefits under Title 34A, Chapter 2, Workers' Compensation Act, or Title 34A, Chapter 3, Utah Occupational Disease Act: (i) a member of the medical panel described in Section 34A-2-601; or (ii) a physician offering a second opinion regarding treatment.
2012	L. 2012, ch. 370 § 2 S.B. 127 Sponsor: Sen. Jones	Added Subsection 58-37f-402(8) providing that completing the required online tutorial and passing the online test described in this section shall count as ½ hour of continuing professional education under Subsection 58-37-6.5(1)(a).
2012	L. 2012, ch. 239 § 2 S.B. 205 Sponsor: Sen. Bramble	Added Subsection 58-37f-301(2)(g)(iii) that permits a prosecutor to provide information about a criminal defendant to defense counsel, upon request during discovery, for the purpose of establishing a defense in a criminal case.
2013	L. 2013, ch.262 § 25 H.B. 51 Sponsor: Rep. Dunnigan	Added "provided to or" in the introductory language of (2)(d)(i)(B) and in (2)(d)(ii)(B) and added "provided or: in the introductory language of (2)(g).
2013	L. 2013, ch. 12 § 1 H.B. 106 Sponsor: Rep. Wilcox	Substituted "Title 63A, Chapter 13, Part 2, Office and Powers" for "Title 63J, Chapter 4a, Part 2, Office Duties and Powers" in (2)(l) (reconciled to (2)(m) by LRGC).

APPENDIX C: CONTROLLED SUBSTANCE DATABASE LEGISLATIVE HISTORY

2013	L. 2013, ch. 130 § 1-3 H.B. 270 Sponsor: Rep. Menlove	Added Subsections 58-37f-102(2)(b) "business associate" & (d) "de-identified" to definitions; updated an internal reference in Subsection 58-37f-102(2)(h)(ii); and made related changed. Added Subsection 58-37f-301(2)(d), which allows the CSD access to in accordance with a written agreement entered into with the department, a designee of the director of the DOH, who is not an employee of the DOH, whom the director of the DOH assigns to conduct scientific studies regarding the use or abuse of controlled substances pursuant to an application process established in rule by the DOH, if: (i) the designee provides explicit information to the DOH regarding the purpose of the scientific studies; (ii) the scientific studies to be conducted by the designee: (A) fit within the responsibilities of the DOH for health and welfare; (B) are reviewed and approved by an Institutional Review Board that is approved for human subject research by the United States Department of Health and Human Services; and (C) are not conducted for profit or commercial gain; and (D) are conducted in a research facility, as defined by division rule, that is associated with a university or college in the state accredited by the Northwest Commission on Colleges and Universities; (iii) the designee protects the information as a business associate of the DOH; and (iv) the identity of the prescribers, patients, and pharmacies in the database are de-identified, confidential, not disclosed in any manner to the designee or to any individual who is not directly involved in the scientific studies. Substituted "Subsection 58-37f-301(2)(e), (f), (g) or (4)(c)" for "Subsection 58-37f-301(2) (d), (e), (f), or (4)(c)" in introductory language of Subsection 58-37f-601(3)(e).
2013	L. 2013, ch.167 § 25 S.B. 207 Sponsor: Sen. Christensen	Deleted former Subsection 58-37f-801(9), which read: "During the Legislature's 2009 interim, the division shall report to the Health and Human Services Interim Committee regarding: (a) the implementation, operation, and impact of the pilot program established in this section: (b) the progress made by the division in implementing the pilot program on a statewide basis; (c) the advisability of, and projected costs of implementing the pilot program on a state-wide basis; and (d) the use of the database by prescribing practitioners"; updated internal references; and made related changes.
2013	L. 2013, ch. 450 § 2 S.B. 214 Sponsor: Rep. Last	Substituted "Subsection 58-37-6.5(2)" for "Subsection 58-37-6.5(1)(a)" in Subsection 58-37f-402(8).
2014	L. 2014, ch. 68 § 1-2 S.B. 29 Sponsor: Sen. Christensen	Added Subsection 58-37f-301(2)(e) and made related changes. This grants access in accordance with a written agreement entered into with the Department of Commerce and the Department of Commerce, to authorized employees of a managed care organization as defined in 42 C.F.R. Sec. 438 under enumerated conditions. Substituted "(2)(f), (g),, (i)" for (2)(e), (f), (g)" in the introductory language of Subsection 58-37f-601(3)(e).

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2014	L. 2014, ch. 72 § 17 S.B. 55 Sponsor: Sen Vickers	Added Subsection 58-37f-203(1)(b) and made related changes. Specifically, it provides as follows: (b) A dispensing medical practitioner licensed under Chapter 17b, Part 8, Dispensing Medical Practitioner and Dispensing Medical Practitioner Clinic Pharmacy, shall comply with the provisions of this section and the dispensing medical practitioner shall assume the duties of the pharmacist under this chapter.
2014	L. 2014, ch. 401 § 1 S.B. 178 Sponsor: Sen Vickers	Added Subsection 58-37f-301(2)(i) and (3)(a)(ii) which allows the pharmacist-in-charge to designate up to three licensed pharmacy technicians to have access to the database on behalf of the pharmacist in accordance with the stated requirements.
2015	L. 2015, ch. 89 § 3-4 H.B. 395 Sponsor: Rep Redd	Appropriated $46,000 to DOPL for the CSD. Added Subsection 58-37f-203(1). Added "submission requirements under this part, including" in Subsection 58-37f-203(4), updated an internal reference, and made related designation changes. Substituted "one or more regional or national accrediting agencies recognized by the United States Department of Education" for "the Northwest Commission on Colleges and Universities" in Subsection 58-37f-301(2)(d)(ii)(D); substituted "58-37f-203(5)" for "58-37f-203(b) throughout 58-37f-301(2); added Subsection 58-37f-203(2)(p)(ii); and made related changes. Repealed Section 58-37f-801, "Pilot program for real-time reporting for controlled substance database – Statewide implementation."
2015	L. 2015, ch. 326 § 1 S.B. 119 Sponsor: Sen. Weiler	Deleted former Subsection 58-37f-203(2)(m), which read: "other relevant information as required by division rule. Added Subsections 58-37f-203(3) and (4); and made related changes. Subsection (3) lists the information required to be submitted to the CSD by pharmacists described in Subsection (2). Subsection 4 provides that an individual whose records are in the database may obtain those records upon submission of a request to DOPL. Substituted "Subsection 58-37f-203(4)(b)" for "Subsection 58-37f-203(3)(b)" in Subsection 58-37f-301(2)(g)(iii)(B), (2)(h)(iii)(B), and (2)(j)(iii)(B). Rewrote Subsection (2)(k), which formerly read: "federal, state, and local law enforcement authorities, and state and local prosecutors, engaged as a specified duty of their employment in enforcing laws: (i) regulating controlled substances; (ii) investigating insurance fraud, Medicaid fraud, or Medicare fraud; or (iii) providing information about a criminal defendant to defense counsel, upon request during the discovery process, for the purpose of establishing a defense in a criminal case"; added Subsection 58-37f-301(2)(o) and (2) (q)(ii); and made related changes. Deleted "knowingly and intentionally releases" before "or any information obtained" in Subsection 58-37f-601(1)(a); added (1)(b); and made a related change.
2015	L. 2015, ch. 336 § 1 S.B. 158 Sponsor: Sen. Vickers	Added "and pharmacy intern" in the introductory language of Subsection 58-37f-301(2)(j) and substituted "five employees" for "three employees" in Subsection 58-37f-301(3)(a)(ii).

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2016	L. 2016, ch. 99 H.B. 114 Sponsor: Rep. Ward	Amends the requirement for a general acute hospital to report to the Division of Occupational and Professional Licensing admissions for poisoning or overdose involving a prescribed controlled substance. Requires courts to report to the division certain violations of the Utah Controlled Substances Act. Amends the purposes of the division's controlled substance database. Requires the division to enter into the database information it receives in reports by hospitals concerning persons admitted for poisoning involving a prescribed controlled substance. Requires the division to enter into the database information it receives in reports by courts concerning persons convicted for: driving under the influence of a prescribed controlled substance that renders the person incapable of safely operating a vehicle; driving while impaired, in whole or in part, by a prescribed controlled substance; or certain violations of the Utah Controlled Substances Act.
2016	L. 2016, ch. 197 H.B. 150 Sponsor: Rep. Daw	Amends the Controlled Substance Database Act to allow a person for whom a controlled substance is prescribed to designate a third party who is to be notified when a controlled substance prescription is dispensed to the person. Allows the person to direct the division to discontinue providing the information; Requires that the division advise the person that if the person discontinues the notification, the third party will be advised of the discontinuance. Requires that the division comply with the direction and also notify the third party of the discontinuation. Authorizes the division to make administrative rules to facilitate implementation of this provision.
2016	L. 2016, ch. 112 H.B. 239 Sponsor: Rep. McKell	Defines terms. Requires the Division of Occupational and Professional Licensing within the Department of Commerce to make opioid prescription data information in its controlled substance database accessible to an opioid prescriber or pharmacist via the prescriber's or Pharmacist's electronic data system. Limits access to and use of the information by an electronic data system, to a prescriber, or a pharmacist in accordance with rules established by the division. Requires rulemaking by the division. Requires the division to periodically audit use of the information. Amends Controlled Substance Database Act penalty provisions.
2016	L. 2016, ch. 275 H.B. 375 Sponsor: Rep. Christensen	Defines terms. Amends the Controlled Substances Database Act to promote utilization of the controlled substances database to prevent opioid abuse. Requires a dispenser to contact the prescriber if the controlled substance database suggests potential prescription drug abuse. Limits liability for prescribers and dispensers who contribute to and use the database. Makes technical changes.
2016	L. 2016, ch. 238 S.B. 136 Sponsor: Sen. Vickers	Modifies in Subsection 58-37f-601(3)(e) the reference to Subsection 58-37f-301(2)"(f), (g), (i)" to Subsection 58-37f-301(2)"(h), (k), or (4)(c)."

APPENDIX D: DATA TABLES

Table 4. Number and Rate of Opioid Prescriptions Dispensed per 1,000 Population (95% CI) by Age and Sex, 2002-2015

	Overall		Males		Females	
Year	Number of Opioid Prescriptions Dispensed	Rate of Opioid Prescriptions Dispensed per 1,000 Population (95% CI)	Number of Opioid Prescriptions Dispensed	Rate of Opioid Prescriptions Dispensed per 1,000 Population (95% CI)	Number of Opioid Prescriptions Dispensed	Rate of Opioid Prescriptions Dispensed per 1,000 Population (95% CI)
2002	1,595,781	686.4 (685.3, 687.5)	643,258	551.7 (550.3, 553.0)	950,858	820.5 (818.9, 822.2)
2003	1,730,509	733.2 (732.1, 734.3)	693,794	585.8 (584.5, 587.2)	1,035,169	880.3 (878.6, 882.0)
2004	1,842,931	767.4 (766.1, 768.5)	745,641	618.9 (617.5, 620.3)	1,095,953	915.8 (914.1, 917.5)
2005	1,941,497	790.0 (788.8, 791.1)	794,324	644.2 (642.8, 645.6)	1,145,909	935.6 (933.9, 937.3)
2006	2,067,158	818.5 (817.4, 819.6)	856,939	676.1 (674.6, 677.5)	1,208,706	960.8 (959.1, 962.5)
2007	2,169,816	835.3 (834.2, 836.4)	914,467	700.7 (699.3, 702.1)	1,254,581	970.5 (968.8, 972.2)
2008	2,285,164	858.1 (857.0, 859.2)	963,560	720.5 (719.0, 721.9)	1,320,825	996.4 (994.7, 998.1)
2009	2,306,619	847.0 (845.9, 848.0)	976,580	713.9 (712.5, 715.3)	1,328,575	980.1 (978.5, 981.8)
2010	2,325,157	838.1 (837.0, 839.2)	988,295	709.1 (707.7, 710.5)	1,335,246	967.1 (965.5, 968.8)
2011	2,325,903	826.2 (825.1, 827.2)	998,266	705.8 (704.5, 707.2)	1,326,244	946.6 (945.0, 948.2)
2012	2,381,186	834.0 (832.9, 835.0)	1,022,421	712.3 (711.0, 713.7)	1,357,547	956.1 (954.5, 957.7)
2013	2,604,144	897.1 (896.0, 898.2)	1,112,176	762.1 (760.7, 763.6)	1,490,461	1032.5 (1030.9, 1034.2)
2014	2,678,995	910.3 (909.2, 911.4)	1,145,609	774.2 (772.8, 775.6)	1,531,620	1046.8 (1045.1, 1048.5)
2015	2,654,608	888.5 (887.5, 889.6)	1,143,010	760.9 (759.5, 762.3)	1,509,886	1016.5 (1014.9, 1018.1)
Ages <18 Years						
2002	56,872	77.5 (76.9, 78.2)	27,797	73.7 (72.9, 74.6)	29,001	81.3 (80.4, 82.3)
2003	56,622	76.5 (75.8, 77.1)	27,199	71.5 (70.6, 72.3)	29,359	81.5 (80.6, 82.5)
2004	54,863	73.0 (72.4, 73.6)	26,743	69.3 (68.4, 70.1)	28,079	76.8 (75.9, 77.7)
2005	54,237	70.6 (70.0, 71.2)	26,635	67.5 (66.7, 68.3)	27,551	73.8 (72.9, 74.6)
2006	52,992	67.1 (66.5, 67.7)	26,097	64.3 (63.5, 65.1)	26,697	69.5 (68.7, 70.4)
2007	51,817	63.5 (63.0, 64.1)	25,742	61.4 (60.6, 62.1)	25,979	65.6 (64.8, 66.4)
2008	54,199	64.7 (64.2, 65.3)	26,829	62.4 (61.6, 63.1)	27,278	67.0 (66.2, 67.8)
2009	53,515	62.4 (61.9, 62.9)	26,509	60.2 (59.4, 60.9)	26,865	64.4 (63.6, 65.2)
2010	51,761	59.3 (58.8, 59.8)	25,558	57.0 (56.3, 57.7)	26,086	61.4 (60.7, 62.2)
2011	49,114	55.7 (55.2, 56.2)	24,368	53.8 (53.2, 54.5)	24,593	57.3 (56.6, 58.1)
2012	45,666	51.4 (51.0, 51.9)	22,897	50.2 (49.6, 50.9)	22,675	52.5 (51.8, 53.2)
2013	42,324	47.2 (46.7, 47.6)	20,871	45.3 (44.7, 45.9)	21,079	48.3 (47.6, 48.9)
2014	46,883	51.9 (51.4, 52.3)	23,181	49.9 (49.3, 50.6)	23,091	52.5 (51.8, 53.2)
2015	43,728	47.6 (47.2, 48.1)	18,825	39.9 (39.4, 40.5)	24,270	54.3 (53.7, 55.0)
Ages 18-24 Years						
2002	164,661	493.4 (491.0, 495.8)	65,702	393.9 (390.9, 396.9)	98,808	592.0 (588.3, 595.7)
2003	172,532	517.5 (515.1, 520.0)	68,726	410.3 (407.2, 413.3)	103,636	624.8 (621.0, 628.6)
2004	175,155	532.5 (530.0, 535.0)	70,897	430.6 (427.4, 433.8)	104,118	633.8 (630.0, 637.7)
2005	175,432	536.9 (534.4, 539.5)	71,921	437.8 (434.6, 441.0)	103,423	636.6 (632.7, 640.5)
2006	176,676	548.0 (545.4, 550.5)	73,515	453.4 (450.1, 456.7)	103,038	642.9 (639.0, 646.8)
2007	174,632	545.7 (543.1, 548.3)	74,288	461.8 (458.4, 465.1)	100,309	630.3 (626.4, 634.2)
2008	146,258	457.7 (455.3, 460.0)	73,789	461.5 (458.1, 464.8)	100,471	629.2 (625.3, 633.1)
2009	134,225	420.3 (418.0, 422.5)	68,825	431.9 (428.7, 435.2)	96,649	603.9 (600.1, 607.7)
2010	123,477	387.8 (385.6, 390.0)	63,366	399.0 (395.9, 402.1)	90,538	567.3 (563.6, 571.0)
2011	117,037	364.5 (362.5, 366.6)	60,195	374.3 (371.3, 377.3)	85,176	531.5 (528.0, 535.1)
2012	113,371	347.4 (345.4, 349.5)	57,968	351.9 (349.1, 354.8)	81,741	505.9 (502.4, 509.4)
2013	109,126	328.4 (326.4, 330.3)	56,265	334.4 (331.6, 337.1)	80,026	487.9 (484.5, 491.3)
2014	101,708	305.1 (303.2, 306.9)	51,257	303.8 (301.2, 306.5)	75,703	459.7 (456.4, 462.9)
2015	97,714	288.7 (286.9, 290.5)	47,162	275.4 (272.9, 277.9)	73,092	437.2 (434.0, 440.3)
Ages 25-34 Years						
2002	283,159	823.9 (820.8, 826.9)	108,611	615.3 (611.6, 619.0)	174,211	1042.0 (1037.2, 1046.9)
2003	308,250	869.5 (866.4, 872.6)	119,358	657.7 (654.0, 661.5)	188,649	1090.1 (1085.2, 1095.1)
2004	333,388	906.5 (903.4, 909.6)	130,222	689.6 (685.8, 693.3)	202,963	1134.3 (1129.3, 1139.2)
2005	352,708	928.3 (925.3, 931.4)	140,425	723.3 (719.6, 727.1)	212,101	1141.5 (1136.7, 1146.4)
2006	383,250	968.4 (965.3, 971.5)	155,473	768.7 (764.8, 772.5)	227,562	1176.1 (1171.2, 1180.9)
2007	413,381	997.8 (994.8, 1000.8)	171,427	808.6 (804.8, 812.4)	241,847	1195.5 (1190.8, 1200.3)
2008	434,476	1011.9 (1008.9, 1014.9)	181,523	825.9 (822.1, 829.7)	252,840	1206.5 (1201.8, 1211.2)
2009	434,119	985.2 (982.3, 988.1)	180,510	798.7 (795.0, 802.4)	253,284	1180.0 (1175.4, 1184.6)
2010	430,080	963.2 (960.3, 966.1)	182,170	794.7 (791.1, 798.3)	247,518	1139.1 (1134.6, 1143.6)
2011	421,407	943.7 (940.8, 946.5)	180,746	792.1 (788.5, 795.8)	240,355	1100.6 (1096.2, 1105.0)
2012	408,546	922.9 (920.1, 925.8)	176,440	784.1 (780.4, 787.7)	231,842	1065.3 (1060.9, 1069.6)
2013	414,937	940.7 (937.8, 943.6)	178,241	796.7 (793.0, 800.4)	236,540	1088.2 (1083.8, 1092.6)
2014	399,534	906.8 (903.9, 909.6)	172,101	770.0 (766.4, 773.6)	227,267	1046.8 (1042.5, 1051.1)
2015	367,709	822.0 (819.4, 824.7)	156,080	687.9 (684.4, 691.3)	212,243	962.9 (958.8, 967.0)

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	Overall		Males		Females	
Year	Number of Opioid Prescriptions Dispensed	Rate of Opioid Prescriptions Dispensed per 1,000 Population (95% CI)	Number of Opioid Prescriptions Dispensed	Rate of Opioid Prescriptions Dispensed per 1,000 Population (95% CI)	Number of Opioid Prescriptions Dispensed	Rate of Opioid Prescriptions Dispensed per 1,000 Population (95% CI)
Ages 35-44 Years						
2002	334,854	1125.4 (1121.6, 1129.3)	139,331	923.9 (919.1, 928.8)	195,249	1330.7 (1324.8, 1336.6)
2003	349,278	1181.0 (1177.1, 1185.0)	144,540	963.3 (958.3, 968.3)	204,452	1403.4 (1397.3, 1409.4)
2004	357,742	1208.5 (1204.5, 1212.5)	148,681	991.0 (985.9, 996.0)	208,776	1430.1 (1424.0, 1436.3)
2005	369,987	1234.6 (1230.6, 1238.6)	154,427	1015.7 (1010.6, 1020.8)	215,317	1458.3 (1452.2, 1464.5)
2006	383,073	1254.1 (1250.1, 1258.0)	161,421	1040.5 (1035.5, 1045.6)	221,450	1473.1 (1466.9, 1479.2)
2007	392,196	1255.9 (1252.0, 1259.8)	169,421	1066.6 (1061.5, 1071.6)	222,676	1451.3 (1445.3, 1457.3)
2008	403,512	1271.0 (1267.1, 1274.9)	174,046	1077.0 (1071.9, 1082.1)	229,312	1471.1 (1465.1, 1477.1)
2009	400,206	1231.3 (1227.5, 1235.1)	173,388	1046.3 (1041.4, 1051.2)	226,504	1421.8 (1416.0, 1427.7)
2010	400,646	1195.2 (1191.5, 1198.9)	173,827	1017.4 (1012.6, 1022.2)	226,478	1377.9 (1372.2, 1383.5)
2011	401,673	1158.5 (1154.9, 1162.1)	176,294	997.0 (992.3, 1001.6)	225,117	1325.1 (1319.6, 1330.5)
2012	411,828	1144.4 (1140.9, 1147.9)	182,105	992.0 (987.4, 996.5)	229,441	1301.5 (1296.1, 1306.8)
2013	453,036	1212.6 (1209.1, 1216.1)	201,196	1056.4 (1051.8, 1061.0)	251,603	1373.7 (1368.3, 1379.1)
2014	471,475	1220.3 (1216.8, 1223.8)	210,189	1066.4 (1061.8, 1071.0)	260,999	1379.1 (1373.8, 1384.4)
2015	464,105	1183.3 (1179.9, 1186.7)	204,010	1019.6 (1015.2, 1024.0)	259,807	1352.2 (1347.0, 1357.4)
Ages 45-54 Years						
2002	315,525	1216.8 (1212.6, 1221.1)	137,061	1056.9 (1051.3, 1062.5)	178,209	1374.9 (1368.5, 1381.3)
2003	351,580	1319.8 (1315.4, 1324.1)	151,552	1138.3 (1132.6, 1144.0)	199,717	1498.8 (1492.2, 1505.3)
2004	384,761	1406.1 (1401.6, 1410.5)	166,735	1222.0 (1216.2, 1227.9)	217,771	1587.3 (1580.6, 1593.9)
2005	415,102	1472.9 (1468.4, 1477.3)	180,882	1288.1 (1282.2, 1294.0)	233,978	1654.6 (1647.9, 1661.3)
2006	446,621	1538.1 (1533.5, 1542.6)	196,522	1359.3 (1353.3, 1365.3)	249,742	1712.8 (1706.1, 1719.6)
2007	467,674	1571.8 (1567.3, 1576.3)	190,736	1285.5 (1279.7, 1291.3)	258,787	1734.8 (1728.2, 1741.5)
2008	494,150	1630.4 (1625.8, 1634.9)	218,437	1446.0 (1440.0, 1452.1)	275,555	1812.5 (1805.8, 1819.3)
2009	488,202	1595.8 (1591.3, 1600.3)	217,336	1425.8 (1419.8, 1431.8)	271,611	1769.4 (1762.8, 1776.1)
2010	485,491	1581.3 (1576.8, 1585.7)	214,312	1400.1 (1394.1, 1406.0)	270,873	1759.5 (1752.9, 1766.1)
2011	472,581	1542.1 (1537.7, 1546.5)	210,840	1378.3 (1372.4, 1384.2)	261,424	1703.2 (1696.7, 1709.8)
2012	465,033	1520.4 (1516.0, 1524.7)	207,935	1358.2 (1352.4, 1364.0)	256,803	1681.0 (1674.5, 1687.5)
2013	496,892	1625.9 (1621.4, 1630.4)	220,852	1440.7 (1434.7, 1446.8)	275,780	1810.5 (1803.8, 1817.3)
2014	499,522	1629.2 (1624.7, 1633.8)	222,398	1444.6 (1438.6, 1450.6)	276,907	1814.1 (1807.3, 1820.8)
2015	482,869	1551.3 (1546.9, 1555.7)	212,017	1356.5 (1350.7, 1362.3)	270,665	1746.6 (1740.0, 1753.2)
Ages 55-64 Years						
2002	186,307	1171.0 (1165.7, 1176.3)	76,839	986.4 (979.4, 993.3)	109,292	1346.0 (1338.0, 1354.0)
2003	213,556	1270.7 (1265.3, 1276.1)	87,909	1066.4 (1059.3, 1073.4)	125,505	1465.7 (1457.6, 1473.8)
2004	244,561	1377.2 (1371.7, 1382.7)	99,230	1138.8 (1131.7, 1145.9)	140,061	1548.6 (1540.5, 1556.7)
2005	270,420	1431.7 (1426.3, 1437.1)	110,012	1185.4 (1178.4, 1192.4)	150,963	1571.4 (1563.4, 1579.3)
2006	290,136	1445.8 (1440.6, 1451.1)	125,174	1268.8 (1261.8, 1275.8)	164,834	1615.7 (1607.9, 1623.5)
2007	314,478	1488.8 (1483.6, 1494.0)	137,711	1327.9 (1320.9, 1334.9)	176,679	1643.3 (1635.6, 1650.9)
2008	348,707	1577.4 (1572.2, 1582.6)	153,169	1410.5 (1403.4, 1417.5)	195,474	1738.0 (1730.3, 1745.7)
2009	372,151	1609.6 (1604.5, 1614.8)	165,550	1455.6 (1448.6, 1462.7)	206,457	1757.5 (1749.9, 1765.1)
2010	396,240	1631.0 (1625.9, 1636.1)	177,084	1480.9 (1474.0, 1487.8)	219,067	1775.7 (1768.3, 1783.1)
2011	407,873	1603.5 (1598.6, 1608.4)	184,776	1475.9 (1469.2, 1482.7)	222,991	1726.4 (1719.2, 1733.5)
2012	429,789	1645.5 (1640.6, 1650.5)	194,862	1514.4 (1507.7, 1521.2)	234,833	1772.1 (1765.0, 1779.3)
2013	493,112	1830.0 (1824.9, 1835.1)	224,279	1691.7 (1684.7, 1698.7)	268,737	1963.3 (1955.9, 1970.8)
2014	529,489	1914.5 (1909.3, 1919.6)	240,342	1767.6 (1760.5, 1774.6)	288,993	2055.5 (2048.0, 2063.0)
2015	543,936	1937.3 (1932.2, 1942.4)	250,113	1811.8 (1804.7, 1818.9)	293,680	2057.6 (2050.2, 2065.1)
Ages 65+ Years						
2002	254,270	1284.6 (1279.6, 1289.6)	87,879	1006.6 (999.9, 1013.2)	165,994	1500.4 (1493.2, 1507.6)
2003	278,628	1382.3 (1377.2, 1387.5)	94,490	1059.1 (1052.3, 1065.8)	183,807	1636.1 (1628.6, 1643.6)
2004	297,582	1445.6 (1440.4, 1450.8)	103,110	1126.2 (1119.3, 1133.1)	194,150	1698.6 (1691.0, 1706.2)
2005	312,858	1470.4 (1465.2, 1475.5)	110,000	1158.8 (1152.0, 1165.7)	202,540	1718.6 (1711.1, 1726.1)
2006	334,326	1513.7 (1508.6, 1518.8)	118,710	1201.7 (1194.9, 1208.6)	215,327	1763.8 (1756.3, 1771.2)
2007	355,565	1567.1 (1562.0, 1572.3)	127,114	1246.7 (1239.9, 1253.6)	228,259	1827.1 (1819.6, 1834.5)
2008	375,753	1597.7 (1592.5, 1602.8)	146,751	1382.0 (1375.0, 1389.1)	239,860	1859.3 (1851.9, 1866.7)
2009	391,794	1609.7 (1604.7, 1614.8)	144,437	1313.0 (1306.2, 1319.8)	247,181	1853.1 (1845.8, 1860.4)
2010	406,852	1619.5 (1614.5, 1624.5)	151,965	1333.8 (1327.1, 1340.5)	254,657	1854.9 (1847.7, 1862.1)
2011	427,769	1652.9 (1647.9, 1657.8)	161,042	1367.1 (1360.5, 1373.8)	266,554	1890.4 (1883.2, 1897.5)
2012	480,497	1770.9 (1765.9, 1775.9)	180,204	1451.8 (1445.1, 1458.5)	300,175	2039.3 (2032.0, 2046.6)
2013	567,326	2000.7 (1995.5, 2005.9)	210,380	1613.3 (1606.4, 1620.2)	356,647	2328.5 (2320.9, 2336.1)
2014	605,015	2049.1 (2043.9, 2054.3)	226,138	1658.5 (1651.6, 1665.3)	378,637	2382.8 (2375.2, 2390.4)
2015	631,936	2108.5 (2103.3, 2113.7)	255,607	1846.7 (1839.6, 1853.9)	376,129	2331.9 (2324.5, 2339.4)

APPENDIX D: DATA TABLES

Table 5. Total MME of Dispensed Opioid Prescriptions by Sex, Utah, 2002-2015

Year	Overall	Males	Females
2002	96,025,233.06	40,205,273.97	55,707,749.40
2003	105,117,146.73	44,304,882.89	60,653,525.66
2004	116,573,914.18	48,744,249.52	67,717,905.91
2005	126,789,296.35	54,060,728.67	72,626,935.36
2006	138,780,605.13	60,472,062.30	78,202,961.39
2007	156,597,632.26	71,019,836.33	85,511,825.50
2008	158,430,399.25	72,433,517.17	85,946,984.70
2009	162,195,747.46	75,007,387.01	87,103,251.58
2010	162,177,015.26	76,815,406.98	87,252,308.78
2011	162,177,015.26	77,383,340.62	84,692,656.20
2012	167,515,571.76	79,765,201.94	87,655,304.71
2013	173,896,450.28	82,936,243.47	90,856,653.37
2014	172,136,377.55	81,846,851.21	90,188,739.13
2015	169,423,298.14	80,284,163.86	89,050,680.14
% Change from 2002-2015	76.44%	99.69%	59.85%

Table 6. Total MME Dispensed per 1,000 Population by Sex, Utah, 2002-2015

Year	Overall	Males	Females
2002	41,304.46	34,482.49	48,071.45
2003	44,538.58	37,411.13	51,581.96
2004	48,540.51	40,457.33	56,584.89
2005	51,588.20	43,845.66	59,299.83
2006	54,951.58	47,709.11	62,164.96
2007	60,282.12	54,418.24	66,151.22
2008	59,492.56	54,160.03	64,834.77
2009	59,555.88	54,833.49	64,258.70
2010	58,455.94	55,114.71	63,198.42
2011	57,605.10	54,715.21	60,450.24
2012	58,670.47	55,573.42	61,734.22
2013	59,906.72	56,833.60	62,941.70
2014	58,492.05	55,311.27	61,640.03
2015	56,708.30	53,442.33	59,951.85
% Change from 2002-2015	37.29%	54.98%	24.71%

Table 7. Number and Percent of Opioid Prescriptions Dispensed with a Daily Morphine Milligram Equivalent (MME) >90 by Age, 2002-2015

Year	Number of Opioid Prescriptions Dispensed with a daily MME>90	Number of Opioid Prescriptions Dispensed	% of Opioid Prescriptions Dispensed with a daily MME>90
Ages <18 Years			
2002	2,873	56,872	5.05%
2003	2,875	56,622	5.08%
2004	2,546	54,863	4.64%
2005	2,648	54,237	4.88%
2006	2,507	52,992	4.73%
2007	2,780	51,817	5.37%
2008	2,667	54,199	4.92%
2009	2,707	53,515	5.06%
2010	2,316	51,761	4.47%
2011	1,952	49,114	3.97%
2012	1,738	45,666	3.81%
2013	1,577	42,324	3.73%
2014	1,117	46,883	2.38%
2015	810	43,728	1.85%
Ages 18-24 Years			
2002	14,009	164,661	8.51%
2003	15,313	172,532	8.88%
2004	16,580	175,155	9.47%
2005	18,356	175,432	10.46%
2006	20,133	176,676	11.40%
2007	23,330	174,632	13.36%
2008	24,920	146,258	17.04%
2009	18,348	134,225	13.67%
2010	16,367	123,477	13.26%
2011	14,286	117,037	12.21%
2012	12,939	113,371	11.41%
2013	10,183	109,126	9.33%
2014	8,184	101,708	8.05%
2015	7,011	97,714	7.18%
Ages 25-34 Years			
2002	29,876	283,159	10.55%
2003	34,146	308,250	11.08%
2004	40,973	333,388	12.29%
2005	47,496	352,708	13.47%
2006	57,328	383,250	14.96%
2007	69,603	413,381	16.84%
2008	77,555	434,476	17.85%
2009	80,652	434,119	18.58%

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Year	Number of Opioid Prescriptions Dispensed with a daily MME>90	Number of Opioid Prescriptions Dispensed	% of Opioid Prescriptions Dispensed with a daily MME>90
Ages 25-34 Years continued			
2010	83,719	430,080	19.47%
2011	81,464	421,407	19.33%
2012	81,102	408,546	19.85%
2013	76,873	414,937	18.53%
2014	71,864	399,534	17.99%
2015	65,913	367,709	17.93%
Ages 35-44 Years			
2002	42,884	334,854	12.81%
2003	48,552	349,278	13.90%
2004	54,530	357,742	15.24%
2005	59,961	369,987	16.21%
2006	64,484	383,073	16.83%
2007	70,803	392,196	18.05%
2008	74,031	403,512	18.35%
2009	77,270	400,206	19.31%
2010	80,100	400,646	19.99%
2011	77,600	401,673	19.32%
2012	82,189	411,828	19.96%
2013	85,233	453,036	18.81%
2014	87,723	471,475	18.61%
2015	88,228	464,105	19.01%
Ages 45-54 Years			
2002	44,040	315,525	13.96%
2003	54,397	351,580	15.47%
2004	63,787	384,761	16.58%
2005	72,688	415,102	17.51%
2006	83,965	446,621	18.80%
2007	92,996	467,674	19.88%
2008	99,584	494,150	20.15%
2009	99,573	488,202	20.40%
2010	98,114	485,491	20.21%
2011	93,490	472,581	19.78%
2012	93,762	465,033	20.16%
2013	92,768	496,892	18.67%
2014	91,082	499,522	18.23%
2015	90,097	482,869	18.66%

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Year	Number of Opioid Prescriptions Dispensed with a daily MME>90	Number of Opioid Prescriptions Dispensed	% of Opioid Prescriptions Dispensed with a daily MME>90
Ages 55-64 Years			
2002	27,813	186,307	14.93%
2003	32,585	213,556	15.26%
2004	43,649	244,561	17.85%
2005	52,798	270,420	19.52%
2006	51,694	290,136	17.82%
2007	58,400	314,478	18.57%
2008	65,655	348,707	18.83%
2009	71,609	372,151	19.24%
2010	77,664	396,240	19.60%
2011	75,323	407,873	18.47%
2012	82,078	429,789	19.10%
2013	88,008	493,112	17.85%
2014	91,397	529,489	17.26%
2015	95,709	543,936	17.60%
Ages 65+ Years			
2002	42,790	254,270	16.83%
2003	47,225	278,628	16.95%
2004	50,274	297,582	16.89%
2005	52,962	312,858	16.93%
2006	54,578	334,326	16.32%
2007	57,817	355,565	16.26%
2008	59,620	375,753	15.87%
2009	61,655	391,794	15.74%
2010	62,093	406,852	15.26%
2011	55,878	427,769	13.06%
2012	66,462	480,497	13.83%
2013	72,234	567,326	12.73%
2014	71,736	605,015	11.86%
2015	71,762	631,936	11.36%

APPENDIX D: DATA TABLES

Table 8. Number and Percent of Opioid Prescriptions Dispensed with a Daily Morphine Milligram Equivalent (MME) >90 by Sex, 2002-2015

Year	Number of Opioid Prescriptions Dispensed with a daily MME>90	Number of Opioid Prescriptions Dispensed	% of Opioid Prescriptions Dispensed with a daily MME>90
2002	204,313	1,595,781	12.80%
2003	235,097	1,730,509	13.59%
2004	267,181	1,842,931	14.50%
2005	297,613	1,941,497	15.33%
2006	334,698	2,067,158	16.19%
2007	375,743	2,169,816	17.32%
2008	404,042	2,285,164	17.68%
2009	417,418	2,306,619	18.10%
2010	425,811	2,325,157	18.31%
2011	404,504	2,325,903	17.39%
2012	424,396	2,381,186	17.39%
2013	430,868	2,604,144	17.82%
2014	426,314	2,678,995	15.91%
2015	422,054	2,654,608	15.90%
Males			
2002	82,012	643,258	12.75%
2003	95,892	693,794	13.82%
2004	110,370	745,641	14.80%
2005	126,229	794,324	15.89%
2006	147,386	856,939	17.20%
2007	171,905	914,467	18.80%
2008	188,473	963,560	19.56%
2009	199,393	976,580	20.42%
2010	206,379	988,295	20.88%
2011	204,600	998,266	20.50%
2012	214,320	1,022,421	20.50%
2013	219,349	1,112,176	20.96%
2014	217,662	1,145,609	19.00%
2015	215,315	1,143,010	18.84%

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Year	Number of Opioid Prescriptions Dispensed with a daily MME>90	Number of Opioid Prescriptions Dispensed	% of Opioid Prescriptions Dispensed with a daily MME>90
Females			
2002	122,158	950,858	12.85%
2003	139,063	1,035,169	13.43%
2004	156,645	1,095,953	14.29%
2005	171,165	1,145,909	14.94%
2006	187,044	1,208,706	15.47%
2007	203,692	1,254,581	16.24%
2008	215,423	1,320,825	16.31%
2009	217,838	1,328,575	16.40%
2010	219,182	1,335,246	16.42%
2011	199,675	1,326,244	15.06%
2012	209,831	1,357,547	15.06%
2013	211,276	1,490,461	15.46%
2014	208,403	1,531,620	13.61%
2015	206,549	1,509,886	13.68%

APPENDIX E: TECHNICAL NOTES

Inclusion Criteria for Patients

Patients in the CSD were only included in the analyses for this report if they were a Utah resident. This determination was made using patient zip code. No other exclusion criteria were applied to patients. Palliative care, cancer, and veterinarian prescriptions were included for this report to provide a comprehensive picture of the amount of prescription opioids dispensed in Utah. In the future, analyses will exclude cancer, veterinarian, and palliative care prescriptions. Prescriptions were de-duplicated using a very limited method for this analysis; if there were exact duplicates in the data, the duplicates were excluded. Future reports will be created using much cleaner datasets after linkage and comprehensive data cleaning and de-duplication has been performed; these cleaning steps could not be completed within the timeframe for this report.

Inclusion of Criteria for Prescription Opioids

The CDC published a file titled "CDC Morphine Milligram Equivalent Table June 2015.xlsx" that was used to determine what prescriptions were opioids. This table is the updated annually, and the most recent update was June 2015. The CDC table contains tabs titled "Opioids," "Benzodiazepines," "Muscle Relaxants," "Stimulants," "Miscellaneous Zolpidem," and "Documentation." The "Opioids" tab contains NDC codes, Trade & Generic names, form (capsule, tablet, liquid, etc.), drug class, drug type, DEA classification, strength per unit, unit of measure, and MME conversion factor. From this file, there are 13,433 NDC codes for opioids, and all codes were used to identify a prescription opioid for this report.

Calculation of Daily MME

The "Documentation" tab explains the calculation of daily morphine milligram equivalents (MME). The following formula was used to calculate the daily MME for each opioid prescription. Strength per unit and MME conversion factor were found in the CDC table. The CSD contains the number of units and days supply. After daily MME/prescription was calculated, prescriptions were then categorized as low-dose or high-dose (≤90MME/day or >90MME/day, respectively). The 2016 CDC prescribing guidelines were used to determine 90 MME/day as the dichotomozing value for prescriptions.[13]

$$\text{MME/day} = \text{Strength per Unit} * \left(\frac{\text{Number of Units}}{\text{Days Supply}} \right) * \text{MME conversion factor}$$

Calculation of Rates and Percentages

Population counts were found using Public Health Indicator Based Information System (IBIS-PH).[18] The rates were calculated using the formula below.

$$\text{Rate}_i = \frac{\text{Number of Opioid Prescriptions}_i}{\text{Population}_i} * 1{,}000 \text{ population}$$

i=Subgroup (year,sex,age group,etc.

The percentages of opioid prescriptions that had a daily MME>90 were calculated using the formula below.

$$\text{Percent>90MME}_i = \frac{\text{Number of Opioid Prescriptions with MME>90}_i}{\text{Total Number of Opioid Prescriptions}_i} * 100\%$$

i=Subgroup (year,sex,age group,etc.)

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