# CONSEQUENCES OF 2014 LEGISLATION ON CONTROLLED SUBSTANCE DISPENSING PATTERNS AND UTILIZATION OF THE INDIANA PRESCRIPTION DRUG MONITORING PROGRAM: A THREE-YEAR REVIEW

by

Kristin Rose Villa

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## THE PURDUE UNIVERSITY GRADUATE SCHOOL STATEMENT OF COMMITTEE APPROVAL

Dr. Matthew M. Murawski, Chair Department of Pharmacy Practice Dr. Kimberly S. Plake Department of Pharmacy Practice Dr. Mangala Subramaniam Department of Sociology Dr. Alan J. Zillich

Department of Pharmacy Practice

### Approved by:

Dr. Brian R. Overholser Head of the Graduate Program To my family.

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#### ABSTRACT

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Title: Consequences of 2014 Legislation on Controlled Substance Dispensing Patterns and Utilization of the Indiana Prescription Drug Monitoring Program: A Three-Year Review. Committee Chair: Matthew Murawski

The misuse of prescription controlled substances is a matter of growing concern in the United States. The National Institute on Drug Abuse (NIDA) defines misuse as "taking a medication in a manner or dose other than prescribed; taking someone else's prescription, even if for a legitimate medical complaint such as pain; or taking a medication to feel euphoria (i.e., to get high)." This broad definition provides a comprehensive understanding of drug misuse and includes many different behaviors when taking medication. Specifically, the misuse of opioids has been recognized as a public health emergency, but it is not the only category of controlled substances misused. According to the 2016 National Survey on Drug Use and Health (NSDUH), approximately 6.2 million Americans had misused prescription drugs within the last month and 18.7 million within the last year, the second-highest reported incidence of misuse for any drug category after marijuana. The therapeutic classes of medications associated with prescription drug misuse include benzodiazepines, stimulants, opioid pain relievers, and sedative-hypnotics. To combat the misuse of these prescription medications, new laws and regulations have been put in place at both federal and state levels.

The objectives of this study were to assess whether controlled substance dispensing in Indiana has changed over the three-year study period when changes in legislation around hydrocodone combination product rescheduling and INSPECT reporting occurred, to assess practitioner use of the INSPECT program changed over the three-year study period, and to assess whether the focus on opioid misuse led practitioners to use the INSPECT program more for opioid-based substances.

37,264, 971 dispensations, and 7,829,714 practitioner queries were used for analysis. Results indicate policy changes had mixed results on dispensations. Hydrocodone rescheduling had no

impact on dispensing, while INSPECT reporting changes had a significant impact on dispensing. When examining specific drug classes, the impact of policy changes was less clear. In addition, results indicated practitioner use of INSPECT is increasing over the three-year study period, but policy changes did not impact usage. Specific practitioner type results were similar. Finally, results indicate there is a difference in INSPECT usage across drug class.

It can be definitively stated that policies have impacted controlled substance dispensing and use of INSPECT in Indiana. This study provides strong evidence to support examining controlled substance dispensations and PDMP usage on a larger scale than just a single drug class. This study also illustrates that many substances make up controlled substance dispensing in Indiana, and though opioids are currently drugs of concern, other products are also dispensed in significant numbers.

#### **INTRODUCTION**

#### **Overview**

The misuse of prescription controlled substances is a matter of growing concern in the United States. The National Institute on Drug Abuse (NIDA) defines misuse as "taking a medication in a manner or dose other than prescribed; taking someone else's prescription, even if for a legitimate medical complaint such as pain; or taking a medication to feel euphoria (i.e., to get high)." (2018) This broad definition provides a comprehensive understanding of drug misuse and includes many different behaviors when taking medication.

Specifically, the misuse of opioids has been recognized as a public health emergency, but it is not the only category of controlled substances misused. According to the 2016 National Survey on Drug Use and Health (NSDUH), approximately 6.2 million Americans misused prescription drugs within the last month and 18.7 million within the previous year, the second-highest reported incidence of misuse for any drug category after marijuana. The therapeutic classes of medications associated with prescription drug misuse include benzodiazepines, stimulants, opioid pain relievers, and sedative-hypnotics. (2017) To address the misuse of these prescription medications, new laws and regulations have been put in place at both federal and state levels.

#### **Statement of Problem**

The Comprehensive Drug Abuse Control and Prevention Act of 1970 went into effect on May 1, 1971. This act, more commonly known as the Controlled Substances Act (CSA), created stricter controls for substances that had a potential for misuse. The law created a new category of substances, called controlled substances, and implemented a system that used registration as a means to control the distribution of these substances. (Abood & Burns, 2017; Gabay, 2013) This led to a closed system of distribution in order "to reduce the diversion of controlled substances to illicit markets." (Abood & Burns, 2017) Controlled substances are drugs or other substances that have been determined to have dependence liability or the potential for abuse. (Abood & Burns, 2017) Drugs or other substances can be classified as a controlled substance by the federal government after consideration of eight factors including actual or relative potential for abuse,

Scientific evidence of pharmacologic effect, if known, state of current knowledge regarding the drug or other substance, risk to public health, and physical or psychological dependence liability. ("Authority and criteria for classification of substances") If a review of these factors indicates a substance should be controlled, it can be placed into one of five schedules, with lower number categories more strictly regulated. The schedules are distinguished by whether there is a medical use for the substance, the abuse potential of the product, as well as the degree of physical and psychological dependence that results from use of the substance. (Abood & Burns; "Authority and criteria for classification of substances"; "Schedules of controlled substances")

The national focus on opioid-based substances has led to new legislation in many states that limit the amount of opioid medication a patient receives. (Division of Unintentional Injury Prevention, 2014) Laws limiting the amount of prescription opioid medication first started to appear in 2016. By July 2017, 23 states had enacted legislation with limits or requirements related to opioid prescribing. (Division of Unintentional Injury Prevention, 2014) Prior to the focus on limitations or requirements for opioid prescribing, states and professional guidelines often focused on the use of prescription drug monitoring programs (PDMPs) as a means to limit or prevent the unnecessary or over-prescribing of opioid medications. (Dowell, Haegerich, & Chou, 2016; Moyo et al., 2017; National Conference of State Legislatures, 2018; The Heller School of Social Policy and Management, 2018) PDMPs are statewide, electronic repositories that track controlled substance prescriptions dispensed within a state. (Division of Unintentional Injury Prevention, 2017; Moyo et al., 2017) According to the CDC, PDMPs "continue to be among the most promising state-level interventions to improve opioid prescribing, inform clinical practice, and protect patients at risk."(Division of Unintentional Injury Prevention, 2017) Typically, PDMPs include data on all controlled substance prescriptions dispensed within a state and are not limited to opioid medications.

To combat the misuse of controlled substances, new laws and regulations have been put in place both at federal and state levels. One such regulation is the scheduling and rescheduling of certain medications to limit their prescribing and dispensing. The move of hydrocodone combination products from schedule III from schedule II requires a prescriber to write a new prescription each time the medication is needed, while scheduling tramadol for the first time as a schedule IV medication limits the number of times the medication can be refilled and changes the expiration of any prescriptions written for the medication. (Drug Enforcement Administration, 2014a, 2014b) Another legislative change has been the requirement to report information to statewide prescription drug monitoring programs (PDMP). This requires a dispenser of a controlled substance to submit specific information on the individual receiving the dispensation and the medication dispensed to the database for practitioners to review before prescribing or dispensing a controlled substance.

In Indiana, both options have impacted controlled substance dispensing. Indiana's PDMP – Indiana Scheduled Prescription Electronic Collection and Tracking Program (INSPECT) – has data on all controlled substance prescriptions dispensed in Indiana listed by patient. ("Central repository for controlled substances") Analyzing data from INSPECT can help quantify how legislative and regulatory (called rules in Indiana) changes have impacted the dispensing of controlled substances in Indiana. By looking at the impact of legislation and rule changes in Indiana, we can attempt to determine whether legislative and rule changes have had the desired effect on prescribing practices in Indiana.

#### Significance of the Study

In October of 2017, the US Department of Health and Human Services (HHS) declared a public health emergency in order to address the national opioid crisis. (Department of Health and Human Services, 2017) This public health emergency was declared as a growing number of overdoses were attributed to all opioid-based substances, including prescription opioid medications. The Centers for Disease Control and Prevention (CDC) estimated that the number of overdoses involving opioids was five times higher in 2016 than in 1999 and that prescription opioid medications are a driving factor in that increase. The CDC estimates that 66% of overdose deaths in the US can be attributed to all opioid-based substances. (Division of Unintentional Injury Prevention, 2018) The 2016 National Survey on Drug Use and Health (NSDUH) estimated approximately 6.2 million Americans 12 and older misused prescription medications at least once in the previous month. This made prescription medications the second most misused category of drugs after marijuana. (Ahrnsbrak et al., 2017)

While the misuse and over-prescribing of prescription opioid medications have been the distinct focus of growing national concern, opioid-based substances are not the only category of drugs misused. Of the approximately 6.2 million Americans 12 and older who misused prescription medications at least once in the previous month, the pain reliever category, which includes prescription opioid medications, made up the largest percentage, with 3.3 million Americans. However, opioids were not the only category of controlled substance misused, and the broader prescription drug category included tranquilizers, stimulants, and sedatives. (Ahrnsbrak et al., 2017) As the focus on controlled substance prescribing has emphasized opioid-based substances, we have little understanding of how the awareness of the opioid epidemic has impacted prescribing or dispensing behavior, as well as the use of a state's PDMP for all controlled substances.

In Indiana, dispensers, which include pharmacies and practitioners, are required to report data on controlled substances dispensed in the state. As of January 2016, reporting is required to occur within 24 hours of a controlled substance medication being dispensed. Practitioners interested in looking up patient-level data in the INSPECT system before prescribing or dispensing a controlled substance are required to register with the INSPECT program to gain access to controlled substance data. ("Central repository for controlled substances") A 2013 study provided a descriptive analysis of controlled substances dispensed in Indiana over a three-year period (2011, 2012, and 2013) and included a survey of practitioner perceptions of the use of the INSPECT program. (Kooreman, Carnes, & Wright, 2014; Kooreman, Greene, Xavier-Brier, & Wright, 2014) Over the three year period, opioids were the largest percentage of prescriptions dispensed in Indiana, with benzodiazepine and stimulant prescriptions being the second and third largest percentage of prescriptions, respectively. (Kooreman, Greene, et al., 2014) Twenty-nine percent of prescribers reported they did not ever use INSPECT and seven percent of prescribers indicated they had not checked INSPECT before prescribing any controlled substance medication for their patients in the last year. However, since this was a self-report measure, practitioners may not accurately recall their INSPECT usage. (Kooreman, Carnes, et al., 2014) Therefore a review of actual practitioner inquiries into the INSPECT system and comparison to practitioner self-report is warranted.

Since the conclusion of the 2013 study, Indiana had some important changes take place regarding the scheduling of certain controlled substances, as well as with the INSPECT program. First, the federal government made scheduling changes to two drugs. In August 2014, tramadol was recategorized from a non-controlled legend drug to a schedule IV controlled substance, and in October 2014, hydrocodone combination products were rescheduled, with the schedule categorization moved from schedule III to the more restrictive schedule II. (Drug Enforcement Administration, 2014a, 2014b) Indiana also made changes to the INSPECT program. The Board of Pharmacy removed the notarization requirement for registration, streamlining the INSPECT registration process for all practitioners. ("Indiana Scheduled Prescription Electronic Collection and Tracking Program") The Indiana Legislature also made changes to INSPECT reporting timelines for dispensers. The reporting deadline was shortened from 7 days prior to July 1, 2015, to three days between July 1, 2015, and December 31, 2015, and ultimately to 24 hours on January 1, 2016. ("Central repository for controlled substances") Finally, the Indiana State Legislature and Indiana Board of Medicine added a provision requiring practitioners prescribing a certain amount of opioid medication for pain management to check Indiana's PDMP data on the patient involved at least once a year. This provision went into effect on January 1, 2015. ("Opioid Prescribing Requirements")

The changes to the scheduling of certain substances, the INSPECT program, requirements for the use of the INSPECT program, and the awareness of the opioid epidemic may have resulted in changes in both, or either, prescribing or dispensing behavior, in addition to the level of use of the INSPECT program. Analysis of INSPECT data can allow researchers to quantify how legislative and rule changes have impacted the dispensing of controlled substances in Indiana and to determine changes have had the desired effects.

#### **Objectives and Hypothesis**

#### **Objective One**

To assess whether controlled substance dispensing in Indiana has changed over the three-year study period when changes in legislation around hydrocodone combination product rescheduling and INSPECT reporting occurred.

#### Null Hypothesis

Controlled substances dispensing has not changed over the three-year study period for all categories of substances around changes in legislation.

#### Alternative Hypothesis

Controlled substance dispensing has increased over the three-year study period for all categories of substances despite changes in legislation.

#### **Objective Two**

To assess practitioner use of the INSPECT program changed over the three-year study period.

#### Null Hypothesis

Practitioner use of the INSPECT program has not changed over the three-year study period.

#### Alternative Hypothesis

Practitioner use of the INSPECT program has increased over the three-year study period.

#### **Objective Three**

To assess whether the focus on opioid misuse led practitioners to use the INSPECT program more for opioid-based substances.

#### Null Hypothesis

Practitioners use the INSPECT program for all controlled substances equally.

#### Alternative Hypothesis

Practitioners use the INSPECT program more for opioid-based substances.

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#### LITERATURE REVIEW

#### History of Controlled substances pre-1970

Several legislative measures were put in place to reduce diversion of commonly abused substances. However, most of these measures focused on narcotics and marijuana, which were the main drugs of concern in the early 1900s. (Quinn and McLaughlin 1973; Sacco 2014) Early legislation often used taxation as a method of control, most notably in the Harrison Narcotics Act of 1914 and the Marihuana (Marijuana) Tax Act of 1937. These acts required those involved in the supply chain of narcotic drug products, listed mainly at the time as cocaine, opium, heroin, and morphine, and marijuana products to pay a tax on these drugs through regulated tax stamps and keep records of all transactions regarding these drugs. (Sacco 2014) While these policies provided a means of these policies also led to the development of other drugs that were widely abused. (Sacco 2014; Quinn and McLaughlin 1973)

In 1965, additional drugs became regulated under the Drug Abuse Control Amendments to the Federal Food, Drug, and Cosmetic Act. This amendment labeled depressants, including barbiturates and tranquilizers, stimulants, and hallucinogens as "dangerous drugs" and regulated their dispensing and distribution. (Quinn and McLaughlin 1973; United States et al. 1965; Rosenthal 1967; Spillane 2004) In addition to adding registration, inspection, and record-keeping provisions for manufacturers and wholesale distributors, this amendment also expanded the powers of the Food and Drug Administration (FDA) with regard to the administration and enforcement of the laws within this amendment.(Rosenthal 1967) The addition of this amendment provided additional oversight over commonly abused drugs, however this amendment and the acts that came before it led to different methods and government entities in charge of enforcement. (Quinn and McLaughlin 1973) The piecemeal approach to enforcement led to an increasing movement for federal legislation regulating all drugs with the potential for abuse or dependence liability while recognizing there are legitimate medical uses for many of these substances and a push to bring enforcement of the legislation under a single entity. (Quinn and McLaughlin 1973; Sacco 2014)

#### **History of Controlled Substances post-1970**

The Comprehensive Drug Abuse Control and Prevention Act of 1970 was the federal government's answer to the call for a single, comprehensive piece of legislation to regulate current and future substances that have been determined to have abuse potential and dependence liability, while still recognizing the medical benefits of many of these substances. The act replaced all previous legislation regulating these types of substances and went into effect on May 1, 1971. This act, more commonly known as the Controlled Substances Act (CSA), created more control around substances that had a potential for abuse by creating a new category of substances and implementing a system that used registration as a means to control the distribution of these substances. (Courtwright, 1982) This created a closed system of distribution in order "to reduce the diversion of controlled substances to illicit markets." (Abood & Burns, 2017)

The new category of substances created by this act was controlled substances. These substances are drugs or other substances that have been determined to have dependence liability and/or the potential for abuse. (Abood & Burns, 2017) Drugs or other substances can be classified as a controlled substance by the federal government after consideration of eight factors. Those factors, prescribed by law, are – 1. Actual or relative potential for abuse; 2. Scientific evidence of pharmacologic effect, if known; 3. State of current knowledge regarding the drug or other substance; 4. History and current pattern of abuse; 5. Scope, duration, and significance of abuse; 6. Any risk there is to the public health; 7. Physical or psychological dependence liability; and 8. Whether the substance is an immediate precursor of a substance already controlled under this subchapter. ("Authority and criteria for classification of substances")

If a review of these factors indicates a substance should be controlled, it can be placed into one of five schedules. Schedule I is the most restrictive, these substances have no recognized medical use in the United States, have high abuse potential, and the physical and psychological dependence of these substances has not been determined within the law. Substances in schedule I cannot be dispensed from a pharmacy and may only be used for research purposes under heavy restrictions. Schedule II substances have legitimate medical uses but have high abuse potential and cause severe physical and psychological dependence. Drugs in this schedule have more controls around obtaining them. Distributing and ordering these substances requires special forms, the DEA Form

222, and patients require new prescriptions each time they need a refill of the medication. The remaining schedules, III through V, contain other substances with a therapeutic value that cause varying levels of physical and psychological dependence that decrease as you move down in schedule. Schedule III substances cause moderate to low physical dependence and high psychological dependence, while schedule V substances cause limited dependence and substances in this schedule have the lowest abuse potential of all schedules. (Abood & Burns, 2017; "Authority and criteria for classification of substances";Courtwright, 1982; "Schedules of controlled medications. (Abood & Burns, 2017; "Authority and criteria for classification of substances";Courtwright, 1982; "Schedules of controlled substances")

In addition to creating the controlled substance category, the CSA required all persons interested in engaging in activities with controlled substances to register with the Drug Enforcement Administration (DEA), unless exempt by the CSA. Registration is based on the schedule of drugs handled and the activities a person engages. There are ten federal registration types, including manufacturing, distributing, dispensing, and importing. Registrants are assigned a DEA number that identifies the activities they can engage in and schedules they can handle. This number must be on all transactions related to controlled substances. Prescriptions must have a prescriber's DEA number on the face of the prescription to be dispensed from a registered pharmacy. Patients do not need to be registered with the DEA to obtain a controlled substance on a valid prescription from a licensed prescriber. (Abood & Burns, 2017; "Application for registration; time for application; expiration date; registration for independent activities; application forms, fees, contents and signature; coincident activities", "Persons required to register", "Separate registrations for separate locations")

While the CSA is federal legislation regulating controlled substances in the US, individual states also regulate controlled substances and controlled substance activities within their borders. Many states, including Indiana, adopt the provisions of the CSA directly into their own statutes. States often differ from the federal government in the registration types for activities conducted within the state and requiring a state-specific controlled substance registration (CSR), as well as the

scheduling of certain substances. When states differ on the scheduling of substances, they are often stricter in their scheduling decisions. For instance, in Indiana, all butalbital products are in schedule III, whereas the federal government only schedules those butalbital products containing other controlled substances like codeine. (Abood & Burns, 2017; "Classification of Drugs", "Controlled Substances") At this time, the only variation in scheduling between Indiana and the federal government is butalbital-containing products. ("Classification of Drugs"; "Controlled Substances"; Drug Enforcement Administration)

#### **Prescription Drug Monitoring Programs**

A prescription drug monitoring program (PDMP) is a statewide electronic database that collects specific dispensing information on certain substances dispensed in a state. (National Alliance of Model State Drug Laws, 2018) These publicly administered programs collect data pertaining to all or some controlled substances and other substances of interest dispensed from both pharmacies and practitioner offices. They consolidate and report various data to authorized users, including drug name, quantity, day's supply, number of refills, prescriber, dispensing pharmacy, and calculate morphine milligram equivalents (MME) both by prescription and over a 30-day period.

Forty-nine states, the District of Columbia, and Guam currently have operational PDMPs within their state or territory. Missouri is the only state that doesn't currently have a state-based PDMP, however St. Louis County has a county-based PDMP that other Missouri counties can participate in. The National Alliance for Model State Drug Laws (NAMSDL) estimates that participating counties cover over 75 percent of those living in Missouri. (2018) Although there are variations across states in non-controlled substances monitored, all states and territories monitor controlled substances in schedules II through IV. Thirty-five states also monitor substances in schedule V. (Substance Abuse and Mental Health Services Administration, 2017) PDMPs are run by different agencies within a state with the majority (20) being administered by the state board of pharmacy. The department of health, law enforcement agencies, professional licensing agencies, substance abuse commissions, and consumer protection agencies are other groups that administer PDMPs within states. (Substance Abuse and Mental Health Services Administration, 2017) PDMPs were originally intended to "facilitate judicious prescribing and to illuminate the activities of prescribers, pharmacies, and patients." (Deyo et al., 2018) Since their initial establishment, the implementation and utilization of PDMPs has become a key policy focus in many states, established as a response to prescription drug misuse. (Moyo et al., 2017) As early as 2002, the federal government began providing funding for states to encourage the implementation, use, and enhancement of these systems to monitor controlled substance usage. (Brady et al., 2014) PDMPs provide authorized users histories of controlled substances dispensed to a patient, allowing them to view an objective report of the medications patients receives and their prescribers. (Brady et al., 2014; Griggs, Weiner, & Feldman, 2015; Moyo et al., 2017) This objective report allows prescribers, pharmacists, and other authorized users to "support the appropriate use of controlled substances, detect and deter diversion of controlled substances, and inform public health interventions to prevent drug misuse." (Brady et al., 2014)

Several studies have analyzed the impact of PDMP implementation in various states. A study conducted by Brady and colleagues gathered data from the Automation of Reports and Consolidated Orders System (ACROS) on all opioids and MMEs dispensed from 1999 to 2008 from all states and the District of Columbia. Authors completed a retrospective analysis comparing and modeling the amount of MMEs distributed per capita in states with a PDMP and those without. Additionally, the authors analyzed information in states that had a PDMP implemented during the study period. They found that PDMP implementation was associated with a 3 percent decrease of MMEs dispensed per capita overall in states with a PDMP implemented; however the impact varied widely by state. (2014)

Another study conducted by Deyo *et al.* examined trends in prescribing and health outcomes after initiation of a PDMP and compared patterns for prescribers who registered with the PDMP during the first 3 months of operability and those that did not at any point during the study period. The authors found a decline in opioid prescribing per capita after implementation of the state-based PDMP in Oregon. However, they found no difference in changes in prescribing patterns between individuals who used the PDMP and those who did not. (2018)

In a study evaluating New York's PDMP, I-STOP, Brown and colleagues looked at "whether the supply and/or prescribing of opioids decreased" after PDMP implementation. The authors found the number of opioid prescriptions dispensed by pharmacies in New York declined after PDMP implementation; however they could not draw conclusions due to a limited time-period of data after implementation of the PDMP. They also found the number of opioids in the supply chain increased based on MMEs distributed to individual registrants with the state. (2017)

A study by Lin et al. used national data from the 2012 National Ambulatory Medical Care Survey (NAMCS) to examine "the effectiveness of different state-level PDMPs on physicians' opioid prescribing." They found that implementation of a PDMP was not associated with physician opioid prescribing practices for non-cancer chronic pain treatment. This study looked at the differences of prescribing based on state-mandated PDMP queries before prescribing and found no difference in states that required a prescriber check the PDMP before prescribing the medication. (2018)

A study from Ali and colleagues looked at state-level variation in PDMP implementation to explore associations between a state's PDMP status and the "nonmedical use of prescription pain relievers" or more simply the misuse of opioids. Using data from the 2004 – 2014 National Survey of Drug Use and Health, the authors found that PDMPs had no effect on overall opioid misuse but did find evidence of a reduction of the number of days of opioid misuse in the previous year. Additionally, they found PDMP implementation was not associated with an increase in heroin use or initiation within a state, however, noted that PDMP implementation was associated with an increase in heroin use in the number of days of heroin use in the past year. (2017) The results of these studies indicate that PDMPs may be beneficial for combating drug misuse, specifically with opioids. However, no studies have looked at the impact of PDMP usage and legislation on all controlled substances.

The prescription drug monitoring program in Indiana is called Indiana Scheduled Prescription Electronic Collection and Tracking Program (INSPECT). INSPECT's "two critical functions are to maintain a warehouse of patient information for health care professionals and to serve as an important investigative tool for law enforcement." (Kooreman, Greene, Xavier-Brier, & Wright, 2014) Legislation for its establishment was passed in 1997 and INSPECT first became operational
in 1998. When INSPECT was initially established, pharmacies were required to report all schedule II dispensations to the program. Since 2004, pharmacies and dispensing practitioners must report dispensations of controlled substances in schedules II through V to the program. As of 2016, the obligation to report all dispensations of ephedrine and pseudoephedrine products was added to INSPECT reporting requirements. While pharmacies must report all dispensations, prescribers who dispense must only report dispensations that exceed a 72-hour supply. All reports, including zero-reports which are reports that indicate a pharmacy or prescriber has not dispensed any controlled substances on a given day, must be reported to the INSPECT program within 24-hours, or if a location is closed, on the next business day. Numerous individuals may request patient information within the INSPECT system, including physicians, pharmacists, nurse practitioners, physician assistants, prosecutors, medical examiners, drug court officials, and the state health department. (Abood & Burns, 2017; "Central repository for controlled substances", "Indiana Scheduled Prescription Electronic Collection and Tracking Program";Kooreman, Greene, et al., 2014; National Alliance of Model State Drug Laws, 2016; Prescription Drug Monitoring Program Training and Technical Assistance Center, 2018)

A previous descriptive paper of INSPECT data analyzed prescriptions dispensed in 2011, 2012, and 2013. This report included 30,547,252 controlled substance dispensations reported over the three years. Opioids were the largest percentage of controlled substances dispensed (48.6 percent, 48.4 percent, and 46.86 percent) over the three-year period, with hydrocodone/acetaminophen accounting for the largest number of dispensations per year within this category (68.9 percent, 63.8 percent, and 63.6 percent). Benzodiazepines were the second largest category of controlled substance dispensed (22.3 percent, 21.8 percent, and 21.9 percent) over the three-year period, with alprazolam making up the largest percentage of the benzodiazepine group (43.5 percent, 43,5 percent, and 42.8 percent). Simulants, sedative-hypnotics, and muscle relaxants were the next largest categories. (Kooreman, Greene, et al., 2014) This study did not evaluate the changes in dispensing nor the impact of legislation on the usage of the INSPECT program.

### **Risk Perception, Communication, and Pharmacy Practice**

All drugs have an inherent risk associated with them. Drugs that represent greater risks and those which are "not safe for use except under the supervision by a practitioner licensed by law to administer such a drug" due to their "toxicity or other potentiality for harmful effect, or the method of its use, or the collateral measures necessary to its use" are legally defined as prescription drugs. ("Exemptions and considerations for certain drugs, devices, and biological products") Within that legal category, drugs that have greater risks than just needing supervision for use are categorized as controlled substances. Due to their chemical properties, these drugs also have risks for dependence liability and/or the potential for abuse. (Abood & Burns, 2017; "Authority and criteria for classification of substances", "Schedules of controlled substances")

Risk is "the probability and magnitude of harm, where harm refers to threats to humans and things they value." (Cho, Reimer, & McComas, 2015) Risk communication is "the process of informing people about potential hazards to their person, property or community."(United States Environmental Protection Agency, 2018) The construct of risk communication is defined as a "science-based approach for communicating effectively in situations of high stress, high concern, or controversy." (United States Environmental Protection Agency, 2018) One critical component of risk communication is messaging, fundamental to help reach the goal of informing the public and impacting an individual's risk perception. Messages should be designed for non-experts, simplify complex information, and target the group you intend to influence. Components of risk communication messages are both instrumental and relational. Instrumental message components aim to "affect the attitudes and behaviors of the receiver." (Reckelhoff-Dangel, Petersen, & Laboratory, 2007) Relational message components aim to "build and reinforce a climate of mutual trust and acceptance between sender and receiver relative to the potentially threatening event or condition" in order to "influence the likelihood of meeting the instrumental" message component. (Reckelhoff-Dangel et al., 2007)

There are many theories focused on how to move a patient's perception of risk or how to affect a patient's perception of risk to use when creating a message. The extended parallel process model (EPPM) and protection motivation theory (PMT) are two that have been extensively used to determine the impact of health promotion materials on a patient's perception of risk. (Gore &

Bracken, 2005; Maloney, Lapinski, & Witte, 2011; Murray-Johnson et al., 2004; Ruthig, 2016; Simpson, 2017; Witte, 1992, 1996; Witte & Allen, 2000; Witte, Berkowitz, Cameron, & McKeon, 1998) There are few studies in this area looking at the impact of these techniques on health care professionals and their perception of risk related to a current public health issue. Although these theories and techniques are aimed at patients, it is impossible to limit healthcare professionals' collateral exposure to these methods of changing risk perception.

In the extended parallel process model (EPPM), fear appeals are used as a type of messaging. Fear appeals, also called threat appeals, elicit a fear-based response that causes either an adaptive response or maladaptive response in an individual. "Fear appeals are persuasive messages designed to scare people by describing the terrible things that will happen to them if they do not do what the message recommends." (Witte, 1992) Witte points out that the popular drug prevention commercial that shows a woman holding an egg and saying "this is your brain" then cracking the egg in a frying pan and frying it while saying "this is your brain on drugs, any questions?" is an example of a fear appeal. (Witte, 1992)

In the EPPM, Witte theorizes that after exposure to a fear appeal, an individual appraises the perceived threat. If appraisal leads to a moderate to high-perceived threat, fear is elicited, and a second appraisal is made. If the perceived threat is low, no fear is elicited, no second appraisal is made, and there is no response to the fear appeal. (Witte, 1992)

The second appraisal evaluates the efficacy of the recommended response. If the appraiser believes this response is feasible and effective, a danger control process, also considered protective motivation, is initiated. This process leads to thinking of strategies to avert the threat. If the appraiser believes this response is not feasible or not effective, a fear control process, also considered defensive motivation, is initiated. The fear control process leads to maladaptive responses like denial. In this process, individuals "respond to their fear, not to the danger." (Witte, 1992)

As stated previously, all prescription drugs have inherent risks associated with their use, such as side effects, but controlled substances have risk profiles that are quite different from those of other

drugs. Controlled substance use includes risks for dependence liability and/or the potential for abuse. (Abood & Burns, 2017) The increasing issues in the US with opioid misuse has led public health agencies, including the Center for Disease Control (CDC), to craft risk communication messages to influence patient understanding of the risks associated with opioids. These messages often have fear-based components intended to impact a patient's perception of opioid medications. Some examples include "How can I be addicted? These are from my doctor" "One prescription can be all it takes to lose everything" "Prescription opioids can be addictive and dangerous" and "I'm not supposed to be the one to pick which sneakers I'm going to bury him in." (Centers for Disease Control and Prevention Injury Center, 2017) These examples are used as short images with messages and are also used as longer 30-second video clips. (Centers for Disease Control and Prevention Injury Center, 2017) While public health agencies specifically craft fear-based messages, other messaging sources impact individuals. Media coverage of growing issues, including the opioid epidemic, often creates a fear-based message that has not been specifically crafted to meet goals.

Both types of messaging, public health-based and media-based, target the public. Although these messages are intended for the general population, health care practitioners are also exposed to these messages. Since the recommended response in these messages are not tailored to health care practitioners, we do not know the impact that these messages may have on a practitioner's practice or appraisal of the danger associated with the use of a controlled substance, specifically opioids. They may believe the threat in the message is low and therefore may not be influenced by the message at all. In this case, a practitioner would not change their practice in relation to opioids or other controlled substances, including their dispensing trends or use of a PDMP.

If the threat in the message is moderate to high, the practitioner may then look to appraise the recommended response. However, if the message does not provide a response in the message, a practitioner may need to look elsewhere. Use of a state's PDMP is one recommended step for combating prescription drug misuse. (Division of Unintentional Injury Prevention) If a healthcare practitioner believes that using a PDMP is effective, they may use the PDMP more. This response could either be for all controlled substances or be limited to the specific controlled substance noted in the message, specifically opioids. The focus on one controlled substance in messaging may have

an unintended consequence of impacting a practitioner's overall appraisal of all drugs with specific risks. If a healthcare practitioner believes that using a PDMP is ineffective, they may have no change in their PDMP usage or use the PDMP less to avoid the issue altogether.

While these are hypothesized responses, no research has yet looked at the impact of fear-based messages on dispensing trends and the use of prescription drug monitoring programs. The focus on these messages on the public and not on health care practitioners may inadvertently lead to an unexpected and sub-optimal response in health care practitioner habits.

#### 2013 Indiana Professional Licensing Agency INSPECT Prescriber Survey

The authors of a study on INSPECT data over the years 2011, 2012, and 2013 conducted a survey of practitioners eligible to register and use INSPECT program. They found that many prescribers did not check INSPECT before prescribing controlled substance medications for their patients. When asked, "For what percent of patients to whom you have prescribed controlled substances did you review INSPECT information in the past 30 days?" 67.8 percent of respondents (1514 prescribers) indicated they had used INSPECT to review 30% or less of their patients within that time frame. Alarmingly, 20 percent of respondents (447 prescribers) indicated they had reviewed INSPECT for none of their patients within that time frame. When extending the time period to the previous 12 months, 59.2 percent of respondents (1328 prescribers) indicated they had used INSPECT to review 30% or less of their patients within that time frame, with 7.1 percent indicating they had not reviewed INSPECT for any of their patients before prescribing controlled substances within the last 12 months. Prescribers were also asked "The last time you considered writing a prescription for a controlled substance, did you consult INSPECT?" and in response to this question, 37 percent of prescribers (836 respondents) indicated that they had consulted INSPECT. When subsequently asked, "Did the information you learned from INSPECT prompt you to change your treatment plan?" 50.1 percent of respondents (415 prescribers) indicated that yes, their treatment plan had changed after a review of INSPECT. (Kooreman, Carnes, & Wright, 2014)

This study showed that of those practitioners who used INSPECT, half of them believed their review of the PDMP changed their behavior. However, there were many limitations to this study, including that of the 27,727 eligible prescribers enrolled in INSPECT only 4264 participated in

this study (15.4 percent response). (Kooreman, Carnes, et al., 2014) Additionally, this study asked prescribers to recall their INSPECT review history and how it impacted their prescribing, both of which are subject to potential social desirability bias and recall bias. Practitioners may not adequately remember their practice habits, and due to the increasing emphasis on curbing opioid misuse, they may overestimate the impact of the PDMP review. Still, the results suggest using INSPECT changes prescribing behavior. Since the conclusion of this study, Indiana has made important changes relating to INSPECT.

## Legislative and Regulatory Changes Federally and in Indiana

Since the results of previous Indiana Professional Licensing Agency studies were published in 2014, there have been several legislative, regulatory, and policy changes regarding the scheduling of certain substances and Indiana's prescription drug monitoring program (PDMP). (Kooreman, Greene, et al., 2014) These changes may have significantly impacted the dispensing of controlled substances and the rate of use of the INSPECT system by providers and, as a result, requires additional exploration.

To start, in August 2014, the federal government first scheduled products containing tramadol. Tramadol products were initially non-controlled prescription drugs; however there was evidence that these products could be misused, and the federal government decided to categorize tramadol-containing products as schedule IV drugs. In addition to the scheduling of tramadol, the federal government also changed the schedule for hydrocodone combination products in October 2014. Hydrocodone combination products, including hydrocodone/acetaminophen and hydrocodone/ibuprofen, were originally in schedule III, however, after re-evaluating the evidence for misuse, these products were moved into the more highly regulated schedule II category of controlled substances. Due to federal supremacy in law, these federal scheduling changes were immediately reflected in individual states. (Drug Enforcement Administration, 2014a, 2014b)

The above changes in regulations have the potential to impact the number of controlled substances dispensed in the state of Indiana; however there are additional changes in regulations pertaining to Indiana's PDMP that may also impact controlled substance prescribing, as well as the usage of the state's prescription drug monitoring program, INSPECT. First, on November 6, 2014, prescribers

treating a patient with an opioid pain reliever for chronic pain were required to review a patient's INSPECT report at certain intervals. Prescribers treating a patient for greater than three consecutive months with a transdermal opioid patch of any dose, a tramadol dosage greater than 60 morphine milligram equivalents (MMEs) per day, or another opioid-containing controlled substance in quantities of greater than 60 per month or greater than 15 MMEs per day were required to check INSPECT for a patient at the outset of treatment and at least once per year thereafter. In addition, prescribers prescribing any opiate in an extended-release dosage form which is not in an abuse-deterrent formulation, when an abuse-deterrent formulation is available, for a therapy duration greater than one day, must check INSPECT for a patient at the outset of treatment and at least once per year thereafter. (Indiana State Medical Association, 2014; "Opioid Prescribing Rule") Next, in 2015, changes in INSPECT registration included the removal of notarization from the application form, substantially facilitating the registration process to gain access to INSPECT. Finally, during 2015 and 2016, the timeline for reporting dispensing data to INSPECT became progressively more stringent. Before July 2015 reporting was required within 7 days of dispensing, after July 2015 reporting changed to 3 days of dispensing a product to a patient, and finally, as of Jan 2016 reporting was required within 24 hours of dispensing, or if a location was closed, on the next business day. ("Central repository for controlled substances", "Indiana Scheduled Prescription Electronic Collection and Tracking Program")

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# **METHODOLOGY**

### Overview

The main goals of this study were to explore controlled substance prescription dispensing in Indiana and to explore practitioner use of the Indiana prescription drug monitoring program. To fulfill these goals, data were obtained and analyzed from the Indiana Scheduled Prescription Electronic Collection and Tracking (INSPECT) program with approval from the Indiana Board of Pharmacy.

# **Study Design**

This study was a retrospective analysis of de-identified data of Indiana controlled substance prescription dispensations and practitioner queries in Indiana's prescription drug monitoring program. The study protocol was submitted and approved by the Purdue University Institutional Review Board (IRB) and the Indiana Board of Pharmacy per statute requirements for obtaining data. Two data files were obtained from the INSPECT program. ("Indiana Scheduled Prescription Electronic Collection and Tracking Program,") The first was a data file containing information on all prescriptions dispensed and reported to the program, which will be referred to in this work as the INSPECT data file. The second data file contained all practitioner queries of individual patients in the INSPECT program, which will be referred to in this work as the INSPECT program, which will be referred to in this work as the INSPECT data file. The second data file contained all practitioner queries of individual patients in the INSPECT program, which will be referred to in this work as the INSPECT data file. The second data file contained all practitioner queries of individual patients in the INSPECT program, which will be referred to in this work as the practitioner data file. All data obtained were inclusive controlled substance dispensations from January 1, 2014, through December 31, 2016. Data consisted of several variables. Listed below are the variables, their operational definitions, and the data file where the variable is located.

### **Patient Variables**

- Patient identifier a unique, de-identified indicator noting a specific patient located in the INSPECT data file and practitioner data file
- Zip code five-digit United States postal zip code correlating to patient address located in the INSPECT data file
- Age at fill patient age on the date the prescription was dispensed from the pharmacy located in the INSPECT data file

- Year of birth the four-digit year the patient was born located in the INSPECT data file
- Gender patient gender, indicated as male or female, as reported to the INSPECT program
   located in the INSPECT data file

# **Prescription or Dispensation Variables**

- Practitioner zip code five-digit United States postal zip code correlating to prescribing practitioner address located in the INSPECT data file
- Pharmacy zip code five-digit United States postal zip code correlating to dispensing pharmacy address located in the INSPECT data file
- Prescription number a unique, de-identified indicator noting a specific prescription located in the INSPECT data file
- Date written date the prescription was prescribed by the practitioner to the patient located in the INSPECT data file
- Date filled date the prescription was dispensed to the patient by the pharmacy located in the INSPECT data file
- Origin code information on how the pharmacy received the prescription (i.e., telephone, fax, written, electronic) located in the INSPECT data file
- Refills number of times the prescription was authorized to be refilled per the prescriber – located in the INSPECT data file
- Refill number current number of times the same prescription had been refilled located in the INSPECT data file
- Quantity the amount of medication dispensed to the patient located in the INSPECT data file
- Days supply based on the directions and quantity, the number of days the pharmacy calculated the prescription should last located in the INSPECT data file
- Drug information Information on the medication, included the national drug code (NDC), product name, dosage form (liquid, tablet, capsule), strength, and whether the product was a compounded medication or not – located in the INSPECT data file
- Pharmacy identifier a unique, de-identified indicator noting a specific pharmacy that dispensed the prescription located in the INSPECT data file

• Payment type – billing information for prescription such as cash or private pay, commercial insurance, Medicaid, Medicare, or other – located in the INSPECT data file

# **Practitioner Variables**

- Number of practitioners raw number of practitioners registered to access INSPECT data in each year of interest (2014, 2015, 2016) and total practitioner registrations prior to 2014 – located in the INSPECT data file
- Practitioner identifier a unique, de-identified indicator noting a specific practitioner, this
  practitioner may also be the prescriber of a prescription located in the INSPECT data file
  and practitioner data file
- Practitioner profession practitioner profession (pharmacist, physician, dentist, nurse practitioner, physician assistant, podiatrist, veterinarian) or if practitioner profession is unavailable, type (full prescriber or midlevel) – located in the practitioner data file
- Practitioner type practitioner profession (physician, dentist, nurse practitioner, physician assistant, podiatrist, veterinarian) or if practitioner profession is unavailable, type (full prescriber or midlevel) – located in the INSPECT data file
- Success whether the inquiry successfully generate a patient profile response located in the INSPECT data file
- Date date of a patient query from a practitioner in through the INSPECT program located in the practitioner data file
- Time period time period (dates) the query provided information over located in the practitioner data file

# **Study Populations**

There are two separate populations for this study: 1. Controlled substance dispensations, and 2. Practitioner queries.

# **Controlled Substance Dispensations**

The first population in this study was from the INSPECT data file and consisted of controlled substance dispensations dispensed in Indiana from January 1, 2014, through December 31, 2016.

The initial population size obtained from the INSPECT program was 37,819,678 dispensations. Of these dispensations reported to the INSPECT program, 152, 658 (0.4 percent) were submitted with no drug data, 20,423 (0.05 percent) were non-controlled prescription medications, 36,061 (0.1 percent) were non-controlled pseudoephedrine products, 5,096 (0.01) were submissions with missing NDC data, and 316,544 (0.84 percent) were compounded medications containing multiple or unknown ingredients. These 530,782 dispensations (1.4 percent) were excluded from the analysis as they were not a substance of interest or the substance of interest could not be determined, which left a total population of 37,288,896 dispensations for analysis.

#### **Practitioner Queries**

The second population in this study was from the practitioner data file and consisted of practitioner queries of individual patients within the INSPECT program from January 1, 2014, through December 31, 2016. The population size obtained from the INSPECT program was 7,829,714 practitioner queries. All queries obtained from the INSPECT program, both those that provided a successful search result and those that did not, were included in the analysis to estimate the true usage of the INSPECT program by practitioners.

# **Data Management**

Data were obtained from the INSPECT program and analyzed using Stata/MP 15 for Windows. (StataCorp, 2017) An *a priori* level of 0.05 was considered statistically significant for all statistical tests.

# **Objective One Analysis: Description of Controlled Substance Dispensations in Indiana and Time-series Analysis of Full Population and Drug Classes**

Objective one was to assess whether controlled substance dispensing in Indiana has changed over the three-year study period when changes in legislation around hydrocodone combination product rescheduling and INSPECT reporting occurred. To meet the aim of objective one, descriptive statistics were performed for all controlled substances and therapeutic classes listed in the INSPECT data file. Interrupted time-series analyses were used to determine whether there were statistically significant changes in the total number of dispensations, total quantity of medications dispensed, and the total days supply of dispensations for the full population and within each drug class. The two relevant dates for the analysis were October 2014 and January 2016. The first, October 2014, was when hydrocodone combination products moved to schedule II, while the second, January 2016, was when INSPECT changed its dispenser reporting requirements to 24 hours.

# Interrupted Time-series Analysis

Interrupted time-series analyses (ITSA) are often used for public policy changes and present "a quasi-experimental research design with a potentially high degree of internal validity." (Briesacher et al., 2013; Campbell & Stanley, 2011; Linden, 2015; Shadish, Cook, & Campbell, 2015) The ITSA command for Stata was installed and used for analysis with a time period of one month. (Linden, 2015) Month was used as the time variable because you must have at least three points before and after your moment of interest and day, week, and bi-week data did not show any apparent trend in the data. (Bernal, Cummins, & Gasparrini, 2017) Figure 1 provides an example of ITSA Stat output and how to interpret the ITSA Stata output. (Linden, 2015)

Regression wit maximum lag: 1	th Newey-West 1	standard er	rors	Number F( 3, Prob >	of obs = 27) = F =	31 331.45 0.0000
cigsale	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x1989 _x_t1989 _cons	-1.779474 -20.0581 -1.494652 134.0053	.3834188 4.724395 .4368201 4.600271	-4.64 -4.25 -3.42 29.13	0.000 0.000 0.002 0.000	-2.566184 -29.75175 -2.390933 124.5663	9927632 -10.36444 5983715 143.4442

Postintervention Linear Trend: 1989

Treated: \_b[\_t]+\_b[\_x\_t1989]

Linear Trend	Coeff	Std. Err.	t P> t	[95% Conf.	Interval]
Treated	-3.2741	0.2688 -12.1	803 0.0000	-3.8257	-2.7226

As shown in the regression table, the starting level of the per capita cigarette sales was estimated at 134 packs, and sales appeared to decrease significantly every year prior to 1989 by 1.78 packs (P < 0.0001, CI = [-2.57, -0.99]). In the first year of the intervention (1989), there appeared to be a significant decrease in per capita cigarette sales of 20.06 packs (P < 0.0001, CI = [-29.75, -10.36]), followed by a significant decrease in the annual trend of sales (relative to the preintervention trend) of 1.49 packs per capita per year (P = 0.002, CI = [-2.39, -0.60]). We also see, from the lincom estimate produced by specifying posttrend, that after the introduction of Proposition 99, per capita cigarette sales decreased annually at a rate of 3.27 packs (95% CI = [-3.83, -2.72]). Figure 2 provides a visual display of these results.



Figure 2. Single-group ITSA with Newey–West standard errors and one lag

Figure 1. Example interrupted time series analysis output and analysis from Linden.

After performing the ITSA in Stata, the actest command with a lag of 12 was used to test for autocorrelation and verify the model fitted had the correct autocorrelation structure. If a different autocorrelation was found through the actest command, the analysis was re-run with the appropriate lag command. (Linden, 2015)

### **Objective Two Analysis: Description of Practitioner INSPECT Usage**

Objective two was to assess practitioner use of the INSPECT program changed over the three-year study period. To meet the aim of objective two, descriptive statistics were provided for practitioner use of the INSPECT program from the practitioner data file. Linear regression and interrupted time-series analysis were used to determine if there were statistically significant changes in practitioner use of INSPECT during the study period. The date of interest for the time-series analysis was January 1, 2016, which was when INSPECT changed its dispenser reporting requirements to 24 hours.

# **Objective Three Analysis: Comparison of Practitioner INSPECT Usage by Class of Drug**

Objective three was to assess whether the focus on opioid misuse led practitioners to use the INSPECT program more for opioid-based substances. Practitioner queries were dependent variables, while month was the independent variable, and drug class was the repeated measure. To meet the aim of objective three, repeated measure ANOVA tests were used to compare groups across drug class. Mean comparisons used a Bonferroni correction to test for significance across different drug classes.

#### Notes

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# RESULTS

The results of the study are reported in this chapter. There are three sections, each discussing the findings of a single objective.

#### **Study Objectives**

# **Objective One**

The first objective was to assess whether controlled substance dispensing in Indiana has changed over the three-year study period when changes in legislation around hydrocodone combination product rescheduling and INSPECT reporting occurred. The alternative hypothesis tested was that controlled substance dispensing has increased over the three-year study period for all categories of substances despite changes in legislation. INSPECT data files from 2014, 2015, and 2016 were used to determine dispensing in Indiana during the study period. Reported below are the analyses for the full population, each drug class in the population, and each individual drug in the population.

# **Full Population**

#### Descriptive Analysis for Full Population

There were 37,288,896 controlled substance dispensations reported to the INSPECT system during the three-year study period. Of those controlled substance dispensations reported to the INSPECT system, 23,925 dispensations (0.06 percent) were provided to patients outside of Indiana from pharmacies not located in Indiana. These dispensations were excluded from analysis as they were not dispensed in Indiana or to Indiana residents. This brought the total population to 37,264,971 dispensations. Medications dispensed in 2014, 2015, and 2016 were 12,345,737 (33.13 percent), 12,610,323 (33.84 percent), and 12,308,911 (33.03 percent) respectively. Controlled substances dispensed and reported to INSPECT were in controlled substance schedules II through V. The largest number of dispensations over the three-year period were schedule II substances with 18,687,905 dispensations (50.15 percent) and the least were in schedule V with 1,731,973

dispensations (4.65 percent). A full description of the number of dispensations by schedule and year can be found in Table 1.

The number of dispensations equated to 4,124,291 individual patients reported to the INSPECT system. Dispensations to a single patient over the three-year study period ranged from 1 to 1,948 dispensations. The mean number of dispensations to patients over the three-year study period was 9.04 prescriptions with a standard deviation of 16.45. Further information on individual patients, mean number of dispensations, and the range of dispensations in each year of the study can be found in Table 1.

Of the 4,124,291 patients in the INSPECT data file, 5,171 (12.5 percent) patients had missing gender data. Gender breakdown for the remaining 4,119,120 patients in the INSPECT data file was 1,857,175 (45.09 percent) male and 2,261,945 (54.91 percent) female. Gender information for patients in each year can be found in Table 1. The full study population had a mean age of 47.79 years (SD=20.57) with a range of 0-239 years over the three-year study period. This range equated to 18 patients with an age greater than the oldest known person in the US, which was 117 years old in 2015, and 127 patients with an age greater than the oldest person in Indiana, which was 110 years old in 2016. (Diebel, 2015; Franklin, 2016) Reviewing these outliers, all patients had an Indiana zip code; therefore, patients with an age greater than 108 in 2014, an age greater than 109 in 2015, and an age greater than 110 in 2016 were excluded from all age analyses as that was the age of the oldest individual living in Indiana in those years. This modified study population gave a mean age of 45.15 years old (SD=21) with a range of 0-110 years over the three-year study period. Age information for patients in each year, excluding age outliers, can be found in Table 1.

A total of 117,801 providers prescribed a medication for a dispensation to patients in the population. The mean number of dispensations from each prescriber was 316.34 (SD=1645.79) with a range of 1-151,613 dispensations. A majority of prescribers did not have profession data available (78.68 percent), and of those prescribers with profession data most were physicians. Prescribers information can be found in Table 1.

Eight different types of payment were used for dispensations in the population. Most dispensations in the population were paid for using commercial insurance (53.85 percent). Further information on payment for dispensations can be found in Table 1.

	2014	2015	2016	Total study period
Dispensations (Percent)	12,345,737 (33.13)	12,610,323 (33.84)	12,308,911 (33.03)	37,264,971 (100)
Total quantity dispensed	786,533,336	813,218,362	785,552,630	2,385,304,328
Total days supply	289,238,286	298,377,665	295,856,858	883,472,809
Schedule (Percent)				
II	6,553,415 (51.97)	6,219,499 (49.32)	5,914,991 (48.05)	18,687,905 (50.15)
III	678,323 (5.49)	680,397 (5.40)	702,133 (5.70)	2,060,853 (5.53)
IV	4,562,041 (36.95)	5,136,060 (40.73)	5,086,139 (41.32)	14,784,240 (39.67)
V	551,958 (4.47)	574,367 (4.55)	605,648 (4.92)	1,731,973 (4.65)
Patients				
Ν	2,299,737	2,2345,517	2,263,409	4,124,291
Mean dispensations per patient (SD)	5.37 (7.48)	5.38 (7.41)	5.43 (7.34)	9.04 (16.45)
Range of dispensations per patient	1-390	1-1470	1-540	1-1,948
Gender (Percent)				
Male	1,000,840 (43.50)	1,030,559 (43.90)	992,061 (43.80)	1,857,175 (45.09)
Female	1,297,251 (56.40)	1,312,848 (56.00)	1,269,189 (56.10)	2,261,945 (54.91)
Missing	1,646 (0.10)	2,110 (0.10)	2,159 (0.10)	5,171 (0.12)
Age				
Ν	2,299,649	2,345,426	2,263,318	4,124,063
Age (SD)	46.32 (20.62)	46.83(20.63)	47.39(20.69)	45.15(21.00)
Range	0-108	0-109	0-110	0-110

Table 1. Descriptive information for all dispensations in the population.

Table 1 continued.					
	2014	2015	2016	Total study period	
Prescribers					
Ν	65,637	64,894	76,178	117,801	
Mean number of dispensations	188.09 (717.25)	194.32 (813.52)	161.58 (702.55)	316.34 (1645.79)	
Range	1-25,749	1-86,726	1-64,799	1-151,613	
Prescriber Type					
Unknown Advanced	45,237 (68.92)	42,990 (66.25)	52,859 (69.39)	92,680 (78.68)	
Practice Nurse	3,305 (5.04)	3,782 (5.83)	4,355 (5.72)	4,622 (3.92)	
Dentist	2,750 (4.19)	2,847 (4.39)	2,930 (3.85)	3,081 (2.62)	
Physician	12,476 (19.01)	13,173 (20.3)	13,766 (18.07)	14,994 (12.73)	
Physician's Assistant	671 (1.02)	799 (1.23)	897 (1.18)	934 (0.79)	
Podiatrist	257 (0.39)	270 (0.42)	282 (0.37)	305 (0.26)	
Veterinarian	941 (1.43)	1,033 (1.59)	1,089 (1.43)	1,185 (1.01)	
Payment					
Ind Nat	5 (0.00)	4 (0.00)	2 (0.00)	11 (0.00)	
Commercial	6,803,621	6,733,182	6,530,265	20,067,068	
Insurance	(55.11)	(53.39)	(53.05)	(53.85)	
Medicaid	1,704,374 (13.81)	1,410,785 (11.19)	1,408,136 (11.44)	4,523,295 (12.14)	
Medicare	1,800,854 (14.59)	2,549,731 (20.22)	2,578,529 (20.95)	6,929,114 (18.59)	
Other	471,422 (3.82)	331,894 (2.63)	192,100 (1.56)	995,416 (2.67)	
Private Pay	1,533,570 (12.42)	1,384,345 (10.98)	1,285,714 (10.45)	4,203,629 (11.28)	
VA	1,893 (0.02)	166,190 (1.32)	283,221 (2.3)	451,304 (1.21)	
Workers Comp	29,998 (0.24)	34,192 (0.27)	30,944 (0.25)	95,134 (0.26)	

To visualize the dispersion of prescriptions received by patients, dispensed by pharmacies, and prescribed by practitioners in Indiana during the study period Figures 2 through 13 provide a heat map of prescriptions received by patients, dispensed by pharmacies, and prescribed by

practitioners in Indiana based on county population estimates in each year. (STATS Indiana, 2019) Prescriptions with missing zip code data or for patients, from pharmacies, or from prescribers outside of Indiana were excluded.



36,051,273 prescriptions received by patients with Indiana zip codes

Figure 2. Prescriptions received by Indiana patients per capita by county during entire study period (2014-2016).



Total Prescriptions Received by Patients in Indiana Per Capita by County 2014

11,598,498 prescriptions received by patients with Indiana zip codes

Figure 3. Prescriptions received by Indiana patients per capita by county during 2014.



Total Prescriptions Received by Patients in Indiana Per Capita by County 2015

12,207,586 prescriptions received by patients with Indiana zip codes

Figure 4. Prescriptions received by Indiana patients per capita by county during 2015.



Total Prescriptions Received by Patients in Indiana Per Capita by County 2015

11,885,189 prescriptions received by patients with Indiana zip codes

Figure 5. Prescriptions received by Indiana patients per capita by county during 2016.



Total Prescriptions Prescribed by Practitioners in Indiana Per Capita by County 2014 to 2016

34,832,393 prescriptions prescribed by practitioners with Indiana zip codes

Figure 6. Prescriptions prescribed by Indiana practitioners per capita by county during entire study period (2014-2016).



Total Prescriptions Prescribed by Practitioners in Indiana Per Capita by County

Figure 7. Prescriptions prescribed by Indiana practitioners per capita by county during 2014.



Total Prescriptions Prescribed by Practitioners in Indiana Per Capita by County

12,610,323 prescriptions prescribed by practitioners with Indiana zip codes

Figure 8. Prescriptions prescribed by Indiana practitioners per capita by county during 2015.



Total Prescriptions Prescribed by Practitioners in Indiana Per Capita by County

Figure 9. Prescriptions prescribed by Indiana practitioners per capita by county during 2016.



Total Prescriptions Dispensed by Pharmacies in Indiana Per Capita by County 2014 to 2016

36,106,152 prescriptions dispensed by pharmacies with Indiana zip codes

Figure 10. Prescriptions dispensed by Indiana pharmacies per capita by county during entire study period (2014-2016).



Total Prescriptions Dispensed by Pharmacies in Indiana Per Capita by County

11,933,078 prescriptions dispensed by pharmacies with Indiana zip codes

Figure 11. Prescriptions dispensed by Indiana pharmacies per capita by county during 2014.



Total Prescriptions Dispensed by Pharmacies in Indiana Per Capita by County

12,209,239 prescriptions dispensed by pharmacies with Indiana zip codes

Figure 12. Prescriptions dispensed by Indiana pharmacies per capita by county during 2015.



Figure 13. Prescriptions dispensed by Indiana pharmacies per capita by county during 2016.

# Interrupted Time-series Analysis for Full Population

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply of dispensations is explained below.

Figures 14 and 15 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.
time	variable:	mo	onth,	2014m1	to	2016m12
	delta:	1	month	1		

Regression with maximum lag:	th Newey-West D	standard er	rors	Number F( 5, Prob >	of obs 30) F	= 36 = 4.42 = 0.0039
		Newey-West				
prescripti~l	Coef.	Std. Err.	t	P> t	[95% Con	f. Interval]
t	8048.317	5497.716	1.46	0.154	-3179.517	19276.15
x657	-25700.34	43155.81	-0.60	0.556	-113836.3	62435.58
x t657	-4624.367	6481.102	-0.71	0.481	-17860.54	8611.81
	-27586.2	27245.75	-1.01	0.319	-83229.44	28057.03
x_t672	-8576.583	4045.435	-2.12	0.042	-16838.46	-314.7022
	983574.5	28092.32	35.01	0.000	926202.3	1040947

Postintervention Linear Trend: 657

Treated:	b [	t]+	b[	х	t657]

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	3423.95003432.1720	0.9976	0.3265	-3.59e+03	1.04e+04

Postintervention Linear Trend: 672

Treated:	b[	t]+	b[	х	t657]	+ b	[ X	t672]

Linear Trend	Coeff Std. Err.	t P> t	[95% Conf. Interval]
Treated	-5.15e+032141.4342	-2.4062 0.02	25 -9.53e+03 -779.2408

Figure 14. Interrupted time-series analysis for full population total dispensations.



Figure 15. Interrupted time-series graph of dispensations by month for full population.

Dispensations reported to the INSPECT program increased for the months prior to each policy change (p=0.154). After the rescheduling of hydrocodone combination products, the number of dispensations decreased in the month immediately after (p=0.556) and continued to decrease for the remaining months after the policy change (p=0.481). However, the implementation of the policy to change hydrocodone combination products was not significant (p=0.3265). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.319). In the months following the policy change the number of dispensations significantly decreased by-8,576.58 dispensations per month (p=0.042, CI [-16,838.49, -314.70]). The implementation of INSPECT reporting did significantly decrease the number of dispensations per month (p=0.0225).

Figures 16 and 17 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively

time variable: month, 2014m1 to 2016m12 delta: 1 month

Regression wit maximum lag: (	th Newey-West	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 3.83 0.0084
qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t t657 t657 x672 t672 cons	348234.5 1947759 -258283.5 -1476559 -463791.1 6.26e+07	501522.5 3489730 560333.1 2073971 307937.2 2411513	0.69 0.56 -0.46 -0.71 -1.51 25.94	0.493 0.581 0.648 0.482 0.142 0.000	-676011.2 -5179219 -1402636 -5712173 -1092683 5.76e+07	1372480 9074738 886069.4 2759056 165100.5 6.75e+07

#### Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_{657}]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	9.00e+04	2.50e+05	0.3600	0.7214	-4.20e+05	6.00e+05

Postintervention Linear Trend: 672

Treated: \_b[\_t]+\_b[\_x\_t657]+\_b[\_x\_t672]

Linear Trend	Coeff Std. Err	. t	P> t	[95% Conf. Interval]
Treated	-3.74e+05 1.80e+05	-2.0776	0.0464	-7.41e+05 -6.36e+03

Figure 16. Interrupted time-series analysis for full population total quantity dispensed.



Figure 17. Interrupted time-series graph of total quantity dispensed by month for full population.

The quantity of products reported to the INSPECT program increased for the months prior to each policy change (p=0.493). After the rescheduling of hydrocodone combination products, the total quantity for dispensations increased in the month immediately after (p=0.581) and decreased for the remaining months after the policy change (p=0.648). However, the implementation of the policy to change hydrocodone combination products was not significant (p=0.3600). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.482). In the months following the policy change, the quantity of dispensations continued to decrease each month (p=0.142). This policy change did result in a significant decrease in the quantity of products dispensed (p=0.0464).

Figures 18 and 19 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

time variab	le: m	ionth,	2014m1	to	2016m12
del	ta: 1	month	1		

Regression with Newey-West standa	rd errors	Number of o	obs =	= 36
maximum lag: O		F( 5,	30) =	4.06
		Prob > F	=	= 0.0062

dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t	197768.6	121245	1.63	0.113	-49846.76	445383.9
x657	-454456.2	971173.4	-0.47	0.643	-2437857	1528945
x t657	-104364	144541.2	-0.72	0.476	-399556.5	190828.5
	-656294.8	615779.9	-1.07	0.295	-1913885	601295.4
x t672	-159910.7	91918.57	-1.74	0.092	-347633.4	27812.08
cons	2.30e+07	624399.1	36.76	0.000	2.17e+07	2.42e+07

Postintervention Linear Trend: 657

Treated:	b[	t]+	b[	х	t65'	7]
			_			

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	9.34e+04	7.87e+04	1.1870	0.2445	-6.73e+04	2.54e+05

Postintervention Linear Trend: 672

Treated:	b [	t]+	b [	х	t657	] +	b[	х	t672	2]
					-	_			-	

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	-6.65e+04	4.75e+04	-1.3998	0.1718	-1.64e+05	3.05e+04

Figure 18. Interrupted time-series analysis for full population total days supply of dispensations.



Figure 19. Interrupted time-series graph of total days supply of dispensations by month for full population.

The days supply of products reported to the INSPECT program increased for the months prior to each policy change (p=0.113). After the rescheduling of hydrocodone combination products, the total days supply for dispensations decreased in the month immediately after (p=0.643) and continued to decrease for the remaining months after the policy change (p=0.476). However, the implementation of the policy to change hydrocodone combination products was not significant (p=0.2445). After the change to the INSPECT reporting requirements, the days supply of dispensations decreased in the month immediately following the policy change (p=0.295). In the months following the policy change, the days supply of dispensations continued to decrease each remaining month of the study period (p=0.092). This policy change also did not result in any significant changes to the days supply of products dispensed (p=0.1718).

#### **Drug Class Information**

There are nine drug class categories in the population – benzodiazepine, miscellaneous, muscle relaxant, opioid, stimulant, barbiturate, multiple classes, sedative-hypnotic, and cannabinoids. Drugs classes were determined from Lexicomp. (Wolters-Kluwer, 2019) A description of each class can be found in Table 2. All drug class analyses used the final dispensation population of 37,264,971 dispensations, which removed all dispensations without drug information, all dispensations for non-controlled medications, and all dispensations where the patient and pharmacy zip code were outside Indiana. The prescription total dispensed in each in each year, and the entire study period can be found in Table 3.

Drug Class	Description	Examples
Benzodiazepine	Medications with Lexicomp pharmacological class matching only the benzodiazepine controlled substance class	alprazolam, lorazepam
Miscellaneous	Medications with Lexicomp pharmacological class fitting into no other controlled substance class listed	cocaine, pregabalin
Muscle Relaxant	Medications with Lexicomp pharmacological class matching only the muscle relaxant controlled substance class	carisoprodol, carisoprodol/aspirin
Opioid	Medications with Lexicomp pharmacological class matching only the opioid controlled substance class	oxycodone, tramadol
Stimulant	Medications with Lexicomp pharmacological class matching only the stimulant controlled substance class	dexmethylphenidate, lisdexamfetamine
Barbiturate	Medications with Lexicomp pharmacological class matching only the barbiturate controlled substance class	Phenobarbital, secobarbital

Table 2. Drug classes in population.

Table 2 continued.						
Drug Class	Description	Examples				
Multiple Classes	Medications with Lexicomp pharmacological class matching multiple controlled substance classes	butalbital/acetaminophen/ caffeine/codeine				
Sedative-hypnotic	Medications with Lexicomp pharmacological class matching only the sedative-hypnotic controlled substance class	eszopiclone, zolpidem				
Cannabinoid	Medications with Lexicomp pharmacological class matching only the cannabinoid controlled substance class	dronabinol				

Drug Class	2014 (Percent)	2015 (Percent)	2016 (percent)	Full Study Period (Percent)
Benzodiazepine	2,922,482 (23.67)	2,884,904 (22.88)	2,866,852 (23.29)	8,674,239 (23.28)
Miscellaneous	525,854 (4.26)	564,319 (4.48)	617,854 (5.02)	1,708,027 (4.59)
Muscle Relaxant	84,153 (0.68)	72,429 (0.57)	60,830 (0.49)	217,412 (0.58)
Opioid	6,589,305 (53.37)	6,868,950 (54.47)	6,502,854 (52.83)	19,961,109 (53.57)
Stimulant	1,369,247 (11.09)	1,402,252 (11.12)	$1,450,480 \\ (11.78)$	4,221,979 (11.33)
Barbiturate	54,286 (0.44)	55,924 (0.44)	60,429 (0.49)	170,639 (0.46)
Multiple Classes	5,128 (0.04)	3,986 (0.03)	3,496 (0.03)	12,610 (0.03)
Sedative-hypnotic	788,449 (6.39)	750,249 (5.95)	737,684 (5.99)	2,276,382 (6.11)
Cannabinoid	6,832 (0.06)	7,310 (0.06)	8,432 (0.07)	22,574 (0.06)
Total	12,345,737	12,610,323	12,308,911	37,264,971

Table 3. Total number of dispensations in each year and full study period.

## **Benzodiazepines**

# Descriptive Information for the Full Benzodiazepine Population and Each Drug in the Benzodiazepine Class

A controlled substance in the benzodiazepine drug class was dispensed 8,674,239 times during the three-year study period with 2,922,483 (33.69 percent), 2,884,904 (33.26 percent), and 2,866,852 (33.05 percent) dispensed in 2014, 2015, and 2016 respectively. There were 16 different controlled

substances in the benzodiazepine class and all substances were schedule IV controlled substances. Alprazolam was the most common benzodiazepine dispensed over the three-year study period with 3,658,798 (42.18 percent) dispensations, while quazepam was the least common benzodiazepine dispensed with 8 (0.00 percent) dispensations. A list of the controlled substances and the number of dispensations across each year and during the three-year study period can be found in Table 4.

	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)
Alprazolam	1,241,281 (42.47)	1,214,692 (42.11)	1,202,825 (41.96)	3,658,798 (42.18)
Chlordiazepoxide	15,629 (0.53)	15,034 (0.52)	18,069 (0.63)	48,732 (0.56)
Chlordiazepoxide/ amitriptyline	2,013 (0.07)	1,748 (0.06)	1,463 (0.05)	5,224(0.06)
Chlordiazepoxide/ clidinium	140 (0.00)	395 (0.01)	40 (0.00)	575 (0.01)
Clobazam	7,720 (0.24)	8,960 (0.31)	10,476 (0.37)	27,156 (0.31)
Clonazepam	680,351 (23.28)	683,551 (23.69)	689,566 (24.05)	2,053,468 (23.67)
Clorazepate	16,645 (0.57)	14,871 (0.52)	13,826 (0.48)	45,342 (0.52)
Diazepam	317,189 (10.85)	309,464 (10.73)	294,138 (10.26)	920,791 (10.62)
Estazolam	2,806 (0.10)	2,426 (0.08)	2,087 (0.07)	7,319 (0.08)
Flurazepam	3,722 (0.13)	3,033 (0.11)	2,502 (0.09)	9,257 (0.11)
Lorazepam	473,166 (16.19)	471,357 (16.34)	471,234 (16.44)	1,415,757 (16.32)
Midazolam	464 (0.02)	468 (0.02)	750 (0.03)	1,682 (0.02)
Oxazepam	6,276 (0.21)	5,198 (0.18)	7,116 (0.25)	18,590 (0.21)
Quazepam	6 (0.00)	2 (0.00)	0 (0.00)	8 (0.00)
Temazepam	128,190 (4.39)	127,354 (4.41).	127,282 (4.44)	382,826 (4.41)
Triazolam	26,885 (0.92)	26,351 (0.91)	25,478 (0.89)	78,714 (0.91)
Total	2,922,483	2,884,904	2,866,852	8,674.239

Table 4. Total number of benzodiazepine dispensations in each year and full study period.

Over the three-year study period, 1,102,348 patients were dispensed a benzodiazepine with a mean of 7.87 dispensations (SD=10.76) and a range from 1 to 800 dispensations. Women received a majority (63.77 percent) of the benzodiazepine dispensations during the study period, and the average patient age was 51.65(SD=19.32) with an age range from 0-110. There were 60,378 prescribers who prescribed a benzodiazepine at least once for dispensing to these patients with a mean of 143.67 (SD=647.03) and a range of 1 to 23,679 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 5.

	2014	2015	2016	Total study period
Dispensations (Percent)	2,922,483 (33.69)	2,884,904 (33.26)	2,866,852 (33.05)	8,674,239
Total Quantity Dispensed	177,382,131	173,047,292	170,183,809	520,613,232
Total Days Supply	82,050725	80,694,646	80,123,035	242,868,406
Patients				
N	616,114	615,110	609,698	1,102,348
Mean dispensations per patient (SD)	4.74 (4.61)	4.69 (4.53)	4.70 (4.61)	7.87 (10.75)
Range of dispensations per patient	1-210	1-320	1-270	1-800
Gender (Percent)				
Male	210,338 (34.14)	214,255 (34.83)	213,134 (34.96)	397,872 (36.09)
Female	405,220 (65.77)	400,21765.07)	395,947 (64.94)	702,991 (63.77)
Missing	556 (0.09)	638 (0.10)	517 (0.08)	1,485 (0.13)
Age				
Ν	616,078	615,071	609,665	1,102,260
Age (SD)	52.67 (18.33)	52.87 (18.46)	53.24(18.57)	51.65(19.32)
Range	0-108	0-109	0-110	0-110

Table 5. Descriptive information for all benzodiazepine dispensations.

	2014	2015	2016	Total study period
	2014	2015	2010	Total study period
Prescribers				
Ν	34,548	34,442	39,469	60,378
Mean number of dispensations	84.59 (286.31)	83.76 (293.32)	72.64 (270.96)	143.67 (647.03)
Range	1-7,117	1-13,672	1-10,001	1-23,679
Prescriber Type				
Unknown	18,466 (53.45)	17,276 (50.16)	21,391 (54.20)	39,316 (65.12)
Advanced Practice Nurse	2.625 (7.60)	2,031 (8.80)	3,499 (8.87)	3.967 (6.57)
Dentist	1,867 (5.40)	1,878 (5.45)	1,927 (4.88)	2,382 (3.95)
Physician	10,332 (29.91)	10,821 (31.42)	11,120 (28.17)	12,815 (21.22)
Physician's Assistant	525 (1.52)	619 (1.80)	701 (1.78)	812 (1.34)
Podiatrist	124 (0.36)	141 (0.41)	129 (0.33)	198 (0.33)
Veterinarian	609 (1.76)	676 (1.96)	702 (1.78)	888 (1.47)

#### Alprazolam

Alprazolam is a schedule IV controlled substance. (Wolters-Kluwer) There were 3,658,798 alprazolam dispensations during the three-year study period, with 1,241,281 (33.93 percent), 1,214,692 (33.20 percent), and 1,202,825 (32.87 percent) dispensations in 2014, 2015, and 2016 respectively. There were 435,943 patients who received at least one dispensation for alprazolam during the study period. The mean number of dispensations was 8.39 (SD=10.60), and the range was from 1 to 177 dispensations. Women comprised a majority (68.22 percent) of the alprazolam patients during the study period, and the average patient age was 51.27 (SD=18.17) with an age range from 0-108 dispensations. There were 33,908 prescribers who prescribed alprazolam at least once during the three-year study period with a mean of 107.90 (SD=417.69) times and a range of 1 to 12,383 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 6.

	2014	2015	2016	Total study period
Dispensations (Percent)	1,241,281 (33.93)	1,214,692 (33.20)	1,202,825 (32.87)	3,658,798
Total Quantity Dispensed	82,769,699	80,009,636	78,306,775	241,113,110
Total Days Supply	35,590,728	34,786,688	34,527,981	104,905,397
Patients				
Ν	255,743	251,379	245,562	435,943
Mean dispensations per patient (SD) Range of	4.85 (4.37)	4.83 (4.32)	4.90 (4.41)	8.39 (10.60)
dispensations per patient	1-74	1-62	1-95	1-177
Gender (Percent)				
Male	78,518 (30.7)	78,144 (30.09)	76,352 (31.09)	137,488 (31.54)
Female	176,869 (69.16)	172,733 (68.71)	168,778 (68.73)	297,413 (68.22)
Missing	356 (0.14)	502 (0.20)	432 (0.18)	1,042 (0.24)
Age				
Ν	255,728	251,359	245,550	435,903
Age (SD)	52.54 (17.29)	52.73 (17.46)	53.15 (17.51)	51.27 (18.17)
Range	0-107	0-107	0-108	1-108
Prescribers				
Ν	19,964	19,926	21,761	33,908
Mean number of dispensations	62.18 (183.8)	60.96 (182.68)	55.27 (174.20)	107.90 (417.59)
Range	1-4,068	1-4,028	1-4,287	1-12,383

Table 6. Descriptive information for all alprazolam dispensations.

Table 6 continued.						
	2014	2015	2016	Total study period		
Prescriber Type						
Unknown	8,769 (43.92)	8,085 (40.58)	9,461 (43.48)	18,306 (53.99)		
Advanced Practice Nurse	2,096 (10.50)	2,414 (12.11)	2,751 (12.64)	3,136 (9.78)		
Dentist	374 (1.87)	357 (1.79)	346 (1.59)	664 (1.96)		
Physician	7,836 (39.25)	8,046 (40.38)	8,096 (37.20)	10,142 (29.91)		
Physician's Assistant	334 (1.67)	391 (1.96)	429 (1.97)	597 (1.76)		
Podiatrist	48 (0.24)	53 (0.27)	66 (0.30)	99 (0.29)		
Veterinarian	507 (2.54)	580 (2.91)	612 (2.81)	784 (2.31)		

Chlordiazepoxide

Chlordiazepoxide is a schedule IV controlled substance. (Wolters-Kluwer) There were 48,732 chlordiazepoxide dispensations during the three-year study period, with 15,629 (32.07 percent), 15,034 (30.85 percent), and 18,064 dispensations (37.08 percent) in 2014, 2015, and 2016 respectively. There were 12,912 patients who received at least one dispensation for chlordiazepoxide. The mean number of dispensations was 3.77 (SD=6.71), and the range was from 1 to 249 dispensations. Men comprised a majority (58.45percent) of the chlordiazepoxide patients during the study period, and the average patient age was 50.55 (SD=16.60) with an age range from 0-100 dispensation. Additional information on the number of dispensations, patients, and prescribers across each year and for the total three-year study period can be found in Table 7.

Table 7. Descriptive information for an enformazepoxide dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	15,629 (32.07)	15,034 (30.85)	18,069 (37.08)	48,732	
Total Quantity Dispensed	960,062	885,781	847,711	2,693,554	
Total Days Supply	417,808	380,813	366,351	1,116,972	

Table 7. Descriptive information for all chlordiazepoxide dispensations.

		Table 7 continued.		
	2014	2015	2016	Total study period
Patients				
Ν	5,486	5,518	5,983	12,916
Mean dispensations per patient (SD)	2.85 (3.16)	2.72 (3.07)	3.02(5.56)	3.77 (6.71)
Range of dispensations per patient	1-40	1-45	1-249	1-249
Gender (Percent)				
Male	2,854 (52.02)	3,018 (54.69)	3,435 (57.41)	7,550 (58.45)
Female	2,619 (47.74)	2,487 (45.07)	2,542 (42.49)	5,335 (41.31)
Missing	13 (0.24)	13 (0.24)	6 (0.10)	31 (0.24)
Age				
Ν	5,484	5,516	5,981	12,912
Age (SD)	54.65(17.79)	53.73(17.56)	51.83 (17.38)	50.55(16.60)
Range	0-100	0-101	0-101	0-100
Prescribers				
Ν	2,833	2,880	3,026	5,046
Mean number of dispensations	5.52 (12.15)	5.22 (10.53)	5.97 (36.14)	9.66 (35.34)
Range	1-346	1-270	1-1,839	1-1,839
Prescriber Type				
Unknown	428 (15.11)	348 (12.08)	307 (10.15)	824 (16.33)
Advanced Practice Nurse	349 (12.32)	377 (13.09)	465 (15.37)	791 (15.68)
Dentist	7 (0.25)	4 (0.14)	7 (0.23)	13 (0.26)
Physician	1,988 (70.17)	2,067 (71.77)	2,144 (70.85)	3,259 (64.59)
Physician's Assistant	60 (2.12)	83 (2.88)	101 (3.34)	155 (3.07)
Podiatrist	1 (0.04)	0 (0.00)	2 (0.07)	2 (0.04)
Veterinarian	0 (0.00)	1 (0.03)	0 (0.00)	2 (0.04)

#### Chlordiazepoxide/amitriptyline

Chlordiazepoxide/amitriptyline (Wolters-Kluwer,2019) is a schedule V controlled substance. There were 5,224 chlordiazepoxide/amitriptyline dispensations during the three-year study period, with 2,013 (38.53 percent), 1,748 (33.46 percent), and 1,463 dispensations (28.01 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations during the three-year study period was 8.96 (SD=9.81), and the range was from 1 to 65 dispensations to 582 patients. Women comprised a majority (75.95 percent) of the chlordiazepoxide/amitriptyline patients during the study period. Information on dispensations, patients, and prescribers across each year and during the total three-year study period can be found in Table 8.

	2014	2015	2016	Total study period
Dispensations (Percent)	2,013 (38.53)	1,748 (33.46)	1,463 (28.01)	5,224
Total Quantity Dispensed	125,428	110,632	89,795	325,855
Total Days Supply	76,799	66,617	56,208	199,624
Patients				
Ν	420	353	271	582
Mean dispensations per patient (SD) Range of dispensations per patient	4.79(3.79) 1-19	4.95 (3.88) 1-21	5.40 (4.10) 1-25	8.96 (9.81) 1-65
Gender (Percent)				
Male	90 (21.43)	78 (22.10)	53 (19.56)	140(24.05)
Female	330 (78.57)	275 (77.90)	218 (80.44)	442 (75.95)
Missing	0	0	0	0

Table 8. Descriptive information for all chlordiazepoxide/amitriptyline dispensations.

	Table 8 continued.					
	2014	2015	2016	Total study period		
Age						
Ν	420	353	271	582		
Age (SD)	60.81 (17.28)	61.95 (16.21)	63.62 (15.63)	59.32 (17.29)		
Range	15-93	14-94	15-95	14-93		
Prescribers						
Ν	283	239	229	413		
Mean number						
of	7.11 (16.84)	7.31 (16.39)	6.39 (10.67)	12.65 (33.9)		
dispensations						
Range	1-257	1-233	1-97	1-587		
Prescriber Type						
Unknown	43 (15.19)	32 (13.39)	42 (18.34)	78 (18.89)		
Advanced Practice Nurse	33 (11.66)	26 (10.88)	27 (11.79)	52 (12.59)		
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Physician	205 (72.44)	176 (73.64)	157 (68.56)	276 (66.83)		
Physician's Assistant	2 (0.71)	5 (2.09)	3 (1.31)	7 (1.69)		
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

Chlordiazepoxide/clindinium

Chlordiazepoxide/clindinium is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 575 times during the three-year study period, with 140 (24.35 percent), 395 (68.7 percent), and 40 dispensations (6.96 percent) in 2014, 2015, and 2016 respectively. Four hundred fifteen individuals received at least one dispensation for chlordiazepoxide/clindinium. The mean number of dispensations was 1.39 (SD=1.13), and the range was from 1 to 11 dispensations. There

were 307 prescribers who prescribed chlordiazepoxide/clindinium at least once during the threeyear study period with a mean of 1.87 times (SD=3.05) and a range of 1 to 45 times. Information on dispensations, patients, and prescribers during the three-year study period can be found in Table 9.

Table 9. Descriptive information for all chlordiazepoxide/clindinium dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	140 (24.35)	395 (68.7)	40 (6.96)	575	
Total Quantity Dispensed	9,123	31,218	3,481	43,822	
Total Days Supply	3,199	11,585	1,263	16,047	
Patients					
Ν	68	331	25	415	
Mean dispensations per patient (SD)	2.06 (2.18)	1.19 (0.50)	1.6 (1.08)	1.39 (1.13)	
Range of dispensations per patient	1-11	1-5	1-4	1-11	
Gender (Percent)					
Male	23 (33.82)	94 (28.40)	8 (32.00)	123 (29.64)	
Female	45 (66.18)	237 (71.60)	17 (68.00)	292 (70.36)	
Missing	0	0	0	0	
Age					
Ν	68	331	25	415	
Age (SD)	61.46 (17.25)	58.50 (16.61)	65.68 (13.01)	59.23 (16.63)	
Range	15-94	13-97	43-92	13-97	

Table 9 continued.					
	2014	2015	2016	Total study period	
Prescribers					
Ν	38	265	23	307	
Mean number of dispensations	3.68 (6.66)	1.49 (1.44)	1.74 (1.21)	1.87 (3.05)	
Range	1-40	1-21	1-5	1-45	
Prescriber Type					
Unknown	6 (15.79)	17 (6.42)	0 (0.00)	23 (7.49)	
Advanced Practice Nurse	2 (5.26)	31 (11.70)	3 (13.04)	35 (11.40)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	30 (78.95)	215 (81.13)	20 (86.96)	247 (80.46)	
Physician's Assistant	0 (0.00)	2 (0.75)	0 (0.00)	2 (0.65)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

### Clobazam

Clobazam is a schedule IV controlled substance. (Wolters-Kluwer, 2019) It was dispensed 27,156 times during the three-year study period, with 7,720, 8,960, 10,476 dispensations in 2014, 2015, and 2016 respectively. Clobazam was dispensed to 1,845 individuals and men comprised a slight majority (51.00 percent) of the dispensations during the study period. There were 857 prescribers who prescribed clobazam at least once during the three-year study period. The mean number of times clobazam was prescribed by a prescriber was 31.89 (SD=129.12) with a range of 1 to 2,259 times. Further descriptive information of the clobazam group can be found in Table 10.

	2014	2015	2016	Total study period
Dispensations (Percent)	7,720 (28.43)	8,960 (32.99)	10,476 (38.58)	27,156
Total Quantity Dispensed	649,168	860,649	1,066,163	2,575,980
Total Days Supply	229,564	267,120	311,444	808,128
Patients				
Ν	1,049	1,145	1,306	1,845
Mean dispensations per patient (SD) Pange of	7.36 (5.27)	7.83 (4.73)	8.02 (5.48)	14.72 (13.52)
dispensations per patient	1-87	1-35	1-62	1-105
Gender (Percent)				
Male	542 (51.67)	580 (50.66)	667 (51.07)	941 (51.00)
Female	507 (48.33)	565 (49.34)	639 (48.93)	904 (49.00)
Missing	0	0	0	0
Age				
Ν	1,049	1,145	1,306	1,845
Age (SD)	21.42 (16.66)	21.51 (16.67)	21.75 (16.33)	21.52 (17.07)
Range	0-94	0-90	0-90	0-94
Prescribers				
Ν	368	447	560	857
Mean number of dispensations	20.98 (54.29)	20.04 (61.45)	18.71 (61.66)	31.89 (129.12)
Range	1-505	1-844	1-910	1-2,259

Table 10. Descriptive information for all clobazam dispensations.

Table 10 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	151 (41.03)	163 (36.47)	219 (39.11)	332 (38.74)	
Advanced Practice Nurse	36 (9.78)	47 (10.51)	56 (10.00)	94 (10.97)	
Dentist	1 (0.27)	0 (0.00)	1 (0.18)	2 (0.23)	
Physician	176 (47.83)	234 (52.35)	279 (49.82)	420 (49.01)	
Physician's Assistant	4 (1.09)	3 (0.67)	5 (0.89)	9 (1.05)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

#### Clonazepam

Clonazepam is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 2,053,468 times during the three-year study period. There were 225,541 patients who received at least one dispensation for clonazepam with a mean number of dispensations per patient of 9.1 (SD=10.38) and a range of 1 to 191 dispensations. Women were a majority (65.29 percent) of the clonazepam patients during the study period. There were 23,964 prescribers who prescribed clonazepam during the study period with a mean of 47.82 (SD=16.71) and range from 1 to 9,340. Descriptive information on clonazepam dispensations, patients, and prescribers can be found in Table 11.

Table 11. Descriptive information for all clonazepam dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	680,351 (33.13)	683,551 (33.29)	689,566 (33.58)	2,053,468
Total Quantity Dispensed	42,054,803	41,868,232	41,885,281	125,808,316
Total Days Supply	20,792,845	20,791,654	20,996,876	62,581,375

Table 11 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	129,164	129,767	129,386	225,541	
Mean dispensations per patient (SD)	5.28 (4.29)	5.28 (4.23)	5.33 (4.32)	9.1 (10.38)	
Range of dispensations per patient	1-73	1-70	1-79	1-191	
Gender (Percent)					
Male	43,372 (33.58)	45,039 (34.71)	45,052 (34.82)	78,240 (34.69)	
Female	85,765 (66.4)	84,707 (65.28)	84,306 (65.16)	147,252 (65.29)	
Missing	27 (0.02)	21 (0.02)	28 (0.02)	49 (0.02)	
Age					
Ν	129,161	129,765	129,386	225,536	
Age (SD)	48.63 (16.32)	49.05 (16.34)	49.49 (16.42)	47.82 (16.71)	
Range	0-104	0-106	0-103	0-106	
Prescribers					
Ν	13,720	13,698	15,427	23,964	
Mean number of dispensations	49.59 (123.34)	49.9 (132.20)	44.7 (125.09)	85.69 (288.53)	
Range	1-1,959	1-5,340	1-3,999	1-9,340	

Table 11 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	5,702 (41.56)	5,324 (38.87)	6,578 (42.64)	12,571 (52.46)	
Advanced Practice Nurse	1,707 (12.44)	1,969 (14.37)	2,309 (14.97)	2,829 (11.81)	
Dentist	54 (0.39)	60 (0.44)	53 (0.34)	127 (0.53)	
Physician	5,990 (43.66)	6,056 (44.21)	6,155 (39.9)	7,946 (33.16)	
Physician's Assistant	224 (1.63)	250 (1.83)	290 (1.88)	410 (1.71)	
Podiatrist	9 (0.07)	8 (0.06)	6 (0.04)	18 (0.08)	
Veterinarian	34 (0.25)	31 (0.23)	36 (0.23)	63 (0.26)	

#### Clorazepate

Clorazepate, a schedule IV controlled substance, was dispensed 43,342 times during the study period to 5, 929 individuals. Clorazepate was dispensed a mean of 7.65 times (SD=9.31) with a range from 1-91 dispensations. The average age for an individual receiving a clorazepate dispensation was 57.87 (SD=19.81), and the age range was 0-102. Prescribers prescribed clorazepate for individuals a mean of 15.56 times (SD=38.60). The number of times a prescriber prescribed clorazepate leading to a dispensation ranged from 1-1,273 times. Information on dispensations, patients, and prescribers during the three-year study period can be found in Table 12.

	2014	2015	2016	Total study period
Dispensations (Percent)	16,645 (36.71)	14,871 (32.8)	13,826 (30.49)	45,342
Total Quantity Dispensed	1,138,152	1,034,992	961,024	3,134,168
Total Days Supply	550,695	504,011	466,594	1,521,300
Patients				
Ν	3,837	3,431	3,266	5,929
Mean dispensations per patient (SD)	4.34 (3.8)	4.33 (3.74)	4.23 (3.78)	7.65 (9.31)
Range of dispensations per patient	1-30	1-31	1-30	1-91

Table 12. Descriptive information for all clorazepate dispensations.

Table 12 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	1,104 (28.77)	1,025 (29.87)	962 (29.45)	1,772 (29.89)	
Female	2,730 (71.15)	2,398 (69.89)	2,291 (70.15)	4,138 (69.79)	
Missing	3 (0.08)	8 (0.23)	13 (0.4)	19 (0.32)	
Age					
Ν	3,836	3,431	3,265	5,927	
Age (SD)	60.67 (18.22)	60.65 (18.97)	61.12 (19.00)	57.87 (19.81)	
Range	1-102	1-101	0-100	0-102	
Prescribers					
Ν	1,966	1,800	1,749	2,914	
Mean number of dispensations	8.47 (16.26)	8.26 (15.74)	7.91 (16.05)	15.56 (38.60)	
Range	1-456	1-422	1-395	1-1,273	
Prescriber Type					
Unknown	297 (15.11)	231 (12.83)	233 (13.32)	517 (17.74)	
Advanced Practice Nurse	290 (14.75)	285 (15.83)	297 (16.98)	543 (18.63)	
Dentist	3 (0.15)	1 (0.06)	0 (0.00)	3 (0.10)	
Physician	1,340 (68.16)	1,237 (68.72)	1,171 (66.95)	1,765 (60.57)	
Physician's Assistant	15 (0.76)	21 (1.17)	24 (1.37)	41 (1.41)	
Podiatrist	1 (0.05)	0 (0.00)	0 (0.00)	1 (0.03)	
Veterinarian	20 (1.02)	25 (1.39)	24 (1.37)	44 (1.51)	

## Diazepam

Diazepam is a schedule IV controlled substance (Wolters-Kluwer, 2019) that was dispensed 920,791 during the three-year study period, with 317,189, 309,464, 294,138 dispensations in 2014, 2015, and 2016 respectively. 262,361 patients received a dispensation for diazepam with a mean

of 2.51 dispensations (SD=6.34) and range from 1 to 185 dispensations. Women comprised a majority (60.33 percent) individuals receiving a diazepam dispensation. The mean number of times diazepam was prescribed by a provider for dispensing was 35.86 times (SD=112.96), and a range of 1 to 4,494 times. Descriptive information on diazepam dispensations, patients, and prescribers can be found in Table 13.

	2014	2015	2016	Total study period
Dispensations (Percent)	317,189 (34.47)	309,464 (33.61)	294,138 (31.94)	920,791
Total Quantity Dispensed	17,168,006	16,283,142	15,295,075	48,756,283
Total Days Supply	7,096,127	6,804,080	6,402,968	20,303,175
Patients				
N	114,514	115,160	111,478	262,361
Mean dispensations per patient (SD) Range of	2.77 (3.28)	2.69 (3.17)	2.64 (3.14)	2.51 (6.34)
dispensations per patient	1-75	1-62	1-53	1-185
Gender (Percent)				
Male	44,491 (38.85)	45,444 (39.34)	44,014 (39.48)	103,788 (39.56)
Female	69,908 (61.05)	69,614 (60.45)	67,362 (60.43)	158,288 (60.33)
Missing	115 (0.10)	102 (0.08)	102 (0.09)	285 (0.11)
Age				
Ν	114,505	115,149	111,470	262,338
Age (SD)	49.21 (18.61)	49.26 (18.84)	49.39 (19.95)	48.08 (18.90)
Range	0-105	0-103	0-102	0-105

Table 13. Descriptive information for all diazepam dispensations.

Table 13 continued.				
	2014	2015	2016	Total study period
Prescribers				
Ν	16,172	16,390	16,765	25,676
Mean number of dispensations	19.61 (49.54)	18.88 (49.06)	17.54 (45.17)	35.86 (112.96)
Range	1-1,649	1-1,529	1-1,373	1-4,494
Prescriber Type				
Unknown	4,965 (30.70)	4,492 (27.41)	4,420 (26.36)	9,636 (37.53)
Advanced Practice Nurse	1,669 (10.32)	1,959 (11.95)	2,254 (13.44)	2,854 (11.12)
Dentist	1,307 (8.08)	1,306 (7.97)	1,315 (7.84)	1,837 (7.15)
Physician	7,487 (46.30)	7,772 (47.42)	7,896 (47.10)	10,070 (39.22)
Physician's Assistant	379 (2.34)	469 (2.86)	507 (3.02)	642 (2.50)
Podiatrist	84 (0.52)	101 (0.62)	84 (0.50)	144 (0.56)
Veterinarian	281 (1.74)	291 (1.78)	289 (1.72)	493 (1.92)

#### Estazolam

Estazolam is a schedule IV controlled substance. (Wolters-Kluwer, 2019) There were 7,319 estazolam dispensations during the three-year study period, with 2,806 (38.34 percent), 2,426 (33.15 percent), 2,087 dispensations (28.51 percent) in 2014, 2015, and 2016 respectively. There were 893 patients who received at least one dispensation for estazolam. The mean number of dispensations was 8.20 (SD=9.80), and the range was from 1 to 71 dispensations. Women comprised a majority (65.17 percent) of the estazolam patients during the study period. The average patient age was 61.03 (SD=16.35) with an age range from 16-97. There were 551 prescribers who prescribed estazolam at least once during the three-year study period with a mean number of 13.28 times (SD=27.1) and a range of 1 to 286 times. Information on dispensations, patients, and prescribers during the three-year study period can be found in Table 14.

	2014	2015	2016	Total study period
Dispensations (Percent)	2,806 (38.34)	2,426 (33.15)	2,087 (28.51)	7,319
Total Quantity Dispensed	104,910	89,042	77,824	271,776
Total Days Supply	97,904	86,263	74,454	258,621
Patients				
Ν	556	505	458	893
Mean dispensations per patient (SD)	5.05 (4.10)	4.8 (3.99)	4.56 (3.88)	8.20 (9.80)
Range of dispensations per patient	1-25	1-24	1-22	1-71
Gender (Percent)				
Male	192 (34.89)	182 (36.04)	153 (33.41)	311 (34.83)
Female	362 (65.11)	323 (63.96)	305 (66.59)	582 (65.17)
Missing	0	0	0	0
Age				
Ν	556	505	458	893
Age (SD)	62.61 (15.44)	62.68 (16.06)	63.46 (15.56)	61.03 (16.35)
Range	16-97	16-98	17-99	16-97
Prescribers				
Ν	358	343	304	551
Mean number of dispensations	7.84 (12.55)	7.07 (11.04)	6.87 (10.32)	13.28 (27.1)
Range	1-108	1-97	1-81	1-286

Table 14. Descriptive information for all estazolam dispensations.

Table 14 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	37 (10.34)	24 (7)	41 (13.49)	82 (14.88)	
Advanced Practice Nurse	45 (12.57)	44 (12.83)	45 (14.8)	87 (15.79)	
Dentist	1 (0.28)	1 (0.29)	0 (0.00)	1 (0.18)	
Physician	271 (75.70)	271 (79.01)	215 (70.72)	374 (67.88)	
Physician's Assistant	4 (1.12)	3 (0.87)	3 (0.99)	7 (1.27)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

### Flurazepam

Flurazepam, a schedule IV controlled substance, (Wolters-Kluwer, 2019) was dispensed 9,257 times during the three-year study period with 3,722 (40.21 percent), 3,033 (32.76 percent), 2,502 dispensations (27.03 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations during the study period was 6.98 (SD=9.12) and the range was from 1 to 62 dispensations. There were 735 women (55.39 percent) who received a flurazepam dispensation. 847 prescribers prescribed flurazepam during the three-year study period with a mean of 10.93 times (SD=17.94) and a range of 1 to 227 times. Further descriptive information on flurazepam dispensations, patients, and prescribers can be found in Table 15.

	2014	2015	2016	Total study period
Dispensations (Percent)	3,722 (40.21)	3,033 (32.76)	2,502 (27.03)	9,257
Total Quantity Dispensed	137,508	113,672	93,926	345,106
Total Days Supply	121,561	101,805	85,611	308,977
Patients				
Ν	860	686	548	1,327
Mean dispensations per patient (SD)	4.33 (4.17)	4.42 (3.79)	4.57 (4.05)	6.98 (9.12)
Range of dispensations per patient	1-56	1-15	1-17	1-62

Table 15. Descriptive information for all flurazepam dispensations.

Table 15 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	378 (43.95)	311 (45.34)	256 (46.72)	592 (44.61)	
Female	482 (56.05)	375 (54.66)	292 (53.28)	735 (55.39)	
Missing	0	0	0	0	
Age					
N	860	686	548	1,327	
Age (SD)	60.92 (16.11)	61.70 (16.32)	63.52 (15.19)	59.52 (16.65)	
Range	14-98	15-97	20-103	14-103	
Prescribers					
Ν	587	482	408	847	
Mean number of dispensations	6.34 (7.56)	6.29 (7.98)	6.13 (8)	10.93 (17.94)	
Range	1-69	1-82	1-76	1-227	
Prescriber Type					
Unknown	91 (15.5)	64 (13.28)	65 (15.93)	159 (18.77)	
Advanced Practice Nurse	63 (10.73)	55 (11.41)	51 (12.5)	105 (12.4)	
Dentist	2 (0.34)	1 (0.21)	1 (0.25)	2 (0.24)	
Physician	426 (72.57)	358 (74.27)	287 (70.34)	573 (67.65)	
Physician's Assistant	5 (0.85)	4 (0.83)	4 (0.98)	8 (0.94)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

## Lorazepam

There were 1,415,757 lorazepam dispensations during the three-year study period, 473,166, 471,357, 471,234 dispensations in 2014, 2015, and 2016 respectively. Lorazepam, a schedule IV controlled substance, (Wolters-Kluwer, 2019) was dispensed to 272,326 individuals. The mean

number of dispensations was 5.20 (SD=8.19), and the range was from 1 to 800 dispensations. 24,937 prescribers prescribed lorazepam during the three-year study period. The mean number of times a prescriber prescribed lorazepam was 56.77 (SD=179.96). Descriptive information for dispensations, patients, and prescribers can be found in Table 16.

Table 16. Descriptive information for all lorazepam dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	473,166 (33.42)	471,357 (33.29)	471,234 (33.28)	1,415,757
Total Quantity Dispensed	26,562,861	26,243,436	25,867,540	78,673,837
Total Days Supply	12,161,548	12,084,506	11,969,333	36,215,387
Patients				
Ν	129,914	130,108	130,535	272,326
Mean dispensations per patient (SD) Range of	3.64 (3.94)	3.62 (3.94)	3.61 (3.98)	5.20 (8.19)
dispensations per patient	1-210	1-320	1-270	1-800
Gender (Percent)				
Male	44,216 (34.03)	45,207 (34.75)	45,575 (34.91)	99,111 (36.39)
Female	85,654 (65.93)	84,855 (65.22)	84,912 (65.05)	173,109 (63.57)
Missing	44 (0.03)	46 (0.04)	48 (0.04)	106 (0.04)
Age				
Ν	129,905	130,103	130,525	272,306
Age (SD)	58.37 (19.43)	58.59 (19.49)	59,37 (19.52)	58.42 (20.34)
Range	0-108	0-109	0-110	0-110
Prescribers				
Ν	14,918	14,984	16,168	24,937
Mean number of dispensations	31.72 (76.78)	31.46 (78.69)	29.15 (76.75)	56.77 (179.96)
Range	1-1,472	1-2,457	1-2,910	1-6,570

Table 16 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	5,500 (36.87)	5,019 (33.50)	5,751 (35.57)	11,479 (46.03)
Advanced Practice Nurse	1,808 (12.12)	2,091 (13.95)	2,420 (14.97)	2,989 (11.99)
Dentist	253 (1.7)	259 (1.73)	247 (1.53)	455 (1.82)
Physician	6,989 (46.85)	7,187 (47.96)	7,307 (45.19)	9,360 (37.53)
Physician's Assistant	311 (2.08)	267 (2.45)	383 (2.37)	524 (2.10)
Podiatrist	17 (0.11)	24 (0.16)	19 (0.12)	44 (0.18)
Veterinarian	40 (0.27)	37 (0.25)	41 (0.25)	86 (0.34)

#### Midazolam

Midazolam is a schedule IV controlled substance. (Wolters-Kluwer, 2019) There were 1,682 midazolam dispensations during the three-year study period 464, 468, 750 dispensations in 2014, 2015, and 2016 respectively. The mean number of dispensations was 2.15 (SD=3.87), and the range was from 1 to 58 dispensations. There were 272 prescribers who prescribed midazolam at least once during the three-year study period with a mean of 6.18 (SD=15.11) and a range of 1 to 115 times. Information dispensations, patients, and prescribers across each year and during the three-year study period can be found in Table 17.

Total study 2014 2015 2016 period **Dispensations** (Percent) 1,682 464 (27.59) 468 (27.82) 750 (44.59) **Total Quantity** 25,586 23,706 73,425 24,133 Dispensed **Total Days Supply** 5,689 4,568 5,868 16,143 Patients Ν 225 264 455 781 Mean dispensations 2.06 (2.83) 1.77 (2.2) 1.65 (2.29) 2.15 (3.87) per patient (SD) Range of dispensations per 1-33 1-25 1-30 1-58 patient

Table 17. Descriptive information for all midazolam dispensations.

Table 17 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	114 (50.67)	134 (50.76)	243 (53.41)	399 (51.09)	
Female	103 (45.78)	128 (48.48)	208 (45.71)	373 (47.76)	
Missing	8 (3.56)	2 (0.76)	4 (0.88)	9 (1.15)	
Age					
N	225	264	455	781	
Age (SD)	21.95 (19.99)	17.49 (15.84)	34.65 (29.45)	28.77 (26.72)	
Range	0-90	0-96	0-102	0-102	
Prescribers					
Ν	128	130	147	272	
Mean number of dispensations	3.63 (6.27)	3.6 (6.05)	5.1 (11.17)	6.18 (15.11)	
Range	1-42	1-44	1-86	1-115	
Prescriber Type					
Unknown	35 (27.34)	40 (30.77)	36 (24.49)	75 (27.57)	
Advanced Practice Nurse	8 (6.25)	7 (5.38)	9 (6.12)	16 (5.88)	
Dentist	31 (24.22)	29 (22.31)	28 (19.05)	56 (20.59)	
Physician	52 (40.63)	51 (39.23)	70 (47.62)	117 (43.01)	
Physician's Assistant	2 (1.56)	0 (0.00)	1 (0.68)	3 (1.1)	
Podiatrist	0 (0.00)	2 (1.54)	0 (0.00)	2 (0.74)	
Veterinarian	0 (0.00)	1 (0.77)	3 (2.04)	3 (1.1)	

## Oxazepam

Oxazepam, like other benzodiazepines, is a schedule IV controlled substance. (Wolters-Kluwer, 2019) It was dispensed 18,590 times to 3,492 individuals in Indiana between 2014 and 2016. The

mean number of dispensations was 5.32 (SD=8.65) with a range from 1 to 89 dispensations. Prescribers prescribed oxazepam an average of 9.40 times (SD=21.56) with a range of 1-583 times. Descriptive information for oxazepam dispensations, patients, and prescribers can be found in Table 18.

Table 18. Descriptive information for all oxazepam dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	6,276 (33.76)	5,198 (27.96)	7,116 (38.28)	18,590
Total Quantity Dispensed	454,789	389,621	550,535	1,394,945
Total Days Supply	198,924	171,185	253,607	605,716
Patients				
Ν	1,239	1,053	2,474	3,492
Mean dispensations per patient (SD) Range of	5.07 (4.86)	4.94 (4.33)	2.88 (3.33)	5.32 (8.65)
dispensations per patient	1-57	1-30	1-32	1-89
Gender (Percent)				
Male	415 (33.49)	345 (32.76)	985 (39.81)	1,391 (39.83)
Female	824 (66.51)	708 (67.24)	1,489 (60.19)	2,101 (60.17)
Missing	0	0	0	0
6				
Age				
N	1,239	1,051	2,474	3,490
Age (SD)	65.58 (17.42)	63.79 (17.27)	46.55 (23.39)	50.02 (22.79)
Range	13-100	4-101	4-100	4-100
Prescribers				
Ν	841	772	1,391	1,977
Mean number of dispensations	7.46 (11.89)	6.73 (9.66)	5.12 (9.3)	9.4 (21.56)
Range	1-199	1-164	1-220	1-583

Table 18 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	109 (12.96)	90 (11.66)	192 (13.8)	314 (15.88)
Advanced Practice Nurse	98 (11.65)	103 (13.34)	240 (17.25)	339 (17.15)
Dentist	2 (.024)	1 (0.13)	0 (0.00)	2 (0.1)
Physician	624 (74.2)	572 (74.09)	946 (68.01)	1,301 (65.81)
Physician's Assistant	7 (0.83)	6 (0.78)	13 (0.93)	20 (1.01)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	1 (0.12)	0 (0.00)	0 (0.00)	1 (0.05)

#### Quazepam

Quazepam is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 8 times during the three-year study period. Four patients received at least one dispensation for quazepam with a mean of 2 (SD=0.82) and a range from 1 to 3 dispensations. Five prescribers prescribed quazepam to a patient who received a dispensation. Information quazepam dispensations, patients, and prescribers can be found in Table 19.

	2014	2015	2016	Total study period
Dispensations (Percent)	6 (75)	2 (25)	0	8
Total Quantity Dispensed	143	10	0	153
Total Days Supply	115	10	0	125
Patients				
Ν	3	1	0	4
Mean dispensations per patient (SD)	2 (1)	2 (-)	0.00 (-)-	2 (0.82)
Range of dispensations per patient	1-3	-	-	1-3

Table 19. Descriptive information for all quazepam dispensations.

Table 19 continued.				
	2014	2015	2016	Total study period
Gender (Percent)				
Male	1 (33.33)	0	0	1 (25)
Female	2 (66.67)	1 (100)	0	3 (75)
Missing	0	0	0	0
Age				
Ν	3	1	0	4
Age (SD)	67 (6)	57 (-)	0	64.5 (7)
Range	61-73	-	0	57-73
Prescribers				
Ν	4		0	5
Mean number of dispensations	1.5 (0.58)	2 (-)	0.00 (-)-	1.6 (0.55)
Range	1-2	-	-	1-2
Prescriber Type				
Unknown	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	4 (100)	1 (100)	0 (0.00)	5 (100)
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)1	0 (0.00)	0 (0.00)	0 (0.00)

## Temazepam

Temazepam is a schedule IV controlled substance and was dispensed 382,826 times during the three-year study period. There were 53,164 patients who received at least one dispensation for

temazepam. The mean number of dispensations was 7.20 (SD=9.34) with a range from 1 to 131 dispensations. 10,980 prescribers prescribed temazepam at least once during the three-year study period with a mean of 34.87 (SD=88.68) time and a range of 1 to 2,530 times. Information on the number of dispensations, patients, and prescribers across each year and during the three-year study period can be found in Table 20.

Table 20. Descriptive information for all temazepam dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	128,190 (33.49)	127,354 (33.27)	127,282 (33.25)	382,826
Total Quantity Dispensed	4,603,891	4,554,342	4,594,667	13,752,900
Total Days Supply	4,246,613	4,202,195	4,228,187	12,676,995
Patients				
Ν	27,695	27,562	26,660	53,164
Mean dispensations per patient (SD) Bange of	4.63 (4.16)	4.62 (4.08)	4.77 (4.22)	7.20 (9.34)
dispensations per patient	1-44	1-51	1-44	1-131
Gender (Percent)				
Male	10,909 (39.39)	11,255 (40.84)	10,838 (40.65)	21,728 (40.87)
Female	16,781 (60.59)	16,304 (59.15)	15,819 (59.34)	31,426 (59.11)
Missing	5 (0.02)	3 (0.01)	3 (0.01)	10 (0.02)
Age				
Ν	27,691	27,560	26,659	53,158
Age (SD)	61.38 (16.31)	61.73 (16.20)	61.93 (16.12)	60.52 (16.76)
Range	2-104	0-105	0-106	0-106

Table 20 continued.				
	2014	2015	2016	Total study period
Prescribers				
Ν	6,740	6,672	7,033	10,980
Mean number of dispensations	19.12 (36.41)	19.09 (40.56)	18.1 (37.06)	34.87 (88.68)
Range	1-632	1-1,546	1-983	1-2,530
Prescriber Type				
Unknown	1,809 (26.84)	1,603 (24.03)	1,836 (26.11)	3,818 (34.77)
Advanced Practice Nurse	1,006 (14.93)	1,160 (17.39)	1,300 (18.48)	1,781 (16.22)
Dentist	12 (0.18)	12 (0.18)	6 (0.09)	23 (0.21)
Physician	3.824 (56.74)	3,793 (56.85)	3,773 (53.65)	5,168 (47.07)
Physician's Assistant	83 (1.23)	101 (1.51)	112 (1.59)	176 (1.60)
Podiatrist	6 (0.09)	3 (0.04)	6 (0.09)	14 (0.13)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Triazolam

Triazolam is a schedule IV controlled substance. (Wolters-Kluwer, 2019) There were 78,714 triazolam dispensations during the three-year study period 26,885, 26,351, 25,478 dispensations in 2014, 2015, and 2016 respectively. There were 37,110 patients who received at least one dispensation for triazolam. The mean number of dispensations was 2.12 (SD=4.33), and the range was 1 to 77 dispensations. Women comprised a majority (64 percent) of the triazolam patients during the study period, and the average patient age was 45.52 (SD=18.06) with an age range from 0-101. Information on triazolam dispensations, patients, and prescribers across each year and during the three-year study period can be found in Table 21.

	2014	2015	2016	Total study period
Dispensations (Percent)	26,885 (34.16)	26,351 (33.48)	25,478 (32.37)	78,714
Total Quantity Dispensed	590,942	548,754	510,306	1,650,002
Total Days Supply	460,606	431,528	394,290	1,286,424
Patients				
Ν	14,316	14,379	14,344	37,110
Mean dispensations per patient (SD) Range of	1.88 (2.43)	1.83 (2.34)	1.78 (2.31)	2.12 (4.33)
dispensations per patient	1-29	1-26	1-32	1-77
Gender (Percent)				
Male	5,218 (36.45)	5,163 (35.91)	5,129 (35.76)	13,348 (35.97)
Female	9.093 (63.52)	9,214 (64.08)	9,210 (64.21)	23,752 (64.00)
Missing	5 (0.03)	2 (0.01)	5 (0.03)	10 (0.03)
Age				
Ν	14,314	14,379	14,344	37,108
Age (SD)	47.28 (18.11)	46.98 (18.22)	36.54 (18.49)	45.52 (18.06)
Range	0-101	2-100	0-100	0-101
Prescribers				
Ν	2,341	2,334	2,246	3,813
Mean number of dispensations	11.48 (27.21)	11.29 (27.24)	11.34 (27.36)	20.64 (63.72)
Range	1-487	1-583	1-596	1-1,666

Table 21. Descriptive information for all triazolam dispensations.

Table 21 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	402 (17.17)	346 (14.82)	333 (14.83)	785 (20.59)	
Advanced Practice Nurse	171 (7.3)	194 (8.31)	216 (9.62)	371 (9.73)	
Dentist	761 (32.51)	817 (35)	835 (37.18)	1,141 (29.92)	
Physician	991 (42.33)	953 (40.83)	841 (37.44)	1,475 (38.68)	
Physician's Assistant	14 (0.6)	19 (0.81)	18 (0.8)	34 (0.89)	
Podiatrist	2 (0.09)	5 (0.21)	3 (0.13)	7 (0.18)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

## Time-series Analysis for Benzodiazepine Population

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply of dispensations in the benzodiazepine drug class is explained below.

Figures 20 and 21 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.
time	variable:	month	, 2014m1	to	2016m12
	delta:	1 mon	th		

Regression wit maximum lag: 1	ch Newey-West L	standard er	rors	Number F( 5, Prob >	of obs 3 F	= 0) = =	36 1.90 0.1232
prescripti~l	Coef.	Newey-West Std. Err.	t	P> t	[95%	Conf.	Interval]
_t _x657 _x_t657 _x672 _x_t672 _cons	361.5333 -10880.36 485.2738 -5554.383 -1412.409 242494	693.1587 6646.536 835.5689 4670.447 700.4102 3915.868	0.52 -1.64 0.58 -1.19 -2.02 61.93	0.606 0.112 0.566 0.244 0.053 0.000	-1054. -2445 -1221. -15092 -2842. 23449	086 4.4 186 .71 837 6.7	1777.152 2693.677 2191.733 3983.943 18.01999 250491.2

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_{657}]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	846.8071	534.2031	1.5852	0.1234	-244.1811 1937.7954

Postintervention Linear Trend: 672

Treated: _b[_t	<pre>Ireated: _b[_t]+_b[_x_t657]+_b[_x_t672]</pre>									
Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]				
Treated	-565.6014	483.7828	-1.1691	0.2516	-1.55e+03	422.4150				

Figure 20. Interrupted time-series analysis for full benzodiazepine population total dispensations.



Figure 21. Interrupted time-series graph of dispensations by month for full benzodiazepine population.

Dispensations reported to the INSPECT program increased for the months prior to each policy change (p=0.606). After the rescheduling of hydrocodone combination products, the number of dispensations decreased in the month immediately after (p=0.112), but then increased for the remaining months after the policy change (p=0.566). The implementation of the policy to change hydrocodone combination products did not have a significant effect on the number of benzodiazepine dispensations (p=0.1234). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.244). In the months following the policy change, the number of benzodiazepine dispensations also decreased each month (p=0.053). The INSPECT reporting policy change also did not have a significant impact on the number of benzodiazepine dispensations (p=0.2516).

Figures 22 and 23 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively.

time v	variable: mo delta: 1	nth, 2014m1 month	to 2016m	12		
Regression with Newey-West standard errors Number of obs = F( 5, 30) = Prob > F =						
qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t x657 x_t657 x672 x_t672 x_t672 cons	348.75 -548355.2 31292.01 -299660.5 -77238.06 1.48e+07	44888.96 401290.6 52936.4 272610.8 41548.21 251926.2	0.01 -1.37 0.59 -1.10 -1.86 58.76	0.994 0.182 0.559 0.280 0.073 0.000	-91326.73 -1367900 -76818.55 -856406.1 -162090.8 1.43e+07	92024.23 271189.6 139402.6 257085.1 7614.701 1.53e+07

#### Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	3.16e+04 3	3.16e+04	1.0003	0.3252	-3.30e+04	9.62e+04

Postintervention Linear Trend: 672

Treated:	_b[	t]+	_b [	x	t657]+	_b [	x	t672]	
----------	-----	-----	------	---	--------	------	---	-------	--

Linear Trend	Coeff Sto	d.Err.t	P> t	[95% Conf.	Interval]
Treated	-4.56e+04 2.9	3e+04 -1.5586	0.1296	-1.05e+05	1.42e+04





Figure 23. Interrupted time-series graph of total quantity dispensed by month for full benzodiazepine population.

The quantity of benzodiazepine products reported to the INSPECT program increased for the months prior to each policy change (p=0.994). After the rescheduling of hydrocodone combination products, the total quantity for dispensations decreased in the month immediately after (p=0.182) and increased for the remaining months after the policy change (p=0.559). The implementation of the policy to change hydrocodone combination products was not significant on the total quantity of benzodiazepine dispensations (p=0.3532). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.280). In the months following the policy change, the total quantity continued to decrease each month (p=0.073). This policy change also did not result in any significant changes to the quantity of benzodiazepine products dispensed (p=0.1296).

Figures 24 and 25 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively

time	variable:	mc	onth,	2014m1	to	2016m12
	delta:	1	month	n		

Regression with Newey-West standard errors	Number of obs	=	36
maximum lag: 1	F(5, 3	0) =	1.79
	Prob > F	=	0.1442

dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t	8175.533	20615.43	0.40	0.694	-33926.8	50277.86
_x657	-278584	190509.4	-1.46	0.154	-667656.1	110488.2
_x_t657	12086.29	24588.81	0.49	0.627	-38130.76	62303.34
_x672	-158555.4	126373.3	-1.25	0.219	-416644.2	99533.41
_x_t672	-33302.57	19910.5	-1.67	0.105	-73965.24	7360.091
_cons	6808276	116332.9	58.52	0.000	6570692	7045859

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_{657}]$ 

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf.	. Interval]
Treated	2.03e+04 1.51e+04	1.3381	0.1909	-1.07e+04	5.12e+04

Postintervention Linear Trend: 672

Treated: _b[_t	t]+_b[_x_t657]+_b[_x_t67	2]		
Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf. Interval]
Treated	-1.30e+04 1.39e+04	-0.9413	0.3541	-4.13e+04 1.53e+04

# Figure 24. Interrupted time-series analysis for full benzodiazepine population total days supply of dispensations.



Figure 25. Interrupted time-series graph of total days supply of dispensations by month for full benzodiazepine population.

The days supply of benzodiazepine products reported to the INSPECT program increased for the months prior to each policy change (p=0.694). After the rescheduling of hydrocodone combination products, the total days supply for dispensations decreased in the month immediately after (p=0.154) and then increased for the remaining months after the policy change (p=0.627). However, the implementation of the policy to change hydrocodone combination products was not significant (p=0.1909). After the change to the INSPECT reporting requirements, the days supply of dispensations decreased in the month immediately following the policy change (p=0.219). In the months following the policy change, the days supply of dispensations continued to decrease each remaining month of the study period (p=0.105). This policy change also did not result in any significant changes to the days supply of products dispensed (p=0.3541).

#### Miscellaneous

# Descriptive Information for Full Miscellaneous Population and Each Drug

The miscellaneous class of drugs in the study comprised controlled substances in classes not defined elsewhere, including anticonvulsants, anabolic steroids, and anti-obesity agents. (Wolters-

Kluwer, 2019) A controlled substance in the miscellaneous drug class was dispensed 1,708,027 times during the three-year study period with 525,854 (30.79 percent), 564,319 (33.04 percent), and 617,854 (36.17) dispensed in 2014, 2015, and 2016 respectively. There were 19 different controlled substances in the miscellaneous class and spanned all controlled substance schedules. Testosterone was the most common product in the miscellaneous class dispensed over the three-year study period with 3465,920 (27.28 percent) dispensations, while cocaine was the least common product dispensed with 31 (0.00 percent) dispensations. A list of the controlled substances and the number of dispensations across each year and during the three-year study period can be found in Table 22.

	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)
cocaine	19 (0.00)	11 (0.00)	1 (0.00)	31 (0.00)
diphenoxylate/atropine	57,315 (10.9)	57,586 (10.2)	54,741 (8.86)	169,642 (9.93)
esterified estrogens/ methyltestosterone	21,881 (4.16)	18,693 (3.31)	15,836 (2.56)	56,410 (3.3)
ezogabine	447 (0.09)	263 (0.05)	189 (0.03)	899 (0.05)
fluoxymesterone	79 (0.02)	14 (0.00)	49 (0.01)	142 (0.01)
isometheptene/ dichloralphenazone/ acetaminophen	286 (0.05)	1,410 (0.25)	972 (0.16)	2,668 (0.16)
ketamine	60 (0.01)	86 (0.02)	158 (0.03)	304 (0.02)
lacosamide	25,257 (4.8)	29,123 (5.16)	34,583 (5.6)	88,963 (5.21)
lorcaserin	11,636 (2.21)	16,748 (2.97)	10,236 (1.66)	38,620 (2.26)
meprobamate	1,453 (0.28)	1,178 (0.21)	897 (0.15)	3,528 (0.21)
methyltestosterone	238 (0.05)	61 (0.01)	100 (0.02)	399 (0.02)
nabilone	0 (0.00)	3 (0.00)	5 (0.00)	8 (0.00)
oxandrolone	278 (0.05)	313 (0.06)	169 (0.03)	760 (0.04)
oxymetholone	2 (0.00)	0 (0.00)	0 (0.00)	2 (0.00)
perampanel	407 (0.08)	1,112 (0.2)	1,734 (0.28)	3,253 (0.19)
phendimetrazine	2,460 (0.48)	1,858 (0.33)	1,961 (0.32)	6,279 (0.37)
pregabalin	251,217 (47.78)	277,999 (49.26)	314,974 (50.98)	844,190 (49.42)
suvorexant	0 (0.00)	8,959 (1.59)	17,050 (2.76)	26,009 (1.52)

Table 22. Total miscellaneous dispensations by drug for each year and the full study period.

	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)
testosterone	152,819 (29.07)	148,902 (26.39)	164,199 (26.58)	465,920 (27.28)
Total	525,854	564,319	617,854	1,708,027

Over the three-year study period, 1,708,027 patients were dispensed a product from the miscellaneous class with a mean of 6.36 dispensations (SD=8.44) and a range from 1 to 297 dispensations. A majority of the population were women (52.05 percent) with an average age of 53.77 (SD=15.98). There were 27,007 prescribers who prescribed a product in the miscellaneous drug class to an individual for dispensing. Information on dispensations, patients, and prescribers in the miscellaneous drug class can be found in Table 23.

	2014	2015	2016	Total study period
Dispensations (Percent)	525,854 (30.79)	564,319 (33.04)	617,854 (36.17)	1,708,027
Total Quantity Dispensed	38,316,789	38,342,502	40,733,923	117,393,214
Total Days Supply	18,020,918	18,844,644	20,833,610	57,699,172
Dationta				
Fatients				
Ν	136,423	141,550	142,548	272,853
Mean				
dispensations per patient (SD)	3.85 (3.82)	3.99 (3.81)	4.33 (4.11)	6.26 (8.44)
Range of	1 201	1.00	1 102	1 207
patient	1-201	1-90	1-102	1-297
Gender (Percent)				
Male	68,617 (50.3)	69,172 (48.87)	71,045 (49.84)	130,749 (47.92)
Female	67,777 (49.68)	72,338 (51.1)	71,453 (50.13)	142,018 (52.05)
Missing	29 (0.00)	40 (0.00)	50 (0.00)	86 (0.00)

Table 23. Descriptive information for all miscellaneous drug class dispensations.

Table 23 continued.						
	2014	2015	2016	Total study period		
Age						
Ν	136,418	141,547	142,542	272,843		
Age (SD)	54.55 (15.33)	54.44 (15.47)	54.78 (15.37)	53.77 (15.98)		
Range	0-106	0-105	0-103	0-106		
Prescribers						
Ν	14,984	15,421	18,756	27,007		
Mean number of dispensations	35.09 (73.05)	36.59 (101.31)	32.94 (93.62)	63.24 (199.22)		
Range	1-1441	1-8364	1-7344	1-1520		
Prescriber Type						
Unknown	5,671 (37.85)	5,264 (34.14)	7,983 (42.56)	13,645 (50.52)		
Advanced Practice Nurse	1,784 (11.91)	2,128 (13.80)	2,512 (13.39)	2,996 (11.09)		
Dentist	43 (0.29)	46 (0.30)	28 (0.15)	93 (0.34)		
Physician	6,991 (46.66)	7,415 (48.08)	7,607 (40.56)	9,394 (34.78)		
Physician's Assistant	306 (2.04)	354 (2.3)	389 (2.07)	540 (2)		
Podiatrist	155 (1.03)	156 (1.01)	157 (0.84)	215 (0.8)		
Veterinarian	34 (0.23)	58 (0.38)	80 (0.43)	124 (0.46)		

#### Cocaine

Cocaine is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 31 times during the three-year study period with 19 (61.29 percent), 11 (35.48 percent), and 1 (3.23 percent) dispensations in 2014, 2015, and 2016 respectively. Five patients received at least one dispensation for cocaine. The mean number of dispensations was 6.2 (SD=8.4), and the range was from 1 to 21 dispensations. No women received cocaine during the study period, and the average patient age was 48.4 (SD=30.91) with an age range from 2 to 79. Six prescribers prescribed cocaine at least once for dispensing to these patients with a mean of 5.17 (SD=7.84) and a range of 1 to 21 times.

Information on the number of dispensations and prescribers across each year and during the threeyear study period can be found in Table 24.

	2014	2015	2016	Total study period
Dispensations (Percent)	19 (61.29)	11 (35.48)	1 (3.23)	31
Total Quantity Dispensed	942	804	10	1756
Total Days Supply	338	301	5	694
Patients				
Ν	4	2	1	5
Mean dispensations per patient (SD)	4.75 (4.35)	5.5 (6.36)	1 (-)	6.2 (8.4)
Range of dispensations per patient	1-11	1-10	1	1-21
Gender (Percent)				
Male	3 (75.00)	1 (50.00)	1 (100)	4 (80)
Female	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Missing	1 (25.00)	1 (50.00)	0 (0.00)	1 (20)
Age				
N	4	2	1 53	5
Age (SD)	47.25 (35.57)	41 (55.15)	53 (-)	48.4 (30.91)
Range	2-79	2-80	-	2-79
Prescribers				
Ν	5	2	1	6
Mean number of dispensations	3.8 (4.09)	5.5 (6.36)	1 (-)	5.17 (7.84)
Range	1-11	1-10	-	1-21

Table 24. Descriptive information for all cocaine dispensations.

Table 24 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	2 (0.40)	2 (100)	1 (100)	2 (33.33)
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	3 (0.60)	0 (0.00)	0 (0.00)	4 (66.67)
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

Diphenoxylate/atropine

Diphenoxylate/atropine is a schedule V controlled substance (Wolters-Kluwer, 2019) and was dispensed 169,642 times during the three-year study period with 57,315 (33.79 percent), 57,586 (33.95 percent), and 54,741 (32.27 percent) dispensations in 2014, 2015, and 2016 respectively. There were 67,213 patients who received at least one dispensation for diphenoxylate/atropine. The mean number of dispensations was 2.52 (SD=4.35), and the range was from 1 to 115 dispensations. Women comprised a majority (62.2 percent) of the diphenoxylate/atropine patients during the study period, and the average patient age was 55.42 (SD=19.87) with an age range from 0-106. There were 10,003 prescribers who prescribed diphenoxylate/atropine at least once during the three-year study period with a mean number of 16.96 (SD=37.66) time and a range of 1 to 905 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 25.

	2014	2015	2016	Total stud period
Dispensations (Percent)	57,315 (33.79)	57,586 (33.95)	54,741 (32.27)	169,642
Total Quantity Dispensed	4,254,506	4,331,467	4,367,369	13,053,44
Total Days Supply	1,007,361	1,007,706	1,015,832	3,030,899
Patients				
Ν	28,404	28,557	25,821	67,213
Mean dispensations per patient (SD)	2.02 (2.37)	2.02 (2.3)	2.12 (2.43)	2.52 (4.35
Range of dispensations per patient	1-50	1-58	1-43	1-115
Gender (Percent)				
Male	10,348 (36.43)	10,588 (37.08)	9,341 (36.18)	25,377 (37.
Female	18,048 (63.54)	17,961 (62.9)	16,466 (63.77)	41,808 (62
Missing	8 (0.02)	8 (0.03)	14 (0.05)	28 (0.04)
Age				
Ν	28,402	28,556	25,820	67,210
Age (SD)	56.62 (19.56)	56.71 (19.53)	57.54 (19.24)	55.42 (19.8
Range	0-106	0-103	0-103	0-106
Prescribers				
Ν	6,269	6,281	6,334	10,003
Mean number of dispensations	9.14 (15.71)	9.17 (16.01)	8.64 (15.45)	16.96 (37.0
Range	1-312	1-325	1-305	1-905

Table 25. Descriptive information for all diphenoxylate/atropine dispensations.

Table 25 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	1,310 (20.90)	1,016 (16.18)	991 (15.65)	2,447 (24.46)	
Advanced Practice Nurse	920 (14.68)	1,056 (16.81)	1,198 (18.91)	1,709 (17.08)	
Dentist	14 (0.22)	16 (0.25)	7 (0.11)	29 (0.29)	
Physician	3,849 (61.40)	3,960 (63.05)	3,898 (61.54)	5,418 (54.16)	
Physician's Assistant	140 (2.23)	174 (2.77)	167 (2.64)	277 (2.77)	
Podiatrist	9 (0.14)	11 (0.18)	5 (0.08)	17 (0.17)	
Veterinarian	27 (0.43)	48 (0.76)	68 (1.07)	106 (1.06)	

Esterified estrogens/methyltestosterone

Esterified estrogens/methyltestosterone is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 56,410 times during the three-year study period with 21,881 (33.79 percent), 18,693 (33.14 percent), and 15,836 (28.07 percent) dispensations in 2014, 2015, and 2016 respectively. There were 5,679 patients who received at least one dispensation for esterified estrogens/methyltestosterone. The mean number of dispensations was 9.93 (SD=9.48), and the range was from 1 to 57 dispensations. Women comprised a majority (99.56 percent) of the patients during the study period. The average patient age was 54.07 (SD=9.65) with an age range from 0-96. There were 2,879 prescribers who prescribed esterified estrogens/methyltestosterone at least once during the three-year study period with a mean number of 19.59 (SD=41.12) times and a range of 1 to 634 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 26.

•	2014	2015	2016	Total study period
Dispensations (Percent)	21,881 (33.79)	18,693 (33.14)	15,836 (28.07)	56,410
Total Quantity Dispensed	850,553	711,386	611,845	2,173,784
Total Days Supply	856,086	716,277	616,627	2,188,990
Patients				
Ν	4,181	3,430	2,939	5,679
Mean dispensations per patient (SD) Bange of	5.23 (3.59)	5.48 (3.65)	5.39 (3.81)	9.93 (9.48)
dispensations per patient	1-18	1-28	1-43	1-57
Conden (Dereent)				
Gender (Percent)	12 (0.01)			
Male	13 (0.31)	7 (0.20)	5 (0.17)	21 (0.37)
Female	4,166 (99.64)	3,421 (99.74)	2,932 (99.76)	5,654 (99.56)
Missing	2 (0.05)	2 (0.06)	2 (0.07)	4 (0.07)
Age				
Ν	4,181	3,430	2,939	5,679
Age (SD)	54.85 (9.33)	54.89 (9.45)	55.18 (9.64)	54.07 (9.65)
Range	2-96	0-97	1-92	0-96
Prescribers				
Ν	2,101	1,797	1,665	2,879
Mean number of dispensations	10.41 (19.08)	10.4 (17.18)	9.51 (14.98)	19.59 (41.12)
Range	1-384	1-232	1-223	1-634

Table 26. Descriptive information for all esterified estrogens/methyltestosterone dispensations.

Table 26 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	341 (16.23)	237 (13.19)	260 (15.62)	599 (20.81)	
Advanced Practice Nurse	330 (15.71)	307 (17.08)	298 (17.90)	491 (17.05)	
Dentist	1 (0.05)	2 (0.11)	0 (0.00)	2 (0.07)	
Physician	1,410 (67.11)	1,230 (68.45)	1,089 (65.41)	1,748 (60.72)	
Physician's Assistant	19 (0.90)	21 (1.17)	18 (1.08)	39 (1.35)	
Podiatrist	0	0	0	0	
Veterinarian	0	0	0	0	

#### Ezogabine

Ezogabine is a schedule V controlled substance (Wolters-Kluwer, 2019) and was dispensed 899 times during the three-year study period with 447 (49.72 percent), 263 (29.25 percent), and 189 (21.02 percent) dispensations in 2014, 2015, and 2016 respectively. There were 70 patients who received at least one dispensation for ezogabine. The mean number of dispensations was 12.84 (SD=13), and the range was from 1 to 54 dispensations. Women comprised a majority (52.86 percent) of the patients during the study period. The average patient age was 39.93 (SD=15.89) with an age range from 11-71. There were 55 prescribers who prescribed ezogabine at least once during the three-year study period with a mean number of 16.35 (SD=22.77) times and a range of 1 to 113 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 27.

	2014	2015	2016	Total study period
Dispensations (Percent)	447 (49.72)	263 (29.25)	189 (21.02)	899
Total Quantity Dispensed	55,343	28,986	19,818	104,147
Total Days Supply	15,495	8,573	5,746	29,814
Patients				
Ν	64	37	22	70
Mean dispensations per patient (SD)	6.98 (6.51)	7.11 (4.72)	8.59 (5.36)	12.84 (13.00)
Range of dispensations per patient	1-44	1-18	1-20	1-54
Gender (Percent)				
Male	31 (48.44)	20 (54.05)	10 (45.45)	33 (47.14)
Female	33 (51.56)	17 (45.95)	12 (54.55)	37 (52.86)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
N	64	37	22	70
Age (SD)	38.8 (15.61)	38.89 (17.31)	41.77 (16.87)	39.93 (15.89)
Range	11-71	12-71	16-72	11-71
Prescribers				
Ν	45	28	17	55
Mean number of dispensations	9.93 (11.57)	9.39 (8.8)	11.12 (8.32)	16.35 (22.77)
Range	1-57	1-33	1-32	1-113

Table 27. Descriptive information for all ezogabine dispensations.

Table 27 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	8 (17.78)	5 (17.86)	3 917.65)	11 (20.00)	
Advanced Practice Nurse	4 (8.89)	3 (10.71)	1 (5.88)	5 (9.09)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	33 (73.33)	19 (67.86)	13 (76.47)	28 (69.09)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

### Fluoxymesterone

Fluoxymesterone is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 142 times during the three-year study period with79 (55.63 percent), 14 (9.86 percent), and 49 (34.51 percent) dispensations in 2014, 2015, and 2016 respectively. There were 39 patients who received at least one dispensation for fluoxymesterone. The mean number of dispensations was 3.64 (SD=3.65), and the range was from 1 to 12 dispensations. Men comprised a majority (82.05 percent) of the patients during the study period. The average patient age was 57.64 (SD=14.6) with an age range from 32-82. There were 36 prescribers who prescribed fluoxymesterone at least once during the three-year study period with a mean number of 3.94 (SD=3.87) times and a range of 1 to 17 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 28.

	2014	2015	2016	Total study period
Dispensations (Percent)	79 (55.63)	14 (9.86)	49 (34.51)	142
Total Quantity Dispensed	3,901	543	2,614	7,058
Total Days Supply	3,054	483	1,634	5,171
Patients				
Ν	24	7	14	39
Mean dispensations per patient (SD)	3.29 (2.96)	2 (1.83)	3.5 (3.41)	3.64 (3.65)
Range of dispensations per patient	1-11	1-6	1-10	1-12
Gender (Percent)				
Male	20 (83.33)	5 (71.43)	11 (78.57)	32 (82.05)
Female	4 (16.67)	2 (28.57)	3 (21.43)	7 (17.95)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
N	24	7	14	39
Age (SD)	54.38 (13.79)	64.14 (11.19)	63.21 (15.28)	57.64 (14.6)
Range	32-81	50-80	42-82	32-82
Prescribers				
Ν	20	8	14	36
Mean number of dispensations	3.95 (3.85)	1,75 (1.39)	3.5 (3.57)	3.94 (3.87)
Range	1-16	1-5	1-13	1-17

Table 28. Descriptive information for all fluoxymesterone dispensations.

Table 28 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	5 (25)	2 (25)	4 (28.57)	9 (25)	
Advanced Practice Nurse	1 (5)	1 (12.5)	1 (7.14)	3 (8.33)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	14 (70)	5 (62.5)	9 (64.29)	24 (66.67)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

Isometheptene/dichloralphenazone/acetaminophen

Isometheptene/dichloralphenazone/acetaminophen is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 2,668 times during the three-year study period with 286 (10.72 percent), 1,410 (52.85 percent), and 972 (36.43 percent) dispensations in 2014, 2015, and 2016 respectively. There were 1,509 patients who received at least one dispensation for isometheptene/dichloralphenazone/acetaminophen. The mean number of dispensations was 1.77 (SD=1.71), and the range was from 1 to 15 dispensations. Women comprised a majority (80.58 percent) of the patients during the study period. The average patient age was 41.28 (SD=15.39) from 1-84. There were 734 prescribers with an age range who prescribed isometheptene/dichloralphenazone/acetaminophen at least once during the three-year study period with a mean number of 3.63 (SD=7.48) times and a range of 1 to 107 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 29.

dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	286 (10.72)	1,410 (52.85)	972 (36.43)	2,668	
Total Quantity Dispensed	12,635	56,843	36,144	105,622	
Total Days Supply	3,840	15,753	11,196	30,789	

Table 29. Descriptive information for all isometheptene/dichloralphenazone/acetaminophen

Table 29 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	198	872	660	1,509	
Mean dispensations per patient (SD) Banga of	1.44 (0.99)	1.62 (1.28)	1.47 (1.13)	1.77 (1.71)	
dispensations per patient	1-7	1-13	1-12	1-19	
Gender (Percent)					
Male	42 (21.21)	149 (17.08)	132 (20)	290 (19.22)	
Female	156 (78.79)	720 (82.57)	528 (80)	1,216 (80.58)	
Missing	0 (0.00)	3 (0.34)	0 (0.00)	3 (0.2)	
Age					
Ν	198	872	660	1,509	
Age (SD)	41.61 (15.45)	41.07 (15.28)	42.71 (14.84)	41.28 (15.39)	
Range	9-79	1-84	12-83	1-84	
Prescribers					
Ν	121	475	394	734	
Mean number of dispensations	2.36 (2.67)	2.97 (4.87)	2.47 (3.58)	3.63 (7.48)	
Range	1-22	1-50	1-41	1-107	

Table 29 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	12 (9.92)	31 (6.53)	29 (7.36)	54 (7.36)	
Advanced Practice Nurse	10 (8.26)	65 (13.68)	47 911.93)	98 (13.35)	
Dentist	0 (0.00)	0 (0.00)	2 (0.51)	2 (0.27)	
Physician	95 (78.51)	374 (78.74(	302 (76.65)	560 (76.29)	
Physician's Assistant	4 (3.31)	5 (1.05)	14 (3.55)	20 (2.72)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

# Ketamine

Ketamine is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 304 times during the three-year study period with 60 (19.74 percent), 86 (28.29 percent), and 158 (51.97 percent) dispensations in 2014, 2015, and 2016 respectively. There were 144 patients who received at least one dispensation for ketamine. The mean number of dispensations was 2.11 (SD=4.31), and the range was from 1 to 45 dispensations. Men comprised a slight majority (50.69 percent) of the patients during the study period. The average patient age was 54.54 (SD=16.04) with an age range from 8-94. There were 60 prescribers who prescribed ketamine at least once during the three-year study period with a mean number of 5.07 (SD=15.38) times and a range of 1 to 91 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 30.

Table 30. Descriptive information for all ketamine dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	60 (19.74)	86 (28.29)	158 (51.97)	304	
Total Quantity Dispensed	4,297	4,531	8,710	17,538	
Total Days Supply	1,302	1,189	3,176	5,667	

Table 30 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	24	52	87	144	
Mean dispensations per patient (SD)	2.5 (3.62)	1.65 (2.44)	1.82 (2.41)	2.11 (4.31)	
Range of dispensations per patient	1-15	1-17	1-13	1-45	
Gender (Percent)					
Male	13 (54.17)	27 (51.92)	41 (47.13)	73 (50.69)	
Female	11 (45.83)	25 (48.08)	45 (51.72)	70 (48.61)	
Missing	0 (0.00)	0 (0.00)	1 (1.15)	1 (0.69)	
Age					
Ν	24	52	87	144	
Age (SD)	53.67 (20.44)	57.19 (15.22)	54.25 (15.82)	54.54 (16.04)	
Range	8-88	14-89	16-94	8-94	
Prescribers					
Ν	21	19	31	60	
Mean number of dispensations	2.86 (3.24)	4.53 (8.53)	5.1 (12.86)	5.07 (15.38)	
Range	1-12	1-28	1-63	1-91	

Table 30 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	4 (19.05)	7 (36.84)	3 (9.68)	11 (18.33)	
Advanced Practice Nurse	1 (4.76)	0 (0.00)	3 (9.68)	4 (6.67)	
Dentist	2 (9.52)	0 (0.00)	0 (0.00)	2 (3.33)	
Physician	11 (52.38)	9 (47.37)	21 (67.74)	36 (60)	
Physician's Assistant	2 (9.52)	1 (5.26)	1 (3.23)	3 (5)	
Podiatrist	1 (4.76)	2 (10.53)	3 (9.68)	4 (6.67)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

#### Lacosamide

Lacosamide is a schedule V controlled substance (Wolters-Kluwer, 2019) and was dispensed 88,963 times during the three-year study period with 25,257 (28.39 percent), 29,123 (32.74 percent), and 34,583 (38.87 percent) dispensations in 2014, 2015, and 2016 respectively. There were 7,447 patients who received at least one dispensation for lacosamide. The mean number of dispensations was 11.95 (SD=13.06), and the range was from 1 to 177 dispensations. Women comprised a slight majority (52.22 percent) of the patients during the study period. The average patient age was 45.24 (SD=20.04) with an age range from 0-97. There were 3,335 prescribers who prescribed lacosamide at least once during the three-year study period with a mean number of 26.67 (SD=106.12) times and a range of 1 to 2,498 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 31.

	2014	2015	2016	Total study period
Dispensations (Percent)	25,257 (28.39)	29,123 (32.74)	34,583 (38.87)	88,963
Total Quantity Dispensed	2,177,383	2,476,617	2,940,346	7,594,346
Total Days Supply	793,368	911,448	1,063,745	2,768,561
Patients				
Ν	3,696	4,355	4,997	7,447
Mean dispensations per patient (SD) Pange of	6.83 (5.33)	6.69 (5.18)	6.92 (5.63)	11.95 (13.06)
dispensations per patient	1-62	1-63	1-54	1-177
Gender (Percent)				
Male	1,774 (48)	2,083 (47.83)	2,439 (48.81)	3,557 (47.76)
Female	1,921 (51.98)	2,272 (52.17)	2,558 (51.19)	3,889 (52.22)
Missing	1 (0.03)	0 (0.00)	0 (0.00)	1 (0.01)
Age				
Ν	3,695	4,353	4,996	7,444
Age (SD)	43.67 (19)	44,57 (19.45)	45.06 (19.51)	45.24 (20.04)
Range	0-95	1-95	0-97	0-97
Prescribers				
Ν	1,454	1,686	2,049	3,335
Mean number of dispensations	17.37 (46.06)	17.27 (50.16)	16.88 (51.5)	26.67 (106.12)
Range	1-656	1-827	1-1,015	1-2,498

Table 31. Descriptive information for all lacosamide dispensations.

Table 31 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	388 (26.69)	382 (22.66)	508 (24.79)	888 (26.63)	
Advanced Practice Nurse	152 (10.45)	244 (14.47)	324 (15.81)	482 (14.45)	
Dentist	0 (0.00)	3 (0.18)	1 (0.05)	3 (0.09)	
Physician	896 (61.62)	1,037 (61.51)	1,187 (57.93)	1,907 (57.18)	
Physician's Assistant	16 (1.10)	20 (1.19)	28 (1.37)	52 (1.56)	
Podiatrist	1 (0.07)	0 (0.00)	1 (0.05)	2 (0.06)	
Veterinarian	1 (0.07)	0 (0.00)	0 (0.00)	1 (0.03)	

#### Lorcaserin

Lorcaserin is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 38,620 times during the three-year study period with 11,636 (30.13 percent), 16,748 (43.37 percent), and 10,236 (26.5 percent) dispensations in 2014, 2015, and 2016 respectively. There were 14,814 patients who received at least one dispensation for lorcaserin. The mean number of dispensations was 2.61 (SD=3.04), and the range was from 1 to 35 dispensations. Women comprised a majority (80.96 percent) of the patients during the study period. The average patient age was 47.72 (SD=11.83) with an age range from 2 to 89. There were 2,909 prescribers who prescribed lorcaserin at least once during the three-year study period with a mean number of 13.28 (SD=26.93) times and a range of 1 to 371 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 32.

	2014	2015	2016	Total study period
Dispensations (Percent)	11,636 (30.13)	16,748 (43.37)	10,236 (26.5)	38,620
Total Quantity Dispensed	522,760	868,067	592,163	1,982,990
Total Days Supply	268,026	439,681	298,799	1,006,506
Patients				
Ν	6,234	7,120	3,930	14,814
Mean dispensations per patient (SD) Range of	1.87 (1.58)	2.35 (2.06)	2.6 (2.31)	2.61 (3.04)
dispensations per patient	1-16	1-19	1-14	1-35
Gender (Percent)				
Male	1,177 (18.88)	1,396 (19.61)	718 (18.27)	2,818 (19.02)
Female	5,056 (81.1)	5,723 (80.38)	3,211 (81.7)	11,994 (80.96)
Missing	1 (0.02)	1 (0.01)	1 (0.03)	2 (0.01)
Age				
N	6,233	7,120	3,930	14,813
Age (SD)	48.38 (11.81)	48.07 (11.79)	48.3 (11.83)	47.72 (11.83)
Range	2-87	3-81	16-89	2-89
Prescribers				
Ν	1,747	1,913	1,414	2,909
Mean number of dispensations	6.66 (10.42)	8.75 (16.1)	7.24 (11.16)	13.28 (26.93)
Range	1-149	1-272	1-120	1-371

Table 32. Descriptive information for all lorcaserin dispensations.

		Table 32 continued.		
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	251 (14.37)	271 (14.17)	164 (11.6)	516 (17.72)
Advanced Practice Nurse	121 (6.93)	168 (8.78)	209 (14.78)	359 (12.34)
Dentist	1 (0.06)	1 (0.05)	0 (0.00)	1 (0.03)
Physician	1,361 (77.90)	1,458 (76.22)	1,014 (71.71)	1,994 (68.55)
Physician's Assistant	13 (0.74)	15 (0.78)	27 (1.91)	39 (1.34)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Meprobamate

Meprobamate is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 3,528 times during the three-year study period with 1,453 (41.18 percent), 1,178 (33.39 percent), and 897 (25.43 percent) dispensations in 2014, 2015, and 2016 respectively. There were 423 patients who received at least one dispensation for meprobamate. The mean number of dispensations was 8.34 (SD=9.97), and the range was from 1 to 47 dispensations. Women comprised a majority (81.09 percent) of the patients during the study period. The average patient age was 70.75 (SD=16.8) with an age range from 16 to 97. There were 429 prescribers who prescribed meprobamate at least once during the three-year study period with a mean number of 8.22 (SD=11.28) times and a range of 1 to 80 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 33.

	2014	2015	2016	Total study period
Dispensations (Percent)	1,453 (41.18)	1,178 (33.39)	897 (25.43)	3,528
Total Quantity Dispensed	125,371	101,324	76,109	302,804
Total Days Supply	53,232	42,506	31,778	127,516

Table 33. Descriptive information for all meprobamate dispensations

Table 33 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	312	244	200	423	
Mean dispensations per patient (SD) Range of	4.66 (3.98)	4.83 (3.99)	4.49 (4.07)	8.34 (9.97)	
dispensations per patient	1-19	1-16	1-23	1-47	
Gender (Percent)					
Male	58 (18.59)	41 (16.8)	32 (16)	80 (18.91)	
Female	254 (81.41)	203 (83.2)	168 (84)	343 (81.09)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	312	244	200	423	
Age (SD)	73.79 (13.61)	71.72 (16.31)	72.37 (15.91)	70.75 (16.8)	
Range	16-97	16-95	20-96	16-97	
Prescribers					
Ν	297	247	196	429	
Mean number of dispensations	4.89 (4.75)	4.77 (4.71)	4.58 (4.67)	8.22 (11.28)	
Range	1-26	1-31	1-28	1-80	

Table 33 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	34 (11.45)	28 (11.34)	15 (7.65)	64 (14.92)
Advanced Practice Nurse	29 (9.76)	27 (10.93)	26 (13.27)	52 (12.12)
Dentist	3 (1.01)	2 (0.81)	3 (1.53)	4 (0.93)
Physician	228 (76.77)	186 (75.30)	151 (77.04)	304 (70.86)
Physician's Assistant	3 (1.01)	4 (1.62)	1 (0.51)	5 (1.17)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Methyltestosterone

Methyltestosterone is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 399 times during the three-year study period with 238 (59.65 percent), 61 (15.29 percent), and 100 (25.06 percent) dispensations in 2014, 2015, and 2016 respectively. There were 85 patients who received at least one dispensation for methyltestosterone. The mean number of dispensations was 4.69 (SD=5.08), and the range was from 1 to 26 dispensations. Men comprised a majority (84.71 percent) of the patients during the study period. The average patient age was 55.35 (SD=12.81) with an age range from 28 to 91. There were 68 prescribers who prescribed methyltestosterone at least once during the three-year study period with a mean number of 5.87 (SD=6.69) times and a range of 1 to 33 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 34.

	2014	2015	2016	Total study period
Dispensations (Percent)	238 (59.65)	61 (15.29)	100 (25.06)	399
Total Quantity Dispensed	13,684	3,812	5,930	23,426
Total Days Supply	8,079	2,177	3,505	13,761

Table 34. Descriptive information for all methyltestosterone dispensations

Table 34 continued.				
	2014	2015	2016	Total study period
Patients				
Ν	70	23	18	85
Mean dispensations per patient (SD) Range of	3.4 (3.25)	2.65 (1.85)	5.56 (3.03)	4.69 (5.08)
dispensations per patient	1-13	1-8	1-10	1-26
Gender (Percent)				
Male	60 (85.71)	22 (95.65)	15 (83.33)	72 (84.71)
Female	10 (14.29)	1 (4.35)	3 (16.67)	13 (15.29)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	70	23	18	85
Age (SD)	54.89 (13.09)	57.04 (12.89)	60.22 (13.44)	55.35 (12.81)
Range	28-91	33-84	39-90	28-91
Prescribers				
Ν	55	24	18	68
Mean number of dispensations	4.33 (4.88)	2.54 (1.72)	5.56 (3.71)	5.87 (6.69)
Range	1-30	1-7	1-16	1-33

Table 34 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	6 (10.91)	1 (4.17)	1 (5.56)	7 (10.29)
Advanced Practice Nurse	9 (16.36)	3 (12.50)	1 (5.56)	10 (14.71)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	40 (72.73)	20 (83.33)	15 (83.33)	50 (73.53)
Physician's Assistant	0 (0.00)	0 (0.00)	1 (5.56)	1 (1.47)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Nabilone

Nabilone is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 8 times during the three-year study period with 0 (0 percent), 3 (37.5 percent), and 5 (62.5 percent) dispensations in 2014, 2015, and 2016 respectively. There were 2 patients who received at least one dispensation for nabilone. The mean number of dispensations was 4 (SD=4.24), and the range was from 1 to 7 dispensations. Men were the only patients dispensed to during the study period. The average patient age was 56.5 (SD=7.78) with an age range from 51-62. There were 3 prescribers who prescribed nabilone at least once during the three-year study period with a mean number of 2.67 (SD=2.89) times and a range of 1 to 6 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 35.

Total study 2014 2015 2016 period 0 (0.00) 8 **Dispensations** (Percent) 3 (37.5) 5 (62.5) **Total Quantity** 0 180 290 470 Dispensed 90 Total Days Supply 133 223

Table 35. Descriptive information for all nabilone dispensations.

Table 35 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	0	1	2	2	
Mean dispensations per patient (SD) Range of	0.00 (-)	3 (-)	2.5 (2.12)	4 (4.24)	
dispensations per patient	-	-	1-4	1-7	
Gender (Percent)					
Male	0 (0.00)	1 (100)	2 (100)	2 (100)	
Female	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	0	1	2	2	
Age (SD)	0.00 (-)	51 (-)	57 (7.07)	56.5 (7.78)	
Range	-	-	52-62	51-62	
Prescribers					
Ν	0	2	2	3	
Mean number of dispensations	0.00 (-)	1.5 (0.71)	2.5 (2.12)	2.67 (2.89)	
Range	-	1-2	1-4	1-6	

Table 35 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	0 (0.00)	0 (0.00)	1 (50)	1 (33.33)
Advanced Practice Nurse	0 (0.00)	1 (5)	1 (50)	1 (33.33)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	0 (0.00)	1 (50)	0 (0.00)	1 (33.33)
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Oxandrolone

Oxandrolone is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 760 times during the three-year study period with 278 (36.58 percent), 313 (41.18 percent), and 169 (22.24 percent) dispensations in 2014, 2015, and 2016 respectively. There were 140 patients who received at least one dispensation for oxandrolone. The mean number of dispensations was 5.43 (SD=6.15), and the range was from 1 to 30 dispensations. Men comprised a majority (65 percent) of the patients during the study period. The average patient age was 49.34 (SD=24.21) with an age range from 8 to 95. There were 116 prescribers who prescribed oxandrolone at least once during the three-year study period with a mean number of 6.55 (SD=12.11) times and a range of 1 to 79 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 36.

	2014	2015	2016	Total study period
Dispensations (Percent)	278 (36.58)	313 (41.18)	169 (22.24)	760
Total Quantity Dispensed	16,178	18,715	10,706	45,599
Total Days Supply	8,389	10,027	6,025	24,441
Patients				
Ν	74	75	53	140
Mean dispensations per patient (SD) Range of	3.76 (3.040	4.17 (3.58)	3.19 (2.75)	5.43 (6.15)
dispensations per patient	1-12	1-13	1-12	1-30
Gender (Percent)				
Male	52 (70.27)	51 (68)	34 (64.15)	91 (65)
Female	22 (29.73)	24 (32)	19 (35.85)	49 (35)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	74	75	53	140
Age (SD)	51.69 (23.54)	46.84 (24.22)	43.32 (23.3)	49.34 (24.21)
Range	8-95	9-92	10-92	8-95
Prescribers				
Ν	62	53	50	116
Mean number of dispensations	4.48 (4.93)	5.91 (7.13)	3.38 (4.39)	6.55 (12.11)
Range	1-26	1-32	1-21	1-79

Table 36. Descriptive information for all oxandrolone dispensations.

Table 36 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	9 (14.52)	10 (18.87)	15 (30)	28 (24.14)
Advanced Practice Nurse	11 (17.74)	5 (9.43)	5 (10)	20 (17.24)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	42 (67.74)	37 (69.81)	28 (56)	65 (56.03)
Physician's Assistant	0 (0.00)	1 (1.89)	2 (4)	3 (2.59)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

### Oxymetholone

Oxymetholone is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed twice during the three-year study period with all dispensations in 2014. There was 1 patient who received a dispensation for oxymetholone. This female patient received 2 dispensations and was 7 years old. One prescriber prescribed this substance for both dispensations. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 37.

Total study 2014 2015 2016 period 2 **Dispensations** (Percent) 2 (100) 0(0.00)0(0.00)**Total Quantity** 60 0 0 60 Dispensed 0 0 **Total Days Supply** 60 60 Patients 0 0 Ν 1 1 Mean dispensations 0.00(-)0.00 (-) 2 (-) 2 (-) per patient (SD) Range of dispensations per \_ \_ \_ \_ patient

Table 37. Descriptive information for all oxymetholone dispensations.

	Table37 continued.			
	2014	2015	2016	Total study period
Gender (Percent)				
Male	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Female	1 (100)	0 (0.00)	0 (0.00)	1 (100)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	1	0	0	1
Age (SD)	7 (-)	0.00 (-)	0.00 (-)	7 (-)
Range	-	-	-	-
Prescribers				
Ν	1	0	0	1
Mean number of dispensations	2 (-)	0.00 (-)	0.00 (-)	2 (-)
Range	-	-	-	-
Prescriber Type				
Unknown	1 (100)	0 (0.00)	0 (0.00)	1 (100)
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

Perampanel

Perampanel is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 3,253 times during the three-year study period with 407 (12.51 percent), 1,112 (34.18 percent),

and 1,734 (53.3 percent) dispensations in 2014, 2015, and 2016 respectively. There were 437 patients who received at least one dispensation for perampanel. The mean number of dispensations was 7.44 (SD=8.99), and the range was from 1 to 65 dispensations. Women comprised a majority (55.38 percent) of the patients during the study period. The average patient age was 31.29 (SD=18.4) with an age range from 2-86. There were 209 prescribers who prescribed perampanel at least once during the three-year study period with a mean number of 15.56 (SD=41.43) times and a range of 1 to 501 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 38.

Table 38. Descriptive information for all perampanel dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	407 (12.51)	1,112 (34.18)	1,734 (53.3)	3,253
Total Quantity Dispensed	16,243	43.099	62,869	122,211
Total Days Supply	11,446	34,133	52,858	98,437
Patients				
Ν	108	209	304	437
Mean dispensations per patient (SD) Pange of	3.77 (3.93)	5.32 (4.44)	5.70 (5.2)	7.44 (8.99)
dispensations per patient	1-26	1-26	1-30	1-65
Gender (Percent)				
Male	44 (40.74)	93 (44.5)	142 (46.71)	195 (44.62)
Female	64 (59.26)	116 (55.5)	162 (53.29)	242 (55.38)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	108	209	304	437
Age (SD)	34.9 (17.82)	30.83 (17.59)	31.23 (18.81)	31.29 (18.4)
Range	3-72	2-74	3-86	2-86

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Table 38 continued.				
	2014	2015	2016	Total study period
Prescribers				
Ν	63	110	152	209
Mean number of dispensations	6.46 (7.4)	10.11 (18.53)	11.41 (28.42)	15.56 (41.43)
Range	1-39	1-160	1-316	1-501
Prescriber Type				
Unknown	20 (31.75)	38 (34.55)	52 (34.21)	77 (36.84)
Advanced Practice Nurse	6 (9.52)	13 (11.82)	16 (10.53)	24 (11.48)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	35 (55.56)	58 (52.73)	82 (53.95)	105 (50.24)
Physician's Assistant	2 (3.17)	1 (0.91)	2 (1.32)	3 (1.44)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

## Phendimetrazine

Phendimetrazine is a schedule III controlled substance (Wolters-Kluwer, 2019)and was dispensed 6,279 times during the three-year study period with 2,460 (39.18 percent), 1,858 (29.93 percent), and 1,961 (31.23 percent) dispensations in 2014, 2015, and 2016 respectively. There were 1,986 patients who received at least one dispensation for phendimetrazine. The mean number of dispensations was 3.16 (SD=4.6), and the range was from 1 to 52 dispensations. Women comprised a majority (83.33 percent) of the patients during the study period. The average patient age was 44.98 (SD=12.2) with an age range from 3-83. There were 327 prescribers who prescribed phendimetrazine at least once during the three-year study period with a mean number of 19.2 (SD=67.99) times and a range of 1 to 721 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 39.

	2014	2015	2016	Total study period
Dispensations (Percent)	2,460 (39.18)	1,858 (29.93)	1,961 (31.23)	6,279
Total Quantity Dispensed	107,727	87,465	89,378	284,570
Total Days Supply	71,846	53,489	57,506	182,841
Patients				
N	1.010	664	752	1 086
IN Mean dispensations	1,010	004	155	1,980
per patient (SD)	2.44 (2.32)	2.8 (2.9)	2.6 (2.7)	3.16 (4.6)
Range of dispensations per patient	1-22	1-25	1-26	1-52
Gender (Percent)				
Male	165 (16.34)	110 (16.57)	112 (14.87)	330 (16.61)
Female	844 (83.56)	554 (83.43)	641 (85.13)	1,655 (83.33)
Missing	1 (0.1)	0 (0.00)	0 (0.00)	1 (0.05)
Age				
Ν	1,010	664	753	1,986
Age (SD)	44.92 (12.32)	45,36 (12.75)	46.41 (12.41)	44.98 (12.2)
Range	3-83	3-82	17-83	3-83
Prescribers				
Ν	187	173	162	327
Mean number of dispensations	13.16 (39.81)	10.74 (31.72)	12.1 (33.91)	19.2 (67.99)
Range	1-375	1-314	1-275	1-721

Table 39. Descriptive information for all phendimetrazine dispensations.

	Table	e 39 continued.		
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	57 (30.48)	46 (26.59)	44 (27.16)	118 (36.09)
Advanced Practice Nurse	12 (6.42)	14 (8.09)	18 (11.11)	32 (9.79)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	117 (62.57)	111 (64.16)	98 (60.49)	173 (52.91)
Physician's Assistant	0 (0.00)	2 (1.16)	1 (0.62)	2 (0.61)
Podiatrist	1 (0.53)	0 (0.00)	1 (0.62)	2 (0.61)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

## Pregabalin

Pregabalin is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 844,190 times during the three-year study period with 251,217 (29.76 percent), 277,999 (32.93 percent), and 314,974 (37.31 percent) dispensations in 2014, 2015, and 2016 respectively. There were 108,887 patients who received at least one dispensation for pregabalin. The mean number of dispensations was 7.75 (SD=9.44), and the range was from 1 to 297 dispensations. Women comprised a majority (63.75 percent) of the patients during the study period. The average patient age was 55.21 (SD=14.74) with an age range from 0 to 104. There were 16,709 prescribers who prescribed pregabalin at least once during the three-year study period with a mean number of 50.52 (SD=146.78) times and a range of 1 to 8036 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 40.

2014 2015 2016 Total s period				
Dispensations (Percent)	251,217 (29.76)	277,999 (32.93)	314,974 (37.31)	844,190
Total Quantity Dispensed	19,819,008	21,435,509	24,095,337	65,367,854
Total Days Supply	8,612,828	9,342,384	10,525,494	28,480,706

Table 40 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	54,045	57,460	61,690	108,887	
Mean dispensations per patient (SD) Range of	4.65 (4.24)	4.84 (4.12)	5.11 (4.33)	7.75 (9.44)	
dispensations per patient	1-201	1-90	1-102	1-297	
Gender (Percent)					
Male	18,259 (33.78)	20,370 (35.45)	22,385 (36.29)	39,436 (36.22)	
Female	35,777 (66.2)	37,076 (65,52)	39,290 (63.69)	69,425 (63.76)	
Missing	9 (0.02)	14 (0.02)	15 (0.02)	26 (0.02)	
Age					
Ν	54,043	57,459	61,688	108,884	
Age (SD)	55.89 (14.64)	55.86 (14.45)	55.98 (14.25)	55.21 (14.74)	
Range	0-104	0-104	2-103	0-104	
Prescribers					
Ν	9,470	9,830	11,439	16,709	
Mean number of dispensations	26.53 (53.74)	28.28 (70.59)	27.54 (71.94)	50.52 (146.78)	
Range	1-1,009	1-4,019	1-4,007	1-8,036	

Table 40 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	2,909 (30.72)	2,722 (27.69)	3,769 (32.95)	6,877 (41.16)
Advanced Practice Nurse	1,284 (13.56)	1,538 (15.65)	1,834 (16.03)	2,288 (13.69)
Dentist	15 (0.16)	19 (0.19)	12 (0.10)	38 (0.23)
Physician	4,923 (51.99)	5.175 (52.64)	5,414 (47.33)	6,907 (41.34)
Physician's Assistant	183 (1.93)	219 (2.23)	252 (2.2)	377 (2.26)
Podiatrist	151 (1.59)	151 (1.54)	152 (1.33)	211 (1.26)
Veterinarian	5 (0.05)	6 (0.06)	6 (0.05)	11 (0.07)

#### Suvorexant

Suvorexant is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 26.009 times during the three-year study period with 0 (0 percent), 8,959 (34.45 percent), and 17,050 (65.55 percent) dispensations in 2014, 2015, and 2016 respectively. There were 9,940 patients who received at least one dispensation for suvorexant. The mean number of dispensations was 2.62 (SD=3.22), and the range was from 1 to 33 dispensations. Women comprised a majority (64.92 percent) of the patients during the study period. The average patient age was 51.8 (SD=14.72) with an age range from 3-101. There were 2,775 prescribers who prescribed suvorexant at least once during the three-year study period with a mean number of 9.37 (SD=16.8) times and a range of 1 to 314 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 41.

	2014	2015	2016	Total study period
Dispensations (Percent)	0 (0.00)	8,959 (34.45)	17,050 (65.55)	26,009
Total Quantity Dispensed	0 (0.00)	198,736	455,245	653,981
Total Days Supply	0 (0.00)	203,908	465,909	669,817

Table 41. Descriptive information for all suvorexant dispensations.

Table 41 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	0	4,894	6,066	9,940	
Mean dispensations per patient (SD)	0.00 (-)	1.83 (1.65)	2.81 (2.94)	2.62 (3.22)	
dispensations per patient	-	1-20	1-33	1-33	
Gender (Percent)					
Male	0 (0.00)	1,757 (35.9)	2,053 (33.84)	3.481 (35.02)	
Female	0 (0.00)	3,135 (64.06)	4,009 (66.09)	6,453 (64.92)	
Missing	0 (0.00)	2 (0.04)	4 (0.07)	6 (0.06)	
Age					
Ν	0	4,894	6,065	9,939	
Age (SD)	0.00 (-)	51.67 (14.25)	51.73 (14.89)	51.8 (14.72)	
Range	-	3-96	3-101	3-101	
Prescribers					
Ν	0	2,173	1,811	2,775	
Mean number of dispensations	0.00 (-)	7.85 (12.63)	4.95 (7.63)	9.37 (16.8)	
Range	-	1-209	1-105	1-314	

Table 41 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	0 (0.00)	236 (10.86)	160 (8.83)	352 (12.68)
Advanced Practice Nurse	0 (0.00)	484 (22.27)	311 (17.17)	576 (20.76)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	0 (0.00)	1,409 (64.84)	1,304 (72.01)	1,788 (64.43)
Physician's Assistant	0 (0.00)	44 (2.02)	36 (1.99)	59 (2.13)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Testosterone

Testosterone is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 465,920 times during the three-year study period with 152,819 (32.8 percent), and 148,902 (31.96 percent), and 164,199 (35.24 percent) dispensations in 2014, 2015, and 2016 respectively. There were 66,889 patients who received at least one dispensation for testosterone. The mean number of dispensations was 6.97 (SD=7.26), and the range was from 1 to 119 dispensations. Men comprised a majority (91.84 percent) of the patients during the study period. The average patient age was 52.95 (SD=12.67) with an age range from 0-105. There were 10,432 prescribers who prescribed testosterone at least once during the three-year study period with a mean number of 44.66 (SD=141.71) times and a range of 1 to 6967 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 42.

Table 42. Descriptive information for all testosterone dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	152,819 (32.8)	148,902 (31.96)	164,199 (35.24)	465,920
Total Quantity Dispensed	10,236,100	7,956,418	7,359,040	25,551,558
Total Days Supply	6,306,118	6,054,519	6,673,642	19,034,279

Table 42 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	41,597	37,658	39,139	66,889	
Mean dispensations per patient (SD)	3.67 (3.01)	3.95 (3.1)	4.2 (3.36)	6.97 (7.26)	
dispensations per patient	1-50	1-42	1-40	1-119	
Gender (Percent)					
Male	38,653 (92.92)	34,688 (92.11)	35,854 (91.61)	81,432 (91.84)	
Female	2,934 (7.05)	2,959 (7.86)	3,268 (8.35)	5,433 (8.12)	
Missing	10 (0.02)	11 (0.03)	17 (0.04)	24 (0.04)	
Age					
Ν	41.595	37,657	39,137	66,884	
Age (SD)	53.51 (12.05)	53.69 (12.46)	53.78 (12.76)	52.95 (12.67)	
Range	0-99	0-105	0-100	0-105	
Prescribers					
Ν	6,116	5,884	7,356	10,432	
Mean number of dispensations	24.99 (53.41)	25.3 (73.49)	22.32 (64.02)	44.66 (141.71)	
Range	1-1,441	1-3,970	1-2,995	1-6,967	

Table 42 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	1,937 (31.67)	1,633 (27.75)	2,972 (40.40)	4,723 (45.27)
Advanced Practice Nurse	811 (13.26)	905 (15.38)	1,039 (14.12)	1,391 (13.33)
Dentist	11 (0.18)	9 (0.15)	7 (0.10)	22 (0.21)
Physician	3,269 (53.45)	3,235 (54.98)	3,215 (43.71)	4,130 (39.59)
Physician's Assistant	86 (1.41)	96 91.63)	113 (1.54)	152 (1.46)
Podiatrist	0 (0.00)	1 (0.02)	2 (0.03)	3 (0.03)
Veterinarian	2 (0.03)	5 (0.08)	8 (0.11)	11 (0.11)

## Time-series Analysis for Miscellaneous Population

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for the number of dispensations, quantity dispensed, and days supply of dispensations in the miscellaneous drug class is explained below.

Figures 26 and 27 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 month	h		

Regression wit maximum lag: (	th Newey-West 0	standard er	rors	Number F( 5, Prob >	of obs F	= 30) = =	36 49.84 0.0000
prescripti~l	Coef.	Newey-West Std. Err.	t	P> t	[95%	Conf.	Interval]
_t _x657 x t657	256.2333 -2406.225 364.7274	163.7218 1808.762 233.9747	1.57 -1.33 1.56	0.128 0.193 0.130	-78.13 -6100 -113.3	3111 0.21 1128	590.5978 1287.76 842.5675

-2.70

-0.13

44.37

0.011

0.897

0.000

-5941.233

-436.9625

40434.69

-825.1642

384.6215

44336.11

Postintervention Linear Trend: 657

1252.543

201.1446

955.1645

Treated:  $b[_t]+b[_x_t657]$ 

\_x672

x\_t672

\_cons

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	620.9607	167.1507	3.7150	0.0008	279.5934	962.3280

Postintervention Linear Trend: 672

|--|

-3383.199

-26.1705

42385.4

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	594.7902	111.8918	5.3158	0.0000	366.2767	823.3038

Figure 26. Interrupted time-series analysis for full miscellaneous population total dispensations.



Figure 27. Interrupted time-series graph of dispensations by month for full population.

Dispensations reported to the INSPECT program increased for the months prior to each policy change (p=0.128). After the rescheduling of hydrocodone combination products the number of dispensations decreased in the month immediately after (p=0.192) and then increased for the remaining months after the policy change (p=0.130). The implementation of the policy to change hydrocodone combination products had a significant impact on miscellaneous drug class dispensations and increased the number of dispensations per month by 6.20.96 dispensations (p<0.001, CI [279.59, 962.33]). After the change to the INSPECT reporting requirements, the number of dispensations significantly decreased in the month immediately following the policy change (p=0.011, [-5941.23,-825.16]). In the months following the policy change the number of dispensations also decreased per month; however, the impact was not significant (p=0.897). The implementation of shorter reporting requirements to INSPECT significantly increased the number of miscellaneous dispensations by 594.80 dispensations each month (p<0.001, CI [366.28, 823.20]).

Figures 28 and 29 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively.

cime	variable:	month,	2014m1	to	2016m12
	delta:	1 montl	n		

Regression wi maximum lag:	th Newey-West 0	standard e	errors	Number F( 5, Prob >	of obs F	= 30) = =	36 8.66 0.0000
qty	Coef.	Newey-West Std. Err.	: . t	P> t	[95%	Conf.	Interval]
t	5541.033	13265.2	0.42	0.679	-21550	0.12	32632.18

_t	5541.033	13265.2	0.42	0.679	-21550.12	32632.18
_x657	-181384.2	136519.1	-1.33	0.194	-460193.4	97424.92
x_t657	19246.75	18383.9	1.05	0.303	-18298.19	56791.69
x672	-241859.2	95729.07	-2.53	0.017	-437364	-46354.34
x_t672	18207.69	15240.8	1.19	0.242	-12918.17	49333.55
_cons	3159576	74730.08	42.28	0.000	3006957	3312195

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	2.48e+04	1.27e+04	1.9475	0.0609	-1.21e+03	5.08e+04

Postintervention Linear Trend: 672

Treated:	b[t	]+ b[	x t65	7]+ b[ :	x t672]
					_

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf	. Interval
Treated	4.30e+048383.2868	5.1287	0.0000	2.59e+04	6.01e+04

Figure 28. Interrupted time-series analysis for full miscellaneous population total quantity dispensed.



Figure 29. Interrupted time-series graph of total quantity dispensed by month for full miscellaneous population.

The quantity of products reported to the INSPECT program increased for the months prior to each policy change (p=0.679). After the rescheduling of hydrocodone combination products, the total quantity for dispensations decreased in the month immediately after the policy implementation (p=0.194) and increased for the remaining months after the policy change (p=0.303). The implementation of the policy to change hydrocodone combination products to schedule II did not have a significant impact on the quantity of miscellaneous dispensations (p=0.0609). After the change to the INSPECT reporting requirements, the number of dispensations significantly decreased in the month immediately following the policy change (p=0.017, CI [-437,364, -46,354.34])). In the months following the policy change, the quantity of dispensations increased each month (p=0.242). The change in INSPECT reporting policies significantly increased the quantity of miscellaneous dosage units dispensed each month (p<0.001).

Figures 30 and 31 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

time variable: month, 2014ml to 2016ml2

	delta: 1	month				
Regression wit maximum lag: (	th Newey-West)	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 29.65 0.0000
dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x672 _x672 _cons	7565.233 -94278.52 10729.71 -102977.1 5310.9 1461047	5813.152 62463.57 8236.47 45985.89 7418.861 33273.24	1.30 -1.51 1.30 -2.24 0.72 43.91	0.203 0.142 0.203 0.033 0.480 0.000	-4306.807 -221846.2 -6091.409 -196892.8 -9840.435 1393093	19437.27 33289.11 27550.82 -9061.413 20462.23 1529000

Treated: _b[_t]+_b[_x_t657]						
Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf. Interval]		
Treated	1.83e+045834.9547	3.1354	0.0038	6378.3720 3.02e+04		

Postintervention Linear Trend: 672

Treated:	b [	t]+	b[ x	t657]+	b[	x t672]
				_		_

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	2.36e+044581.7897	5.1521	0.0000	1.42e+04	3.30e+04

Figure 30. Interrupted time-series analysis for full miscellaneous population total days supply of dispensations.



Figure 31. Interrupted time-series graph of total days supply of dispensations by month for full miscellaneous population.

The days supply of products reported to the INSPECT program increased for the months prior to each policy change (p=0.202). After the rescheduling of hydrocodone combination products, the total days supply for dispensations decreased in the month immediately after (p=0.142) and then increased for the remaining months after the policy change (p=0.203). The implementation of the policy to change hydrocodone combination products had a significant impact on increasing the days supply of miscellaneous dispensations (p=0.0038). After the change to the INSPECT reporting requirements, the days supply of dispensations decreased significantly in the month immediately following the policy change (p=0.033, [-196,892.8, -9,061.413]). In the months following the policy change, the days supply of dispensations increased each remaining month of the study period (p=0.480). This policy implementation significantly increased the days supply of miscellaneous dispensed (p<0.001).

## Muscle Relaxants

#### Descriptive Information for Full Muscle Relaxant Population and Each Drug

A controlled substance in the muscle relaxant drug class was dispensed 217,412 times during the three-year study period with 84,253 (38.75 percent), 72,429 (33.31 percent), and 60,830 (27.98

percent) dispensed in 2014, 2015, and 2016 respectively. There were 2 different controlled substances in the muscle relaxant class, and all substances were schedule IV controlled substances. Carisoprodol was the most common muscle relaxant dispensed over the three-year study period with 216,955 (99.97 percent) dispensations, while carisoprodol/aspirin was the least common muscle relaxant dispensed with 457 (0.21 percent) dispensations. A list of the controlled substances and the number of dispensations across each year and during the three-year study period can be found in Table 43.

	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)
Carisoprodol	83,948 (99.64)	72,289 (99.81)	60,718 (99.82)	216,955 (99.97)
Carisoprodol/ aspirin	205 (0.24)	140 (0.19)	112 (0.18)	457 (0.21)
Total	84,253	72,429	60,830	217,412

Table 43. Number of muscle relaxants dispensed each year and during the total study period.

Over the three-year study period, 30,318 patients were dispensed a muscle relaxant with a mean of 7.17 dispensations (SD=10.10) and a range from 1 to 113 dispensations. A majority of the population receiving a muscle relaxant was female (60.12 percent), and the average age was 50.56 (SD=13.59). There were 7,293 prescribers who prescribed a muscle relaxant for dispensing to a patient. The mean was 29.81 (SD=98.23) and a range of 1-2,756 times. Further information on dispensations, patients, and prescribers in the muscle relaxant class can be found in Table 44.

Table 44	Descri	ntive	informa	tion fo	or all	muscle	- rel	ayant a	lisnen	isations
	DUSUI	puve	morma	uon n	JI all	musci		алаті	aispen	isations.

	2014	2015	2016	Total study period
Dispensations (Percent)	84,253 (38.75)	72,429 (33.31)	60,830 (27.98)	217,412
Total Quantity Dispensed	6,537,243	5,555,167	4,678,688	16,771,098
Total Days Supply	2,399,706	2,068,291	1,746,071	6,214,068
Patients				
Ν	18,274	15,241	12,504	30,318
Mean dispensations per patient (SD)	4.61 (4.42)	4.75 (4.45)	4.86 (4.48)	7.17 (10.10)
Range of dispensations per patient	1-45	1-43	1-46	1-113

Table 44 continued.						
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	7,211 (39.46)	5,845 (38.35)	4,788 (38.29)	12,084 (39.86)		
Female	11,062 (60.53)	9,392 (61.62)	7,715 (61.70)	18,228 (60.12)		
Missing	1 (0.01)	4 (0.03)	1 (0.01)	6 (0.02)		
Age						
Ν	18,273	15,240	12,503	30,317		
Age (SD)	51.23 (13.21)	51.65 (13.12)	52.25 (12.88)	50.56 (13.59)		
Range	9-98	12-99	0-100	0-98		
Prescribers						
Ν	4,665	4,261	4,103	7,293		
Mean number of dispensations	18.04 (47.62)	17 (45.84)	14.83 (37.10)	29.81 (98.23)		
Range	1-884	1-1061	1-889	1-2,756		
Prescriber Type						
Unknown	1220 (26.15)	922 (21.64)	922 (22.47)	2,213 (30.34)		
Advanced Practice Nurse	639 (13.70)	646 (15.16)	665 (16.21)	1,120 (15.36)		
Dentist	60 (1.29)	58 (1.36)	50 (1.22)	109 (1.49)		
Physician	2,639 (56.57)	2,530 (59.38)	2,349 (57.25)	3,636 (49.86)		
Physician's Assistant	90 (1.93)	88 (2.07)	103 (2.51)	183 (2.51)		
Podiatrist	15 (0.32)	16 (0.38)	12 (0.29)	27 (0.37)		
Veterinarian	2 (0.04)	1 (0.02)	2 (0.05)	5 (0.07)		

# Carisoprodol

Carisoprodol is a schedule IV controlled substance and was dispensed 216,955 times during the three-year study period with 83,948 (38.69 percent), 72,289 (33.32 percent), and 60,718 (27.99 percent) dispensations in 2014, 2015, and 2016 respectively. There were 30,237 patients who

received at least one dispensation for carisoprodol. The mean number of dispensations was 7.18 (SD=10.09), and the range was from 1 to 113 dispensations. Women comprised a majority (60.12 percent) of the patients during the study period. The average patient age was 50.55 (SD=13.58) with an age range from 0-98. There were 7,285 prescribers who prescribed carisoprodol at least once for dispensing to these patients with a mean number of 29.78 (SD=98.25) times and a range of 1 to 2,756 times. Information on variables within the carisoprodol group across each year and during the three-year study period can be found in Table 45.

	2014	2015	2016	Total study period
Dispensations (Percent)	83,948 (38.69)	72,289 (33.32)	60,718 (27.99)	216,955
Total Quantity Dispensed	6,521,393	5,544,667	4,671,411	16,737,471
Total Days Supply	2,394,726	2,064,800	1,743,227	6,202,753
Patients				
1 atients	10.000	15.005	10.175	
N	18,222	15,205	12,477	30,237
Mean dispensations per patient (SD)	4.61 (4.42)	4.75 (4.45)	4.87 (4.48)	7.18 (10.09)
Range of dispensations per patient	1-45	1-43	1-46	1-113
Gender (Percent)				
Male	7,189 (39.45)	5,832 (38.26)	4,779 (38.3)	12,052 (39.89)
Female	11,032 (60.54)	9,369 (61.62)	7,697 (61.69)	18,179 (60.12)
Missing	1 (0.01)	4 (0.03)	1 (0.01)	6 (0.02)
Age				
Ν	18,221	15,204	12,476	30,236
Age (SD)	51.21 (13.2)	51.64 (13.11)	52.24 (12.87)	50.55 (13.58)
Range	9-98	12-99	0-100	0-98

Table 45. Descriptive information for all carisoprodol dispensations.

Table 45 continued.					
	2014	2015	2016	Total study period	
Prescribers					
Ν	4,656	4,254	4,097	7,285	
Mean number of dispensations	18.03 (47.65)	16.99 (45.87)	14.82 (37.12)	29.78 (98.25)	
Range	1-884	1-1061	1-889	1-2756	
Prescriber Type					
Unknown	1,216 (26.12)	921 (21.65)	920 (22.46)	2,208 (30.31)	
Advanced Practice Nurse	638 (13.7)	664 (15.14)	665 (16.23)	1,119 (15.36)	
Dentist	60 (1.29)	56 (1.32)	49 (1.2)	109 (1.50)	
Physician	2,635 (56.59)	2,528 (59.43)	2,347 (57.29)	3,634 (49.88)	
Physician's Assistant	90 (1.93)	88 (2.07)	102 (2.49)	183 (2.51)	
Podiatrist	15 (0.32)	16 (0.38)	12 (0.29)	27 (0.37)	
Veterinarian	2 (0.04)	1 (0.02)	2 (0.05)	5 (0.07)	

Carisoprodol/aspirin

Carisoprodol/aspirin is a schedule IV controlled substance and was dispensed 457 times during the three-year study period with 205 (44.86 percent), 140 (30.63 percent), and 112 (24.51 percent) dispensations in 2014, 2015, and 2016 respectively. One hundred six patients received at least one dispensation for carisoprodol/aspirin. The mean number of dispensations was 4.31 (SD=11.05), and the range was from 1 to 105 dispensations. Women comprised a majority (59.43 percent) of the patients during the study period. The average patient age was 54.19 (SD=15.15) with an age range from 17 to 87. There were 78 prescribers who prescribed carisoprodol/aspirin at least once for dispensing to these patients with a mean number of 5.86 (SD=12.91) times and a range of 1 to 105 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 46.

	2014	2015	2016	Total study period
Dispensations (Percent)	205 (44.86)	140 (30.63)	112 (24.51)	457
Total Quantity Dispensed	15,850	10,500	7,277	33,627
Total Days Supply	4,980	3,491	2,844	11,315
Patients				
Ν	64	42	30	106
Mean dispensations per patient (SD) Range of	3.2 (5.15)	3.33 (5.6)	3.73 (6.36)	4.31 (11.05)
dispensations per patient	1-36	1-35	1-34	1-105
Gender (Percent)				
Male	27 (42.19)	18 (42.86)	10 (33.33)	43 (40.57)
Female	37 (57.81)	24 (57.14)	20 (66.67)	63 (59.43)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	64	42	30	106
Age (SD)	56.45 (14.88)	57.62 (15.7)	56.03 (15.8)	54.19 (15.15)
Range	17-87	26-81	23-83	17-87
Prescribers				
Ν	50	38	27	78
Mean number of dispensations	4.1 (6.05)	3.68 (5.92)	4.15 (6.45)	5.86 (12.91)
Range	1-36	1-35	1-34	1-105

Table 46. Descriptive information for all carisoprodol/aspirin dispensations.

Table 46 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	8 (16)	3 (7.89)	2 (7.41)	10 (12.82)	
Advanced Practice Nurse	6 (12)	2 (5.26)	2 (7.41)	10 (12.82)	
Dentist	1 (2)	2 (5.26)	1 (3.7)	3 (3.85)	
Physician	35 (70)	31 (81.58)	21 (77.78)	54 (69.23)	
Physician's Assistant	0 (0.00)	0 (0.00)	1 (3.7)	1 (1.28)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

# Time-series Analysis for Muscle Relaxant Population

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply of muscle relaxant dispensations is explained below.

Figures 32 and 33 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.

time	variable:	mo	onth,	2014m1	to	2016m12
	delta:	1	month	1		

Regression wit maximum lag: 1	th Newey-West	standard er	rors	Number F( 5, Prob >	of obs 3 F	= 0) = =	36 313.27 0.0000
		Newey-West					
prescripti~l	Coef.	Std. Err.	t	P> t	[95%	Conf.	Interval]
t	-85.58333	26.52685	-3.23	0.003	-139.7	584	-31.40829
x657	-126.2778	168.5558	-0.75	0.460	-470.5	146	217.959
x t657	27.94762	31.3853	0.89	0.380	-36.14	971	92.04494
	-193.804	118.2711	-1.64	0.112	-435.3	458	47.73777
x t672	-22.56009	15.76214	-1.43	0.163	-54.75	068	9.630499
cons	7465.111	146.428	50.98	0.000	7166.	065	7764.157

Postintervention Linear Trend: 657

ILEALEU. DI LIT DI A LOJ/I	Treated:	bſ	t]+	b[	х	t657]
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Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval
Treated	-57.6357	14.3324	-4.0213	0.0004	-86.9065	-28.3650

Postintervention Linear Trend: 672

Treated:	b[t	]+ b[ x t	:657]+ b[ x t672]

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	-80.1958	7.7366 -	10.3658	0.0000	-95.9960	-64.3956

Figure 32. Interrupted time-series analysis for full muscle relaxant population total dispensations.



Figure 33. Interrupted time-series graph of dispensations by month for full muscle relaxant population.

Dispensations reported to the INSPECT program significantly decreased for the months prior to each policy change (p=0.003, CI [-139.76, -31.41]). After the rescheduling of hydrocodone combination products, the number of dispensations decreased in the month immediately after (p=0.460) and then increased for the remaining months after the policy change (p=0.380). The hydrocodone combination rescheduling policy had a significant impact in decreasing the number of muscle relaxant prescriptions dispensed. This policy led to a 57.64 decrease of muscle relaxant prescriptions per month (p<0.001, CI [-86.91, -28.37]. After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.112). In the months following the policy change, the number of dispensations continued to decrease (p=0.163). The change in INSPECT reporting led to a significant decrease in 80.2 prescriptions per month (p<0.001, CI [-96.00, -64.40]).

Figures 34 and 35 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 mont	h		

Regression wit maximum lag: 1	h Newey-West	standard	errors	Number F( 5, Prob >	of obs F	30)	= =	36 320.97 0.0000

qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	[Interval]
t	-8068.583	1968.81	-4.10	0.000	-12089.43	-4047.737
x657	-4787.794	13624.17	-0.35	0.728	-32612.06	23036.47
x657	3200.926	2366.655	1.35	0.186	-1632.428	8034.281
x672	-15477.84	9510.077	-1.63	0.114	-34900.01	3944.331
t672	-557.6226	1307.185	-0.43	0.673	-3227.25	2112.005
cons	585627.4	11163.85	52.46	0.000	562827.8	608427.1

Postintervention Linear Trend: 657

Treated: _b[_t	t]+_b[_x_t657]			
Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf. Interval]
Treated	-4.87e+031166.7311	-4.1720	0.0002	-7.25e+03 -2.48e+03

Postintervention Linear Trend: 672

Treated: _b[_t	t]+_b[_x_t657]	+_b[_x_t67	2]		
Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	-5.43e+03	728.9738	-7.4424	0.0000	-6.91e+03 -3.94e+03

Figure 34. Interrupted time-series analysis for full muscle relaxant population total quantity dispensed.



Figure 35. Interrupted time-series graph of total quantity dispensed by month for full muscle relaxant population.

The quantity of products reported to the INSPECT program decreased for the months prior to each policy change (p<0.001, CL[-12,089.43, -4,047.74]). After the rescheduling of hydrocodone combination products, the total quantity for dispensations decreased in the month immediately after (p=0.728) and increased for the remaining months after the policy change (p=0.186). The hydrocodone combination rescheduling policy had a significant impact in decreasing the number of muscle relaxant prescriptions dispensed. This policy led to a decrease in muscle relaxant prescriptions per month (p<0.001). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.114). In the months following the policy change, the quantity of dispensations continued to decrease each month (p=0.673). The change in INSPECT reporting led to a significant decrease in the quantity of dispensitions per month (p<0.001).

Figures 36 and 37 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 month	ı		

212829.1 5704.156

Regression wit maximum lag: (	th Newey-West)	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 200.37 0.0000
dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x672 _x_t672	-2517.5 -3013.211 953.5857 -7306.096 -415.6626	995.8647 7385.358 1182.266 4448.769 687.688	-2.53 -0.41 0.81 -1.64 -0.60	0.017 0.686 0.426 0.111 0.550	-4551.327 -18096.12 -1460.924 -16391.69 -1820.109	-483.6729 12069.7 3368.096 1779.503 988.7835

37.31

0.000

201179.7

224478.6

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

\_cons

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	-1.56e+03	637.1868	-2.4544	0.0201	-2.87e+03 -262.6052

Postintervention Linear Trend: 672

Treated:	_b[_t]	+_b[_x	_t657]+_b	[_x_t672]

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	-1.98e+03	258.6653	-7.6530	0.0000	-2.51e+03 -1.45e+03

Figure 36. Interrupted time-series analysis for full muscle relaxant population total days supply of dispensations.



Figure 37. Interrupted time-series graph of total days supply of dispensations by month for full muscle relaxant population.

The days supply of products reported to the INSPECT program decreased significantly for the months prior to each policy change (p=0.017, CI [-4,551.33, -483.67). After the rescheduling of hydrocodone combination products, the total days supply for dispensations decreased in the month immediately after (p=0.686) and increased for the remaining months after the policy change (p=0.426). The hydrocodone combination rescheduling policy had a significant impact in decreasing the number of muscle relaxant prescriptions dispensed. This policy led to a decrease in muscle relaxant prescriptions per month (p=0.0201). After the change to the INSPECT reporting requirements, the days supply of dispensations decreased in the month immediately following the policy change (p=0.111). In the months following the policy change, the days supply of dispensations continued to decrease each remaining month of the study period (p=0.550). The change in INSPECT reporting led to a significant decrease in prescriptions per month (p<0.001).

#### **Opioids**

## Descriptive Information for Full Opioid Population and Each Drug

A controlled substance in the opioid drug class was dispensed 19,961,109 times during the threeyear study period with 6,589,305 (33.01 percent), 6,868,950 (34.31 percent), and 6,502,854 (32.58 percent) dispensed in 2014, 2015, and 2016 respectively. There were 45 different controlled substances in the opioid class, and there were substances in all schedules. Hydrocodone/acetaminophen was the most common opioid dispensed over the three-year study period with 19,961,109 (50.67 percent) dispensations, while four products tied (codeine/brompheniramine/pseudoephedrine, codeine/chlorpheniramine/pseudoephedrine, codeine/dexchlorpheniramine/phenylephrine, and remifentanil) least common benzodiazepine dispensed with only 1 (0.00 percent) dispensation each. A list of the opioid controlled substances and the number of dispensations across each year and during the three-year study period can be found in Table 47.

Table 47. Oploid dispensations by year and during the total study period.						
	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)		
Buprenorphine	59,508 (0.9)	58,675 (0.85)	58,306 (0.9)	176,489 (0.88)		
Buprenorphine/naloxone	234,730 (3.56)	224,455 (3.27)	239,110 (3.68)	698,295 (3.5)		
Butorphanol	4,317 (0.07)	3,828 (0.06)	3,697 (0.06)	11,842 (0.06)		
Codeine	1,149 (0.02)	1,282 (0.02)	1,282 (0.02)	3,713 (0.02)		
Codeine/acetaminophen	188,448 (2.86)	209,035 (3.04)	200,417 (3.09)	597,900 (3.0)		
Codeine/brompheniramine/ pseudoephedrine	0 (0.00)	1 (0.00)	0 (0.00)	1 (0.00)		
Codeine/chlorpheniramine	327 (0.00)	329 (0.00)	1,550 (0.02)	2,206 (0.01)		
Codeine/chlorpheniramine/ pseudoephedrine	1 (0.00)	0 (0.00)	0 (0.00)	1 (0.00)		
Codeine/dexchlorpheniramine/ phenylephrine	0 (0.00)	0 (0.00)	1 (0.00)	1 (0.00)		
Codeine/guaifenesin	128,691 (1.95)	127,792 (1.86)	124,965 (1.92)	381,448 (1.91)		
Codeine/guaifenesin/ pseudoephedrine	1,810 (0.03)	1,457 (0.02)	1,275 (0.02)	4,542 (0.02)		
Codeine/promethazine	78,563 (1.19)	73,742 (1.07)	68,739 (1.06)	221,044		
Codeine/promethazine/ phenylephrine	8,330 (0.13)	6,075 (0.09)	4,631 (0.07)	19,036 (0.1)		
Dihydrocodeine/aspirin/caffeine	31 (0.00)	10 (0.00)	7 (0.00)	48 (0.00)		
Fentanyl	149,844 (2.27)	146,177 (2.13)	141,096 (2.17)	437,117 (2.19)		
Hydrocodone	1,611 (0.02)	4,885 (0.07)	5,591 (0.09)	12,087 (0.06)		
Hydrocodone/acetaminophen	3,722,525 (56.49)	3,354,501 (48.84)	3,037,738 (46.71)	10,114,764 (50.67)		
Hydrocodone/chlorpheniramine	66,219 (1.0)	52,354 (0.76)	46,167 (0.71)	164,740 (0.83)		
Hydrocodone/chlorpheniramine/ pseudoephedrine	1,767 (0.00)	131 (0.00)	38 (0.00)	1,936 (0.01)		
Hydrocodone/guaifenesin	0 (0.00)	6 (0.00)	51 (0.00)	57 (0.00)		
Hydrocodone/guaifenesin/ pseudoephedrine	0 (0.00)	7 (0.00)	119 (0.00)	126 (0.00)		
Hydrocodone/homatropine	20,988 (0.32)	15,822 (0.23)	12,580 (0.19)	49,390 (0.25)		
Hydrocodone/ibuprofen	40,764 (0.62)	29,773 (0.43)	25,220 (0.39)	95,757 (0.48)		
Hydrocodone/pseudoephedrine	238 (0.00)	8 (0.00)	1 (0.00)	247 (0.00)		

Table 47. Opioid dispensations by year and during the total study period.

Table 47 continued.						
	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)		
Hydromorphone	52,053 (0.79)	52,407 (0.76)	50,288 (0.77)	154,748 (0.77)		
Levorphanol	2,179 (0.03)	1,930 (0.03)	1,001 (0.02)	5,110 (0.03)		
Meperidine	4,407 (0.07)	3,316 (0.05)	2,807 (0.04)	10,530 (0.05)		
Methadone	98,420 (1.49)	90,589 (1.32)	79,119 (1.22)	268,128 (1.34)		
Morphine	250,786 (3.81)	247,239 (3.6)	241,037 (3.71)	739,062 (3.7)		
Morphine/naltrexone	0 (0.00)	733 (0.01)	2,261 (0.03)	2,994 (0.01)		
Opium	1,396 (0.02)	1,464 (0.02)	1,435 (0.02)	4,295 (0.02)		
Opium/belladonna	370 (0.01)	367 (0.01)	306 (0.00)	1,043 (0.01)		
Oxycodone	334,521 (5.08)	342,486 (4.99)	342,145 (5.26)	1,019,152 (5.11)		
Oxycodone/acetaminophen	668,782 (10.15)	718,762 (10.46)	724,226 (11.14)	2,111,770 (10.58)		
Oxycodone/aspirin	442 (0.01)	382 (0.01)	242 (0.00)	1,066 (0.01)		
Oxycodone/ibuprofen	324 (0.00)	64 (0.00)	50 (0.00)	438 (0.00)		
Oxymorphone	29,833 (0.45)	27,308 (0.4)	25,300 (0.38)	82,441 (0.41)		
Paregoric	137 (0.00)	83 (0.00)	45 (0.00)	265 (0.00)		
Pentazocine/acetaminophen	85 (0.00)	0 (0.00)	0 (0.00)	85 (0.00)		
Pentazocine/naloxone	3,226 (0.05)	2,582 (0.04)	1,978 (0.03)	7,786 (0.04)		
Remifentanil	1 (0.00)	0 (0.00)	0 (0.00)	1 (0.00)		
Sufentanil	12 (0.00)	15 (0.00)	1 (0.00)	28 (0.00)		
Tapentadol	20,204 (0.31)	21,519 (0.31)	21,512 (0.33)	63,235 (0.32)		
Tramadol	395,648 (6.0)	1,008,944 (14.69)	1,001,942 (15.41)	2,406,534 (12.06)		
Tramadol/acetaminophen	16,618 (0.25)	38,415 (0.56)	34,578 (0.53)	89,611 (0.45)		
Total	6,589,305	6,868,950	6,502,854	19,961,109		

Over the three-year study period, 3,464,660 patients were dispensed an opioid with a mean of 5.76 dispensations (SD=11.20) and a range from 1 to 800 dispensations. The average patient's age was 46.3 (SD-20.32), and the range was 0 to 110. 77,064 prescribers prescribed an opioid for dispensing to a patient in the population with a mean of 259.02 (SD=1,283.17). Further

information on dispensations, patients, and prescribers for the opioid drug class can be found in Table 48.

	2014	2015	2016	Total study period
Dispensations (Percent)	6,589,305 (33.01)	6,868,950 (34.31)	6,502,854 (32.58)	19,961,109
Total Quantity Dispensed	474,891,419	506,058,309	475,997,245	1,456,946,973
Total Days Supply	115,853,278	126,319,090	121,182,364	363,354,731
Patients				
N	1,765,201	1,816,445	1,708,790	3,464,660
Mean dispensations per patient (SD)	3.73 (5.46)	3.78 (5.37)	3.81 (5.34)	5.76 (11.20)
Range of dispensations per patient	1-355	1-471	1-319	1-927
Gender (Percent)				
Male	761,890 (43.16)	791,459 (43.57)	741,716 (43.41)	1,554,528 (44,87)
Female	1,002,580 (56.8)	1,023,968 (56.37)	966,006 (56.53)	1,907,943 (55.07)
Missing	731 (0.04)	1,018 (0.06)	1,068 (0.06)	2,189 (0.06)
Age				
N	1,765,156	1,816,401	1,708,742	3,464,537
Age (SD)	47.55 (19.70)	48.24 (19.70)	48.99 (19.71)	46.3 (20.32)
Range	0-108	0-109	0-110	0-110
Prescribers				
Ν	47,604	46,974	48,609	77,064
Mean number of dispensations	138.42 (529.31)	146.23 (620.145)	133.78 (557.9)	259.02 (1,283.17)
Range	1-23,127	1-55,283	1-40,311	1-95,660

Table 48. Descriptive information for all opioid dispensations.

Table 48 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	26,686 (60.26)	26,630 (56.69)	27,132 (55.82)	53,274 (69.13)	
Advanced Practice Nurse	3,038 (6.38)	3.451 (7.35)	3,928 (8.08)	4,334 (5.62)	
Dentist	2,728 (5.73)	2,807 (5.98)	2,895 (5.96)	3,061 (3.97)	
Physician	11,578 (24.32)	12,219 (26.01)	12,639 (26)	14,175 (18.39)	
Physician's Assistant	656 (1.38)	779 (1.66)	878 (1.81)	921 (1.20)	
Podiatrist	255 (0.54)	268 (0.57)	278 (0.57)	302 (0.39)	
Veterinarian	663 (1.39)	820 (1.75)	859 (1.77)	997 (1.29)	

## Buprenorphine

Buprenorphine is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 176,489 times during the three-year study period to 15,792 individuals. The mean number of dispensations was 11.18 (SD=21.06), and the range was from 1 to 356 dispensations. The average patient age was 44.82 (SD=17.48) with an age range from 0-106. There were 3,004 prescribers who prescribed buprenorphine at least once for dispensing to these patients with a mean 58.76 (300.89) and a range of 1 to 10,501 times. Descriptive information for dispensations, patients, and prescribers across each year and during the three-year study period can be found in Table 49.

Table 49. Descriptive information for all buprenorphine dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	59,508 (33.72)	58,675 (33.25)	58,306 (33.04)	176,489
Total Quantity Dispensed	1,506,478	1,623,357	1,528,320	4,658,155
Total Days Supply	1,009,179	1,085,031	1,095,803	3,190,013
Patients				
Ν	7,299	7,498	7,626	15,792
Mean dispensations per patient (SD)	8.15 (12.91)	7.83 (10.88)	7.65 (11.02)	11.18 (21.06)
Range of dispensations per patient	1-210	1-176	1-199	1-356

Table 49 continued.						
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	3,121 (42.76)	3,214 (42.86)	2,994 (39.26)	6,389 (40.46)		
Female	4,174 (57.19)	4,279 (57.07)	4,628 (60.69)	9,392 (59.47)		
Missing	4 (0.05)	5 (0.07)	4 (0.05)	11 (0.07)		
Age						
Ν	7,298	7,497	7,626	15,791		
Age (SD)	44.14 (17.12)	43.87 (17.01)	45.58 (16.96)	44.82 (17.48)		
Range	0-106	0-100	0-106	0-106		
Prescribers						
Ν	1,729	1,705	1,716	3,004		
Mean number of dispensations	34.42 (134.67)	34.41 (144.66)	33.98 (144.93)	58.75 (300.89)		
Range	1-2,925	1-3,974	1-3,602	1-10,501		
Prescriber Type						
Unknown	725 (41.93)	677 (39.71)	615 (35.84)	1,277 (42.51)		
Advanced Practice Nurse	187 (10.82)	188 (11.03)	222 (12.94)	371 (12.35)		
Dentist	3 (0.17)	3 (0.18)	1 (0.06)	5 (0.17)		
Physician	784 (45.34)	788 (46.22)	819 (47.73)	1,265 (42.11)		
Physician's Assistant	21 (1.21)	29 (1.7)	32 (1.86)	43 (1.43)		
Podiatrist	2 (0.12)	0 (0.00)	0 (0.00)	2 (0.07)		
Veterinarian	7 (0.4)	20 (1.17)	27 (1.57)	41 (1.36)		

# Buprenorphine/naloxone

Buprenorphine/naloxone is a schedule III controlled substance (Wolters-Kluwer, 2019). It was dispensed 698,295 times during the three-year study period with 234,730 (33.61 percent), 224,455 (32.14 percent), and 239,110 dispensations (42.24 percent) in 2014, 2015, and 2016 respectively.

The mean number of dispensations was 18.97 (SD=30.33), and the range was from 1 to 927 dispensations. Men comprised a majority (56.49 percent) of the patients during the study period. Prescribers prescribed buprenorphine/naloxone an average of 247.97 times (SD=846.51) and a range of 1 to 25,395 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 50.

Table 50. Descriptive information for all buprenorphine/naloxone dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	234,730 (33.61)	224,455 (32.14)	239,110 (42.24)	698,295	
Total Quantity Dispensed	5,926,605	6,001,534	6,525,114	18,453,253	
Total Days Supply	3,225,397	3,333,781	3,728,167	10,287,345	
Patients					
Ν	18,866	19,251	21,939	36,814	
Mean dispensations per patient (SD)	12.44 (17.16)	11.66 (15.28)	10.9 (13.2)	18.97 (30.33)	
Range of dispensations per patient	1-354	1-443	1-319	1-927	
Gender (Percent)					
Male	10,723 (56.84)	11,092 (57.62)	12,522 (57.08)	20,962 (56.94)	
Female	8,140 (43.15)	8,155 (42.36)	9,411 (42.9)	15,841 (43.03)	
Missing	3 (0.02)	4 (0.02)	6 (0.03)	11 (0.03)	
Age					
Ν	18,863	19,250	21,937	36,810	
Age (SD)	36.8 (11.07)	37.27 (11.05)	37.38 (10.84)	36.35 (10.88)	
Range	0-91	0-92	0-94	0-94	

		Table 50 continued	•	
	2014	2015	2016	Total study period
Prescribers				
Ν	1,654	1,539	1,479	2,816
Mean number of dispensations	141.92 (381.79)	145.84 (388.64)	161.67 (443.56)	247.97 (846.51)
Range	1-4,640	1-4,938	1-5,976	1-15,395
Prescriber Type				
Unknown	1,201 (72.61)	1,058 (68.75)	965 (65.25)	2,020 (71.73)
Advanced Practice Nurse	40 (2.42)	40 (2.6)	43 (2.91)	88 (3.13)
Dentist	1 (0.06)	2 (0.13)	1 (0.07)	3 (0.11)
Physician	400 (24.18)	426 (27.68)	460 (31.1)	686 (24.86)
Physician's Assistant	11 (0.067)	12 (0.78)	9 (0.61)	18 (0.64)
Podiatrist	1 (0.06)	1 (0.06)	1 (0.07)	1 (0.04)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Butorphanol

Butorphanol is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 11,842 times during the three-year study period. There were 1,002 patients who received at least one dispensation for butorphanol. The mean number of dispensations was 11.92 (SD=19.22) with a range from 1 to 190 dispensations. Women comprised a majority (76.55 percent) of the patients during the study period. The average number of times butorphanol was prescribed for dispensing was 14.27 (SD=28.95), and a range of 1 to 409 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 51.

Table 51. Descriptive information for all butorphanol dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	4,317 (36.45)	3,828 (32.33)	3,697 (31.22)	11,842
Total Quantity Dispensed	20,562	17,240	17,486	55,288
Total Days Supply	78,228	78,274	71,289	227,791

Table 51 continued.				
	2014	2015	2016	Total study period
Patients				
Ν	599	528	520	1,002
Mean dispensations per patient (SD) Range of	7.21 (8.82)	7.25 (8.08)	7.11 (8.14)	11.82 (19.22)
dispensations per patient	1-65	1-58	1-67	1-190
Gender (Percent)				
Male	132 (22.04)	117 (22.16)	118 (22.69)	234 (23.35)
Female	467 (77.96)	411 (77.84)	401 (77.12)	767 (76.55)
Missing	0 (0.00)	0 (0.00)	1 (0.19)	1 (0.1)
Age				
Ν	598	528	520	1,001
Age (SD)	47.77 (13.65)	48.83 (13.59)	48.96 (13.65)	46.79 (14.24)
Range	5-88	3-100	0-90	0-100
Prescribers				
Ν	508	446	432	830
Mean number of dispensations	8.5 (13.06)	8.58 (12.6)	8.56 (13.12)	14.27 (28.95)
Range	1-109	1-136	1-164	1-409

Table 51 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	117 (23.03)	72 (16.14)	73 (16.9)	195 (23.49)
Advanced Practice Nurse	68 (13.39)	64 (14.35)	66 (15.28)	128 (15.42)
Dentist	2 (0.39)	1 (0.22)	1 (0.23)	3 (0.36)
Physician	314 (61.81)	299 (67.04)	281 (65.05)	485 (58.43)
Physician's Assistant	5 (0.98)	7 (1.57)	8 (1.85)	14 (1.69)
Podiatrist	1 (0.2)	3 (0.67)	2 (0.46)	3 (0.36)
Veterinarian	1 (0.2)	0 (0.00)	1 (0.23)	2 (0.24)

# Codeine

Codeine, a schedule II controlled substance, (Wolters-Kluwer, 2019) was dispensed 3,713 times during the three-year study period to 986 patients. The mean number of dispensations was 3.77 (SD=8.22), and the range was from 1 to 127 dispensations. There were 866 prescribers who prescribed codeine at least once for dispensing to these patients and an average of 4.29 (SD=9.78). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 52.

	2014	2015	2016	Total study period
Dispensations (Percent)	1,149 (30.95)	1,282 (34.53)	1,282 (34.53)	3,713
Total Quantity Dispensed	107,450	111,492	110,610	329,552
Total Days Supply	27,588	29,897	30,128	87,613

Table 52. Descriptive information for all codeine dispensations.

Table 52 continued.				
	2014	2015	2016	Total study period
Patients				
Ν	408	423	387	986
Mean dispensations per patient (SD) Range of	2.82 (3.67)	3.3 (3.97)	3.31 (5.37)	3.77 (8.22)
dispensations per patient	1-36	1-36	1-79	1-127
Gender (Percent)				
Male	163 (39.95)	182 (43.03)	176 (45.48)	418 (42.39)
Female	243 (559.56)	240 (56.74)	208 (53.75)	562 (57.00)
Missing	2 (0.49)	1 (0.24)	3 (0.76)	6 (0.61)
Age				
Ν	408	423	387	986
Age (SD)	57 (18.32)	57.91 (17.66)	57.06 (19.44)	55.83 (19.03)
Range	3-93	1-95	5-98	1-98
Prescribers				
Ν	412	389	372	866
Mean number of dispensations	2.79 (3.77)	3.3 (7.11)	3.45 (5.34)	4.29 (9.78)
Range	1-32	1-120	1-63	1-183
Table 52 continued.				
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	2014	2015	2016	Total study period
Prescriber Type				
Unknown	62 (15.05)	53 (13.62)	35 (9.41)	115 (13.28)
Advanced Practice Nurse	52 (12.62)	52 (13.37)	57 (15.32)	121 (13.97)
Dentist	6 (1.46)	3 (0.77)	0 (0.00)	9 (1.04)
Physician	278 (67.48)	267 (68.64)	262 (70.43)	582 (67.21)
Physician's Assistant	9 (2.18)	7 (1.8)	9 (2.42)	20 (2.31)
Podiatrist	1 (0.24)	3 (0.77)	3 (0.810	6 (0.69)
Veterinarian	4 (0.97)	4 (1.03)	6 (1.61)	13 (1.5)

Codeine/acetaminophen

Codeine/acetaminophen is a schedule III controlled substance (Wolters-Kluwer, 2019). It was dispensed 597,900 times during the three-year study period with 188,448 (31.52 percent), 209,035 (34.96 percent), and 200,417 dispensations (33.52 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 1.71 (SD=2.97) to 350,256 patients. The average patient age was 40.92 (SD=22.24). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 53.

	2014	2015	2016	Total study period
Dispensations (Percent)	188,448 (31.52)	209,035 (34.96)	200,417 (33.52)	597,900
Total Quantity Dispensed	9,768,067	10,489,941	10,038,982	30,296,990
Total Days Supply	1,843,243	2,137,301 2,180,747		6,161,291
Patients				
Ν	125,015	137,679	128,424	350,256
Mean dispensations per patient (SD)	1.51 (1.72)	1.52 (1.73)	1.56 (1.85)	1.71 (2.97)
Range of dispensations per patient	1-52	1-53	1-52	1-157

Table 53. Descriptive information for all codeine/acetaminophen dispensations.

Table 53 continued.						
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	47,103 (37.68)	53,516 (33.87)	50,004 (39.94)	138,069 (39.42)		
Female	77,890 (62.3)	84,141 (61.11)	78,400 (61.05)	212,132 (60.56)		
Missing	22 (0.02)	22 (0.02)	20 (0.02)	55 (0.02)		
Age						
Ν	125,014	137,675	128,423	350,250		
Age (SD)	40.81 (22.99)	42.2 (22.14)	43.06 (21.94)	40.92 (22.24)		
Range	0-104	0-105	0-105	0-105		
Prescribers						
Ν	15,312	15,885	15,377	24,364		
Mean number of dispensations	12.31 (27.85)	13.16 (37.56)	13.03 (41.07)	24.54 (79.45)		
Range	1-867	1-1,874	1-1,919	1-4,353		
Prescriber Type						
Unknown	4,380 (28.61)	4,467 (28.12)	3,922 (25.51)	9,109 (37.39)		
Advanced Practice Nurse	1,454 (9.5)	1,646 (10.36)	1,770 (11.51)	2,528 (10.38)		
Dentist	2,105 (13.75)	2,183 (13.74)	2,190 (14.24)	2,667 (10.95)		
Physician	6,774 (44.24)	6,890 (43.37)	6,776 (44.07)	9,118 (37.42)		
Physician's Assistant	391 (2.55)	454 (2.86)	498 (3.24)	646 (2.65)		
Podiatrist	180 (1.18)	207 (1.3)	191 (1.24)	239 (0.98)		
Veterinarian	28 (0.18)	38 (0.24)	30 (0.2)	57 (0.23)		

Codeine/brompheniramine/pseudoephedrine

Codeine/brompheniramine/pseudoephedrine is a schedule V controlled substance (Wolters-Kluwer, 2019) and was dispensed one time to one, 46-year-old patient during the three-year study period in 2015. Information on codeine/brompheniramine/pseudoephedrine can be found in Table 54.

		dispensations.		
	2014	2015	2016	Total study period
Dispensations (Percent)	0 (0.00)	1 (100)	0 (0.00)	1 (100)
Total Quantity Dispensed	0	473	0	473
Total Days Supply	0	16	0	16
Patients				
Ν	0	1	0	1
Mean dispensations per patient (SD) Range of	0.00 (-)	1 (-)	0.00 (-)	1 (-)
dispensations per patient	-	-	-	-
Gender (Percent)				
Male	0 (0.00)	1	0 (0.00)	1 (100)
Female	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	0	1	0	1
Age (SD)	0.00 (-)	46 (-)	0.00 (-)	46 (-)
Range	-	-	-	-
Prescribers				
Ν	0	1	0	1
Mean number of dispensations	0.00 (-)	1 (-)	0.00 (-)	1 (-)
Range	-	-	-	-

Table 54. Descriptive information for all codeine/brompheniramine/pseudoephedrine dispensations.

Table54 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	0 (0.00)	1 (100)	0 (0.00)	1 (100)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

Codeine/chlorpheniramine

Codeine/chlorpheniramine is a schedule V controlled substance (Wolters-Kluwer, 2019) and was dispensed 2,206 times during the three-year study period to 1,895 patients. The mean number of dispensations was 1.16 (SD=0.72), and the range was from 1 to 19 dispensations. The average patient age was 47.31 (SD=15.74). Two hundred thirty-five prescribers prescribed codeine/chlorpheniramine an average of 9.39 times (SD=40.13). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 55.

Total study 2014 2016 2015 period **Dispensations** (Percent) 327 (14.82) 329 (14.91) 1,550 (70.26) 2,206 Total Quantity Dispensed 59,599 57,587 231,727 348,913 **Total Days Supply** 1,873 2,231 12,597 16,701 Patients 274 284 Ν 1,390 1,895 Mean dispensations per 1.19 (0.53) 1.16 (0.48) 1.12 (0.63) 1.16 (0.72) patient (SD) Range of dispensations 1-6 1-4 1-19 1-19 per patient

Table 55. Descriptive information for all codeine/chlorpheniramine dispensations.

Table 55 continued.						
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	131 (47.81)	111 (39.08)	551 (39.64)	773 (40.79)		
Female	143 (52.19)	173 (60.92)	839 (60.36)	1,122 (59.21)		
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Age						
Ν	274	284	1,390	1,895		
Age (SD)	51.57 (19.35)	52.51 (17.37)	45.55 (14.23)	47.31 (15.74)		
Range	3-93	3-92	5-95	3-93		
Prescribers						
Ν	59	73	161	235		
Mean number of dispensations	5.54 (12.79)	4.51 (10.83)	9.63 (44.75)	9.39 (40.13)		
Range	1-69	1-74		1-552		
Prescriber Type						
Unknown	14 (23.73)	10 (13.70)	13 (8.07)	31 (13.19)		
Advanced Practice Nurse	6 (10.17)	8 (10.96)	43 (26.71)	50 (21.28)		
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Physician	37 (62.71)	49 (67.12)	88 (54.66)	135 (57.45)		
Physician's Assistant	2 (3.39)	6 (8.22)	17 (10.56)	19 (8.09)		
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

Codeine/chlorpheniramine/pseudoephedrine

Codeine/chlorpheniramine/pseudoephedrine is a schedule V controlled substance (Wolters-Kluwer, 2019) and was dispensed one time to a 57-year-old patient in 2014. Information on codeine/brompheniramine/pseudoephedrine can be found in Table 56.

	2014	2015	2016	Total study period
Dispensations (Percent)	1 (100)	0 (0.00)	0 (0.00)	1 (100)
Total Quantity Dispensed	120	0	0	120
Total Days Supply	4	0	0	4
Patients				
Ν	1	0	0	
Mean dispensations per patient (SD) Range of	1 (-)	0.00 (-)	0.00 (-)	
dispensations per patient	-	-	-	-
Gender (Percent)				
Male	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Female	1 (100)	0 (0.00)	0 (0.00)	1 (100)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	1	0	0	1
Age (SD)	57 (-)	0.00 (-)	0.00 (-)	57 (-)
Range	-	-	-	-
Prescribers				
Ν	1	0	0	1
Mean number of dispensations	1 (-)	0.00 (-)	0.00 (-)	1 (-)
Range	-	-	-	-

 Table 56. Descriptive information for all codeine/chlorpheniramine/pseudoephedrine dispensations.

Table 56 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	1 (100)	0 (0.00)	0 (0.00)	1 (100)
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

Codeine/dexchlorpheniramine/phenylephrine

Codeine/dexchlorpheniramine/phenylephrine is a schedule V controlled substance (Wolters-Kluwer, 2019) that was dispensed one time to a 50-year-old patient in 2016. Information on codeine/brompheniramine/pseudoephedrine can be found in Table 57.

	dispensations.			
	2014	2015	2016	Total study period
Dispensations (Percent)	0 (0.00)	0 (0.00)	1 (100)	1 (100)
Total Quantity Dispensed	0	0	100	100
Total Days Supply	0	0	4	4
Patients				
Ν	0	0		
Mean dispensations per patient (SD)	0.00 (-)	0.00 (-)		
Range of dispensations per patient	-	-	-	-

Table 57. Descriptive information for all codeine/dexchlorpheniramine/phenylephrine dispensations

Table 57 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Female	0 (0.00)	0 (0.00)	1 (100)	1 (100)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	0	0	1	1	
Age (SD)	0.00 (-)	0.00 (-)	50.00 (-)	50.00 (-)	
Range	-	-	-	-	
Prescribers					
Ν	0	0	1	1	
Mean number of dispensations	0.00 (-)	0.00 (-)	1 (-)	1 (-)	
Range	-	-	-	-	
Prescriber Type					
Unknown	0 (0.00)	0 (0.00)	1 (100)	1 (100)	
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

Codeine/guaifenesin

Codeine/guaifenesin is a schedule V controlled substance. (Wolters-Kluwer, 2019) It was dispensed 381,448 times during the three-year study period to 290,289 patients. The mean number of dispensations was 1.31 (SD=1.01) Over 12,000 prescribers prescribed codeine/guaifenesin at

least once for dispensing to these patients with a mean 31.21 (SD=90.13). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 58.

Table 58. Descriptive information for all codeine/guaifenesin dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	128,691 (33.73)	127,792 (33.5)	124,965 (32.76)	381,448	
Total Quantity Dispensed	20,779,853	20,739,257	20,698,841	62,217,951	
Total Days Supply	884,785	877,065	876,523	2,638,373	
Patients					
Ν	109,349	108,498	105,848	290,289	
Mean dispensations per patient (SD)	1.18 (0.65)	1.18 (0.63)	1.18 (0.65)	1.31 (1.01)	
Range of dispensations per patient	1-35	1-23	1-33	1-57	
Gender (Percent)					
Male	41,940 (38.35)	41,481 (38.23)	39,936 (37.73)	111,859 (38.53)	
Female	67,392 (61.63)	67,000 (61.75)	65,893 (62.25)	178,383 (61.45)	
Missing	17 (0.02)	17 (0.02)	19 (0.02)	47 (0.02)	
Age					
Ν	109,349	108,494	105,848	290,285	
Age (SD)	46.52 (19.72)	48.19 (19.25)	49.02 (18.74)	47.28 (19.32)	
Range	0-103	0-105	0-106	0-105	
Prescribers					
Ν	7,447	7,622	7,459	12,223	
Mean number of dispensations	17.28 (40.4)	16.77 (38.82)	16.75 (41.32)	31.21 (90.13)	
Range	1-781	1-728	1-836	1-2,271	

Table58 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	1,654 (22.21)	1,446 (18.97)	1,191 (15.97)	3,189 (26.09)	
Advanced Practice Nurse	1,365 (18.33)	1,571 (20.61)	1,697 (22.75)	2,312 (18.92)	
Dentist	28 (0.38)	28 (0.37)	30 (0.40)	75 (0.61)	
Physician	4,147 (55.69)	4,284 (56.21)	4,230 (56.71)	6,202 (50.74)	
Physician's Assistant	229 (3.08)	268 (3.52)	291 (3.9)	390 (3.19)	
Podiatrist	8 (0.11)	8 (0.1)	5 (0.07)	21 (0.17)	
Veterinarian	16 (0.21)	17 (0.22)	15 (0.2)	34 (0.28)	

Codeine/guaifenesin/pseudoephedrine

Codeine/guaifenesin/pseudoephedrine is a schedule V controlled substance (Wolters-Kluwer, 2019) and was dispensed 4,542 times during the three-year study period with 1,810 (39.85 percent), 1,457 (32.08 percent), and 1,275 (28.07 percent) dispensations in 2014, 2015, and 2016 respectively. The mean number of dispensations was 2.29 (SD=0.74), and the range was from 1 to 24 dispensations. Seven hundred eighty-six prescribers prescribed codeine/guaifenesin/pseudoephedrine at least once for dispensing to these patients with a mean of 5.78 (SD=20.04). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 59.

Table 59	Descr	intive	in	format	ion	for a	a11	code	ine	/guai	fenes	sin/	nseud	oen	hec	Irine	dis	nensa	tions.	
1 uoie 5 2		ipu v	111	IoIIIIuu	IOII	101 0	*11	couc	1110	Suui	TOHOU	,111/	pocuu	υep	nec		and	pensu	uono.	

	2014	2015	2016	Total study period
Dispensations (Percent)	1,810 (39.85)	1,457 (32.08)	1,275 (28.07)	4,542
Total Quantity Dispensed	306,569	253,995	222,101	782,665
Total Days Supply	12,392	9,776	8,261	30,429
Patients				
Ν	1,613	1,284	1,115	3,830
Mean dispensations per patient (SD)	1.12 (0.41)	1.13 (0.51)	1.14 (0.7)	1.19 (0.74)
Range of dispensations per patient	1-6	1-8	1-17	1-24

Table 59 continued.							
	2014	2015	2016	Total study period			
Gender (Percent)							
Male	670 (41.54)	494 (38.47)	408 (36.59)	1,499 (39.14)			
Female	943 (58.46)	789 (61.45)	707 (63.41)	2,330 (60.84)			
Missing	0 (0.00)	1 (0.08)	0 (0.00)	1 (0.03)			
Age							
Ν	1,613	1,284	1,115	3,830			
Age (SD)	46.64 (18.69)	46.72 (18.95)	48.65 (17.89)	47.05 (18.52)			
Range	0-95	2-96	5-99	0-99			
Prescribers							
Ν	399	334	324	786			
Mean number of dispensations	4.54 (12.58)	4.36 (11.16)	3.94 (9.65)	5.78 (20.04)			
Range	1-178	1-91	1-93	1-272			
Prescriber Type							
Unknown	65 (16.29)	37 (11.08)	21 (6.48)	104 (13.23)			
Advanced Practice Nurse	54 (13.53)	67 (20.06)	67 (20.68)	146 (18.58)			
Dentist	0 (0.00)	1 (0.3)	0 (0.00)	1 (0.13)			
Physician	274 (68.67)	221 (66.17)	227 (70.06)	518 (65.9)			
Physician's Assistant	6 (1.5)	8 (2.4)	9 (2.78)	17 (2.16)			
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			

## Codeine/promethazine

Codeine/promethazine, a schedule V controlled substance, (Wolters-Kluwer, 2019) was dispensed 221,044 times during the three-year study period to 150,578 patients. The mean number of dispensations was 1.47 (SD=1.82), and the range was from 1 to 106 dispensations.

Codeine/promethazine was prescribed for dispensing by 8,020 prescribers an average of 27.56 times (SD=104.75). Dispensation, patient, and prescriber descriptive information can be found in Table 60.

Table 60. Descriptive information for all codeine/promethazine dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	78,563 (35.54)	73,742 (33.36)	68,739 (31.1)	221,044	
Total Quantity Dispensed	12,817,685	10,057,547	11,231,421	36,106,653	
Total Days Supply	648,985	631,553	614,209	1,894,747	
Patients					
Ν	60,714	57,574	53,070	150,578	
Mean dispensations per patient (SD)	1.29 (1.08)	1.28 (1.08)	1.3 (1.14)	1.47 (1.82)	
Range of dispensations per patient	1-40	1-36	1-41	1-106	
Gender (Percent)					
Male	22,636 (37.28)	21,364 (37.11)	19,459 (36.67)	56,521 (37.54)	
Female	38,070 (67.7)	36,199 (62.87)	33,604 (63.32)	94,033 (62.45)	
Missing	8 (0.01)	11 (0.02)	7 (0.01)	24 (0.02)	
Age					
Ν	60,714	57,573	53,070	150,577	
Age (SD)	47.41 (19.14)	48.69 (18.79)	49.17 (18.37)	47.67 (18.86)	
Range	0-104	0-105	0-104	0-104	
Prescribers					
Ν	4,810	4,612	4,582	8,020	
Mean number of dispensations	16.33 (48.92)	15.99 (47.1)	15 (46.35)	27.56 (104.75)	
Range	1-1,159	1-1,138	1-959	1-3,255	

	Table 60 continued.						
	2014	2015	2016	Total study period			
Prescriber Type							
Unknown	1,231 (25.59)	1,102 (23.89)	968 (21.13)	2,392 (29.83)			
Advanced Practice Nurse	803 (16.69)	907 (19.67)	969 (21.15)	1,443 (17.99)			
Dentist	26 (0.54)	25 (0.54)	18 (0.39)	55 (0.69)			
Physician	2,606 (54.18)	2,428 (52.65)	2,455 (52.58)	3,865 (48.19)			
Physician's Assistant	140 (2.91)	144 (3.12)	164 (3.58)	250 (3.12)			
Podiatrist	2 (0.04)	3 (0.07)	1 (0.02)	6 (0.07)			
Veterinarian	2 (0.04)	3 (0.07)	7 (0.15)	9 (0.11)			

Codeine/promethazine/phenylephrine

Codeine/promethazine/phenylephrine is a schedule V controlled substance (Wolters-Kluwer, 2019) and was dispensed 19,036 times during the three-year study period with 8,330 (43.76 percent), 6,075 (31.91 percent), and 4.631 dispensations (24.33 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 1.35 (SD=1.89). Women comprised a majority (62.09 percent) of the patients during the study period. There were 1,955 prescribers who prescribed codeine/promethazine/phenylephrine, with an average of 9.74 times (SD=50.2). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 61.

Table 61. Descr	iptive informat	tion for all c	odeine/promet	hazine/phenyle	ephrine disj	pensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	8,330 (43.76)	6,075 (31.91)	4.631 (24.33)	19,036
Total Quantity Dispensed	1,378,440	982,288	726,715	3,091,443
Total Days Supply	61,470	46,581	35,643	143,694
Patients				
Ν	6,731	5,002	3,732	14,119
Mean dispensations per patient (SD)	1.24 (1.26)	1.21 (1.03)	1.24 (1.04)	1.35 (1.89)
Range of dispensations per patient	1-84	1-55	1-44	1-183

Table 61 continued.						
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	2,616 (38.86)	1,829 (36.57)	1,366 (36.6)	5,346 (37.86)		
Female	4,115 (61.14)	3,172 (64.41)	2,361 (63.26)	8,767 (62.09)		
Missing	0 (0.00)	1 (0.02)	5 (0.13)	6 (0.04)		
Age						
Ν	6,731	5,002	3,732	14,119		
Age (SD)	48.99 (18.87)	49.58 (18.54)	48.97 (18.27)	48.66 (18.64)		
Range	1-98	1-98	2-96	1-98		
Prescribers						
Ν	1,098	997	836	1,955		
Mean number of dispensations	7.59 (27.53)	6.09 (22.43)	5.54 (23.03)	9.74 (50.2)		
Range	1-336	1-317	1-425	1-1,052		
Prescriber Type						
Unknown	158 (14.39)	115 (11.53)	67 (8.01)	279 (14.27)		
Advanced Practice Nurse	209 (19.03)	220 (22.07)	200 (23.92)	433 (22.15)		
Dentist	1 (0.09)	1 (0.1)	1 (0.12)	3 (0.15)		
Physician	699 (63.66)	632 (63.39)	531 (63.52)	1,170 (59.85)		
Physician's Assistant	31 (2.82)	28 (2.81)	37 (4.43)	69 (3.53)		
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Veterinarian	0 (0.00)	1 (0.1)	0 (0.00)	1 (0.05)		

Dihydrocodeine/aspirin/caffeine

Dihydrocodeine/aspirin/caffeine is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 48 times during the three-year study period to 27 individuals. The mean number of dispensations was 1.78 (SD=1.01). The average patient age was 53.44 (SD=14.49). The average

number of times a prescriber prescribed dihydrocodeine/aspirin/caffeine for dispensing was 2.18 (SD=1.22). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 62.

	2014	2015	2016	Total study period
Dispensations (Percent)	31 (64.58)	10 (20.83)	7 (14.58)	48
Total Quantity Dispensed	2,800	646	890	4,336
Total Days Supply	805	111	103	1,019
Patients				
Ν	17	7	4	27
Mean dispensations per patient (SD) Range of	1.82 (1.19)	1.43 (0.53)	1.75 (0.96)	1.78 (1.01)
dispensations per patient	1-5	1-2	1-3	15
Gender (Percent)				
Male	4 (23.53)	0 (0.00)	0 (0.00)	4 (14.81)
Female	13 (76.47)	7 (100)	4 (100)	23 (85.19)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	17	7	4	27
Age (SD)	56.47 (14.56)	51.43 (13.31)	42.5 (11.24)	53.44 (14.49)
Range	29-78	33-73	33-55	29-78
Prescribers				
Ν	16	6	2	22
Mean number of dispensations	1.94 (1.24)	1.67 (0.52)	3.5 (0.71)	2.18 (1.22)
Range	1-5	1-2	3-4	1-5

Table 62. Descriptive information for all dihydrocodeine/aspirin/caffeine dispensations.

	10			T + 1 + 1
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	2 (12.5)	1 (16.67)	0 (0.00)	3 (13.64)
Advanced Practice Nurse	0 (0.00)	0 (0.00)	1 (50)	1 (4.55)
Dentist	3 (18.75)	1 (16.67)	0 (0.00)	4 (18.18)
Physician	11 (68.75)	4 (66.67)	1 (50)	14 (63.64)
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Fentanyl

Fentanyl is a schedule II controlled substance (Wolters-Kluwer, 2019). It was dispensed 437,117 times during the three-year study period with 149,844 (34.28 percent), 146,177 (33.44 percent), and 141,096 dispensations (32.28 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 8.42 (SD=11.88), and the range was from 1 to 416 dispensations. There were 10,433 prescribers who prescribed fentanyl, and the average number of times fentanyl was prescribed was 41.90 (SD=138.16). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 63.

Table 63. Descriptive information for all fentanyl dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	149,844 (34.28)	146,177 (33.44)	141,096 (32.28)	437,117
Total Quantity Dispensed	1,714,727	1,683,698	1,536,880	4,935,305
Total Days Supply	4,085,085	3,958,745	3,792,147	11,835,977
Patients				
Ν	26,056	25,012	23,376	51,920
Mean dispensations per patient (SD)	5.75 (5.43)	5.84 (5.45)	6.04 (5.59)	8.42 (11.88)
Range of dispensations per patient	1-132	1-121	1-163	1-416

	2014	2015	2016	Total study period
Gender (Percent)				
Male	9,759 (37.45)	9,762 (39.03)	9,019 (38.58)	20,796 (40.05)
Female	16,285 (62.5)	15,234 (69.91)	14,329 (61.3)	31,074 (59.85)
Missing	12 (0.05)	16 (0.06)	28 (0.12)	50 (0.1)
Age				
N	26,050	25,009	23,376	51,913
Age (SD)	62.71 (16.73)	63.05 (16.49)	63.56 (16.55)	63.39 (17.06)
Range	0-105	0-109	0-110	0-109
Prescribers				
Ν	6,640	6,390	6,343	10,433
Mean number of dispensations	22.57 (59.08)	22.88 (61.73)	22.24 (59.91)	41.90 (138.16)
Range	1-1,357	1-1,135	1-1,620	1-3,390
Prescriber Type				
Unknown	1,641 (24.71)	1,386 (21.69)	1,268 (19.99)	3,046 (29.2)
Advanced Practice Nurse	899 (13.54)	1,013 (15.85)	1,139 (17.96)	1,598 (15.32)
Dentist	13 (0.2)	12 (0.19)	6 (0.09)	27 (0.26)
Physician	3.924 (59.1)	3,804 (59.53)	3,680 (58.02)	5,375 (51.52)
Physician's Assistant	83 (1.25)	114 (1.78)	152 (2.4)	221 (2.12)
Podiatrist	19 (0.29)	9 (0.14)	8 (0.13)	27 (0.26)
Veterinarian	61 (0.92)	52 (0.81)	90 (1.42)	139 (1.33)

## Hydrocodone

Hydrocodone is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 12,087 times during the three-year study to 3.005 patients. The mean number of dispensations was 4.02 (SD=5.15), and the range was from 1 to 50 dispensations. The average patient age was 49.19

(SD=14.31) with an age range from 0-95. There were 684 prescribers who prescribed hydrocodone at least once for dispensing to these patients with a mean 17.67 times (SD=58.77). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 64.

Table 64. Dese	Table 64. Descriptive information for all hydrocodone dispensations.				
	2014	2015	2016	Potal study period	
Dispensations (Percent)	1,611 (13.33)	4,885 (40.42)	5.591 (46.26)	12,087	
Total Quantity Dispensed	90,649	213,068	195,414	499,131	
Total Days Supply	45,016	136,091	160,377	341,484	
Patients					
Ν	523	1,408	1,679	3,005	
Mean dispensations per patient (SD)	3.08 (2.61)	3.47 (3.49)	3.33 (3.34)	4.02 (5.15)	
Range of dispensations per patient	1-14	1-30	1-24	1-50	
Gender (Percent)					
Male	253 (48.37)	654 (46.45)	755 (44.97)	1,389 (46.22)	
Female	270 (51.63)	754 (53.55)	919 (54.73)	1,611 (53.61)	
Missing	0 (0.00)	0 (0.00)	5 (0.3)	5 (0.17)	
Age					
N	523	1,408	1,679	3,005	
Age (SD)	49.9 (14.4)	48.75 (13.92)	49.89 (14.05)	49.19 (14.31)	
Range	0-94	1-94	0-95	0-95	
Prescribers					
Ν	152	399	440	684	
Mean number of dispensations	10.6 (44.83)	12.24 (31.66)	12.71 (30.3)	17.67 (58.77)	
Range	1-513	1-306	1-404	1-794	

Table 64 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	31 (20.39)	82 (20.55)	69 (15.68)	143 (20.91)	
Advanced Practice Nurse	19 (12.5)	68 (17.04)	99 (22.5)	130 (19.01)	
Dentist	0 (0.00)	0 (0.00)	1 (0.23)	1 (0.15)	
Physician	94 (61.84)	226 (56.64)	243 (55.23)	372 (54.39)	
Physician's Assistant	5 (3.29)	14 (3.51)	15 (3.41)	21 (3.07)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	3 (1.97)	9 (2.26)	13 (2.95)	17 (2.49)	

Hydrocodone/acetaminophen

Hydrocodone/acetaminophen is a schedule II controlled substance (Wolters-Kluwer, 2019). It had the largest number of dispensations for any single drug in the dataset during the study period with 10,114,764 dispensations. There were 2,495,674 individuals who received at least one dispensation for hydrocodone/acetaminophen. The mean number of dispensations was 4.05 (SD=7.09), and the range was from 1 to 206 dispensations. There were 2,495,631 prescribers who prescribed hydrocodone/acetaminophen at least once for dispensing to these patients. The mean number of times a prescriber prescribed hydrocodone/acetaminophen was 188.60 times (SD=715.04) and a range of 1 to 50,363 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 65.

	2014	2015	2016	Total study period
Dispensations (Percent)	3,722,525 (36.8)	3,354,501 (33.16)	3,037,738 (30.03)	10,114,764
Total Quantity Dispensed	245,689,792	225,470,726	204,281,990	675,442,508
Total Days Supply	60,880,915	56,800,674	52,280,679	169,962,268

Table 65. Descriptive information for all hydrocodone/acetaminophen dispensations

Table65 continued.				
	2014	2015	2016	Total study period
Patients				
Ν	1,236,846	1,196,009	1,083,461	2,495,674
Mean dispensations per patient (SD)	3.01 (3.67)	2.8 (3.38)	2.8 (3.41)	4.05 (7.09)
Range of dispensations per patient	1-72	1-72	1-82	1-206
Gender (Percent)				
Male	545,562 (44.11)	535,468 (44.77)	485,350 (44.8)	1,140,722 (45.71)
Female	691,052 (55.87)	660,306 (55.21)	597,891 (55.18)	1,354,464 (54.27)
Missing	232 (0.02)	235 (0.02)	220 (0.02)	488 (0.02)
Age				
Ν	1,236,830	1,196,000	1,083,440	2,495,631
Age (SD)	47.35 (19.11)	47.67 (19.18)	48.23 (19.27)	46.17 (19.63)
Range	0-108	0-107	0-107	0-108
Prescribers				
Ν	37,060	33,407	32,581	53,631
Mean number of dispensations	100.45 (301.15)	100.41 (334.47)	93.24 (300.45)	188.6 (715.04)
Range	1-9,608	1-29,224	1-21,101	1-50,363

Table 65 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	20,125 (54.3)	15,637 (46.81)	13,939 (42.78)	32,186 (60.01)	
Advanced Practice Nurse	2,693 (7.27)	3,062 (9.17)	3,519 (10.8)	4,010 (7.48)	
Dentist	2,596 (7)	2,619 (7.84)	2,700 (8.29)	2,952 (5.5)	
Physician	10,691 (28.85)	11,040 (33.05)	11,277 (34.61)	13,148 (24.52)	
Physician's Assistant	637 (1.72)	711 (2.13)	2.47 (806)	890 (1.66)	
Podiatrist	252 (0.68)	258 (0.77)	270 (0.83)	299 (0.56)	
Veterinarian	66 (0.18)	80 (0.24)	70 (0.21)	146 (0.27)	

Hydrocodone/chlorpheniramine

Hydrocodone/chlorpheniramine, a schedule II controlled substance, (Wolters-Kluwer, 2019) was dispensed 164,740 times to 109,858 individuals. The mean number of dispensations was 1.50 (SD=1.97), and the range was from 1 to 21 dispensations. 8,412 prescribers prescribed hydrocodone/chlorpheniramine at least once for dispensing to these patients with a mean of 19.58 (SD=54.59). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 66.

	2014	2015	2016	Total study period
Dispensations (Percent)	66,219 (40.2)	52.354 (31.78)	46,167 (28.02)	164,740
Total Quantity Dispensed	7,584,861	6,193,490	5,516,020	19,294,371
Total Days Supply	843,468	693,931	614,100	2,151,499
Patients				
Ν	48,431	40,718	36,018	109,858
Mean dispensations per patient (SD)	1.37 (1.37)	1.29 (1.08)	1.28 (1.05)	1.50 (1.97)
Range of dispensations per patient	1-44	1-32	1-31	1-95

Table 66. Descriptive information for all hydrocodone/chlorpheniramine dispensations.

	Table 66 continued.					
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	17,929 (37.02)	15,025 (36.9)	13,086 (36.33)	40,923 (37.25)		
Female	30,496 (62.97)	25,688 (63.09)	22,925 (63.65)	68,919 (62.73)		
Missing	6 (0.01)	5 (0.01)	7 (0.02)	16 (0.01)		
Age						
Ν	48,431	40,717	36,018	109,857		
Age (SD)	49.73 (17.66)	50.6 (17.39)	50.56 (16.80)	49.74 (17.41)		
Range	0-106	0-105	1-106	0-106		
Prescribers						
Ν	5,659	5,233	4,995	8,412		
Mean number of dispensations	11.7 (27.29)	10 (23.46)	9.24 (20.94)	19.58 (54.59)		
Range	1-618	1-703	1-527	1-1,848		
Prescriber Type						
Unknown	914 (16.15)	606 (11.58)	393 (7.87)	1,430 (17.00)		
Advanced Practice Nurse	1,009 (17.83)	1,045 (19.97)	1,151 (23.04)	1,682 (20.00)		
Dentist	18 (0.32)	9 (0.17)	8 (0.16)	31 (0.37)		
Physician	3,521 (62.22)	3,374 (64.48)	3,230 (64.66)	4,926 (58.56)		
Physician's Assistant	179 (3.16)	178 (3.40)	197 (3.94)	301 (3.58)		
Podiatrist	4 (0.07)	2 (0.04)	3 (0.06)	8 (0.10)		
Veterinarian	14 (0.25)	19 (0.36)	13 (0.26)	34 (0.40)		

Hydrocodone/chlorpheniramine/pseudoephedrine

Hydrocodone/chlorpheniramine/pseudoephedrine is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 1,936 times during the three-year study period to 1,647 patients.

The mean number of dispensations was 1.18 (SD=0.67), and the range was from 1 to 14 dispensations. Two hundred nineteen prescribers prescribed hydrocodone/chlorpheniramine/pseudoephedrine to these patients with a mean of 8.84 (SD=32.69). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 67.

		dispensations.		
	2014	2015	2016	Total study period
Dispensations (Percent)	1,767 (91.27)	131 (6.77)	38 (1.96)	1,936
Total Quantity Dispensed	298,892	20,221	5,212	324,325
Total Days Supply	16,740	1,389	441	18,570
Patients				
Ν	1,544	108	31	1,647
Mean dispensations per patient (SD) Panga of	1.14 (0.53)	1.21 (0.81)	1.23 (0.62)	1.18 (0.67)
dispensations per patient	1-8	1-7	1-4	1-14
Gender (Percent)				
Male	637 (41.26)	48 (44.44)	13 (41.94)	679 (41.23)
Female	907 (58.74)	60 (55.56)	18 (58.06)	968 (58.77)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	1,544	108	31	1,647
Age (SD)	42.97 (14.23)	49.85 (15.21)	46.19 (18.88)	43.34 (14.47)
Range	3-84	15-85	7-74	3-85

Fable 67. Descriptive information	for all hydrocodone	chlorpheniramine	e/pseudoephedrine
	dispensations		

	2014	2015	2016	Total study period
Prescribers				
Ν	173	55	27	219
Mean number of dispensations	10.21 (35.78)	2.38 (2.93)	1.41 (0.64)	8.84 (32.69)
Range	1-396	1-15	1-3	1-400
Prescriber Type				
Unknown	33 (19.08)	3 (5.45)	3 (11.11)	38 (17.35)
Advanced Practice Nurse	33 (19.08)	15 (27.27)	2 (7.41)	43 (19.63)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	98 (56.65)	34 (61.82)	21 (77.78)	127 (57.99)
Physician's Assistant	9 (5.2)	3 (5.45)	1 (3.7)	11 (5.02)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

Hydrocodone/guaifenesin

Hydrocodone/guaifenesin, a schedule II controlled substance (Wolters-Kluwer, 2019), was dispensed 57 times during the study period with 6 dispensations (10.53 percent) and 51 dispensations (89.47 percent) in 2015 and 2016 respectively. There were no dispensations in 2014. Fifty-seven individuals received a dispensation for hydrocodone/guaifenesin, and everyone received only one dispensation. Twenty-eight prescribers prescribed hydrocodone/guaifenesin for an individual with a mean of 2.04 (SD=3.32) and a range of 1 to 18 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 68.

	2014	2015	2016	Total study period
Dispensations (Percent)	0 (0.00)	6 (10.53)	51 (89.47)	57
Total Quantity Dispensed	0	730	7,475	8,205
Total Days Supply	0	19	311	330
Patients				
Ν	0	6	51	57
Mean dispensations per patient (SD)	0.00 (-)	1 (-)	1 (-)	1 (-)
Range of dispensations per patient	-	-	-	-
Gender (Percent)				
Male	0 (0.00)	2 (33.33)	17 (33.33)	19 (33.33)
Female	0 (0.00)	4 (66.67)	34 (66.67)	38 (66.67)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	0	6	51	57
Age (SD)	0.00 (-)	44.67 (19.99)	48.33 (11.83)	47.95 (12.72)
Range	-	21-72	18-71	18-72
Prescribers				
Ν	0	5	23	28
Mean number of dispensations	0.00 (-)	1.2 (0.45)	2.22 (3.64)	2.04 (3.32)
Range	-	1-2	1-18	1-18

Table 68. Descriptive information for all hydrocodone/guaifenesin dispensations.

Table 68 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	0 (0.00)	0 (0.00)	3 (13.04)	3 (10.71)	
Advanced Practice Nurse	0 (0.00)	1 (20)	8 (34.78)	9 (32.14)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	0 (0.00)	4 (80)	12 (52.17)	16 (57.14)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

Hydrocodone/guaifenesin/pseudoephedrine

Hydrocodone/guaifenesin/pseudoephedrine is a schedule II controlled substance. (Wolters-Kluwer, 2019) It was dispensed 126 times during the three-year study period to 121 patients. The mean number of dispensations was 1.04 (SD=0.34), and the range was from 1 to 3 dispensations. Men comprised a slight majority (50.41 percent) of the patients during the study period. Twenty-three prescribers prescribed hydrocodone/guaifenesin/pseudoephedrine at least once for dispensing to these individuals with a mean of 5.48 (SD=11.17) and a range of 1 to 49 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 69.

dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	0 (0.00)	7 (5.56)	119 (94.44)	126	
Total Quantity Dispensed	0	1,746	18,196	19,942	
Total Days Supply	0	64	1,089	1,153	

Table 69. Descriptive information for all hydrocodone/guaifenesin/pseudoephedrine

Table 69 continued.						
	2014	2015	2016	Total study period		
Patients						
Ν	0	7	115	121		
Mean dispensations per patient (SD) Range of	0.00 (-)	1 (-)	1.03 (0.23)	1.04 (0.34)		
dispensations per patient	-	-	1-3	1-3		
Gender (Percent)						
Male	0 (0.00)	2 (28.57)	59 (51.3)	61 (50.41)		
Female	0 (0.00)	5 (71.43)	56 (48.7)	60 (49.59)		
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Age						
Ν	0	7	115	121		
Age (SD)	0.00 (-)	45.86 (12.88)	42.81 (14.57)	42.93 (14.5)		
Range	-	26-64	15-89	15-89		
Prescribers						
Ν	0	7	20	23		
Mean number of dispensations	0.00 (-)	1 (-)	5.95 (11.94)	5.48 (11.17)		
Range	-	-	1-49	1-49		

Table 69 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	0 (0.00)	1 (14.29)	2 (10)	2 (8.7)	
Advanced Practice Nurse	0 (0.00)	1 (14.29)	5 (25)	5 (21.74)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	0 (0.00)	3 (42.86)	12 (60)	14 (60.87)	
Physician's Assistant	0 (0.00)	2 (28.57)	1 (5)	2 (8.7)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

Hydrocodone/homatropine

Hydrocodone/homatropine, a schedule II controlled substance (Wolters-Kluwer, 2019), was dispensed 49,390 times during the three-year study period with 20,988 (42.49 percent), 15,822 (32.03 percent), and 12,580 dispensations (25.47 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 1.45 (SD=1.93), and the range was from 1 to 154 dispensations. Prescribers prescribed hydrocodone/homatropine for dispensing a mean of 16.92 (SD=97.01) with a range of 1 to 3,120. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 70.

	2014	2015	2016	Total study period
Dispensations (Percent)	20,988 (42.49)	15,822 (32.03)	12,580 (25.47)	49,390
Total Quantity Dispensed	3,238,974	2,454,614	1,904,205	7,597,793
Total Days Supply	193,990	157,876	133,520	485,386
Patients				
Ν	16,088	12,479	9,604	34,164
Mean dispensations per patient (SD)	1.3 (1.19)	1.27 (1.14)	1.31 (1.27)	1.45 (1.93)
Range of dispensations per patient	1-53	1-51	1-50	1-154

Table 70. Descriptive information for all hydrocodone/homatropine dispensations.

Table 70 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	6,197 (38.52)	4,927 (39.48)	3,779 (39.35)	13,426 (39.52)	
Female	9,815 (61.01)	7,483 (59.96)	5,757 (59.94)	20,548 (60.14)	
Missing	76 (0.47)	69 (0.55)	68 (0.71)	190 (0.56)	
Age					
Ν	16,086	12,473	9,603	34,157	
Age (SD)	45.76 (20.79)	46.01 (20.79)	46.28 (21.21)	45.5 (20.81)	
Range	0-100	0-104	0-96	0-104	
Prescribers					
Ν	1,696	1,465	1,414	2,919	
Mean number of dispensations	12.38 (50.32)	10.8 (49.61)	8.9 (41.25)	16.92 (97.01)	
Range	1-1,043	1-1,196	1-1,120	1-3,120	
Prescriber Type					
Unknown	431 (25.41)	280 (19.11)	248 (17.54)	723 (24.77)	
Advanced Practice Nurse	195 (11.5)	201 (13.72)	199 (14.07)	382 (13.09)	
Dentist	5 (0.29)	5 (0.34)	5 (0.35)	15 (0.51)	
Physician	787 (46.4)	665 (45.39)	590 (41.73)	1,222 (41.86)	
Physician's Assistant	37 (2.18)	27 (1.84)	24 (1.7)	56 (1.92)	
Podiatrist	1 (0.06)	1 (0.07)	2 (0.14)	3 (0.10)	
Veterinarian	240 (14.15)	286 (19.52)	346 (24.47)	518 (17.75)	

## Hydrocodone/ibuprofen

Hydrocodone/ibuprofen is a schedule II controlled substance (Wolters-Kluwer, 2019). There were 95,757 dispensations during the three-year study period. The mean number of dispensations was 2.33 (SD=4.80), and the range was from 1 to 146 dispensations. There were 7,007 prescribers who

prescribed hydrocodone/ibuprofen at least once for dispensing to these patients with a mean of 13.67 (SD=54.80) and a range of 1 to 1,802 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 71.

Table 71. Descriptive information for all hydrocodone/ibuprofen dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	40,764 (42.57)	29,773 (31.09)	25,220 (26.34)	95,757	
Total Quantity Dispensed	2,131,764	1,638,067	1,407,246	5,177,077	
Total Days Supply	598,894	467,832	407,844	1,474,570	
Patients					
Ν	19,436	14,882	12,281	41,041	
Mean dispensations per patient (SD)	2.1 (2.78)	2 (2.66)	2.05 (2.76)	2.33 (4.80)	
dispensations per patient	1-48	1-621	1-59	1-146	
Gender (Percent)					
Male	8,822 (45.39)	6,870 (46.16)	5,681 (46.26)	18,900 (46.05)	
Female	10,610 (54.59)	8,010 (53.82)	6,596 (53.71)	22,133 (53.93)	
Missing	4 (0.02)	2 (0.01)	4 (0.03)	8 (0.02)	
Age					
Ν	19,436	14,882	12,280	41,040	
Age (SD)	45.12 (15.78)	45.8 (15.85)	45.96 (15.98)	44.83 (15.98)	
Range	8-98	1-103	8-98	1-103	
Prescribers					
Ν	4,571	3,771	3,184	7,007	
Mean number of dispensations	8.92 (27.17)	7.9 (24.43)	7.92 (25)	13.67 (54.80)	
Range	1-604	1-561	1-642	1-1,802	

Table 71 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	792 (17.33)	491 (13.02)	334 (10.49)	1,219 (17.4)	
Advanced Practice Nurse	558 (12.21)	523 (13.87)	475 (14.92)	955 (13.63)	
Dentist	732 (16.01)	653 (17.32)	552 (17.34)	1,099 (15.68)	
Physician	2,303 (50.38)	1,908 (50.6)	1,637 (51.41)	3,380 (48.24)	
Physician's Assistant	140 (3.06)	151 (4)	145 (4.55)	267 (3.81)	
Podiatrist	46 (1.01)	45 (1.19)	40 (1.26)	86 (1.23)	
Veterinarian	0 (0.00)	0 (0.00)	1 (0.03)	1 (0.01)	

Hydrocodone/pseudoephedrine

Hydrocodone/pseudoephedrine is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 247 times during the three-year study period. The mean number of dispensations was 1.24 (SD=0.66), and the range was from 1 to 6 dispensations. Men comprised a majority (61.31 percent) of the patients during the study period. Fifty-three prescribers prescribed hydrocodone/pseudoephedrine for dispensing to these individuals. The mean number of times this was prescribed was 4.66 (SD=8.68) and a range of 1 to 45 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 72.

Table 72. Descriptive information for all hydrocodone/pseudoephedrine dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	238 (96.36)	8 (3.24)	1 (0.4)	247
Total Quantity Dispensed	37,776	1,195	180	39,151
Total Days Supply	2,036	116	9	2,161
Patients				
Ν	193	7	1	199
Mean dispensations per patient (SD)	1.23 (0.6)	1.14 (0.38)	1 (-)	1.24 (0.66)
Range of dispensations per patient	1-5	1-2	-	1-6

Table 72 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	74 (38.34)	4 (57.14)	0 (0.00)	77 (38.69)	
Female	119 (61.66)	3 (42.86)	1 (100)	122 (61.31)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	193	7	1	199	
Age (SD)	35.97 (18.52)	27 (17.95)	59 (-)	35.98 (18.53)	
Range	5-82	11-63	-	5-82	
Prescribers					
Ν	48	6	1	53	
Mean number of dispensations	4.96 (8.68)	1.33 (0.82)	1 (-)	4.66 (8.68)	
Range	1-42	1-3	-	1-45	
Prescriber Type					
Unknown	6 (12.5)	1 (16.67)	0 (0.00)	7 (13.21)	
Advanced Practice Nurse	10 (20.83)	2 (33.33)	0 (0.00)	11 (20.75)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	32 (66.67)	3 (50)	1 (100)	35 (66.04)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

# Hydromorphone

Hydromorphone is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 154,748 times during the three-year study period with 52,053 (33.64 percent), 52,407 (33.87 percent), and 50,288 dispensations (32.5 percent) in 2014, 2015, and 2016 respectively. The mean

number of dispensations was 4.51 (SD=8.61), and the range was from 1 to 500 dispensations. The mean number of times hydromorphone was prescribed for dispensing was 18.24 (SD=84.74) with a range of 1 to 3,382. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 73.

Table 73. Descriptive information for all hydromorphone dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	52,053 (33.64)	52,407 (33.87)	50,288 (32.5)	154,748	
Total Quantity Dispensed	4,653,617	4,722,692	4,375,865	13,752,174	
Total Days Supply	1,069,466	1,064,742	984,576	3,118,784	
Patients					
Ν	14,438	14,467	13,716	34,303	
Mean dispensations per patient (SD)	3.61 (4.58)	3.62 (4.71)	3.67 (4.84)	4.51 (8.61)	
Range of dispensations per patient	1-148	1-171	1-181	1-500	
Gender (Percent)					
Male	5,811 (40.94)	5,864 (40.53)	5,551 (40.47)	14,057 (40.98)	
Female	8,520 (59.01)	8,593 (59.4)	8,156 (59.46)	20,229 (58.97)	
Missing	7 (0.05)	10 (0.07)	9 (0.07)	17 (0.05)	
Age					
Ν	14,434	14,467	13,716	34,229	
Age (SD)	53.63 (15.84)	54.74 (15.8)	55.75 (19.91)	54.78 (16.31)	
Range	0-101	0-106	0-107	0-106	
Prescribers					
Ν	4,753	4,787	4,692	8,485	
Mean number of dispensations	10.95 (39.04)	10.95 (39.32)	10.72 (40)	18.24 (84.74)	
Range	1-1,008	1-1,050	1-1,604	1-3,382	

Table 73 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	1,119 (23.54)	1,020 (21.31)	932 (19.86)	2,245 (26.46)	
Advanced Practice Nurse	541 (11.38)	621 (12.97)	669 (14.26)	1,102 (12.99)	
Dentist	37 (0.78)	32 (0.67)	41 (0.87)	87 (1.03)	
Physician	2,936 (61.77)	2,951 (61.65)	2,866 (61.08)	4,740 (55.86)	
Physician's Assistant	77 (1.62)	116 (2.42)	135 (2.88)	216 (2.55)	
Podiatrist	39 (0.82)	39 (0.81)	39 (0.83)	74 (0.87)	
Veterinarian	4 (0.08)	8 (0.17)	10 (0.21)	21 (0.25)	

#### Levorphanol

Levorphanol, a schedule II controlled substance, (Wolters-Kluwer, 2019) was dispensed 5,110 times during the three-year study period. There were 582 individuals who received at least one dispensation for levorphanol. The mean number of dispensations was 8.78 (SD=9.13) Sixty-five prescribers prescribed levorphanol at least once for dispensing to these individuals with a mean of 78.62 (SD=423.27) and a range of 1 to 21 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 74.

Table 74. Descriptive information for all levorphanol dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	2,179 (42.64)	1,930 (37.77)	1,001 (19.59)	5,110
Total Quantity Dispensed	232,998	209,453	114,989	557,440
Total Days Supply	62,963	55,964	29,658	148,585
Patients				
Ν	389	339	160	582
Mean dispensations per patient (SD)	5.6 (4.05)	5.69 (3.85)	6.26 (4.55)	8.78 (9.13)
Range of dispensations per patient	1-26	1-19	1-14	1-45

Table 74 continued.							
	2014	2015	2016	Total study period			
Gender (Percent)							
Male	165 (42.42)	131 (38.64)	56 (35)	233 (40.03)			
Female	224 (57.58)	208 (61.36)	104 (65)	349 (59.97)			
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			
Age							
Ν	389	339	160	582			
Age (SD)	56.01 (15.52)	55.02 (14.1)	56.33 (12.19)	55.97 (14.98)			
Range	21-102	21-102	28-91	21-102			
Prescribers							
Ν	37	38	26	65			
Mean number of dispensations	58.89 (240.06)	50.79 (209.53)	38.5 (123.94)	78.62 (423.27)			
Range	1-1,323	1-1,181	1-594	1-3,098			
Prescriber Type							
Unknown	7 (18.92)	1 (2.63)	0 (0.00)	8 (12.31))			
Advanced Practice Nurse	10 (27.03)	11 (28.95)	5 (19.23)	19 (29.23)			
Dentist	1 (2.7)	0 (0.00)	0 (0.00)	1 (1.54)			
Physician	19 (51.35)	23 (60.53)	17 (65.38)	32 (49.23)			
Physician's Assistant	0 (0.00)	3 (7.89)	4 (15.38)	5 (7.69)			
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			

# Meperidine

Meperidine is a schedule II controlled substance (Wolters-Kluwer, 2019). It was dispensed 10,530 times during the three-year study period to 5,718 individuals. The mean number of dispensations

was 1.84 (SD=3.9), and the range was from 1 to 21 dispensations. Women comprised a majority (71.51 percent) of the patients during the study period. There were 1,510 prescribers who prescribed meperidine at least once for dispensing to these patients with a mean of 6.97 (SD=20.02). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 75.

	2014	2015	2016	Total study period
Dispensations (Percent)	4,407 (41.85)	3,316 (31.49)	2,807 (26.66)	10,530
Total Quantity Dispensed	192,274	153,046	131,742	477,062
Total Days Supply	49,231	39,081	34,875	123,187
Patients				
Ν	2,767	1,966	1,608	5,718
Mean dispensations per patient (SD)	1.59 (1.97)	1.69 (2.31)	1.75 (2.49)	1.84 (3.9)
Range of dispensations per patient	1-26	1-45	1-42	1-97
Gender (Percent)				
Male	860 (31.08)	536 (27.26)	390 (24.25)	1,622 (28.37)
Female	1,903 (68.77)	1,426 (72.53)	1,215 (75.56)	4,089 (71.51)
Missing	4 (0.14)	4 (0.2)	3 (0.19)	7 (0.12)
Age				
Ν	2,765	1,965	1,608	5,715
Age (SD)	44.06 (19.18)	48.75 (16.88)	49.2 (16.86)	45.72 (18.11)
Range	2-99	1-94	2-94	1-99
Prescribers				
Ν	914	785	641	1,510
Mean number of dispensations	4.82 (12.3)	4.22 (8.65)	4.38 (9.96)	6.97 (20.02)
Range	1-219	1-101	1-142	1-290

Table 75. Descriptive information for all meperidine dispensations.
Table 75 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	121 (13.24)	95 (12.1)	57 (8.89)	209 (13.84)	
Advanced Practice Nurse	67 (7.33)	66 (8.41)	60 (9.36)	133 (8.81)	
Dentist	129 (14.11)	112 (14.27)	86 (13.42)	189 (12.52)	
Physician	545 (59.63)	457 (58.22)	387 (60.37)	888 (58.81)	
Physician's Assistant	9 (0.98)	18 (2.29)	12 (1.87)	29 (1.92)	
Podiatrist	43 (4.7)	36 (4.59)	39 (6.08)	61 (4.04)	
Veterinarian	0 (0.00)	1 (0.13)	0 (0.00)	1 (0.07)	

#### Methadone

Methadone is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 268,128 times during the three-year study period with 98,420 (36.71 percent), 90,589 (33.79 percent), and 79,119 dispensations (29.51 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 12.85 (SD=13.67), and the range was from 1 to 214 dispensations. There were 4,795 prescribers who prescribed methadone with a mean 55.92 (SD=297.48) and a range of 1 to 10,279 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 76.

	2014	2015	2016	Total study period
Dispensations (Percent)	98,420 (36.71)	90,589 (33.79)	79,119 (29.51)	268,128
Total Quantity Dispensed	14,083,661	12,501,423	10,295,624	36,880,708
Total Days Supply	2,716,267	2,500,036	2,180,623	7,396,926
Patients				
Ν	13,580	12,151	10,203	20,866
Mean dispensations per patient (SD)	7.25 (5.31)	7.46 (5.3)	7.75 (5.47)	12.85 (13.67)
Range of dispensations per patient	1-70	1-70	1-85	1-214

Table 76. Descriptive information for all methadone dispensations.

Table 76 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	6,641 (48.9)	6,254 (51.47)	5,250 (51.46)	10,494 (50.29)	
Female	6,937 (51.08)	5,890 (48.47)	4,948 (48.5)	10,361 (49.65)	
Missing	2 (0.01)	7 (0.06)	5 (0.05)	11 (0.05)	
Age					
Ν	13,580	12,151	10,203	20,866	
Age (SD)	51.24 (14.98)	52.4 (15.3)	53.55 (15.39)	52.13 (16.42)	
Range	0-106	0-105	0-106	0-106	
Prescribers					
Ν	2,963	2,720	2,618	4,795	
Mean number of dispensations	33.22 (136.19)	33.3 (140.34)	30.22 (125.4)	55.92 (297.48)	
Range	1-3,278	1-3,554	1-3,707	1-10,279	
Prescriber Type					
Unknown	786 (26.53)	640 (23.53)	545 (20.82)	1,321 (27.55)	
Advanced Practice Nurse	420 (14.17)	428 (15.74)	472 (18.03)	775 (16.16)	
Dentist	7 (0.24)	4 (0.15)	4 (0.15)	13 (0.27)	
Physician	1,714 (57.85)	1,602 (58.9)	1,545 (59.01)	2,603 (54.29)	
Physician's Assistant	31 (1.05)	38 (1.4)	43 (1.64)	69 (1.44)	
Podiatrist	5 (0.17)	5 (0.18)	6 (0.23)	11 (0.23)	
Veterinarian	0 (0.00)	3 (0.11)	3 (0.11)	3 (0.06)	

# Morphine

Morphine, a schedule II controlled substance, (Wolters-Kluwer, 2019) was dispensed 739,062 times from 2014 to 2016. The mean number of dispensations was 6.48 (SD=11.51), and the range was from 1 to 21 dispensations. There were 11,486 prescribers who prescribed morphine at least

once for dispensing to these patients with a mean of 64.34 (SD=336.73) and a range of 1 to 13,705 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 77.

	2014	2015	2016	Total study
Dispensations (Percent)	250,786 (33.93)	247,239 (33.45)	241,037 (32.61)	739,062
Total Quantity Dispensed	16,544,008	16,097,828	15,212,513	47,854,349
Total Days Supply	6,252,483	6,079,361	5,808,548	18,140,392
Patients				
Ν	49,766	49,961	49,106	113,974
Mean dispensations per patient (SD)	5.04 (5.92)	4,95 (5.95)	4.91 (5.9)	6.48 (11.51)
Range of dispensations per patient	1-180	1-320	1-270	1-770
Gender (Percent)				
Male	27,702 (45.62)	23,285 (46.61)	22,999 (46.84)	53,164 (46.65)
Female	27,031 (54.32)	26,642 (53.33)	26,083 (53.12)	60,734 (53.29)
Missing	33 (0.07)	34 (0.07)	24 (0.05)	76 (0.07)
Age				
Ν	49,759	49,958	49,099	113,959
Age (SD)	62.67 (17.95)	64.04 (17.71)	65.81 (17.39)	66.11 (18.27)
Range	0-108	0-109	0-110	0-110
Prescribers				
Ν	7,048	6,985	7,007	11,486
Mean number of dispensations	35.58 (148)	35.4 (170.77)	34.4 (144.08)	64.34 (336.73)
Range	1-4,807	1-7,479	1-4,831	1-13,705

Table 77. Descriptive information for all morphine dispensations.

Table77 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	1,914 (27.16)	1,722 (24.65)	1,622 (23.15)	3,636 (31.66)	
Advanced Practice Nurse	941 (13.35)	1,038 (14.86)	1,149 (16.4)	1,685 (14.67)	
Dentist	17 (0.24)	20 (0.29)	14 (0.2)	43 (0.37)	
Physician	4,063 (57.65)	4,059 (58.11)	4,052 (57.83)	5,852 (50.95)	
Physician's Assistant	84 (1.19)	117 (1.68)	145 (2.07)	210 (1.83)	
Podiatrist	14 (0.2)	19 (0.27)	16 (0.23)	34 (0.3)	
Veterinarian	15 (0.21)	10 (0.14)	9 (0.13)	26 (0.23)	

### Morphine/naltrexone

Morphine/naltrexone is a schedule II controlled substance (Wolters-Kluwer, 2019). It was dispensed 2,994 times between 2014 and 2016. The mean number of dispensations was 3.60 (SD=4.12), and the range was from 1 to 25 dispensations. There were 213 prescribers 2ho prescribed morphine/naltrexone at least once for dispensing to these patients with a mean of 14.06 (SD=32.02) and a range of 1 to 308 times. Further descriptive information on dispensation, patients, and prescribers during the study period can be found in Table 78.

	2014	2015	2016	Total study period
Dispensations (Percent)	0 (0.00)	733 (24.48)	2,261 (75.52)	2,994
Total Quantity Dispensed	0	34,323	108,877	143,200
Total Days Supply	0	20,684	64,575	85,259
Patients				
Ν	0	280	651	831
Mean dispensations per patient (SD)	0.00 (-)	2.62 (2.45)	3.47 (3.31)	3.60 (4.12)
Range of dispensations per patient	-	1-16	1-15	1-25

Table 78. Descriptive information for all morphine/naltrexone dispensations.

Table 78 continued.				
	2014	2015	2016	Total study period
Gender (Percent)				
Male	0 (0.00)	140 (50)	270 (41.47)	366 (44.04)
Female	0 (0.00)	140 (50)	380 (58.37)	464 (55.84)
Missing	0 (0.00)	0 (0.00)	1 (0.15)	1 (0.12)
Age				
Ν	0	280	651	831
Age (SD)	0.00 (-)	50.25 (11.14)	52.39 (11.53)	51.79 (11.44)
Range	-	24-92	21-89	21-92
Prescribers				
Ν	0	105	183	213
Mean number of dispensations	0.00 (-)	6.98 (10.86)	12.36 (26.31)	14.06 (32.02)
Range	-	1-71	1-237	1-308
Prescriber Type				
Unknown	0 (0.00)	11 (10.48)	19 (10.38)	25 (11.74)
Advanced Practice Nurse	0 (0.00)	24 (22.86)	43 (23.5)	48 (22.54)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	0 (0.00)	59 (56.19)	110 (60.11)	124 (58.22)
Physician's Assistant	0 (0.00)	10 (9.52)	11 (6.01)	15 (7.04)
Podiatrist	0 (0.00)	1 (0.95)	0 (0.00)	1 (0.47)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

# Opium

Opium is a schedule II controlled substance (Wolters-Kluwer, 2019) that was dispensed 4,295 times during the three-year study period. The mean number of dispensations was 5.08 (SD=7.85), and the range was from 1 to 43 dispensations. Opium was prescribed a mean of 6.73 times

(SD=17.34) and a range of 1 to 327 times by 846 prescribers. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 79.

Table 79. Descriptive information for all opium dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	1,396 (32.5)	1,464 (34.09)	1,435 (33.41)	4,295
Total Quantity Dispensed	147,173	153,463	163,068	463,704
Total Days Supply	43,024	45,247	44,792	133,063
Patients				
Ν	410	419	378	846
Mean dispensations per patient (SD)	3.4 (3.61)	3.49 (3.5)	3.8 (3.79)	5.08 (7.85)
Range of dispensations per patient	1-24	1-16	1-15	1-43
Gender (Percent)				
Male	164 (40)	171 (40.8)	156 (41.27)	348 (41.13)
Female	244 (59.51)	246 (58.71)	221 (58.47)	495 (58.51)
Missing	2 (0.49)	2 (0.48)	1 (0.26)	3 (0.35)
Age				
Ν	410	419	378	846
Age (SD)	59.58 (14.96)	60.32 (14.04)	60.75 (12.97)	59.93 (14.31)
Range	2-91	4-95	8-96	2-95
Prescribers				
Ν	337	336	328	638
Mean number of dispensations	4.14 (7.37)	4.36 (8.63)	4.38 (8.43)	6.73 (17.34)
Range	1-102	1-118	1-107	1-327

Table 79 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	52 (15.43)	47 (13.99)	35 (10.67)	100 (15.67)	
Advanced Practice Nurse	39 (11.57)	42 (12.5)	47 (14.33)	91 (14.26)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	243 (72.11)	245 (72.92)	242 (73.78)	439 (68.81)	
Physician's Assistant	3 (0.89)	2 (0.6)	4 (1.22)	8 (1.25)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

### Opium/belladonna

Opium/belladonna is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 1,043 times during the three-year study period to709 patients. The mean number of dispensations was 1.47 (SD=2.18), and the range was from 1 to 36 dispensations. There were 419 prescribers who prescribed opium/belladonna at least once for dispensing to these patients with a mean of 2.49 (SD=4.38) and a range of 1 to 52 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 80.

Table 80. Descriptive information for all opium/belladonna dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	370 (35.47)	367 (35.19)	306 (29.34)	1,043
Total Quantity Dispensed	4,381	5,868	5,294	15,543
Total Days Supply	2,167	2,724	2,802	7,693
Patients				
Ν	293	236	214	709
Mean dispensations per patient (SD)	1.26 (0.89)	1.56 (2.01)	1.43 (1.45)	1.47 (2.18)
Range of dispensations per patient	1-12	1-21	1-12	1-36

Table 80 continued.				
	2014	2015	2016	Total study period
Gender (Percent)				
Male	108 (36.86)	78 (33.05)	86 (40.19)	259 (36.53)
Female	185 (63.14)	157 (66.53)	128 (59.81)	449 (63.3)
Missing	0 (0.00)	1 (0.42)	0 (0.00)	1 (0.14)
Age				
Ν	293	236	214	709
Age (SD)	53.09 (17.76)	53.8 (18.31)	57.08 (20.05)	54.78 (18.64)
Range	16-96	8-94	2-98	2-98
Prescribers				
Ν	195	164	171	419
Mean number of dispensations	1.9 (2.29)	2.24 (3.08)	1.79 (1.99)	2.49 (4.38)
Range	1-19	1-24	1-13	1-52
Prescriber Type				
Unknown	27 (13.85)	25 (15.24)	21 (12.28)	60 (14.32)
Advanced Practice Nurse	18 (9.23)	23 (14.02)	26 (15.2)	59 (14.08)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	146 (74.87)	114 (69.51)	121 (70.76)	293 (69.93)
Physician's Assistant	4 (2.05)	2 (1.22)	3 (1.75)	7 (1.67)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

# Oxycodone

Oxycodone, a schedule II controlled substance, (Wolters-Kluwer, 2019) was dispensed 1,019,152 times during the three-year study period with 334,521 (32.82 percent), 342,486 (33.61 percent), and 342,145 dispensations (33.57 percent) in 2014, 2015, and 2016 respectively. The mean number

of dispensations was 6.84 (SD=12.17), and the range was from 1 to 240 dispensations. There were 18,045 prescribers who prescribed oxycodone at least once for dispensing to these patients with a mean of 56.48 (SD=349.89). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 81.

Table 81. De	Table 81. Descriptive information for all oxycodone dispensations.				
	2014	2015	2016	Total study period	
Dispensations (Percent)	334,521 (32.82)	342,486 (33.61)	342,145 (33.57)	1,019,152	
Total Quantity Dispensed	32,060,250	32,968,998	32,393,785	97,423,033	
Total Days Supply	8,281,889	8,316,450	8,169,973	24,768,312	
Patients					
Ν	63,593	68,160	70,428	149,060	
Mean dispensations per patient (SD)	5.26 (6.19)	5.02 (6)	4,86 (5.89)	6.84 (12.17)	
Range of dispensations per patient	1-82	1-120	1-105	1-240	
Gender (Percent)					
Male	29,508 (46.4)	31,559 (46.3)	32,259 (45.8)	68,017 (45.63)	
Female	34,058 (53.56)	36,584 (53.67)	38,147 (54.16)	80,995 (54.34)	
Missing	27 (0.04)	17 (0.02)	22 (0.03)	48 (0.03)	
Age					
Ν	63,589	68,157	70,421	149,048	
Age (SD)	53.05 (15.44)	53.44 (15.78)	53.8 (16.04)	53.08 (16.58)	
Range	0-105	0-103	0-103	0-105	
Prescribers					
Ν	10,315	10,901	11,380	18,045	
Mean number of dispensations	32.43 (157.07)	31.42 (163.14)	30.07 (152.81)	56.48 (349.89)	
Range	1-4,676	1-5,912	1-5,318	1-14,075	

Table 81 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	3,485 (33.79)	3,436 (31.52)	3,407 (29.94)	7,191 (39.85)
Advanced Practice Nurse	1,180 (11.44)	1,350 (12.38)	1,604 (14.09)	2,178 (12.07)
Dentist	74 (0.72)	83 (0.76)	76 (0.67)	174 (0.96)
Physician	5,315 (51.53)	5,632 (51.66)	5,834 (51.27)	7,878 (43.66)
Physician's Assistant	205 (1.99)	320 (2.94)	378 (3.32)	481 (2.67)
Podiatrist	52 (0.5)	65 (0.6)	71 (0.62)	119 (0.66)
Veterinarian	4 (0.04)	15 (0.14)	10 (0.09)	24 (0.13)

Oxycodone/acetaminophen

Oxycodone/acetaminophen is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 2,111,770 times during the three-year study period. The mean number of dispensations was 3.77 (SD=6.92), and the range was from 1 to 220 dispensations. Oxycodone/acetaminophen was prescribed by a prescriber for dispensing a mean of 77.07 (SD=331.10). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 82.

Table 82. Descriptive information for all oxycodone/acetaminophen dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	668,782 (31.67)	718,762 (34.04)	724,226 (34.29)	2,111,770
Total Quantity Dispensed	55,262,845	58,504,709	58,890,478	172,658,032
Total Days Supply	12,713,292	13,570,528	13,842,594	40,126,414
Patients				
Ν	229,625	241,010	235,607	560,114
Mean dispensations per patient (SD) Range of	2.91 (3.57)	2.98 (3.62)	3.08 (3.74)	3.77 (6.92)
dispensations per patient	1-73	1-76	1-91	1-220

	Table 82 continued.					
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	94,395 (41.11)	100,297 (41.62)	98,224 (41.69)	233,807 (41.74)		
Female	135,162 (58.86)	140,643 (58.36)	137,326 (58.29)	326,139 (58.23)		
Missing	68 (0.03)	70 (0.03)	57 (0.02)	168 (0.03)		
Age						
Ν	229,623	241,009	235,603	560,109		
Age (SD)	48.56 (16.84)	49.05 (16.87)	49.69 (16.88)	48.13 (17.25)		
Range	0-105	0-109	0-110	0-109		
Prescribers						
Ν	17,448	18,112	18,310	27,402		
Mean number of dispensations	38.33 (138.34)	39.68 (152.88)	39.55 (143.14)	77.07 (331.10)		
Range	1-5,464	1-8,888	1-5,548	1-16,386		
Prescriber Type						
Unknown	6,096 (34.94)	5,963 (32.92)	5,494 (30.01)	11,522 (42.05)		
Advanced Practice Nurse	1,851 (10.61)	2,130 (11.76)	2,430 (13.27)	3,046 (11.12)		
Dentist	837 (4.8)	871 (4.81)	859 (4.69)	1,330 (4.85)		
Physician	8,047 (46.12)	8,371 (46.22)	8,651 (47.25)	10,518 (38.38)		
Physician's Assistant	426 (2.44)	568 (3.14)	651 (3.56)	729 (2.66)		
Podiatrist	185 (1.06)	207 (1.14)	225 (3.56)	250 (0.91)		
Veterinarian	6 (0.03)	2 (0.01)	0 (0.00)	7 (0.03)		

### Oxycodone/aspirin

Oxycodone/aspirin is a schedule II controlled substance (Wolters-Kluwer, 2019) that was dispensed 1,066 times between 2014 and 2016. Two hundred thirty-one individuals received at least one dispensation for oxycodone/aspirin. The mean number of dispensations was 4.61

(SD=8.26), and the range was from 1 to 38 dispensations. There were 257 prescribers who prescribed oxycodone/aspirin at least once for dispensing to these patients with a mean of 4.15 (SD=7.33) and a range of 1 to 67 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 83.

Table 83. Descriptive information for all oxycodone/aspirin dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	442 (41.46)	382 (35.83)	242 (22.7)	1,066
Total Quantity Dispensed	37,099	33,598	22,698	93,395
Total Days Supply	10,229	9,283	5,959	25,471
Patients				
Ν	157	90	60	231
Mean dispensations per patient (SD)	2.82 (3.41)	4.24 (4.34)	4.03 (4.3)	4.61 (8.26)
Range of dispensations per patient	1-14	1-20	1-13	1-38
Gender (Percent)				
Male	75 (47.77)	47 (52.22)	29 (48.33)	113 (48.92)
Female	82 (52.23)	43 (47.78)	31 (51.67)	118 (51.08)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	157	90	60	231
Age (SD)	55.65 (15.33)	58.79 (14.74)	62.47 (12.76)	55.75 (15.27)
Range	19-89	21-90	34-86	19-89
Prescribers				
Ν	155	114	77	257
Mean number of dispensations	2.85 (3.33)	3.35 (3.85)	3.14 (3.86)	4.15 (7.33)
Range	1-19	1-24	1-24	1-67

Table 83 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	18 (11.61)	9 (7.89)	9 (11.69)	26 (10.12)	
Advanced Practice Nurse	13 (8.39)	13 (11.4)	9 (11.69)	29 (11.28)	
Dentist	23 (14.84)	14 (12.28)	6 (7.79)	38 (14.79)	
Physician	95 (61.29)	76 (66.67)	53 (68.83)	157 (61.09)	
Physician's Assistant	2 (1.29)	0 (0.00)	0 (0.00)	2 (0.78)	
Podiatrist	4 (2.58)	2 (1.75)	0 (0.00)	5 (1.95)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

#### Oxycodone/ibuprofen

Oxycodone/ibuprofen is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 438 times during the three-year study period to 290 individuals. The mean number of dispensations was 1.51 (SD=2.86), and the range was from 1 to 37 dispensations. Oxycodone/ibuprofen was prescribed a mean of 7.68 times (SD=23.13) for dispensing to these individuals. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 84.

Total study 2014 2015 2016 period **Dispensations** (Percent) 324 (73.97) 438 64 (14.61) 50 (11.42) **Total Quantity** 11,218 4,605 4,638 20,461 Dispensed **Total Days Supply** 3,134 1,160 1,014 5,308 Patients Ν 249 32 22 290 Mean dispensations 1.3 (1.33) 2(2.34)2.27 (2.69) 1.51 (2.86) per patient (SD) Range of 1-112 1-13 1-37 dispensations per 1-13 patient

Table 84. Descriptive information for all oxycodone/ibuprofen dispensations.

Table 84 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	104 (41.77)	19 (59.38)	10 (45.45)	123 (42.41)	
Female	145 (58.23)	13 (40.63)	12 (54.55)	167 (57.59)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
N	249	32	22	290	
Age (SD)	31.8 (17.03)	45.06 (20.48)	42.68 (17.05)	32.87 (17.42)	
Range	14-77	14-782	17-73	14-78	
Prescribers					
Ν	42	18	12	57	
Mean number of dispensations	7.71 (24.4)	3.56 (4.55)	4.17 (4.63)	7.68 (23.12)	
Range	1-149	1-16	1-13	1-149	
Prescriber Type					
Unknown	8 (19.05)	2 (11.11)	2 (16.67)	11 (19.3)	
Advanced Practice Nurse	3 (7.14)	0 (0.00)	3 (25)	5 (8.77)	
Dentist	10 (23.81)	3 (16.67)	2 (16.67)	10 (17.54)	
Physician	20 (47.62)	12 (66.67)	5 (41.67)	29 (50.88)	
Physician's Assistant	1 (2.38)	1 (5.56)	0 (0.00)	2 (3.51)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

# Oxymorphone

Oxymorphone, a schedule II controlled substance, (Wolters-Kluwer, 2019) was dispensed 82,441 times during the study period. The mean number of dispensations was 10.96 (SD=14.91), and the

range was from 1 to 219 dispensations. There were 2,088 prescribers who prescribed oxymorphone at least once for dispensing to these patients with a mean of 39.48 (SD=176.70) and a range of 1 to 4,241 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 85.

Table 85. Des	Table 85. Descriptive information for all oxymorphone dispensations.				
	2014	2015	2016	Total study period	
Dispensations (Percent)	29,833 (36.19)	27,308 (33.12)	25,300 (30.69)	82,441	
Total Quantity Dispensed	2,142,483	1,919,784	1,739,995	5,802,262	
Total Days Supply	834,819	754,726	700,195	2,289,740	
Patients					
Ν	4,284	3,796	3,445	7,519	
Mean dispensations per patient (SD)	6.96 (6.47)	7.19 (6.66)	7.34 (7.06)	10.96 (14.91)	
Range of dispensations per patient	1-71	1-71	1-79	1-219	
Gender (Percent)					
Male	1,884 (43.98)	1,664 (43.84)	1,491 (43.28)	3,280 (43.62)	
Female	2,397 (55.95)	2,131 (56.14)	1,951 (56.63)	4,233 (56.3)	
Missing	3 (0.07)	1 (0.03)	3 (0.09)	6 (0.08)	
Age					
Ν	4,283	3,794	3,444	7,517	
Age (SD)	51.3 (12.39)	52.48 (12.17)	53.14 (12.17)	51.65 (12.46)	
Range	2-96	16-97	18-98	2-98	
Prosoribors					
N	1.000	1 1 4 7	1.010	2 000	
N Mean number of	1,262	1,14/	1,019	2,088	
dispensations	23.64 (74.31)	23.81 (83.54)	24.83 (86.8)	39.48 (176.70)	
Range	1-1,341	1-1,469	1-1,431	1-4,241	

Table 85 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	314 (24.88)	251 (21.88)	212 (20.8)	529 (25.34)
Advanced Practice Nurse	184 (14.58)	172 (15)	174 (17.08)	335 (16.04)
Dentist	2 (0.16)	5 (0.44)	2 (0.2)	8(0.38)
Physician	736 (58.32)	689 (60.07)	602 (59.08)	1,162 (55.65)
Physician's Assistant	21 (1.66)	27 (2.35)	27 (2.65)	45 (2.16)
Podiatrist	5 (0.4)	3 (0.26)	2 (0.2)	9 (0.43)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

# Paregoric

Paregoric is a schedule III controlled substance. (Wolters-Kluwer, 2019) It was dispensed 265 times during the three-year study period with 137 (51.7 percent), 83 (31.32 percent), and 45 dispensations (16.98 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 2.68 (SD=3.62), and the range was from 1 to 22 dispensations. One hundred three prescribers prescribed paregoric at least once for dispensing to these patients with a mean of 2.57 (SD=3.41) and a range of 1 to 22 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 86.

Table 86. Descriptive information for all paregoric dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	137 (51.7)	83 (31.32)	45 (16.98)	265
Total Quantity Dispensed	33,560	23,071	15,509	72,140
Total Days Supply	2,485	1,405	712	4,602
Patients				
Ν	60	38	20	99
Mean dispensations per patient (SD)	2.28 (2.54)	2.18 (2.35)	2.25 (2.4)	2.68 (3.62)
Range of dispensations per patient	1-10	1-11	1-10	1-22

Table 86 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	29 (48.33)	17 (44.74)	6 (30)	46 (46.46)	
Female	31 (51.67)	21 (55.26)	14 (70)	53 (53.54)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	60	38	20	99	
Age (SD)	65.27 (16.47)	66.08 (14.15)	64.45 (21.64)	64.08 (17)	
Range	11-92	31-91	1-92	1-92	
Prescribers					
Ν	61	37	28	103	
Mean number of dispensations	2.25 (2.62)	2.24 (2.37)	1.61 (1.13)	2.57 (3.41)	
Range	1-15	1-11	1-6	1-22	
Prescriber Type					
Unknown	5 (8.2)	9 (24.32)	2 (7.14)	14 (13.59)	
Advanced Practice Nurse	5 (8.2)	3 (8.11)	6 (21.43)	13 (12.62)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	50 (81.97)	25 (67.57)	20 (71.43)	75 (72.82)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	1 (1.64)	0 (0.00)	0 (0.00)	1 (0.97)	

### Pentazocine/acetaminophen

Pentazocine/acetaminophen is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 85 times to 58 individuals only during 2014. The mean number of dispensations was 1.47 (SD=0.86), and the range was from 1 to 6 dispensations. Fifty-eight prescribers

prescribed pentazocine/acetaminophen for dispensing to these patients with a mean of 1.67 (SD=1.23) and a range of 1 to 6 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 87.

	2014	2015	2016	Total study period
Dispensations (Percent)	85 (100)	0 (0.00)	0 (0.00)	85 (100)
Total Quantity Dispensed	6,961	0	0	6,961
Total Days Supply	1,990	0	0	1,990
Patients				
Ν	58	0	0	58
Mean dispensations per patient (SD)	1.47 (0.86)	0.00 (-)	0.00 (-)	1.47 (0.86)
Range of dispensations per patient	1-6	-	-	1-6
Gender (Percent)				
Male	19 (32.76)	0 (0.00)	0 (0.00)	19 (32.76)
Female	39 (67.24)	0 (0.00)	0 (0.00)	39 (67.24)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
Ν	58	0	0	58
Age (SD)	59.31 (14.2)	0.00 (-)	0.00 (-)	59.31 (14.2)
Range	22-88	-	-	22-88
Prescribers				
Ν	51	0	0	51
Mean number of dispensations	1.67 (1.23)	0.00 (-)	0.00 (-)	1.67 (1.23)
Range	1-6	-	-	1-6

Table 87. Descriptive information for all pentazocine/acetaminophen dispensations.

Table 87 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	7 (13.73)	0 (0.00)	0 (0.00)	7 (13.73)
Advanced Practice Nurse	4 (7.84)	0 (0.00)	0 (0.00)	4 (7.84)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	38 (74.51)	0 (0.00)	0 (0.00)	38 (74.51)
Physician's Assistant	2 (3.92)	0 (0.00)	0 (0.00)	2 (3.92)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

### Pentazocine/naloxone

Pentazocine/naloxone, a schedule IV controlled substance, (Wolters-Kluwer, 2019) was dispensed 7,786 times during the three-year study period. The mean number of dispensations was 3.22 (SD=6.28), and the range was from 1 to 21 dispensations. Pentazocine/naloxone was prescribed by 708 prescribers at least once for dispensing to these patients with a mean of 11.00 (SD=24.45). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 88.

	2014	2015	2016	Total study period
Dispensations (Percent)	3,226 (41.43)	2,582 (33.16)	1,978 (25.4)	7,786
Total Quantity Dispensed	229,191	181,691	157,109	567,991
Total Days Supply	60,080	48,623	42,080	150,783
Patients				
Ν	1,196	937	719	2,418
Mean dispensations per patient (SD)	2.7 (3.46)	2.76 (3.52)	2.75 (3.4)	3.22 (6.28)
Range of dispensations per patient	1-34	1-28	1-21	1-66

Table 88. Descriptive information for all pentazocine/naloxone dispensations.

Table 88 continued.				
	2014	2015	2016	Total study period
Gender (Percent)				
Male	386 (32.27)	333 (35.54)	264 (36.72)	826 (34.16)
Female	809 (67.64)	604 (64.46)	454 (63.14)	1,590 (65.76)
Missing	1 (0.08)	0 (0.00)	1 (0.14)	2 (0.08)
Age				
Ν	1,196	937	719	2,418
Age (SD)	51.22 (14.98)	51.17 (15.11)	51.76 (15.16)	50.48 (15.25)
Range	15-100	14-90	15-98	14-100
Prescribers				
Ν	445	364	313	708
Mean number of dispensations	7.25 (12.54)	7.09 (11.81)	6.32 (9.45)	11.00 (24.45)
Range	1-110	1-100	1-99	1-270
Prescriber Type				
Unknown	101 (22.7)	77 (21.15)	65 (20.77)	171 (24.15)
Advanced Practice Nurse	45 (10.11)	39 (10.71)	39 (12.46)	94 (13.28)
Dentist	16 (3.6)	14 (3.85)	8 (2.56)	26 (3.67)
Physician	274 (61.57)	221 (60.71)	192 (61.34)	395 (55.79)
Physician's Assistant	6 (1.35)	11 (3.02)	7 (2.24)	16 (2.26)
Podiatrist	3 (0.67)	2 (0.55)	2 (0.64)	6 (0.85)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

# Remifentanil

Remifentanil is a schedule II controlled substance (Wolters-Kluwer, 2019) that was dispensed only one time during the study period. It was dispensed in 2014 to a 45-year-old male individual.

Information on the number of dispensations and prescribers across each year and during the threeyear study period can be found in Table 89.

	2014	2015	2016	Total study period
Dispensations (Percent)	1 (100)	0 (0.00)	0 (0.00)	1 (100)
Total Quantity Dispensed	10	0	0	10
Total Days Supply	10	0	0	10
Patients				
Ν	1	0	0	1
Mean dispensations per patient (SD)	1 (-)	0.00 (-)	0.00 (-)	1 (-)
Range of dispensations per patient	-	-	-	-
Gender (Percent)				
Male	1 (100)1	0 (0.00)	0 (0.00)	1 (100)
Female	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
N	1	0	0	1
Age (SD)	45 (-)	0.00 (-)	0.00 (-)	45 (-)
Range	-	-	-	-
Prescribers				
Ν	1	0	0	1
Mean number of dispensations	1 (-)	0.00 (-)	0.00 (-)	1 (-)
Range	-	-	-	-

Table 89. Descriptive information for all remifentanil dispensations.

Table 89 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Physician	1 (100)	0 (0.00)	0 (0.00)	1 (100)1
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Sufentanil

Sufentanil is a schedule II controlled substance (Wolters-Kluwer, 2019) that was dispensed 28 times during the three-year study period. Eleven patients received at least one dispensation for sufentanil. The mean number of dispensations was 2.55 (SD=2.07), and the range was from 1 to 7 dispensations. Eight prescribers prescribed sufentanil at least once for dispensing to these patients with a mean of 3.50 times (SD=2.33) and a range of 1 to 8 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 90.

Table 90. Descriptive information for an surentann dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	12 (42.86)	15 (53.57)	1 (3.57)	28
Total Quantity Dispensed	12	15	20	47
Total Days Supply	168	99	30	297
Patients				
Ν	5	7	1	11
Mean dispensations per patient (SD)	2.4 (1.52)	2.14 (0.69)	1 (-)	2.55 (2.07)
dispensations per patient	1-4	1-3	-	1-7

Table 90. Descriptive information for all sufentanil dispensations.

Table 90 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	0 (0.00)	2 (28.57)	0 (0.00)	2 (18.18)	
Female	5 (100)	5 (71.43)	1 (100)	9 (81.82)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	5	7	1	11	
Age (SD)	63.8 (17.58)	62.57 (19.97)	78 (-)	63.64 (17.24)	
Range	47-87	45-93	-	45-93	
Prescribers					
Ν	4	6	1	8	
Mean number of dispensations	3.00 (1.15)	2.50 (1.52)	1 (-)	3.50 (2.33)	
Range	2-4	1-5	-	1-8	
Prescriber Type					
Unknown	1 (25)	2 (33.33)	0 (0.00)	2 (25)	
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	3 (75)	4 (66.67)	1 (100)	6 (75)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

### Tapentadol

Tapentadol is a schedule II controlled substance (Wolters-Kluwer, 2019). It was dispensed 63,235 times during the study period. The mean number of dispensations was 5.22 (SD=8.81), and the range was from 1 to 166 dispensations. There were 2,625 prescribers who prescribed tapentadol at

least once for dispensing to these patients with a mean of 24.09 (SD=117.09) and a range of 1 to 4,188 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 91.

14010 91.	2014	2015	2016	Total study period
Dispensations (Percent)	20,204 (31.95)	21.519 (34.03)	21,512 (34.02)	63,235
Total Quantity Dispensed	1,556,848	1,633,377	1,599,807	4,790,032
Total Days Supply	524,848	568,595	574,322	1,667,765
Patients				
Ν	5,442	5,386	4,938	12,116
Mean dispensations per patient (SD)	3.71 (4.28)	4 (4.52)	4.36 (5.07)	5.22 (8.81)
dispensations per patient	1-36	1-54	1-123	1-166
Gender (Percent)				
Male	1,891 (34.75)	1,847 (34.29)	1,786 (36.17)	4,239 (34.99)
Female	3,550 (65.23)	3,536 (65.65)	3,146 (63.71)	7,870 (64.96)
Missing	1 (0.02)	3 (0.06)	6 (0.12)	7 (0.06)
Age				
Ν	5,442	5,386	4,938	12,116
Age (SD)	50.47 (14.2)	50.41 (13.75)	51.59 (13.67)	50.49 (14.16)
Range	1-96	4-99	4-108	1-108
Prescribers				
Ν	1,466	1,468	1,368	2,625
Mean number of dispensations	13.78 (44.69)	14.66 (53.98)	15.73 (66.99)	24.09 (117.09)
Range	1-874	1-1,324	1-1,990	1-4,188

Table 91. Descriptive information for all tapentadol dispensations.

Table 91 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	293 (19.99)	315 (21.46)	281 (20.54)	621 (23.66)
Advanced Practice Nurse	205 (13.98)	228 (15.53)	217 (15.86)	395 (15.05)
Dentist	5 (0.34)	6 (0.41)	15 (1.1)	23 (0.88)
Physician	898 (61.26)	844 (57.49)	777 (56.8)	1,458 (55.54)
Physician's Assistant	38 (2.59)	46 (3.13)	52 (3.8)	84 (3.2)
Podiatrist	27 (1.84)	29 (1.98)	26 (1.9)	44 (1.68)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

#### Tramadol

Tramadol is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 2,406,534 times during the three-year study period with 395,648 (16.44 percent), 1,008,944 (41.93 percent), and 1,001,942 dispensations (41.63 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 3.65 (SD=5.78), and the range was from 1 to 140 dispensations. There were 34,892 prescribers who tramadol with a mean of 68.97 (SD=225.54). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 92.

Table 92. Descriptive information for all tramadol dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	395,648 (16.44)	1,008,944 (41.93)	1,001,942 (41.63)	2,406,534
Total Quantity Dispensed	32,863,337	83,819,808	81,814,789	198,497,974
Total Days Supply	8,436,788	22,049,653	21,976,560	52,463,001
Patients				
Ν	194,815	354,528	345,044	658,749
Mean dispensations per patient (SD)	2.03 (1.8)	2.85 (3.27)	2.9 (3.38)	3.65 (5.78)
Range of dispensations per patient	1-72	1-72	1-73	1-140

Table 92 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	70,782 (36.33)	135,520 (38.23)	132,074 (38.28)	257,105 (39.03)	
Female	123,711 (63.5)	218,379 (61.6)	212,288 (61.52)	400,311 (60.77)	
Missing	322 (0.17)	629 (0.18)	682 (0.2)	1,333 (0.2)	
Age					
N	194,803	354,512	345,033	658,712	
Age (SD)	54.24 (18.84)	53.19 (19.02)	54.31 (18.87)	52.46 (19.31)	
Range	0-106	0-107	0-108	0-108	
Prescribers					
Ν	17,182	23,635	25,296	34,892	
Mean number of dispensations	23.03 (46)	42.69 (125.84)	39.61 (112.04)	68.97 (225.54)	
Range	1-728	1-11,486	1-8,460	1-19,951	
Prescriber Type					
Unknown	5,444 (31.68)	8,866 (37.51)	9,752 (38.55)	16,814 (48.19)	
Advanced Practice Nurse	1,957 (11.39)	2,614 (11.06)	3,000 (11.86)	3.418 (9.8)	
Dentist	928 (5.4)	1,376 (5.82)	1,410 (5.54)	1,834 (5.26)	
Physician	7,616 (44.33)	9,146 (38.7)	9,368 (37.03)	10,812 (30.99)	
Physician's Assistant	498 (2.9)	668 (2.83)	771 (3.05)	826 (2.37)	
Podiatrist	188 (1.09)	232 (0.98)	233 (0.92)	259 (0.74)	
Veterinarian	55 (3.21)	733 (3.1)	771 (3.05)	929 (2.66)	

### Tramadol/acetaminophen

Tramadol/acetaminophen is a schedule IV controlled substance (Wolters-Kluwer, 2019). It was dispensed 89,611 times during the study period. The mean number of dispensations was 2.63 (SD=4.47), and the range was from 1 to 80 dispensations. There were 5,856 prescribers who

prescribed tramadol/acetaminophen with a mean of 15.30 (SD=48.19). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 93.

Table 93. Descriptive information for all tramadol/acetaminophen dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	16,618 (18.54)	38,415 (42.87)	34,578 (38.59)	89,611
Total Quantity Dispensed	1,367,790	3,073,645	2,745,320	7,186,755
Total Days Supply	327,852	742,375	674,485	1,744,712
Patients				
Ν	9,526	17,169	15,353	34,125
Mean dispensations per patient (SD)	1.74 (1.57)	2.24 (2.66)	2.25 (2.79)	2.63 (4.47)
dispensations per patient	1-36	1-35	1-49	1-80
Gender (Percent)				
Male	3,521 (36.96)	6,586 (38.36)	5,880 (38.3)	13,450 (39.41)
Female	6,004 (63.03)	10,581 (61.63)	9,468 (61.67)	20,668 (60.57)
Missing	1 (0.01)	2 (0.01)	5 (0.03)	7 (0.02)
Age				
N	9,526	17,168	15,352	34,123
Age (SD)	57.78 (18.9)	55.15 (18.87)	55.97 (18.89)	53.95 (18.99)
Range	4-107	9-102	1-105	1-107
Prescribers				
Ν	2,773	3,840	3,685	5,856
Mean number of dispensations	5.99 (12.09)	10 (25.73)	9.38 (24.78)	15.30 (48.19)
Range	1-264	1-783	1-785	1-1,832

Table 93 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	344 (12.41)	475 (12.37)	478 (12.97)	948 (16.19)	
Advanced Practice Nurse	306 (11.03)	526 (13.7)	567 (15.39)	876 (14.96)	
Dentist	275 (9.92)	431 (11.22)	392 (10.64)	630 (10.76)	
Physician	1,775 (64.01)	2,275 (59.24)	2,120 (57.53)	3,180 (54.3)	
Physician's Assistant	64 (2.31)	116 (3.02)	114 (3.09)	196 (3.35)	
Podiatrist	9 (0.32)	16 (0.442)	14 (0.38)	25 (0.43)	
Veterinarian	0 (0.00)	1 (0.03)	0 (0.00)	1 (0.02)	

### Time-series Analysis for Opioid Dispensations

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply of opioid dispensations is explained below.

Figures 38 and 39 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 montl	n		

Regression wi maximum lag:	th Newey-West 0	standard e	rrors	Number F( 5, Prob >	of obs = 30) = F =	36 8.19 0.0001
prescripti~l	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x_t672	7503.05 -10338.41 -5928.729 -17994.68 -6625.217	4164.603 29584.47 4633.826 16590.49 2550.632	1.80 -0.35 -1.28 -1.08 -2.60	0.082 0.729 0.211 0.287 0.014	-1002.204 -70757.95 -15392.26 -51876.98 -11834.3	16008.3 50081.13 3534.807 15887.62 -1416.131
_cons	506875.2	19371.89	26.17	0.000	467312.6	546437.9

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff S	td. Err.	t	P> t	[95% Conf. Interva	1]
Treated	1574.3214203	1.8537	0.7748	0.4445	-2.58e+03 5723.9202	

Postintervention Linear Trend: 672

Treated:	b[	t]+ b	[ x t65	57]+ b	[ x t6]	12]
		_		_		

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf. Interval]
Treated	-5.05e+031541.8479	-3.2759	0.0027	-8.20e+03 -1.90e+03

Figure 38. Interrupted time-series analysis for full opioid population total dispensations.



Figure 39. Interrupted time-series graph of dispensations by month for full opioid population.

Dispensations reported to the INSPECT program increased for the months prior to each policy change (p=0.082). After the rescheduling of hydrocodone combination products, the number of dispensations decreased in the month immediately after (p=0.729) and then increased for the remaining months after the policy change (p=0.211). The hydrocodone combination rescheduling policy did not have a significant impact on the number of opioid prescriptions dispensed (p=0.4445). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.287). In the months following the policy change the number of dispensations significantly decreased (p=0.014, CI [-11,834.3, -1,1416.13]). The change in INSPECT reporting led to a significant decrease in the number of opioid prescriptions per month (p=0.0027).

Figures 40 and 41 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively.

time variable: month, 2014m1 to 2016m12 delta: 1 month									
Regression with Newey-West standard errors Number of obs = 3									
maximum lag: (	) -			F( 5,	30) =	5.72			
				Prob >	F =	0.0008			
qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]			
t	338489.3	438382.2	0.77	0.446	-556806.7	1233785			
x657	2757041	2901845	0.95	0.350	-3169317	8683400			
_x_t657	-323413.5	472646.5	-0.68	0.499	-1288686	641859.4			
x672	-919361.7	1559625	-0.59	0.560	-4104540	2265817			
_x_t672	-399774.9	240934.7	-1.66	0.107	-891829.2	92279.29			
_cons	3.67e+07	1946771	18.84	0.000	3.27e+07	4.06e+07			

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	1.51e+04 1.77e+05	0.0853	0.9326	-3.46e+05	3.76e+05

Postintervention Linear Trend: 672

Treated: _b[_t]+_b[_x_t657]+_b[_x_t672]							
Linear Trend	Coeff Std.	Err. t	P> t	[95% Conf. Interval]			
Treated	-3.85e+05 1.64e+	05 -2.3484	0.0256	-7.19e+05 -5.02e+04			

Figure 40. Interrupted time-series analysis for full opioid population total quantity dispensed.



Figure 41. Interrupted time-series graph of total quantity dispensed by month for full opioid population.

The quantity of products reported to the INSPECT program increased for the months prior to each policy change (p=0.446). After the rescheduling of hydrocodone combination products, the total quantity for dispensations increased in the month immediately after (p=0.350) and decreased for the remaining months after the policy change (p=0.499). The hydrocodone combination rescheduling policy did not have a significant impact on the number of opioid prescriptions dispensed (p=0.9326). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.560). In the months following the policy change, the quantity of dispensations continued to decrease each month (p=0.107). The change in INSPECT reporting led to a significant decrease in the number of opioid prescriptions per month (p=0.0256).

Figures 42 and 43 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 month	h		

Regression with Newey-West standard errors	Number of obs	; =	36
maximum lag: 4	F(5,	30) =	37.45
	Prob > F	=	0.0000

dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x_t672 _x_t672	180840.9 5483.728 -136461.9 -351975.6 -126682.5 8604439	62252.77 306727.5 76078.76 169520.5 24816.24 269071 2	2.90 0.02 -1.79 -2.08 -5.10	0.007 0.986 0.083 0.047 0.000	53703.73 -620937.4 -291835.4 -698182.6 -177364 8054822	307978 631904.9 18911.71 -5768.554 -76001

Postintervention Linear Trend: 657

Treated:	b	[	t]	+	b[	х	t65	7]
	_	_		_				

Linear Trend	Coeff Std. Er	r. t	P> t	[95% Conf	. Interval]
Treated	4.44e+04 2.20e+04	2.0150	0.0529	-599.7077	8.94e+04

Postintervention Linear Trend: 672

Treated:	b [	t]+	b [	х	t657]	+ b[	X 1	t672]
						_		

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	-8.23e+04	1.35e+04	-6.0792	0.0000	-1.10e+05 -5.47e+04

Figure 42. Interrupted time-series analysis for full opioid population total days supply of dispensations.



Figure 43. Interrupted time-series graph of total days supply of dispensations by month for full opioid population.

The days supply of products reported to the INSPECT program significantly increased for the months prior to each policy change (p=0.007, CI [53,703.73; 307,978]). After the rescheduling of hydrocodone combination products, the total days supply for dispensations increased in the month immediately after (p=0.986) and then decreased for the remaining months after the policy change (p=0.083). The hydrocodone combination rescheduling policy did not have a significant impact on the number of opioid prescriptions dispensed (p=0.0529). After the change to the INSPECT reporting requirements, the days supply of dispensations significantly decreased in the month immediately following the policy change (p=0.047, CI [-698,182.6, -5,768.55]). In the months following the policy change the days supply of dispensations continued to significantly decrease each remaining month of the study period (p<0.001, CI [-177,364; -76,001]). The change in INSPECT reporting led to a significant decrease in the days supply of opioid dispensations per month (p<0.001).

#### Stimulants

#### Descriptive Information for Full Stimulant Population and Each Drug

A controlled substance in the stimulant drug class was dispensed 4,221,979 times during the threeyear study period with 21,369,247 (32.43 percent), 1,402,252 (33.21 percent), and 1,450,480 (34.36 percent) dispensed in 2014, 2015, and 2016 respectively. There were 13 different controlled substances in the stimulant class, and substances spanned schedules 2 through IV. (Wolters-Kluwer, 2019) Methylphenidate was the most common stimulant dispensed over the three-year study period with 1,351,815 (32.02 percent) dispensations, while methamphetamine was the least common stimulant dispensed with 532 (0.01 percent) dispensations. A list of the controlled substances in the stimulant class and the number of dispensations across each year and during the three-year study period can be found in Table 94.

	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)
Amphetamine	0 (0.00)	1,077 (0.08)	3,789 (0.26)	4,866 (0.12)
Amphetamine/ dextroamphetamine	127,243 (9.29)	116,623 (8.32)	154,511 (10.65)	398,377 (9.44)
Armodafinil	36,121 (2.64)	35,301 (2.52)	21,653 (1.49)	93,075 (2.2)
Benzphetamine	926 (0.07)	995 (0.07)	877 (0.06)	2,798 (0.07)
Dexmethylphenidate	115,358 (8.42)	119,506 (8.52)	118,697 (8.18)	353,561 (8.37)
Dextroamphetamine	10,946 (0.8)	12,191 (0.87)	11,109 (0.77)	34,246 (0.81)
Diethylpropion	2,423 (0.18)	2,556 (0.18)	3,486 (0.24)	8,465 (0.2)
Lisdexamfetamine	375,076 (27.39)	399,262 (28.47)	426,152 (29.38)	1,200,490 (28.43)
Methamphetamine	203 (0.01)	188 (0.01)	141 (0.01)	532 (0.01)
Methylphenidate	455,732 (33.28)	457,111 (32.6)	438,972 (30.26)	1,351,815 (32.02)
Modafinil	36,834 (2.69)	37,387 (2.67)	41,335 (2.85)	115,556 (2.74)
Phentermine	197,720 (14.44)	207,844 (14.82)	220,630 (15.21)	626,194 (14.83)
Phentermine/topiramate	10,665 (0.78)	12,211 (0.87)	9,128 (0.63)	32,004 (0.76)
Total	1,369,247 (32.43)	1,402,252 (33.21)	1,450,480 (34.36)	4,221,979

Table 94. Stimulant dispensations each year and during the full study period.

Over the three-year study period, 440,721 patients were dispensed a stimulant with a mean of 9.58 dispensations (SD=10.78) and a range from 1 to 385 dispensations. Women received a majority (54.18 percent) of stimulant dispensations, and the average patient age was 29.46 (SD=18.22). There were 25,674 who prescribed a stimulant during the study period with a mean of 164.45 (SD=606.14). Descriptive information on stimulant dispensations can be found in Table 95.

2014 2015 2016 Total study period							
Dispensations (Percent)	1,369,247 (32.43)	1,402,252 (33.21)	1,450,480 (34.36)	4,221,979			
Total Quantity Dispensed	53,742,583	56,077,879	59,559,048	169,379,510			
Total Days Supply	42,401,008	43,361,130	44,950,225	130,712,363			

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Table 95 continued.							
	2014	2015	2016	Total study period			
Patients							
Ν	254,385	257,282	267,656	440,721			
Mean dispensations per patient (SD)	5.38 (4.42)	5.45 (4.43)	5.42 (4.34)	9.58 (10.78)			
Range of dispensations per patient	1-211	1-159	1-102	1-385			
Gender (Percent)							
Male	123,273 (48.46)	124,051 (48.22)	127,464 (47.62)	201,834 (45.8)			
Female	131,064 (51.52)	133,165 (51.76)	140,151 (52.36)	238,791 (54.18)			
Missing	48 (0.02)	66 (0.03)	41 (0.02)	96 (0.02)			
Age							
N	254,380	257,276	267,652	440,711			
Age (SD)	27.89 (18.13)	28.4 (18.22)	29.1 (18.14)	29.46 (18.22)			
Range	0-106	0-102	0-106	0-106			
Prescribers							
Ν	14,570	14,757	16,926	25,674			
Mean number of dispensations	93.98 (260.02)	95.02 (266.87)	85.7 (260.5)	164.45 (606.14)			
Range	1-6,688	1-10,749	1-13,551	1-30,988			

Table 95 continued.						
	2014	2015	2016	Total study period		
Prescriber Type						
Unknown	6,727 (46.17)	6,519 (44.18)	8,256 (48.78)	14,710 (57.3)		
Advanced Practice Nurse	1,682 (11.54)	1,913 (12.96)	2,263 (13.37)	2,754 (10.73)		
Dentist	84 (0.58)	75 (0.51)	60 (0.35)	181 (0.7)		
Physician	5,906 (40.54)	6,039 (40.92)	6,116 (36.13)	7,671 (29.88)		
Physician's Assistant	152 (1.04)	188 (1.27)	211 (1.25)	310 (1.21)		
Podiatrist	9 (0.06)	17 (0.12)	14 (0.08)	30 (0.12)		
Veterinarian	10 (0.07)	6 (0.04)	6 (0.04)	18 (0.07)		

### Amphetamine

Amphetamine is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 4,866 times during the three-year study period. The mean number of dispensations was 2.75 (SD=2.92), and the range was from 1 to 23 dispensations. The mean number of times amphetamine was prescribed was 10.01 (SD=27.87). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 96.

Table 96. Descriptive information for all amphetamine dispensations.

	2014	2015	2016	Total study period	
Dispensations (Percent)	0 (0.00)	1,077 (22.13)	3,789 (77.87)	4,866	
Total Quantity Dispensed	0	56,431	174,516	230,947	
Total Days Supply	0	31,449	112,585	144,034	
Patients					
Ν	0	587	1,377	1,768	
Mean dispensations per patient (SD)	0.00 (-)	1.83 (1.55)	2.75 (2.44)	2.75 (2.92)	
Range of dispensations per patient	0	1-13	1-20	1-23	
Table 96 continued.					
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	2014	2015	2016	Total study period	
Gender (Percent)					
Male	0 (0.00)	313 (53.32)	853 (61.95)	1,046 (59.16)	
Female	0 (0.00)	274 (46.68)	524 (38.05)	722 (40.84)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	0	587	1,377	1,768	
Age (SD)	0.00 (-)	25.38 (16.77)	17.39 (13.76)	19.81 (15.23)	
Range	-	2-73	3-69	2-73	
Prescribers					
Ν	0	167	435	486	
Mean number of dispensations	0.00 (-)	6.45 (12.3)	8.71 (23.12)	10.01 (27.87)	
Range	-	1-104	1-311	1-359	
Prescriber Type					
Unknown	0 (0.00)	28 (16.77)	48 (11.03)	67 (13.79)	
Advanced Practice Nurse	0 (0.00)	32 (19.16)	113 (25.98)	119 (24.49)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	0 (0.00)	106 (63.47)	270 (62.07)	269 (60.91)	
Physician's Assistant	0 (0.00)	1 (0.6)	4 (0.92)	4 (0.82)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

Amphetamine/dextroamphetamine

Amphetamine/dextroamphetamine is a schedule II controlled substance. (Wolters-Kluwer, 2019) It was dispensed 398,377 times during the three-year study period with 127,243 (31.94 percent), 116,623 (29.27 percent), 154,511 dispensations (38.79 percent) in 2014, 2015, and 2016

respectively. The mean number of dispensations was 6.87 (SD=8.04), and the range was from 1 to 109 dispensations. Men comprised a majority (91.84 percent) of the patients during the study period. The average patient age was 52.95 (SD=12.67) with an age range from 0-105. Amphetamine/dextroamphetamine was prescribed by 8,864 prescribers with a mean of 44.94 (SD=97.59). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 97.

	2014	2015	2016	Total study period
Dispensations (Percent)	127,243 (31.94)	116,623 (29.27)	154,511 (38.79)	398,377
Total Quantity Dispensed	4,572,352	4,187,600	6,491,267	15,251,219
Total Days Supply	3,905,209	3,582,061	4,745,296	12,232,566
Patients				
Ν	25,620	24,910	34,090	57,952
Mean dispensations per patient (SD)	4.97 (4.08)	4.68 (3.87)	4.53 (3.62)	6.87 (8.04)
Range of dispensations per patient	1-40	1-35	1-37	1-109
Gender (Percent)				
Male	14,444 (56.38)	14,319 (57.48)	18,400 (53.97)	31,512 (54.38)
Female	11,170 (43.6)	10,586 (42.5)	15,686 (46.01)	26,432 (45.61)
Missing	6 (0.02)	5 (0.02)	4 (0.01)	8 (0.01)
Age				
Ν	25,619	24,908	34,090	57,950
Age (SD)	20.95 (13.7)	21.53 (14.17)	26.23 (15.33)	24.3 (15.01)
Range	2-79	1-83	1-88	1-88

Table 97. Descriptive information for all amphetamine/dextroamphetamine dispensations.

Table 97 continued.					
	2014	2015	2016	Total study period	
Prescribers					
Ν	5,440	5,491	6,613	8,864	
Mean number of dispensations	23.39 (44.56)	21.24 (39.03)	23.36 (39.71)	44.94 (97.59)	
Range	1-744	1-567	1-602	1-1,745	
Prescriber Type					
Unknown	1,125 (20.68)	996 (18.14)	1,409 (21.31)	2,593 (29.25)	
Advanced Practice Nurse	930 (17.1)	1,074 (19.56)	1,389 (21)	1,660 (18.73)	
Dentist	10 (0.18)	8 (0.15)	8 (0.12)	21 (0.24)	
Physician	3,318 (60.99)	3,344 (60.9)	3,710 (56.1)	4,466 (50.38)	
Physician's Assistant	54 (0.99)	68 (1.24)	95 (1.44)	118 (1.33)	
Podiatrist	1 (0.02)	1 (0.02)	2 (0.03)	4 (0.05)	
Veterinarian	2 (0.04)	0 (0.00)	0 (0.00)	2 (0.02)	

## Armodafinil

Armodafinil is a schedule IV controlled substance (Wolters-Kluwer, 2019) that was dispensed 93,075 times during the three-year study period to 13,318 individuals. The mean number of dispensations was 6.99 (SD=9.65), and the range was from 1 to 385 dispensations. Armodafinil was prescribed by 13,316 prescribers a mean of 25.35 times (SD=71.74) with a range of 1 to 1,407. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 98.

Table 98. Descriptive information for all armodafinil dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	36,121 (38.81)	35,301 (37.93)	21,653 (23.26)	93,075
Total Quantity Dispensed	1,230,716	1,191,784	749,820	3,172,320
Total Days Supply	1,172,342	1,139,355	715,547	3,027,244

Table 98 continued.				
	2014	2015	2016	Total study period
Patients				
Ν	7,992	7,570	5,835	13,318
Mean dispensations per patient (SD)	4,52 (5.05)	4.66 (4.87)	3.71 (3.46)	6.99 (9.65)
Range of dispensations per patient	1-211	1-159	1-102	1-385
Gender (Percent)				
Male	3,554 (44.47)	3,386 (44.73)	2,591 (44.4)	5,997 (45.03)
Female	4,436 (55.51)	4,183 (55.26)	3,243 (55.58)	7,317 (54.94)
Missing	2 (0.03)	1 (0.01)	1 (0.02)	4 (0.03)
Age				
Ν	7,990	7,569	5,835	13,316
Age (SD)	46.49 (13.73)	46.8 (13.50)	47.35 (13.63)	46.03 (13.84)
Range	6-97	4-98	3-99	3-98
Prescribers				
Ν	2,485	2,430	2,024	3,672
Mean number of dispensations	14.54 (33.3)	14.53 (33.97)	10.7 (24.22)	25.35 (71.74)
Range	1-476	1-645	1-597	1-1,407

Table 98 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	522 (21.01)	416 (17.12)	278 (13.74)	817 (22.25)
Advanced Practice Nurse	396 (15.94)	431 (17.74)	377 (18.63)	666 (18.14)
Dentist	1 (0.04)	3 (0.12)	1 (0.05)	3 (0.08)
Physician	1,535 (61.77)	1,536 (63.21)	1,327 (65.56)	2,111 (57.49)
Physician's Assistant	30 (1.21)	44 (1.81)	41 (2.03)	74 (2.02)
Podiatrist	1 (0.04)	0 (0.00)	0 (0.00)	1 (0.03)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

## Benzphetamine

Benzphetamine is a schedule III controlled substance. (Wolters-Kluwer, 2019) It was dispensed 2,798 times during the three-year study period to 384 individuals. The mean number of dispensations was 7.29 (SD=10.00), and the range was from 1 to 21 dispensations. Women comprised a majority (86.46 percent) of the patients during the study period. Eighty-five prescribers prescribed benzphetamine at least once for dispensing to these patients with a mean of 32.92 (SD=223.69) and a range of 1 to 2,067 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 99.

Table 99. Descriptive information for all benzphetamine dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	926 (33.06)	995 (35.56)	877 (31.34)	2,798	
Total Quantity Dispensed	72,202	80,448	67,114	219,764	
Total Days Supply	25,505	29,627	24,388	79,520	
Patients					
N	197	195	186	384	
Mean dispensations per patient (SD)	4.70 (4.66)	5.10 (4.29)	4.72 (4.19)	7.29 (10.00)	
Range of dispensations per patient	1-34	1-29	1-21	1-84	

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Table 99 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	21 (10.66)	29 (14.87)	26 (13.98)	52 (13.54)	
Female	176 (89.34)	166 (85.13)	160 (86.02)	332 (86.46)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	197	195	186	384	
Age (SD)	51.58 (11.57)	49.81 (12.80)	50.25 (12.54)	48.37 (12.35)	
Range	23-80	11-80	25-79	11-80	
Prescribers					
Ν	60	33	30	85	
Mean number of dispensations	15.43 (81.6)	30.15 (126.37)	29.23 (126.72)	32.92 (223.69)	
Range	1-636	1-732	1-699	1-2,067	
Prescriber Type					
Unknown	10 (16.67)	4 (12.12)	3 (10)	14 (16.47)	
Advanced Practice Nurse	5 (8.33)	1 (3.03)	3 (10)	9 (9.41)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	45 (75)	28 (84.85)	24 (80)	63 (74.12)	
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

# Dexmethylphenidate

Dexmethylphenidate is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 353,561 times during the three-year study period to 33,714 individuals. The mean

number of dispensations was 10.49 (SD=12.38), and the range was from 1 to 111 dispensations. There were 5,693 prescribers who prescribed dexmethylphenidate at least once for dispensing with a mean of 59.29 (SD=175.97) and a range of 1 to 2,865 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 100.

Table 100. Descriptive information for all dexmethylphenidate dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	115,358 (32.63)	119,506 (33.8)	118,697 (33.57)	353,561
Total Quantity Dispensed	4,138,341	4,324,250	4,231,158	12,693,749
Total Days Supply	3,544,286	3,674,643	3,664,798	10,883,727
Patients				
Ν	19,712	19,020	19,125	33,714
Mean dispensations per patient (SD)	5.85 (4.99)	6.28 (5.33)	6.21 (5.26)	10.49 (12.38)
Range of dispensations per patient	1-48	1-40	1-45	1-111
Gender (Percent)				
Male	13,324 (67.59)	12,854 (67.58)	13,000 (67.97)	22,541 (66.86)
Female	6.384 (32.39)	6,162 (32.4)	6.123 (32.02)	11,165 (33.12)
Missing	4 (0.02)	4 (0.02)	2 (0.01)	8 (0.02)
Age				
Ν	19,711	19,019	19,124	33,712
Age (SD)	13.78 (9.62)	14.02 (9.75)	14.35 (9.91)	13.84 (10.05)
Range	0-84	0-85	1-86	0-85

Table 100 continued.					
	2014	2015	2016	Total study period	
Prescribers					
Ν	3,707	3,805	4,022	5,963	
Mean number of dispensations	31.12 (74.6)	31.41 (75.56)	29.51 (72.1)	59.29 (175.97)	
Range	1-922	1-1,149	1-1,107	1-2,865	
Prescriber Type					
Unknown	836 (22.55)	749 (19.68)	831 (20.66)	1,655 (27.75)	
Advanced Practice Nurse	626 (16.89)	710 (18.66)	812 (20.19)	1,117 (18.73)	
Dentist	4 (0.11)	8 (0.21)	5 (0.12)	15 (0.25)	
Physician	2,208 (59.56)	2,295 (60.32)	2,320 (57.68)	3,102 (52.02)	
Physician's Assistant	32 (0.86)	42 (1.1)	54 (1.34)	73 (1.22)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	1 (0.03)	1 (0.03)	0 (0.00)	1 (0.02)	

Dextroamphetamine

Dextroamphetamine is a schedule II controlled substance (Wolters-Kluwer, 2019) that was dispensed 34,246 times during the three-year study period with 10,946 (31.96 percent), 12,191 (35.6 percent), and 11,109 dispensations(34.44 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 7.59 (SD=9.43), and the range was from 1 to 90 dispensations. There were 4,510 prescribers who prescribed dextroamphetamine at least once for dispensing with a mean of 14.01 (SD=35.82) and a range of 1 to 545 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 101.

	2014	2015	2016	Total study period
Dispensations (Percent)	10,946 (31.96)	12,191 (35.6)	11,109 (34.44)	34,246
Total Quantity Dispensed	868,697	917,825	844,241	2,630,763
Total Days Supply	341,426	377,262	346,366	1,065,054
Patients				
Ν	2,275	2,502	2,413	4,512
Mean dispensations per patient (SD)	4.81 (4.26)	4.87 (4.19)	4.6 (3.99)	7.59 (9.43)
Range of dispensations per patient	1-26	1-44	1-27	1-90
Gender (Percent)				
Male	1,145 (50.33)	1,302 (52.04)	1,268 (52.55)	2,397 (53.13)
Female	1,130 (49.67)	1,200 (47.96)	1,145 (47.45)	2,115 (46.88)
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Age				
N	2,274	2,501	2,413	4,510
Age (SD)	33.51 (20.2)	32.68 (19.79)	32.7 (19.66)	30.8 (19.29)
Range	3-93	2-92	3-93	2-93
Prescribers				
Ν	1,407	1,400	1,408	2,445
Mean number of dispensations	7.78 (13.63)	8.71 (18.84)	7.89 (16.36)	14.01 (35.82)
Range	1-181	1-356	1-208	1-545

Table 101. Descriptive information for all dextroamphetamine dispensations.

Table 101 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	272 (19.33)	243 (17.36)	262 (18.61)	536 (21.92)	
Advanced Practice Nurse	195 (13.86)	232 (16.57)	261 (18.54)	427 (17.46)	
Dentist	1 (0.07)	3 (0.21)	1 (0.07)	3 (0.12)	
Physician	927 (65.88)	913 (65.21)	874 (62.07)	1,457 (59.59)	
Physician's Assistant	12 (0.85)	9 (0.64)	10 (0.71)	22 (0.9)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

## Diethylpropion

Diethylpropion is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 8,465 times to 2,307 individuals during the study period. The mean number of dispensations was 3.67 (SD=4.73), and the range was from 1 to 54 dispensations. Diethylpropion was prescribed by 365 prescribers for a mean of 23.19 (SD=109.84). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 102.

Table 102. Descriptive information for all diethylpropion dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	2,423 (28.62)	2.556 (30.19)	3.486 (41.18)	8,465
Total Quantity Dispensed	91,689	97,645	124,798	314,132
Total Days Supply	73,323	75,973	100,504	249,800
Patients				
Ν	858	930	1,151	2,307
Mean dispensations per patient (SD)	2.82 (2.62)	2.75 (2.52)	3.03 (2.81)	3.67 (4.73)
Range of dispensations per patient	1-18	1-18	1-23	1-54

	Table 102 continued.					
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	164 (19.11)	204 (21.94)	216 (18.77)	455 (19.72)		
Female	693 (80.77)	726 (78.06)	935 (81.23)	1,851 (80.23)		
Missing	1 (0.12)	0 (0.00)	0 (0.00)	1 (0.04)		
Age						
N	858	930	1,151	2,307		
Age (SD)	48.16 (13.5)	48.87 (12.96)	49.03 (12.98)	47.63 (12.95)		
Range	1-88	14-89	16-90	1-88		
Prescribers						
Ν	210	192	194	365		
Mean number of dispensations	11.54 (28.53)	13.31 (39.33)	17.97 (97.87)	23.19 (109.84)		
Range	1-310	1-398	1-1,282	1-1,712		
Prescriber Type						
Unknown	48 (22.86)	38 (19.79)	32 (16.49)	84 (23.01)		
Advanced Practice Nurse	10 (4.76)	4 (2.08)	26 (13.4)	35 (9.59)		
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Physician	151 (71.9)	149 (77.60)	135 (69.59)	243 (66.58)		
Physician's Assistant	0 (0.00)	1 (0.52)	1 (0.52)	2 (0.55)		
Podiatrist	1 (0.48)	0 (0.00)	0 (0.00)	1 (0.27)		
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

## Lisdexamfetamine

Lisdexamfetamine is a schedule II controlled substance (Wolters-Kluwer, 2019) and was dispensed 1,200,490 times during the three-year study period. The mean number of dispensations

was 9.88 (SD=10.07), and the range was from 1 to 84 dispensations. There were 12,600 prescribers who prescribed lisdexamfetamine at least once for dispensing to these individuals with a mean of 95.26 (SD=277.36). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 103.

Table 103. Descr	Table 103. Descriptive information for all lisdexamfetamine dispensations.					
	2014	2015	2016	Total study period		
Dispensations (Percent)	375,076 (31.24)	399,262 (33.26)	426,152 (35.5)	1,200,490		
Total Quantity Dispensed	11,825,520	12,486,191	13,301,861	37,613,572		
Total Days Supply	11,561,399	12,257,022	13,072,364	36,890,785		
Patients						
Ν	67,307	70,761	74,476	121,459		
Mean dispensations per patient (SD)	5.57 (3.99)	5.64 (4)	5.72 (4.06)	9.88 (10.07)		
Range of dispensations per patient	1-40	1-33	1-36	1-84		
Gender (Percent)						
Male	39,398 (58.53)	40,369 (57.05)	41,242 (55.38)	68,473 (56.38)		
Female	27,902 (41.45)	30,387 (42.94)	33,224 (44.61)	52,971 (43.61)		
Missing	7 (0.01)	5 (0.01)	10 (0.01)	15 (0.01)		
Age						
Ν	67,306	70,759	74,475	121,456		
Age (SD)	20.87 (13.19)	21.87 (13.66)	22.87 (14.12)	21.78 (13.85)		
Range	0-101	0-85	1-106	0-106		
Prescribers						
Ν	7,569	7,972	8,612	12,600		
Mean number of dispensations	49,55 (115.12)	50.08 (114.82)	49.48 (115.89)	95.28 (277.36)		
Range	1-2,581	1-2,800	1-2,864	1-8,245		

Table 103 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	2,512 (33.19)	2,500 (31.36)	2,835 (32.92)	5,433 (43.12)
Advanced Practice Nurse	1,172 (15.48)	1,373 (17.22)	1,584 (18.39)	1,946 (15.44)
Dentist	21 (0.28)	24 (0.3)	18 (0.21)	55 (0.44)
Physician	3,782 (49.97)	3,971 (49.81)	4.054 (47.07)	4,988 (39.59)
Physician's Assistant	77 (1.02)	99 (1.24)	116 (1.35)	164 (1.3)
Podiatrist	0 (0.00)	4 (0.05)	3 (0.03)	7 (0.06)
Veterinarian	5 (0.07)	1 (0.01)	2 (0.02)	7 (0.06)

#### Methamphetamine

Methamphetamine, a schedule II controlled substance, (Wolters-Kluwer, 2019) was dispensed 532 times during the three-year study period to 68 individuals. The mean number of dispensations was 7.82 (SD=8.50), and the range was from 1 to 35 dispensations. Seventy-five prescribers prescribed methamphetamine at least once for dispensing to these patients with a mean of 7.09 (SD=12.66) and a range of 1 to 80 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 104.

	2014	2015	2016	Total study period
Dispensations (Percent)	203 (38.16)	188 (35.34)	141 (26.5)	532
Total Quantity Dispensed	21,378	20,138	19,817	61,333
Total Days Supply	5,765	5,505	4,066	15,336
Patients				
Ν	42	36	29	68
Mean dispensations per patient (SD)	4.83 (3.26)	5.22 (4.09)	4.86 (4.53)	7.82 (8.50)
Range of dispensations per patient	1-17	1-12	1-13	1-35

Table 104. Descriptive information for all methamphetamine dispensations.

Table 104 continued.						
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	25 (59.52)	20 (55.56)	18 (62.07)	39 (57.35)		
Female	17 (40.48)	16 (44.44)	11 (37.93)	29 (42.65)		
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Age						
Ν	42	36	29	68		
Age (SD)	42.71 (20.16)	41.25 (19.5)	39.97 919.98)	38.68 (17.85)		
Range	5-80	11-80	12-75	5-80		
Prescribers						
Ν	44	40	27	75		
Mean number of dispensations	4.61 (4.95)	4.70 (6.64)	5.22 (7.84)	7.09 (12.66)		
Range	1-29	1-33	1-39	1-80		
Prescriber Type						
Unknown	10 (22.73)	8 (20)	7 (25.93)	14 (18.67)		
Advanced Practice Nurse	6 (13.64)	9 (22.5)	4 (14.81)	14 (18.67)		
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Physician	28 (63.64)	23 (77.5)	15 (55.56)	46 (61.33)		
Physician's Assistant	0 (0.00)	0 (0.00)	1 (3.7)	1 (1.33)		
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

Methylphenidate

Methylphenidate is a schedule II controlled substance. (Wolters-Kluwer, 2019) It was dispensed 1,351,815 times during the three-year study period with 455,732 (33.71 percent), 457,111 (33.81 percent), and 438,972 dispensations (32.47 percent) in 2014, 2015, and 2016 respectively. The

mean number of dispensations was 10.04 (SD=11.33), and the range was from 1 to 114 dispensations. There were 14,183 prescribers prescribed methylphenidate for dispensing with a mean number of 95.31 (SD=295.95). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 105.

Table 105. Descr	riptive information	n for all methylpl	henidate dispensa	tions.
	2014	2015	2016	Total study period
Dispensations (Percent)	455,732 (33.71)	457,111 (33.81)	438,972 (32.47)	1,351,815
Total Quantity Dispensed	22,543,399	23,941,926	24,176,337	70,661,662
Total Days Supply	14,144,012	14,159,424	13,633,212	41,936,648
Patients				
Ν	80,649	78,849	75,964	134,600
Mean dispensations per patient (SD)	5.65 (4.62)	5.8 (4.66)	5.78 (4.63)	10.04 (11.33)
Range of dispensations per patient	1-46	1-40	1-48	1-114
Gender (Percent)				
Male	50,055 (62.07)	49,082 (62.25)	47,288 (62.25)	82,408 (61.22)
Female	30,580 (37.92)	29,750 (37.73)	28,659 (37.73)	52,162 (38.75)
Missing	14 (0.02)	17 (0.02)	17 (0.02)	30 (0.02)
Age				
Ν	80,646	78,845	75,962	134,594
Age (SD)	20.35 (16.71)	20.67 (16.98)	20.95 (17.22)	20.69 (17.23)
Range	0-101	0-102	0-99	0-102
Prescribers				
Ν	8,792	8,829	9,616	14,183
Mean number of dispensations	51.83 (127.64)	51.77 (126.11)	45.65 (116.73)	95.31 (295.95)
Range	1-2,574	1-2,805	1-2,516	1-7,895

Table 105 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	2,945 (33.5)	2,684 (30.4)	3,176 (33.03)	6,088 (42.92)	
Advanced Practice Nurse	1,336 (15.2)	1,518 (17.19)	1,747 (18.17)	2,185 (15.41)	
Dentist	33 (0.38)	27 (0.31)	22 (0.23)	70 (0.49)	
Physician	4,394 (49.98)	4,472 (50.65)	4,538 (47.19)	5,647 (39.82)	
Physician's Assistant	80 (0.91)	121 (1.37)	126 (1.31)	176 (1.24)	
Podiatrist	1 (0.01)	6 (0.07)	4 (0.04)	10 (0.07)	
Veterinarian	3 (0.03)	1 (0.01)	3 (0.03)	7 (0.05)	

## Modafinil

Modafinil is a schedule IV controlled substance (Wolters-Kluwer, 2019). It was dispensed to 15,570 individuals for a total of 111,556 times during the three-year study period. The mean number of dispensations was 7.49 (SD=8.63), and the range was from 1 to 119 dispensations. There were 5,499 prescribers who prescribed modafinil for dispensing with a mean number of 21.02 (SD=58.48). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 106.

	2014	2015	2016	Total study period
Dispensations (Percent)	36,834 (31.88)	37,387 (32.35)	41,335 (35.77)	111,556
Total Quantity Dispensed	1,795,151	1,807,103	2,027,312	5,629,566
Total Days Supply	1,315,250	1,326,121	1,483,870	4,125,241
Patients				
Ν	8,041	8,133	9,133	15,570
Mean dispensations per patient (SD)	4.58 (4.06)	4.6 (3.82)	4.53 (3.74)	7.42 (8.63)
Range of dispensations per patient	1-119	1-63	1-59	1-119

Table 106. Descriptive information for all modafinil dispensations.

Table 106 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	3,417 (42.49)	3,594 (44.19)	4,054 (44.39)	6,833 (43.89)	
Female	4,622 (57.48)	4,538 (55.79)	5,079 (55.61)	8,735 (56.1)	
Missing	2 (0.02)	1 (0.01)	0 (0.00)	2 (0.01)	
Age					
Ν	8,040	8,133	9,132	15,569	
Age (SD)	49.94 (15.16)	49.95 (15.13)	49.94 (15.27)	48.98 (15.57)	
Range	1-106	3-100	3-98	1-106	
Prescribers					
Ν	3,274	3,224	3,661	5,499	
Mean number of dispensations	11.25 (23.34)	11.6 (25.6)	11.29 (28.57)	21.01 (58.48)	
Range	1-613	1-556	1-886	1-1,531	
Prescriber Type					
Unknown	678 (20.71)	555 (17.21)	801 (21.88)	1,470 (26.73)	
Advanced Practice Nurse	471 (14.39)	546 (16.94)	662 (18.08)	966 (17.57)	
Dentist	3 (0.09)	3 (0.09)	1 (0.03)	6 (0.11)	
Physician	2,085 (63.68)	2,072 (64.27)	2,136 (58.34)	2,969 (53.99)	
Physician's Assistant	36 (1.10)	48 (1.49)	61 (1.67)	87 (1.58)	
Podiatrist	1 (0.03)	0 (0.00)	0 (0.00)	1 (0.02)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

# Phentermine

Phentermine is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 626,194 times during the three-year study period with 197,720 (31.57 percent), 207,844 (33.19 percent), and 220,630 dispensations (35.23 percent) in 2014, 2015, and 2016 respectively. The

mean number of dispensations was 4.91 (SD=5.21), and the range was from 1 to 76 dispensations. 7,613 prescribers prescribed phentermine at least once for dispensing to these individuals with a mean number of 82.25 (SD=450.17). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 107.

Table 107. Des	scriptive informat	ion for all phente	rmine dispensation	ons.
	2014	2015	2016	Total study period
Dispensations (Percent)	197,720 (31.57)	207,844 (33.19)	220,630 (35.23)	626,194
Total Quantity Dispensed	6,312,823	6,647,922	7,105,945	20,066,690
Total Days Supply	6,043,115	6,385,600	6,803,630	19,232,345
Patients				
Ν	62,132	63,470	65,705	127,602
Mean dispensations per patient (SD)	3.18 (2.52)	3.27 (2.6)	3.36 (2.66)	4.91 (5.21)
Range of dispensations per patient	1-34	1-31	1-36	1-76
Gender (Percent)				
Male	10,495 (16.89)	10,712 (16.88)	11,240 (17.11)	21,868 (17.14)
Female	51,611 (83.07)	52,717 (83.06)	54,454 (82.88)	105,682 (82.82)
Missing	26 (0.04)	41 (0.06)	11 (0.02)	52 (0.04)
Age				
Ν	62,130	63,468	65,704	127,597
Age (SD)	43.26 (12.02)	43.66 (12.06)	43.8 (12.02)	43.01 (12.17)
Range	0-106	0-93	0-94	0-106
Prescribers				
Ν	4,655	4,631	4,943	7,613
Mean number of dispensations	42.47 (164.54)	44.88 (200.86)	44.63 (217.79)	82.25 (450.17)
Range	1-6,636	1-10,347	1-12,257	1-29,240

Table 107 continued.				
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	1,404 (30.16)	1,346 (29.06)	1,308 (26.46)	2,740 (35.99)
Advanced Practice Nurse	429 (9.22)	467 (10.08)	803 (16.25)	1,054 (13.84)
Dentist	27 (0.58)	17 (0.37)	13 (0.26)	44 (0.58)
Physician	2,733 (58.71)	2,727 (58.89)	2,730 (55.23)	3,682 (47.84)
Physician's Assistant	54 (1.16)	64 (1.38)	82 (1.66)	118 (1.55)
Podiatrist	6 (0.13)	7 (0.15)	6 (0.12)	11 (0.14)
Veterinarian	2 (0.04)	3 (0.06)	1 (0.02)	4 (0.05)

Phentermine/topiramate

Phentermine/topiramate is a schedule IV controlled substance (Wolters-Kluwer, 2019) that was dispensed 32,004 times during the three-year study period to 8,170. The mean number of dispensations was 3.92 (SD=4.71), and the range was from 1 to 46 dispensations. Women comprised a majority (81.84 percent) of the patients during the study period. Phentermine/topiramate was prescribed a mean of 18.81 times (SD=56.77) by 1,701 prescribers. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 108.

	2014	2015	2016	Total study period
Dispensations (Percent)	10,655 (33.32)	12,211 (38.15)	9,128 (28.52)	32,004
Total Quantity Dispensed	270,315	318,616	244,862	833,793
Total Days Supply	269,376	317,088	243,599	830,063
Patients				
Ν	3,700	3,797	2,682	8,170
Mean dispensations per patient (SD)	2.88 (2.52)	3.22 (2.81)	3.4 (2.96)	3.92 (4.71)
Range of dispensations per patient	1-22	1-38	1-22	1-46

Table 108. Descriptive information for all phentermine/topiramate dispensations.

Table 108 continued.									
	2014	2015	2016	Total study period					
Gender (Percent)									
Male	727 (19.65)	693 (18.25)	435 (16.22)	1,484 (18.16)					
Female	2,973 (80.35)	3,104 (81.75)	2,247 (83.78)	6,686 (81.84)					
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)					
Age									
Ν	3,700	3,797	2,682	8,170					
Age (SD)	46.82 (11.44)	46.41 (11.18)	46.33 (11.03)	46.18 (11.26)					
Range	16-81	10-79	17-79	10-81					
Prescribers									
Ν	980	981	901	1,701					
Mean number of dispensations	10.88 (24.29)	12.45 (28.32)	10.13 (27.34)	18.81 (56.77)					
Range	1-478	1-408	1-499	1-1,385					
Prescriber Type									
Unknown	204 (20.82)	202 (20.59)	163 (18.09)	406 (23.87)					
Advanced Practice Nurse	48 (4.90)	60 (6.12)	124 (13.76)	165 (9.70)					
Dentist	1 (0.1)	1 (0.1)	2 (0.22)	4 (0.24)					
Physician	724 (73.88)	707 (72.07)	598 (66.37)	1,104 (64.9)					
Physician's Assistant	3 (0.31)	11 (1.12)	14 (1.55)	22 (1.29)					
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)					
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)					

# Time-series Analysis for Opioid Population

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply for all stimulant dispensations is explained below.

Figures 44 and 45 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.

ueita. I					
Regression with Newey-West standard errors maximum lag: 2					36 2.13 0.0886
Coef.	Newey-West Std. Err.	t	P> t	[95% Conf	. Interval]
172.1333 1243.092 124.6917 1194.072 -250.0138	625.2299 4329.246 769.3334 4019.364 425.0931 2506 486	0.28 0.29 0.16 0.30 -0.59	0.785 0.776 0.872 0.768 0.561	-1104.757 -7598.408 -1446.497 -7014.564 -1118.17	1449.023 10084.59 1695.88 9402.708 618.1421
	Coef. 172.1333 1243.092 124.6917 1194.072 -250.0138 112177 1	Newey-West standard er: Newey-West standard er: Newey-West Coef. Std. Err. 172.1333 625.2299 1243.092 4329.246 124.6917 769.3334 1194.072 4019.364 -250.0138 425.0931 112177 1 2566 486	Newey-West   Newey-West     Coef.   Std. Err.   t     172.1333   625.2299   0.28     1243.092   4329.246   0.29     124.6917   769.3334   0.16     1194.072   4019.364   0.30     -250.0138   425.0931   -0.59     11277   1   2506   44	Newey-West   Number     F(5, Prob >     Newey-West     Coef.     Std. Err.     172.1333     625.2299     0.28     0.776     1243.092     4329.246     0.29     0.776     124.6917     769.3334     0.16     0.872     1194.072     4019.364     0.30     0.561     112177     2506     486     44     750     0.000	h Newey-West standard errors Number of obs =   F(5, 30) =   Prob > F =   172.1333 625.2299 0.28 0.785 -1104.757   1243.092 4329.246 0.29 0.776 -7598.408   124.6917 769.3334 0.16 0.872 -1446.497   1194.072 4019.364 0.30 0.768 -7014.564   -250.0138 425.0931 -0.59 0.561 -1118.17

time variable: month, 2014m1 to 2016m12 delta: 1 month

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	296.8250	288.5525	1.0287	0.3119	-292.4779	886.1279

Postintervention Linear Trend: 672

Treated: _b[_t	t]+_b[_x_t657]	+_b[_x_t672	]			
Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	46.8112	320.6963	0.1460	0.8849	-608.1381	701.7605

Figure 44. Interrupted time-series analysis for full opioid population total dispensations.



Figure 45. Interrupted time-series graph of dispensations by month for full population.

Dispensations reported to the INSPECT program increased for the months prior to each policy change (p=0.785). After the rescheduling of hydrocodone combination products, the number of dispensations increased in the month immediately after (p=0.776) and then continued to increase for the remaining months after the policy change (p=0.872). The hydrocodone combination rescheduling policy did not have a significant impact on the number of stimulant prescriptions dispensed (p=0.3119). After the change to the INSPECT reporting requirements, the number of dispensations increased in the month immediately following the policy change (p=0.768). In the months following the policy change, the number of dispensations decreased (p=0.561). The change in INSPECT reporting did not lead to a significant change in stimulant dispensations (p=0.8849).

Figures 46 and 47 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively.

	time	variable: delta:	month, 1 mont	2014m1 h	to 2016m1	2		
Regressi maximum	ion wi lag:	th Newey-We 2	est sta	ndard e	rrors	Number F( 5, Prob >	of obs F	30)
			Nou	ov-Most				

qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t	14891.57	22865.96	0.65	0.520	-31806.96	61590.09
x657	47071.85	160812	0.29	0.772	-281350.1	375493.8
x t657	4521.151	28546.56	0.16	0.875	-53778.71	62821.01
	56165.81	164999.2	0.34	0.736	-280807.5	393139.2
x t672	-4976.019	17126.42	-0.29	0.773	-39952.83	30000.8
cons	4355400	91501.13	47.60	0.000	4168529	4542270

Postintervention Linear Trend: 657

Treated: \_b[\_t]+\_b[\_x\_t657]

Linear Trend	Coeff Std.	Err. t	P> t	[95% Conf.	[Interval]
Treated	1.94e+04 1.15e+	04 1.6834	0.1027 -	4.14e+03 4	1.30e+04

Postintervention Linear Trend: 672

Treated:	b[	t]+	b[	x t	657]	+ ł	)[ 2	k t	672]	
						_	_	_		

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	1.44e+04	1.34e+04	1.0762	0.2904	-1.30e+04	4.18e+04

Figure 46. Interrupted time-series analysis for full stimulant population total quantity dispensed.



Figure 47. Interrupted time-series graph of total quantity dispensed by month for full stimulant population.

36

7.48

0.0001

=

=

=

The quantity of products reported to the INSPECT program increased for the months prior to each policy change (p=0.520). After the rescheduling of hydrocodone combination products, the total quantity for dispensations increased in the month immediately after (p=0.772) and continued to increase for the remaining months after the policy change (p=0.875). The hydrocodone combination rescheduling policy did not have a significant impact on the number of stimulant prescriptions dispensed (p=0.1027). After the change to the INSPECT reporting requirements, the number of dispensations increased in the month immediately following the policy change (p=0.736). In the months following the policy change, the quantity of dispensations decreased each month (p=0.773). The change in INSPECT reporting did not lead to a significant change in stimulant quantity of dispensetaions (p=0.2904).

Figures 48 and 49 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

time variable: month, 2014m1 to 2016m12 delta: 1 month

Regression wit maximum lag: 2	th Newey-West 2	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 2.52 0.0510
dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x672 _x_t672 _cons	6496.533 26120.13 3038.96 17205.26 -3729.356 3469092	18533.18 128885.1 22903.84 122237.1 12554.4 75016.93	0.35 0.20 0.13 0.14 -0.30 46.24	0.728 0.841 0.895 0.889 0.768 0.000	-31353.27 -237098.3 -43736.91 -232436.1 -29368.87 3315887	44346.34 289338.5 49814.83 266846.7 21910.16 3622297

#### Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	9535.49298804.1708	1.0831	0.2874	-8.45e+03	2.75e+04

Postintervention Linear Trend: 672

Treated:	_b[_t]	+_b[_x_	t657]+_b	[_x_t672]
----------	--------	---------	----------	-----------

Linear Trend	Coeff S	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	5806.1364930	61.6377	0.6202	0.5398	-1.33e+04	2.49e+04

## Figure 48. Interrupted time-series analysis for full stimulant population total days supply of dispensations.



Figure 49. Interrupted time-series graph of total days supply of dispensations by month for full stimulant population.

The days supply of products reported to the INSPECT program increased for the months prior to each policy change (p=0.728). After the rescheduling of hydrocodone combination products, the total days supply for dispensations increased in the month immediately after (p=0.841) and continued to increase for the remaining months after the policy change (p=0.895). The hydrocodone combination rescheduling policy did not have a significant impact on the number of stimulant prescriptions dispensed (p=0.2874). After the change to the INSPECT reporting requirements, the days supply of dispensations increased in the month immediately following the policy change (p=0.889). In the months following the policy change, the days supply of dispensations decreased each remaining month of the study period (p=0.768). The change in INSPECT reporting did not lead to a significant change in the days supply of stimulant dispensations (p=0.5398).

## Barbiturate

#### Descriptive Information for Full Barbiturate Population and Each Drug

A controlled substance in the barbiturate drug class was dispensed 170,639 times during the threeyear study period with 54,286 (31.81 percent), 55,924 (32.77 percent), and 60,429 (35.41 percent) dispensations in 2014, 2015, and 2016 respectively. There were 8 different controlled substances in the barbiturate class, and substances were in schedule II through IV.(Wolters-Kluwer, 2019) Phenobarbital was the most common barbiturate dispensed over the three-year study period with 166,934 (97.83 percent) dispensations, while phenobarbital/belladonna was the least common barbiturate dispensed with 2 (0.00 percent) dispensations. A list of the controlled substances and the number of dispensations across each year and during the three-year study period can be found in Table 109.

		<u> </u>	0 1	
	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)
Atropine/scopolamine/ hyoscyamine/phenobarbital	13 (0.02)	95 (0.17)	31 (0.05)	139 (0.08)
Butabarbital	43 (0.08)	46 (0.08)	35 (0.06)	124 (0.07)
Butalbital/acetaminophen	22 (0.04)	332 (0.59)	1,537 (2.54)	1,891 (1.11)
Butalbital/acetaminophen/caffeine	47 (0.09)	198 (0.35)	935 (1.55)	1,180 (0.69)
Butalbital/aspirin/caffeine	187 (0.34)	86 (0.15)	92 (0.15)	365 (0.21)
Phenobarbital	53,971 (99.42)	55,165 (98.64)	57,798 (95.65)	166,934 (97.83)
Phenobarbital/belladonna	0 (0.00)	2 (0.00)	0 (0.00)	2 (0.00)
Secobarbital	3 (0.01)	0 (0.00)	1 (0.00)	4 (0.00)
Total	54,286	55,924	60,429	170,639

Table 109. Barbiturate dispensations by year and during study period.

Over the three-year study period, 23,285 patients were dispensed a barbiturate with a mean of 8.41 dispensations (SD=12.88) and a range from 1 to 1,104 dispensations. A barbiturate was prescribed by 6,874 prescribers for a mean of 23.83 (SD=60.81) and a range of 1 to 1,135. Descriptive information can be found in Table 110.

Table 110. Descriptive information for all barbiturate dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	54,286 (31.81)	55,924 (32.77)	60,429 (35.41)	170,639	
Total Quantity Dispensed	6,752,470	6,789,035	7,010,112	20,551,617	
Total Days Supply	2,309,254	2,058,613	2,172,990	6,270,857	

Table 110 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	9,977	10,597	11,953	20,285	
Mean dispensations per patient (SD)	5.44 (4.44)	5.28 (8.93)	5.06 (5.34)	8.41 (12.88)	
Range of dispensations per patient	1-52	1-810	1-294	1-1104	
Gender (Percent)					
Male	5,046 (50.58)	5,414 (51.09)	5,713 (47.8)	10,069 (49.64)	
Female	4,500 (45.1)	4,694 (44.3)	5,695 (47.64)	9,199 (45.35)	
Missing	431 (4.32)	489 (4.61)	545 (4.56)	1,017 (5.01)	
Age					
Ν	9,958	10,581	11,939	20,249	
Age (SD)	27.73 (26.26)	27.46 (25.89)	28.25 (25.48)	24.9 (24.61)	
Range	0-104	0-104	0-105	0-105	
Prescribers					
Ν	4,024	4,137	4,508	6,874	
Mean number of dispensations	13.49 (25.18)	13.52 (27.99)	13.4 (26.7)	23.83 (60.81)	
Range	1-527	1-811	1-394	1-1135	

Table 110 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	834 (20.73)	785 (18.98)	861 (19.1)	1,757 (25.56)	
Advanced Practice Nurse	369 (9.17)	429 (10.37)	561 (12.44)	854 (12.42)	
Dentist	10 (0.25)	7 (0.17)	9 (0.2)	20 (0.29)	
Physician	1,979 (49.18)	1,972 (47.67)	2,066 (45.83)	3,068 (44.63)	
Physician's Assistant	27 (0.67)	42 (1.02)	67 (1.26)	101 (1.47)	
Podiatrist	1 (0.02)	1 (0.02)	0 (0.00)	1 (0.01)	
Veterinarian	804 (19.98)	901 (21.78)	954 (21.16)	1,073 (15.61)	

Atropine/scopolamine/hyoscyamine/phenobarbital

Atropine/scopolamine/hyoscyamine/phenobarbital is a schedule IV controlled substance. (Wolters-Kluwer, 2019) It was dispensed 139 times during the three-year study period to 113 individuals. The mean number of dispensations was 1.23 (SD=0.61), and the range was from 1 to 5 dispensations. Ninety-eight prescribers prescribed atropine/scopolamine/hyoscyamine/ phenobarbital at least once for dispensing to these individuals with a mean of 1.42 (SD=1.05). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 111.

dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	13 (9.35)	95 (68.35)	31 (22.3)	139	
Total Quantity Dispensed	1,544	8,335	2,935	12,814	
Total Days Supply	187	1,709	727	2,263	
Patients					
Ν	12	80	27	113	
Mean dispensations per patient (SD)	1.08 (0.29)	1.19 (0.6)	1.15 (0.36)	1.23 (0.61)	
Range of dispensations per patient	1-2	1-5	1-2	1-5	

Table 111. Descriptive information for all atropine/scopolamine/hyoscyamine/phenobarbital dispensations

Table 111 continued.						
	2014	2015	2016	Total study period		
Gender (Percent)						
Male	4 (33.33)	22 (27.5)	10 (37.04)	34 (30.09)		
Female	8 (66.67)	58 (72.5)	17 (62.96)	79 (69.91)		
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Age						
Ν	12	80	27	113		
Age (SD)	45 (27.78)	54.44 (17.91)	50.81 (18.54)	51.73 (19.2)		
Range	8-88	2-90	19-85	2-90		
Prescribers						
Ν	12	73	22	98		
Mean number of dispensations	1.08 (0.29)	1.3 (0.88)	1.41 (0.73)	1.42 (1.05)		
Range	1-2	1-7	1-3	1-9		
Prescriber Type						
Unknown	1 (8.33)	4 (5.48)	3 (13.64)	8 (8.16)		
Advanced Practice Nurse	0 (0.00)	9 (12.33)	2 (9.09)	10 (10.20)		
Dentist	1 (8.33)	0 (0.00)	0 (0.00)	1 (1.02)		
Physician	10 (83.33)	60 (82.19)	17 (77.27)	79 (80.61)		
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

## Butabarbital

Butabarbital is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 124 times during the three-year study period. The mean number of dispensations was 6.53 (SD=8.36), and the range was from 1 to 31 dispensations. There were 22 prescribers who prescribed

butabarbital at least once for dispensing with a mean of 5.64 (SD=7.79) and a range of 1 to 34 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 112.

Table 112. Descriptive information for all butabarbital dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	43 (34.68)	46 (37.1)	35 (28.23)	124	
Total Quantity Dispensed	3,211	3,413	3,695	10,319	
Total Days Supply	1,641	1,539	1,435	4,615	
Patients					
Ν	13	10	13	19	
Mean dispensations per patient (SD)	3.31 (3.54)	4.6 (4.33)	2.69 (2.75)	6.53 (8.36)	
Range of dispensations per patient	1-13	1-12	1-10	1-31	
Gender (Percent)					
Male	3 (23.08)	3 (30)	3 (23.08)	4 (21.05)	
Female	10 (76.92)	7 (70)	10 (76.92)	15 (78.95)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	13	10	13	19	
Age (SD)	74.08 (13.78)	71.7 (21.76)	67.92 (20.74)	66.05 (22.35)	
Range	43-92	17-92	25-93	17-92	
Prescribers					
Ν	15	11	13	22	
Mean number of dispensations	2.87 (3.04)	4.18 (3.57)	2.69 (3.15)	5.64 (7.79)	
Range	1-13	1-12	1-10	1-34	

Table 112 continued.						
	2014	2015	2016	Total study period		
Prescriber Type						
Unknown	2 (13.33)	1 (9.09)	2 (15.38)	3 (13.64)		
Advanced Practice Nurse	0 (0.00)	1 (9.09)	2 (15.38)	3 (13.64)		
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Physician	13 (86.67)	9 (81.82)	9 (69.23)	16 (72.73)		
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

### Butalbital/acetaminophen

Butalbital/acetaminophen is a schedule III controlled substance. (Wolters-Kluwer, 2019) It was dispensed 1,891 times during the three-year study period to 827 individuals. The mean number of dispensations was 2.29 (SD=3.16), and the range was from 1 to 36 dispensations. Butalbital/acetaminophen was prescribed by 450 prescribers who prescribed an average of 4.2 times (SD=10.27). Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 113.

	2014	2015	2016	Total study period
Dispensations (Percent)	22 (1.16)	332 (17.56)	1,537 (81.28)	1,891
Total Quantity Dispensed	1,240	14,955	73,379	89,574
Total Days Supply	492	4,701	22,931	28,124
Patients				
Ν	9	202	709	827
Mean dispensations per patient (SD)	2.44 (3.28)	1,64 (1.45)	2.18 (2.54)	2.29 (3.16)
Range of dispensations per patient	1-11	1-10	1-27	1-36

Table 113. Descriptive information for all butalbital/acetaminophen dispensations.

Table 113 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	3 (33.33)	42 (20.79)	153 (21.58)	180 (21.77)	
Female	6 (66.67)	160 (79.21)	556 (78.42)	647 (78.23)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	9	202	709	827	
Age (SD)	58.22 (13.94)	45.14 (15.61)	45.79 (15.3)	45.26 (15.47)	
Range	37-76	10-87	11-92	10-92	
Prescribers					
Ν	10	137	389	450	
Mean number of dispensations	2.2 (3.16)	2.42 (3.3)	3.95 (8.92)	4.2 (10.27)	
Range	1-11	1-27	1-124	1-151	
Prescriber Type					
Unknown	1 (10)	7 (5.11)	28 (7.2)	32 (7.11)	
Advanced Practice Nurse	1 (10)	22 (16.06)	85 (21.85)	93 (20.67)	
Dentist	0 (0.00)	1 (0.73)	1 (0.26)	2 (0.44)	
Physician	8 (80)	104 (75.91)	263 (67.61)	309 (68.67)	
Physician's Assistant	0 (0.00)	3 (2.19)	12 (3.08)	14 (3.11)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

Butalbital/acetaminophen/caffeine

Butalbital/acetaminophen/caffeine is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 1,180 times between 2014 and 2016. Six hundred thirty-one patients received at least one dispensation for butalbital/acetaminophen/caffeine. The mean number of dispensations

was 1.87 (SD=2.17), and the range was from 1 to 18 dispensations. There were 542 prescribers who prescribed butalbital/acetaminophen/caffeine for dispensing to these patients with a mean of 2.18 (SD=2.67) and a range of 1 to 35 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 114.

Table 114. Descriptive information for all butalbital/acetaminophen/caffeine dispensations.					
	2014	2015	2016	Total study period	
Dispensations (Percent)	47 (3.98)	198 (16.78)	935 (79.24)	1,180	
Total Quantity Dispensed	3,075	13,562	81,188	97,825	
Total Days Supply	1,039	4,180	13,737	18,956	
Patients					
Ν	30	135	509	631	
Mean dispensations per patient (SD)	1.57 (1.01)	1.47 (1.02)	1.84 (2.03)	1.87 (2.17)	
Range of dispensations per patient	1-5	1-7	1-18	1-18	
Gender (Percent)					
Male	2 (6.67)	22 (16.3)	89 (17.49)	108 (17.12)	
Female	28 (93.33)	113 (83.7)	420 (82.51)	523 (82.88)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	30	135	509	631	
Age (SD)	57.33 (16.9)	46.43 (14.86)	45.85 (16.29)	45.99 (16.33)	
Range	19-90	16-77	13-92	13-92	
Prescribers					
Ν	32	136	441	542	
Mean number of dispensations	1.47 (0.8)	1.46 (0.99)	2.12 (2.63)	2.18 (2.67)	
Range	1-4	1-7	1-35	1-35	

Table 114 continued.					
	2014	2015	2016	Total study period	
Prescriber Type					
Unknown	2 (6.25)	5 (3.68)	32 (7.26)	37 (6.83)	
Advanced Practice Nurse	3 (9.38)	19 (13.97)	81 (18.37)	95 (17.53)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	25 (78.13)	110 (80.88)	317 (71.88)	396 (73.06)	
Physician's Assistant	2 (6.25)	2 (1.47)	11 (2.49)	14 (2.58)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

Butalbital/aspirin/caffeine

Butalbital/aspirin/caffeine, a schedule III controlled substance, (Wolters-Kluwer, 2019) was dispensed 365 times during the three-year study period to 101 patients. The mean number of dispensations was 3.61 (SD=5.05), and the range was from 1 to 24 dispensations. Butalbital/aspirin/caffeine was prescribed by 97 prescribers. Prescribers prescribed this a mean of 3.76 (SD=5.54) with a range of 1-41. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 115.

	2014	2015	2016	Total study period
Dispensations (Percent)	187 (51.23)	86 (23.56)	92 (25.02)	365
Total Quantity Dispensed	12,763	8,036	7,162	27,961
Total Days Supply	3,273	1,652	1,500	6,425
Patients				
Ν	76	30	25	101
Mean dispensations per patient (SD)	2.46 (2.89)	2.87 (2.26)	3.68 (3.45)	3.61 (5.05)
Range of dispensations per patient	1-17	1-9	1-14	1-24

Table 115. Descriptive information for all butalbital/aspirin/caffeine dispensations.

Table 115 continued.					
	2014	2015	2016	Total study period	
Gender (Percent)					
Male	12 (15.79)	1 (3.33)	0 (0.00)	13 (12.87)	
Female	64 (84.21)	29 (96.67)	25 (100)	88 (87.13)	
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Age					
Ν	76	30	25	101	
Age (SD)	56.14 (15.92)	62.43 (15.11)	66 (14.95)	57.2 (15.79)	
Range	19-92	35-92	39-93	19-92	
Prescribers					
Ν	73	29	28	97	
Mean number of dispensations	2.56 (2.66)	2.97 (2.78)	3.29 (3.15)	3.76 (5.45)	
Range	1-15	1-13	1-13	1-41	
Prescriber Type					
Unknown	7 (9.59)	3 (10.34)	1 (3.57)	9 (9.28)	
Advanced Practice Nurse	5 (6.85)	3 (10.34)	2 (7.14)	8 (8.25)	
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Physician	60 (82.19)	23 (79.31)	25 (89.29)	79 (81.44)	
Physician's Assistant	1 (1.37)	0 (0.00)	0 (0.00)	1 (1.03)	
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	

# Phenobarbital

Phenobarbital is a schedule IV controlled substance. (Wolters-Kluwer, 2019) It was dispensed 166,934 times during the three-year study period with 53,971 (32.33 percent), 55,165 (33.05 percent), and 57,798 dispensations (34.62 percent) in 2014, 2015, and 2016 respectively. The mean

number of dispensations was 8.97 (SD=13.27), and the range was from 1 to 1,104 dispensations. Men comprised a majority (52.31 percent) of the patients during the study period. Prescribers prescribed phenobarbital an average of 26.57 times (SD=762.83) to patients. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 116.

Table 116. Descriptive information for all phenobarbital dispensations.				
	2014	2015	2016	Total study period
Dispensations (Percent)	53,971 (32.33)	55,165 (33.05)	57,798 (34.62)	166,934
Total Quantity Dispensed	6,730,623	6,740,549	6,841,752	20,312,924
Total Days Supply	2,032,616	2,044,742	2,132,659	6,210,017
Patients				
Ν	9,836	10,139	10,676	18,601
Mean dispensations per patient (SD)	5.49 (4.44)	5.44 (9.09)	5.41 (5.48)	8.97 (13.27)
Range of dispensations per patient	1-52	1-810	1-294	1-1,104
Gender (Percent)				
Male	5,022 (51.06)	5,322 (52.49)	5,459 (51.13)	9,730 (52.31)
Female	4,383 (44.56)	4,328 (42.69)	4,672 (43.76)	7,854 (42.22)
Missing	431 (4.38)	489 (4.82)	545 (5.1)	1,017 (5.47)
Age				
Ν	9,817	10,123	10,662	18,565
Age (SD)	27.31 (26.12)	26.49 (25.81)	26.05 (25.5)	22.91 (24.24)
Range	0-104	0-104	0-105	0-105
	Table 11	6 continued.		
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	2014	2015	2016	Total study period
Prescribers				
Ν	3,945	3,923	3,969	6,282
Mean number of dispensations	13.68 (25.38)	14.06 (28.54)	14.56 (27.72)	26.57 (62.83)
Range	1-527	1-811	1-394	1-1135
Prescriber Type				
Unknown	827 (20.96)	769 (19.6)	801 (20.18)	1,686 (26.84)
Advanced Practice Nurse	361 (9.15)	392 (9.99)	439 (11.06)	726 (11.56)
Dentist	7 (0.18)	6 (0.15)	7 (0.18)	15 (0.24)
Physician	1,920 (48.67)	1,816 (46.29)	1,729 (43.56)	2,700 (42.98)
Physician's Assistant	25 (0.63)	38 (0.97)	39 (0.98)	81 (1.29)
Podiatrist	1 (0.03)	1 (0.03)	0 (0.00)	1 (0.02)
Veterinarian	804 (20.38)	901 (22.97)	954 (24.04)	1,073 (17.08)

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Phenobarbital/belladonna

Phenobarbital/belladonna is a schedule IV controlled substance (Wolters-Kluwer, 2019) that was dispensed twice during the study period to two different patients in 2015. Two different prescribers each prescribed phenobarbital/belladonna once during the study period. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 117.

Table 117. Descriptive information for all phenobarbital/belladonna dispensations.						
	2014	2015	2016	Total study period		
Dispensations (Percent)	0 (0.00)	2 (100)	0 (0.00)	2		
Total Quantity Dispensed	0	185	0	185		
Total Days Supply	0	90	0	90		

Table 117 continued.								
	2014	2015	2016	Total study period				
Patients								
Ν	0	2	0	2				
Mean dispensations per patient (SD)	0.00 (-)	1 (-)	0.00 (-)	1 (-)				
Range of dispensations per patient	-	-	-	-				
Gender (Percent)								
Male	0 (0.00)	2 (100)	0 (0.00)	2 (100)				
Female	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)				
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)				
Age								
Ν	0	2	0	2				
Age (SD)	0.00 (-)	41.5 (10.61)	0.00 (-)	41.5 (10.61)				
Range	-	34-49	-	34-49				
Prescribers								
Ν	0	2	0	2				
Mean number of dispensations	0.00 (-)	1 (-)	0.00 (-)	1 (-)				
Range	-	-	-	-				

Table 117 continued.								
	2014	2015	2016	Total study period				
Prescriber Type								
Unknown	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)				
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)				
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)				
Physician	0 (0.00)	2 (100)	0 (0.00)	2 (100)				
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)				
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)				
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)				

# Secobarbital

Secobarbital is a schedule II controlled substance (Wolters-Kluwer, 2019) that was dispensed 4 times during the study period – three times in 2014, and once in 2016. Two female patients received dispensations for secobarbital, and two different prescribers prescribed the medication for these individuals. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 118.

Table 118. Descriptive information for all secobarbital dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	3 (75)	0 (0.00)	1 (25)	4
Total Quantity Dispensed	14	0	1	15
Total Days Supply	6	0	1	7
Patients				
Ν	2	0	1	2
Mean dispensations per patient (SD)	1.5 (0.71)	0.00 (-)	1 (-)	2 (-)
Range of dispensations per patient	1-2	-	1	-

	Table 118 continued.									
	2014	2015	2016	Total study period						
Gender (Percent)										
Male	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Female	2 (100)	0 (0.00)	1 (100)	2 (100)						
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Age										
Ν	2	0	1	2						
Age (SD)	57 (1.41)	0.00 (-)	60.00 (-)	57 (1.41)						
Range	56-58	-	-	56-58						
Prescribers										
Ν	2	0	1	2						
Mean number of dispensations	1.5 (0.71)	0.00 (-)	1 (-)	2 (-)						
Range	1-2	-	-	-						
Prescriber Type										
Unknown	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Advanced Practice Nurse	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Dentist	2 (100)	0 (0.00)	1 (100)	2 (100)						
Physician	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply of muscle relaxant barbiturate dispensations is explained below.

Figures 50 and 51 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.

time ,	variable: mo delta: 1	nth, 2014m1 month	to 2016m1	12		
Regression with maximum lag: 1	th Newey-West 1	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 34.22 0.0000
prescripti~l	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x672 _x_t672 _cons	8.016667 -184.325 29.29405 -23.18828 -14.67085 4486.933	14.54501 109.291 17.22715 81.09297 12.81924 84.69965	0.55 -1.69 1.70 -0.29 -1.14 52.97	0.586 0.102 0.099 0.777 0.261 0.000	-21.6882 -407.5269 -5.888488 -188.8022 -40.85124 4313.954	37.72153 38.87692 64.47658 142.4257 11.50953 4659.913

Postintervention Linear Trend: 657

Treated: _b[_t	t]+_b[_x_t657]					
Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	37.3107	9.1069	4.0970	0.0003	18.7119	55.9095

Postintervention Linear Trend: 672

Treated: _b[_t	t]+_b[_x_t657]	+_b[_x_t672	]			
Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	22.6399	8.6238	2.6253	0.0135	5.0278	40.2519

Figure 50. Interrupted time-series analysis for full barbiturate population total dispensations.



Figure 51. Interrupted time-series graph of dispensations by month for full barbiturate population.

Dispensations reported to the INSPECT program increased for the months prior to each policy change (p=0.586). After the rescheduling of hydrocodone combination products, the number of dispensations decreased in the month immediately after (p=0.102) and then increased for the remaining months after the policy change (p=0.170). The hydrocodone combination rescheduling policy had a significant impact in increasing the number of barbiturate prescriptions dispensed. This policy led to a 37.31 increase in barbiturate prescriptions per month (p<0.001, CI [18.71,59.91]. After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.261). The change in INSPECT reporting led to a significant decrease in 22.64 prescriptions per month (p=0.0135, CI [5.03, 40.25]).

Figures 52 and 53 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively.

time	variable:	mo	onth,	2014m1	to	2016m12
	delta:	1	month	ı		

Regression with Newey-West standard errors	Number of obs	=	36
maximum lag: 4	F( 5,	30) =	16.94
	Prob > F	=	0 0000

qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t	-2196.167	921.4086	-2.38	0.024	-4077.934	-314.3992
_x657	-4265.6	10431.32	-0.41	0.686	-25569.19	17037.99
_x_t657	4656.981	1158.587	4.02	0.000	2290.831	7023.131
_x672	-1515.73	8590.653	-0.18	0.861	-19060.18	16028.72
_x_t672	-2272.884	1184.717	-1.92	0.065	-4692.4	146.6313
_cons	571777	5167.271	110.65	0.000	561224	582330

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	2460.8143	860.4000	2.8601	0.0076	703.6431 4217.9855

Postintervention Linear Trend: 672

Treated: \_b[\_t]+\_b[\_x\_t657]+\_b[\_x\_t672]

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	187.9301	800.1342	0.2349	0.8159	-1.45e+03 1822.0221

Figure 52. Interrupted time-series analysis for full barbiturate population total quantity dispensed.



Figure 53. Interrupted time-series graph of total quantity dispensed by month for full barbiturate population.

The quantity of products reported to the INSPECT program significantly decreased for the months prior to each policy change (p=0.0.24, CI [-4,077.93, -314.40]). After the rescheduling of hydrocodone combination products, the total quantity for dispensations decreased in the month immediately after (p=0.686) and then significantly increased for the remaining months after the policy change (p=0.000, CI [-25,569.19, 17,037.99]). The hydrocodone combination rescheduling policy had a significant impact in increasing the quantity of barbiturate dispensed. This policy led to an increase in barbiturate dosage units by 2,460.81 units per month (p=0.0076, CI [703.64, 4,217.99]. After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.861). In the months following the policy change, the quantity of dispensations continued to decrease each month (p=0.065). The change in INSPECT reporting did not lead to a significant change in barbiturate quantity dispensed (p=0.2349).

Figures 54 and 55 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 month	1		

Regression wit maximum lag: 1	th Newey-West	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 14.51 0.0000
dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t _x657 x t657	295.0667 -4100.183 384.3976	545.1688 3852.041 633.7281	0.54 -1.06 0.61	0.592 0.296 0.549	-818.3166 -11967.1 -909.8478	1408.45 3766.734 1678.643

_t	295.0667	545.1688	0.54	0.592	-818.3166	1408.45
_x657	-4100.183	3852.041	-1.06	0.296	-11967.1	3766.734
_x_t657	384.3976	633.7281	0.61	0.549	-909.8478	1678.643
_x672	2489.206	2758.31	0.90	0.374	-3144.014	8122.426
x t672	-386.0377	454.1387	-0.85	0.402	-1313.513	541.4373
cons	168232.1	3346.082	50.28	0.000	161398.5	175065.7

Postintervention Linear Trend: 657

Treated:	b[	t]+	b[	х	t65	7]
			_		-	

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	679.4643	324.9696	2.0909	0.0451	15.7878 1343.1408

Postintervention Linear Trend: 672

Treated:	b[	t]+ b[	x t65	57]+ b[	x t6	72]
		_		_		

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval
Treated	293.4266	301.7190	0.9725	0.3386	-322.7658	909.6189

## Figure 54. Interrupted time-series analysis for full barbiturate population total days supply of dispensations.



Figure 55. Interrupted time-series graph of total days supply of dispensations by month for full barbiturate population.

The days supply of products reported to the INSPECT program increased for the months prior to each policy change (p=0.592). After the rescheduling of hydrocodone combination products, the total days supply for dispensations decreased in the month immediately after (p=0.269) and then increased for the remaining months after the policy change (p=0.549). The hydrocodone combination rescheduling policy had a significant impact in increasing the days supply of barbiturate dispensed. This policy led to an increase in barbiturate days supply by 679.46 days per month (p=0.0451, CI [15.79, 1,343.14]. After the change to the INSPECT reporting requirements, the days supply of dispensations increased in the month immediately following the policy change (p=0.374). In the months following the policy change, the days supply of dispensations decreased each remaining month of the study period (p=0.402). The change in INSPECT reporting did not lead to a significant change in barbiturate days supply dispensed each month (p=0.9725]).

#### Multiple Classes

#### Descriptive Information for Full Multiple Classes Population and Each Drug

A controlled substance meeting the requirements for entry into multiple drug classes was dispensed 12,610 times during the three-year study period with 5,128 (40.67 percent), 3,986 (31.61 percent), and 3,496 (27.72 percent) dispensed in 2014, 2015, and 2016 respectively. There were 2 products that met the criteria for two drug classes, and both were schedule IV substances. Each product was part of the opioid and barbiturate drug classes. (Wolters-Kluwer, 2019) A list of the controlled substances and the number of dispensations across each year and during the three-year study period can be found in Table 119

	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)
Butalbital/acetaminophen/ caffeine/codeine	68 (1.33)	89 (2.23)	52 (1.49)	209 (1.66)
Butalbital/aspirin/ caffeine/codeine	5,060 (98.67)	3,897 (97.77)	3,444 (98.51)	12,401 (98.34)
Total	5,128	3,986	3,496	12,610

Table 119. Dispensations for drug meeting multiple classes each year and the entire study period.

Over the three-year study period, 1,916 patients were dispensed a product falling into multiple drug classes with a mean of 6.58 dispensations (SD=10.19) and a range from 1 to 81 dispensations. There were 1,465 prescribers who prescribed one of these products during the study period with a

mean of 8.61 (SD=16.12) and a range of 1 to 248 times. Descriptive information can be found in Table 120.

Table 120. Descriptive information for all drugs falling into multiple classes.							
	2014	2015	2016	Total study period			
Dispensations (Percent)	5,128 (40.67)	3,986 (31.61)	3,496 (27.72)	12,610			
Total Quantity Dispensed	347,246	266,346	233,788	847,370			
Total Days Supply	91,785	71,710	65,384	228,879			
Patients							
Ν	1,171	935	824	1,916			
Mean dispensations per patient (SD)	4.38 (4.85)	4.26 (4.55)	4.24 (4.37)	6.58 (10.19)			
Range of dispensations per patient	1-49	1-29	1-29	1-81			
Gender							
Male	245 (20.92)	182 (19.47)	165 (20.02)	401 (20.93)			
Female	926 (79.08)	753 (80.53)	659 (79.98)	1.515 (79.07)			
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			
Age							
Ν	1,171	935	824	1,916			
Age (SD)	53.4 (14.54)	53.45 (14.71)	52.96 (14.79)	51.56 (14.98)			
Range	13-89	16-91	12-92	12-90			
Prescribers							
Ν	899	780	705	1,465			
Mean number of dispensations	5.7 (8.01)	5.11 (7.13)	4.96 (6.51)	8.61 (16.12)			
Range	1-86	1-82	1-80	1-248			

Table 120 continued.									
	2014	2015	2016	Total study period					
Prescriber Type									
Unknown	115 (12.79)	80 (10.26)	53 (7.52)	157 (11.95)					
Advanced Practice Nurse	117 (13.01)	105 (13.46)	113 (16.03)	236 (16.11)					
Dentist	12 (1.33)	7 (0.9)	5 (0.71)	17 (1.16)					
Physician	642 (71.41)	572 (73.33)	520 (73.76)	1,006 (68.67)					
Physician's Assistant	10 (1.11)	15 (1.92)	13 (1.84)	28 (1.91)					
Podiatrist	3 (0.33)	1 (0.13)	1 (0.14)	3 (0.2)					
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)					

Butalbital/acetaminophen/caffeine/codeine

Butalbital/acetaminophen/caffeine/codeine is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 209 times during the three-year study period to 46 patients. The mean number of dispensations was 4.54 (SD=8.31), and the range was from 1 to 40 dispensations. Fifty-one prescribers prescribed butalbital/acetaminophen/caffeine/codeine with a mean of 4.10 (SD=7.45) and a range of 1 to 40 times. Descriptive information on dispensations, patients, and prescribers can be found in Table 121.

Table 121. Descriptive information for all butalbital/acetaminophen/caffeine/codeine

-	dispensations.								
	2014	2015	2016	Total study period					
Dispensations (Percent)	68 (32.54)	89 (42.58)	52 (24.88)	209					
Total Quantity Dispensed	6,005	5,782	3,638	15,425					
Total Days Supply	1,234	1,146	882	3,262					
Patients									
Ν	16	24	17	46					
Mean dispensations per patient (SD)	4.25 (4.8)	3.71 (5.46)	3.06 (3.19)	4.54 (8.31)					
Range of dispensations per patient	1-14	1-23	1-12	1-40					

	Table 121 continued.									
	2014	2015	2016	Total study period						
Gender (Percent)										
Male	4 (25)	3 (12.5)	1 (5.88)	8 (17.39)						
Female	12 (75)	21 (87.5)	16 (94.12)	38 (82.61)						
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Age										
Ν	16	24	17	46						
Age (SD)	49.81 (14.62)	47.62 (13.43)	47.76 (13.04)	47.43 (13.93)						
Range	23-75	22-68	14-64	14-75						
Prescribers										
Ν	19	25	20	51						
Mean number of dispensations	3.58 (3.89)	3.56 (4.03)	2.6 (3.1)	4.1 (7.45)						
Range	1-13	1-14	1-13	1-40						
Prescriber Type										
Unknown	5 (26.32)	2 (8)	0 (0.00)	5 (9.8)						
Advanced Practice Nurse	4 (21.05)	4 (16)	4 (20)	9 (17.65)						
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Physician	9 (47.37)	16 (64)	15 (75)	34 (66.67)						
Physician's Assistant	1 (5.26)	3 (12)	1 (5)	3 (5.88)						
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)						

# Butalbital/aspirin/caffeine/codeine

Butalbital/aspirin/caffeine/codeine is a schedule III controlled substance (Wolters-Kluwer, 2019) that was dispensed 12,401 times during the three-year study period with 5,060 (40.8 percent),

3,897 (31.42 percent), and 3,444 dispensations (27.77 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations was 6.62 (SD=10.22), and the range was from 1 to 81 dispensations. There were 1,434 prescribers who prescribed butalbital/aspirin/caffeine/ codeine with a mean of 8.65 (SD=16.20) and a range of 1 to 248 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 122.

Table 122. Descriptive information for all butalbital/aspirin/caffeine/codeine dispensations.							
	2014	2015	2016	Total study period			
Dispensations (Percent)	5,060 (40.80)	3,897 (31.42)	3,444 (27.77)	12,401			
Total Quantity Dispensed	341,241	260,564	230,140	831,945			
Total Days Supply	90,551	70,564	64,502	225,617			
Patients							
Ν	1,155	914	807	1,874			
Mean dispensations per patient (SD)	4.38 (4.86)	4.26 (4.52)	2.27 (4.39)	6.62 (10.22)			
Range of dispensations per patient	1-49	1-29	1-29	1-81			
Gender (Percent)							
Male	241 (20.87)	180 (19.69)	164 (20.32)	395 (21.08)			
Female	914 (79.13)	734 (80.31)	643 (79.68)	1,479 (78.92)			
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			
Age							
Ν	1,155	914	807	1,874			
Age (SD)	53.45 (14.54)	53.61 (14.70)	53.07 (14.81)	51.67 (14.98)			
Range	13-89	16-91	12-92	12-90			

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	Tab	le 122 continued.		
	2014	2015	2016	Total study period
Prescribers				
Ν	884	760	690	1,434
Mean number of dispensations	5.72 (8.06)	5.13 (7.16)	4.99 (6.55)	8.65 (16.2)
Range	1-86	1-82	1-80	1-248
Prescriber Type Unknown	111	78 (10.26)	53 (7.68)	171 (11.92)
Advanced Practice Nurse	114 (12.9)	101 (13.29)	109 (15.8)	231 (16.11)
Dentist	12 (1.36)	7 (0.92)	5 (0.72)	17 (1.19)
Physician	635 (71.83)	561 (73.82)	510 (73.91)	986 (68.76)
Physician's Assistant	9 (1.02)	12 (1.58)	12 (1.74)	26 (1.81)
Podiatrist	3 (0.34)	1 (0.13)	1 (0.14)	2 (0.21)
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

# Time-series Analysis for Multiple Classes Population

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply of multiple classes dispensations is explained below.

Figures 56 and 57 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 month	ı		

Regression with maximum lag: (	th Newey-West )	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 76.05 0.0000
prescripti~l	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	. Interval]
t	-13.46667	4.471547	-3.01	0.005	-22.59878	-4.33455
x657	-11.10833	24.60507	-0.45	0.655	-61.35858	39.14192
x t657	10.74881	4.930071	2.18	0.037	.6802609	20.81736
	-25.85458	17.36361	-1.49	0.147	-61.31581	9.606652
x t672	1.941633	2.396194	0.81	0.424	-2.952047	6.835314

19.17

0.000

441.8554

547.2112

Postintervention Linear Trend: 657

25.79377

Treated:  $b[_t]+b[_x_t657]$ 

cons

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	-2.7179	2.0763	-1.3090	0.2005	-6.9582	1.5224

Postintervention Linear Trend: 672

Treated:	_b[_	t]+	_b [	x_t	:657]	+_]	b[_	x_	t672]	
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494.5333

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	-0.7762	1.1962	-0.6489	0.5213	-3.2192	1.6667

Figure 56. Interrupted time-series analysis for full multiple class population total dispensations.



Figure 57. Interrupted time-series graph of dispensations by month for full multiple class population.

Dispensations reported to the INSPECT program significantly decreased for the months prior to each policy change (p=0.005, CI [-22.60, -4.33]). After the rescheduling of hydrocodone combination products, the number of dispensations decreased in the month immediately after (p=0.655) and then significantly increased for the remaining months after the policy change (p=0.037, CI [0.68, 20.82]). The hydrocodone combination rescheduling policy did not have a significant impact on the number of multiple class prescriptions dispensed (p=0.2005). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.147). In the months following the policy change, the number of dispensations increased each month (p=0.424). The change in INSPECT reporting did not have a significant impact on the number of dispensations per month (p=0.5213).

Figures 58 and 59 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively.

Regression wit maximum lag: 0	h Newey-West	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 82.91 0.0000
qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t x657 x_t657 x672 x_t672 cons	-553.4167 -3223.111 384.981 -1535.342 75.06508 32260.78	164.4764 1437.097 206.4149 1099.871 155.8042 828.2983	-3.36 -2.24 1.87 -1.40 0.48 38.95	0.002 0.032 0.072 0.173 0.633 0.000	-889.3222 -6158.054 -36.57447 -3781.58 -243.1296 30569.17	-217.5111 -288.1683 806.5364 710.8948 393.2598 33952.39

time variable: month, 2014ml to 2016m12 delta: 1 month

Postintervention Linear Trend: 657

Treated:	bl	t]-	+ b	X	t657]
			_		

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	-168.4357	124.7182	-1.3505	0.1869	-423.1443	86.2728

Postintervention Linear Trend: 672

<pre>Treated: _b[_t]+_b[_x_t657]+_b[_x_t672]</pre>						
Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	-93.3706	93.3827	-0.9999	0.3254	-284.0836	97.3423

Figure 58. Interrupted time-series analysis for full multiple class population total quantity dispensed.



Figure 59. Interrupted time-series graph of total quantity dispensed by month for full multiple class population.

The quantity of products reported to the INSPECT program significantly decreased for the months prior to each policy change (p=0.002, CI [-889.32, -217.51]). After the rescheduling of hydrocodone combination products, the total quantity for dispensations significantly decreased in the month immediately after (p=0.032, CI [-6,158.05, -288.16]) and increased for the remaining months after the policy change (p=0.072). The hydrocodone combination rescheduling policy did not have a significant impact on the quantity of multiple class dosage units dispensed (p=0.1869). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.173). In the months following the policy change, the quantity of dispensations increased each month (p=0.633). The change in INSPECT reporting did not have a significant impact on the quantificant impact on the quantity of dosage units dispensed per month (p=0.3254).

Figures 60 and 61 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

	delta: 1 m	nonth				
Regression wit maximum lag: (	th Newey-West)	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 116.16 0.0000
dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x_t672 _cons	-151.4667 -652.925 108.656 -374.7989 41.88064 8486.867	22.84147 407.3508 46.88917 353.8169 49.87876 82.32325	-6.63 -1.60 2.32 -1.06 0.84 103.09	0.000 0.119 0.027 0.298 0.408 0.000	-198.1152 -1484.846 12.89549 -1097.389 -59.98538 8318.74	-104.8182 178.9963 204.4164 347.7916 143.7467 8654.993

time variable: month, 2014ml to 2016ml2

Postintervention Linear Trend: 657

Treated:	bſ	t1+	bſ	х	t6571

Treated

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval
Treated	-42.8107	40.9495	-1.0455	0.3042	-126.4408	40.8193

Postintervention Linear Trend: 672

Treated: _b[_t	:]+_b[_x_t65/]+	_b[_x_t6/2	]				
Linear Trend	Coeff	Std. Err.	t	P> t	[95%	Conf.	Interval]

-0.9301 28.4786

Figure 60. Interrupted time-series analysis for full multiple class population total days supply of dispensations.

-0.0327

0.9742

-59.0911

57.2309



Figure 61. Interrupted time-series graph of total days supply of dispensations by month for full multiple class population.

The days supply of products reported to the INSPECT program significantly decreased for the months prior to each policy change (p=<0.001, CI [-198.12; -104.82]). After the rescheduling of hydrocodone combination products, the total days supply for dispensations decreased in the month immediately after (p=0.119) and then significantly increased for the remaining months after the policy change (p=0.027, CI [12.90; 204.41]). The hydrocodone combination rescheduling policy did not have a significant impact on the quantity of multiple class dosage units dispensed (p=0.3042). After the change to the INSPECT reporting requirements, the days supply of dispensations decreased in the month immediately following the policy change (p=0.298). In the months following the policy change, the days supply of dispensations increased each remaining month of the study period (p=0.408). The change in INSPECT reporting did not have a significant impact on the quantity of days supply dispensed per month (p=0.9742).

#### Sedative-Hypnotics

#### Descriptive Information for Full Sedative-Hypnotic Population and Each Drug

A controlled substance in the sedative-hypnotic drug class was dispensed 2,276,382 times during the three-year study period with 788,449 (34.64 percent), 750,249 (32.96 percent), and 737,684 (32.41 percent) dispensed in 2014, 2015, and 2016 respectively. There were five different controlled substances in the sedative-hypnotics class, and substances were in schedule III or schedule IV. (Wolters-Kluwer, 2019) Zolpidem was the most common sedative-hypnotic dispensed over the three-year study period with 2,042,680 (89.73 percent) dispensations, while chloral hydrate was the least common sedative-hypnotic dispensed with 7 (0.00 percent) dispensations. A list of the controlled substances and the number of dispensations across each year and during the three-year study period can be found in Table 123.

	2014 (Percent)	2015 (Percent)	2016 (Percent)	Total Study Period (Percent)
Chloral hydrate	5 (0.00)	2 (0.00)	0 (0.00)	7 (0.00)
Eszopiclone	60,688 (7.7)	59,769 (7.97)	62,740 (8.5)	183,197 (8.05)
Sodium oxybate	4,060 (0.51)	4,147 (0.55)	4,638 (0.63)	12,845 (0.56)
Zaleplon	13,770 (1.75)	12,160 (1.62)	11,723 (1.59)	37,653 (1.65)
Zolpidem	709,926 (90.04)	674,171 (89.86)	658,583 (89.28)	2,042,680 (89.73)
Total	788,449	750,249	737,684	2,276,382 (100)

Table 123. Dispensations for sedative-hypnotics each year and during the study period.

Over the three-year study period, 264,082 patients were dispensed a sedative-hypnotic with a mean of 8.62 dispensations (SD=10.33) and a range from 1 to 123 dispensations. During the study period, 29,291 prescribers prescribed a sedative-hypnotic for dispensing with a mean of 77.72 (SD=244.31). Further information on dispensations, patients, and prescribers can be found in Table 124.

	2014	2015	2016	Total study period
Dispensations (Percent)	788,449 (34.64)	750,249 (32.96)	737,684 (32.41)	2,276,382
Total Quantity Dispensed	28,147,996	26,645,270	26,662,083	81,455,349
Total Days Supply	26,200,193	24,767,033	24,564,654	75,531,880
Patients				
Ν	159,550	151,125	144,198	264,082
Mean dispensations per patient (SD)	4.94 (4.19)	4.96 (4.17)	5.12 (4.28)	8.62 (10.33)
Range of dispensations per patient	1-67	1-46	1-57	1-123
Gender (Percent)				
Male	59,217 (37.12)	57,906 (38.32)	55,722 (38.64)	102,673 (38.88)
Female	100,307 (62.87)	93,189 (61.66)	88,461 (61.35)	161,361 (61.1)
Missing	26 (0.02)	30 (0.02)	15 (0.01)	48 (0.02)

Table 124. Descriptive information for all sedative-hypnotic dispensations.

Table 124 continued.					
	2014	2015	2016	Total study period	
Age					
Ν	159,549	151,123	144,193	264,076	
Age (SD)	55.42 (15.33)	55.69 (15.13)	55.96 (14.91)	54.59 (15.75)	
Range	0-108	0-106	1-105	0-108	
Prescribers					
Ν	16,822	16,421	18,756	29,291	
Mean number of dispensations	46.87 (105.93)	45.69 (114.28)	39.33 (101.16)	77.72 (244.31)	
Range	1-1,1276	1-6,783	1-4,998	1-11,782	
Prescriber Type					
Unknown	7,186 (42.72)	6,492 (39.53)	8,654 (46.14)	16,111 (55)	
Advanced Practice Nurse	1,948 (11.58)	2,200 (13.40)	2,472 (13.18)	3,042 (10.39)	
Dentist	77 (0.46)	60 (0.37)	59 (0.31)	154 (0.53)	
Physician	7,294 (43.46)	7,314 (44.54)	7,221 (38.5)	9,412 (32.13)	
Physician's Assistant	253 (1.50)	301 (1.83)	306 (1.63)	473 (1.61)	
Podiatrist	56 (0.33)	50 (0.30)	42 (0.22)	87 (0.30)	
Veterinarian	8 (0.05)	4 (0.02)	2 (0.01)	12 (0.04)	

#### Chloral hydrate

Chloral hydrate is a schedule IV controlled substance (Wolters-Kluwer, 2019) and was dispensed 7 times during the three-year study period – five times in 2014 and twice in 2015. Three patients received chloral hydrate with a mean of 2.33 (SD=1.53) and a range from 1 to 4 dispensations. Four prescribers prescribed chloral hydrate at least once for dispensing to these patients with a mean of 1.75 (SD=2.5) and a range of 1 to 4 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 125.

	2014	2015	2016	Total study period
Dispensations (Percent)	5 (71.43)	2 (28.57)	0 (0.00)	7
Total Quantity Dispensed	930	300	0	1,230
Total Days Supply	156	60	0	216
Patients				
Ν	2	1	0	3
Mean dispensations per patient (SD)	2.5 (2.12)	2.00(-)	0.00 (-)	2.33 (1.53)
Range of dispensations per patient	1-4	-	-	1-4
Gender (Percent)				
Male	1 (50)	0 (0.00)	0 (0.00)	1 (33.33)
Female	0 (0.00)	1 (50)	0 (0.00)	1 (33.33)
Missing	1 (50)	0 (0.00)	0 (0.00)	1 (33.33)
Age				
N	2	1	0	3
Age (SD)	57.5 (7.78)	37 (-)	0.00 (-)	50.67 (13.05)
Range	52-63	-	-	37-63
Prescribers				
Ν	2	2	0	4
Mean number of dispensations	2.5 (2.12)	1 (-)	0.00 (-)	1.75 (1.5)
Range	1-4	-	-	1-4

Table 125. Descriptive information for all chloral hydrate dispensations.

Table 125 continued.						
	2014	2015	2016	Total study period		
Prescriber Type						
Unknown	1 (50)	0 (0.00)	0 (0.00)	1 (25)		
Advanced Practice Nurse	0 (0.00)	2 (100)	0 (0.00)	2 (50)		
Dentist	1 (50)	0 (0.00)	0 (0.00)	1 (25)		
Physician	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Physician's Assistant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

#### Eszopiclone

Eszopiclone is a schedule IV controlled substance. (Wolters-Kluwer, 2019) It was dispensed 183,197 times during the three-year study period 60,688 (33.13 percent), 59,769 (32.63 percent), and 62,740 dispensations (34.25 percent) in 2014, 2015, and 2016 respectively. There were 28,254 patients who received at least one dispensation for eszopiclone. The mean number of dispensations was 6.48 (SD=8.59), and the range was from 1 to 91 dispensations. Women comprised a majority (64.09 percent) of the patients during the study period. The average patient age was 52.95 (SD=12.67) with an age range from 0-105. There were 8,016 prescribers who prescribed eszopiclone at least once for dispensing to these patients with a mean 22.85 (SD=44.69) and a range of 1 to 820 times. Information on the number of dispensations and prescribers across each year and during the three-year study period can be found in Table 126.

Table 1.	Table 126. Descriptive information for all eszopicione dispensations.						
	2014	2015	2016	Total study period			
Dispensations (Percent)	60,688 (33.13)	59,769 (32.63)	62,740 (34.25)	183,197			
Total Quantity Dispensed	2,024,173	2,004,221	2,140,580	6,168,974			
Total Days Supply	2,011,927	1,997,676	2,130,344	6,139,947			

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Table 126 continued.					
	2014	2015	2016	Total study period	
Patients					
Ν	14,071	13,929	14,695	28,254	
Mean dispensations per patient (SD)	4.31 (3.98)	4,29 (3.86)	4.27 (3.87)	6.48 (8.59)	
Range of dispensations per patient	1-58	1-35	1-44	1-91	
Gender (Percent)					
Male	5,005 (35.57)	4,943 (35.49)	5,275 (35.9)	10,137 (35.88)	
Female	9,062 (64.4)	8,984 (64.5)	9,418 (64.09)	18,109 (64.09)	
Missing	4 (0.03)	2 (0.01)	2 (0.01)	8 (0.03)	
Age					
Ν	14,071	13,927	14,692	28,249	
Age (SD)	53.69 (14.73)	53.22 (14.5)	53.49 (14.42)	52.46 (14.93)	
Range	1-105	4-99	5-100	1-105	
Prescribers					
Ν	4,861	4,769	5,328	8,016	
Mean number of dispensations	12.48 (17.9)	12.53 (18.77)	11.98 (19.52)	22.85 (44.69)	
Range	1-286	1-299	1-262	1-820	

	Та	ble 126 continued.		
	2014	2015	2016	Total study period
Prescriber Type				
Unknown	977 (20.10)	822 (17.24)	1,256 (23.98)	2,348 (29.29)
Advanced Practice Nurse	810 (16.66)	868 (18.2)	1,002 (19.13)	1,456 (18.16)
Dentist	7 (0.14)	7 (0.15)	8 (0.15)	16 (0.2)
Physician	2,994 (61.59)	2,983 (62.55)	2,889 (55.15)	4,054 (50.57)
Physician's Assistant	69 (1.42)	87 (1.82)	82 (1.57)	135 (1.68)
Podiatrist	1 (0.02)	1 (0.02)	1 (0.02)	3 (0.04)
Veterinarian	3 (0.06)	1 (0.02)	0 (0.00)	4 (0.05)

#### Sodium oxybate

Sodium oxybate is a schedule III controlled substance (Wolters-Kluwer, 2019) and was dispensed 12,845 times during the three-year study period. The mean number of dispensations was 6.2 (SD=8.4), and the range was from 1 to 21 dispensations. Women comprised a majority (72.09 percent) of the patients during the study period. The average patient age was 40.24 (SD=13.71) with an age range from 9-86. There were 255 prescribers who prescribed sodium oxybate at least once during the three-year study period with a mean of 50.37 (SD=89.23) and a range of 1 to 689 times. Information on dispensations, patients, and prescribers across each year and during the three-year study period can be found in Table 127.

	2014	2015	2016	Total study period
Dispensations (Percent)	4,060 (31.61)	4,147 (32.28)	4,638 (36.11)	12,845
Total Quantity Dispensed	1,881,990	1,929,960	2,168,460	5,980,410
Total Days Supply	117,981	120,552	134,877	373,410

Table 127. Descriptive information for all sodium oxybate dispensations

Table 127 continued.						
	2014	2015	2016	Total study period		
Patients						
Ν	542	558	566	860		
Mean dispensations per patient (SD)	7.49 (4.15)	7.43 (4.12)	8.19 (4.17)	14.94		
Range of dispensations per patient	1-15	1-24	1-24	1-61		
Gender (Percent)						
Male	163 (30.07)	160 (28.67)	154 (27.21)	240 (27.91)		
Female	379 (69.93)	398 (71.33)	412 (72.79)	620 (72.09)		
Missing	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Age						
Ν	542	558	566	860		
Age (SD)	41.32 (14.04)	41.39 (13.71)	41.34 (13.84)	40.24 (13.71)		
Range	9-86	9-85		9-86		
Prescribers						
Ν	175	192	182	255		
Mean number of dispensations	23.2 (33.72)	21.6 (30.76)	25.48 (38.77)	50.37 (89.23)		
Range	1-196	1-204	1-306	1-689		

Table 127 continued.						
	2014	2015	2016	Total study period		
Prescriber Type						
Unknown	41 (23.43)	57 (29.69)	37 (20.33)	84 (32.94)		
Advanced Practice Nurse	19 (5.71)	12 (6.25)	12 (6.59)	15 (5.88)		
Dentist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Physician	123 (70.29)	123 (64.06)	132 (72.53)	155 (60.78)		
Physician's Assistant	1 (0.57)	0 (0.00)	1 (0.55)	1 (0.39)		
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

### Zaleplon

Zaleplon is a schedule IV controlled substance. (Wolters-Kluwer, 2019) It was dispensed 37,653 times during the three-year study period with 13,770 (36.57 percent), 12,160 (32.29 percent), and 11,723 dispensations (31.13 percent) in 2014, 2015, and 2016 respectively. The mean number of dispensations over the study period was 4.50 (SD=6.58), and the range was from 1 to 60 dispensations. There were 3,149 prescribers who prescribed zaleplon at least once for dispensing to these patients with a mean of 11.96 (SD=24.94) and a range of 1 to 284 times. Additional information on dispensations, patients, and prescribers can be found in Table 128.

Table 128. Descriptive information for all zaleplon dispensations.

	2014	2015	2016	Total study period
Dispensations (Percent)	13,770 (36.57)	12,160 (32.29)	11,723 (31.13)	37,653
Total Quantity Dispensed	502,464	439,240	432,964	1,374,668
Total Days Supply	441,646	388,221 383,158		1,213,025
Patients				
Ν	4,132	3,743	3,539	8,371
Mean dispensations per patient (SD)	3.33 (3.32)	3.25 (3.29)	3.31 (3.37)	4.50 (6.58)
Range of dispensations per patient	1-23	1-22	1-23	1-60

Table 128 continued.							
	2014	2015	2016	Total study period			
Gender (Percent)							
Male	1,492 (36.11)	1,345 (35.93)	1,280 (36.17)	3,020 (36.08)			
Female	2,638 (63.84)	2,397 (64.04)	2,258 (63.80)	5,349 (63.90)			
Missing	2 (0.05)	1 (0.03)	1 (0.03)	2 (0.02)			
Age							
Ν	4,131	3,743	3,539	8,370			
Age (SD)	54.40 (15.76)	53.76 (16.09)	53.97 (15.89)	53.28 (16.28)			
Range	10-101	7-102	7-103	7-101			
Prescribers							
Ν	1,863	1,762	1,773	3,149			
Mean number of dispensations	7.39 (12.30)	6.9 (11.16)	6.61 (10.60)	11.96 (24.94)			
Range	1-140	1-110	1-145	1-284			
Prescriber Type							
Unknown	318 (17.07)	251 (14.25)	291 (16.41)	657 (20.86)			
Advanced Practice Nurse	251 (13.47)	276 (15.66)	313 (17.65)	528 (16.77)			
Dentist	5 (0.27)	5 (0.28)	5 (0.28)	14 (0.44)			
Physician	1,266 (67.95)	1,208 (68.56)	1,141 (64.35)	1,905 (60.50)			
Physician's Assistant	22 (1.18)	22 (1.25)	23 (1.30)	44 (1.40)			
Podiatrist	1 (0.05)	0 (0.00)	0 (0.00)	1 (0.03)			
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			

# Zolpidem

Zolpidem is a schedule IV controlled substance and was dispensed 2,042,680 times during the three-year study period with 709,926 (34.75 percent), 674,171 (33.00 percent) and 658,583 dispensations (32.24 percent) in 2014, 2015, and 2016 respectively. The mean number of

dispensations was 8.52 (SD=10.23), and the range was from 1 to 121 dispensations. Women comprised a majority (60.81 percent) of the patients during the study period. There were 27,504 prescribers who prescribed zolpidem at least once for dispensing to these patients with a mean of 74.27 (SD=227.83) and a range of 1 to 108 times. Information patients, dispensations, and prescribers across each year and during the three-year study period can be found in Table 129.

Table 129. Descriptive information for all zolpidem dispensations.						
	2014	2015	2016	Total study period		
Dispensations (Percent)	709,926 (34.75)	674,171 (33.00)	658,583 (32.24)	2,042,680		
Total Quantity Dispensed	23,738,439	22,271,549	21,920,079	67,930,067		
Total Days Supply	23,628,483	22,260,524	21,916,275	67,805,282		
Patients						
Ν	145,172	136,886	129,243	239,878		
Mean dispensations per patient (SD)	4.89 (4.15)	4.93 (4.14)	5.10 (4.26)	8.52 (10.23)		
Range of dispensations per patient	1-67	1-46	1-57	1-121		
Gender (Percent)						
Male	54,132 (37.29)	52,843 (33.60)	50,389 (38.99)	93,974 (39.18)		
Female	91,019 (62.70)	84,015 (61.38)	78,842 (61.00)	145,864 (60.81)		
Missing	21 (0.01)	28 (0.02)	12 (0.01)	40 (0.02)		
Age						
Ν	145,172	136,886	129,241	239,876		
Age (SD)	55.59 (15.35)	55.93 (15.11)	56.23 (14.88)	54.79 (15.75)		
Range	0-108	0-106	1-105	0-108		

Table 129 continued.							
	2014	2015	2016	Total study period			
Prescribers							
Ν	16,083	15,680	17,552	27,504			
Mean number of dispensations	44.14 (97.64)	43 (106.58)	37.59 (94.55)	74.27 (227.83)			
Range	1-1,201	1-6,447	1-4,825	1-11,273			
Dressriber Type							
Tresenber Type							
Unknown	6,666 (41.45)	6,003 (38.28)	7,656 (43.69)	14,599 (53.08)			
Advanced Practice Nurse	1,912 (11.89)	2,147 (13.69)	2,407 (13.74)	2,987 (10.86)			
Dentist	66 (0.41)	51 (0.33)	49 (0.28)	130 (0.47)			
Physician	7,129 (44.33)	7,136 (45.51)	7,068 (40.34)	9,228 (33.55)			
Physician's Assistant	249 (1.55)	291 (1.86)	299 (1.71)	464 (1.69)			
Podiatrist	54 (0.34)	49 (0.31)	41 (0.23)	86 (0.31)			
Veterinarian	7 (0.04)	3 (0.02)	2 (0.01)	10 (0.04)			

Time-series Analysis for Sedative-hypnotic Population

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply of sedative-hypnotic dispensations is explained below.

Figures 62 and 63 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 mont	h		

Regression with Newey-West standard errors	Number of obs	5 =	36
maximum lag: 1	F(5,	30) =	18.19
	Prob > F	=	0 0000

prescripti~l	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t	-162.4167	214.8466	-0.76	0.456	-601.1921	276.3587
x657	-2971.519	1909.656	-1.56	0.130	-6871.557	928.5178
x t657	265.5917	269.5323	0.99	0.332	-284.8668	816.0501
	-1586.518	1167.089	-1.36	0.184	-3970.032	796.9961
x t672	-235.8323	183.4666	-1.29	0.208	-610.5212	138.8565
	66675.44	1232.053	54.12	0.000	64159.26	69191.63

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	103.1750	164.1990	0.6284	0.5345	-232.1642	438.5142

Postintervention Linear Trend: 672

Treated:	b [	t]+	b [	х	t657	] +	b[	х	t6	72	]

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	-132.6573	87.2212	-1.5209	0.1387	-310.7867	45.4720

Figure 62. Interrupted time-series analysis for full sedative-hypnotic population total dispensations.



Figure 63. Interrupted time-series graph of dispensations by month for full sedative-hypnotic population.

Dispensations reported to the INSPECT program decreased for the months prior to each policy change (p=0.456). After the rescheduling of hydrocodone combination products, the number of dispensations decreased in the month immediately after (p=0.130) and then increased for the remaining months after the policy change (p=0.332). The hydrocodone combination rescheduling policy did not have a significant impact on the number of sedative-hypnotic prescriptions dispensed (p=0.5345). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.184). In the months following the policy change, the number of dispensations continued to decrease each month (p=0.208). The change in INSPECT reporting did not lead to a significant change in sedative-hypnotic dispensations (p=0.1387).

Figures 64 and 65 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively

time variable: month, 2014ml to 2016ml2 delta: 1 month

Regression wit maximum lag: (	th Newey-West)	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 7.36 0.0001
qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x_t672 _cons	-836.5667 -112552.8 2203.017 -51319.4 2154.323 2353381	12537.53 92379.05 15013.57 60714.95 9350.56 73027.96	-0.07 -1.22 0.15 -0.85 0.23 32.23	0.947 0.233 0.884 0.405 0.819 0.000	-26441.61 -301216 -28458.78 -175315.9 -16942.07 2204238	24768.48 76110.35 32864.82 72677.06 21250.71 2502524

#### Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_{657}]$ 

Linear Trend	Coeff S	td. Err.	t	P> t	[95% Conf	. Interval]
Treated	1366.4500825	9.3995	0.1654	0.8697	-1.55e+04	1.82e+04

Postintervention Linear Trend: 672

Treated: \_b[\_t]+\_b[\_x\_t657]+\_b[\_x\_t672]

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	3520.77274383.5243	0.8032	0.4282	-5.43e+03	1.25e+04

Figure 64. Interrupted time-series analysis for full sedative-hypnotic population total quantity dispensed.



Figure 65. Interrupted time-series graph of total quantity dispensed by month for full sedativehypnotic population.

The quantity of products reported to the INSPECT program decreased for the months prior to each policy change (p=0.947). After the rescheduling of hydrocodone combination products, the total quantity for dispensations decreased in the month immediately after (p=0.233) and increased for the remaining months after the policy change (p=0.884). The hydrocodone combination rescheduling policy did not have a significant impact on the number of sedative-hypnotic prescriptions dispensed (p=0.8697). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.405). In the months following the policy change, the quantity of dispensations increased each month (p=0.819). The change in INSPECT reporting did not lead to a significant change in the quantity of sedative-hypnotic dispensed (p=0.4282).

Figures 66 and 67 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

time	variable:	month,	2014m1	to	2016m12
	delta:	1 montl	h		

Regression with Newey-West standard errors	Number of obs	=	36
maximum lag: 0	F( 5,	30) =	9.34
	Prob > F	=	0.0000

dayssupply	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t	-3090.45	11397.13	-0.27	0.788	-26366.49	20185.59
x657	-105169.2	85088.28	-1.24		-278942.7	68604.24
_x_t657	4823.846	13657.93	0.35	0.726	-23069.37	32717.07
_x672	-54012.74	54036.11	-1.00	0.326	-164369.2	56343.71
_x t672	-960.9349	8467.516	-0.11	0.910	-18253.91	16332.04
cons	2203801	66312.52	33.23	0.000	2068373	2339229

Postintervention Linear Trend: 657

Treated:	b	[	t]	+	b[	х	t65	7]
	_	_		_				

Linear Trend	Coeff Std. Err.	t t	P> t	[95% Conf	. Interval]
Treated	1733.39647526.2638	0.2303	0.8194	-1.36e+04	1.71e+04

Postintervention Linear Trend: 672

Treated:	b [	t]+	b [	х	t657	] +	b[	х	t672	1
					-	_			-	

Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf. Interval]
Treated	772.46153879.9717	0.1991	0.8435	-7.15e+03 8696.4209

Figure 66. Interrupted time-series analysis for full sedative-hypnotic population total days supply of dispensations.



Figure 67. Interrupted time-series graph of total days supply of dispensations by month for full sedative-hypnotic population.

The days supply of products reported to the INSPECT program decreased for the months prior to each policy change (p=0.788). After the rescheduling of hydrocodone combination products, the total days supply for dispensations decreased in the month immediately after (p=0.226) and then increased for the remaining months after the policy change (p=0.726). The hydrocodone combination rescheduling policy did not have a significant impact on total days supply of prescriptions dispensed (p=0.8194). After the change to the INSPECT reporting requirements, the days supply of dispensations decreased in the month immediately following the policy change (p=0.326). In the months following the policy change, the days supply of dispensations continued to decrease each remaining month of the study period (p=0.910). The change in INSPECT reporting did not lead to a significant change in the total days supply of sedative-hypnotic dispensed (p=0.8435).

#### **Cannabinoids**

#### Descriptive Information for Full Cannabinoid Population and Each Drug

A controlled substance in the cannabinoid drug class was dispensed 22,574 times during the threeyear study period with 6,832 (30.26 percent), 7,310 (32.38 percent), and 8,432 (37.35 percent) dispensed in 2014, 2015, and 2016 respectively. There was only a single drug, dronabinol, in the cannabinoid class, and it is a schedule III controlled substance. (Wolters-Kluwer) There were 6,259 patients who received at least one dispensation for dronabinol. The mean number of dispensations was 3.61 (SD=5.8), and the range was from 1 to 88 dispensations. Women comprised a slight majority (50.6 percent) of the patients during the study period. The average patient age was 61.38 (SD=16.7) with an age range from 0-106. A total of 2,558 prescribers prescribed the cannabinoid, dronabinol, at least once for dispensing to these patients with a mean of 8.82 (SD=29.06) times and a range of 1 to 1093 times. Additional information on dronabinol dispensations can be found in Table 130.

	2014	2015	2016	Total study period
Dispensations (Percent)	6,832 (30.26)	7,310 (32.38)	8,432 (37.35)	22,574
Total Quantity Dispensed	415,459	436,562	493,944	1,345,965
Total Days Supply	181,419	192,508	218,525	592,452

Table 130. Descriptive information for all cannabinoid dispensations.
Table 130 continued.							
	2014	2015	2016	Total study period			
Patients							
Ν	2,386	2,502	2,761	6,259			
Mean dispensations per patient (SD)	2.86 (3.09)	2.92 (3.16)	3.05 (3.52)	3.61 (5.8)			
Range of dispensations per patient	1-26	1-32	1-64	1-88			
Gender (Percent)							
Male	1,196 (50.15)	1,239 (49.52)	1,401 (50.74)	3,091 (49.38)			
Female	1,189 (49.83)	1,263 (50.48)	1,360 (49.26)	3,167 (50.6)			
Missing	1 (0.04)	0 (0.00)	0 (0.00)	1 (0.02)			
Age							
Ν	2,386	2,501	2,761	6,258			
Age (SD)	59.44 (16.84)	60.18 (16.77)	60.19 (16.60)	61.38 (16.70)			
Range	5-106	0-103	5-100	0-106			
Prescribers							
Ν	1,275	1,334	1,432	2,558			
Mean number of dispensations	5.36 (11.45)	5.48 (13.26)	5.89 (16.03)	8.82 (29.06)			
Range	1-262	1-355	1-476	1-1093			

Table 130 continued.							
	2014	2015	2016	Total study period			
Prescriber Type							
Unknown	265 (20.78)	250 (18.74)	249 (17.39)	593 (23.18)			
Advanced Practice Nurse	166 (13.02)	206 (15.44)	268 (18.72)	403 (15.75)			
Dentist	0 (0.00)	0 (0.00)	1 (0.07)	1 (0.04)			
Physician	836 (65.57)	871 (65.29)	905 (63.20)	1,544 (60.36)			
Physician's Assistant	8 (063)	7 (0.52)	9 (0.63)	17 (0.66)			
Podiatrist	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			
Veterinarian	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)			

# Time-series Analysis for Cannabinoid Population

The interrupted time-series analysis of October 2014 (month 657) and January 2016 (month 672) for number of dispensations, quantity dispensed, and days supply of cannabinoid dispensations is explained below.

Figures 68 and 69 depict the interrupted time-series analysis results and a graph of the monthly dispensations with their predicted values, respectively.

time variable:	month, 2014ml to 2016m12
delta:	1 month

Regression with Newey-West standard errors maximum lag: O		Number of obs = F( 5, 30) = Prob > F =		36 41.34 0.0000			
prescripti~l	Coef.	Newey-West Std. Err.	t	P> t	[95% (	Conf.	Interval]
_t _x657 x t657	8.816667 -25.20833 -3.913095	1.991311 26.86185 3.404451	4.43 -0.94 -1.15	0.000 0.356 0.259	4.7498 -80.06 -10.865	366 756 591	12.88347 29.65089 3.039721

-0.53

1.72

48.22

0.597

0.096

0.000

-89.98703

-1.557209

498.6763

52.69399

18.25356

542.7903

Postintervention Linear Trend: 657

34.93193

4.850178

10.80023

Treated:  $b[_t]+b[_x_{657}]$ 

\_x672

cons

x t672

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	4.9036	2.7613	1.7758	0.0859	-0.7358	10.5430

Postintervention Linear Trend: 672

<pre>Ireated: _b[_t]+_b[_x_t657]+_b[_x_t</pre>	672]	
--	------	--

-18.64652

8.348177

520.7333

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	13.2517	3.9874	3.3234	0.0024	5.1084	21.3951

Figure 68. Interrupted time-series analysis for full cannabinoid population total dispensation.



Figure 69. Interrupted time-series graph of dispensations by month for full cannabinoid population.

Dispensations reported to the INSPECT program significantly increased for the months prior to each policy change (p<0.001, CI [4.75, 12.88]). After the rescheduling of hydrocodone combination products, the number of dispensations decreased in the month immediately after (p=0.356) and then continued to decrease for the remaining months after the policy change (p=0.259). The hydrocodone combination rescheduling policy did not have a significant impact on the number of sedative-hypnotic prescriptions dispensed (p=0.0859). After the change to the INSPECT reporting requirements, the number of dispensations decreased in the month immediately following the policy change (p=0.597). In the months following the policy change, the number of dispensations increased (p=0.096). The change in INSPECT reporting led to a significant increase of 13.25 prescriptions per month (p=0.0024, CI [-5.11, 21.40]).

Figures 70 and 71 depict the interrupted time-series analysis results and a graph of the monthly total quantity dispensed with their predicted values, respectively.

time variable: month, 2014ml to 2016ml2

	delta: 1	month				
Regression wit maximum lag: (	th Newey-West)	standard er	rors	Number F( 5, Prob >	of obs = 30) = F =	36 30.11 0.0000
qty	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x657 _x_t657 _x672 _x_t672 _cons	618.5667 -1785.306 -375.8738 -1995.002 591.3421 31147.62	97.29863 1944.814 227.7675 2179.503 308.5534 504.2792	6.36 -0.92 -1.65 -0.92 1.92 61.77	0.000 0.366 0.109 0.367 0.065 0.000	419.8564 -5757.146 -841.0372 -6446.141 -38.80803 30117.75	817.277 2186.535 89.28955 2456.137 1221.492 32177.5

Postintervention Li	ear Trend: 657
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Treated:	b[ t]+	b[x	t657]

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	242.6929	205.9394	1.1785	0.2479	-177.8915	663.2772

Postintervention Linear Trend: 672

Treated: _b[_t	t]+_b[_x_t657]+_b[_x_t672	2]		
Linear Trend	Coeff Std. Err.	t	P> t	[95% Conf. Interval]
Treated	834.0350 229.7698	3.6299	0.0010	364.7823 1303.2876

Figure 70. Interrupted time-series analysis for full cannabinoid population total quantity dispensed.



Figure 71. Interrupted time-series graph of total quantity dispensed by month for full cannabinoid population.

The quantity of products reported to the INSPECT program significantly increased for the months prior to each policy change (p<0.001, CI [419.86, 817.28]). After the rescheduling of hydrocodone combination products, the total quantity for dispensations decreased in the month immediately after (p=0.366) and decreased for the remaining months after the policy change (p=0.109). The hydrocodone combination rescheduling policy did not have a significant impact on the number of sedative-hypnotic prescriptions dispensed (p=0.2479). After the change to the INSPECT reporting requirements, the quantity of dispensations decreased in the month immediately following the policy change (p=0.367). In the months following the policy change, the quantity of dispensations increased each month (p=0.065). The change in INSPECT reporting led to a significant increase in quantity of dosage units of cannabinoid dispensations by 834.04 dosage units per month (p=0.0010, CI [364.78, 1303.29]).

Figures 72 and 73 depict the interrupted time-series analysis results and a graph of the monthly total days supply dispensed with their predicted values, respectively.

time	variable:	mo	onth,	2014m1	to	2016m12
	delta:	1	montl	n		

Regression with maximum lag: 0	h Newey-West	standard	errors	Number F( 5, Prob >	of F	obs	= 30) = =	36 35.94 0.0000
dayssupply	Coef	Newey-Wes	st +	P>1+1		[95%	Conf	Intervall

dayssupply	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
_t	154.75	43.85621	3.53	0.001	65.18368	244.3163
_x657	-261.9833	865.5607	-0.30	0.764	-2029.694	1505.727
_x_t657	-27.56429	102.1437	-0.27	0.789	-236.1696	181.041
_x672	-787.5396	964.3689	-0.82	0.421	-2757.044	1181.964
_x_t672	213.615	132.8493	1.61	0.118	-57.6994	484.9294
_cons	14085	192.1271	73.31	0.000	13692.62	14477.38

Postintervention Linear Trend: 657

Treated:  $b[_t]+b[_x_t657]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	127.1857	92.2495	1.3787	0.1782	-61.2129	315.5843

Postintervention Linear Trend: 672

Treated:	b [	t]+	b [	х	t657	] +	b[	х	t672	]
			_		_		_		_	

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	340.8007	95.5979	3.5649	0.0012	145.5638	536.0376

Figure 72. Interrupted time-series analysis for full cannabinoid population total days supply of dispensations.



Figure 73. Interrupted time-series graph of total days supply of dispensations by month for full cannabinoid population.

The days supply of products reported to the INSPECT program significantly increased for the months prior to each policy change (p=0.001, CI [65.18, 244.32]). After the rescheduling of hydrocodone combination products, the total days supply for dispensations decreased in the month immediately after (p=0.764) and continued to decrease for the remaining months after the policy change (p=0.789). The hydrocodone combination rescheduling policy did not have a significant impact on the days supply of sedative-hypnotic prescriptions dispensed (p=0.1782). After the change to the INSPECT reporting requirements, the days supply of dispensations decreased in the month immediately following the policy change (p=0.421). In the months following the policy change, the days supply of dispensations increased each remaining month of the study period (p=0.118). The change in INSPECT reporting led to a significant increase in days supply of cannabinoid dispensations by 340.80 days per month (p=0.0012, CI [145.56, 536.04]).

#### **Objective Two**

The second objective was to assess whether practitioner use of the INSPECT program changed over the three-year study period. The hypothesis tested was practitioner use of the INSPECT program has increased over the three-year study period, specifically due to the change in INSPECT reporting requirements implemented January 1, 2016. Practitioner data files from 2014, 2015, and 2016 were used to determine practitioner use of the INSPECT program the study period Table 131 describes the number of queries per practitioner type each year and for the entire study period. Physicians made queries most often in the INSPECT system, while veterinarians made the fewest queries. Reported below in Table 132 are the analyses for the full population and for each reported practitioner type in the population.

Practitioner	2014 (percent)	2015 (Percent)	2016 (percent)	Full Study Period (percent)
Nurse Practitioner	303,484 (12.65)	289,489 (10.75)	334,047 (12.19)	927,020 (1.84)
Dentist	16,326 (0.68)	19,456 (0.72)	23,641 (0.86)	59,423 (0.76)
Physician	1,281,253 (53.42)	1,482,333 (55.07)	1,610,126 (58.78)	4,373,712 (55.86)
Physician's Assistant	48,488 (2.02)	54,105 (2.01)	62,712 (2.29)	165,305 (2.11)
Podiatrist	2,755 (0.11)	3,279 (0.12)	2,649 (0.10)	8,683 (0.11)
Pharmacist	715,860 (29.85)	805,410 (29.92)	676,329 (24.69)	2,197,599 (28.07)
Unknown	30,385 (1.27)	37,774 (1.40)	29,116 (1.06)	97,275 (1.24)
Veterinarian	6 (0.00)	8 (0.00)	683 (0.02)	697 (0.01)
Total	2,398,557	2,691,854	2,739,303	7,829,714

Table 131. Number of practitioner queries during each year and the entire study period.

Over the three-year study period, 14,768 practitioners made a query in the INSPECT program. Queries ranged from 1 patient query in the INSPECT program to 124,154 patient queries. Of the queries entered into the INSPECT program, 13,633 queries returned no patient results. The mean number of total queries was 530.18 requests with a standard deviation (SD) of 2198.07. Looking only at successful patient queries in the system, 14,002 practitioners had successful queries, ranging from 1 to 109,496 successful queries with a mean of 408.8 queries (SD=1820.92).

Practitioner Prescriber Type	Number of Practitioners Requesting	Total Requests	Mean (SD) number of queries	Range
Nurse Practitioner	2,571	927,020	360.57(1,112.00)	1-21,239
Dentist	862	59,423	68.94(261.80)	1-3,586
Physician	5,725	4,373,712	763.97(3,268.59)	1-124,154
Physician's Assistant	466	165,305	354.73(1204.95)	1-23,254
Podiatrist	103	8,683	84.30(330.12)	1-2,357
Pharmacist	4,707	2,197,599	466.88(101.09)	1-17,147
Unknown	317	97,275	306.86 (1615.43)	1-25,575
Veterinarian	17	697	41.00(159.53)	1-660
Total	14,768	7,829,714	530.18 (2,198.07)	1-124,514

Table 132. Overall descriptive information for practitioner use of INSPECT.



Figure 74. Practitioner use of INSPECT on a single graph.

# Regression and Time-series Analysis of INSPECT Use

# All Practitioners

Figures 75 and 76 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that overall practitioner use of the INSPECT program significantly increased during the study period by 1,095.01 requests per month (p<0.001, CI [739.36; 1,450.65]).

Source	SS	df	MS	Numbe	er of obs	s =	36
Model Residual	4.6583e+09 4.0453e+09	1 34	4.6583e+09 118980740	- F(1, 9 Prob 0 R-squ	34) > F lared	= = =	39.15 0.0000 0.5352
Total	8.7036e+09	35	248674192	- Adjf 2 Root	Root MSE		10908
requesttotal	Coef.	Std. Err.	t	P> t	[95% (	Conf.	Interval]
month _cons	1095.005 -511233.5	175.0019 116478	6.26 -4.39	0.000	739.35 -747945	579 5.2	1450.651 -274521.8

Figure 75. Regression analysis of practitioner use of INSPECT by month.



Figure 76. Graph of actual and fitted values over time

Figures 77 and 78 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that requests significantly increased in the months prior to the policy change (p<0.001, CI [1,025.44; 2,489.82]). In the month immediately following the policy change, practitioner requests in INSPECT decreased (p=0.672) and continued to significantly decrease in the remaining months of the study (p=0.001, CI [-3,799.57; -1,063.22]). However, the overall impact of the policy change was not significant (p=0.1559).

	delta: 1 m	month				
Regression wit maximum lag: 4	th Newey-West	standard er	rors	Number F( 3, Prob >	of obs = 32) = F =	36 23.02 0.0000
requesttotal	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t x672 t672 cons	1757.627 -2089.839 -2431.393 191887.7	359.4564 4896.766 671.6823 4385.57	4.89 -0.43 -3.62 43.75	0.000 0.672 0.001 0.000	1025.439 -12064.22 -3799.565 182954.6	2489.816 7884.546 -1063.221 200820.9

time variable: month, 2014ml to 2016ml2

Postintervention Linear Trend: 672

Treated:  $b[_t]+b[_x_t672]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	-673.7657	463.6251	-1.4533	0.1559	-1.62e+03	270.6076





Figure 78. Time-series graph for number of requests and time.

# Nurse Practitioners

Figures 79 and 80 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that nurse practitioner use of the INSPECT program significantly increased during the study period by 107.63 requests per month (p<0.001, CI [51.16, 164.10]).

Source	SS	df	MS	Number	of obs	=	36
Model Residual	45002411.7 101984365	1 34	45002411.7 2999540.15	- F(1, 3 Prob > R-squa - Adj R-	F(1, 34) Prob > F R-squared Adj R-squared Root MSE		15.00 0.0005 0.3062 0.2858
TOTAL	140980///	35	4199622.2	. ROOT M	.5E	=	1/31.9
apn	Coef.	Std. Err.	t	P> t	[95% Co	onf.	Interval]
month cons	107.6273 -45875.4	27.78637 18494.08	3.87 -2.48	0.000 0.018	51.158 -83459	58 .9	164.096 -8290.904





Figure 80. Graph of actual and fitted values over time.

Figures 81 and 82 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that nurse practitioner requests decreased in the months prior to the policy change (p=0.250). In the month immediately following the policy change, nurse practitioner requests in INSPECT significantly increased (p=0.031, CI [266.03, 5,353.35]) and continued to significantly increase in the remaining months of the study (p=0.021, CI [36.01, 405.16]). However, the overall impact of the policy change was not significant on nurse practitioner requests (p=0.0827).

time variable: month, 2014m1 to 2016m12 delta: 1 month

Regression with Newey-West standard errors naximum lag: 4			rors	Number of F( 3, Prob > F	= obs = 32) = =	36 19.98 0.0000
apn	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t _x672 _x_t672 _cons	-49.60391 2809.687 220.5864 25277.65	42.37746 1248.769 90.61368 351.1437	-1.17 2.25 2.43 71.99	0.250 0.031 0.021 0.000	-135.924 266.0276 36.01241 24562.4	36.71615 5353.346 405.1605 25992.91

Postintervention Linear Trend: 672

Troated.	Ъſ	+1+	Ъſ	.,	+ 6721
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Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	170.9825	95.4490	1.7913	0.0827	-23.4407	365.4057

Figure 81. Interrupted time-series analysis for nurse practitioner requests by month.



Figure 82. Time-series graph for number of requests and time.

#### Dentists

Figures 83 and 84 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that dentist use of the INSPECT program significantly increased during the study period by 24.11 requests per month (p<0.001, CI [18.47, 29.75]).

Source	SS	df	MS	Numbe	er of obs	=	36
Model Residual	2258230.6 1016167.7	1 34	2258230.6 29887.2854	- F(1, 5 Prob 4 R-squ	F(1, 34) Prob > F R-squared		0.0000
Total	3274398.31	35	93554.2373	- Adj H B Root	<pre>{-squared MSE</pre>	=	0.6805 172.88
dds	Coef.	Std. Err.	t	P> t	[95% Co	nf.	Interval]
month _cons	24.10952 -14394.25	2.773625 1846.072	8.69 -7.80	0.000	18.4728 -18145.9	4 2	29.74621 -10642.58

Figure 83. Regression analysis of dentist use of INSPECT by month.



Figure 84. Graph of actual and fitted values over time.

Figures 85 and 86 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that dentist requests significantly increased in the months prior to the policy change (p<0.001, CI [13.68, 25.75]). In the month immediately following the policy change, dentist requests in INSPECT increased (p=0.194) and then decreased in the remaining months of the study (p=0.822). However, the overall impact of the policy change was not significant on dentist requests (p=0.5815).

	delta: 1 m	month				
Regression with Newey-West standard errors maximum lag: 1				Number F( 3, Prob >	of obs = 32) = F =	36 23.27 0.0000
dds	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t t672 cons	19.71217 155.976 -5.750635 1264.227	2.96348 117.665 25.4093 50.22854	6.65 1.33 -0.23 25.17	0.000 0.194 0.822 0.000	13.67576 -83.69976 -57.50769 1161.914	25.74859 395.6518 46.00642 1366.539

time variable: month, 2014m1 to 2016m12

## Postintervention Linear Trend: 672

Treated:  $b[_t]+b[_x_t672]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	13.9615	25.0712	0.5569	0.5815	-37.1069	65.0299





Figure 86. Time-series graph for number of requests and time.

# Physicians

Figures 87 and 88 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that physician use of the INSPECT program significantly increased during the study period by 1,053.76 requests per month (p<0.001, CI [838.68, 1,268.85]).

Source	SS	df	MS	Numb	er of obs	=	36
Model Residual	4.3140e+09 1.4796e+09	1 34	4.3140e+09 43517035.8	- F(1, 9 Prob 8 R-sq - Adj	34) > F uared R-squared	= = =	99.13 0.0000 0.7446 0.7371
Total	5.7935e+09	35	165529723	3 Root	MSE	=	6596.7
md	Coef.	Std. Err.	t	P> t	[95% Co	nf.	Interval]
month _cons	1053.762 -579786.7	105.8362 70442.56	9.96 -8.23	0.000	838.677 -722943.	2 2	1268.847 -436630.2

Figure 87. Regression analysis of physician use of INSPECT by month.



Figure 88. Graph of actual and fitted values over time.

Figures 89 and 90 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that physician requests significantly increased in the months prior to the policy change (p<0.001, CI [693.73, 1,630.68]). In the month immediately following the policy change, physician requests in INSPECT increased (p=0.225) and then significantly decreased in the remaining months of the study (p=0.047, CI [-2,068.15, -13.78]). However, the overall impact of the policy change was not significant on physician requests (p=0.7565).

time variable: month, 2014ml to 2016ml2 delta: 1 month

Regression wit maximum lag: 4	egression with Newey-West standard errors aximum lag: 4			Number F( 3, Prob >	of obs = 32) = F =	36 45.08 0.0000
md	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t x672 xt672 cons	1162.203 3833.41 -1040.965 101784.1	229.9909 3100.361 504.2814 3070.097	5.05 1.24 -2.06 33.15	0.000 0.225 0.047 0.000	693.7264 -2481.819 -2068.152 95530.5	1630.679 10148.64 -13.77733 108037.7

Postintervention Linear Trend: 672

Treated.	hſ	+1+	Ъſ	v	+6721
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Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf	. Interval]
Treated	121.2378	387.6831	0.3127	0.7565	-668.4470	910.9225

Figure 89. Interrupted time-series analysis for physician requests by month.



Figure 90. Time-series graph for number of requests and time.

#### Physician's Assistants

Figures 91 and 92 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that physician's assistant use of the INSPECT program significantly increased during the study period by 18.47 requests per month (p<0.001, CI [18.47, 29.75]).

Source	SS	df	MS	Numbe	er of obs	=	36
Model Residual	8860311.08 2410284.56	1 34	8860311.08 70890.7222	- F(1, 8 Prob 2 R-squ	F(1, 34) Prob > F R-squared Adj R-squared Root MSE		0.0000
Total	11270595.6	35	322017.018	- Adjf 8 Root			266.25
pa	Coef.	Std. Err.	t	P> t	[95% C	onf.	Interval]
month _cons	47.75611 -27189.89	4.271685 2843.152	11.18 -9.56	0.000	39.075 -32967.	01 87	56.43722 -21411.91

Figure 91. Regression analysis of physician's assistant use of INSPECT by month.



Figure 92. Graph of actual and fitted values over time.

Figures 93 and 94 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that physician's assistant requests significantly increased in the months prior to the policy change (p<0.001, CI [21.06, 58.26]). In the month immediately following the policy change, physician's assistant requests in INSPECT increased (p=0.055) and then decreased in the remaining months of the study (p=0.589). However, the overall impact of the policy change was not significant on physician's assistant requests (p=0.5049).

	delta: 1 m	month				
Regression with Newey-West standard errors maximum lag: 4				Number	of obs =	36
				F(3,	32) =	36.53
				Prob>	F =	0.0000
pa	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t	39.6587	9.132897	4.34	0.000	21.05559	58.2618
_x672	342.5195	172.2792	1.99	0.055	-8.401793	693.4408
_x_t672	-19.10625	34.9726	-0.55	0.589	-90.3431	52.13061
_cons	3818.633	99.897	38.23	0.000	3615.15	4022.117

time variable: month, 2014m1 to 2016m12

Postintervention Linear Trend: 672

Treated:  $b[_t]+b[_x_t672]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	20.5524	30.4771	0.6744	0.5049	-41.5273	82.6322

Figure 93. Interrupted time-series analysis for physician's assistant requests by month.



Figure 94. Time-series graph for number of requests and time.

# Podiatrists

Figures 95 and 96 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that podiatrist use of the INSPECT program did not change over the study period (p=0.8318).

Source	SS	df	MS	Numb	er of ob	s =	36
Model Residual	157.607786 117036.031	1 34	157.607786 3442.23621	F (1, F Prob R-sq	> F uared	= = =	0.8318
Total	117193.639	35	3348.38968	- Adj 3 Root	MSE	a = =	-0.0280 58.671
pod	Coef.	Std. Err.	t	P> t	[95% )	Conf.	Interval]
month _cons	2014157 375.2366	.941293 626.5068	-0.21 0.60	0.832 0.553	-2.114 -897.9	353 784	1.711522 1648.452

Figure 95. Regression analysis of podiatrist use of INSPECT by month.



Figure 96. Graph of actual and fitted values over time.

Figures 97 and 98 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that podiatrist requests increased in the months prior to the policy change (p=0.174). In the month immediately following the policy change, podiatrist requests in INSPECT decreased (p=0.148) and continued to decrease in the remaining months of the study (p=0.293). The overall impact of the policy change was not significant on podiatrist requests (p=0.7037).

time v	variable: mo delta: 1	nth, 2014m1 month	to 2016m1	.2		
Regression wit	h Newey-West	standard er	rors	Number	of obs =	36
maximum lag: 1					32) =	1.05
				Prob >	F =	0.3824
		Newey-West				
pod	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
t	3.342609	2.403363	1.39	0.174	-1.552881	8.238099
x672	-64.35312	43.44812	-1.48	0.148	-152.8541	24.14781
x_t672	-4.814637	4.50787	-1.07	0.293	-13.99687	4.367595
cons	212.9767	25.14716	8.47	0.000	161.7536	264.1997

Postintervention Linear Trend: 672

Treated:	b [	[t]	+ b[	х	t672	2]
	_	_	_			

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	-1.4720	3.8357	-0.3838	0.7037	-9.2852	6.3411

Figure 97. Interrupted time-series analysis for podiatrist requests by month.



Figure 98. Time-series graph for number of requests and time.

# Pharmacists

Figures 99 and 100 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that pharmacist use of the INSPECT program did not change over the study period (p=0.1498).

Source	SS	df	MS	Numbe	er of obs	=	36
Model Residual	74730381.3 1.1700e+09	1 34	74730381.3 34411455.8	- F(1, 3 Prob 3 R-squ	> F lared	=	0.1498
Total	1.2447e+09	35	35563425.1	- Adji L Root	MSE MSE	=	0.0324 5866.1
pharmd	Coef.	Std. Err.	t	P> t	[95% Cor	nf.	Interval]
month _cons	-138.6925 153344.3	94.11439 62640.75	-1.47 2.45	0.150 0.020	-329.950 26042.9	5 7	52.57091 280645.6

Figure 99. Regression analysis of pharmacist use of INSPECT by month.



Figure 100. Graph of actual and fitted values over time.

Figures 101 and 102 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that pharmacist requests significantly increased in the months prior to the policy change (p=0<0.001, [309.62; 771.02]). In the month immediately following the policy change, pharmacist requests in INSPECT significantly decreased (p=0.001, CI [-12,652.7; -3,481.73]) and continued to significantly decrease in the remaining months of the study (p<0.001, CI [-2,059.13; -1,098.73]). The overall impact of the change in INSPECT reporting time was a significant decrease in pharmacist requests (p<0.001, CI [-1,460; -617.45]).

time v	variable: mon delta: 1 m	nth, 2014ml month	to 2016m1	.2		
Regression wit maximum lag: (	th Newey-West	standard er	rors	Number of F( 3, Prob > F	32) = =	36 30.52 0.0000
pharmd	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
_t _x672 _x_t672 _cons	540.3235 -8067.217 -1578.928 57172.53	113.259 2251.172 235.7474 1303.085	4.77 -3.58 -6.70 43.87	0.000 0.001 0.000 0.000	309.6223 -12652.7 -2059.13 54518.23	771.0246 -3481.729 -1098.727 59826.83

Postintervention Linear Trend: 672

Treated:  $b[_t]+b[_x_t672]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf. Interval]
Treated	-1.04e+03	206.7588	-5.0233	0.0000	-1.46e+03 -617.4509





Figure 102. Time-series graph for number of requests and time.

Figures 103 and 104 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that practitioners whose profession is unknown use of the INSPECT program did not change over the study period (p=0.8441).

Source	SS	df	MS	Numb	er of obs	=	36
				- F(1,	34)	=	0.04
Model	11217.4523	1	11217.452	3 Prob	$\rightarrow F$	=	0.8441
Residual	9711513.3	34	285632.74	4 R-sq	uared	=	0.0012
				– Adi	R-squared	=	-0.0282
Total	9722730.75	35	277792.30	7 Root	MSE	=	534.45
unknown	Coef.	Std. Err.	t	P> t	[95% C	onf.	Interval]
month _cons	-1.699228 3832.919	8.574494 5707.021	-0.20 0.67	0.844 0.506	-19.12 -7765.1	47 42	15.72624 15430.98





Figure 104. Graph of actual and fitted values over time.

Figures 105 and 106 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that practitioner of an unknown type requests significantly increased in the months prior to the policy change (p=0.009, CI [11.37; 72.59]). In the month immediately following the policy change, practitioner requests in INSPECT significantly decreased (p<0.001, CI [-1620.39; -616.71]) and continued to decrease in the remaining months of the study (p=0.627). The overall impact of the policy change was a significant increase in requests from these prescribers (p=0.0067, [9.75; 55.78]).

time variable: month, 2014m1 to 2016m12 delta: 1 month

Regression wit maximum lag: (	th Newey-West)	standard er	rors	Number F(3, Prob>	of obs = 32) = F =	36 9.45 0.0001
unknown	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t _x672 _x_t672 _cons	41.9787 -1118.551 -9.216458 2357.203	15.02877 246.3706 18.80187 179.579	2.79 -4.54 -0.49 13.13	0.009 0.000 0.627 0.000	11.36609 -1620.391 -47.51462 1991.413	72.59131 -616.7106 29.08171 2722.994

Postintervention Linear Trend: 672

Treated:	b [	t]+	b[	x t	:672]

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	32.7622	11.2981	2.8998	0.0067	9.7488	55.7757

Figure 105. Interrupted time-series analysis for unknown practitioner requests by month.



Figure 106. Time-series graph for number of requests and time.

# Veterinarians

Figures 107 and 108 show the results of the regression analysis and a graph of the fitted values. The regression analysis of the use of INSPECT over time indicated that veterinarian use of the INSPECT program significantly increased by 2.34 requests per month (p<0.001, CI [1.39, 3.29]).

Source	SS	df	MS	Numb	er of obs	=	36
Model Residual	21322.3429 28909.9626	1 34	21322.3429 850.293019	- F(1, ) Prob ) R-sq	34) > F uared	=	0.0000
Total	50232.3056	35	1435.20873	- Adj Root	R-squared MSE	=	0.4075 29.16
vet	Coef.	Std. Err.	t	P> t	[95% Co	onf.	Interval]
month _cons	2.342728 -1539.725	.4678308 311.3793	5.01 -4.94	0.000	1.39198 -2172.52	82 24	3.293475 -906.9258

Figure 107. Regression analysis of veterinarian use of INSPECT by month.



Figure 108. Graph of actual and fitted values over time.

Figures 109 and 110 show the results and a graph for the interrupted time-series analysis. The interrupted time-series analysis indicated that veterinarian requests increased in the months prior to the policy change (p=0.557). In the month immediately following the policy change, veterinarian requests in INSPECT increased (p=0.104) and continued to significantly increase in the remaining months of the study (p=0.013, [1.53, 12.08]). The overall impact of the policy change was a significant increase on veterinarian requests by 8.61 requests per month (p=0.0130).

	delta: 1 m	month				
Regression wit maximum lag: 3	th Newey-West	standard er	rors	Number F( 3, Prob >	of obs = 32) = F =	36 10.00 0.0001
vet	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf.	Interval]
t x672 cons	.0130435 18.68952 6.801642 .4333333	.0220026 11.16879 2.589606 .3373949	0.59 1.67 2.63 1.28	0.557 0.104 0.013 0.208	0317743 -4.060564 1.526788 2539176	.0578613 41.43961 12.0765 1.120584

time variable: month, 2014m1 to 2016m12

#### Postintervention Linear Trend: 672

Treated:  $b[_t]+b[_x_t672]$ 

Linear Trend	Coeff	Std. Err.	t	P> t	[95% Conf.	Interval]
Treated	6.8147	2.5891	2.6320	0.0130	1.5408	12.0886





Figure 110. Time-series graph for number of requests and time.

#### **Objective Three**

The third objective was to assess whether the focus on opioids led practitioners to use the INSPECT program more for those substances. The hypothesis tested was practitioner use the INSPECT program more for opioid-based substances as the study period progressed. Reported below are the analyses for the full population.

Observations in the INSPECT data file were combined by patient, month, and drug class, while observations in the practitioner data file were combined by patient, month, and listed each practitioner type that made a request on that patient in that month and the number of requests. Data files were then combined on patient and month as matching variables. Once the practitioner data file and the INSPECT data file were merged, 4,738,802 dispensations had a matching observation. These observations were then combined by month and drug class.

Repeated measures ANOVA was used on the final data with practitioner requests as the dependent variable, month as the independent variable, and drug class as the repeated measure. This analysis, including the more conservative Huynh-Feldt, Greenhouse-Geisser, and Box's conservative estimates, indicated that the mean number of requests across drug class varied significantly (p<0.001). A margin analysis and Bonferroni pairwise comparisons indicated there were significant difference across groups. Specifically, opioids had significantly more requests than all other drug class, benzodiazepines had significantly more requests than other classes except opioids, and all other classes had mixed results compared to one another. Nine pairwise comparisons were not statistically significant – simulants compared to miscellaneous, sedative-hypnotics compared to muscle relaxants, cannabinoids compared to muscle relaxants, sedative-hypnotics compared to stimulants, multiple class drugs compared to barbiturates, and cannabinoids compared to multiple class drugs. Results of the repeated measure ANOVA, the margin results, and the Bonferroni pairwise comparisons can be found in Figures 111, 112, and 113.

	Number of obs Root MSE	=	3 3250.	24 R-squ 26 Adj H	uared = R-squared =	0.9931 0.9920
Source	Partial SS		df	MS	F	Prob>F
Model	4.228e+11		43	9.833e+09	9 930.78	0.0000
classnum month	4.220e+11 8.424e+08		8 35	5.275e+10 24069952	4993.00 2 2.28	0.0000 0.0001
Residual	2.958e+09		280	10564201	L	
Total	4.258e+11		323	1.318e+09	9	
Between-subjects error t Lev Lowest b.s.e. varia	erm: month els: 36 ble: month	(	35 df)			
Repeated variable: class	num		Huynh-F Greenho Box's c	eldt epsilo use-Geissen onservative	on = r epsilon = e epsilon =	0.1357 0.1348 0.1250
			<u> </u>	Pro	ob > F	
Source	df	F	Regul	ar H-F	G-G	Box
classnum Residual	8 499 280	93.0	0 0.00	00 0.0000	0.0000	0.0000

# Figure 111. Repeated measures ANOVA for number of requests, month, and drug class.

Predictive	margins		Number of	obs	=	324
Expression	: Linea	ar prediction, predict()				
		Delta-method				

	1	Delta-method	l			
	Margin	Std. Err.	t	P> t	[95% Conf.	Interval]
classnum						
benzodiazepine	44224.64	541.7103	81.64	0.000	43158.3	45290.98
miscellaneous	8781.528	541.7103	16.21	0.000	7715.186	9847.87
muscle relaxant	2137.5	541.7103	3.95	0.000	1071.158	3203.842
opioid	116322.6	541.7103	214.73	0.000	115256.2	117388.9
stimulant	9503.333	541.7103	17.54	0.000	8436.992	10569.68
barbiturate	133.5	541.7103	0.25	0.806	-932.8418	1199.842
multiple classes	41.44444	541.7103	0.08	0.939	-1024.897	1107.786
sedative hypnotic	8771.417	541.7103	16.19	0.000	7705.075	9837.758
cannabinoid	156.5278	541.7103	0.29	0.773	-909.814	1222.87

SS.

Margins : asbalanced

	Number of Comparisons
classnum	36

Contrast         Std. Err.         t         P> t          [95% Conf. Interva           classnum         miscellaneous vs benzodiazepine         -35443.11         766.094         -46.26         0.000         -37917.04         -32969.           muscle relaxant vs benzodiazepine         -42087.14         766.094         -54.94         0.000         -44561.07         -39613.           opioid vs benzodiazepine         72097.92         766.094         94.11         0.000         69623.99         74571.           stimulant vs benzodiazepine         -34721.31         766.094         -45.32         0.000         -37195.23         -32247.           barbiturate vs benzodiazepine         -44091.14         766.094         -57.55         0.000         -46655.07         -41617.           multiple classes vs benzodiazepine         -44183.19         766.094         -57.67         0.000         -37927.15         -32979.           sedative hypnotic vs benzodiazepine         -44068.11         766.094         -57.52         0.000         -37927.15         -32979.           cannabinoid vs benzodiazepine         -44068.11         766.094         -57.52         0.000         -46542.04         -41594.           muscle relayant vs miscellaneous         -6644.028         766.094         -86
classnum         miscellaneous vs benzodiazepine       -35443.11       766.094       -46.26       0.000       -37917.04       -32969.         muscle relaxant vs benzodiazepine       -42087.14       766.094       -54.94       0.000       -44561.07       -39613.         opioid vs benzodiazepine       72097.92       766.094       94.11       0.000       69623.99       74571.         stimulant vs benzodiazepine       -34721.31       766.094       -45.32       0.000       -37195.23       -32247.         barbiturate vs benzodiazepine       -44091.14       766.094       -57.55       0.000       -46565.07       -41617.         multiple classes vs benzodiazepine       -44183.19       766.094       -57.67       0.000       -37927.15       -32979.         sedative hypnotic vs benzodiazepine       -35453.22       766.094       -46.28       0.000       -37927.15       -32979.         cannabinoid vs benzodiazepine       -44088.11       766.094       -57.52       0.000       -46542.04       -41594.         muscle relavant vs miscellaneous       -6644.028       766.094       -86.7       0.000       -41579.
miscellaneous vs benzodiazepine       -35443.11       766.094       -46.26       0.000       -37917.04       -32969.         muscle relaxant vs benzodiazepine       -42087.14       766.094       -54.94       0.000       -44561.07       -39613.         opioid vs benzodiazepine       72097.92       766.094       94.11       0.000       69623.99       74571.         stimulant vs benzodiazepine       -34721.31       766.094       -45.32       0.000       -37195.23       -32247.         barbiturate vs benzodiazepine       -44091.14       766.094       -57.55       0.000       -46565.07       -41617.         multiple classes vs benzodiazepine       -44183.19       766.094       -57.67       0.000       -37927.15       -32979.         sedative hypnotic vs benzodiazepine       -35453.22       766.094       -57.52       0.000       -37927.15       -32979         cannabinoid vs benzodiazepine       -44088.11       766.094       -57.52       0.000       -46542.04       -41594.         muscle relavant vs miscellaneous       -6644.028       766.094       -86       -9117.054       -4170.1
muscle relaxant vs benzodiazepine opioid vs benzodiazepine       -42087.14       766.094       -54.94       0.000       -44561.07       -39613.         stimulant vs benzodiazepine barbiturate vs benzodiazepine       72097.92       766.094       94.11       0.000       69623.99       74571.         multiple classes vs benzodiazepine cannabinoid vs benzodiazepine       -34721.31       766.094       -45.32       0.000       -37195.23       -32247.         multiple classes vs benzodiazepine cannabinoid vs benzodiazepine       -44091.14       766.094       -57.67       0.000       -46657.12       -41617.         muscle relavant vs miscellaneous       -35453.22       766.094       -57.55       0.000       -4657.12       -41709.         muscle relavant vs miscellaneous       -6644.028       766.094       -57.52       0.000       -37927.15       -32979.
opioid vs benzodiazepine         72097.92         766.094         94.11         0.000         69623.99         74571.           stimulant vs benzodiazepine         -34721.31         766.094         -45.32         0.000         -37195.23         -32247.           barbiturate vs benzodiazepine         -44091.14         766.094         -57.55         0.000         -46565.07         -41617.           multiple classes vs benzodiazepine         -44183.19         766.094         -57.67         0.000         -46657.12         -41709.           sedative hypnotic vs benzodiazepine         -35453.22         766.094         -57.52         0.000         -37927.15         -32979.           uscle relavant vs miscellaneous         -6644         028         766.094         -86         70.000         -46542.04         -41594.
stimulant vs benzodiazepine       -34721.31       766.094       -45.32       0.000       -37195.23       -32247.         barbiturate vs benzodiazepine       -44091.14       766.094       -57.55       0.000       -46565.07       -41617.         multiple classes vs benzodiazepine       -44183.19       766.094       -57.67       0.000       -4657.12       -41709.         sedative hypnotic vs benzodiazepine       -35453.22       766.094       -46.28       0.000       -37927.15       -32979         cannabinoid vs benzodiazepine       -44068.11       766.094       -57.52       0.000       -46542.04       -41594.         muscle relayant vs miscellaneous       -6644       028       766       094       -867       0.000       -9117       954       -4170
barbiturate vs benzodiazepine         -44091.14         766.094         -57.55         0.000         -46565.07         -41617.           multiple classes vs benzodiazepine         -44183.19         766.094         -57.67         0.000         -4657.12         -41709.           sedative hypnotic vs benzodiazepine         -35453.22         766.094         -46.28         0.000         -37927.15         -32979           cannabinoid vs benzodiazepine         -44068.11         766.094         -57.52         0.000         -46542.04         -41594.           muscle relayant vs miscellaneous         -6644         028         766         94         -8         67         0.000         -9117         954         -41594.
multiple classes vs benzodiazepine       -44183.19       766.094       -57.67       0.000       -46657.12       -41709.         sedative hypnotic vs benzodiazepine       -35453.22       766.094       -46.28       0.000       -37927.15       -32979         cannabinoid vs benzodiazepine       -44068.11       766.094       -57.52       0.000       -46542.04       -41594.         muscle relayant vs miscellaneous       -6644       028       766       -867       0.000       -9117       954       -41594.
sedative hypnotic vs benzodiazepine         -35453.22         766.094         -46.28         0.000         -37927.15         -32979           cannabinoid vs benzodiazepine         -44068.11         766.094         -57.52         0.000         -46542.04         -41594.           muscle relayant vs miscellaneous         -6644         028         766         094         -8         67         0.000         -9117         954         -4170         1
cannabinoid vs benzodiazepine -44068.11 766.094 -57.52 0.000 -46542.04 -41594.
muscle relaxant vs miscellaneous $-6644,028,766,094,-8,67,0,000,-9117,954,-4170,1$
mabere reramane vo miscerraneous   0044,020 /00,094 0,07 0,000 -9117,994 -4170,1
opicid vs miscellaneous 107541 766.094 140.38 0.000 105067.1 1100
stimulant vs miscellaneous 721.8056 766.094 0.94 1.000 -1752.121 3195.7
barbiturate vs miscellaneous -8648.028 766.094 -11.29 0.000 -11121.95 -6174.1
multiple classes vs miscellaneous -8740.083 766.094 -11.41 0.000 -11214.01 -6266.1
sedative hypnotic vs miscellaneous -10.11111 766.094 -0.01 1.000 -2484.038 2463.8
cannabinoid vs miscellaneous -8625 766.094 -11.26 0.000 -11098.93 -6151.0
opioid vs muscle relaxant 114185.1 766.094 149.05 0.000 111711.1 1166
stimulant vs muscle relaxant 7365.833 766.094 9.61 0.000 4891.907 9839.
barbiturate vs muscle relaxant -2004 766.094 -2.62 0.338 -4477.927 469.92
multiple classes vs muscle relaxant -2096.056 766.094 -2.74 0.238 -4569.982 377.8
sedative hypnotic vs muscle relaxant 6633.917 766.094 8.66 0.000 4159.99 9107.8
cannabinoid vs muscle relaxant -1980.972 766.094 -2.59 0.368 -4454.899 492.95
stimulant vs opioid -106819.2 766.094 -139.43 0.000 -109293.1 -104345
barbiturate vs opioid -116189.1 766.094 -151.66 0.000 -118663 -113715
multiple classes vs opioid -116281.1 766.094 -151.78 0.000 -118755 -113807
sedative hypnotic vs opioid -107551.1 766.094 -140.39 0.000 -110025.1 -105077
cannabinoid vs opioid -116166 766.094 -151.63 0.000 -118640 -113692
barbiturate vs stimulant -9369.833 766.094 -12.23 0.000 -11843.76 -6895.9
multiple classes vs stimulant -9461.889 766.094 -12.35 0.000 -11935.82 -6987.9
sedative hypnotic vs stimulant -731.9167 766.094 -0.96 1.000 -3205.843 1742.
cannabinoid vs stimulant -9346.806 766.094 -12.20 0.000 -11820.73 -6872.8
multiple classes vs barbiturate -92.05556 766.094 -0.12 1.000 -2565.982 2381.8
sedative hypnotic vs barbiturate 8637.917 766.094 11.28 0.000 6163.99 11111.
cannabinoid vs barbiturate 23.02778 766.094 0.03 1.000 -2450.899 2496.9
sedative hypnotic vs multiple classes 8729.972 766.094 11.40 0.000 6256.046 11203
cannabinoid vs multiple classes 115.0833 766.094 0.15 1.000 -2358.843 2589.
cannabinoid vs sedative hypnotic -8614.889 766.094 -11.25 0.000 -11088.82 -6140.9

Figure 113. Bonferroni pairwise comparisons for drug class.

#### Notes

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## DISCUSSION

The misuse of prescription controlled substances is a matter of growing concern in the United States. The National Institute on Drug Abuse (NIDA) defines misuse as "taking a medication in a manner or dose other than prescribed; taking someone else's prescription, even if for a legitimate medical complaint such as pain; or taking a medication to feel euphoria (i.e., to get high)."(National Institute on Drug Abuse, 2018) This broad definition provides a comprehensive understanding of drug misuse and includes many different behaviors when taking medication.

Specifically, the misuse of opioids has been recognized as a public health emergency, but it is not the only category of controlled substances misused. According to the 2016 National Survey on Drug Use and Health (NSDUH), approximately 6.2 million Americans had misused prescription drugs within the last month and 18.7 million within the last year, the second-highest reported incidence of misuse for any drug category after marijuana. The therapeutic classes of medications associated with prescription drug misuse include benzodiazepines, stimulants, opioid pain relievers, and sedative-hypnotics. (Ahrnsbrak, Bose, Hedden, Lipari, & Park-Lee, 2017) In order to combat the misuse of these prescription medications, new laws and regulations have been put in place at both federal and state levels.

#### **Discussion of Objective One**

The aim of objective one was to assess whether controlled substance dispensing in Indiana has changed over the three-year study period due to changes in legislation around hydrocodone combination product rescheduling and INSPECT reporting. The hypothesis was controlled substance dispensing had increased over the study period for all categories of substances despite changes in legislation. This hypothesis was based on a previous study describing controlled substance dispensing in 2011, 2012, and 2013. On the surface, this descriptive analysis appeared to show a trend of controlled substance dispensations increasing in the three-year period. However, this analysis did not utilize any statistical tests and took place before the implementation of several Indiana policies aimed at controlled substances. (Kooreman, Greene, Xavier-Brier, & Wright, 2014) The information contained in this descriptive analysis coincided with national concerns
relating to the misuse of prescription controlled substances in all categories, but with particular emphasis on opioids.

This objective was tested using an interrupted time-series analysis with two months of interest. The first was October 2014 when hydrocodone combination products were rescheduled to schedule II controlled substances. This was one of the first legislative changes aimed at impacting controlled substance dispensing, and general availability went into effect. The second month of interest was January 2016 when dispenser reporting to INSPECT became 24 hours. This was one of the last policy changes in the study period aimed at impacting controlled substance dispensing. The policies were implemented to potentially decrease controlled substance dispensing by removing unnecessary or improper dispensations.

Results for the full population indicated that the rescheduling of hydrocodone did not have a significant impact on the overall number of dispensations, quantity of dosage units, or overall days supply in the following months, while the change in INSPECT reporting time did significantly decrease dispensations and quantity dispensed in the months following the policy implementation but did not impact the overall days supply of dispensations. The results were mixed across the individual drug classes in the sample. Neither policy significantly impacted benzodiazepine variables. Both policies significantly increased miscellaneous dispensations and overall days supply of dispensations and INSPECT reporting significantly increased the number of dosage units dispensed. Both policies decreased muscle relaxant variables of interest. The hydrocodone rescheduling had no impact on opioid variables, but the change in INSPECT reporting time significantly decreased opioid variables. Neither policy significantly impacted stimulant variables. Both policy changes significantly increased barbiturate dispensations, and hydrocodone rescheduling significantly increased other variables, while INSPECT reporting did not. Variables for drugs falling into multiple drug classes and sedative-hypnotics saw no significant impact from either policy change. The INSPECT policy change significantly increased cannabinoid variables, but hydrocodone rescheduling had no significant impact.

Results with a significant increase in variables, agreeing with the hypothesis, or no impact, indicate that the implemented policies were not effective for the group studied. This may be because the

policies did not adequately consider current practices and trends before being implements but may also be because many recent policy changes have been aimed at addressing the opioid crisis. Another potential explanation is that these policies are effective. However the products dispensed are appropriate and needed medications for the patients receiving the dispensation. Results where there was a significant decrease in variables indicate effective policy implementation.

### **Discussion of Objective Two**

The aim of objective two was to assess whether practitioner use of the INSPECT program changed over the three-year study period. The hypothesis was practitioner use of the INSPECT program has increased over the three-year study period. This hypothesis was based on current good practices and practice guidelines that indicate the use of a prescription drug monitoring program (PDMP) is a powerful tool in facilitating appropriate prescribing and dispensing. (Division of Unintentional Injury Prevention, 2014; Dowell, Haegerich, & Chou, 2016)

This objective was tested using linear regression and interrupted time-series analyses. For the interrupted time-series analysis, the month of interest of January 2016, which is when INSPECT reporting changed to 24 hours and may have impacted the usefulness of INSPECT reports and increased use. The change in INSPECT reporting was implemented with the hope of creating more useful information for practitioners to use.

The results for the full practitioner sample indicated that practitioner use significantly increased over time, but that the change in INSPECT reporting did not subsequently lead to a significant increase in use. Results for specific practitioners varied. Nurse practitioners, dentists, physicians, physician's assistants, and veterinarian use of the INSPECT system significantly increased over time, while podiatrists, pharmacists, and practitioners with an unknown profession type did not have a significant change in their INSPECT usage. The policy change had no significant effect on most practitioner types, except pharmacist (significantly decreased usage), as well as unknown prescriber types and veterinarians (significantly increased usage).

The variation across provide types indicates there may be differences in the access practitioners have to the INSPECT program or difference in setting that leads to time constraints on accessing

the program. Results cannot predict whether INSPECT reports were used in the determination of a dispensation or if a review of the report was merely a formality.

### **Discussion of Objective Three**

The aim of objective three was to assess whether the focus on opioids led practitioners to use the INSPECT program more for those substances. The hypothesis was practitioners use the INSPECT program more for opioid-based substances. This hypothesis was based on risk communication theory and the elevation of information about the harm associated with opioids. Public health campaigns are designed to impact a patient's perception of the risk associated with a situation; however these campaigns generally assume that health care practitioners agree with the underlying message of the campaign. Therefore, these campaigns do not evaluate the impact they may have on health care practitioners. With the opioid crisis in the news, public health campaigns raising awareness about the harms of opioids, and new policies being put in place to limit the availability of opioids, this may have had an unintended consequence of bringing opioids to the forefront of practitioners' minds over the presence of other abusive substances. This objective was tested using repeated-measures ANOVA with Bonferroni corrections for pairwise analyses.

The results indicate there are differences in usage across drug classes. Pairwise comparison indicate practitioners use INSPECT more for opioids than other drug classes. INSPECT was also used for benzodiazepines more than other non-opioid classes, and there was variation across other drug classes compared to each other.

Results indicate there is potential for unintended consequences of risk communication strategies on the awareness of practitioners for certain controlled substances. This result is confounded by the number of dispensations for each drug class. Opioids have the highest number of dispensations, and the use of INSPECT for these substances may be due to the volume of substance dispensed and not the importance a practitioner places on the drug class.

### Limitations

The results of this study are promising; however with all research, there are limitations that must be considered. Limitations include secondary database analysis, separate data files, and unknown factors in dispensations. These limitations will be discussed in further detail below.

### **Secondary Database Analysis**

This study was an analysis of a previously generated database. This type of analysis has inherent limitations. The variables and data have already been generated prior to a researcher generating a research question. Due to this fact, researchers must adapt to inherent issues with the data. This often leads to confounding or missing data due to variables not being generated with the initial dataset. Specifically, with the data files used in this study, researchers did not know how the INSPECT program generated certain pieces of data was unknown. For instance, the researchers did not know how patient zip code, gender, or date of birth were generated. This data could have been from a state-based database like the Bureau of Motor Vehicles or from pharmacy submitted data.

### **Separate Data Files**

Two separate data files were used in this study – an INSPECT data file and a practitioner data file. To complete the analyses for objective three, the two data files had to be merged on different variables. This merge led to several observations being unmatched. This may have led to unintentional conclusions because practitioners reviewed a patient in INSPECT on a date different than dispensing. Additionally, by collapsing this information by month to account for date differences, there may have been additional unmatched information due to issues near the beginning and end of the month.

### **Unknown Factors in Dispensations**

Many factors play a part in a dispensation and review of INSPECT. Many of the factors are professional judgments of practitioners and were not included in the data. A practitioner may feel they do not need to review INSPECT due to information they have about an individual. This may

lead to inappropriate conclusions about practitioner use of INSPECT and the impact of INSPECT usage.

## **Pharmacy Data Submission**

Data used in this study were obtained from the INSPECT program; however dispensation data was submitted by individual pharmacies. Pharmacy submitted data might have errors present that cannot be prevented, fixed, or known by researchers. Particularly, the day supply calculation of a dispensation may be inaccurate due to accidental miscalculation or purposeful miscalculation for insurance requirements.

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# FUTURE RESEARCH, IMPLICATIONS, AND CONCLUSIONS

### **Areas of Future Research**

Although there are several limitations present, this study provides a foundation for future research in controlled substance dispensing in Indiana. Further research is needed to explore how the policies explored in this study impact dispensing and INSPECT usage over a longer period. Future research should explore dispensations across time on an individual drug basis and explore variables that may be more likely to lead to a dispensation.

Future studies should consider developing a research design that would lead to primary data collection of interested variables. This may allow for connecting INSPECT review and dispensation at the time of dispensation, which would lead to a richer analysis. Additionally, researchers may consider incorporating practitioner professional judgment information in any prospective data collection to fully explore the impact of new policies on dispensations and INSPECT usage. Forthcoming studies should consider comparing Indiana results to other states. This would increase the generalizability of the results and expand the understanding of controlled substance dispensing variations across legislative policies. Finally, future studies should explore the enforceability of legislative policy changes as part of the exploration of impact. Without understanding the enforceability of a policy, one cannot completely evaluate a policy impact.

### **Conclusions and Implications**

The primary purpose of this study was to provide a description of controlled substance dispensations and evaluate the impact of policies on dispensing. The secondary purpose of this study was to describe practitioner use of INSPECT over time and to explore the impact of policy changes on usage. The final purpose was to explore the impact of specific drug classes on INSPECT usage for future hypothesis generation.

Results indicate policy changes had mixed results on dispensations. Hydrocodone rescheduling had no impact on dispensing, while INSPECT reporting changes had a significant impact on dispensing. When examining specific drug classes the impact of policy changes were less clear. In

addition, results indicated practitioner use of INSPECT is increasing over the three-year study period, but policy changes did not impact usage. Specific practitioner type results were similar. Finally, results indicate there is a difference in INSPECT usage across drug class.

These results have implications in a number of different areas. Controlled substance dispensing is a growing area of research, legislation, and litigation. Illuminating the scope and trends associated with dispensing, while not focusing on a single drug or drug class as most studies do, provides a foundation for future researchers to expand their area of exploration. This also provides a big-picture view of dispensing in a single state and allows for future comparisons with other states. Additionally, these results provide an initial analysis prior to future policy changes and can help inform future policy changes. Finally, this study does not indicate if risk communication strategies impact practitioner evaluation of different controlled substances but provides a solid foundation of information for future studies and hypotheses. This is an area that has not been explored in research before, but there is evidence that it should be explored.

It can be definitively stated that policies have impacted controlled substance dispensing and use of INSPECT in Indiana. This study provides strong evidence to support examining controlled substance dispensations and PDMP usage on a larger scale than just a single drug class. This study also illustrates that many substances make up controlled substance dispensing in Indiana, and though opioids are currently drugs of concern, other products are also dispensed in significant numbers.

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# **APPENDIX A. DATA DICTIONARY**

obs: 37,264,971 vars: 51 size:29,178,472,293

11 Jun 2019 20:25

st variable name	torage type	display format	value label	variable label		
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hashedpatients	str32	%32s		HashedPatients		
ageatfill	int	%8.0g		AgeatFill		
yob	int	%8.0g		YOB		
gender	str1	89s		Gender		
gendernum	byte	%10.0g	Gender	Gender		
patzip	str5	%9s		PatZip		
patientzip	long	%10.0g	ZipUpdate	- Patient Zipcode		
practdea	str32	%32s		PractDEA		
profession	str3	%9s		Profession		
practzip	str5	%9s		PractZip		
practitionerzip	long	%10.0g	ZipUpdate	Practitioner Zipcode		
written	str10	%10s		Written		
nharmnahn	etr32	832e		PharmNABP		
pharmain	3t152	8023 80a		Pharm7in		
pharmaquain	long	595 810 0a	ZipUndato	FIIAIIIIZIP		
pharmacyzip	TONG	510.0g	Zipopuace	Pharmacy Zipcode		
filled	str10	%10s		Filled		
ry	str32	\$32s		Rv#		
rvorigincode	str11	%11e		RyOriginCode		
authrofille	buto	89 0 <i>a</i>		A#AuthBofills		
rofilloodo	byte	~0.0g		PofillCodo		
dauragunnalu	int int	~0.0g		Development		
uayssuppiy	111C	*0.UY		Dayssuppiy		
plic	SLL/	-595 - 0 0		Pint		
qty	100	*8.0g		Qty		
productname	striuu	%100s		ProductName		
proaqual	str3	*9S		Produlat		
ola_nac	stri3	%13S		Original NDC		
cmpnac	double	%10.0g		CMPNDC		
strength	str35	*35S		Strength		
doseunit	str4	%9s		DoseUnit		
simplegeneric	str100	%100s				
simplegenericnum						
	int	%46.0g	Simplegene	eric Simple Generic		
datefilled	float	%td				
year	float	%9.0g				
generic	str100	%100s		ProductName		
class	str46	%46s				
classnum	byte	%17.0g	Class	Drug Class		
week_num	int	%8.0g				
month_num	int	%8.0g				
prescriptiontota	al					
	float	%9.0g				
schedule	str100	%100s				
practitioner	str3	%9s		Profession		
benzodiazepine	float	%9.0q				
miscellaneous	float	%9.0g				
musclerelaxant	float	%9.0q				
opioid	float	%9.0a				
stimulant	float	%9.0a				
barbiturate	float	89.0a				
multipleclass	float	89.0a				
sedativehypnotic	2					
	float	%9.0q				
cannabinoid	float	%9.0a				
		-				

Figure 114. Data dictionary for dispensations in INSPECT data file.

obs: 7,829 vars: size: 1,487,649	9,714 24 5,660			17 Jun 2019 00:39
st variable name	torage type	display format	value label	variable label
user profession pract	str32 str10 int	%32s %10s %10.0g	Practitione	er
hashedpatients success date begin end id v1 v2 datefilled year week_num month_num requesttotal apn dds md pa pod pharmd unknown vet	str32 double str22 long double str10 str10 float float float float float float float float float float	<pre>%32s %12.0g %22s %tdD_m_Y %tdD_m_Y %12.0g %10s %10s %td %9.0g %8.0g %8.0g %8.0g %8.0g %9.0g %%9.0g %%9.0g %%9.0g</pre>		Practitioner

Figure 115.Data dictionary for queries in practitioner data file.

# APPENDIX B. STATA CODE USED FOR CLEANING AND DATA ANALYSIS

\*data prepping and cleaning\*

replace productname = "armodafinil" if (productname == "250 MG")

- replace productname = "carisoprodol" if (productname == "350 MG")
- replace productname = "meperidine" if (productname == "50 MG")

generate generic=productname

- replace generic = "unknownNDC" if (generic == ".")
- replace generic = "unknownNDC" if (generic == ".5 MG")
- replace generic = "unknownNDC" if (generic == ".6 MG")
- replace generic = "unknownNDC" if (generic == "0")
- replace generic = "unknownNDC" if (generic == "1")
- replace generic = "unknownNDC" if (generic == "1 MG")
- replace generic = "pseudoephedrine" if (generic =="12 HOUR ALLERGY D")
- replace generic = "pseudoephedrine" if (generic =="12 HOUR DECONGESTANT")

replace generic = "unknownNDC" if (generic == "2")

- replace generic = "unknownNDC" if (generic == "2 MG")
- replace generic = "unknownNDC" if (generic == "20 MG")
- replace generic = "unknownNDC" if (generic == "232")
- replace generic = "unknownNDC" if (generic == "5 MG")
- replace generic = "unknownNDC" if (generic == "50")
- replace generic = "unknownNDC" if (generic == "50 MCG/HR PATCH")
- replace generic = "unknownNDC" if (generic == "51")
- replace generic = "unknownNDC" if (generic == "6051")
- replace generic = "unknownNDC" if (generic == "6602")
- replace generic = "unknownNDC" if (generic == "7")
- replace generic = "unknownNDC" if (generic == "7063")
- replace generic = "non-controlled" if (generic =="ABSORICA")
- replace generic = "fentanyl" if (generic=="ABSTRAL")

replace generic = "codeine/acetaminophen" if (generic=="ACET/COD SOLN 500ML")

replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE")

replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE")

replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE ORAL SOLUTION USP")

replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE TABLETS")

replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN CODEINE PHOSPHATE TABLETS")

replace generic = "fentanyl" if (generic=="ACTIQ")

replace generic = "non-controlled" if (generic =="ACYCLOVIR")

replace generic = "amphetamine/dextroamphetamine" if (generic =="ADDERALL")

replace generic = "amphetamine/dextroamphetamine" if (generic =="ADDERALL 12.5 MG")

replace generic = "amphetamine/dextroamphetamine" if (generic == "ADDERALL TABLETS")

replace generic = "amphetamine/dextroamphetamine" if (generic =="ADDERALL XR")

replace generic = "phentermine" if (generic =="ADIPEX-P")

replace generic = "pseudoephedrine" if (generic =="ADVIL ALLERGY SINUS")

replace generic = "pseudoephedrine" if (generic =="ADVIL COLD AND SINUS")

replace generic = "pseudoephedrine" if (generic =="ALAVERT ALLERGY SINUS D-12")

replace generic = "pseudoephedrine" if (generic =="ALL DAY ALLERGY D")

replace generic = "pseudoephedrine" if (generic =="ALL DAY ALLERGY-D")

replace generic = "pseudoephedrine" if (generic =="ALLEGRA D 12 HOUR ALLERGY AND CONGESTION")

replace generic = "pseudoephedrine" if (generic =="ALLEGRA D-12 HOUR")

replace generic = "pseudoephedrine" if (generic =="ALLEGRA--D 24 HOUR")

replace generic = "pseudoephedrine" if (generic =="ALLEGRA-D 24 HOUR ALLERGY AND CONGESTION")

replace generic = "pseudoephedrine" if (generic =="ALLERGY AND CONGESTION RELIEF") replace generic = "pseudoephedrine" if (generic =="ALLERGY PLUS-SINUS HA CAPLE")

- replace generic = "pseudoephedrine" if (generic =="ALLERGY RELIEF D")
- replace generic = "pseudoephedrine" if (generic =="ALLERGY RLF LORATADINE D 24 HR PSE TABS")
- replace generic = "non-controlled" if (generic =="ALLOPURINOL")
- replace generic = "alprazolam" if (generic == "ALPRAZOLAM")
- replace generic = "alprazolam" if (generic == "ALPRAZOLAM EXTENDED RELEASE")
- replace generic = "alprazolam" if (generic == "ALPRAZOLAM EXTENDED-RELEASE")
- replace generic = "alprazolam" if (generic == "ALPRAZOLAM TABLETS")
- replace generic = "alprazolam" if (generic == "ALPRAZOLAM TABLETS EXTENDED RELEASE")
- replace generic = "alprazolam" if (generic == "ALPRAZOLAM XR")
- replace generic = "zolpidem" if (generic == "AMBIEN")
- replace generic = "zolpidem" if (generic == "AMBIEN CR")
- replace generic = "zolpidem" if (generic == "AMBIEN TABLETS")
- replace generic = "non-controlled" if (generic =="AMITRIPTYLINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic =="AMLODIPINE BESYLATE")
- replace generic = "amphetamine/dextroamphetamine" if (generic == "AMPHETAMINE SALTS TABS 20MG X 100")
- replace generic = "amphetamine/dextroamphetamine" if (generic == "AMPHETAMINE SALTS TABS 30MG X 100")
- replace generic = "non-controlled" if (generic =="AMRIX")
- replace generic = "oxymetholone" if (generic =="ANADROL-50")
- replace generic = "testosterone" if (generic =="ANDRODERM")
- replace generic = "testosterone" if (generic =="ANDROGEL")
- replace generic = "testosterone" if (generic =="ANDROGEL GEL")
- replace generic = "methyltestosterone" if (generic =="ANDROID")
- replace generic = "fluoxymesterone" if (generic =="ANDROXY")
- replace generic = "pseudoephedrine" if (generic =="APRODINE")
- replace generic = "methylphenidate" if (generic =="APTENSIO XR")
- replace generic = "non-controlled" if (generic =="ARIPIPRAZOLE")
- replace generic = "non-controlled" if (generic =="ARNUITY ELLIPTA")

replace generic = "butalbital/aspirin/caffeine/codeine" if (generic == "ASCOMP WITH CODEINE")

replace generic = "non-controlled" if (generic =="ASPIR LOW")

replace generic = "non-controlled" if (generic =="ASPIRIN")

replace generic = "non-controlled" if (generic =="ASPIRIN AND DIPYRIDAMOLE")

replace generic = "non-controlled" if (generic =="ATENOLOL")

- replace generic = "non-controlled" if (generic =="ATENOLOL AND CHLORTHALIDONE")
- replace generic = "lorazepam" if (generic =="ATIVAN")
- replace generic = "lorazepam" if (generic =="ATIVAN TABLETS")

replace generic = "non-controlled" if (generic =="ATORVASTATIN CALCIUM")

replace generic = "non-controlled" if (generic =="ATROPINE SULFATE")

- replace generic = "testosterone" if (generic =="AVEED")
- replace generic = "morphine" if (generic=="AVINZA")
- replace generic = "testosterone" if (generic =="AXIRON")
- replace generic = "amphetamine" if (generic == "Adzenys XR-ODT")
- replace generic = "armodafinil" if (generic =="Armodafinil")
- replace generic = "non-controlled" if (generic =="B AND O SUPPRETTES SUPPOSITORIES RECTAL NO 15A")

replace generic = "non-controlled" if (generic == "BACLOFEN")

replace generic = "phenobarbital/belladonna" if (generic=="BELLADONNA ALKALOIDS WITH PHENOBARTBITAL")

replace generic = "opium/belladonna" if (generic =="BELLADONNA AND OPIUM")

replace generic = "opium/belladonna" if (generic =="BELLADONNA AND OPIUM SUPPOSITORIES")

replace generic = "suvorexant" if (generic =="BELSOMRA")

replace generic = "lorcasesrin" if (generic =="BELVIQ")

replace generic = "non-controlled" if (generic =="BENZONATATE")

replace generic = "benzphetamine" if (generic =="BENZPHETAMINE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "BETADINE")

replace generic = "codeine/guaifenesin" if (generic =="BIOTUSSIN AC V SYRUP")

replace generic = "phendimetrazine" if (generic=="BONTRIL")

replace generic = "pseudoephedrine" if (generic =="BROMFED DM")

replace generic = "pseudoephedrine" if (generic =="BRONCHIAL ASTHMA RELIEF")

replace generic = "pseudoephedrine" if (generic =="BRONKAID DUAL ACTION FORMULA")

replace generic = "pseudoephedrine" if (generic =="BROTAPP DM COLD AND COUGH")

replace generic = "buprenorphine/naloxone" if (generic =="BUNAVAIL")

replace generic = "butalbital/acetaminophen" if (generic == "BUPAP")

replace generic = "buprenorphine" if (generic == "BUPRENEX")

replace generic = "buprenorphine" if (generic == "BUPRENORPHINE")

replace generic = "buprenorphine/naloxone" if (generic =="BUPRENORPHINE AND NALOXONE")

replace generic = "buprenorphine" if (generic == "BUPRENORPHINE HCL")

replace generic = "buprenorphine/naloxone" if (generic =="BUPRENORPHINE HCL AND NALOXONE HCL")

replace generic = "buprenorphine" if (generic == "BUPRENORPHINE HYDROCHLORIDE")

replace generic = "buprenorphine/naloxone" if (generic =="BUPRENORPHINE HYDROCHLORIDE AND NALOXONE HYDROCHLORIDE DIHYDRATE")

replace generic = "buprenorphine" if (generic == "BUPRENORPHINE HYDROCHLORIDE SUBLINGUAL")

replace generic = "non-controlled" if (generic =="BUPROPION HYDROCHLORIDE")

replace generic = "non-controlled" if (generic =="BUSPIRONE HCL")

replace generic = "non-controlled" if (generic =="BUSPIRONE HYDROCHLORIDE")

replace generic = "butalbital/acetaminophen" if (generic == "BUTALBITAL AND ACETAMINOPHEN")

replace generic = "butalbital/aspirin/caffeine" if (generic =="BUTALBITAL COMPOUND")

replace generic = "butalbital/aspirin/caffeine/codeine" if (generic =="BUTALBITAL COMPOUND WITH CODEINE NO 3 CAPSULES")

replace generic = "butabarbital" if (generic =="BUTISOL SODIUM")

replace generic = "butorphanol" if (generic == "BUTORPHANOL TARTRATE")

replace generic = "buprenorphine" if (generic == "BUTRANS")

replace generic = "buprenorphine" if (generic == "Belbuca")

replace generic = "butalbital/acetaminophen/caffeine" if (generic == "CAPACET")

replace generic = "codeine/acetaminophen" if (generic == "CAPITAL AND CODEINE")

replace generic = "pseudoephedrine" if (generic =="CAPMIST DM")

replace generic = "non-controlled" if (generic =="CARBAMAZEPINE")

- replace generic = "carisoprodol" if (generic == "CARISOPRODOL")
- replace generic = "carisoprodol" if (generic == "CARISOPRODOL 350MG 500TB BT")
- replace generic = "carisoprodol" if (generic == "CARISOPRODOL 350MG (500) TABS")
- replace generic = "carisoprodol/aspirin" if (generic == "CARISOPRODOL AND ASPIRIN")
- replace generic = "carisoprodol" if (generic == "CARISOPRODOL TABLETS")
- replace generic = "carisoprodol" if (generic == "CARISOPRODOL TABLETS USP")
- replace generic = "non-controlled" if (generic =="CARVEDILOL")
- replace generic = "non-controlled" if (generic =="CELECOXIB")
- replace generic = "non-controlled" if (generic =="CEPACOL EXTRA STRENGTH SORE THROAT TANGERINE")
- replace generic = "non-controlled" if (generic =="CEPHALEXIN")
- replace generic = "nabilone" if (generic == "CESAMET")
- replace generic = "pseudoephedrine" if (generic =="CETIRIZINE HCL AND PSEUDOEPHEDRINE HCL ER")
- replace generic = "non-controlled" if (generic =="CETIRIZINE HYDROCHLORIDE")
- replace generic = "pseudoephedrine" if (generic =="CETIRIZINE HYDROCHLORIDE AND PSEUDOEPHEDRINE HYDROCHLORIDE")
- replace generic = "codeine/guaifenesin" if (generic == "CHERATUSSIN AC")
- replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "CHERATUSSIN DAC")
- replace generic = "pseudoephedrine" if (generic =="CHILDRENS DIMETAPP COLD AND ALLERGY")
- replace generic = "pseudoephedrine" if (generic =="CHILDRENS SILFEDRINE")
- replace generic = "pseudoephedrine" if (generic =="CHILDRENS SUDAFED NASAL DECONGESTANT")
- replace generic = "chloral hydrate" if (generic == "CHLORAL HYDRATE CRY USP")
- replace generic = "chloral hydrate" if (generic == "CHLORAL HYDRATE SYRUP")
- replace generic = "chlordiazepoxide/amitriptyline" if (generic =="CHLORDIAZEPOXIDE AND AMITRIPTYLINE HYDROCHLORIDE")

generic HYDROCHLORIDE")

replace

replace generic = "chlordiazepoxide/clidinium" if (generic =="CHLORDIAZEPOXIDE HYDROCHLORIDE AND CLIDINIUM BROMIDE")

generic = "chlordiazepoxide" if (generic "CHLORDIAZEPOXIDE replace ==HYDROCHLORIDE CAPSULES")

replace generic = "chlordiazepoxide" if (generic =="CHLORDIAZEPOXIDE HYDROCHLORIDE CQPSULES")

replace generic = "chlordiazepoxide/clidinium" if (generic =="CHLORDIAZEPOXIDE HYDROCHLORIDE/CLIDINIUM BROMIDE")

replace generic = "chlordiazepoxide/clidinium" if (generic =="CHLORODIAZEPOXIDE HCL AND CLIDINIUM BROMIDE 5 MG/2.5 MG CAPSULE")

replace generic = "non-controlled" if (generic =="CHLORZOXAZONE")

replace generic = "non-controlled" if (generic =="CHORIONIC GONADOTROPIN")

replace generic = "morphine" if (generic =="CII MORPHINE SULFATE")

replace generic = "morphine" if (generic =="CII MORPHINE SULFATE 120")

replace generic = "non-controlled" if (generic =="CITALOPRAM")

replace generic = "non-controlled" if (generic =="CITALOPRAM HYDROBROMIDE")

replace generic = "pseudoephedrine" if (generic =="CLARINEX-D 12 HOUR")

replace generic = "pseudoephedrine" if (generic =="CLARINEX-D 24 HOUR")

replace generic = "pseudoephedrine" if (generic =="CLARITIN D TABLETS 24 HOUR EXTENDED RELEASE")

replace generic = "pseudoephedrine" if (generic =="CLARITIN-D 12 HOUR")

replace generic = "pseudoephedrine" if (generic =="CLARITIN-D 24 HOUR")

replace generic = "non-controlled" if (generic =="CLINDAMYCIN HYDROCHLORIDE")

replace generic = "non-controlled" if (generic =="CLOMIPHENE CITRATE")

replace generic = "clonazepam" if (generic =="CLONAZEPAM")

replace generic = "clonazepam" if (generic == "CLONAZEPAM .5MG")

replace generic = "clonazepam" if (generic =="CLONAZEPAM 0.5 MG TABLETS")

replace generic = "clonazepam" if (generic =="CLONAZEPAM TABLETS")

- replace generic = "clonazepam" if (generic =="CLONEZEPAM 1MG")
- replace generic = "clorazepate" if (generic =="CLORAZEPATE 3.75MG")
- replace generic = "clorazepate" if (generic =="CLORAZEPATE DIPOTASSIUM")
- replace generic = "clorazepate" if (generic =="CLORAZEPATE DIPOTASSIUM TABLETS")
- replace generic = "clorazepate" if (generic =="CLORAZEPATE DIPOTASSIUM TABLETS USP")
- replace generic = "non-controlled" if (generic =="CLOZAPINE")
- replace generic = "compounded drug" if (generic =="CMPD")
- replace generic = "hydrocodone/acetaminophen" if (generic =="CO-GESIC")
- replace generic = "cocaine" if (generic =="COCAINE HYDROCHLORIDE")
- replace generic = "codeine" if (generic == "CODEINE 30MG 100'S")
- replace generic = "codeine/guaifenesin" if (generic == "CODEINE PHOSPHATE 10 MG / GUAI
- 300 MG LIQUID (473 ML)")
- replace generic = "codeine" if (generic == "CODEINE SULF 30MG 1C")
- replace generic = "codeine" if (generic == "CODEINE SULFATE")
- replace generic = "codeine/guaifenesin" if (generic == "CODEINE-GUAIFENESIN")
- replace generic = "non-controlled" if (generic =="COLCRYS")
- replace generic = "non-controlled" if (generic =="COLESTIPOL HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic =="COMFEEL PLUS PRD HYDROCOLLOID")
- replace generic = "methylphenidate" if (generic == "CONCERTA")
- replace generic = "methylphenidate" if (generic == "CONCERTA ER TABLETS")
- replace generic = "pseudoephedrine" if (generic =="CONGESTAC")
- replace generic = "tramadol" if (generic=="CONZIP")
- replace generic = "non-controlled" if (generic =="COUGH & COLD DM ELIX")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="COVARYX")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="COVARYX HS")
- replace generic = "non-controlled" if (generic == "CRINONE")
- replace generic = "non-controlled" if (generic =="CYCLOBENZAPRINE 10MG TABLETS")
- replace generic = "non-controlled" if (generic =="CYCLOBENZAPRINE HYDROCHLORIDE")
- replace generic = "clonazepam" if (generic =="Clonazepam")
- replace generic = "pseudoephedrine" if (generic =="DALLERGY")

replace generic = "methylphenidate" if (generic == "DAYTRANA")

replace generic = "methylphenidate" if (generic == "DAYTRANA 10 MG")

replace generic = "methylphenidate" if (generic == "DAYTRANA 15 MG")

replace generic = "methylphenidate" if (generic == "DAYTRANA 20MG")

replace generic = "methylphenidate" if (generic == "DAYTRANA EXTENDED RELEASE PATCH")

replace generic = "meperidine" if (generic == "DEMEROL")

replace generic = "meperidine" if (generic == "DEMEROL HCL INJ 5% 25MG 0.5ML AMPUL")

replace generic = "testosterone" if (generic =="DEPO-TESTOSTERONE")

replace generic = "non-controlled" if (generic == "DESLORATADINE")

replace generic = "methamphetamine" if (generic == "DESOXYN")

replace generic = "non-controlled" if (generic == "DEXAMETHASONE")

replace generic = "dextroamphetamine" if (generic =="DEXEDRINE")

replace generic = "dextroamphetamine" if (generic =="DEXEDRINE CAPSULES")

replace generic = "dextroamphetamine" if (generic == "DEXEDRINE SPANSULE")

replace generic = "dexmethylphenidate" if (generic =="DEXMETHYLPHENIDATE HYDROCHLORIDE")

replace generic = "dexmethylphenidate" if (generic =="DEXMETHYLPHENIDATE HYDROCHLORIDE EXTENDED-RELEASE")

replace generic = "amphetamine/dextroamphetamine" if (generic =="DEXTROAMPH SACC-AMPH ASP-DEXTROAM")

replace generic = "dextroamphetamine" if (generic == "DEXTROAMPHETAMINE")

replace generic = "amphetamine/dextroamphetamine" if (generic == "DEXTROAMPHETAMINE SACCHARATE AND AMPHETAMINE ASPARTATE AND DEXTROAMPHETAMINE SULFATE AND AMPHETAMINE")

replace generic = "dextroamphetamine" if (generic =="DEXTROAMPHETAMINE SULFATE") replace generic = "dextroamphetamine" if (generic =="DEXTROAMPHETAMINE SULFATE EXTENDED-RELEASE")

replace generic = "non-controlled" if (generic =="DIABETIC TUSSIN DM")

replace generic = "non-controlled" if (generic =="DIABETIC TUSSIN EXPECTORANT")

replace generic = "diazepam" if (generic =="DIASTAT")

replace generic = "diazepam" if (generic =="DIASTAT (DIAZEPAM RECTAL GEL) TWIN PACK")

replace generic = "diazepam" if (generic =="DIASTAT PEDIATRIC")

replace generic = "diazepam" if (generic =="DIAZEPAM")

replace generic = "diazepam" if (generic =="DIAZEPAM INJECTION")

replace generic = "diazepam" if (generic =="DIAZEPAM INJECTION USP")

replace generic = "diazepam" if (generic =="DIAZEPAM INTENSOL")

replace generic = "diazepam" if (generic =="DIAZEPAM TABLETS")

replace generic = "diazepam" if (generic =="DIAZEPAM USP")

replace generic = "non-controlled" if (generic =="DIAZOXIDE POWDER")

replace generic = "non-controlled" if (generic =="DICLOFENAC SODIUM")

replace generic = "benzphetamine" if (generic =="DIDREX")

replace generic = "diethylpropion" if (generic =="DIETHYLPROPION HCL CONTROLLED-RELEASE")

replace generic = "diethylpropion" if (generic =="DIETHYLPROPION HCL IMMEDIATE-RELEASE")

replace generic = "diethylpropion" if (generic =="DIETHYLPROPION HYDROCHLORIDE")

replace generic = "diethylpropion" if (generic =="DIETHYLPROPION HYDROCHLORIDE ER")

replace generic = "non-controlled" if (generic =="DIFLORASONE DIACETATE")

replace generic = "hydromorphone" if (generic =="DILAUDID")

replace generic = "hydromorphone" if (generic =="DILAUDID AMP 2MG/ML -HYDROMORPHONE HYDROCHLORIDE")

replace generic = "hydromorphone" if (generic =="DILAUDID AMP 4MG/ML -HYDROMORPHONE HYDROCHLORIDE")

```
replace generic = "hydromorphone" if (generic =="DILAUDID HP")
```

replace generic = "non-controlled" if (generic =="DILTIAZEM HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "DIPHENHYDRAMINE HYDROCHLORIDE") replace generic = "diphenoxylate/atropine" if (generic == "DIPHENOXYLATE HYDROCHLORIDE AND ATROPINE SULFATE") replace generic = "diphenoxylate/atropine" if (generic =="DIPHENOXYLATE HYDROCHLORIDE AND ATROPINE SULFATE TABLETS")

replace generic = "diphenoxylate/atropine" if (generic =="DIPHENOXYLATE HYDROCHLORIDE AND ATROPINE SULFATE TABLETS USP")

replace generic = "non-controlled" if (generic =="DIVALPROEX SODIUM")

replace generic = "non-controlled" if (generic =="DIVALPROEX SODIUM EXTENDED-RELEASE")

replace generic = "butalbital/acetaminophen/caffeine" if (generic == "DOLGIC PLUS")

replace generic = "methadone" if (generic == "DOLOPHINE")

replace generic = "atropine/scopalamine/hyoscyamine/phenobarbital" if (generic == "DONNATAL")

replace generic = "atropine/scopalamine/hyoscyamine/phenobarbital" if (generic == "DONNATAL EXTENTABS")

replace generic = "quazepam" if (generic == "DORAL")

replace generic = "non-controlled" if (generic =="DOXYCYCLINE")

replace generic = "dronabinol" if (generic =="DRONABINOL")

replace generic = "dronabinol" if (generic =="DRONABINOL CAPSULES")

replace generic = "non-controlled" if (generic =="DULOXETINE")

replace generic = "non-controlled" if (generic =="DULOXETINE HYDROCHLORIDE")

- replace generic = "fentanyl" if (generic =="DURAGESIC")
- replace generic = "fentanyl" if (generic =="DURAGESIC SYSTEM")

replace generic = "fentanyl" if (generic =="DURAGESIC TRANSDERMAL PATCH")

replace generic = "morphine" if (generic =="DURAMORPH")

replace generic = "dexmethylphenidate" if (generic =="Dexmethylphenidate Hydrochloride")

- replace generic = "diazepam" if (generic =="Diazepam")
- replace generic = "zolpidem" if (generic =="EDLUAR")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="EEMT")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="EEMT HS")
- replace generic = "non-controlled" if (generic =="EGRIFTA")
- replace generic = "morphine/naltrexone" if (generic =="EMBEDA")
- replace generic = "oxycodone/acetaminophen" if (generic == "ENDOCET")

- replace generic = "non-controlled" if (generic =="ENOXAPARIN SODIUM")
- replace generic = "non-controlled" if (generic =="EPINEPHRINE")
- replace generic = "non-controlled" if (generic =="EPIPEN")
- replace generic = "pseudoephedrine" if (generic =="EQUATE SUPHEDRINE")
- replace generic = "non-controlled" if (generic =="ESCITALOPRAM")
- replace generic = "non-controlled" if (generic =="ESCITALOPRAM OXALATE")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "ESGIC")
- replace generic = "non-controlled" if (generic =="ESOMEPRAZOLE MAGNESIUM")
- replace generic = "estazolam" if (generic == "ESTAZOLAM")
- replace generic = "estazolam" if (generic == "ESTAZOLAM TABLETS")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="ESTERIFIED ESTROGENS AND METHYLTESTOSTERONE")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="ESTERIFIED ESTROGENS AND METHYLTESTOSTERONE TABLETS 0.625/1.25")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="ESTERIFIED ESTROGENS AND METHYTESTOSTERONE TABLETS 1.25 MG/2.5")
- replace generic = "non-controlled" if (generic =="ESTRADIOL")
- replace generic = "non-controlled" if (generic =="ESTRADIOL HEMIHYDRATE MICRO USP")

replace generic = "esterified estrogens/methyltestosterone" if (generic =="ESTRATEST H S TABLETS")

- replace generic = "non-controlled" if (generic =="ESTRIOL")
- replace generic = "non-controlled" if (generic =="ESTRIOL MICRONIZED USP")
- replace generic = "non-controlled" if (generic =="ESTRONE CRYSTAL USP")
- replace generic = "eszopiclone" if (generic == "ESZOPICLONE")
- replace generic = "amphetamine" if (generic == "EVEKEO")
- replace generic = "hydromorphone" if (generic == "EXALGO")
- replace generic = "non-controlled" if (generic == "FAMOTIDINE")
- replace generic = "non-controlled" if (generic =="FAZACLO")
- replace generic = "fentanyl" if (generic=="FENTANYL")
- replace generic = "fentanyl" if (generic=="FENTANYL NOVAPLUS")
- replace generic = "fentanyl" if (generic=="FENTANYL CITRATE")

replace generic = "fentanyl" if (generic=="FENTANYL CITRATE INJECTION")

- replace generic = "fentanyl" if (generic=="FENTANYL CITRATE USP")
- replace generic = "fentanyl" if (generic=="FENTANYL RES TDS 100MCG/H 5PT PK")
- replace generic = "fentanyl" if (generic=="FENTANYL RES TDS 25MCG/H 5PT PK")
- replace generic = "fentanyl" if (generic=="FENTANYL RES TDS 50MCG/H 5PT PK")
- replace generic = "fentanyl" if (generic=="FENTANYL TRANSDERMAL SYSTEM")
- replace generic = "fentanyl" if (generic=="FENTORA")
- replace generic = "non-controlled" if (generic =="FEXMID")
- replace generic = "pseudoephedrine" if (generic =="FEXOFENADINE HCL PSEUDOEPHED 60MG FEXOFENADINE HCL - PSEUDO T")
- replace generic = "pseudoephedrine" if (generic =="FEXOFENADINE HCL AND PSEUDOEPHEDRINE HCI")
- replace generic = "non-controlled" if (generic =="FEXOFENADINE HYDROCHLORIDE")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "FIORICET")
- replace generic = "butalbital/acetaminophen/caffeine/codeine" if (generic == "FIORICET WITH CODEINE")
- replace generic = "butalbital/aspirin/caffeine" if (generic == "FIORINAL")
- replace generic = "butalbital/aspirin/caffeine/codeine" if (generic == "FIORINAL WITH CODEINE")
- replace generic = "testosterone" if (generic == "FIRST TESTOSTERONE KIT")
- replace generic = "testosterone" if (generic == "FIRST TESTOSTERONE MC KIT")
- replace generic = "non-controlled" if (generic =="FLEET ENEMA TWIN PK")
- replace generic = "hydrocodone/guaifenesin" if (generic == "FLOWTUSS")
- replace generic = "non-controlled" if (generic =="FLUCONAZOLE")
- replace generic = "non-controlled" if (generic =="FLUOXETINE")
- replace generic = "non-controlled" if (generic =="FLUOXETINE HYDROCHLORIDE")
- replace generic = "flurazepam" if (generic =="FLURAZEPAM")
- replace generic = "flurazepam" if (generic =="FLURAZEPAM HYDROCHLORIDE")
- replace generic = "dexmethylphenidate" if (generic == "FOCALIN")
- replace generic = "dexmethylphenidate" if (generic == "FOCALIN XR")
- replace generic = "testosterone" if (generic == "FORTESTA")

- replace generic = "non-controlled" if (generic =="FUROSEMIDE")
- replace generic = "perampanel" if (generic == "FYCOMPA")
- replace generic = "fentanyl" if (generic=="Fentanyl 0.025 MG/HR Transdermal Patch")
- replace generic = "non-controlled" if (generic =="GABAPENTIN")
- replace generic = "non-controlled" if (generic =="GABLOFEN")
- replace generic = "codeine/guaifenesin" if (generic == "GANI-TUSS NR LIQUID CV")
- replace generic = "pseudoephedrine" if (generic =="GENAPHED TABLET 30MG 48")
- replace generic = "non-controlled" if (generic =="GENOTROPIN")
- replace generic = "non-controlled" if (generic =="GENTAMICIN SULFATE")
- replace generic = "non-controlled" if (generic =="GENTEAL MILD TO MODERATE")
- replace generic = "non-controlled" if (generic =="GLIPIZIDE")
- replace generic = "non-controlled" if (generic =="GLYBURIDE")
- replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY ALL DAY ALLERGY D")
- replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY IBUPROFEN COLD AND SINUS")
- replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY LORATADINE D")
- replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY LORATADINE D 24 HOUR")
- replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY NASAL DECONGESTANT")
- replace generic = "pseudoephedrine" if (generic =="GOOD SENSE ALL DAY ALLERGY D")
- replace generic = "pseudoephedrine" if (generic =="GOOD SENSE ALLERGY AND CONGESTION RELIEF")
- replace generic = "pseudoephedrine" if (generic =="GOOD SENSE NASAL DECONGESTANT")
- replace generic = "pseudoephedrine" if (generic =="GOOD SENSE SUPHEDRINE 12 HOUR")
- replace generic = "codeine/guaifenesin" if (generic == "GUAIATUSSIN AC")
- replace generic = "codeine/guaifenesin" if (generic == "GUAIFENESIN AC")

replace generic = "codeine/guaifenesin" if (generic == "GUAIFENESIN AND CODEINE PHOSPHATE")

replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "GUAIFENESIN DAC")

replace generic = "codeine/guaifenesin" if (generic == "GUAIFENESIN W/ CODEINE")

replace generic = "codeine/guaifenesin" if (generic == "GUAIFENESIN W/CODEINE")

replace generic = "codeine/guaifenesin" if (generic == "GUIATUSS AC SYRUP")

replace generic = "codeine/guaifenesin" if (generic == "GUIATUSS AC SYRUP 100MG/10MG 4 OZ")

replace generic = "codeine/guaifenesin" if (generic == "GUIATUSS AC SYRUP 100MG/10MG 473ML")

replace generic = "triazolam" if (generic == "HALCION")

replace generic = "non-controlled" if (generic =="HALOG")

replace generic = "non-controlled" if (generic =="HALOPERIDOL")

replace generic = "pseudoephedrine" if (generic =="HEALTH MART ALLERGY AND CONGESTION")

replace generic = "pseudoephedrine" if (generic =="HEALTH MART ALLERGY COMPLETE D")

replace generic = "pseudoephedrine" if (generic =="HEALTH MART NASAL DECONGESTANT")

replace generic = "non-controlled" if (generic =="HEARTBURN RELIEF ORIGINAL STRENGTH")

replace generic = "non-controlled" if (generic =="HUMATROPE")

replace generic = "non-controlled" if (generic =="HUMIRA")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYCET")

replace generic = "hydrocodone/guaifenesin/pseudoephedrine" if (generic == "HYCOFENIX")

replace generic = "non-controlled" if (generic =="HYDROCHLOROTHIAZIDE")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE ACET TABLETS")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTATE AND ACETAMINOPHEN")

replace generic = "hydrocodone" if (generic =="HYDROCODONE BITARTRATE")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN CAPSULES")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN ORAL SOLUTION")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN TABLETS")

replace generic = "hydrocodone/homatropine" if (generic =="HYDROCODONE BITARTRATE AND HOMATROPINE METHYLBROMIDE")

replace generic = "hydrocodone/ibuprofen" if (generic =="HYDROCODONE BITARTRATE AND IBUPROFEN")

replace generic = "hydrocodone/ibuprofen" if (generic =="HYDROCODONE BITARTRATE AND IBUPROFEN TABLETS")

replace generic = "hydrocodone" if (generic =="HYDROCODONE BITARTRATE POWDER") replace generic = "hydrocodone" if (generic =="HYDROCODONE BITARTRATE USP")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITATRATE AND ACETAMINOPHEN")

replace generic = "hydrocodone/chlorpheniramine" if (generic =="HYDROCODONE POLISTIREX AND CHLORPHENIRAMINE POLISITREX")

replace generic = "hydrocodone/chlorpheniramine" if (generic =="HYDROCODONE POLISTIREX AND CHLORPHENIRAMINE POLISTIREX")

replace generic = "hydrocodone/chlorpheniramine" if (generic =="HYDROCODONE POLISTIREX AND CHLORPHENIRAMINE POLISTIREX EXTENDED-RELEASE")

replace generic = "hydrocodone/chlorpheniramine" if (generic =="HYDROCODONE POLISTIREX AND CHLORPHENIRAMINE POLISTIREX PENNKINETIC")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE W/APAP 5MG/325MG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE/ACETAMINOPHEN 5/500MMG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE/APAP 7.5/650MG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE/APAP TABLETS")

replace generic = "hydrocodone/homatropine" if (generic =="HYDROCODONE/HOMATROPINE MB TAB CIII")

replace generic = "non-controlled" if (generic =="HYDROCORTISONE")

replace generic = "hydrocodone/homatropine" if (generic =="HYDROMET")

replace generic = "hydromorphone" if (generic == "HYDROMORPH HCL 2MG 1C")

replace generic = "hydromorphone" if (generic == "HYDROMORPH HCL 4MG 1C")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HCL")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HCL\_USP")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HCL INJECTION")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HCL INJECTION USP")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE EXTENDED-RELEASE")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE INJECTION")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE INJECTION 500 MG/50ML 50")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE POWDER")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE TABLETS")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE POWDER")

replace generic = "hydromorphone" if (generic == "HYDROMORPNONE HYDROCHLORIDE POWDER")

replace generic = "hydrocodone" if (generic =="HYSINGLA ER")

replace generic = "hydromorphone" if (generic == "HydromorphonePowder")

replace generic = "hydrocodone/ibuprofen" if (generic =="IBUDONE")

replace generic = "pseudoephedrine" if (generic =="IBUPROFEN AND PSEUDOEPHEDRINE HYDROCHLORIDE")

replace generic = "morphine" if (generic == "INFUMORPH 200")

replace generic = "morphine" if (generic == "INFUMORPH 500")

replace generic = "morphine" if (generic == "INFUMORPH 500MG/20ML AMPUL X 1")

replace generic = "zolpidem" if (generic == "INTERMEZZO")

replace generic = "non-controlled" if (generic =="INVEGA")

replace generic = "non-controlled" if (generic =="INVEGA SUSTENNA")

replace generic = "codeine/guaifenesin" if (generic == "IOPHEN C NR")

replace generic = "isometheptene/dichloralphenazone/acetaminophen" if (generic == "ISOMETHEPTENE MUCATE DICHLORALPHENAZONE ACETAMINOPHEN CAPSULES")

replace generic = "isometheptene/dichloralphenazone/acetaminophen" if (generic == "ISOMETHEPTENE MUCATE/DICHLORALPHENAZONE/ACETAMINOPHEN CAPSULES")

replace generic = "non-controlled" if (generic =="ISOMETHEPTENE Mucate USP")

replace generic = "isometheptene/dichloralphenazone/acetaminophen" if (generic == "ISOMETHEPTENE-DICHLORAL-APAP ORAL")

replace generic = "non-controlled" if (generic =="ISOSORBIDE DINITRATE")

replace generic = "non-controlled" if (generic =="ISOSORBIDE MONONITRATE")

replace generic = "morphine" if (generic == "KADIAN")

replace generic = "ketamine" if (generic == "KETALAR")

replace generic = "ketamine" if (generic == "KETAMINE HCL")

replace generic = "ketamine" if (generic == "KETAMINE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic =="KETOROLAC TROMETHAMINE")

replace generic = "pseudoephedrine" if (generic =="KIRKLAND SIGNATURE ALLER TEC D")

replace generic = "pseudoephedrine" if (generic =="KIRKLAND SIGNATURE ALLERCLEAR D 12 HR")

replace generic = "pseudoephedrine" if (generic =="KIRKLAND SIGNATURE ALLERCLEAR D 24HR")

replace generic = "clonazepam" if (generic == "KLONOPIN")

replace generic = "clonazepam" if (generic == "KLONOPIN TABLETS")

replace generic = "non-controlled" if (generic =="LAMOTRIGINE")

replace generic = "non-controlled" if (generic == "LANTUS")

replace generic = "fentanyl" if (generic == "LAZANDA")

replace generic = "pseudoephedrine" if (generic =="LEADER 12 HOUR NASAL DECONGESTANT")

replace generic = "pseudoephedrine" if (generic =="LEADER ALLERGY D 12")

replace generic = "pseudoephedrine" if (generic =="LEADER ALLERGY RELIEF D-24")

replace generic = "pseudoephedrine" if (generic =="LEADER NASAL DECONGESTANT MAXIMUM STRENGTH")

replace generic = "non-controlled" if (generic == "LEADER TUSSIN CF")

replace generic = "non-controlled" if (generic == "LEVETIRACETAM")

replace generic = "non-controlled" if (generic == "LEVOFLOXACIN")

replace generic = "levorphanol" if (generic == "LEVORPHANOL TARTRATE")

replace generic = "non-controlled" if (generic == "LEVOTHYROXINE SODIUM")

replace generic = "non-controlled" if (generic == "LIBRAX")

replace generic = "non-controlled" if (generic == "LIDOCAINE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "LIDODERM")

replace generic = "non-controlled" if (generic == "LISINOPRIL")

replace generic = "non-controlled" if (generic == "LISINOPRIL AND HYDROCHLOROTHIAZIDE")

replace generic = "pseudoephedrine" if (generic =="LODRANE D")

replace generic = "diphenoxylate/atropine" if (generic =="LOMOTIL")

replace generic = "diphenoxylate/atropine" if (generic =="LONOX 2.5/0.025MG 100TB BT")

replace generic = "non-controlled" if (generic == "LORATADINE 10 MG 24 HOUR")

replace generic = "pseudoephedrine" if (generic =="LORATADINE AND PSEUDOEPHEDRINE")
replace generic = "pseudoephedrine" if (generic =="LORATADINE AND PSEUDOEPHEDRINE SULFATE")

- replace generic = "non-controlled" if (generic == "LORATADINE ANTIHISTAMINE")
- replace generic = "pseudoephedrine" if (generic =="LORATADINE D")
- replace generic = "pseudoephedrine" if (generic =="LORATADINE D 24 HOUR")
- replace generic = "lorazepam" if (generic == "LORAZEPAM")
- replace generic = "lorazepam" if (generic == "LORAZEPAM 0.5MG")
- replace generic = "lorazepam" if (generic == "LORAZEPAM 1MG")
- replace generic = "lorazepam" if (generic == "LORAZEPAM INJECTION")
- replace generic = "lorazepam" if (generic == "LORAZEPAM INJECTION CIV")
- replace generic = "lorazepam" if (generic == "LORAZEPAM INJECTION SOLUTION USP")
- replace generic = "lorazepam" if (generic == "LORAZEPAM TABLETS")
- replace generic = "hydrocodone/acetaminophen" if (generic == "LORCET 10/650")
- replace generic = "hydrocodone/acetaminophen" if (generic == "LORCET PLUS")
- replace generic = "hydrocodone/acetaminophen" if (generic == "LORCET PLUS TABLETS")
- replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB")
- replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB 10/325")
- replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB 5/325")
- replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB 7.5/325")
- replace generic = "non-controlled" if (generic == "LORZONE")

replace generic = "non-controlled" if (generic == "LOSARTAN POTASSIUM AND HYDROCHLOROTHIAZIDE")

- replace generic = "eszopiclone" if (generic == "LUNESTA")
- replace generic = "eszopiclone" if (generic == "LUNESTA TABLETS")
- replace generic = "non-controlled" if (generic == "LYCOPODIUM")
- replace generic = "pregabalin" if (generic == "LYRICA")
- replace generic = "lorazepam" if (generic == "Lorazepam")
- replace generic = "oxycodone/acetaminophen" if (generic == "MAGNACET")
- replace generic = "non-controlled" if (generic == "MAJOR CLOTRIMAZOLE")
- replace generic = "pseudoephedrine" if (generic == "MAPAP SINUS CONGESTION AND PAIN

MAXIMUM STRENGTH")

replace generic = "codeine/guaifenesin" if (generic == "MAR-COF CG EXPECTORANT")

replace generic = "butalbital/acetaminophen/caffeine" if (generic == "MARGESIC")

replace generic = "dronabinol" if (generic == "MARINOL")

replace generic = "dronabinol" if (generic == "MARINOL CAPSULES")

replace generic = "non-controlled" if (generic == "MECLIZINE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "MELOXICAM")

replace generic = "meperidine" if (generic == "MEPERIDINE 50MG/ML 1ML VL X 25")

replace generic = "meperidine" if (generic == "MEPERIDINE HYDROCHLORIDE")

replace generic = "meprobamate" if (generic == "MEPROBAMATE")

replace generic = "methylphenidate" if (generic == "METADATE CD")

replace generic = "methylphenidate" if (generic == "METADATE CD CAPSULES EXTENDED

RELEASE")

replace generic = "methylphenidate" if (generic == "METADATE ER")

replace generic = "methylphenidate" if (generic == "METADATE ER 10 MG 100")

replace generic = "non-controlled" if (generic == "METAXALONE")

replace generic = "non-controlled" if (generic == "METFORMIN HYDROCHLORIDE")

replace generic = "methadone" if (generic == "METHADONE HYDROCHLORIDE")

replace generic = "methadone" if (generic == "METHADONE.HCL;USP BULK")

replace generic = "methadone" if (generic == "METHADOSE")

replace generic = "methadone" if (generic == "METHADOSE SUGAR-FREE")

replace generic = "methamphetamine" if (generic == "METHAMPHETAMINE HYDROCHLORIDE")

replace generic = "methyltestosterone" if (generic == "METHITEST")

replace generic = "non-controlled" if (generic == "METHOCARBAMOL")

replace generic = "methylphenidate" if (generic == "METHYLIN")

replace generic = "methylphenidate" if (generic == "METHYLPHENIDATE HCL ORAL SOLUTION")

replace generic = "methylphenidate" if (generic == "METHYLPHENIDATE HYDROCHLORIDE")

replace generic = "methylphenidate" if (generic == "METHYLPHENIDATE HYDROCHLORIDE (CD)")

"methylphenidate" (generic "METHYLPHENIDATE replace generic if = ==HYDROCHLORIDE CD") replace generic "methylphenidate" if (generic "METHYLPHENIDATE = == HYDROCHLORIDE EXTENDED RELEASE") "methylphenidate" replace generic = if (generic "METHYLPHENIDATE == HYDROCHLORIDE EXTENDED-RELEASE") "methylphenidate" (generic replace generic if "METHYLPHENIDATE = == HYDROCHLORIDE SR") "methylphenidate" generic if (generic "METHYLPHENIDATE replace = == HYDROCHLORIDE TABLETS") replace generic = "methyltestosterone" if (generic == "METHYLTESTOSTERONE") replace generic "esterified estrogens/methyltestosterone" if (generic =="METHYLTESTOSTERONE AND ESTERIFIED ESTOGENS TABLETS") generic = "non-controlled" if (generic == "METOCLOPRAMIDE replace HCL MONOHYDRATE") replace generic = "midazolam" if (generic == "MIDAZOLAM") replace generic = "midazolam" if (generic == "MIDAZOLAM HYDROCHLORIDE") replace generic = "midazolam" if (generic == "MIDAZOLAM INJECTION") replace generic = "non-controlled" if (generic == "MIRTAZAPINE") replace generic = "modafinil" if (generic == "MODAFINIL") replace generic = "non-controlled" if (generic == "MONTELUKAST SODIUM") replace generic = "morphine" if (generic == "MORPH SUL 15MG TAB 1C") replace generic = "morphine" if (generic == "MORPH.SO4 PENTAHYDRATE USP") replace generic = "morphine" if (generic == "MORPHINE") replace generic = "morphine" if (generic == "MORPHINE 10MG/5ML 500ML") replace generic = "morphine" if (generic == "MORPHINE 10MG/ML TUBEX") replace generic = "morphine" if (generic == "MORPHINE 20MG/5ML 500ML") replace generic = "morphine" if (generic == "MORPHINE 4MG/ML TUBEX") replace generic = "morphine" if (generic == "MORPHINE POWDER") replace generic = "morphine" if (generic == "MORPHINE SULFATE") replace generic = "morphine" if (generic == "MORPHINE SULFATE CR 100 MG TAB")

replace generic = "morphine" if (generic == "MORPHINE SULFATE EXTENDED RELEASE") replace generic = "morphine" if (generic == "MORPHINE SULFATE INJECTION") replace generic = "morphine" if (generic == "MORPHINE SULFATE ORAL SOL 20MG/ML") replace generic = "morphine" if (generic == "MORPHINE SULFATE ORAL SOL 20MG/ML") replace generic = "morphine" if (generic == "MORPHINE SULFATE ORAL SOLUTION") replace generic = "morphine" if (generic == "MORPHINE SULFATE ORAL SOLUTION") replace generic = "morphine" if (generic == "MORPHINE SULFATE SOLUTION") replace generic = "morphine" if (generic == "MORPHINE SULFATE SOLUTION") replace generic = "morphine" if (generic == "MORPHINE SULFATE SOLUTION")

replace generic = "morphine" if (generic == "MORPHINE SULFATE TABLETS")

replace generic = "morphine" if (generic == "MORPHINE SULFATE TABLETS 15 MG X 100")

replace generic = "morphine" if (generic == "MORPHINE SULFATE TABLETS IMMEDIATE RELEASE")

replace generic = "morphine" if (generic == "MORPHINE SULFATE USP")

replace generic = "diphenoxylate/atropine" if (generic =="MOTOFEN")

replace generic = "diphenoxylate/atropine" if (generic =="MOTOFEN TABLETS")

replace generic = "morphine" if (generic == "MS CONTIN")

replace generic = "morphine" if (generic == "MS CONTIN TABLET")

replace generic = "morphine" if (generic == "MS CONTIN TABLETS")

replace generic = "non-controlled" if (generic == "MUCINEX")

replace generic = "pseudoephedrine" if (generic =="MUCINEX D")

- replace generic = "pseudoephedrine" if (generic =="MUCINEX D MAXIMUM STRENGTH")
- replace generic = "non-controlled" if (generic == "MUCINEX DM")

replace generic = "non-controlled" if (generic == "MUCINEX DM MAXIMUM STRENGTH")

- replace generic = "non-controlled" if (generic == "MULTI-VIT WITH FLUORIDE")
- replace generic = "non-controlled" if (generic == "MUPIROCIN")
- replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "MYTUSSIN DAC")
- replace generic = "methylphenidate" if (generic == "Methylphenidate")
- replace generic = "morphine" if (generic == "Morphine sulfate")
- replace generic = "non-controlled" if (generic == "NALBUPHINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic == "NAMZARIC")
- replace generic = "non-controlled" if (generic == "NAPROXEN")

- replace generic = "pseudoephedrine" if (generic =="NASAL DECONGESTANT MAXIMUM STRENGTH NON DROWSY")
- replace generic = "testosterone" if (generic == "NATESTO")
- replace generic = "pseudoephedrine" if (generic =="NEXAFED")
- replace generic = "codeine/guaifenesin" if (generic == "NINJACOF-XG")
- replace generic = "alprazolam" if (generic == "NIRAVAM")
- replace generic = "isometheptene/dichloralphenazone/acetaminophen" if (generic == "NODOLOR")
- replace generic = "hydrocodone/acetaminophen" if (generic == "NORCO")
- replace generic = "non-controlled" if (generic == "NORDITROPIN")
- replace generic = "non-controlled" if (generic == "NORTRIPTYLINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic == "NOVAREL")
- replace generic = "non-controlled" if (generic == "NOVOLIN 70/30")
- replace generic = "non-controlled" if (generic == "NOVOLIN N")
- replace generic = "tapentadol" if (generic == "NUCYNTA")
- replace generic = "tapentadol" if (generic == "NUCYNTA ER")
- replace generic = "non-controlled" if (generic == "NUTROPIN AQ NUSPIN 10")
- replace generic = "non-controlled" if (generic == "NUTROPIN AQ NUSPIN 5")
- replace generic = "armodafinil" if (generic == "NUVIGIL")
- replace generic = "non-controlled" if (generic == "NYSTATIN")
- replace generic = "hydrocodone/guaifenesin" if (generic == "OBREDON")
- replace generic = "non-controlled" if (generic == "OLANZAPINE")
- replace generic = "non-controlled" if (generic == "OMEPRAZOLE")
- replace generic = "non-controlled" if (generic == "OMNITROPE")
- replace generic = "clobazam" if (generic == "ONFI")
- replace generic = "oxymorphone" if (generic == "OPANA")
- replace generic = "oxymorphone" if (generic == "OPANA ER")
- replace generic = "opium" if (generic == "OPIUM TINCTURE USP X 118ML")
- replace generic = "opium" if (generic == "OPIUM TINCTURE DEODORIZED")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "ORBIVAN")

replace generic = "non-controlled" if (generic == "OVIDREL")

replace generic = "oxandrolone" if (generic == "OXANDROLONE")

replace generic = "oxandrolone" if (generic == "OXANDROLONE 10MG 60TB BT")

replace generic = "oxycodone" if (generic == "OXAYDO")

replace generic = "oxazepam" if (generic == "OXAZEPAM")

replace generic = "oxazepam" if (generic == "OXAZEPAM CAPSULES")

replace generic = "oxazepam" if (generic == "OXCARBAZEPINE")

replace generic = "oxycodone/acetaminophen" if (generic == "OXYCODONE AND ACETAMINOPHEN")

replace generic = "oxycodone/acetaminophen" if (generic == "OXYCODONE AND ACETAMINOPHEN ORAL SOLUTION")

replace generic = "oxycodone/acetaminophen" if (generic == "OXYCODONE AND ACETAMINOPHEN TABLETS")

replace generic = "oxycodone/aspirin" if (generic == "OXYCODONE AND ASPIRIN")

replace generic = "oxycodone" if (generic == "OXYCODONE HCL")

replace generic = "oxycodone" if (generic == "OXYCODONE HCL 15 MG TABLET")

replace generic = "oxycodone" if (generic == "OXYCODONE HCL CONTROLLED-RELEASE")

replace generic = "oxycodone" if (generic == "OXYCODONE HCL SOLUTION 5MG/5ML CII") replace generic = "oxycodone" if (generic == "OXYCODONE HYDCHLORIDE")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE")

replace generic = "oxycodone/acetaminophen" if (generic == "OXYCODONE HYDROCHLORIDE AND ACETAMINOPHEN")

replace generic = "oxycodone/aspirin" if (generic == "OXYCODONE HYDROCHLORIDE AND ASPIRIN")

replace generic = "oxycodone/ibuprofen" if (generic == "OXYCODONE HYDROCHLORIDE AND IBUPROFEN")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE ORAL CONCENTRATE SOLUTION (20MG/ML)")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE ORAL SOLUTION USP (5M/5ML)")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE TABLETS")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE USP")

replace generic = "oxycodone" if (generic == "OXYCODONE TAB 5MG (100) CII")

replace generic = "oxycodone/aspirin" if (generic == "OXYCODONE/ASP 4.5/0.38/325MG")

replace generic = "oxycodone" if (generic == "OXYCONTIN")

replace generic = "oxycodone" if (generic == "OXYCONTIN TABLETS")

replace generic = "oxycodone" if (generic == "OXYCONTIN TABLETS CONTROLLED RELEASE")

replace generic = "oxycodone" if (generic == "OXYFAST SOLUTION ORAL")

replace generic = "oxymorphone" if (generic == "OXYMORPHONE HYDROCHLORIDE")

replace generic = "oxycodone" if (generic == "Oxycodone Hydrochloride")

replace generic = "non-controlled" if (generic == "PANTOPRAZOLE SODIUM")

replace generic = "paregoric" if (generic == "PAREGORIC")

replace generic = "non-controlled" if (generic == "PARICALCITOL")

replace generic = "non-controlled" if (generic == "PAROXETINE")

replace generic = "pentazocine/naloxone" if (generic == "PENTAZOCINE AND NALOXONE")

replace generic = "pentazocine/acetaminophen" if (generic == "PENTAZOCINE HCL AND ACETAMINOPHEN")

replace generic = "pentazocine/acetaminophen" if (generic == "PENTAZOCINE HYDROCHLORIDE AND ACETAMINOPHEN")

replace generic = "pentazocine/naloxone" if (generic == "PENTAZOCINE HYDROCHLORIDE AND NALOXONE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "PENTRAVAN")

replace generic = "oxycodone/acetaminophen" if (generic == "PERCOCET")

replace generic = "phendimetrazine" if (generic == "PHENDIMETRAZINE TARTRATE")

replace generic = "codeine/promethazine" if (generic == "PHENERGAN WITH CODEINE SYRUP")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL 100 MG TABLETS")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL 30 MG TABLETS")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL 60 MG TABLETS")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL ELIXIR") replace generic = "phenobarbital" if (generic == "PHENOBARBITAL ELIXIR NO2") replace generic = "phenobarbital" if (generic == "PHENOBARBITAL SODIUM") replace generic = "phenobarbital" if (generic == "PHENOBARBITAL SODIUM INJECTION") replace generic = "phenobarbital" if (generic == "PHENOBARBITAL TABLETS") replace generic = "phenobarbital" if (generic == "PHENOBARBITOL USP") replace generic = "phentermine" if (generic == "PHENTERMINE 37.5MG (100) CAPS CIV") replace generic = "phentermine" if (generic == "PHENTERMINE 37.5MG (100) TABS CIV") replace generic = "phentermine" if (generic == "PHENTERMINE HCL TABLETS") replace generic = "phentermine" if (generic == "PHENTERMINE HCL TABLETS") replace generic = "phentermine" if (generic == "PHENTERMINE HCL TABLETS") replace generic = "phentermine" if (generic == "PHENTERMINE HCL TABLETS") replace generic = "phentermine" if (generic == "PHENTERMINE HCL TABLETS") replace generic = "phentermine" if (generic == "PHENTERMINE HCL TABLETS") replace generic = "phentermine" if (generic == "PHENTERMINE HYDROCHLORIDE 37.5MG TABLETS")

replace generic = "phentermine" if (generic == "PHENTERMINE HYDROCHLORIDE TABLETS")

replace generic = "codeine/chlorpheniramine/pseudoephedrine" if (generic == "PHENYLHISTINE DH")

replace generic = "non-controlled" if (generic == "PHENYTEK")

replace generic = "non-controlled" if (generic == "PHENYTOIN INFATABS")

replace generic = "non-controlled" if (generic == "PHENYTOIN SODIUM")

replace generic = "non-controlled" if (generic == "PICATO")

replace generic = "non-controlled" if (generic == "PILOCARPINE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "PNEUMOVAX 23")

replace generic = "codeine/brompheniramine/pseudoephedrine" if (generic == "POLY-TUSSIN AC")

replace generic = "ezogabine" if (generic == "POTIGA")

replace generic = "non-controlled" if (generic == "PREGNYL")

replace generic = "non-controlled" if (generic == "PRILOSEC OTC")

replace generic = "pseudoephedrine" if (generic =="PRIMATENE")

replace generic = "non-controlled" if (generic == "PRIMIDONE")

replace generic = "oxycodone/acetaminophen" if (generic == "PRIMLEV")

replace generic = "codeine/dexchlorpheniramine/phenylephrine" if (generic == "PRO-RED AC")

replace generic = "dextroamphetamine" if (generic == "PROCENTRA")

replace generic = "non-controlled" if (generic == "PROCHLORPERAZINE MALEATE")

replace generic = "non-controlled" if (generic == "PROGESTERONE")

replace generic = "non-controlled" if (generic == "PROGESTERONE MICRONIZED")

replace generic = "non-controlled" if (generic == "PROGESTERONE MICRONIZED USP")

replace generic = "non-controlled" if (generic == "PROGESTERONE WETTABLE (YAM) USP")

replace generic = "non-controlled" if (generic == "PROGESTERONE WETTABLE USP")

replace generic = "codeine/promethazine" if (generic == "PROMETH WITH CODEINE")

replace generic = "non-controlled" if (generic == "PROMETHAZINE HYDROCHLORIDE")

replace generic = "codeine/promethazine" if (generic == "PROMETHAZINE HYDROCHLORIDE AND CODEINE PHOSPHATE")

replace generic = "non-controlled" if (generic == "PROMETHAZINE VC")

replace generic = "codeine/promethazine/phenylephrine" if (generic == "PROMETHAZINE VC WITH CODEINE")

replace generic = "codeine/promethazine" if (generic == "PROMETHAZINE WITH CODEINE") replace generic = "codeine/promethazine" if (generic == "PROMETHAZINE WITH CODEINE COUGH")

replace generic = "modafinil" if (generic == "PROVIGIL")

replace generic = "modafinil" if (generic == "PROVIGIL TABLETS")

replace generic = "pseudoephedrine" if (generic =="PSEUDOEPHEDRINE 60MG 100TB BT")

replace generic = "pseudoephedrine" if (generic == "PSEUDOEPHEDRINE HCL")

replace generic = "pseudoephedrine" if (generic =="PSEUDOEPHEDRINE HYDROCHLORIDE")

replace generic = "pseudoephedrine" if (generic =="Q TAPP COLD AND ALLERGY")

replace generic = "pseudoephedrine" if (generic =="Q TAPP COLD AND COUGH")

replace generic = "non-controlled" if (generic == "Q TUSSIN DM")

replace generic = "phentermine/topiramate" if (generic == "QSYMIA")

replace generic = "non-controlled" if (generic == "QUETIAPINE FUMARATE")

replace generic = "methylphenidate" if (generic == "QUILLIVANT XR")

- replace generic = "non-controlled" if (generic == "RANITIDINE")
- replace generic = "non-controlled" if (generic == "REFISSA")
- replace generic = "benzphetamine" if (generic == "REGIMEX")
- replace generic = "codeine/guaifenesin" if (generic == "RELCOF-C")
- replace generic = "hydrocodone/ibuprofen" if (generic == "REPREXAIN")
- replace generic = "pseudoephedrine" if (generic =="RESPAIRE-30")
- replace generic = "temazepam" if (generic == "RESTORIL")
- replace generic = "hydrocodone/pseudoephedrine" if (generic == "REZIRA")
- replace generic = "non-controlled" if (generic == "RISPERIDONE")
- replace generic = "methylphenidate" if (generic == "RITALIN")
- replace generic = "methylphenidate" if (generic == "RITALIN LA")
- replace generic = "methylphenidate" if (generic == "RITALIN SR")
- replace generic = "non-controlled" if (generic == "RITE AID BRANDS")
- replace generic = "codeine/guaifenesin" if (generic == "ROBITUSSIN AC SYRUP")
- replace generic = "non-controlled" if (generic == "ROPINIROLE HYDROCHLORIDE")
- replace generic = "morphine" if (generic == "ROXANOL 20MG/ML")
- replace generic = "morphine" if (generic == "ROXANOL ORAL SOLUTION")
- replace generic = "oxycodone/acetaminophen" if (generic == "ROXICET")
- replace generic = "oxycodone" if (generic == "ROXICODONE")
- replace generic = "oxycodone" if (generic == "ROXICODONE (OXYCODONE
- HYDROCHLORIDE INTENSOL) ORAL SOLUTION")
- replace generic = "pseudoephedrine" if (generic =="RUGBY NASAL DECONGESTANT")
- replace generic = "non-controlled" if (generic == "SAIZEN")
- replace generic = "non-controlled" if (generic == "SAIZEN CLICKEASY")
- replace generic = "secobarbital" if (generic == "SECONAL SODIUM")
- replace generic = "pseudoephedrine" if (generic =="SEMPREX D")
- replace generic = "oxazepam" if (generic == "SERAX CAPSULES")
- replace generic = "non-controlled" if (generic == "SERTRALINE")
- replace generic = "non-controlled" if (generic == "SERTRALINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic == "SILDENAFIL")
- replace generic = "non-controlled" if (generic == "SIMPONI")

- replace generic = "non-controlled" if (generic == "SINELEE")
- replace generic = "pseudoephedrine" if (generic =="SINUS AND COLD D")
- replace generic = "pseudoephedrine" if (generic =="SMART SENSE ALL DAY ALLERGY D")
- replace generic = "pseudoephedrine" if (generic =="SMART SENSE ALLERGY AND
- CONGESTION RELIEF")
- replace generic = "carisoprodol" if (generic == "SOMA")
- replace generic = "zaleplon" if (generic == "SONATA")
- replace generic = "non-controlled" if (generic == "SPIRONOLACTONE")
- replace generic = "pseudoephedrine" if (generic =="STAHIST AD")
- replace generic = "non-controlled" if (generic == "STRATTERA")
- replace generic = "testosterone" if (generic == "STRIANT")
- replace generic = "buprenorphine/naloxone" if (generic == "SUBOXONE")
- replace generic = "buprenorphine/naloxone" if (generic == "SUBOXONE FILM")
- replace generic = "fentanyl" if (generic == "SUBSYS")
- replace generic = "buprenorphine" if (generic == "SUBUTEX 8MG")
- replace generic = "pseudoephedrine" if (generic =="SUDAFED")
- replace generic = "pseudoephedrine" if (generic =="SUDAFED 12 HOUR")
- replace generic = "pseudoephedrine" if (generic =="SUDAFED 12 HOUR PRESSURE AND PAIN")
- replace generic = "pseudoephedrine" if (generic =="SUDAFED 24 HOUR")
- replace generic = "pseudoephedrine" if (generic =="SUDAGEST 30MG TABLETS")
- replace generic = "pseudoephedrine" if (generic =="SUDOGEST")
- replace generic = "sufentanil" if (generic == "SUFENTANIL CITRATE")
- replace generic = "sufentanil" if (generic == "SUFENTANIL CITRATE BULK")
- replace generic = "non-controlled" if (generic == "SUN MARK TUSSIN DM COUGH AND CHEST CONGESTION")
- replace generic = "non-controlled" if (generic == "SUNMARK ACID REDUCER")
- replace generic = "pseudoephedrine" if (generic =="SUNMARK ALL DAY ALLERGY D")
- replace generic = "non-controlled" if (generic == "SUNMARK LICE TREATMENT")
- replace generic = "pseudoephedrine" if (generic =="SUNMARK LORATADINE D")
- replace generic = "non-controlled" if (generic == "SUNMARK MILK OF MAGNESIA MINT")

replace generic = "non-controlled" if (generic == "SUNMARK NICOTINE") replace generic = "non-controlled" if (generic == "SUNMARK OMEPRAZOLE") replace generic = "pseudoephedrine" if (generic == "SUNMARK SINUS 12 HOUR") replace generic = "pseudoephedrine" if (generic == "SUPHEDRIN GRAPE") replace generic = "pseudoephedrine" if (generic == "SUPHEDRINE TABS") replace generic = "phentermine" if (generic == "SUPRENZA") replace generic = "dihydrocodeine/aspirin/caffeine" if (generic == "SYNALGOS")

replace generic = "pseudoephedrine" if (generic =="SUNMARK NASAL DECONGESTANT")

- replace generic = "non-controlled" if (generic == "TACROLIMUS")
- replace generic = "non-controlled" if (generic == "TAZORAC")
- replace generic = "temazepam" if (generic == "TEMAZEPAM")
- replace generic = "temazepam" if (generic == "TEMAZEPAM 30MG")
- replace generic = "temazepam" if (generic == "TEMAZEPAM 7.5MG CAPS 100.00 CP 1")
- replace generic = "temazepam" if (generic == "TEMAZEPAM CAPSULES")
- replace generic = "testosterone" if (generic == "TESTIM")
- replace generic = "testosterone" if (generic == "TESTOPEL")
- replace generic = "testosterone" if (generic == "TESTOSTERONE")
- replace generic = "testosterone" if (generic == "TESTOSTERONE CYPIONATE")
- replace generic = "testosterone" if (generic == "TESTOSTERONE CYPIONATE PWD")
- replace generic = "testosterone" if (generic == "TESTOSTERONE CYPIONATE USP/NF")
- replace generic = "testosterone" if (generic == "TESTOSTERONE ENANTHATE")
- replace generic = "testosterone" if (generic == "TESTOSTERONE ENANTHATE USP")
- replace generic = "testosterone" if (generic == "TESTOSTERONE MICRNIZED YAM")
- replace generic = "testosterone" if (generic == "TESTOSTERONE MICRONIZED USP")
- replace generic = "testosterone" if (generic == "TESTOSTERONE MICRONIZED YAM")
- replace generic = "testosterone" if (generic == "TESTOSTERONE POWDER")
- replace generic = "testosterone" if (generic == "TESTOSTERONE POWDER 25 GM")
- replace generic = "testosterone" if (generic == "TESTOSTERONE POWDER 5 GM")
- replace generic = "testosterone" if (generic == "TESTOSTERONE PROPIONATE POWDER 25
- GM")

replace generic = "testosterone" if (generic == "TESTOSTERONE PROPIONATE POWDER 5 GM")

replace generic = "testosterone" if (generic == "TESTOSTERONE USP MICRONIZED")

replace generic = "methyltestosterone" if (generic == "TESTRED C-III")

replace generic = "non-controlled" if (generic == "TIZANIDINE")

replace generic = "non-controlled" if (generic == "TIZANIDINE HYDROCHLORIDE")

replace generic = "pseudoephedrine" if (generic =="TOPCARE 12 HOUR DECONGESTANT")

replace generic = "pseudoephedrine" if (generic =="TOPCARE ALL DAY ALLERGY D")

replace generic = "pseudoephedrine" if (generic =="TOPCARE ALLERGY RELIEF D")

replace generic = "pseudoephedrine" if (generic =="TOPCARE NASAL DECONGESTANT

MAXIMUM STRENGTH NON DROWSY")

replace generic = "non-controlled" if (generic == "TOPIRAMATE")

replace generic = "tramadol" if (generic == "TRAMADOL HCL TABLETS")

replace generic = "tramadol" if (generic == "TRAMADOL HYDROCHLORIDE")

replace generic = "tramadol/acetaminophen" if (generic == "TRAMADOL HYDROCHLORIDE AND ACETAMINOPHEN")

replace generic = "tramadol" if (generic == "TRAMADOL HYDROCHLORIDE EP")

replace generic = "tramadol" if (generic == "TRAMADOL HYDROCHLORIDE EXTENDED-RELEASE")

replace generic = "tramadol" if (generic == "TRAMADOL HYDROCHLORIDE TABLETS")

replace generic = "clorazepate" if (generic == "TRANXENE T-TAB")

replace generic = "clorazepate" if (generic == "TRANXENE TABLETS")

replace generic = "non-controlled" if (generic == "TRAZODONE HYDROCHLORIDE")

replace generic = "dihydrocodeine/aspirin/caffeine" if (generic == "TREZIX")

replace generic = "triazolam" if (generic == "TRIAZ 0.25MG TAB 10X10")

replace generic = "triazolam" if (generic == "TRIAZOLAM")

replace generic = "triazolam" if (generic == "TRIAZOLAM .125")

replace generic = "triazolam" if (generic == "TRIAZOLAM TABLETS")

replace generic = "non-controlled" if (generic == "TRILEPTAL")

replace generic = "hydrocodone/chlorpheniramine" if (generic == "TUSSICAPS")

replace generic = "hydrocodone/homatropine" if (generic == "TUSSIGON")

replace generic = "hydrocodone/chlorpheniramine" if (generic == "TUSSIONEX PENNKINETIC")

- replace generic = "codeine/chlorpheniramine" if (generic == "TUZISTRA XR")
- replace generic = "codeine/acetaminophen" if (generic == "TYLENOL WITH CODEINE")
- replace generic = "oxycodone/acetaminophen" if (generic == "TYLOX")
- replace generic = "testosterone" if (generic == "Testosterone Powder")
- replace generic = "remifentanil" if (generic == "ULTIVA")
- replace generic = "tramadol/acetaminophen" if (generic == "ULTRACET")
- replace generic = "tramadol" if (generic == "ULTRAM")
- replace generic = "tramadol" if (generic == "ULTRAM ER")
- replace generic = "tramadol" if (generic == "ULTRAM TABLETS")
- replace generic = "unknownNDC" if (generic == "UNKNOWN")
- replace generic = "non-controlled" if (generic == "VALACYCLOVIR")
- replace generic = "non-controlled" if (generic == "VALACYCLOVIR HYDROCHLORIDE")
- replace generic = "diazepam" if (generic == "VALIUM")
- replace generic = "diazepam" if (generic == "VALIUM TABLETS")
- replace generic = "non-controlled" if (generic == "VALPROIC ACID")
- replace generic = "non-controlled" if (generic == "VALTREX")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "VANATOL LQ")
- replace generic = "non-controlled" if (generic == "VENLAFAXINE")
- replace generic = "non-controlled" if (generic == "VENLAFAXINE HYDROCHLORIDE")
- replace generic = "hydrocodone/acetaminophen" if (generic == "VICODIN")
- replace generic = "hydrocodone/acetaminophen" if (generic == "VICODIN ES")
- replace generic = "hydrocodone/acetaminophen" if (generic == "VICODIN HP")
- replace generic = "hydrocodone/ibuprofen" if (generic == "VICOPROFEN")
- replace generic = "non-controlled" if (generic == "VIIBRYD")
- replace generic = "lacosamide" if (generic == "VIMPAT")
- replace generic = "codeine/guaifenesin" if (generic == "VIRTUSSIN A/C")
- replace generic = "codeine/guaifenesin" if (generic == "VIRTUSSIN AC")
- replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "VIRTUSSIN DAC")
- replace generic = "hydrocodone/chlorpheniramine" if (generic == "VITUZ")

- replace generic = "testosterone" if (generic == "VOGELXO")
- replace generic = "lisdexamfetamine" if (generic == "VYVANSE")
- replace generic = "pseudoephedrine" if (generic =="WAL ITIN D")
- replace generic = "pseudoephedrine" if (generic =="WAL ITIN D 12 HOUR ALLERGY AND
- CONGESTION")
- replace generic = "pseudoephedrine" if (generic =="WAL PROFEN COLD AND SINUS")
- replace generic = "pseudoephedrine" if (generic =="WAL-PHED")
- replace generic = "non-controlled" if (generic == "WARFARIN SODIUM")
- replace generic = "alprazolam" if (generic == "XANAX")
- replace generic = "alprazolam" if (generic == "XANAX XR")
- replace generic = "non-controlled" if (generic == "XARELTO")
- replace generic = "oxycodone/acetaminophen" if (generic == "XARTEMIS XR")
- replace generic = "hydrocodone/acetaminophen" if (generic == "XODOL")
- replace generic = "hydrocodone/ibuprofen" if (generic == "XYLON 10")
- replace generic = "sodium oxybate" if (generic == "XYREM")
- replace generic = "codeine/chlorpheniramine" if (generic == "Z-TUSS AC")
- replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "Z-TUSS E")
- replace generic = "zaleplon" if (generic == "ZALEPLON")
- replace generic = "hydrocodone/acetaminophen" if (generic == "ZAMICET")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "ZEBUTAL")
- replace generic = "dextroamphetamine" if (generic == "ZENZEDI")
- replace generic = "pseudoephedrine" if (generic =="ZEPHREX-D")
- replace generic = "hydrocodone" if (generic == "ZOHYDRO")
- replace generic = "hydrocodone" if (generic == "ZOHYDRO ER")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE 10 MG")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE 10MG")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE 5 MG")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE EXTENDED-RELEASE")

replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE TABLETS") replace generic = "zolpidem" if (generic == "ZOLPIMIST") replace generic = "hydrocodone/acetaminophen" if (generic == "ZOLVIT") replace generic = "buprenorphine/naloxone" if (generic == "ZUBSOLV") "hydrocodone/chlorpheniramine/pseudoephedrine" if (generic == replace generic = "ZUTRIPRO") replace generic = "hydrocodone/acetaminophen" if (generic == "ZYDONE") replace generic = "pseudoephedrine" if (generic =="ZYRTEC D 12 HOUR EXTENDED **RELEASE TABLETS")** replace generic = "pseudoephedrine" if (generic =="ZYRTEC-D ALLERGY AND CONGESTION") replace generic = "oxycodone" if (generic == "oxycodone hydrochloride") replace generic = "unknownNDC" if (generic == "t") replace generic = "tramadol" if (generic == "tramadol hydrochloride") replace generic = "unknownNDC" if (generic == "unknown")

rename generic simplegeneric tabulate generic

generate datefilled = date(filled, "MDY")
format %tdNN/DD/CCYY datefilled
generate year=year(datefilled)

destring filled, generate(filleddate)
format %tdNN/DD/CCYY filleddate
gen int week\_num = wofd(filleddate) - wofd(td(31dec2013))
gen int week\_num = mofd(filleddate) - mofd(td(31dec2013))

tabulate generic year

collapse (sum) qty, by (generic year) collapse (sum) qty, by (generic) collapse (count) prescriptiontotal, by(hashedpatients)

generate prescriptiontotal=1 collapse (count) prescriptiontotal, by(filled generic) keep if generic == "hydrocodone/acetaminophen" generate datefilled = date(filled, "MDY") format %tdNN/DD/CCYY datefilled tsset datefilled

generate week=week(datefilled)
collapse (count) prescriptiontotal, by(week)

\*practitioner date stuff\*
replace date = trim(itrim(date))
split date, gen(v)
generate datefilled = date(v1, "MDY")
format %tdNN/DD/CCYY datefilled

replace profession = "1" if profession == "#N/A" replace profession = "2" if profession == "APN" replace profession = "3" if profession == "DDS" replace profession = "4" if profession == "MD" replace profession = "5" if profession == "MIDWIFE" replace profession = "6" if profession == "OST" replace profession = "7" if profession == "PA" replace profession = "8" if profession == "POD" replace profession = "9" if profession == "Pharmacist" replace profession = "10" if profession == "RES" replace profession = "11" if profession == "UNK"

replace profession = "12" if profession == "VET"

destring profession, generate(pract)

- label define Practitioner 1 "#N/A" 2 "APN" 3 "DDS" 4 "MD" 5 "MIDWIFE" 6 "OST" 7 "PA" 8
- "POD" 9 "Pharmacist" 10 "RES" 11 "UNK" 12 "VET"
- label variable pract "Practitioner"
- label values pract Practitioner
- clonevar generic=productname
- replace generic = "unknownNDC" if (generic == ".")
- replace generic = "unknownNDC" if (generic == ".5 MG")
- replace generic = "unknownNDC" if (generic == ".6 MG")
- replace generic = "unknownNDC" if (generic == "0")
- replace generic = "unknownNDC" if (generic == "1")
- replace generic = "unknownNDC" if (generic == "1 MG")
- replace generic = "pseudoephedrine" if (generic =="12 HOUR ALLERGY D")
- replace generic = "pseudoephedrine" if (generic =="12 HOUR DECONGESTANT")
- replace generic = "unknownNDC" if (generic == "2")
- replace generic = "unknownNDC" if (generic == "2 MG")
- replace generic = "unknownNDC" if (generic == "20 MG")
- replace generic = "unknownNDC" if (generic == "232")
- replace generic = "unknownNDC" if (generic == "5 MG")
- replace generic = "unknownNDC" if (generic == "50")
- replace generic = "unknownNDC" if (generic == "50 MCG/HR PATCH")
- replace generic = "unknownNDC" if (generic == "51")
- replace generic = "unknownNDC" if (generic == "6051")
- replace generic = "unknownNDC" if (generic == "6602")
- replace generic = "unknownNDC" if (generic == "7")
- replace generic = "unknownNDC" if (generic == "7063")
- replace generic = "non-controlled" if (generic =="ABSORICA")
- replace generic = "fentanyl tablet" if (generic=="ABSTRAL")

replace generic = "codeine/acetaminophen solution" if (generic=="ACETAMINOPHEN AND CODEINE" & doseunit=="GM")

- replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE" & strength=="120 MG/5ML;12 MG/5ML" & doseunit=="EACH")
- replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE" & strength=="15 MG;300 MG" & doseunit=="EACH")
- replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE
- PHOSPHATE" & strength=="300 MG;30 MG" & doseunit=="EACH")
- replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE
- PHOSPHATE" & strength=="300 MG;60 MG" & doseunit=="EACH")
- replace generic = "codeine/acetaminophen solution" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE" & doseunit=="GM")
- replace generic = "codeine/acetaminophen solution" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE" & doseunit=="ML")
- replace generic = "codeine/acetaminophen solution" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE ORAL SOLUTION USP")
- replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN AND CODEINE PHOSPHATE TABLETS")
- replace generic = "codeine/acetaminophen" if (generic=="ACETAMINOPHEN CODEINE PHOSPHATE TABLETS")
- replace generic = "fentanyl tablet" if (generic=="ACTIQ")
- replace generic = "non-controlled" if (generic =="ACYCLOVIR")
- replace generic = "amphetamine/dextroamphetamine" if (generic =="ADDERALL")
- replace generic = "amphetamine/dextroamphetamine" if (generic =="ADDERALL 12.5 MG")
- replace generic = "amphetamine/dextroamphetamine" if (generic =="ADDERALL TABLETS")
- replace generic = "amphetamine/dextroamphetamine LA solution" if (generic =="ADDERALL XR" and doseunit=="ML")
- replace generic = "amphetamine/dextroamphetamine LA" if (generic =="ADDERALL XR")

- replace generic = "phentermine" if (generic =="ADIPEX-P")
- replace generic = "pseudoephedrine" if (generic =="ADVIL ALLERGY SINUS")
- replace generic = "pseudoephedrine" if (generic =="ADVIL COLD AND SINUS")
- replace generic = "pseudoephedrine" if (generic =="ALAVERT ALLERGY SINUS D-12")
- replace generic = "pseudoephedrine" if (generic =="ALL DAY ALLERGY D")
- replace generic = "pseudoephedrine" if (generic =="ALL DAY ALLERGY-D")
- replace generic = "pseudoephedrine" if (generic =="ALLEGRA D 12 HOUR ALLERGY AND CONGESTION")
- replace generic = "pseudoephedrine" if (generic =="ALLEGRA D-12 HOUR")
- replace generic = "pseudoephedrine" if (generic =="ALLEGRA--D 24 HOUR")
- replace generic = "pseudoephedrine" if (generic =="ALLEGRA-D 24 HOUR ALLERGY AND CONGESTION")
- replace generic = "pseudoephedrine" if (generic =="ALLERGY AND CONGESTION RELIEF")
- replace generic = "pseudoephedrine" if (generic =="ALLERGY PLUS-SINUS HA CAPLE")
- replace generic = "pseudoephedrine" if (generic =="ALLERGY RELIEF D")
- replace generic = "pseudoephedrine" if (generic =="ALLERGY RLF LORATADINE D 24 HR PSE TABS")
- replace generic = "non-controlled" if (generic =="ALLOPURINOL")
- replace generic = "alprazolam" if (generic == "ALPRAZOLAM")
- replace generic = "alprazolam LA" if (generic == "ALPRAZOLAM EXTENDED RELEASE")
- replace generic = "alprazolam LA" if (generic == "ALPRAZOLAM EXTENDED-RELEASE")
- replace generic = "alprazolam" if (generic == "ALPRAZOLAM TABLETS")
- replace generic = "alprazolam LA" if (generic == "ALPRAZOLAM TABLETS EXTENDED RELEASE")
- replace generic = "alprazolam LA" if (generic == "ALPRAZOLAM XR")
- replace generic = "zolpidem" if (generic == "AMBIEN")
- replace generic = "zolpidem LA" if (generic == "AMBIEN CR")
- replace generic = "zolpidem" if (generic == "AMBIEN TABLETS")
- replace generic = "non-controlled" if (generic =="AMITRIPTYLINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic =="AMLODIPINE BESYLATE")

replace generic = "amphetamine/dextroamphetamine" if (generic == "AMPHETAMINE SALTS TABS 20MG X 100")

replace generic = "amphetamine/dextroamphetamine" if (generic == "AMPHETAMINE SALTS TABS 30MG X 100")

- replace generic = "non-controlled" if (generic =="AMRIX")
- replace generic = "oxymetholone" if (generic =="ANADROL-50")
- replace generic = "testosterone patch" if (generic =="ANDRODERM")
- replace generic = "testosterone topical" if (generic =="ANDROGEL")
- replace generic = "testosterone topical" if (generic =="ANDROGEL GEL")
- replace generic = "methyltestosterone" if (generic =="ANDROID")
- replace generic = "fluoxymesterone" if (generic =="ANDROXY")
- replace generic = "pseudoephedrine" if (generic =="APRODINE")
- replace generic = "methylphenidate LA" if (generic =="APTENSIO XR")
- replace generic = "non-controlled" if (generic =="ARIPIPRAZOLE")
- replace generic = "non-controlled" if (generic =="ARNUITY ELLIPTA")
- replace generic = "butalbital/aspirin/caffeine/codeine" if (generic == "ASCOMP WITH CODEINE")
- replace generic = "non-controlled" if (generic =="ASPIR LOW")
- replace generic = "non-controlled" if (generic == "ASPIRIN")
- replace generic = "non-controlled" if (generic =="ASPIRIN AND DIPYRIDAMOLE")
- replace generic = "non-controlled" if (generic =="ATENOLOL")
- replace generic = "non-controlled" if (generic =="ATENOLOL AND CHLORTHALIDONE")
- replace generic = "lorazepam" if (generic =="ATIVAN" & doseunit=="EACH")
- replace generic = "lorazepam solution" if (generic =="ATIVAN" & doseunit=="GM")
- replace generic = "lorazepam" if (generic =="ATIVAN TABLETS")
- replace generic = "non-controlled" if (generic =="ATORVASTATIN CALCIUM")
- replace generic = "non-controlled" if (generic =="ATROPINE SULFATE")
- replace generic = "testosterone injection" if (generic =="AVEED")
- replace generic = "morphine LA" if (generic=="AVINZA")
- replace generic = "testosterone topical" if (generic =="AXIRON")
- replace generic = "amphetamine LA" if (generic == "Adzenys XR-ODT")

- replace generic = "armodafinil" if (generic =="Armodafinil")
- replace generic = "non-controlled" if (generic =="B AND O SUPPRETTES SUPPOSITORIES RECTAL NO 15A")
- replace generic = "non-controlled" if (generic =="BACLOFEN")
- replace generic = "phenobarbital/belladonna" if (generic=="BELLADONNA ALKALOIDS WITH PHENOBARTBITAL")
- replace generic = "opium/belladonna" if (generic =="BELLADONNA AND OPIUM")
- replace generic = "opium/belladonna " if (generic =="BELLADONNA AND OPIUM SUPPOSITORIES")
- replace generic = "suvorexant" if (generic =="BELSOMRA")
- replace generic = "lorcasesrin" if (generic =="BELVIQ")
- replace generic = "non-controlled" if (generic =="BENZONATATE")
- replace generic = "benzphetamine" if (generic =="BENZPHETAMINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic =="BETADINE")
- replace generic = "codeine/guaifenesin solution" if (generic =="BIOTUSSIN AC V SYRUP")
- replace generic = "phendimetrazine" if (generic=="BONTRIL")
- replace generic = "pseudoephedrine" if (generic =="BROMFED DM")
- replace generic = "pseudoephedrine" if (generic =="BRONCHIAL ASTHMA RELIEF")
- replace generic = "pseudoephedrine" if (generic =="BRONKAID DUAL ACTION FORMULA")
- replace generic = "pseudoephedrine" if (generic =="BROTAPP DM COLD AND COUGH")
- replace generic = "buprenorphine/naloxone film" if (generic =="BUNAVAIL")
- replace generic = "butalbital/acetaminophen" if (generic == "BUPAP")
- replace generic = "buprenorphine solution" if (generic == "BUPRENEX")
- replace generic = "buprenorphine" if (generic == "BUPRENORPHINE" & doseunit=="EACH")
- replace generic = "buprenorphine solution" if (generic == "BUPRENORPHINE" & doseunit=="GM")
- replace generic = "buprenorphine/naloxone" if (generic =="BUPRENORPHINE AND NALOXONE")
- replace generic = "buprenorphine" if (generic == "BUPRENORPHINE HCL")
- replace generic = "buprenorphine/naloxone" if (generic =="BUPRENORPHINE HCL AND NALOXONE HCL")

replace generic = "buprenorphine solution" if (generic == "BUPRENORPHINE HYDROCHLORIDE" & doseunit=="GM")

replace generic = "buprenorphine" if (generic == "BUPRENORPHINE HYDROCHLORIDE" & doseunit=="EACH")

replace generic = "buprenorphine/naloxone" if (generic =="BUPRENORPHINE HYDROCHLORIDE AND NALOXONE HYDROCHLORIDE DIHYDRATE")

replace generic = "buprenorphine" if (generic == "BUPRENORPHINE HYDROCHLORIDE SUBLINGUAL")

replace generic = "non-controlled" if (generic =="BUPROPION HYDROCHLORIDE")

replace generic = "non-controlled" if (generic =="BUSPIRONE HCL")

replace generic = "non-controlled" if (generic =="BUSPIRONE HYDROCHLORIDE")

replace generic = "butalbital/acetaminophen" if (generic == "BUTALBITAL AND ACETAMINOPHEN")

replace generic = "butalbital/aspirin/caffeine" if (generic =="BUTALBITAL COMPOUND")

replace generic = "butalbital/aspirin/caffeine/codeine" if (generic =="BUTALBITAL COMPOUND WITH CODEINE NO 3 CAPSULES")

replace generic = "butabarbital" if (generic =="BUTISOL SODIUM")

replace generic = "butorphanol solution" if (generic == "BUTORPHANOL TARTRATE" & strength=="1 MG/ML")

replace generic = "butorphanol nasal" if (generic == "BUTORPHANOL TARTRATE" & strength=="10 MG/ML")

replace generic = "butorphanol solution" if (generic == "BUTORPHANOL TARTRATE" & strength=="2 MG/ML")

replace generic = "buprenorphine patch" if (generic == "BUTRANS")

replace generic = "buprenorphine buccal" if (generic == "Belbuca")

replace generic = "butalbital/acetaminophen/caffeine" if (generic == "CAPACET")

replace generic = "codeine/acetaminophen solution" if (generic == "CAPITAL AND CODEINE")

replace generic = "pseudoephedrine" if (generic =="CAPMIST DM")

replace generic = "non-controlled" if (generic =="CARBAMAZEPINE")

replace generic = "carisoprodol" if (generic == "CARISOPRODOL")

replace generic = "carisoprodol" if (generic == "CARISOPRODOL 350MG 500TB BT")

replace generic = "carisoprodol" if (generic == "CARISOPRODOL 350MG (500) TABS")

replace generic = "carisoprodol/aspirin" if (generic == "CARISOPRODOL AND ASPIRIN")

replace generic = "carisoprodol" if (generic == "CARISOPRODOL TABLETS")

replace generic = "carisoprodol" if (generic == "CARISOPRODOL TABLETS USP")

replace generic = "non-controlled" if (generic =="CARVEDILOL")

replace generic = "non-controlled" if (generic =="CELECOXIB")

replace generic = "non-controlled" if (generic =="CEPACOL EXTRA STRENGTH SORE THROAT TANGERINE")

replace generic = "non-controlled" if (generic =="CEPHALEXIN")

replace generic = "nabilone" if (generic == "CESAMET")

replace generic = "pseudoephedrine" if (generic =="CETIRIZINE HCL AND PSEUDOEPHEDRINE HCL ER")

replace generic = "non-controlled" if (generic =="CETIRIZINE HYDROCHLORIDE")

replace generic = "pseudoephedrine" if (generic =="CETIRIZINE HYDROCHLORIDE AND PSEUDOEPHEDRINE HYDROCHLORIDE")

replace generic = "codeine/guaifenesin solution" if (generic == "CHERATUSSIN AC")

replace generic = "codeine/guaifenesin/pseudoephedrine solution" if (generic == "CHERATUSSIN DAC")

replace generic = "pseudoephedrine" if (generic =="CHILDRENS DIMETAPP COLD AND ALLERGY")

replace generic = "pseudoephedrine" if (generic =="CHILDRENS SILFEDRINE")

replace generic = "pseudoephedrine" if (generic =="CHILDRENS SUDAFED NASAL DECONGESTANT")

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replace generic = "chloral hydrate solution" if (generic == "CHLORAL HYDRATE CRY USP")
replace generic = "chloral hydrate solution" if (generic == "CHLORAL HYDRATE SYRUP")
replace generic = "chlordiazepoxide/amitriptyline" if (generic == "CHLORDIAZEPOXIDE AND
AMITRIPTYLINE HYDROCHLORIDE")
```

replace generic = "chlordiazepoxide" if (generic == "CHLORDIAZEPOXIDE HCL 10MG") replace generic = "chlordiazepoxide" if (generic == "CHLORDIAZEPOXIDE HYDROCHLORIDE") replace generic = "chlordiazepoxide/clidinium" if (generic =="CHLORDIAZEPOXIDE HYDROCHLORIDE AND CLIDINIUM BROMIDE")

replace generic = "chlordiazepoxide" if (generic == "CHLORDIAZEPOXIDE HYDROCHLORIDE CAPSULES")

replace generic = "chlordiazepoxide" if (generic == "CHLORDIAZEPOXIDE HYDROCHLORIDE CQPSULES")

replace generic = "chlordiazepoxide/clidinium" if (generic =="CHLORDIAZEPOXIDE HYDROCHLORIDE/CLIDINIUM BROMIDE")

replace generic = "chlordiazepoxide/clidinium" if (generic =="CHLORODIAZEPOXIDE HCL

AND CLIDINIUM BROMIDE 5 MG/2.5 MG CAPSULE")

replace generic = "non-controlled" if (generic =="CHLORZOXAZONE")

replace generic = "non-controlled" if (generic =="CHORIONIC GONADOTROPIN")

replace generic = "morphine" if (generic =="CII MORPHINE SULFATE")

replace generic = "morphine" if (generic =="CII MORPHINE SULFATE 120")

- replace generic = "non-controlled" if (generic =="CITALOPRAM")
- replace generic = "non-controlled" if (generic =="CITALOPRAM HYDROBROMIDE")

replace generic = "pseudoephedrine" if (generic =="CLARINEX-D 12 HOUR")

replace generic = "pseudoephedrine" if (generic =="CLARINEX-D 24 HOUR")

replace generic = "pseudoephedrine" if (generic =="CLARITIN D TABLETS 24 HOUR EXTENDED RELEASE")

replace generic = "pseudoephedrine" if (generic =="CLARITIN-D 12 HOUR")

replace generic = "pseudoephedrine" if (generic =="CLARITIN-D 24 HOUR")

replace generic = "non-controlled" if (generic =="CLINDAMYCIN HYDROCHLORIDE")

replace generic = "non-controlled" if (generic =="CLOMIPHENE CITRATE")

replace generic = "clonazepam" if (generic =="CLONAZEPAM")

replace generic = "clonazepam" if (generic =="CLONAZEPAM .5MG")

replace generic = "clonazepam" if (generic =="CLONAZEPAM 0.5 MG TABLETS")

replace generic = "clonazepam" if (generic =="CLONAZEPAM TABLETS")

replace generic = "clonazepam" if (generic =="CLONEZEPAM 1MG")

replace generic = "clorazepate" if (generic =="CLORAZEPATE 3.75MG")

replace generic = "clorazepate" if (generic =="CLORAZEPATE DIPOTASSIUM")

replace generic = "clorazepate" if (generic =="CLORAZEPATE DIPOTASSIUM TABLETS") replace generic = "clorazepate" if (generic =="CLORAZEPATE DIPOTASSIUM TABLETS USP")

replace generic = "non-controlled" if (generic == "CLOZAPINE")

replace generic = "compounded drug" if (generic =="CMPD")

replace generic = "hydrocodone/acetaminophen" if (generic =="CO-GESIC")

replace generic = "cocaine" if (generic =="COCAINE HYDROCHLORIDE")

replace generic = "codeine" if (generic == "CODEINE 30MG 100'S")

replace generic = "codeine/guaifenesin" if (generic == "CODEINE PHOSPHATE 10 MG / GUAI 300 MG LIQUID (473 ML)")

replace generic = "codeine" if (generic == "CODEINE SULF 30MG 1C")

replace generic = "codeine" if (generic == "CODEINE SULFATE" & strength=="15 MG")

replace generic = "codeine solution" if (generic == "CODEINE SULFATE" & strength=="15 MG/2.5ML")

replace generic = "codeine" if (generic == "CODEINE SULFATE" & strength=="30 MG")

replace generic = "codeine solution" if (generic == "CODEINE SULFATE" & strength=="30 MG/5ML")

replace generic = "codeine" if (generic == "CODEINE SULFATE" & strength=="60 MG")

replace generic = "codeine/guaifenesin" if (generic == "CODEINE-GUAIFENESIN")

replace generic = "non-controlled" if (generic =="COLCRYS")

replace generic = "non-controlled" if (generic =="COLESTIPOL HYDROCHLORIDE")

replace generic = "non-controlled" if (generic =="COMFEEL PLUS PRD HYDROCOLLOID")

replace generic = "methylphenidate" if (generic == "CONCERTA")

replace generic = "methylphenidate LA" if (generic == "CONCERTA ER TABLETS")

replace generic = "pseudoephedrine" if (generic =="CONGESTAC")

replace generic = "tramadol LA" if (generic=="CONZIP")

replace generic = "non-controlled" if (generic =="COUGH & COLD DM ELIX")

replace generic = "esterified estrogens/methyltestosterone" if (generic =="COVARYX")

replace generic = "esterified estrogens/methyltestosterone" if (generic =="COVARYX HS")

replace generic = "non-controlled" if (generic == "CRINONE")

replace generic = "non-controlled" if (generic =="CYCLOBENZAPRINE 10MG TABLETS")

replace generic = "non-controlled" if (generic =="CYCLOBENZAPRINE HYDROCHLORIDE") replace generic = "clonazepam" if (generic =="Clonazepam") replace generic = "pseudoephedrine" if (generic =="DALLERGY") replace generic = "methylphenidate patch" if (generic == "DAYTRANA") replace generic = "methylphenidate patch" if (generic == "DAYTRANA 10 MG") replace generic = "methylphenidate patch" if (generic == "DAYTRANA 15 MG") replace generic = "methylphenidate patch" if (generic == "DAYTRANA 20MG") replace generic = "methylphenidate patch" if (generic == "DAYTRANA EXTENDED RELEASE PATCH") replace generic = "meperidine" if (generic == "DEMEROL" & strength=="100 MG") replace generic = "meperidine solution" if (generic == "DEMEROL" & strength=="100" MG/2ML") replace generic = "meperidine solution" if (generic == "DEMEROL" & strength=="25" MG/.5ML") replace generic = "meperidine solution" if (generic == "DEMEROL" & strength=="100 MG/ML") replace generic = "meperidine" if (generic == "DEMEROL" & strength=="50 MG") replace generic = "meperidine solution" if (generic == "DEMEROL" & strength=="50 MG/ML") replace generic = "meperidine solution" if (generic == "DEMEROL" & strength=="75 MG/ML") replace generic = "meperidine solution" if (generic == "DEMEROL HCL INJ 5% 25MG 0.5ML AMPUL") replace generic = "testosterone solution" if (generic == "DEPO-TESTOSTERONE") replace generic = "non-controlled" if (generic == "DESLORATADINE") replace generic = "methamphetamine" if (generic == "DESOXYN") replace generic = "non-controlled" if (generic == "DEXAMETHASONE") replace generic = "dextroamphetamine" if (generic == "DEXEDRINE") replace generic = "dextroamphetamine" if (generic =="DEXEDRINE CAPSULES") replace generic = "dextroamphetamine" if (generic =="DEXEDRINE SPANSULE") replace generic = "dexmethylphenidate" if (generic =="DEXMETHYLPHENIDATE HYDROCHLORIDE") replace generic = "dexmethylphenidate LA" if (generic =="DEXMETHYLPHENIDATE

HYDROCHLORIDE EXTENDED-RELEASE")

replace generic = "amphetamine/dextroamphetamine" if (generic =="DEXTROAMPH SACC-AMPH ASP-DEXTROAM")

replace generic = "dextroamphetamine solution" if (generic =="DEXTROAMPHETAMINE") replace generic = "amphetamine/dextroamphetamine" if (generic =="DEXTROAMPHETAMINE SACCHARATE AND AMPHETAMINE ASPARTATE AND DEXTROAMPHETAMINE SULFATE AND AMPHETAMINE")

replace generic = "dextroamphetamine" if (generic =="DEXTROAMPHETAMINE SULFATE" & strength=="10 MG")

replace generic = "dextroamphetamine" if (generic =="DEXTROAMPHETAMINE SULFATE" & strength=="15 MG")

replace generic = "dextroamphetamine" if (generic =="DEXTROAMPHETAMINE SULFATE" & strength=="5 MG")

replace generic = "dextroamphetamine solution" if (generic =="DEXTROAMPHETAMINE SULFATE" & strength=="5 MG/5ML")

replace generic = "dextroamphetamine LA" if (generic =="DEXTROAMPHETAMINE SULFATE EXTENDED-RELEASE")

replace generic = "non-controlled" if (generic =="DIABETIC TUSSIN DM")

replace generic = "non-controlled" if (generic =="DIABETIC TUSSIN EXPECTORANT")

replace generic = "diazepam rectal" if (generic =="DIASTAT")

replace generic = "diazepam rectal" if (generic =="DIASTAT (DIAZEPAM RECTAL GEL) TWIN PACK")

replace generic = "diazepam rectal" if (generic =="DIASTAT PEDIATRIC")

replace generic = "diazepam" if (generic =="DIAZEPAM")

replace generic = "diazepam" if (generic =="DIAZEPAM INJECTION")

replace generic = "diazepam" if (generic =="DIAZEPAM INJECTION USP")

replace generic = "diazepam" if (generic =="DIAZEPAM INTENSOL")

replace generic = "diazepam" if (generic =="DIAZEPAM TABLETS")

replace generic = "diazepam" if (generic =="DIAZEPAM USP")

replace generic = "non-controlled" if (generic =="DIAZOXIDE POWDER")

replace generic = "non-controlled" if (generic =="DICLOFENAC SODIUM")

replace generic = "benzphetamine" if (generic =="DIDREX")

replace generic = "diethylpropion LA" if (generic =="DIETHYLPROPION HCL CONTROLLED-RELEASE") replace generic = "diethylpropion" if (generic =="DIETHYLPROPION HCL IMMEDIATE-RELEASE") replace generic = "diethylpropion" if (generic =="DIETHYLPROPION HYDROCHLORIDE") replace generic = "diethylpropion LA" if (generic =="DIETHYLPROPION HYDROCHLORIDE ER") replace generic = "non-controlled" if (generic =="DIFLORASONE DIACETATE") replace generic = "hydromorphone" if (generic =="DILAUDID" & strength=="2 MG") replace generic = "hydromorphone solution" if (generic =="DILAUDID" & strength=="2 MG/ML") replace generic = "hydromorphone" if (generic =="DILAUDID" & strength=="4 MG") replace generic = "hydromorphone solution" if (generic =="DILAUDID" & strength=="5 MG/5ML") replace generic = "hydromorphone" if (generic =="DILAUDID" & strength=="8 MG") replace generic = "hydromorphone solution" if (generic =="DILAUDID AMP 2MG/ML -HYDROMORPHONE HYDROCHLORIDE") replace generic = "hydromorphone solution" if (generic =="DILAUDID AMP 4MG/ML -HYDROMORPHONE HYDROCHLORIDE") replace generic = "hydromorphone solution" if (generic =="DILAUDID HP") replace generic = "non-controlled" if (generic =="DILTIAZEM HYDROCHLORIDE") replace generic = "non-controlled" if (generic == "DIPHENHYDRAMINE HYDROCHLORIDE") replace "diphenoxylate/atropine" if (generic =="DIPHENOXYLATE generic HYDROCHLORIDE AND ATROPINE SULFATE") replace generic "diphenoxylate/atropine" if (generic =="DIPHENOXYLATE = HYDROCHLORIDE AND ATROPINE SULFATE TABLETS") "diphenoxylate/atropine" replace generic if (generic =="DIPHENOXYLATE = HYDROCHLORIDE AND ATROPINE SULFATE TABLETS USP") replace generic = "non-controlled" if (generic =="DIVALPROEX SODIUM") replace generic = "non-controlled" if (generic =="DIVALPROEX SODIUM EXTENDED-RELEASE")

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- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "DOLGIC PLUS")
- replace generic = "methadone" if (generic == "DOLOPHINE")
- replace generic = "atropine/scopalamine/hyoscyamine/phenobarbital aolution" if (generic ==
- "DONNATAL" & strength==".0065 MG/5ML;.0194 MG/5ML;.1037 MG/")
- replace generic = "atropine/scopalamine/hyoscyamine/phenobarbital" if (generic ==
- "DONNATAL" & strength==".0065 MG;.0194 MG;.1037 MG;16.2 MG")
- replace generic = "atropine/scopalamine/hyoscyamine/phenobarbital" if (generic == "DONNATAL EXTENTABS")
- replace generic = "quazepam" if (generic == "DORAL")
- replace generic = "non-controlled" if (generic =="DOXYCYCLINE")
- replace generic = "dronabinol" if (generic == "DRONABINOL")
- replace generic = "dronabinol" if (generic =="DRONABINOL CAPSULES")
- replace generic = "non-controlled" if (generic =="DULOXETINE")
- replace generic = "non-controlled" if (generic =="DULOXETINE HYDROCHLORIDE")
- replace generic = "fentanyl patch" if (generic =="DURAGESIC")
- replace generic = "fentanyl patch" if (generic =="DURAGESIC SYSTEM")
- replace generic = "fentanyl patch" if (generic =="DURAGESIC TRANSDERMAL PATCH")
- replace generic = "morphine injection" if (generic =="DURAMORPH")
- replace generic = "dexmethylphenidate" if (generic =="Dexmethylphenidate Hydrochloride")
- replace generic = "diazepam" if (generic =="Diazepam")
- replace generic = "zolpidem" if (generic =="EDLUAR")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="EEMT")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="EEMT HS")
- replace generic = "non-controlled" if (generic =="EGRIFTA")
- replace generic = "morphine/naltrexone" if (generic =="EMBEDA")
- replace generic = "oxycodone/acetaminophen" if (generic == "ENDOCET")
- replace generic = "non-controlled" if (generic =="ENOXAPARIN SODIUM")
- replace generic = "non-controlled" if (generic =="EPINEPHRINE")
- replace generic = "non-controlled" if (generic =="EPIPEN")
- replace generic = "pseudoephedrine" if (generic =="EQUATE SUPHEDRINE")
- replace generic = "non-controlled" if (generic =="ESCITALOPRAM")

- replace generic = "non-controlled" if (generic =="ESCITALOPRAM OXALATE")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "ESGIC")
- replace generic = "non-controlled" if (generic =="ESOMEPRAZOLE MAGNESIUM")
- replace generic = "estazolam" if (generic == "ESTAZOLAM")
- replace generic = "estazolam" if (generic == "ESTAZOLAM TABLETS")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="ESTERIFIED ESTROGENS AND METHYLTESTOSTERONE")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="ESTERIFIED ESTROGENS AND METHYLTESTOSTERONE TABLETS 0.625/1.25")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="ESTERIFIED
- ESTROGENS AND METHYTESTOSTERONE TABLETS 1.25 MG/2.5")
- replace generic = "non-controlled" if (generic =="ESTRADIOL")
- replace generic = "non-controlled" if (generic =="ESTRADIOL HEMIHYDRATE MICRO USP")
- replace generic = "esterified estrogens/methyltestosterone" if (generic =="ESTRATEST H S TABLETS")
- replace generic = "non-controlled" if (generic =="ESTRIOL")
- replace generic = "non-controlled" if (generic =="ESTRIOL MICRONIZED USP")
- replace generic = "non-controlled" if (generic =="ESTRONE CRYSTAL USP")
- replace generic = "eszopiclone" if (generic == "ESZOPICLONE")
- replace generic = "amphetamine" if (generic == "EVEKEO")
- replace generic = "hydromorphone" if (generic == "EXALGO")
- replace generic = "non-controlled" if (generic == "FAMOTIDINE")
- replace generic = "non-controlled" if (generic =="FAZACLO")
- replace generic = "fentanyl" if (generic=="FENTANYL")
- replace generic = "fentanyl" if (generic=="FENTANYL NOVAPLUS")
- replace generic = "fentanyl injection" if (generic=="FENTANYL CITRATE")
- replace generic = "fentanyl injection" if (generic=="FENTANYL CITRATE INJECTION")
- replace generic = "fentanyl injection" if (generic=="FENTANYL CITRATE USP")
- replace generic = "fentanyl patch" if (generic=="FENTANYL RES TDS 100MCG/H 5PT PK")

replace generic = "fentanyl patch" if (generic=="FENTANYL RES TDS 25MCG/H 5PT PK")

replace generic = "fentanyl patch" if (generic=="FENTANYL RES TDS 50MCG/H 5PT PK") replace generic = "fentanyl patch" if (generic=="FENTANYL TRANSDERMAL SYSTEM") replace generic = "fentanyl tablet" if (generic=="FENTORA") replace generic = "non-controlled" if (generic =="FEXMID")

replace generic = "pseudoephedrine" if (generic =="FEXOFENADINE HCL - PSEUDOEPHED 60MG FEXOFENADINE HCL - PSEUDO T")

replace generic = "pseudoephedrine" if (generic =="FEXOFENADINE HCL AND PSEUDOEPHEDRINE HCI")

replace generic = "non-controlled" if (generic =="FEXOFENADINE HYDROCHLORIDE")

replace generic = "butalbital/acetaminophen/caffeine" if (generic == "FIORICET")

replace generic = "butalbital/acetaminophen/caffeine/codeine" if (generic == "FIORICET WITH CODEINE")

replace generic = "butalbital/aspirin/caffeine" if (generic == "FIORINAL")

replace generic = "butalbital/aspirin/caffeine/codeine" if (generic == "FIORINAL WITH CODEINE")

replace generic = "testosterone" if (generic == "FIRST TESTOSTERONE KIT")

replace generic = "testosterone" if (generic == "FIRST TESTOSTERONE MC KIT")

replace generic = "non-controlled" if (generic =="FLEET ENEMA TWIN PK")

replace generic = "hydrocodone/guaifenesin" if (generic == "FLOWTUSS")

replace generic = "non-controlled" if (generic =="FLUCONAZOLE")

replace generic = "non-controlled" if (generic =="FLUOXETINE")

replace generic = "non-controlled" if (generic =="FLUOXETINE HYDROCHLORIDE")

replace generic = "flurazepam" if (generic =="FLURAZEPAM")

replace generic = "flurazepam" if (generic =="FLURAZEPAM HYDROCHLORIDE")

replace generic = "dexmethylphenidate" if (generic == "FOCALIN")

replace generic = "dexmethylphenidate LA" if (generic == "FOCALIN XR")

replace generic = "testosterone topical" if (generic == "FORTESTA")

replace generic = "non-controlled" if (generic =="FUROSEMIDE")

replace generic = "perampanel" if (generic == "FYCOMPA")

replace generic = "fentanyl patch" if (generic=="Fentanyl 0.025 MG/HR Transdermal Patch")

replace generic = "non-controlled" if (generic =="GABAPENTIN")

replace generic = "non-controlled" if (generic =="GABLOFEN")

replace generic = "codeine/guaifenesin" if (generic == "GANI-TUSS NR LIQUID CV")

replace generic = "pseudoephedrine" if (generic =="GENAPHED TABLET 30MG 48")

replace generic = "non-controlled" if (generic =="GENOTROPIN")

replace generic = "non-controlled" if (generic =="GENTAMICIN SULFATE")

replace generic = "non-controlled" if (generic =="GENTEAL MILD TO MODERATE")

replace generic = "non-controlled" if (generic =="GLIPIZIDE")

replace generic = "non-controlled" if (generic =="GLYBURIDE")

replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY ALL DAY ALLERGY D")

replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY IBUPROFEN COLD AND SINUS")

replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY LORATADINE D")

replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY LORATADINE D 24 HOUR")

replace generic = "pseudoephedrine" if (generic =="GOOD NEIGHBOR PHARMACY NASAL DECONGESTANT")

replace generic = "pseudoephedrine" if (generic =="GOOD SENSE ALL DAY ALLERGY D")

replace generic = "pseudoephedrine" if (generic =="GOOD SENSE ALLERGY AND CONGESTION RELIEF")

replace generic = "pseudoephedrine" if (generic =="GOOD SENSE NASAL DECONGESTANT")

replace generic = "pseudoephedrine" if (generic =="GOOD SENSE SUPHEDRINE 12 HOUR")

replace generic = "codeine/guaifenesin" if (generic == "GUAIATUSSIN AC")

replace generic = "codeine/guaifenesin" if (generic == "GUAIFENESIN AC")

replace generic = "codeine/guaifenesin" if (generic == "GUAIFENESIN AND CODEINE PHOSPHATE")

replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "GUAIFENESIN DAC")

replace generic = "codeine/guaifenesin" if (generic == "GUAIFENESIN W/ CODEINE") replace generic = "codeine/guaifenesin" if (generic == "GUAIFENESIN W/CODEINE") replace generic = "codeine/guaifenesin" if (generic == "GUIATUSS AC SYRUP") replace generic = "codeine/guaifenesin" if (generic == "GUIATUSS AC SYRUP 100MG/10MG 4 OZ")

replace generic = "codeine/guaifenesin" if (generic == "GUIATUSS AC SYRUP 100MG/10MG 473ML")

replace generic = "triazolam" if (generic == "HALCION")

replace generic = "non-controlled" if (generic =="HALOG")

replace generic = "non-controlled" if (generic =="HALOPERIDOL")

replace generic = "pseudoephedrine" if (generic =="HEALTH MART ALLERGY AND CONGESTION")

replace generic = "pseudoephedrine" if (generic =="HEALTH MART ALLERGY COMPLETE D")

replace generic = "pseudoephedrine" if (generic =="HEALTH MART NASAL DECONGESTANT")

replace generic = "non-controlled" if (generic =="HEARTBURN RELIEF ORIGINAL STRENGTH")

replace generic = "non-controlled" if (generic =="HUMATROPE")

replace generic = "non-controlled" if (generic =="HUMIRA")

replace generic = "hydrocodone/acetaminophen solution" if (generic =="HYCET")

replace generic = "hydrocodone/guaifenesin/pseudoephedrine" if (generic == "HYCOFENIX")

replace generic = "non-controlled" if (generic =="HYDROCHLOROTHIAZIDE")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE ACET TABLETS")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTATE AND ACETAMINOPHEN")

replace generic = "hydrocodone" if (generic =="HYDROCODONE BITARTRATE")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="10 MG;300 MG")

generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace BITARTRATE AND ACETAMINOPHEN" & strength=="10 MG;325 MG") generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace BITARTRATE AND ACETAMINOPHEN" & strength=="10 MG;500 MG") generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace BITARTRATE AND ACETAMINOPHEN" & strength=="10 MG;650 MG") generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace BITARTRATE AND ACETAMINOPHEN" & strength=="10 MG;660 MG") = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace generic BITARTRATE AND ACETAMINOPHEN" & strength=="10 MG;750 MG") replace generic = "hydrocodone/acetaminophen solution" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="163 MG/7.5ML;5 MG/7.5ML") replace generic = "hydrocodone/acetaminophen solution" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="167 MG/5ML;2.5 MG/5ML") generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace BITARTRATE AND ACETAMINOPHEN" & strength=="2.5 MG;500 MG") "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace generic = BITARTRATE AND ACETAMINOPHEN" & strength=="300 MG;5 MG") "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace generic = BITARTRATE AND ACETAMINOPHEN" & strength=="300 MG;7.5 MG") replace generic = "hydrocodone/acetaminophen solution" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="325 MG/15ML;7.5 MG/15ML") generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace BITARTRATE AND ACETAMINOPHEN" & strength=="325 MG;10 MG") replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="325 MG;5 MG") generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE replace BITARTRATE AND ACETAMINOPHEN" & strength=="325 MG;7.5 MG") replace generic = "hydrocodone/acetaminophen solution" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="500 MG/15ML;7.5 MG/15ML")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="500 MG;5 MG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="500 MG;7.5 MG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="650 MG;7.5 MG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN" & strength=="750 MG;7.5 MG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN CAPSULES")

replace generic = "hydrocodone/acetaminophen solution" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN ORAL SOLUTION")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITARTRATE AND ACETAMINOPHEN TABLETS")

replace generic = "hydrocodone/homatropine solution" if (generic =="HYDROCODONE BITARTRATE AND HOMATROPINE METHYLBROMIDE" & strength=="1.5 MG/5ML;5 MG/5ML")

replace generic = "hydrocodone/homatropine" if (generic =="HYDROCODONE BITARTRATE AND HOMATROPINE METHYLBROMIDE" & strength=="1.5 MG;5 MG")

replace generic = "hydrocodone/ibuprofen" if (generic =="HYDROCODONE BITARTRATE AND IBUPROFEN")

replace generic = "hydrocodone/ibuprofen" if (generic =="HYDROCODONE BITARTRATE AND IBUPROFEN TABLETS")

replace generic = "hydrocodone" if (generic =="HYDROCODONE BITARTRATE POWDER") replace generic = "hydrocodone" if (generic =="HYDROCODONE BITARTRATE USP")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE BITATRATE AND ACETAMINOPHEN")

replace generic = "hydrocodone/chlorpheniramine" if (generic =="HYDROCODONE POLISTIREX AND CHLORPHENIRAMINE POLISITREX")

replace generic = "hydrocodone/chlorpheniramine" if (generic =="HYDROCODONE POLISTIREX AND CHLORPHENIRAMINE POLISTIREX")
replace generic = "hydrocodone/chlorpheniramine" if (generic =="HYDROCODONE POLISTIREX AND CHLORPHENIRAMINE POLISTIREX EXTENDED-RELEASE") replace generic = "hydrocodone/chlorpheniramine" if (generic =="HYDROCODONE POLISTIREX AND CHLORPHENIRAMINE POLISTIREX PENNKINETIC") replace generic = "hydrocodone/genetaminenhan" if (generic =="HYDROCODONE")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE W/APAP 5MG/325MG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE/ACETAMINOPHEN 5/500MMG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE/APAP 7.5/650MG")

replace generic = "hydrocodone/acetaminophen" if (generic =="HYDROCODONE/APAP TABLETS")

replace generic = "hydrocodone/homatropine" if (generic =="HYDROCODONE/HOMATROPINE MB TAB CIII")

replace generic = "non-controlled" if (generic =="HYDROCORTISONE")

replace generic = "hydrocodone/homatropine solution" if (generic =="HYDROMET")

replace generic = "hydromorphone" if (generic == "HYDROMORPH HCL 2MG 1C")

replace generic = "hydromorphone" if (generic == "HYDROMORPH HCL 4MG 1C")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HCL")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HCL\_USP")

replace generic = "hydromorphone solution" if (generic == "HYDROMORPHONE HCL INJECTION")

replace generic = "hydromorphone solution" if (generic == "HYDROMORPHONE HCL INJECTION USP")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE")

replace generic = "hydromorphone LA" if (generic == "HYDROMORPHONE HYDROCHLORIDE EXTENDED-RELEASE")

replace generic = "hydromorphone solution" if (generic == "HYDROMORPHONE HYDROCHLORIDE INJECTION")

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replace generic = "hydromorphone solution" if (generic == "HYDROMORPHONE HYDROCHLORIDE INJECTION 500 MG/50ML 50")
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replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE POWDER")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE HYDROCHLORIDE TABLETS")

replace generic = "hydromorphone" if (generic == "HYDROMORPHONE POWDER")

replace generic = "hydromorphone" if (generic == "HYDROMORPNONE HYDROCHLORIDE POWDER")

replace generic = "hydrocodone LA" if (generic =="HYSINGLA ER")

replace generic = "hydromorphone" if (generic == "HydromorphonePowder")

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replace generic = "hydrocodone/ibuprofen" if (generic =="IBUDONE")
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replace generic = "pseudoephedrine" if (generic =="IBUPROFEN AND PSEUDOEPHEDRINE HYDROCHLORIDE")

replace generic = "morphine injection" if (generic == "INFUMORPH 200")

replace generic = "morphine injection" if (generic == "INFUMORPH 500")

replace generic = "morphine injection" if (generic == "INFUMORPH 500MG/20ML AMPUL X 1")

replace generic = "zolpidem" if (generic == "INTERMEZZO")

replace generic = "non-controlled" if (generic =="INVEGA")

replace generic = "non-controlled" if (generic =="INVEGA SUSTENNA")

replace generic = "codeine/guaifenesin" if (generic == "IOPHEN C NR")

replace generic = "isometheptene/dichloralphenazone/acetaminophen" if (generic == "ISOMETHEPTENE MUCATE DICHLORALPHENAZONE ACETAMINOPHEN CAPSULES")

replace generic = "isometheptene/dichloralphenazone/acetaminophen" if (generic == "ISOMETHEPTENE MUCATE/DICHLORALPHENAZONE/ACETAMINOPHEN CAPSULES")

replace generic = "non-controlled" if (generic =="ISOMETHEPTENE Mucate USP")

replace generic = "isometheptene/dichloralphenazone/acetaminophen" if (generic == "ISOMETHEPTENE-DICHLORAL-APAP ORAL")

- replace generic = "non-controlled" if (generic =="ISOSORBIDE DINITRATE")
- replace generic = "non-controlled" if (generic =="ISOSORBIDE MONONITRATE")
- replace generic = "morphine LA" if (generic == "KADIAN")
- replace generic = "ketamine" if (generic == "KETALAR")
- replace generic = "ketamine" if (generic == "KETAMINE HCL")
- replace generic = "ketamine" if (generic == "KETAMINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic =="KETOROLAC TROMETHAMINE")
- replace generic = "pseudoephedrine" if (generic =="KIRKLAND SIGNATURE ALLER TEC D")
- replace generic = "pseudoephedrine" if (generic =="KIRKLAND SIGNATURE ALLERCLEAR D 12 HR")
- replace generic = "pseudoephedrine" if (generic =="KIRKLAND SIGNATURE ALLERCLEAR
- D 24HR")
- replace generic = "clonazepam" if (generic == "KLONOPIN")
- replace generic = "clonazepam" if (generic == "KLONOPIN TABLETS")
- replace generic = "non-controlled" if (generic =="LAMOTRIGINE")
- replace generic = "non-controlled" if (generic == "LANTUS")
- replace generic = "fentanyl intranasal" if (generic == "LAZANDA")
- replace generic = "pseudoephedrine" if (generic =="LEADER 12 HOUR NASAL DECONGESTANT")
- replace generic = "pseudoephedrine" if (generic =="LEADER ALLERGY D 12")
- replace generic = "pseudoephedrine" if (generic =="LEADER ALLERGY RELIEF D-24")
- replace generic = "pseudoephedrine" if (generic =="LEADER NASAL DECONGESTANT MAXIMUM STRENGTH")
- replace generic = "non-controlled" if (generic == "LEADER TUSSIN CF")
- replace generic = "non-controlled" if (generic == "LEVETIRACETAM")
- replace generic = "non-controlled" if (generic == "LEVOFLOXACIN")
- replace generic = "levorphanol" if (generic == "LEVORPHANOL TARTRATE")
- replace generic = "non-controlled" if (generic == "LEVOTHYROXINE SODIUM")
- replace generic = "non-controlled" if (generic == "LIBRAX")
- replace generic = "non-controlled" if (generic == "LIDOCAINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic == "LIDODERM")

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replace generic = "non-controlled" if (generic == "LISINOPRIL")
replace
                        "non-controlled"
                                               (generic
         generic
                   =
                                          if
                                                                "LISINOPRIL
                                                                                AND
HYDROCHLOROTHIAZIDE")
replace generic = "pseudoephedrine" if (generic =="LODRANE D")
replace generic = "diphenoxylate/atropine" if (generic =="LOMOTIL")
replace generic = "diphenoxylate/atropine" if (generic =="LONOX 2.5/0.025MG
                                                                               100TB
BT")
replace generic = "non-controlled" if (generic == "LORATADINE 10 MG 24 HOUR")
                        "pseudoephedrine"
replace
         generic
                   =
                                            if
                                                 (generic
                                                           =="LORATADINE
                                                                                AND
PSEUDOEPHEDRINE")
replace generic = "pseudoephedrine" if (generic =="LORATADINE AND PSEUDOEPHEDRINE
SULFATE")
replace generic = "non-controlled" if (generic == "LORATADINE ANTIHISTAMINE")
replace generic = "pseudoephedrine" if (generic =="LORATADINE D")
replace generic = "pseudoephedrine" if (generic =="LORATADINE D 24 HOUR")
replace generic = "lorazepam" if (generic == "LORAZEPAM" & strength==".5 MG")
replace generic = "lorazepam" if (generic == "LORAZEPAM" & strength=="1 MG")
replace generic = "lorazepam" if (generic == "LORAZEPAM" & strength=="2 MG")
replace generic = "lorazepam injection" if (generic == "LORAZEPAM" & strength=="2"
MG/ML")
replace generic = "lorazepam injection" if (generic == "LORAZEPAM" & strength=="4
MG/ML")
replace generic = "lorazepam" if (generic == "LORAZEPAM" & strength=="TABLET")
replace generic = "lorazepam" if (generic == "LORAZEPAM 0.5MG")
replace generic = "lorazepam" if (generic == "LORAZEPAM 1MG")
replace generic = "lorazepam injection" if (generic == "LORAZEPAM INJECTION")
replace generic = "lorazepam injection" if (generic == "LORAZEPAM INJECTION CIV")
replace generic = "lorazepam injection" if (generic == "LORAZEPAM INJECTION SOLUTION
USP")
replace generic = "lorazepam" if (generic == "LORAZEPAM TABLETS")
replace generic = "hydrocodone/acetaminophen" if (generic == "LORCET 10/650")
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replace generic = "hydrocodone/acetaminophen" if (generic == "LORCET PLUS")

replace generic = "hydrocodone/acetaminophen" if (generic == "LORCET PLUS TABLETS")

replace generic = "hydrocodone/acetaminophen solution" if (generic == "LORTAB" & strength=="10 MG/15ML;300 MG/15ML")

replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB" & strength=="10 MG;500 MG")

replace generic = "hydrocodone/acetaminophen solution" if (generic == "LORTAB" & strength=="500 MG/15ML;7.5 MG/15ML")

replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB" & strength=="500 MG;5 MG")

replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB" & strength=="500 MG;7.5 MG")

replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB 10/325")

replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB 5/325")

replace generic = "hydrocodone/acetaminophen" if (generic == "LORTAB 7.5/325")

replace generic = "non-controlled" if (generic == "LORZONE")

replace generic = "non-controlled" if (generic == "LOSARTAN POTASSIUM AND HYDROCHLOROTHIAZIDE")

replace generic = "eszopiclone" if (generic == "LUNESTA")

replace generic = "eszopiclone" if (generic == "LUNESTA TABLETS")

replace generic = "non-controlled" if (generic == "LYCOPODIUM")

replace generic = "pregabalin" if (generic == "LYRICA" & strength=="100 MG")

replace generic = "pregabalin" if (generic == "LYRICA" & strength=="150 MG")

replace generic = "pregabalin solution" if (generic == "LYRICA" & strength=="20 MG/ML")

replace generic = "pregabalin" if (generic == "LYRICA" & strength=="200 MG")

replace generic = "pregabalin" if (generic == "LYRICA" & strength=="225 MG")

replace generic = "pregabalin" if (generic == "LYRICA" & strength=="25 MG")

replace generic = "pregabalin" if (generic == "LYRICA" & strength=="300 MG")

replace generic = "pregabalin" if (generic == "LYRICA" & strength=="50 MG")

replace generic = "pregabalin" if (generic == "LYRICA" & strength=="75 MG")

replace generic = "lorazepam" if (generic == "Lorazepam" & strength==".5 mg/1")

replace generic = "lorazepam injection" if (generic == "Lorazepam" & strength=="1ML/VIAL")

replace generic = "oxycodone/acetaminophen" if (generic == "MAGNACET")

replace generic = "non-controlled" if (generic == "MAJOR CLOTRIMAZOLE")

replace generic = "pseudoephedrine" if (generic =="MAPAP SINUS CONGESTION AND PAIN

MAXIMUM STRENGTH")

replace generic = "codeine/guaifenesin" if (generic == "MAR-COF CG EXPECTORANT")

replace generic = "butalbital/acetaminophen/caffeine" if (generic == "MARGESIC")

replace generic = "dronabinol" if (generic == "MARINOL")

replace generic = "dronabinol" if (generic == "MARINOL CAPSULES")

replace generic = "non-controlled" if (generic == "MECLIZINE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "MELOXICAM")

replace generic = "meperidine injection" if (generic == "MEPERIDINE 50MG/ML 1ML VL X 25")

replace generic = "meperidine" if (generic == "MEPERIDINE HYDROCHLORIDE" & strength=="100 MG")

replace generic = "meperidine injection" if (generic == "MEPERIDINE HYDROCHLORIDE" & strength=="100 MG/ML")

replace generic = "meperidine injection" if (generic == "MEPERIDINE HYDROCHLORIDE" & strength=="25 MG/ML")

replace generic = "meperidine" if (generic == "MEPERIDINE HYDROCHLORIDE" & strength=="50 MG")

replace generic = "meperidine solution" if (generic == "MEPERIDINE HYDROCHLORIDE" & strength=="50 MG/5ML")

replace generic = "meperidine injection" if (generic == "MEPERIDINE HYDROCHLORIDE" & strength=="50 MG/ML")

replace generic = "meprobamate" if (generic == "MEPROBAMATE")

replace generic = "methylphenidate LA" if (generic == "METADATE CD")

replace generic = "methylphenidate LA" if (generic == "METADATE CD CAPSULES EXTENDED RELEASE")

replace generic = "methylphenidate LA" if (generic == "METADATE ER")

replace generic = "methylphenidate LA" if (generic == "METADATE ER 10 MG 100")

replace generic = "non-controlled" if (generic == "METAXALONE")

replace generic = "non-controlled" if (generic == "METFORMIN HYDROCHLORIDE")

replace generic = "methadone" if (generic == "METHADONE HYDROCHLORIDE")

replace generic = "methadone" if (generic == "METHADONE.HCL;USP BULK")

replace generic = "methadone" if (generic == "METHADOSE")

replace generic = "methadone" if (generic == "METHADOSE SUGAR-FREE")

replace generic = "methamphetamine" if (generic == "METHAMPHETAMINE HYDROCHLORIDE")

replace generic = "methyltestosterone" if (generic == "METHITEST")

replace generic = "non-controlled" if (generic == "METHOCARBAMOL")

replace generic = "methylphenidate solution" if (generic == "METHYLIN")

replace generic = "methylphenidate solution" if (generic == "METHYLPHENIDATE HCL ORAL SOLUTION")

replace generic = "methylphenidate" if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="10 MG") replace generic = "methylphenidate solution" if (generic == "METHYLPHENIDATE

HYDROCHLORIDE" & strength=="10 MG/5ML")

replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="18 MG")

replace generic = "methylphenidate" if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="2.5 MG")

replace generic = "methylphenidate" if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="20 MG")

replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="27 MG")

replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="30 MG") replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE

HYDROCHLORIDE" & strength=="36 MG")

replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE

HYDROCHLORIDE" & strength=="40 MG")

generic = "methylphenidate" replace if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="5 MG") replace generic = "methylphenidate solution" if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="5 MG/5ML") replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE HYDROCHLORIDE" & strength=="54 MG") replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE HYDROCHLORIDE (CD)") if (generic == replace generic = "methylphenidate LA" "METHYLPHENIDATE HYDROCHLORIDE CD") replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE HYDROCHLORIDE EXTENDED RELEASE") replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE HYDROCHLORIDE EXTENDED-RELEASE") replace generic = "methylphenidate LA" if (generic == "METHYLPHENIDATE HYDROCHLORIDE SR") "methylphenidate" if (generic "METHYLPHENIDATE replace generic = == HYDROCHLORIDE TABLETS") replace generic = "methyltestosterone" if (generic == "METHYLTESTOSTERONE") replace generic "esterified estrogens/methyltestosterone" if (generic =="METHYLTESTOSTERONE AND ESTERIFIED ESTOGENS TABLETS") generic = "non-controlled" if (generic == "METOCLOPRAMIDE HCL replace MONOHYDRATE") replace generic = "midazolam" if (generic == "MIDAZOLAM") replace generic = "midazolam" if (generic == "MIDAZOLAM HYDROCHLORIDE") replace generic = "midazolam" if (generic == "MIDAZOLAM INJECTION") replace generic = "non-controlled" if (generic == "MIRTAZAPINE") replace generic = "modafinil" if (generic == "MODAFINIL") replace generic = "non-controlled" if (generic == "MONTELUKAST SODIUM") replace generic = "morphine" if (generic == "MORPH SUL 15MG TAB 1C") replace generic = "morphine" if (generic == "MORPH.SO4 PENTAHYDRATE USP")

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replace generic = "morphine" if (generic == "MORPHINE")

replace generic = "morphine" if (generic == "MORPHINE 10MG/5ML 500ML")

replace generic = "morphine" if (generic == "MORPHINE 10MG/ML TUBEX")

replace generic = "morphine" if (generic == "MORPHINE 20MG/5ML 500ML")

replace generic = "morphine" if (generic == "MORPHINE 4MG/ML TUBEX")

replace generic = "morphine" if (generic == "MORPHINE POWDER")

replace generic = "morphine" if (generic == "MORPHINE SULFATE")

replace generic = "morphine LA" if (generic == "MORPHINE SULFATE CR 100 MG TAB")

replace generic = "morphine LA" if (generic == "MORPHINE SULFATE EXTENDED RELEASE")

replace generic = "morphine injection" if (generic == "MORPHINE SULFATE INJECTION")

replace generic = "morphine injection" if (generic == "MORPHINE SULFATE INJECTION USP")

replace generic = "morphine solution" if (generic == "MORPHINE SULFATE ORAL SOL 20MG/ML")

replace generic = "morphine solution" if (generic == "MORPHINE SULFATE ORAL SOLUTION")

replace generic = "morphine solution" if (generic == "MORPHINE SULFATE SOLUTION")

replace generic = "morphine solution" if (generic == "MORPHINE SULFATE SOLUTION ORAL IMMEDIATE RELEASE")

replace generic = "morphine" if (generic == "MORPHINE SULFATE TABLETS")

replace generic = "morphine" if (generic == "MORPHINE SULFATE TABLETS 15 MG X 100") replace generic = "morphine" if (generic == "MORPHINE SULFATE TABLETS IMMEDIATE RELEASE")

replace generic = "morphine" if (generic == "MORPHINE SULFATE USP")

replace generic = "diphenoxylate/atropine" if (generic =="MOTOFEN")

replace generic = "diphenoxylate/atropine" if (generic =="MOTOFEN TABLETS")

replace generic = "morphine LA" if (generic == "MS CONTIN")

replace generic = "morphine LA" if (generic == "MS CONTIN TABLET")

replace generic = "morphine LA" if (generic == "MS CONTIN TABLETS")

replace generic = "non-controlled" if (generic == "MUCINEX")

- replace generic = "pseudoephedrine" if (generic =="MUCINEX D")
- replace generic = "pseudoephedrine" if (generic =="MUCINEX D MAXIMUM STRENGTH")
- replace generic = "non-controlled" if (generic == "MUCINEX DM")
- replace generic = "non-controlled" if (generic == "MUCINEX DM MAXIMUM STRENGTH")
- replace generic = "non-controlled" if (generic == "MULTI-VIT WITH FLUORIDE")
- replace generic = "non-controlled" if (generic == "MUPIROCIN")
- replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "MYTUSSIN DAC")
- replace generic = "methylphenidate" if (generic == "Methylphenidate")
- replace generic = "morphine" if (generic == "Morphine sulfate")
- replace generic = "non-controlled" if (generic == "NALBUPHINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic == "NAMZARIC")
- replace generic = "non-controlled" if (generic == "NAPROXEN")
- replace generic = "pseudoephedrine" if (generic =="NASAL DECONGESTANT")
- replace generic = "pseudoephedrine" if (generic =="NASAL DECONGESTANT MAXIMUM
- STRENGTH NON DROWSY")
- replace generic = "testosterone nasal" if (generic == "NATESTO")
- replace generic = "pseudoephedrine" if (generic =="NEXAFED")
- replace generic = "codeine/guaifenesin" if (generic == "NINJACOF-XG")
- replace generic = "alprazolam" if (generic == "NIRAVAM")
- replace generic = "isometheptene/dichloralphenazone/acetaminophen" if (generic == "NODOLOR")
- replace generic = "hydrocodone/acetaminophen" if (generic == "NORCO")
- replace generic = "non-controlled" if (generic == "NORDITROPIN")
- replace generic = "non-controlled" if (generic == "NORTRIPTYLINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic == "NOVAREL")
- replace generic = "non-controlled" if (generic == "NOVOLIN 70/30")
- replace generic = "non-controlled" if (generic == "NOVOLIN N")
- replace generic = "tapentadol" if (generic == "NUCYNTA")
- replace generic = "tapentadol LA" if (generic == "NUCYNTA ER")
- replace generic = "non-controlled" if (generic == "NUTROPIN AQ NUSPIN 10")
- replace generic = "non-controlled" if (generic == "NUTROPIN AQ NUSPIN 5")

- replace generic = "armodafinil" if (generic == "NUVIGIL")
- replace generic = "non-controlled" if (generic == "NYSTATIN")
- replace generic = "hydrocodone/guaifenesin" if (generic == "OBREDON")
- replace generic = "non-controlled" if (generic == "OLANZAPINE")
- replace generic = "non-controlled" if (generic == "OMEPRAZOLE")
- replace generic = "non-controlled" if (generic == "OMNITROPE")
- replace generic = "clobazam" if (generic == "ONFI")
- replace generic = "oxymorphone" if (generic == "OPANA")
- replace generic = "oxymorphone LA" if (generic == "OPANA ER")
- replace generic = "opium" if (generic == "OPIUM TINCTURE USP X 118ML")
- replace generic = "opium" if (generic == "OPIUM TINCTURE DEODORIZED")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "ORBIVAN")
- replace generic = "non-controlled" if (generic == "OVIDREL")
- replace generic = "oxandrolone" if (generic == "OXANDROLONE")
- replace generic = "oxandrolone" if (generic == "OXANDROLONE 10MG 60TB BT")
- replace generic = "oxycodone" if (generic == "OXAYDO")
- replace generic = "oxazepam" if (generic == "OXAZEPAM")
- replace generic = "oxazepam" if (generic == "OXAZEPAM CAPSULES")
- replace generic = "oxazepam" if (generic == "OXCARBAZEPINE")
- replace generic = "oxycodone/acetaminophen" if (generic == "OXYCODONE AND ACETAMINOPHEN")

replace generic = "oxycodone/acetaminophen solution" if (generic == "OXYCODONE AND ACETAMINOPHEN ORAL SOLUTION")

replace generic = "oxycodone/acetaminophen" if (generic == "OXYCODONE AND ACETAMINOPHEN TABLETS")

replace generic = "oxycodone/aspirin" if (generic == "OXYCODONE AND ASPIRIN")

replace generic = "oxycodone" if (generic == "OXYCODONE HCL")

replace generic = "oxycodone" if (generic == "OXYCODONE HCL 15 MG TABLET")

replace generic = "oxycodone LA" if (generic == "OXYCODONE HCL CONTROLLED-RELEASE") replace generic = "oxycodone solution" if (generic == "OXYCODONE HCL SOLUTION 5MG/5ML CII")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDCHLORIDE")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="10 MG")

replace generic = "oxycodone solution" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="100 MG/5ML")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="15 MG")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="20 MG")

replace generic = "oxycodone solution" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="20 MG/ML")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="30 MG")

replace generic = "oxycodone LA" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="40 MG")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="5 MG")

replace generic = "oxycodone solution" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="5 MG/5ML")

replace generic = "oxycodone LA" if (generic == "OXYCODONE HYDROCHLORIDE" & strength=="80 MG")

replace generic = "oxycodone/acetaminophen" if (generic == "OXYCODONE HYDROCHLORIDE AND ACETAMINOPHEN")

replace generic = "oxycodone/aspirin" if (generic == "OXYCODONE HYDROCHLORIDE AND ASPIRIN")

replace generic = "oxycodone/ibuprofen" if (generic == "OXYCODONE HYDROCHLORIDE AND IBUPROFEN")

replace generic = "oxycodone solution" if (generic == "OXYCODONE HYDROCHLORIDE ORAL CONCENTRATE SOLUTION (20MG/ML)") replace generic = "oxycodone solution" if (generic == "OXYCODONE HYDROCHLORIDE ORAL SOLUTION USP (5M/5ML)")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE TABLETS")

replace generic = "oxycodone" if (generic == "OXYCODONE HYDROCHLORIDE USP")

replace generic = "oxycodone" if (generic == "OXYCODONE TAB 5MG (100) CII")

replace generic = "oxycodone/aspirin" if (generic == "OXYCODONE/ASP 4.5/0.38/325MG")

replace generic = "oxycodone LA" if (generic == "OXYCONTIN")

replace generic = "oxycodone LA" if (generic == "OXYCONTIN TABLETS")

replace generic = "oxycodone LA" if (generic == "OXYCONTIN TABLETS CONTROLLED RELEASE")

replace generic = "oxycodone solution" if (generic == "OXYFAST SOLUTION ORAL")

replace generic = "oxymorphone" if (generic == "OXYMORPHONE HYDROCHLORIDE" & strength=="5 MG")

replace generic = "oxymorphone" if (generic == "OXYMORPHONE HYDROCHLORIDE" & strength=="7.5 MG")

replace generic = "oxymorphone" if (generic == "OXYMORPHONE HYDROCHLORIDE" & strength=="10 MG")

replace generic = "oxymorphone LA" if (generic == "OXYMORPHONE HYDROCHLORIDE" & strength=="15 MG")

replace generic = "oxymorphone LA" if (generic == "OXYMORPHONE HYDROCHLORIDE" & strength=="20 MG")

replace generic = "oxymorphone LA" if (generic == "OXYMORPHONE HYDROCHLORIDE" & strength=="30 MG")

replace generic = "oxymorphone LA" if (generic == "OXYMORPHONE HYDROCHLORIDE" & strength=="40 MG")

replace generic = "oxycodone" if (generic == "Oxycodone Hydrochloride")

replace generic = "non-controlled" if (generic == "PANTOPRAZOLE SODIUM")

replace generic = "paregoric" if (generic == "PAREGORIC")

replace generic = "non-controlled" if (generic == "PARICALCITOL")

replace generic = "non-controlled" if (generic == "PAROXETINE")

replace generic = "pentazocine/naloxone" if (generic == "PENTAZOCINE AND NALOXONE")

replace generic = "pentazocine/acetaminophen" if (generic == "PENTAZOCINE HCL AND ACETAMINOPHEN")

replace generic = "pentazocine/acetaminophen" if (generic == "PENTAZOCINE HYDROCHLORIDE AND ACETAMINOPHEN")

replace generic = "pentazocine/naloxone" if (generic == "PENTAZOCINE HYDROCHLORIDE AND NALOXONE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "PENTRAVAN")

replace generic = "oxycodone/acetaminophen" if (generic == "PERCOCET")

replace generic = "phendimetrazine" if (generic == "PHENDIMETRAZINE TARTRATE")

replace generic = "codeine/promethazine" if (generic == "PHENERGAN WITH CODEINE SYRUP")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL")

replace generic = "phenobarbital solution" if (generic == "PHENOBARBITAL" & strength=="20 MG/5ML")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL 100 MG TABLETS")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL 30 MG TABLETS")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL 60 MG TABLETS")

replace generic = "phenobarbital solution" if (generic == "PHENOBARBITAL ELIXIR")

replace generic = "phenobarbital solution" if (generic == "PHENOBARBITAL ELIXIR NO2")

replace generic = "phenobarbital injection" if (generic == "PHENOBARBITAL SODIUM")

replace generic = "phenobarbital injection" if (generic == "PHENOBARBITAL SODIUM INJECTION")

replace generic = "phenobarbital" if (generic == "PHENOBARBITAL TABLETS")

replace generic = "phenobarbital" if (generic == "PHENOBARBITOL USP")

replace generic = "phentermine" if (generic == "PHENTERMINE 37.5MG (100) CAPS CIV")

replace generic = "phentermine" if (generic == "PHENTERMINE 37.5MG (100) TABS CIV")

replace generic = "phentermine" if (generic == "PHENTERMINE HCL TABLETS")

replace generic = "phentermine" if (generic == "PHENTERMINE HYDROCHLORIDE")

replace generic = "phentermine" if (generic == "PHENTERMINE HYDROCHLORIDE 37.5MG TABLETS")

replace generic = "phentermine" if (generic == "PHENTERMINE HYDROCHLORIDE TABLETS")

replace generic = "codeine/chlorpheniramine/pseudoephedrine" if (generic == "PHENYLHISTINE DH")

replace generic = "non-controlled" if (generic == "PHENYTEK")

replace generic = "non-controlled" if (generic == "PHENYTOIN INFATABS")

replace generic = "non-controlled" if (generic == "PHENYTOIN SODIUM")

replace generic = "non-controlled" if (generic == "PICATO")

replace generic = "non-controlled" if (generic == "PILOCARPINE HYDROCHLORIDE")

replace generic = "non-controlled" if (generic == "PNEUMOVAX 23")

replace generic = "codeine/brompheniramine/pseudoephedrine" if (generic == "POLY-TUSSIN AC")

replace generic = "ezogabine" if (generic == "POTIGA")

replace generic = "non-controlled" if (generic == "PREGNYL")

replace generic = "non-controlled" if (generic == "PRILOSEC OTC")

replace generic = "pseudoephedrine" if (generic == "PRIMATENE")

replace generic = "non-controlled" if (generic == "PRIMIDONE")

replace generic = "oxycodone/acetaminophen" if (generic == "PRIMLEV")

replace generic = "codeine/dexchlorpheniramine/phenylephrine" if (generic == "PRO-RED AC")

replace generic = "dextroamphetamine" if (generic == "PROCENTRA")

replace generic = "non-controlled" if (generic == "PROCHLORPERAZINE MALEATE")

replace generic = "non-controlled" if (generic == "PROGESTERONE")

replace generic = "non-controlled" if (generic == "PROGESTERONE MICRONIZED")

replace generic = "non-controlled" if (generic == "PROGESTERONE MICRONIZED USP")

replace generic = "non-controlled" if (generic == "PROGESTERONE WETTABLE (YAM) USP")

replace generic = "non-controlled" if (generic == "PROGESTERONE WETTABLE USP")

replace generic = "codeine/promethazine" if (generic == "PROMETH WITH CODEINE")

replace generic = "non-controlled" if (generic == "PROMETHAZINE HYDROCHLORIDE")

replace generic = "codeine/promethazine" if (generic == "PROMETHAZINE HYDROCHLORIDE AND CODEINE PHOSPHATE") replace generic = "non-controlled" if (generic == "PROMETHAZINE VC") replace generic = "codeine/promethazine/phenylephrine" if (generic == "PROMETHAZINE VC WITH CODEINE") replace generic = "codeine/promethazine" if (generic == "PROMETHAZINE WITH CODEINE") replace generic = "codeine/promethazine" if (generic == "PROMETHAZINE WITH CODEINE COUGH") replace generic = "modafinil" if (generic == "PROVIGIL") replace generic = "modafinil" if (generic == "PROVIGIL TABLETS") replace generic = "pseudoephedrine" if (generic == "PSEUDOEPHEDRINE 60MG 100TB BT") replace generic = "pseudoephedrine" if (generic == "PSEUDOEPHEDRINE HCL") replace generic = "pseudoephedrine" if (generic =="PSEUDOEPHEDRINE HYDROCHLORIDE") replace generic = "pseudoephedrine" if (generic =="Q TAPP COLD AND ALLERGY") replace generic = "pseudoephedrine" if (generic =="Q TAPP COLD AND COUGH") replace generic = "non-controlled" if (generic == "Q TUSSIN DM") replace generic = "phentermine/topiramate" if (generic == "QSYMIA") replace generic = "non-controlled" if (generic == "QUETIAPINE FUMARATE") replace generic = "methylphenidate LA" if (generic == "QUILLIVANT XR") replace generic = "non-controlled" if (generic == "RANITIDINE") replace generic = "non-controlled" if (generic == "REFISSA")replace generic = "benzphetamine" if (generic == "REGIMEX") replace generic = "codeine/guaifenesin" if (generic == "RELCOF-C") replace generic = "hydrocodone/ibuprofen" if (generic == "REPREXAIN") replace generic = "pseudoephedrine" if (generic =="RESPAIRE-30") replace generic = "temazepam" if (generic == "RESTORIL") replace generic = "hydrocodone/pseudoephedrine" if (generic == "REZIRA") replace generic = "non-controlled" if (generic == "RISPERIDONE") replace generic = "methylphenidate" if (generic == "RITALIN") replace generic = "methylphenidate LA" if (generic == "RITALIN LA") replace generic = "methylphenidate LA" if (generic == "RITALIN SR")

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- replace generic = "non-controlled" if (generic == "RITE AID BRANDS")
- replace generic = "codeine/guaifenesin" if (generic == "ROBITUSSIN AC SYRUP")
- replace generic = "non-controlled" if (generic == "ROPINIROLE HYDROCHLORIDE")
- replace generic = "morphine solution" if (generic == "ROXANOL 20MG/ML")
- replace generic = "morphine solution" if (generic == "ROXANOL ORAL SOLUTION")
- replace generic = "oxycodone/acetaminophen solution" if (generic == "ROXICET" & strength=="325 MG/5ML;5 MG/5ML")
- replace generic = "oxycodone/acetaminophen" if (generic == "ROXICET" & strength=="325 MG;5 MG")
- replace generic = "oxycodone" if (generic == "ROXICODONE")
- replace generic = "oxycodone solution" if (generic == "ROXICODONE (OXYCODONE
- HYDROCHLORIDE INTENSOL) ORAL SOLUTION")
- replace generic = "pseudoephedrine" if (generic =="RUGBY NASAL DECONGESTANT")
- replace generic = "non-controlled" if (generic == "SAIZEN")
- replace generic = "non-controlled" if (generic == "SAIZEN CLICKEASY")
- replace generic = "secobarbital" if (generic == "SECONAL SODIUM")
- replace generic = "pseudoephedrine" if (generic =="SEMPREX D")
- replace generic = "oxazepam" if (generic == "SERAX CAPSULES")
- replace generic = "non-controlled" if (generic == "SERTRALINE")
- replace generic = "non-controlled" if (generic == "SERTRALINE HYDROCHLORIDE")
- replace generic = "non-controlled" if (generic == "SILDENAFIL")
- replace generic = "non-controlled" if (generic == "SIMPONI")
- replace generic = "non-controlled" if (generic == "SINELEE")
- replace generic = "pseudoephedrine" if (generic =="SINUS AND COLD D")
- replace generic = "pseudoephedrine" if (generic =="SMART SENSE ALL DAY ALLERGY D")
- replace generic = "pseudoephedrine" if (generic =="SMART SENSE ALLERGY AND
- CONGESTION RELIEF")
- replace generic = "carisoprodol" if (generic == "SOMA")
- replace generic = "zaleplon" if (generic == "SONATA")
- replace generic = "non-controlled" if (generic == "SPIRONOLACTONE")
- replace generic = "pseudoephedrine" if (generic =="STAHIST AD")

- replace generic = "non-controlled" if (generic == "STRATTERA")
- replace generic = "testosterone tablet" if (generic == "STRIANT")
- replace generic = "buprenorphine/naloxone" if (generic == "SUBOXONE")
- replace generic = "buprenorphine/naloxone" if (generic == "SUBOXONE FILM")
- replace generic = "fentanyl spray" if (generic == "SUBSYS")
- replace generic = "buprenorphine" if (generic == "SUBUTEX 8MG")
- replace generic = "pseudoephedrine" if (generic =="SUDAFED")
- replace generic = "pseudoephedrine" if (generic =="SUDAFED 12 HOUR")
- replace generic = "pseudoephedrine" if (generic =="SUDAFED 12 HOUR PRESSURE AND PAIN")
- replace generic = "pseudoephedrine" if (generic =="SUDAFED 24 HOUR")
- replace generic = "pseudoephedrine" if (generic =="SUDAGEST 30MG TABLETS")
- replace generic = "pseudoephedrine" if (generic =="SUDOGEST")
- replace generic = "sufentanil" if (generic == "SUFENTANIL CITRATE")
- replace generic = "sufentanil" if (generic == "SUFENTANIL CITRATE BULK")
- replace generic = "non-controlled" if (generic == "SUN MARK TUSSIN DM COUGH AND CHEST CONGESTION")
- replace generic = "non-controlled" if (generic == "SUNMARK ACID REDUCER")
- replace generic = "pseudoephedrine" if (generic =="SUNMARK ALL DAY ALLERGY D")
- replace generic = "non-controlled" if (generic == "SUNMARK LICE TREATMENT")
- replace generic = "pseudoephedrine" if (generic =="SUNMARK LORATADINE D")
- replace generic = "non-controlled" if (generic == "SUNMARK MILK OF MAGNESIA MINT")
- replace generic = "pseudoephedrine" if (generic =="SUNMARK NASAL DECONGESTANT")
- replace generic = "non-controlled" if (generic == "SUNMARK NICOTINE")
- replace generic = "non-controlled" if (generic == "SUNMARK OMEPRAZOLE")
- replace generic = "pseudoephedrine" if (generic =="SUNMARK SINUS 12 HOUR")
- replace generic = "pseudoephedrine" if (generic =="SUPHEDRIN GRAPE")
- replace generic = "pseudoephedrine" if (generic =="SUPHEDRINE TABS")
- replace generic = "phentermine" if (generic == "SUPRENZA")
- replace generic = "dihydrocodeine/aspirin/caffeine" if (generic == "SYNALGOS")
- replace generic = "non-controlled" if (generic == "TACROLIMUS")

replace generic = "non-controlled" if (generic == "TAZORAC") replace generic = "temazepam" if (generic == "TEMAZEPAM") replace generic = "temazepam" if (generic == "TEMAZEPAM 30MG") replace generic = "temazepam" if (generic == "TEMAZEPAM 7.5MG CAPS 100.00 CP 1") replace generic = "temazepam" if (generic == "TEMAZEPAM CAPSULES") replace generic = "testosterone topical" if (generic == "TESTIM") replace generic = "testosterone pellet" if (generic == "TESTOPEL") replace generic = "testosterone" if (generic == "TESTOSTERONE") replace generic = "testosterone injection" if (generic == "TESTOSTERONE CYPIONATE") replace generic = "testosterone" if (generic == "TESTOSTERONE CYPIONATE PWD") replace generic = "testosterone" if (generic == "TESTOSTERONE CYPIONATE USP/NF") replace generic = "testosterone" if (generic == "TESTOSTERONE ENANTHATE") replace generic = "testosterone" if (generic == "TESTOSTERONE ENANTHATE USP") replace generic = "testosterone" if (generic == "TESTOSTERONE MICRNIZED YAM") replace generic = "testosterone" if (generic == "TESTOSTERONE MICRONIZED USP") replace generic = "testosterone" if (generic == "TESTOSTERONE MICRONIZED YAM") replace generic = "testosterone" if (generic == "TESTOSTERONE POWDER") replace generic = "testosterone" if (generic == "TESTOSTERONE POWDER 25 GM") replace generic = "testosterone" if (generic == "TESTOSTERONE POWDER 5 GM") replace generic = "testosterone" if (generic == "TESTOSTERONE PROPIONATE POWDER 25 GM") replace generic = "testosterone" if (generic == "TESTOSTERONE PROPIONATE POWDER 5 GM")

replace generic = "testosterone" if (generic == "TESTOSTERONE USP MICRONIZED")

replace generic = "methyltestosterone" if (generic == "TESTRED C-III")

replace generic = "non-controlled" if (generic == "TIZANIDINE")

replace generic = "non-controlled" if (generic == "TIZANIDINE HYDROCHLORIDE")

replace generic = "pseudoephedrine" if (generic =="TOPCARE 12 HOUR DECONGESTANT")

replace generic = "pseudoephedrine" if (generic =="TOPCARE ALL DAY ALLERGY D")

replace generic = "pseudoephedrine" if (generic =="TOPCARE ALLERGY RELIEF D")

replace generic = "pseudoephedrine" if (generic =="TOPCARE NASAL DECONGESTANT MAXIMUM STRENGTH NON DROWSY")

replace generic = "non-controlled" if (generic == "TOPIRAMATE")

replace generic = "tramadol" if (generic == "TRAMADOL HCL TABLETS")

replace generic = "tramadol LA" if (generic == "TRAMADOL HYDROCHLORIDE" & strength=="100 MG")

replace generic = "tramadol LA" if (generic == "TRAMADOL HYDROCHLORIDE" & strength=="150 MG")

replace generic = "tramadol LA" if (generic == "TRAMADOL HYDROCHLORIDE" & strength=="200 MG")

replace generic = "tramadol LA" if (generic == "TRAMADOL HYDROCHLORIDE" & strength=="300 MG")

replace generic = "tramadol" if (generic == "TRAMADOL HYDROCHLORIDE" & strength=="50 MG")

replace generic = "tramadol" if (generic == "TRAMADOL HYDROCHLORIDE" & strength=="50 MG/1")

replace generic = "tramadol/acetaminophen" if (generic == "TRAMADOL HYDROCHLORIDE AND ACETAMINOPHEN")

replace generic = "tramadol" if (generic == "TRAMADOL HYDROCHLORIDE EP")

replace generic = "tramadol LA" if (generic == "TRAMADOL HYDROCHLORIDE EXTENDED-RELEASE")

replace generic = "tramadol" if (generic == "TRAMADOL HYDROCHLORIDE TABLETS")

replace generic = "clorazepate" if (generic == "TRANXENE T-TAB")

replace generic = "clorazepate" if (generic == "TRANXENE TABLETS")

replace generic = "non-controlled" if (generic == "TRAZODONE HYDROCHLORIDE")

replace generic = "dihydrocodeine/aspirin/caffeine" if (generic == "TREZIX")

replace generic = "triazolam" if (generic == "TRIAZ 0.25MG TAB 10X10")

replace generic = "triazolam" if (generic == "TRIAZOLAM")

replace generic = "triazolam" if (generic == "TRIAZOLAM .125")

replace generic = "triazolam" if (generic == "TRIAZOLAM TABLETS")

replace generic = "non-controlled" if (generic == "TRILEPTAL")

- replace generic = "hydrocodone/chlorpheniramine tablet" if (generic == "TUSSICAPS")
- replace generic = "hydrocodone/homatropine" if (generic == "TUSSIGON")
- replace generic = "hydrocodone/chlorpheniramine" if (generic == "TUSSIONEX PENNKINETIC")
- replace generic = "codeine/chlorpheniramine" if (generic == "TUZISTRA XR")
- replace generic = "codeine/acetaminophen" if (generic == "TYLENOL WITH CODEINE")
- replace generic = "oxycodone/acetaminophen" if (generic == "TYLOX")
- replace generic = "testosterone" if (generic == "Testosterone Powder")
- replace generic = "remifentanil" if (generic == "ULTIVA")
- replace generic = "tramadol/acetaminophen" if (generic == "ULTRACET")
- replace generic = "tramadol" if (generic == "ULTRAM")
- replace generic = "tramadol LA" if (generic == "ULTRAM ER")
- replace generic = "tramadol" if (generic == "ULTRAM TABLETS")
- replace generic = "unknownNDC" if (generic == "UNKNOWN")
- replace generic = "non-controlled" if (generic == "VALACYCLOVIR")
- replace generic = "non-controlled" if (generic == "VALACYCLOVIR HYDROCHLORIDE")
- replace generic = "diazepam" if (generic == "VALIUM")
- replace generic = "diazepam" if (generic == "VALIUM TABLETS")
- replace generic = "non-controlled" if (generic == "VALPROIC ACID")
- replace generic = "non-controlled" if (generic == "VALTREX")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "VANATOL LQ")
- replace generic = "non-controlled" if (generic == "VENLAFAXINE")
- replace generic = "non-controlled" if (generic == "VENLAFAXINE HYDROCHLORIDE")
- replace generic = "hydrocodone/acetaminophen" if (generic == "VICODIN")
- replace generic = "hydrocodone/acetaminophen" if (generic == "VICODIN ES")
- replace generic = "hydrocodone/acetaminophen" if (generic == "VICODIN HP")
- replace generic = "hydrocodone/ibuprofen" if (generic == "VICOPROFEN")
- replace generic = "non-controlled" if (generic == "VIIBRYD")
- replace generic = "lacosamide" if (generic == "VIMPAT")
- replace generic = "codeine/guaifenesin" if (generic == "VIRTUSSIN A/C")
- replace generic = "codeine/guaifenesin" if (generic == "VIRTUSSIN AC")

- replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "VIRTUSSIN DAC")
- replace generic = "hydrocodone/chlorpheniramine" if (generic == "VITUZ")
- replace generic = "testosterone topical" if (generic == "VOGELXO")
- replace generic = "lisdexamfetamine" if (generic == "VYVANSE")
- replace generic = "pseudoephedrine" if (generic =="WAL ITIN D")
- replace generic = "pseudoephedrine" if (generic =="WAL ITIN D 12 HOUR ALLERGY AND CONGESTION")
- replace generic = "pseudoephedrine" if (generic =="WAL PROFEN COLD AND SINUS")
- replace generic = "pseudoephedrine" if (generic =="WAL-PHED")
- replace generic = "non-controlled" if (generic == "WARFARIN SODIUM")
- replace generic = "alprazolam" if (generic == "XANAX")
- replace generic = "alprazolam LA" if (generic == "XANAX XR")
- replace generic = "non-controlled" if (generic == "XARELTO")
- replace generic = "oxycodone/acetaminophen LA" if (generic == "XARTEMIS XR")
- replace generic = "hydrocodone/acetaminophen" if (generic == "XODOL")
- replace generic = "hydrocodone/ibuprofen" if (generic == "XYLON 10")
- replace generic = "sodium oxybate" if (generic == "XYREM")
- replace generic = "codeine/chlorpheniramine" if (generic == "Z-TUSS AC")
- replace generic = "codeine/guaifenesin/pseudoephedrine" if (generic == "Z-TUSS E")
- replace generic = "zaleplon" if (generic == "ZALEPLON")
- replace generic = "hydrocodone/acetaminophen" if (generic == "ZAMICET")
- replace generic = "butalbital/acetaminophen/caffeine" if (generic == "ZEBUTAL")
- replace generic = "dextroamphetamine" if (generic == "ZENZEDI")
- replace generic = "pseudoephedrine" if (generic =="ZEPHREX-D")
- replace generic = "hydrocodone LA" if (generic == "ZOHYDRO")
- replace generic = "hydrocodone LA" if (generic == "ZOHYDRO ER")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE" & strength=="10 MG")
- replace generic = "zolpidem LA" if (generic == "ZOLPIDEM TARTRATE" & strength=="12.5 MG")
- replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE" & strength=="5 MG")

replace generic = "zolpidem LA" if (generic == "ZOLPIDEM TARTRATE" & strength=="6.25 MG")

replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE 10 MG")

replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE 10MG")

replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE 5 MG")

replace generic = "zolpidem LA" if (generic == "ZOLPIDEM TARTRATE EXTENDED-RELEASE")

replace generic = "zolpidem" if (generic == "ZOLPIDEM TARTRATE TABLETS")

replace generic = "zolpidem" if (generic == "ZOLPIMIST")

replace generic = "hydrocodone/acetaminophen" if (generic == "ZOLVIT")

replace generic = "buprenorphine/naloxone" if (generic == "ZUBSOLV")

replace generic = "hydrocodone/chlorpheniramine/pseudoephedrine" if (generic == "ZUTRIPRO")

replace generic = "hydrocodone/acetaminophen" if (generic == "ZYDONE")

replace generic = "pseudoephedrine" if (generic =="ZYRTEC D 12 HOUR EXTENDED RELEASE TABLETS")

replace generic = "pseudoephedrine" if (generic =="ZYRTEC-D ALLERGY AND CONGESTION")

replace generic = "oxycodone" if (generic == "oxycodone hydrochloride")

replace generic = "unknownNDC" if (generic == "t")

replace generic = "tramadol" if (generic == "tramadol hydrochloride")

replace generic = "unknownNDC" if (generic == "unknown")

replace class = "1" if class == "alprazolam"

replace class = "5" if class == "amphetamine"

replace class = "5" if class == "amphetamine/dextroamphetamine"

replace class = "5" if class == "armodafinil"

replace class = "6" if class == "atropine/scopalamine/hyoscyamine/phenobarbital"

replace class = "5" if class == "benzphetamine"

replace class = "4" if class == "buprenorphine"

replace class = "4" if class == "buprenorphine/naloxone"

- replace class = "6" if class == "butabarbital"
- replace class = "6" if class == "butalbital/acetaminophen"
- replace class = "6" if class == "butalbital/acetaminophen/caffeine"
- replace class = "7" if class == "butalbital/acetaminophen/caffeine/codeine"
- replace class = "6" if class == "butalbital/aspirin/caffeine"
- replace class = "7" if class == "butalbital/aspirin/caffeine/codeine"
- replace class = "4" if class == "butorphanol"
- replace class = "3" if class == "carisoprodol"
- replace class = "3" if class == "carisoprodol/aspirin"
- replace class = "8" if class == "chloral hydrate"
- replace class = "1" if class == "chlordiazepoxide"
- replace class = "1" if class == "chlordiazepoxide/amitriptyline"
- replace class = "1" if class == "chlordiazepoxide/clidinium"
- replace class = "1" if class == "clobazam"
- replace class = "1" if class == "clonazepam"
- replace class = "1" if class == "clorazepate"
- replace class = "2" if class == "cocaine"
- replace class = "4" if class == "codeine"
- replace class = "4" if class == "codeine/acetaminophen"
- replace class = "4" if class == "codeine/brompheniramine/pseudoephedrine"
- replace class = "4" if class == "codeine/chlorpheniramine"
- replace class = "4" if class == "codeine/chlorpheniramine/pseudoephedrine"
- replace class = "4" if class == "codeine/dexchlorpheniramine/phenylephrine"
- replace class = "4" if class == "codeine/guaifenesin"
- replace class = "4" if class == "codeine/guaifenesin/pseudoephedrine"
- replace class = "4" if class == "codeine/promethazine"
- replace class = "4" if class == "codeine/promethazine/phenylephrine"
- replace class = "0" if class == "compounded drug"
- replace class = "5" if class == "dexmethylphenidate"
- replace class = "5" if class == "dextroamphetamine"
- replace class = "1" if class == "diazepam"

- replace class = "5" if class == "diethylpropion"
- replace class = "4" if class == "dihydrocodeine/aspirin/caffeine"
- replace class = "2" if class == "diphenoxylate/atropine"
- replace class = "9" if class == "dronabinol"
- replace class = "1" if class == "estazolam"
- replace class = "2" if class == "esterified estrogens/methyltestosterone"
- replace class = "8" if class == "eszopiclone"
- replace class = "2" if class == "ezogabine"
- replace class = "4" if class == "fentanyl"
- replace class = "2" if class == "fluoxymesterone"
- replace class = "1" if class == "flurazepam"
- replace class = "4" if class == "hydrocodone"
- replace class = "4" if class == "hydrocodone/acetaminophen"
- replace class = "4" if class == "hydrocodone/chlorpheniramine"
- replace class = "4" if class == "hydrocodone/chlorpheniramine/pseudoephedrine"
- replace class = "4" if class == "hydrocodone/guaifenesin"
- replace class = "4" if class == "hydrocodone/guaifenesin/pseudoephedrine"
- replace class = "4" if class == "hydrocodone/homatropine"
- replace class = "4" if class == "hydrocodone/ibuprofen"
- replace class = "4" if class == "hydrocodone/pseudoephedrine"
- replace class = "4" if class == "hydromorphone"
- replace class = "2" if class == "isometheptene/dichloralphenazone/acetaminophen"
- replace class = "2" if class == "ketamine"
- replace class = "2" if class == "lacosamide"
- replace class = "4" if class == "levorphanol"
- replace class = "5" if class == "lisdexamfetamine"
- replace class = "1" if class == "lorazepam"
- replace class = "2" if class == "lorcasesrin"
- replace class = "4" if class == "meperidine"
- replace class = "2" if class == "meprobamate"
- replace class = "4" if class == "methadone"

- replace class = "4" if class == "methamphetamine"
- replace class = "4" if class == "methylphenidate"
- replace class = "2" if class == "methyltestosterone"
- replace class = "1" if class == "midazolam"
- replace class = "5" if class == "modafinil"
- replace class = "4" if class == "morphine"
- replace class = "4" if class == "morphine/naltrexone"
- replace class = "2" if class == "nabilone"
- replace class = "0" if class == "non-controlled"
- replace class = "4" if class == "opium"
- replace class = "4" if class == "opium/belladonna"
- replace class = "2" if class == "oxandrolone"
- replace class = "1" if class == "oxazepam"
- replace class = "4" if class == "oxycodone"
- replace class = "4" if class == "oxycodone/acetaminophen"
- replace class = "4" if class == "oxycodone/aspirin"
- replace class = "4" if class == "oxycodone/ibuprofen"
- replace class = "2" if class == "oxymetholone"
- replace class = "4" if class == "oxymorphone"
- replace class = "4" if class == "paregoric"
- replace class = "4" if class == "pentazocine/acetaminophen"
- replace class = "4" if class == "pentazocine/naloxone"
- replace class = "2" if class == "perampanel"
- replace class = "2" if class == "phendimetrazine"
- replace class = "6" if class == "phenobarbital"
- replace class = "6" if class == "phenobarbital/belladonna"
- replace class = "5" if class == "phentermine"
- replace class = "5" if class == "phentermine/topiramate"
- replace class = "2" if class == "pregabalin"
- replace class = "0" if class == "pseudoephedrine"
- replace class = "1" if class == "quazepam"

replace class = "4" if class == "remifentanil" replace class = "6" if class == "secobarbital" replace class = "8" if class == "sodium oxybate" replace class = "4" if class == "sufentanil" replace class = "2" if class == "suvorexant" replace class = "4" if class == "tapentadol" replace class = "1" if class == "temazepam" replace class = "2" if class == "testosterone" replace class = "4" if class == "tramadol" replace class = "1" if class == "tramadol" replace class = "1" if class == "triazolam" replace class = "0" if class == "unknownNDC" replace class = "8" if class == "zolpidem"

destring class, generate(classnum)

label define Class 1 "benzodiazepine" 2 "miscellaneous" 3 "muscle relaxant" 4 "opioid" 5 "stimulant" 6 "barbiturate" 7 "multiple classes" 8 "sedative-hypnotic" 9 "cannabinoid" 0 "Missing" label variable classnum "Drug Class" label values classnum Class

replace classnum=. if classnum==0

replace simplegeneric = "1" if simplegeneric == "alprazolam" replace simplegeneric = "2" if simplegeneric == "amphetamine" replace simplegeneric = "3" if simplegeneric == "armodafinil" replace simplegeneric = "4" if simplegeneric == "armodafinil" replace simplegeneric = "5" if simplegeneric === "atropine/scopalamine/hyoscyamine/phenobarbital" replace simplegeneric = "6" if simplegeneric == "benzphetamine" replace simplegeneric = "7" if simplegeneric == "buprenorphine" replace simplegeneric = "8" if simplegeneric == "buprenorphine/naloxone" replace simplegeneric = "9" if simplegeneric == "butabarbital" replace simplegeneric = "10" if simplegeneric == "butalbital/acetaminophen" replace simplegeneric = "11" if simplegeneric == "butalbital/acetaminophen/caffeine" replace simplegeneric = "12" if simplegeneric == "butalbital/acetaminophen/caffeine/codeine" replace simplegeneric = "13" if simplegeneric == "butalbital/aspirin/caffeine" replace simplegeneric = "14" if simplegeneric == "butalbital/aspirin/caffeine/codeine" replace simplegeneric = "15" if simplegeneric == "butorphanol" replace simplegeneric = "16" if simplegeneric == "carisoprodol" replace simplegeneric = "17" if simplegeneric == "carisoprodol/aspirin" replace simplegeneric = "18" if simplegeneric == "chloral hydrate" replace simplegeneric = "19" if simplegeneric == "chlordiazepoxide" replace simplegeneric = "20" if simplegeneric == "chlordiazepoxide/amitriptyline" replace simplegeneric = "21" if simplegeneric == "chlordiazepoxide/clidinium" replace simplegeneric = "22" if simplegeneric == "clobazam" replace simplegeneric = "23" if simplegeneric == "clonazepam" replace simplegeneric = "24" if simplegeneric == "clorazepate" replace simplegeneric = "25" if simplegeneric == "cocaine" replace simplegeneric = "26" if simplegeneric == "codeine" replace simplegeneric = "27" if simplegeneric == "codeine/acetaminophen" replace simplegeneric = "28" if simplegeneric == "codeine/brompheniramine/pseudoephedrine" replace simplegeneric = "29" if simplegeneric == "codeine/chlorpheniramine" replace simplegeneric = "30" if simplegeneric == "codeine/chlorpheniramine/pseudoephedrine" replace simplegeneric = "31" if simplegeneric == "codeine/dexchlorpheniramine/phenylephrine" replace simplegeneric = "32" if simplegeneric == "codeine/guaifenesin" replace simplegeneric = "33" if simplegeneric == "codeine/guaifenesin/pseudoephedrine" replace simplegeneric = "34" if simplegeneric == "codeine/promethazine" replace simplegeneric = "35" if simplegeneric == "codeine/promethazine/phenylephrine" replace simplegeneric = "36" if simplegeneric == "compounded drug" replace simplegeneric = "37" if simplegeneric == "dexmethylphenidate" replace simplegeneric = "38" if simplegeneric == "dextroamphetamine"

replace simplegeneric = "39" if simplegeneric == "diazepam" replace simplegeneric = "40" if simplegeneric == "diethylpropion" replace simplegeneric = "41" if simplegeneric == "dihydrocodeine/aspirin/caffeine" replace simplegeneric = "42" if simplegeneric == "diphenoxylate/atropine" replace simplegeneric = "43" if simplegeneric == "dronabinol" replace simplegeneric = "44" if simplegeneric == "estazolam" replace simplegeneric = "45" if simplegeneric == "esterified estrogens/methyltestosterone" replace simplegeneric = "46" if simplegeneric == "eszopiclone" replace simplegeneric = "47" if simplegeneric == "ezogabine" replace simplegeneric = "48" if simplegeneric == "fentanyl" replace simplegeneric = "49" if simplegeneric == "fluoxymesterone" replace simplegeneric = "50" if simplegeneric == "flurazepam" replace simplegeneric = "51" if simplegeneric == "hydrocodone" replace simplegeneric = "52" if simplegeneric == "hydrocodone/acetaminophen" replace simplegeneric = "53" if simplegeneric == "hydrocodone/chlorpheniramine" replace simplegeneric = "54" if simplegeneric \_\_\_ "hydrocodone/chlorpheniramine/pseudoephedrine" replace simplegeneric = "55" if simplegeneric == "hydrocodone/guaifenesin" replace simplegeneric = "56" if simplegeneric == "hydrocodone/guaifenesin/pseudoephedrine" replace simplegeneric = "57" if simplegeneric == "hydrocodone/homatropine" replace simplegeneric = "58" if simplegeneric == "hydrocodone/ibuprofen" replace simplegeneric = "59" if simplegeneric == "hydrocodone/pseudoephedrine" replace simplegeneric = "60" if simplegeneric == "hydromorphone" replace simplegeneric \_ "61" if simplegeneric == "isometheptene/dichloralphenazone/acetaminophen" replace simplegeneric = "62" if simplegeneric == "ketamine" replace simplegeneric = "63" if simplegeneric == "lacosamide" replace simplegeneric = "64" if simplegeneric == "levorphanol" replace simplegeneric = "65" if simplegeneric == "lisdexamfetamine" replace simplegeneric = "66" if simplegeneric == "lorazepam" replace simplegeneric = "67" if simplegeneric == "lorcasesrin"

replace simplegeneric = "68" if simplegeneric == "meperidine" replace simplegeneric = "69" if simplegeneric == "meprobamate" replace simplegeneric = "70" if simplegeneric == "methadone" replace simplegeneric = "71" if simplegeneric == "methamphetamine" replace simplegeneric = "72" if simplegeneric == "methylphenidate" replace simplegeneric = "73" if simplegeneric == "methyltestosterone" replace simplegeneric = "74" if simplegeneric == "midazolam" replace simplegeneric = "75" if simplegeneric == "modafinil" replace simplegeneric = "76" if simplegeneric == "morphine" replace simplegeneric = "77" if simplegeneric == "morphine/naltrexone" replace simplegeneric = "78" if simplegeneric == "nabilone" replace simplegeneric = "79" if simplegeneric == "non-controlled" replace simplegeneric = "80" if simplegeneric == "opium" replace simplegeneric = "81" if simplegeneric == "opium/belladonna" replace simplegeneric = "82" if simplegeneric == "oxandrolone" replace simplegeneric = "83" if simplegeneric == "oxazepam" replace simplegeneric = "84" if simplegeneric == "oxycodone" replace simplegeneric = "85" if simplegeneric == "oxycodone/acetaminophen" replace simplegeneric = "86" if simplegeneric == "oxycodone/aspirin" replace simplegeneric = "87" if simplegeneric == "oxycodone/ibuprofen" replace simplegeneric = "88" if simplegeneric == "oxymetholone" replace simplegeneric = "89" if simplegeneric == "oxymorphone" replace simplegeneric = "90" if simplegeneric == "paregoric" replace simplegeneric = "91" if simplegeneric == "pentazocine/acetaminophen" replace simplegeneric = "92" if simplegeneric == "pentazocine/naloxone" replace simplegeneric = "93" if simplegeneric == "perampanel" replace simplegeneric = "94" if simplegeneric == "phendimetrazine" replace simplegeneric = "95" if simplegeneric == "phenobarbital" replace simplegeneric = "96" if simplegeneric == "phenobarbital/belladonna" replace simplegeneric = "97" if simplegeneric == "phentermine" replace simplegeneric = "98" if simplegeneric == "phentermine/topiramate"

replace simplegeneric = "99" if simplegeneric == "pregabalin"
replace simplegeneric = "100" if simplegeneric == "pseudoephedrine"
replace simplegeneric = "101" if simplegeneric == "quazepam"
replace simplegeneric = "102" if simplegeneric == "remifentanil"
replace simplegeneric = "103" if simplegeneric == "secobarbital"
replace simplegeneric = "104" if simplegeneric == "sodium oxybate"
replace simplegeneric = "105" if simplegeneric == "sufentanil"
replace simplegeneric = "106" if simplegeneric == "suvorexant"
replace simplegeneric = "107" if simplegeneric == "tapentadol"
replace simplegeneric = "108" if simplegeneric == "temazepam"
replace simplegeneric = "109" if simplegeneric == "testosterone"
replace simplegeneric = "110" if simplegeneric == "tramadol"
replace simplegeneric = "111" if simplegeneric == "tramadol/acetaminophen"
replace simplegeneric = "112" if simplegeneric == "triazolam"
replace simplegeneric = "113" if simplegeneric == "unknownNDC"
replace simplegeneric = "114" if simplegeneric == "zaleplon"
replace simplegeneric = "115" if simplegeneric == "zolpidem"

clonevar schedule=simplegeneric

replace schedule = "4" if schedule == "1" replace schedule = "2" if schedule == "2" replace schedule = "2" if schedule == "3" replace schedule = "4" if schedule == "4" replace schedule = "4" if schedule == "5" replace schedule = "3" if schedule == "6" replace schedule = "3" if schedule == "7" replace schedule = "3" if schedule == "8" replace schedule = "3" if schedule == "9" replace schedule = "3" if schedule == "10" replace schedule = "3" if schedule == "12" replace schedule = "3" if schedule == "13" replace schedule = "3" if schedule == "14" replace schedule = "4" if schedule == "15" replace schedule = "4" if schedule == "16" replace schedule = "4" if schedule == "17" replace schedule = "4" if schedule == "18" replace schedule = "4" if schedule == "19" replace schedule = "4" if schedule == "20" replace schedule = "4" if schedule == "21" replace schedule = "4" if schedule == "22" replace schedule = "4" if schedule == "23" replace schedule = "4" if schedule == "24" replace schedule = "2" if schedule == "25" replace schedule = "2" if schedule == "26" replace schedule = "3" if schedule == "27" replace schedule = "5" if schedule == "28" replace schedule = "5" if schedule == "29" replace schedule = "5" if schedule == "30" replace schedule = "5" if schedule == "31" replace schedule = "5" if schedule == "32" replace schedule = "5" if schedule == "33" replace schedule = "5" if schedule == "34" replace schedule = "5" if schedule == "35" replace schedule = "0" if schedule == "36" replace schedule = "2" if schedule == "37" replace schedule = "2" if schedule == "38" replace schedule = "4" if schedule == "39" replace schedule = "4" if schedule == "40" replace schedule = "3" if schedule == "41" replace schedule = "5" if schedule == "42"

replace schedule = "3" if schedule == "43" replace schedule = "4" if schedule == "44" replace schedule = "3" if schedule == "45" replace schedule = "4" if schedule == "46" replace schedule = "5" if schedule == "47" replace schedule = "2" if schedule == "48" replace schedule = "3" if schedule == "49" replace schedule = "4" if schedule == "50" replace schedule = "2" if schedule == "51" replace schedule = "2" if schedule == "52" replace schedule = "2" if schedule == "53" replace schedule = "2" if schedule == "54" replace schedule = "2" if schedule == "55" replace schedule = "2" if schedule == "56" replace schedule = "2" if schedule == "57" replace schedule = "2" if schedule == "58" replace schedule = "2" if schedule == "59" replace schedule = "2" if schedule == "60" replace schedule = "4" if schedule == "61" replace schedule = "3" if schedule == "62" replace schedule = "5" if schedule == "63" replace schedule = "2" if schedule == "64" replace schedule = "2" if schedule == "65" replace schedule = "4" if schedule == "66" replace schedule = "4" if schedule == "67" replace schedule = "2" if schedule == "68" replace schedule = "4" if schedule == "69" replace schedule = "2" if schedule == "70" replace schedule = "2" if schedule == "71" replace schedule = "2" if schedule == "72" replace schedule = "3" if schedule == "73"

replace schedule = "4" if schedule == "74" replace schedule = "4" if schedule == "75" replace schedule = "2" if schedule == "76" replace schedule = "2" if schedule == "77" replace schedule = "2" if schedule == "78" replace schedule = "6" if schedule == "79" replace schedule = "2" if schedule == "80" replace schedule = "2" if schedule == "81" replace schedule = "3" if schedule == "82" replace schedule = "4" if schedule == "83" replace schedule = "2" if schedule == "84" replace schedule = "2" if schedule == "85" replace schedule = "2" if schedule == "86" replace schedule = "2" if schedule == "87" replace schedule = "3" if schedule == "88" replace schedule = "2" if schedule == "89" replace schedule = "3" if schedule == "90" replace schedule = "4" if schedule == "91" replace schedule = "4" if schedule == "92" replace schedule = "3" if schedule == "93" replace schedule = "3" if schedule == "94" replace schedule = "4" if schedule == "95" replace schedule = "4" if schedule == "96" replace schedule = "4" if schedule == "97" replace schedule = "4" if schedule == "98" replace schedule = "5" if schedule == "99" replace schedule = "6" if schedule == "100" replace schedule = "4" if schedule == "101" replace schedule = "2" if schedule == "102" replace schedule = "2" if schedule == "103" replace schedule = "3" if schedule == "104" replace schedule = "2" if schedule == "105" replace schedule = "4" if schedule == "106" replace schedule = "2" if schedule == "107" replace schedule = "4" if schedule == "108" replace schedule = "3" if schedule == "109" replace schedule = "4" if schedule == "110" replace schedule = "4" if schedule == "111" replace schedule = "4" if schedule == "112" replace schedule = "6" if schedule == "113" replace schedule = "4" if schedule == "114"

destring simplegeneric, generate(simplegenericnum)

define "alprazolam" 3 label Simplegeneric 1 2 "amphetamine" 5 "amphetamine/dextroamphetamine" 4 "armodafinil" "atropine/scopalamine/hyoscyamine/phenobarbital" 6 "benzphetamine" 7 "buprenorphine" 8 "buprenorphine/naloxone" "butabarbital" "butalbital/acetaminophen" 10 11 9 "butalbital/acetaminophen/caffeine" 12 "butalbital/acetaminophen/caffeine/codeine" 13 "butalbital/aspirin/caffeine" 14 "butalbital/aspirin/caffeine/codeine" 15 "butorphanol" 16 "carisoprodol" 17 "carisoprodol/aspirin" 18 "chloral hydrate" 19 "chlordiazepoxide" 20 "chlordiazepoxide/amitriptyline" "chlordiazepoxide/clidinium" "clobazam" 23 21 22 "clonazepam" 24 "clorazepate" 25 "cocaine" 26 "codeine" 27 "codeine/acetaminophen" 28 "codeine/brompheniramine/pseudoephedrine" 30 29 "codeine/chlorpheniramine" "codeine/chlorpheniramine/pseudoephedrine" 31 "codeine/dexchlorpheniramine/phenylephrine" 32 "codeine/guaifenesin" 33 "codeine/guaifenesin/pseudoephedrine" 34 "codeine/promethazine" 35 "codeine/promethazine/phenylephrine" 36 "compounded drug" 37 "dexmethylphenidate" 38 "dextroamphetamine" 39 "diazepam" 40 "diethylpropion" 41 "dihydrocodeine/aspirin/caffeine" 42 "diphenoxylate/atropine" 43 "dronabinol" 44 "estazolam" 45 "esteried estrogens/methyltestosterone" 46 "eszopiclone" 47 "ezogabine" 48 "fentanyl" 49 "fluoxymesterone" 50 "flurazepam" 51 "hydrocodone" 52 "hydrocodone/acetaminophen" 53 "hydrocodone/chlorpheniramine" 54 "hydrocodone/chlorpheniramine/pseudoephedrine" 55

"hydrocodone/guaifenesin" 56 "hydrocodone/guaifenesin/pseudoephedrine" 57 "hydrocodone/homatropine" 58 "hydrocodone/ibuprofen" 59 "hydrocodone/pseudoephedrine" 60 "hydromorphone" 61 "isometheptene/dichloralphenazone/acetaminophen" 62 "ketamine" 63 "lacosamide" 64 "levorphanol" 65 "lisdexamfetamine" 66 "lorazepam" 67 "lorcasesrin" 68 "meperidine" 69 "meprobamate" 70 "methadone" 71 "methamphetamine" 72 "methylphenidate" 73 "methyltestosterone" 74 "midazolam" 75 "modafinil" 76 "morphine" 77 "morphine/naltrexone" 78 "nabilone" 79 "non-controlled" 80 "opium" 81 "opium/belladonna" 82 "oxandrolone" 83 "oxazepam" 84 "oxycodone" 85 "oxycodone/acetaminophen" 86 "oxycodone/aspirin" 87 "oxycodone/ibuprofen" 88 "oxymetholone" 89 "oxymorphone" "paregoric" 91 90 "pentazocine/acetaminophen" 92 "pentazocine/naloxone" 93 "perampanel" 94 "phendimetrazine" 95 "phenobarbital" 96 "phenobarbital/belladonna" 97 "phentermine" 98 "phentermine/topiramate" 99 "pregabalin" 100 "pseudoephedrine" 101 "quazepam" 102 "remifentanil" 103 "secobarbital" 104 "sodium oxybate" 105 "sufentanil" 106 "suvorexant" 107 "tapentadol" 108 "temazepam" 109 "testosterone" 110 "tramadol" 111 "tramadol/acetaminophen" 112 "triazolam" 113 "unknownNDC" 114 "zaleplon" 115 "zolpidem" label variable simplegenericnum "Simple Generic"

label values simplegenericnum Simplegeneric

replace simplegenericnum=. if simplegenericnum==36 replace simplegenericnum=. if simplegenericnum==79 replace simplegenericnum=. if simplegenericnum==100 replace simplegenericnum=. if simplegenericnum==113

replace patzip="1" if patzip== "46711" replace patzip="1" if patzip== "46714" replace patzip="1" if patzip== "46733" replace patzip="1" if patzip== "46740" replace patzip="1" if patzip== "46772" replace patzip="1" if patzip== "46773"
replace patzip="2" if patzip== "46706" replace patzip="2" if patzip== "46723" replace patzip="2" if patzip== "46733" replace patzip="2" if patzip== "46741" replace patzip="2" if patzip== "46743" replace patzip="2" if patzip== "46745" replace patzip="2" if patzip== "46748" replace patzip="2" if patzip== "46765" replace patzip="2" if patzip== "46773" replace patzip="2" if patzip== "46774" replace patzip="2" if patzip== "46777" replace patzip="2" if patzip== "46783" replace patzip="2" if patzip== "46788" replace patzip="2" if patzip== "46797" replace patzip="2" if patzip== "46798" replace patzip="2" if patzip== "46802" replace patzip="2" if patzip== "46803" replace patzip="2" if patzip== "46804" replace patzip="2" if patzip== "46805" replace patzip="2" if patzip== "46806" replace patzip="2" if patzip== "46807" replace patzip="2" if patzip== "46808" replace patzip="2" if patzip== "46809" replace patzip="2" if patzip== "46814" replace patzip="2" if patzip== "46815" replace patzip="2" if patzip== "46816" replace patzip="2" if patzip== "46818" replace patzip="2" if patzip== "46819" replace patzip="2" if patzip== "46825" replace patzip="2" if patzip== "46835" replace patzip="2" if patzip== "46845"

replace patzip="3" if patzip== "46124" replace patzip="3" if patzip== "47201" replace patzip="3" if patzip== "47203" replace patzip="3" if patzip== "47232" replace patzip="3" if patzip== "47234" replace patzip="3" if patzip== "47236" replace patzip="3" if patzip== "47244" replace patzip="3" if patzip== "47246" replace patzip="3" if patzip== "47274" replace patzip="3" if patzip== "47283" replace patzip="3" if patzip== "47448" replace patzip="4" if patzip== "47917" replace patzip="4" if patzip== "47921" replace patzip="4" if patzip== "47942" replace patzip="4" if patzip== "47944" replace patzip="4" if patzip== "47948" replace patzip="4" if patzip== "47970" replace patzip="4" if patzip== "47971" replace patzip="4" if patzip== "47975" replace patzip="4" if patzip== "47977" replace patzip="5" if patzip== "46952" replace patzip="5" if patzip== "46989" replace patzip="5" if patzip== "47336" replace patzip="5" if patzip== "47338" replace patzip="5" if patzip== "47348" replace patzip="5" if patzip== "47359" replace patzip="5" if patzip== "47369" replace patzip="6" if patzip== "46032" replace patzip="6" if patzip== "46035" replace patzip="6" if patzip== "46050" replace patzip="6" if patzip== "46052"

replace patzip="6" if patzip== "46069" replace patzip="6" if patzip== "46071" replace patzip="6" if patzip== "46075" replace patzip="6" if patzip== "46077" replace patzip="6" if patzip== "46112" replace patzip="6" if patzip== "46147" replace patzip="6" if patzip== "46278" replace patzip="7" if patzip== "46160" replace patzip="7" if patzip== "46164" replace patzip="7" if patzip== "46181" replace patzip="7" if patzip== "47201" replace patzip="7" if patzip== "47235" replace patzip="7" if patzip== "47274" replace patzip="7" if patzip== "47401" replace patzip="7" if patzip== "47448" replace patzip="7" if patzip== "47468" replace patzip="8" if patzip== "46041" replace patzip="8" if patzip== "46065" replace patzip="8" if patzip== "46913" replace patzip="8" if patzip== "46917" replace patzip="8" if patzip== "46920" replace patzip="8" if patzip== "46923" replace patzip="8" if patzip== "46929" replace patzip="8" if patzip== "46947" replace patzip="8" if patzip== "46979" replace patzip="8" if patzip== "47920" replace patzip="8" if patzip== "47923" replace patzip="8" if patzip== "47926" replace patzip="8" if patzip== "47950" replace patzip="8" if patzip== "47960" replace patzip="9" if patzip== "46926"

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destring patzip, generate(patientzip)

replace patientzip=0 if patientzip>=100 & patientzip<10000

replace patientzip=0 if patientzip==99999

replace patientzip=94 if patientzip>=10000

label define UpdateZip 0 "Missing" 94 "Outside Indiana" 1 "Adams" 2 "Allen" 3 "Bartholomew" 4 "Benton" 5 "Blackford" 6 "Boone" 7 "Brown" 8 "Carroll" 9 "Cass" 10 "Clark" 11 "Clay" 12 "Clinton" 13 "Crawford" 14 "Daviess" 15 "Dearborn" 16 "Decatur" 17 "DeKalb" 18 "Delaware" 19 "Dubois" 20 "Elkhart" 21 "Fayette" 22 "Floyd" 23 "Fountain" 24 "Franklin" 25 "Fulton" 26 "Gibson" 27 "Grant" 28 "Greene" 29 "Hamilton" 30 "Hancock" 31 "Harrison" 32 "Hendricks" 33 "Henry" 34 "Howard" 35 "Huntington" 36 "Jackson" 37 "Jasper" 38 "Jay" 39 "Jefferson" 40 "Jennings" 41 "Johnson" 42 "Knox" 43 "Kosciusko" 44 "LaGrange" 45 "Lake" 46 "LaPorte" 47 "Lawrence" 48 "Madison" 49 "Marion" 50 "Marshall" 51 "Martin" 52 "Miami" 53 "Monroe" 54 "Montgomery" 55 "Morgan" 56 "Newton" 57 "Noble" 58 "Ohio" 59 "Orange" 60 "Owen" 61 "Parke" 62 "Perry" 63 "Pike" 64 "Porter" 65 "Posey" 66 "Pulaski" 67 "Putnam" 68 "Randolph" 69 "Ripley" 70 "Rush" 71 "St. Joseph" 72 "Scott" 73 "Shelby" 74 "Spencer" 75 "Starke" 76 "Steuben" 77 "Sullivan" 78 "Switzerland" 79 "Tippecanoe" 80 "Tipton" 81 "Union" 82 "Vanderburgh" 83 "Vermillion" 84 "Vigo" 85 "Wabash" 86 "Warren" 87 "Warrick" 88 "Washington" 89 "Wayne" 90 "Wells" 91 "White" 92 "Whitley"

label variable patientzip "Patient Zipcode"

label values patientzip ZipUpdate

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replace practzip="87" if practzip== "47601" replace practzip="87" if practzip== "47610" replace practzip="87" if practzip== "47613" replace practzip="87" if practzip== "47619" replace practzip="87" if practzip== "47630" replace practzip="87" if practzip== "47637" replace practzip="88" if practzip== "47106" replace practzip="88" if practzip== "47108" replace practzip="88" if practzip== "47115" replace practzip="88" if practzip== "47120" replace practzip="88" if practzip== "47125" replace practzip="88" if practzip== "47126" replace practzip="88" if practzip== "47145" replace practzip="88" if practzip== "47164" replace practzip="88" if practzip== "47165" replace practzip="88" if practzip== "47167" replace practzip="88" if practzip== "47170" replace practzip="88" if practzip== "47260" replace practzip="88" if practzip== "47281" replace practzip="89" if practzip== "47327" replace practzip="89" if practzip== "47330" replace practzip="89" if practzip== "47339" replace practzip="89" if practzip== "47341" replace practzip="89" if practzip== "47345" replace practzip="89" if practzip== "47346" replace practzip="89" if practzip== "47354" replace practzip="89" if practzip== "47357" replace practzip="89" if practzip== "47358" replace practzip="89" if practzip== "47360" replace practzip="89" if practzip== "47374" replace practzip="89" if practzip== "47392"

replace practzip="89" if practzip== "47393" replace practzip="90" if practzip== "46714" replace practzip="90" if practzip== "46731" replace practzip="90" if practzip== "46740" replace practzip="90" if practzip== "46750" replace practzip="90" if practzip== "46759" replace practzip="90" if practzip== "46766" replace practzip="90" if practzip== "46770" replace practzip="90" if practzip== "46777" replace practzip="90" if practzip== "46781" replace practzip="90" if practzip== "46783" replace practzip="90" if practzip== "46791" replace practzip="90" if practzip== "46792" replace practzip="90" if practzip== "46798" replace practzip="90" if practzip== "46952" replace practzip="90" if practzip== "46991" replace practzip="90" if practzip== "47359" replace practzip="91" if practzip== "46978" replace practzip="91" if practzip== "46985" replace practzip="91" if practzip== "46996" replace practzip="91" if practzip== "47906" replace practzip="91" if practzip== "47920" replace practzip="91" if practzip== "47923" replace practzip="91" if practzip== "47926" replace practzip="91" if practzip== "47929" replace practzip="91" if practzip== "47950" replace practzip="91" if practzip== "47959" replace practzip="91" if practzip== "47960" replace practzip="91" if practzip== "47970" replace practzip="91" if practzip== "47978" replace practzip="91" if practzip== "47980"

replace practzip="91" if practzip== "47995" replace practzip="92" if practzip== "46562" replace practzip="92" if practzip== "46723" replace practzip="92" if practzip== "46764" replace practzip="92" if practzip== "46764" replace practzip="92" if practzip== "46783" replace practzip="92" if practzip== "46787" replace practzip="92" if practzip== "46818" replace practzip="92" if practzip== "46962"

destring practzip, generate(practitionerzip) replace practitionerzip=0 if practitionerzip>=100 & practitionerzip<10000 replace practitionerzip=0 if practitionerzip==99999 replace practitionerzip=94 if practitioenrzip>=10000 label variable practitionerzip "Practitioner Zipcode" label values practitionerzip ZipUpdate

replace pharmzip="46227" if pharmnabp=="01cd74b4bd120a279c4628c64e577370" replace pharmzip="47170" if pharmnabp=="043314b2f927cb43eb62301a24045991" replace pharmzip="46140" if pharmnabp=="06e06a63600a4b5aa5e780210f5fa2ba" replace pharmzip="46526" if pharmnabp=="0a72001716ab2424fc06e11cb7210e76" replace pharmzip="46254" if pharmnabp=="0c219b57d8aca296dcce2f69c3554dd1" replace pharmzip="47715" if pharmnabp=="0c429802d44f04f54ec3376e37b268fe" replace pharmzip="68138" if pharmnabp=="0dd21deda886bcdd0ff5222c1d3f8dd0" replace pharmzip="46032" if pharmnabp=="0ef4244822f7386bba838d85e9026bf6" replace pharmzip="85258" if pharmnabp=="0f8c77d6e71e74c8f7944ba08a4bcf1f" replace pharmzip="46601" if pharmnabp=="13d8a3ce2f356207d2d69fb7adb4ced7"
replace pharmzip="47303" if pharmnabp=="1602b29957943e94cd9372cb00ec41be" replace pharmzip="7481" if pharmnabp=="17cbd92eeb9c9d9fa6b6dac695bb2175" replace pharmzip="47362" if pharmnabp=="1d700afeb5ee5c04b8b3fce23d0fb88e" replace pharmzip="47025" if pharmnabp=="1def652390fa6eb17fcf6ea6558f615c" replace pharmzip="8054" if pharmnabp=="223e00f0f7af6a4779d7f20ae8a55537" replace pharmzip="47130" if pharmnabp=="24417c6c48ce9d11d6ca23eba6e894f3" replace pharmzip="47562" if pharmnabp=="25733f87f4d43ad57db5c20e9fdfba1b" replace pharmzip="46036" if pharmnabp=="2a5c79503850240b4a17cbfaa055e7c8" replace pharmzip="47712" if pharmnabp=="2b545b364e6ed621937fc33dda169fcd" replace pharmzip="46383" if pharmnabp=="3160729d7b18088801ed3827e857fcf0" replace pharmzip="47205" if pharmnabp=="32066175ae318504b8eb36b76805076b" replace pharmzip="46176" if pharmnabp=="35ef02a467045c6cdde63d19f0096003" replace pharmzip="47438" if pharmnabp=="36a3e197ea822bd7e3b18cf5209a4533" replace pharmzip="60304" if pharmnabp=="36cbe5bcf56681e96dc5f0d7e37c755d" replace pharmzip="46241" if pharmnabp=="39fba3fbdcd712173a18cc3aeb436801" replace pharmzip="63134" if pharmnabp=="3c3f840b35537d4be912c128e01d377d" replace pharmzip="47834" if pharmnabp=="41b2db8a5d7bab1a324133e318485e2d" replace pharmzip="46952" if pharmnabp=="41eab9b4169cf5432558d70e088212c1" replace pharmzip="46304" if pharmnabp=="4378eb184deddb052ad6dadcbf8f96e5" replace pharmzip="46052" if pharmnabp=="45ce870c2e531f3a3f87fef205ccc297" replace pharmzip="47102" if pharmnabp=="45e1b941f1b5156c6079027701eca693" replace pharmzip="47882" if pharmnabp=="4c6eda33835ccdd21a2b2662216f68a3" replace pharmzip="46410" if pharmnabp=="4ca8b32907871fed9834ad9e205d7804" replace pharmzip="46635" if pharmnabp=="4d6a56533a267478066767f7fb1148d6" replace pharmzip="39157" if pharmnabp=="508c1443898cc9a55810a84283a04bee" replace pharmzip="46319" if pharmnabp=="576571de6cf39c711e7c7a4479f04309" replace pharmzip="60106" if pharmnabp=="57c6df511d711190a1595f732d89a3a9" replace pharmzip="46410" if pharmnabp=="59ee8fc6fcf2f0bf70c1a23947fea23f" replace pharmzip="47546" if pharmnabp=="5b560243c1b8968d7fd257911ae45dd5" replace pharmzip="46516" if pharmnabp=="5bd143abf17b407a6e132ab3ee2c881a" replace pharmzip="46383" if pharmnabp=="5cf7c1e71f7045880deed372afdb04e4"

replace pharmzip="47670" if pharmnabp=="5fb3881370d08d1cdf6de734c8308c4f" replace pharmzip="33025" if pharmnabp=="6058706a3bf8d881bb99899127707ab5" replace pharmzip="46202" if pharmnabp=="6688ae46da6750cd6f24c66ec394b245" replace pharmzip="46580" if pharmnabp=="68179ad407143d1add2d797e2e10435b" replace pharmzip="47129" if pharmnabp=="6cae349755a5ee4a5c11de4d9a58e38d" replace pharmzip="46814" if pharmnabp=="6d192bc134b45045dc1f49fdc5b6c578" replace pharmzip="40511" if pharmnabp=="6dcc1992386b302ade7387de9b3dbf63" replace pharmzip="47304" if pharmnabp=="75ae5ca1e62f61ac97016fcd2ec2cb7c" replace pharmzip="47119" if pharmnabp=="79fcb449ffbcecd9977f746b27cdb99f" replace pharmzip="46307" if pharmnabp=="7c41e3f2bbd49763fe2184373dd04865" replace pharmzip="80228" if pharmnabp=="82fb96f986826118bfc4db39f7979128" replace pharmzip="2451" if pharmnabp=="8641b108374fbcd718ef5b443b222f16" replace pharmzip="47150" if pharmnabp=="878671971f97a22e746752534d4b823a" replace pharmzip="46254" if pharmnabp=="8981ae37453dd414b9f7399c19254e56" replace pharmzip="46901" if pharmnabp=="92a018f4fa1d825efccd6a73c4df9f9a" replace pharmzip="47501" if pharmnabp=="94d4460afe7d30e8ee377c33b32b41ce" replace pharmzip="47807" if pharmnabp=="9cde62185a7335b5416762c092c2b069" replace pharmzip="46226" if pharmnabp=="9dff3599afdd13db176ba7ab26cd98d5" replace pharmzip="78247" if pharmnabp=="9e5653de4ad891682c3d9298a3465ea2" replace pharmzip="46256" if pharmnabp=="9e831dad729ea2386f5194327bb0299a" replace pharmzip="89119" if pharmnabp=="9ef4191603c619e3c0adf25450ad8ce6" replace pharmzip="47872" if pharmnabp=="a5cc56f04c21ed420dbc500cd14d8890" replace pharmzip="46402" if pharmnabp=="a61fe1f69f3a33e639f84939eb2bfec4" replace pharmzip="46052" if pharmnabp=="a765ed5b7b7804d34c6adaa7787e2373" replace pharmzip="47240" if pharmnabp=="a777e43e27a70a336be37c0843d0fac4" replace pharmzip="92010" if pharmnabp=="aa05b33268933c288a3dfb65bb8c1ebc" replace pharmzip="19061" if pharmnabp=="ab908193a80aa142a07a5e9df3cbc655" replace pharmzip="30152" if pharmnabp=="ad1c87ee452311e0093d0979ad6007d3" replace pharmzip="46312" if pharmnabp=="ae211cddb91cac25bc86c0de1e5b4451" replace pharmzip="45846" if pharmnabp=="ae606c9087921dc16a4c983b7d7e3a6b" replace pharmzip="47715" if pharmnabp=="af567d33a817aa25f8ee31566014f75c"

replace pharmzip="46307" if pharmnabp=="b035efbd80da28e0c56ed1eea7d944a8" replace pharmzip="92101" if pharmnabp=="b060afd7097952987547cab0aae07dd3" replace pharmzip="46202" if pharmnabp=="b6ceea75f2e9bbc970f7d6aa5b87897a" replace pharmzip="53202" if pharmnabp=="b7c8d21ff8b5668c535b64140704a94f" replace pharmzip="47802" if pharmnabp=="bc10abe10d90930a79c2f25c4ed1b867" replace pharmzip="87125" if pharmnabp=="be010da4e2437cd35ed848c95b563cbd" replace pharmzip="46235" if pharmnabp=="c05aed9f59463bdc150586550ca2d38d" replace pharmzip="48150" if pharmnabp=="c29ef47ba90d531a1e5083f862ec18db" replace pharmzip="47710" if pharmnabp=="cc716cc7090dc7d828ca0d73217a7425" replace pharmzip="46237" if pharmnabp=="d102d98a493321cf4e96742148b7c909" replace pharmzip="68154" if pharmnabp=="d2eaef90916774e00e135d9426a16787" replace pharmzip="47250" if pharmnabp=="d31a80711632b0a90e4e5d5d29643942" replace pharmzip="46545" if pharmnabp=="d3b9f5cce2bae6fa34d92d4bed3da764" replace pharmzip="46792" if pharmnabp=="d5ac8a33c2a2566b40100f589a25cb44" replace pharmzip="63121" if pharmnabp=="d6890f78e1f814697cf5fc2259996484" replace pharmzip="46514" if pharmnabp=="db26be0ae012fc4176c39e71cd27e078" replace pharmzip="47803" if pharmnabp=="dbf1aff7bf1c0d8403d93ac69b07d227" replace pharmzip="46135" if pharmnabp=="e39161e88ed9020a2a6e1080367b1cd1" replace pharmzip="47374" if pharmnabp=="eb919d3348841ce451341935a11037a8" replace pharmzip="47331" if pharmnabp=="ed2880d803a50d89eeae8a3c0efbadbd" replace pharmzip="60612" if pharmnabp=="f38a2da4d7d9bbd139e48fd7a74a3b81" replace pharmzip="46268" if pharmnabp=="f647ae03b1a13785d5483fd6ed11ef65" replace pharmzip="47591" if pharmnabp=="f793cfd33a8dddf5d35528e499430544" replace pharmzip="37416" if pharmnabp=="fb8cbf6e0e933e9bfc5a743d9b704581" replace pharmzip="46208" if pharmnabp=="fbb55f0a9bcb06c6d12e53ef7e5632fc" replace pharmzip="46383" if pharmnabp=="fc3e728d8be449b3a8bbe6974a21cf60"

replace pharmzip="1" if pharmzip== "46711" replace pharmzip="1" if pharmzip== "46714" replace pharmzip="1" if pharmzip== "46733"

replace pharmzip="1" if pharmzip== "46740" replace pharmzip="1" if pharmzip== "46772" replace pharmzip="1" if pharmzip== "46773" replace pharmzip="1" if pharmzip== "46777" replace pharmzip="2" if pharmzip== "46706" replace pharmzip="2" if pharmzip== "46723" replace pharmzip="2" if pharmzip== "46733" replace pharmzip="2" if pharmzip== "46741" replace pharmzip="2" if pharmzip== "46743" replace pharmzip="2" if pharmzip== "46745" replace pharmzip="2" if pharmzip== "46748" replace pharmzip="2" if pharmzip== "46765" replace pharmzip="2" if pharmzip== "46773" replace pharmzip="2" if pharmzip== "46774" replace pharmzip="2" if pharmzip== "46777" replace pharmzip="2" if pharmzip== "46783" replace pharmzip="2" if pharmzip== "46788" replace pharmzip="2" if pharmzip== "46797" replace pharmzip="2" if pharmzip== "46798" replace pharmzip="2" if pharmzip== "46802" replace pharmzip="2" if pharmzip== "46803" replace pharmzip="2" if pharmzip== "46804" replace pharmzip="2" if pharmzip== "46805" replace pharmzip="2" if pharmzip== "46806" replace pharmzip="2" if pharmzip== "46807" replace pharmzip="2" if pharmzip== "46808" replace pharmzip="2" if pharmzip== "46809" replace pharmzip="2" if pharmzip== "46814" replace pharmzip="2" if pharmzip== "46815" replace pharmzip="2" if pharmzip== "46816" replace pharmzip="2" if pharmzip== "46818"

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destring pharmzip, generate(pharmacyzip) replace pharmacyzip=0 if pharmacyzip>=100 & pharmacyzip<10000 replace pharmacyzip=0 if pharmacyzip==99999 replace pharmacyzip=94 if pharmacyzip>=10000 label variable pharmacyzip "Pharmacy Zipcode" label values pharmacyzip ZipUpdate

replace gender="0" if gender=="M" replace gender="1" if gender=="F" destring gender, generate(gendernum) label define Gender 0 "Male" 1 "Female" label variable gendernum "Gender" label values gendernum Gender

\*to get final dataset\*
drop if classnum==.
drop if patientzip==94 & pharmacyzip==94
\*permanently removed from specificgeneric dataset\*

\*to get appropriate average ages without outliers\* drop if ageatfill>108 & year==2014 drop if ageatfill>109 & year==2015 drop if ageatfill>110 & year==2016

\*for total number of patients\* preserve collapse (sum) prescriptiontotal, by (hashedpatients) summarize prescriptiontotal duplicates report hashedpatients restore preserve keep if year==2014 collapse (sum) prescriptiontotal, by (hashedpatients) duplicates report hashedpatients summarize prescriptiontotal restore preserve keep if year==2015 collapse (sum) prescriptiontotal, by (hashedpatients) duplicates report hashedpatients summarize prescriptiontotal restore preserve keep if year==2016 collapse (sum) prescriptiontotal, by (hashedpatients) duplicates report hashedpatients summarize prescriptiontotal restore \*for gender\* preserve

collapse (sum) prescriptiontotal, by (hashedpatients gendernum) duplicates report hashedpatients duplicates drop hashedpatients, force tab gendernum restore preserve keep if year==2014 collapse (sum) prescriptiontotal, by (hashedpatients gendernum) duplicates drop hashedpatients, force duplicates report hashedpatients tab gendernum restore preserve keep if year==2015 collapse (sum) prescriptiontotal, by (hashedpatients gendernum) duplicates drop hashedpatients, force tab gendernum restore preserve keep if year==2016 collapse (sum) prescriptiontotal, by (hashedpatients gendernum) duplicates drop hashedpatients, force duplicates report hashedpatients tab gendernum restore \*for age\* preserve collapse (sum) prescriptiontotal, by (hashedpatients ageatfill year) summarize age drop if ageatfill>108 & year==2014 drop if ageatfill>109 & year==2015

drop if ageatfill>110 & year=2016 summarize age collapse (sum) prescriptiontotal, by (hashedpatients ageatfill) summarize age restore preserve keep if year==2014 collapse (sum) prescriptiontotal, by (hashedpatients ageatfill) drop if ageatfill>108 duplicates report hashedpatients duplicates drop hashedpatients, force duplicates report hashedpatients summarize age restore preserve keep if year==2015 collapse (sum) prescriptiontotal, by (hashedpatients ageatfill) drop if ageatfill>109 duplicates drop hashedpatients, force duplicates report hashedpatients summarize age restore preserve keep if year==2016 collapse (sum) prescriptiontotal, by (hashedpatients ageatfill) drop if ageatfill>110 duplicates drop hashedpatients, force duplicates report hashedpatients summarize age restore \*drug class stuff\*

preserve tab classnum tab classnum year restore preserve keep if year==2014 tab classnum restore preserve keep if year==2015 tab classnum restore preserve keep if year==2016 tab classnum restore use "C:\Users\villa\Documents\Dissertation\dispensationsspecificgeneric.dta" preserve collapse (sum) prescriptiontotal, by (practdea practitioner) duplicates drop practdea, force tab practitioner collapse (sum) prescriptiontotal, by (practdea) summarize prescriptiontotal duplicates report practdea restore preserve keep if year==2014 collapse (sum) prescriptiontotal, by (practdea practitioner) duplicates drop practdea, force tab practitioner collapse (sum) prescriptiontotal, by (practdea)

duplicates report practdea summarize prescriptiontotal restore preserve keep if year==2015 collapse (sum) prescriptiontotal, by (practdea practitioner) duplicates drop practdea, force tab practitioner collapse (sum) prescriptiontotal, by (practdea) duplicates report practdea summarize prescriptiontotal restore preserve keep if year==2016 collapse (sum) prescriptiontotal, by (practdea practitioner) duplicates drop practdea, force tab practitioner collapse (sum) prescriptiontotal, by (practdea) summarize prescriptiontotal restore preserve collapse (sum) prescriptiontotal qty dayssupply, by (year) summarize qty dayssupply year collapse (sum) prescriptiontotal qty dayssupply summarize qty dayssupply year restore \*benzodiazepines and other drug classes\*

use "C:\Users\villa\Documents\Dissertation\benzodiazepine.dta" keep if classnum== \*replace with drug class\* keep if simplegenericnum==\*replace with simple generic\* tab simplegenericnum tab simplegenericnum year preserve collapse (sum) prescriptiontotal, by (hashedpatients) summarize prescriptiontotal duplicates report hashedpatients restore preserve keep if year==2014 collapse (sum) prescriptiontotal, by (hashedpatients) duplicates report hashedpatients summarize prescriptiontotal restore preserve keep if year==2015 collapse (sum) prescriptiontotal, by (hashedpatients) duplicates report hashedpatients summarize prescriptiontotal restore preserve keep if year==2016 collapse (sum) prescriptiontotal, by (hashedpatients) duplicates report hashedpatients summarize prescriptiontotal restore \*for gender\* preserve collapse (sum) prescriptiontotal, by (hashedpatients gendernum) duplicates report hashedpatients duplicates drop hashedpatients, force tab gendernum

restore preserve keep if year==2014 collapse (sum) prescriptiontotal, by (hashedpatients gendernum) duplicates drop hashedpatients, force duplicates report hashedpatients tab gendernum restore preserve keep if year==2015 collapse (sum) prescriptiontotal, by (hashedpatients gendernum) duplicates drop hashedpatients, force tab gendernum restore preserve keep if year==2016 collapse (sum) prescriptiontotal, by (hashedpatients gendernum) duplicates drop hashedpatients, force duplicates report hashedpatients tab gendernum restore \*for age\* preserve collapse (sum) prescriptiontotal, by (hashedpatients ageatfill year) summarize age drop if ageatfill>108 & year==2014 drop if ageatfill>109 & year==2015 drop if ageatfill>110 & year==2016 summarize age collapse (sum) prescriptiontotal, by (hashedpatients ageatfill) duplicates report hashedpatients

duplicates drop hashedpatients, force summarize age restore preserve keep if year==2014 collapse (sum) prescriptiontotal, by (hashedpatients ageatfill) drop if ageatfill>108 duplicates report hashedpatients duplicates drop hashedpatients, force duplicates report hashedpatients summarize age restore preserve keep if year==2015 collapse (sum) prescriptiontotal, by (hashedpatients ageatfill) drop if ageatfill>109 duplicates drop hashedpatients, force duplicates report hashedpatients summarize age restore preserve keep if year==2016 collapse (sum) prescriptiontotal, by (hashedpatients ageatfill) drop if ageatfill>110 duplicates drop hashedpatients, force duplicates report hashedpatients summarize age restore preserve collapse (sum) prescriptiontotal, by (practdea practitioner) duplicates drop practdea, force

tab practitioner collapse (sum) prescriptiontotal, by (practdea) summarize prescriptiontotal duplicates report practdea restore preserve keep if year==2014 collapse (sum) prescriptiontotal, by (practdea practitioner) duplicates drop practdea, force tab practitioner collapse (sum) prescriptiontotal, by (practdea) duplicates report practdea summarize prescriptiontotal restore preserve keep if year==2015 collapse (sum) prescriptiontotal, by (practdea practitioner) duplicates drop practdea, force tab practitioner collapse (sum) prescriptiontotal, by (practdea) duplicates report practdea summarize prescriptiontotal restore preserve keep if year==2016 collapse (sum) prescriptiontotal, by (practdea practitioner) duplicates drop practdea, force tab practitioner collapse (sum) prescriptiontotal, by (practdea) summarize prescriptiontotal restore

```
preserve
collapse (sum) prescriptiontotal qty dayssupply, by (year)
collapse (sum) prescriptiontotal qty dayssupply
restore
*repeat above steps (from keep if classnum==1) for all drug classes and individual drugs*
*for ITSA analysis – repeat for whole population and per class*
generate month=month(datefilled)
generate month1=ym(year,month)
format month1 %tm
drop month
rename month1 month
collapse (sum) prescriptiontotal qty dayssupply, by (simplegenericnum month)
save "C:\Users\villa\Documents\Dissertation\musclerelaxantsmonth.dta"
preserve
collapse (sum) prescriptiontotal qty dayssupply, by (month)
tsset month
itsa prescriptiontotal, trperiod(657 672) lag(1) fig posttrend
actest, lags (12)
*replace lag in itsa step based on lag results for actest*
restore
preserve
collapse (sum) prescriptiontotal qty dayssupply, by (month)
tsset month
itsa qty, trperiod(657 672) lag (1) fig posttrend
actest, lags (12)
*replace lag in itsa step based on lag results for actest*
restore
preserve
collapse (sum) prescriptiontotal qty dayssupply, by (month)
tsset month
itsa dayssupply, trperiod(657 672) lag (1) fig posttrend
```

actest, lags (12) \*replace lag in itsa step based on lag results for actest\* restore \*for practitioner analysis\* preserve regress requesttotal month twoway (scatter requesttotal month) (lfit requesttotal month) tsset month itsa requesttotal, trperiod(672) lag(4) fig posttrend actest, lags (12) restore preserve keep month apn \*replace apn with each practitioner\* regress apn month twoway (scatter apn month) (lfit apn month) tsset month itsa apn, trperiod(672) lag(4) fig posttrend actest, lags (12) \*replace lag in itsa step based on lag results for actest\* restore