Multiple Medications and Vehicle Crashes: Analysis of Databases

Final Report

NHTSA
www.nhtsa.gov

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT HS 810 858		

4. Title and Subtitle	5. Report Date
Multiple Medications and Vehicle Crashes: Analysis of Databases	May 2008
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
Aida A. LeRoy, Pharm.D. and M. Lee Morse	

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Iatrogen, LLC (under contract to Orchid Biosciences) **World Gate IV, Suite 500** **12801 World Gate Drive** **Herndon, VA 20170**	11. Contract or Grant No. DTNH22-02-C-05075

12. Sponsoring Agency Name and Address'	13. Type of Report and Period Covered
U.S. Department of Transportation National Highway Traffic Safety Administration 1200 New Jersey Avenue SE. Washington, D.C. 20590	Final Report Period: Sept 2002 – Sept 2005
	14. Sponsoring Agency Code

15. Supplementary Notes

6. Abstract

Introduction: The number of older adults is expected to increase dramatically in the next 25 years and with it, an increase in both the number of older drivers and the amount of driving within this age group. With the aging of the American population, concern arises regarding potential increases in rates of crash involvement and injury. Age-related factors may impair driving ability, such as age-related decrements in cognitive and physical functioning, increased prevalence of medical conditions or age-related medical conditions, and increased use of multiple medications. Using population databases, this study analyzed the association of the impairing effects of multiple medication use, drug interactions, and drug disease interactions on motor vehicle crashes (MVC) in individuals age 50 years and greater. ***Methodology:*** The main objectives of this study were to determine the relative frequency of various combinations of medications used by those who have experienced a MVC and those who have not by analyzing proprietary and non-proprietary databases; and to conduct a case-control study of possible associations between the use of medications (and combinations thereof) and MVCs amongst older drivers. ***Results:*** The results of the study revealed an association between the kinds and number of medications used by older adults and the risk of involvement in a MVC. The study showed that the drugs known to have an impairing effect on the driving ability of older drivers were the most commonly used by older adults involved in MVCs. The Case Control Analysis suggested an association between MVCs and many potentially driver impairing (PDI) medications, PDI diseases, and various combinations of drugs and diseases. Thirty-five of the ninety PDI drug classes had odds ratios over 1.2 ($p \leq .05$). Many of the medication classes with the highest odds ratios were classes that have been reported to be especially problematic in older patients. Seventy-nine of 200 PDI disease classes had statistically significant odds ratios over 1.4. Study subjects taking any medication were found to be 1.43 times more likely to be involved in a MVC than older adults taking no medications. Compared to patients taking no PDI medications, those taking one or two PDI medications were 1.29 times more likely to be involved in a MVC and that risk increased to 1.87 more likely in patients taking three or more PDI medications. The risk for patients with one or two PDI diseases was 1.49 times greater than that for older adults without any PDI diseases. Three or more PDI diseases further increased the risk for MVCs to 2.20 times that of older adults with no PDI diseases. Drug interactions were also associated with a statistically significant increased risk of MVCs (odds ratio of 1.47 for 1-2 drug interactions and 1.92 for patients with 3 or more drug interactions). The risk for MVCs among study subjects with at least one drug-disease conflict was 1.2 times that for older adults without any drug-disease conflicts. ***Discussion/Conclusions:*** The results of this analysis suggest that both the kinds and number of medication exposures, and the characteristics of diseases/disorders present among study subjects may predict an increase in risk for MVCs among older adults. By demonstrating a potential link between multiple drug therapies and MVCs, this study serves to highlight the need for a more thorough examination of the relationships between drugs, diseases and the older driver. This study suggests the need for further research to elucidate the complex interplay of factors affecting aging adults and driving ability. The results of this research support the intentions of NHTSA to promote the development of educational programs to increase awareness among health care providers and older drivers regarding the potential driver impairing effects of pharmaceutical use.

17. Key Word	18. Distribution Statement
older drivers, drugs; medications; driving; crashes; polypharmacy; drug-drug interactions; drug-disease conflicts	

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified		

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

Table of Contents

FIGURES

TABLES

APPENDICES

Executive Summary

Introduction

The number of older adults is expected to increase dramatically in the next 25 years. By 2030, over 70 million Americans will be over age 65. This older population will be more mobile than ever. There has been substantial growth in numbers of licensed drivers, and this trend is expected to continue. It is anticipated that there will be an increase in both the number of older drivers and the amount of driving within this age group.

Research results indicate that older adults have a higher rate of fatality and injury in motor vehicle crashes per mile driven than any other age group except for teenagers. With the aging of the American population, concern arises regarding potential increases in rates of crash involvement and injury. In order to devise strategies to address these concerns, it is useful to consider which factors relate to crash involvement among older adults.

Driving is a complex behavior requiring sequences of activities that occur in an intricate and variable environment. Impairments in visual, cognitive, and motor function may affect the driver's ability to drive safely. Many age-related factors may impair driving ability, such as age-related decrements in cognitive and physical functioning, increased prevalence of medical conditions or age-related medical conditions, and increased use of multiple medications.

Because impaired driving is a major cause of motor vehicle crashes (MVC) and injuries, the National Highway Traffic Safety Administration (NHTSA) has long studied the impact of alcohol and illicit drug use on driving ability. NHTSA has also conducted studies to examine the impact of certain legal drugs such as antihistamines, benzodiazepines, and narcotic analgesics. Prior studies (Foley, 1995, Leveille, 1994, Ray, 1992, Hemmelgam, 1997, Hu, 1998, Koepsell, 1994, Sims, 2001, Carr, 2000, Lyman, 2001, Masa, 2000, Edwards, 1995, and McGwin, 2000) addressing drug-crash problems have been limited to selected drugs (typically drugs of abuse or antihistamines, antidepressants, benzodiazepines, or narcotic analgesics) or selected diseases (Alzheimer's, diabetes, epilepsy).

This is the first study to consider the association of the impairing effects of multiple medication use, drug/drug interactions, and drug/disease interactions on motor vehicle crashes in individuals age 50 years and greater. An age cut-off of 50 years was selected to maximize sample size and because age-related changes and corresponding increased medication use begin to occur at this age. Individuals start to receive treatment for high blood pressure, osteoarthritis, hypercholesterolemia, and adult-onset diabetes. Multiple medications (prescription and non-prescription) begin to be used to treat or prevent emergence of age-related conditions.

The major barrier to conducting studies of this nature in the past was costly data collection methods, requiring analysis of blood, saliva, sweat, hair, or urine, police crash reports, arrests, medical examiner reports, hospital reports, self-reported driver surveys, and simulator observations. This study overcomes these constraints by using population databases (the publicly available National Ambulatory Medical Care Survey [NAMCS] and a proprietary patient-level medical insurance claims database).

Methodology

We studied two databases: The NAMCS database and a proprietary insurance claims database (PharMetrics). NAMCS provides statistics on demographic characteristics of patients and services provided, including information on diagnostic procedures, patient management, and planned future treatment. The limitation of this database is that one is not able to link, longitudinally, the medical and pharmaceutical data on a patient-specific basis. We used NAMCS survey data from 1998, 1999, and 2000. There was a total of 71,468 physician/patient visits contained in those three year surveys.

The PharMetrics database is an anonymized, proprietary patient-level medical insurance claims database containing longitudinal medical and pharmaceutical data for thousands of individuals with motor vehicle crash diagnoses and the medications and diseases in a proximal time period to the crash. The PharMetrics Patient-Level Database includes patients enrolled during the time period from January 1998 to March 2002. There were 81,408 cases (patients with a diagnosis code for motor vehicle crashes) and 244,224 age-, sex-, and date-matched controls. Hundreds of drugs and diseases and combinations of drugs and diseases can be studied using a case-control matched pair design or logistic regression analysis of possible associations of medication use among older adults and motor vehicle crashes with this database.

The main objectives of this study were to determine the relative frequency of various combinations of medications used by those who have experienced MVCs and those who have not by analyzing proprietary and non-proprietary databases; and to conduct a case-control study and regression analysis of possible associations between the use of medications (and combinations thereof) and MVCs amongst older drivers.

Results

The results of the study revealed an association between the kinds and number of medications older adults take and the risk of having MVCs. The study suggested that the drugs considered to have an impairing effect on the driving ability of older drivers were the most commonly used by older adults involved in MVCs. Thirty-six percent of the NAMCS survey group over age 50 mentioned use of two or more drugs. More than 58 percent of the over age 50 group mentioned use of one or more potentially driver impairing (PDI) medications. Fourteen percent of the drug mentions involved drug-drug interactions.

The descriptive analysis of the proprietary database identified higher rates of drug use in general than the NAMCS results. Fifty-eight percent of the older adult study subjects received two or more medications. Approximately 64 percent of the older adult study subjects received PDI medications. Nearly 51 percent of the older adult study subjects suffered from potentially driver impairing conditions. We identified 24 percent of the older adult study subjects as concomitantly using medications that are known to interact. Eight percent of the older adult study subjects appeared to be using medicines that presented therapeutic conflicts with diseases/conditions for which they were being treated.

The Case Control Analysis suggested an association between motor vehicle crashes and many potentially driver impairing medications, potentially driver impairing diseases, and various combinations of drugs and diseases. Thirty-five of the 90 potentially driver impairing drug classes had odds ratios over 1.2 ($p \leq .05$). Seven of the 15 medication classes with the highest odds ratios are classes that have been reported to be especially problematic in older patients.

Seventy-nine of 200 driver impairing disease classes had statistically significant odds ratios over 1.4. Our results supported previous studies that linked NSAIDS, ACE Inhibitors, anticoagulants, antidepressants, and benzodiazepine use with motor vehicle crashes. We also corroborated previous studies that linked depression, alcoholism, arthritis, history of falls, back pain, diabetes, heart disease, stroke, arrhythmias, coronary artery disease, and sleep apnea with motor vehicle crashes. Most of the drug interaction pairings had higher odds ratios for MVCs than when the drugs were used alone. Though we observed some drug-disease conflicts with statistically significant elevated odds ratios, they involved such small numbers of cases and controls that it is difficult to make any conclusions about these increases in risk.

The number of total medications, PDI medications, PDI diseases, drug-drug interactions, and drug-disease conflicts were used as categorical variables in a regression analysis examining their role in MVCs. Study subjects taking one or more medications were found to be 1.43 times more likely to be involved in MVCs than older adults taking no medications. Compared to patients taking no PDI medications, those taking one or two PDI medications were 1.29 times more likely to be involved in MVCs and that risk increases to 1.87 among patients taking three or more PDI medications.

The risk for patients with one or two PDI diseases was 1.49 times greater than that for older adults without any PDI diseases. Three or more PDI conditions further increased the risk for MVCs to 2.20 times that of older adults with no PDI diseases. Drug interactions were also associated with a statistically significant increased risk of MVCs (odds ratio of 1.47 for 1-2 drug interactions and 1.92 with patients with 3 or more drug interactions). The risk for MVCs among study subjects with at least one drug-disease conflict was 1.2 times that for older adults without any drug-disease conflicts.

Discussion/Conclusions

The results of this analysis suggest that both the kinds and number of medication exposures, and the characteristics of diseases/disorders present among study subjects may predict an increase in risk for MVCs among older adults.

As the population continues to age, an increasingly complex interplay of factors will impact driving safety. Older adults will develop chronic diseases that may have driver impairing characteristics such as heart disease with the potential for arrhythmias and syncope; diabetes with the potential for ketoacidosis, hypoglycemia, and retinal deterioration; depression with the potential for cognitive disturbances; back pain and arthritis leading to physical mobility impairment and distracting pain. Layered onto the underlying chronic diseases are the medications used to treat those conditions along with their potential to exacerbate other co-existing conditions, induce side effects, and promote dangerous drug interactions. By demonstrating the potential link between multiple drug therapies and MVCs, this study serves

to highlight the need for a thorough examination of the relationships among drugs, diseases, and the older driver.

There are limitations to the data used in the case control study, which make it difficult to gauge the strength of these associations. The main limitations are sample size and the inherent weaknesses of administrative claims data. Particularly, in this study, with the diagnostic outcome being an ICD9-CM "E" code to identify patients who were drivers in a motor vehicle crash, the strength of the association of a PDI drug or condition is only meaningful if the "E" code assignment is accurate. (ICD9-CM codes are used by health care providers to bill for services. "E" codes are used in conjunction with diagnostic and procedure codes to classify external causes of injury and other adverse effects).

Additionally, some effects of medications on driver impairment may abate with continued use. This study did not address the contribution to MVCs associated with de novo exposure (initiation of drug therapy when individuals are most likely to experience side effects) and prolonged exposure to prescribed medications (when individuals may become tolerant to side effects).

From a policy perspective there is a troubling relationship between MVCs, multiple medication use, interactions, medication/disease conflicts, and the aging driver. While older drivers are at increased risk of a crash when they take multiple PDI medications, this study cannot isolate the cause of these crashes and determine the relative contributions of the medication, medical condition and age. Furthermore, this analysis cannot predict whether an individual older driver with an underlying medical condition who takes multiple PDI medications can drive safely.

This study suggests the need for further research to elucidate the complex interplay of factors affecting the aging adult and driving ability. The results of this research supports the intentions of NHTSA to promote the development of educational programs to increase consumer and healthcare provider awareness about the potential driver impairing effects of increasingly complex medical and pharmaceutical therapies in older adult drivers.

I. PROJECT OVERVIEW AND OBJECTIVES

This is the Final Report of a study performed for a contract entitled "Examination of Databases for Multiple Medications/Polypharmacy". This study was conducted by Aida A. LeRoy and M. Lee Morse of Iatrogen, LLC under subcontract to Orchid Biosciences.

Impaired driving is a major cause of motor vehicle crashes and injuries. The National Highway Traffic Safety Administration (NHTSA) has long studied the impairing effects of alcohol and illegal drugs on driving performance. NHTSA has also conducted research on the impairing effects of certain legal drugs such as antihistamines, benzodiazepines, and narcotic analgesics. It is recognized that certain medications may impair driving performance. Many prescription and non-prescription medication labels carry warnings against operating heavy machinery or motor vehicles. Compounding this risk are the effects of multiple medication use. Medications may interact, impairing metabolism, potentiating medication effects, or worsening underlying medical conditions. Older adults are often treated with multiple medications for diseases associated with aging, such as diabetes, cardiovascular disease, and arthritis. Drug interaction effects in older individuals are magnified by age-related changes in liver and kidney function. NHTSA sought to study multiple medication usage in older adults in the context of motor vehicle crashes and public safety. For the purpose of this analysis, older adults were defined as individuals over age 50.

The objectives of this project were to:

a. Determine the relative frequency of multiple medications and medical conditions within the older adult population (over age 50) in both those who have experienced a motor vehicle crash (MVC) and those who have not, by analyzing proprietary and non-proprietary databases; and
b. Conduct a case control study of the associations between the use of medications/medical conditions, and motor vehicle crashes among older drivers.

A. Overview

The number of older Americans is expected to grow dramatically over the next several decades. By 2030, almost 20 percent of the United States population will be 65 years of age or older. In 2000, 35 million persons were age 65 or older. By 2030, with the aging of the baby boomer generation, it is predicted that over 70 million Americans will be 65 years of age or older (Federal Interagency Forum on Aging-Related Statistics, 2000). This aging segment of the United States population is very heterogeneous and varies significantly with respect to health status, economic level, ethnicity, and other demographic variables.

The vast majority of older adults continue to rely on the passenger vehicle for mobility -- either as drivers or as passengers. There has been a dramatic growth in numbers of licensed older drivers and this trend is expected to continue. Also, older drivers in 2001 drove more miles and took longer trips as compared to older drivers in 1995 (Oak Ridge National Laboratory, 2005). As the American population ages, it is expected that there will be an increase in both the number of older drivers and the amount of driving within this age group.

Research results indicate that individuals age 65 and older have higher rates of fatality and injury in motor vehicle crashes **per mile** driven than any other age group except for teenagers (Oak Ridge National Laboratory, 2005). There are a number of reasons for these differences. First, older adults are more fragile and more vulnerable in crashes. Thus, they have higher risks for fatalities and serious injuries (Li et al., 2001). However, the rate of **per person** crash involvement decreases with age until the rate increases in individuals age 85 years and older. Even at this age, the rate per person is lower than for younger drivers (Oak Ridge National Laboratory, 2005). Older drivers are also involved in different types of crashes. Older drivers have different patterns of driving than other drivers, and many tend to self-regulate their driving, for example, by decreasing night-time driving (Kelly, R. et al., 1999). Thus, driving patterns among older adults may reduce the exposure rate of crash involvement in comparison to other drivers.

With the aging of the American population, concern arises regarding projected increases in rates of crash involvement. In order to address these concerns, it is useful to consider which factors relate to crash involvement among older adults. Many age-specific factors may impact driving ability, such as age-related decrements in cognitive and physical functioning, increased prevalence of medical conditions or age-related medical conditions, and increased use of multiple medications (Millar, 1999). It is important to note that age alone does not necessarily predict fatality rates or crash rates. In a University of Michigan study, "able older drivers" had lower rates of fatalities when rates were proportionally corrected for licensed drivers (DOT, 2003). By identifying the risk factors, such as driving conditions, health conditions, treatment, medications, functioning, and exposure, strategies can be developed to minimize the impact on motor vehicle crash-related injuries among older adults.

1. Driving

Driving is a complex behavior and can be considered a higher order instrumental activity of daily living (IADLS) (Morgan, 1995). Driving requires complex sequences of activities that occur in an intricate and rapidly variable environment. This environment includes the environment external to the vehicle as well as the environment within the vehicle, both of which may impact safety. For example, concurrent physical, social, and other demanding tasks may distract the driver and influence driving. Safety is dependent upon environmental conditions, the demands of the situation, and the abilities of the driver. Impairments in visual, cognitive, and/or motor function may impact the driver's ability to drive safely. Within each of these modalities of function, driving may require complex processing and action. For example, cognitive function includes the recall of basic information such as, "where I left my keys," but also decision making skills such as, "How can I react most quickly to a moving object in the roadway?" In this example, motor abilities (such as ease of movement of the foot), visual acuity, and attention processing also influence driving skill. Because of the complex nature of driving, impairment due to age, medical condition, or medication can seriously affect the ability of an older adult to drive safely.

2. Age, Medical Conditions, and Medications

Age

On average, aging brings changes and decrements to visual, cognitive, and motor functioning. For example, changes in the structure of the eye can affect visual perception (Owsley, 1994). However, on an individual basis, age – per se – is not a good predictor of driving abilities. For example, a healthy 75-year-old who wears corrective lenses may be able to drive safely, despite some age-related changes. Behavioral changes, health status, environment, and medical interventions may influence the effects of age-related changes. Generally, around age 50, individuals begin to seek treatment for conditions typically associated with aging, such as hypertension, Type II diabetes mellitus, hyperlipidemia, sleep disturbances, etc.

Medical, Cognitive, and Emotional Conditions

Research has been conducted to examine the association of medical, cognitive, and/or emotional conditions and disabilities with functioning and driving abilities. In general, diagnosis alone is not a good predictor of functioning. The type of condition, the severity of the condition, the management of the condition (medical and pharmaceutical), adaptations to the environment, changes in behavior of the individual, and the age of the individual are all factors that influence whether a particular medical, cognitive, or emotional condition will affect driving functioning. For example, while severe cataracts can affect vision, cataract surgery has been shown to improve vision and is correlated with decreases in crashes (Owsley, 2002). In general, the more severe the medical condition and the greater the presence of medical, cognitive, or emotional comorbidities, the more likely that functioning will be impaired. Naturally, this varies on an individual basis.

Medical, cognitive, or emotional conditions typically affect functioning if they are severe, improperly managed, unmanageable, or affected by other conditions. In this report, "potentially driver impairing" (PDI) conditions are defined as conditions that are associated with loss of body control (hypoglycemic coma, seizures, fainting, low blood pressure, blurred vision), central nervous system effects (inattentiveness, sleepiness, dizziness, confusion), or conditions that cause stiffness and pain (arthritis, pain conditions). Examples of such conditions are diabetes mellitus, arthritis, seizures, depression, insomnia, arrhythmias, cardiovascular disease, Alzheimer's, and Parkinsonism, among others. Treatment, however, may ameliorate these conditions and the consequent driver-impairing aspects of the condition.

Medications

While medication treatment offers disease amelioration, it also has the potential for undesirable drug side effects and interactions. In this regard, the older adult faces many challenges. The most evident are the age-related changes in health and physical status. Many among the rapidly growing population over age 65 receive medical therapy for several chronic conditions simultaneously, often involving treatment with up to eight different drugs per day in addition to use of over-the-counter drugs (Ellenhorn's Medical Toxicology, 2nd ed). As a result, older adults use a disproportionately high amount of medications: older adults represent 13 percent of the U.S. population but consume about 30 percent of all prescription drugs (Noble: Textbook of Primary Care Medicine).

A number of factors portend an increase in the number of potential drug interactions experienced by older adults including:

- an increase in the number of drugs taken daily,
- alterations in pharmacokinetics,
- long-term drug use,
- alteration in gut surface area,
- decrease in gastric motility,
- decreased gastric acid secretion,
- multiple drugs competing for binding sites on serum albumin,
- multiple drugs competing for metabolic enzymes,
- increase in the proportion of fat to body mass,
- decreased body water,
- reduced liver size with diminished ability to metabolize drugs,
- less efficient renal clearance of drugs, and
- an increase in g-receptor sensitivity, especially to cardiovascular and psychotropic drugs.

Symptoms of drug-induced poisonings, overdoses, drug interactions or side effects are often interpreted as normal signs of aging and thus fail to be linked to a pharmaceutical etiology[1]. Some of these symptoms include:

- disorientation,
- tremors,
- lethargy,
- depression,
- forgetfulness,
- loss of appetite, and
- constipation.

Other effects are extensions of anticipated pharmacologic effects or side effects of normal doses of drugs that are particularly relevant to older adult drivers, such as:

- dizziness,
- drowsiness,
- tremors,
- rigidity,
- confusion,
- hypoglycemia,
- hypotension, and
- blurred vision.

[1] The set of factors that contribute to the occurrence of a disease.

Sedation and confusion are common drug complications in elderly patients, especially from medications with anticholinergic effects and sedative-hypnotics that affect the central nervous system. Willcox et al. (1994) found that "Physicians prescribe potentially inappropriate medications for nearly a quarter of all older people living in the community, placing them at risk of adverse drug effects such as cognitive impairment and sedation." Other disturbances that are common side effects of drugs in older adults include orthostasis (postural hypotension), falls, depression, urinary retention or incontinence, constipation, anorexia, and metabolic abnormalities, such as hypoglycemia, hypokalemia or hyperkalemia, hyponatremia or hypernatremia, and azotemia. McGwin et al. (2000) conducted a population-based case-control study of drivers age 65 and older and found that an increased risk of at-fault involvement in crashes was found for older drivers using common drugs such as non-steroidal anti-inflammatory drugs (NSAIDs), antihypertensive drugs (specifically ACE inhibitors), anticoagulants, or benzodiazepines.

Certain medications, based on their pharmacology, how they are taken, side-effects, etc., may potentially have a negative effect on driving. To qualify as a potentially driver-impairing medication for the purposes of our study, the medication had to be associated with central nervous system side effects, alter blood sugar levels, affect blood pressure, affect vision, or otherwise have the potential to interfere with driving skills.

Examples of "potentially driver impairing (PDI)" medications include:

Drug Class	***Possible Effects***
Anti-Diabetic Drugs	Hypoglycemia
Anticholinergics	Blurred vision
Narcotic analgesics	Sedation
Anti-hypertensive drugs	Hypotension
Sedative/Hypnotics	Sedation
Antidepressants	Sedation, dizziness
Allergy drugs	Sedation, dizziness
Anti-arrhythmics	Fainting (syncope)
Anticonvulsants	Ataxia, dizziness, sedation
Skeletal Muscle Relaxants	Dizziness, sedation

Recently, Curtis et al. (2004) reported the results of a study to identify inappropriate prescribing for elderly Americans in a large outpatient population. Inappropriate prescribing was defined using the Beers revised list of drugs to be avoided in elderly populations (Beers, 1997). Curtis conducted a retrospective cohort study using outpatient prescription claims. He found that 21 percent of the patients studied filled a prescription for one or more drugs of concern. More than 15 percent of subjects filled prescriptions for two drugs of concern, and 4 percent filled prescriptions for three or more of the drugs within the same year. There is increasing evidence that older adults are being prescribed medications that are known to be problematic based on their age.

Drug-related adverse events are an important cause of emergency department visits and hospitalizations in older adults, and adverse drug events (ADEs) may be responsible for 11-30 percent of hospital admissions (Chan, 2001 and Hanlon, 1997). Nearly 90 percent of all patients admitted were taking one or more over-the-counter or prescribed medications daily, while the average ADE-related hospitalized older adult patient was taking 4.2 drugs, and 13 percent of these admitted patients were taking eight or more medications daily.

ADEs are reportedly responsible for over 10 percent of emergency department visits (Hohl, 2001). In one study, no adverse events were seen in patients taking one or fewer medications. However, in patients taking two to five medications per day, the frequency of ADEs requiring emergency room intervention was 11.5 percent, and for those taking six or more medications daily, the incidence of emergency room visits for ADEs climbed to 16.9 percent. Examination of drug regimens showed that 31 percent of patients also had the potential for at least one adverse drug interaction.

The combination of driver-impairing medical conditions and the use of multiple medications (both impairing and non-impairing) suggests that the aging driver population may be at increased risk for motor vehicle crashes. Our analysis was designed to shed light on the issue of an aging driving population and the impact of diseases and the consequent use of medications. In addition to the inherent side-effects associated with medications, this study also looked at the contribution to motor vehicle crash risk associated with 'problematic medication use' among the older drivers. Problematic use is defined as use that is in therapeutic conflict with other disorders for which the patient is being treated, or other medications the patient is concomitantly receiving.

B. Project Objectives

The objectives of this project are to:

1. Determine the relative frequency of various combinations of medications used by both those who have experienced a motor vehicle crash (MVC) and those who have not by analyzing proprietary and non-proprietary databases; and
2. Conduct a case-control study of possible associations between the use of select medications (and combinations thereof) and MVCs among older drivers (age 50 and older).

II. METHODOLOGY

A. Purpose and Contract Tasks

While many studies have been reported in the literature addressing drug-crash problems and various subsets of drivers, they have been limited to selected drugs (typically drugs of abuse or antihistamines, antidepressants, benzodiazepines, or narcotic analgesics) or selected diseases (Alzheimer's, diabetes, epilepsy). Additionally, these studies have involved costly data collection methods, such as analysis of blood, saliva, sweat, hair, or urine. Some have relied on data taken from police crash reports, arrests, medical examiner reports, research based on data from trauma units and hospitals, and self-reported data from driver surveys. Further, these studies have not looked at the interactions between drugs and diseases.

We conducted an exploratory study to examine the use of a wider array of medication classes and medical conditions and their potential interactions in older adult drivers and association with motor vehicle crashes. We also examined the feasibility of using a national survey database and a longitudinal, patient-specific medical and pharmaceutical claims-linked database for this study. The use of anonymized patient-specific longitudinal databases, absent recall bias (such as insurance claims databases) has served to generate hypotheses in epidemiologic studies involving drugs, medical conditions and outcomes. In addition, data from well-designed national surveys (such as NAMCS) have been successfully used to characterize the use of medications in the general U.S. population.

B. Database Discussion

The selection of databases for this project was performed in consultation with NHTSA. We selected two types of databases: A publicly available database (NAMCS) derived from an annual survey sponsored by the Centers for Disease Control/National Center for Health Statistics (CDC/NCHS), and a proprietary patient-level insurance claims database licensed from PharMetrics.

The National Ambulatory Medical Care Survey (NAMCS) is an annual national survey designed to obtain objective, reliable information about the provision and use of ambulatory medical care services in the United States. Findings are based on a sample of visits to non-federally employed office-based physicians that are primarily engaged in direct patient care. Physicians in the specialties of anesthesiology, pathology, and radiology are excluded from the survey.

Specially trained interviewers visit physicians prior to their participation in the survey in order to provide them with survey materials and instruct them on how to complete the forms. Data collection from the physician, rather than from the patient, expands information on ambulatory care collected through other NCHS surveys. Each physician is randomly assigned to a 1-week reporting period. During this period, data for a systematic random sample of visits are recorded by the physician or office staff on an encounter form provided for that purpose. Data are obtained on patients' symptoms, physicians' diagnoses, and medications ordered or provided. The survey also provides statistics on the demographic characteristics of patients and services provided, including information on diagnostic procedures, patient management, and planned future treatment.

The basic sampling unit for the NAMCS is the physician-patient encounter or visit. The NAMCS is not based on a sample of the population. NAMCS is based on a sample of ***visits*** rather than a sample of people. The data can be used to find out how many ambulatory care visits were made involving a certain diagnosis, but cannot be used to find out how many people have a certain diagnosis.

The absence of patient-specific denominator data significantly reduces the usefulness of survey databases for performing risk/outcomes analysis.

Risk and outcomes analysis requires longitudinally linked medical and pharmaceutical data on a patient-specific basis. To perform the kinds of case-control matched pair logistic regression analyses required to examine the question of medication related motor vehicle crashes in very large populations, patient-specific longitudinal databases are required. There are a number of health care programs that have databases that allow for linkage of medical and pharmaceutical claims data; very few that are available from non-proprietary sources. Those that are non-proprietary (such as State Medicaid programs and other federally funded health care programs) are only available through interagency agreements that are time-consuming to obtain and require extensive data cleaning and manipulation. Thus, we identified proprietary databases that would allow the longitudinal patient-specific medical and pharmaceutical claims linkages for our study.

We solicited proposals from two private companies (PharMetrics and Ingenix) that provide anonymized patient-specific medical and pharmaceutical claims-linked databases. These datasets are derived from hospital, medical and pharmaceutical claims paid through health insurance programs. Services not paid for by the insurance program (such as over-the counter medicines or weight reduction medicines) were not included. Because the sources of the database (geographic location, demographic representation, etc.) are unknown, it can not be determined whether either database can be generalized to the U.S. population of drivers over age 50. Both databases identified a similar number of individuals with ICD9-CM "E"-codes for Motor Vehicle Crashes (PharMetrics had 103,000 patients and Ingenix 70,000 patients). Costs to obtain the databases were the same. The PharMetrics database appeared to have better quality control procedures and they had better customer service. Therefore, we selected PharMetrics as the vendor for the following reasons: 1) larger dataset size, 2) greater ease of identifying individuals enrolled in the insurance plan during our study period, 3) better quality control, 4) equal cost, and 5) more responsive customer service.

The use of administrative claims data for conducting research involving adverse drug reactions and post-marketing drug surveillance has been well described in the literature (Strom and Morse, 1988 and Morse, 1991). Medical record linkage systems merge insurance claims data arising from the dispensing and refilling of prescription medications (which serves as a proxy for consumption) and the provision of medical and hospital services (hospital claims are discharge diagnoses). Gross errors in diagnostic codes and patient demographic data (e.g., age and sex) did not appear to be widespread and generally agreed with patient chart data (Hennessy, 2003 and Quan, 2002), and thus these data systems appear to provide a useful source of healthcare events data (Federspiel, 1976 and Worth, 1996). Administrative claims data has been reported to be particularly useful in studies of inappropriate prescribing

for the elderly (Curtis et al., 2004) and have also been demonstrated to be useful in the study of medication use and vehicle crashes (Ray, 1992 and Jacobs, 2004).

Use of administrative health claims data provides advantages when performing certain types of epidemiologic research. For example, pharmaco-epidemiologic research (the association of drug usage with defined outcomes) using administrative health claims databases, has been documented in the literature (Strom, 1984 and Morse, 1991). An important advantage of using this type of database is the ability to link, cost-effectively, patient demographic, medication use, and medical services usage information longitudinally. These databases support the temporal association of one or many drugs to outcomes of medical services. Researchers are not dependent on recall accuracy by the patient or provider. In case control designs, medication use is examined in a defined time period prior to the defined outcome, compared to matched controls using the same age, sex, and time period studied.

The use of administrative claims data is not without challenges. Several studies suggest that structured data validation processes should be instituted when using claims data to identify data limitations and weaknesses (Hennessey, 2003 and Roos, 1996). Administrative data were found to have diagnoses and conditions that were highly specific (e.g., diabetes mellitus) but that vary greatly by condition in terms of sensitivity (e.g., severe, moderate, or mild). To yield the most informative diagnostic profile from claims data, some researchers have suggested that all physician billings for patients be examined (Wilchesky, 2004). Useful clinical information in claims databases generally resides in *data patterns* rather than in data elements and requires a quality control system that elevates the correctness of data relations above the validity of single facts. The use of massive data sets requires that quality control corresponds to the nature of the high-level information that is derived from large databases (Walker, 2001).

Claims databases are also constrained by missing data (not reported or collected). For example, with respect to consumption, it is only possible to know what medications were dispensed when patients fill prescriptions, but not whether patients actually ingest medicines. (Methodologically this would generally bias against an association between the drug and the outcome). Moreover, the use of medications not reimbursable by the drug program (e.g., OTC herbals, non-formulary medicines) will not be recorded in the database and thus the contribution of these medicines to the outcome being assessed cannot be evaluated. Similar constraints exist for diagnostic data as well. Medical services for non-covered conditions or events will not appear in the database. This may be particularly problematic for motor vehicle crashes where a third-party liability is established and medical claims are paid by the 'at fault' driver's insurance company (claims processed outside the database participating insurer). Motor vehicle crash data included in our study must have resulted from the payment of an emergency room or hospital service bill within the insurance system we are accessing in order to be observed as a medical event.

The following sources of error and study design influences must be considered when evaluating the results of an analysis using an administrative claims database:

- Reporting error
    - This type of error can bias in either favor of (when diagnoses are reported that increase payment fees) or against (under-reporting) the hypothesis.

- Ascertainment error (correctly billed but incorrectly diagnosed):
    - If this error is effectively symmetrical it should have limited effect on the hypothesis.

- Detection bias (prolonged periods of eligibility or frequent visits yield increased opportunity to detect):
    - This bias can skew towards reinforcing the hypothesis; but age, sex, and time period matching (requiring case and controls to have identical observation periods) can minimize this bias.

Given the limitations of administrative medical claims databases, we consider the primary utility of this study to be the generation of hypotheses regarding associations between medication use and motor vehicle crashes.

We used both the NAMCS and the PharMetrics databases to determine the frequency of medication use and patterns of use and diagnosis among individuals over age 50. An age cut-off of 50 years was selected to maximize sample size and because age-related changes and corresponding increased medication use begin to occur at this age. Individuals start to receive treatment for high blood pressure, osteoarthritis, hypercholesterolemia, and adult-onset diabetes. Multiple medications (prescription and non-prescription) begin to be used to treat or prevent emergence of age-related conditions.

1. Non-Proprietary Database

a. Database Description

NAMCS provides detailed prescription drug and disease mentions collected and reported by a panel of physicians. It is a national probability sample survey of visits to office-based physicians. The survey is designed to meet the need for objective, reliable information on the provision and use of ambulatory medical care services in the United States. We chose NAMCS from 1998-2000 to obtain information on drug use characteristics and disease prevalence for the U.S. population. These years were complete and readily available at the start of the project. The NAMCS data is provided either unweighted or weighted (data projected to the entire U.S. population).

b. Quality Control

The National Center for Health Statistics, Centers for Disease Control and Prevention (CDC) conducts a thorough system of data completeness checks, data edits, and quality control for NAMCS data collection and process. Field staff conducts checks of the survey information for completeness. Clerical edits are performed upon receipt of the data. Patient records are manually reviewed and ambiguous entries are reclassified. In addition, computer edits for code ranges and inconsistencies are performed. Further, all medical and drug coding is subjected to a two-way 10-percent

independent verification procedure. Non-response rates for age and sex are five percent or less. Missing data items are inputted by randomly assigning a value from a patient record form with similar characteristics (National Center for Health Statistics, 1998, 1999, 2000).

After obtaining the NAMCS data, we also performed a series of quality control procedures:

- Reviewed at random 200 records from the raw data file for completeness, and reasonableness before loading data into our SAS file system;
- Verified the number of records for each year's data in our files against NAMCS documentation;
- Reviewed frequency report by 10-year age group and for both weighted and non-weighted datasets for out-of-range values (outliers);
- Verified all drug class codes and ICD-9 CM codes matched their respective reference files;
- Verified the Number of Medications field against drug class fields 1 to 6 to ensure consistency;
- Excluded 10,765 visits from the original 71,468 physician/patient visits representing individuals too young to drive (under age 16);
- Excluded 2,491 patients from the 60,703 physician/patient visits from the previous step because they had diagnoses inconsistent with their sex.
- We identified the motor vehicle crash E-code Group, which resulted in a final number of 548 physician/patient visits (unweighted) and 16,500,227 (weighted) physician/patient visits.

c. Eligibility

All office-based physician visits in the NAMCS sample between 1998 and 2000 were included in the analysis. In total, there were 23,339 sample visits for 1998; 20,760 sample visits for 1999; and 27,369 sample visits for 2000 (total of 71,468 physician/patient visits). We limited Motor Vehicle Crash E-codes to those that involve *motor vehicles* and including ICD9-CM codes (Figure 1):

Figure 1: ICD9-CM "E" Codes for Motor Vehicle Crashes

Included ICD9-CM Codes	***Excluded ICD9-CM Codes***
E810-E816 (Motor Vehicle Traffic Accidents) E819-E823 (Motor Vehicle Non-Traffic Accidents) only with the subdivisions: Driver .0, Motorcyclist .2, and Unspecified .9.	Passenger .1 and .3 Occupant of Streetcar .4 Rider of Animal .5 Pedal Cyclist .6 Pedestrian .7, and Other Occupant .8.

d. Preparation of NAMCS Analysis File

We used the National Drug Code Directory Classes used by NAMCS to identify all medications reported in the survey. A table of medication classes containing potentially driver impairing medications (Appendix I) was defined. To qualify as a driver-impairing medication the medication had to be associated with central nervous system side effects, alterations in blood sugar levels, changes in blood pressure, impaired vision, or otherwise have the potential to interfere with driving skills. We also defined potentially driver impairing diseases (Appendix II). These conditions are associated with loss of body control (hypoglycemic coma, seizures, fainting, low blood pressure, blurred vision), central nervous system effects (inattentiveness, sleepiness, dizziness, confusion), or conditions that cause stiffness or pain (arthritis, pain conditions). We also prepared tables of drug interaction conflicts (Appendix III), and drug-disease conflicts (Appendix IV). Drug interaction conflicts were determined from drug interaction compendia and drug literature. Drug-disease conflicts are based on side effects of drugs that contribute to or are contraindicated by underlying medical conditions. These conflicts are obtained from drug compendia, manufacturer literature, and primary medical journal references.

The 1998, 1999, and 2000 data were loaded into the SAS file system separately and merged into a single file for analysis. In total, there were 71,468 sample visits (23,339 sample visits for 1998; 20,760 for 1999; and 27,369 for 2000).

We subdivided this database into individuals 16-49 years of age and individuals over age 50. We also divided the population into those with a mention of motor vehicle crashes and those without.

NAMCS presents the results in their database as unweighted, reflecting just the data collected, and weighted, which extrapolates to the U.S. population as a whole. The unit of analysis in the NAMCS survey is the physician visit, not the patient. The total number of physician visits is 58,212 (unweighted) and 1,880,862,898 (weighted). The number of physician visits among the Motor Vehicle Crash E-code patients is 548 (unweighted) and 16,500,227 (weighted). The breakdown of physician visits (weighted) among the Over Age 50 Motor Vehicle Crash E-code patients was 4,457,588 and among the Age 16-49 patients was 12,042,639 visits.

e. Database Queries: Descriptive Analysis

We designed a number of queries to conduct a thorough descriptive analysis of the NAMCS database. Queries were performed to identify the frequencies of age, sex, medications dispensed, concomitant drugs used, and co-morbidities, both for the entire cohort, for patients with Motor Vehicle Crash mentions, both weighted, and unweighted. We analyzed numbers and types of medications in general, driver impairing medications, driver impairing diseases, drug-drug conflicts, and drug-disease conflicts. The Motor Vehicle Crash-Involved category was narrowly defined to include the E-codes for *motor vehicle* crashes only where the patient was the *driver, motorcyclist, or unspecified.* We excluded *passenger, occupant of streetcar, rider of*

animal, pedal cyclist, pedestrian, and *other occupant*. (See Figure 1). We performed the following queries with results by number of physician visits by age and sex:

Query 1: Number of Physician Visits
Query 2: Number of Medications
Query 3: Number of Specific Combinations of Drug Classes
Query 4: Number of Potential Driver Impairing Medications
Query 5: Number of Conflict Medications
Query 6: Number of Specific Potential Driver Impairing Disease Groups
Query 7: Number of Potential Driver Impairing Disease Groups
Query 8: Number of Disease-Drug Conflicts

2. Proprietary Database

a. Database Description

The PharMetrics Patient-Level Database includes patients enrolled during the time period from January 1998 to March 2002. Individuals with E-codes for motor vehicle crashes and three controls for each case provide information about patient demographics, number of medications dispensed, patterns of medication combinations, and disease prevalence for patients with and without motor vehicle crashes in the enrollment population. Occurrences of drug-drug conflicts and drug-disease conflicts were also examined. The first phase of the analysis of the proprietary data utilized the same descriptive queries that were used for the non-proprietary dataset. The second phase of the analysis of the proprietary dataset was a matched-pair case control study.

b. Quality Control

PharMetrics followed an extensive data quality review procedure that used over 100 quality measures. Key demographic, service date, diagnosis and medication variables were included in the review process. Key variables from each data submission were compared to expected ranges based on PharMetrics' production database norms. Data that deviated from norms were either excluded from the production database or sent back for correction and re-submission. Each variable on every record was evaluated.

We also performed the following QC measures:

- Checked and reconciled the number of records loaded against PharMetrics' documentation.
- Performed basic field audits for anticipated types, value ranges, and formats.
- Generated a frequency for every character variable (e.g., sex) and checked out-of-range values.
- Calculated a mean, minimum, and maximum for all numeric variables (e.g., age, days drug supplied, quantity dispensed, etc.) and checked outliers.
- Validated data against specified inclusion/exclusion criteria.
- Developed diagnostic and drug ranking reports and examined them for reasonableness given the demographic nature of underlying population (e.g., geriatric diseases and commonly used medications)

The database we obtained from PharMetrics is a patient-level insurance claim database. The PharMetrics patient-level database is an integrated set of fully adjudicated medical and pharmaceutical claims for all covered medical and pharmaceutical services. It includes both inpatient and outpatient diagnoses and procedures, and both standard and mail order prescription records. This database is a longitudinal, anonymized, patient-specific medical and pharmaceutical claims-linked database. We selected an insurance claims database because it provided the ability to analyze medication usage and disease treatments and their temporal relationship to the motor vehicle crash. In total, there were 81,408 cases and 244,224 controls.

c. Eligibility

Data contained in the proprietary database included patients enrolled during the time period from January 1998 to March 2002. Cases were defined as all patients with one or more claims with an ICD9-CM code indicative of a motor vehicle crash (See Figure 1) and with at least six months of continuous enrollment prior to their first claim(s) with a crash code. Three control patients were randomly matched to each case patient. For each control, a match number was provided that linked the control to the case. Matching was based on the following matching criteria:

- No claims with any of the motor vehicle crash codes listed in Appendix V.
- Age (as of January 1998), within 5 years of the age of the case
- Sex (case matched to control)
- At least 6 months of continuous enrollment prior to the Case study subject's first claim with a crash code
- There were a total of 81,408 cases and 244,224 controls.

d. Refinement Steps

We performed extensive quality control, data cleaning and refining steps with results as follows:

- Excluded 25 case patients from the original 81,408 case patients due to either missing sex or more than two possible sexes, leaving 81,383 patients.
- Removed 9,891 case patients from the 81,383 case patients from the previous step due to missing year of birth, leaving 71,492 patients.
- Excluded 20,461 case patients under age 16 from the 71,492 case patients from the previous step, resulting in 51,031 patients.
- Removed 146 case patients from the 51,031 case patients from the previous step because their motor vehicle crash code(s) were apparently used to justify physical therapies they received leaving 50,885 case patients with all E-Codes. Note: If a patient had a procedure code of '97001', '97002', '97039', '98940', '98941', '98942', '98943', 'Q0086', and 'S9131' (codes for physical therapy or chiropractic services) on the same date as the event, AND there was no ER visit on the event date, a day immediately before or after the event date, the MVA E-code was apparently used to justify the physical therapies or chiropractic services.
- Fifty-three (53) case patients were excluded because of wrong sex diagnoses, which left 50,832 case patients.
- Inclusion of only patients with Motor Vehicle Crash E-codes listed above resulted in a total of 33,519 cases. Among them we have 5,378 cases of age 50 or above. The ratio of cases to controls is 1 to 3. Therefore, we have 16,134 controls of age 50 or above.

e. Database Queries: Descriptive Analysis

The following queries, which describe the frequencies of age, sex, medications dispensed, concomitant drugs used, and co-morbidities, were conducted according to the design used for the non-proprietary dataset. For each query, one set of tables was generated by number of patients by age and sex.

Query 1: Number of Patients.
Query 2: Number of Medications
Query 3: Number of Specific Drug Combinations
Query 4: Number of Driver Impairing Medications
Query 5: Number of Drug Interaction Conflicts
Query 6: Number of Specific Potential Driver Impairing Disease Groups
Query 7: Number of Potential Driver Impairing Disease Groups
Query 8: Number of Disease-Drug Conflicts

f. Methodology for Case-control Analysis

A McNemar-matched pair case-control design was employed to obtain odds ratio measures of potential MVC risk and to conduct a conditional logistic regression analysis using the proprietary database. The McNemar is a statistical test designed to describe the strength of an association between an outcome and an intervention among sets of a matched pair of subjects. Pairing with the intervention subject can occur with one (e.g. 1:1) or multiple controls (e.g. 1:2. 1:3, 1:4, etc.). In general, the greater the number of control pairings, the narrower the confidence interval around the 'best guess estimate' of the association measured. Data contained in the proprietary database included patients enrolled during the time period January 1998 to March 2002. Individuals with E-codes for motor vehicle crashes with the restricted definition and three controls for each case were selected. Each case was matched with three controls by age and sex. Three controls represented the maximum number of controls available from the database, and thus provided the maximum sensitivity available for this population sample. In order to control seasonal factors, controls had the same event date as their corresponding cases.

More specifically, cases were defined as all patients with one or more claims with an ICD9-CM code indicative of a motor vehicle crash (see Figure 1) and with at least six months of continuous enrollment prior to their first claim(s) with a crash code. Three control patients were randomly matched to each case patient. For each control, a match number was provided that linked the control to the case. Matching was based on the following matching criteria:

- No claims with any of the motor vehicle crash codes listed in Appendix V.
- Age (as of January 1998), within five years of the age of the case.
- Sex (case matched to control).
- At least six months of continuous enrollment prior to the Case study subject's first claim with an crash code.

Medical history claims during the 60-day window prior to the MVC event date were analyzed using the odds ratio and conditional logistic regression analysis methodologies. We analyzed the numbers and types of medications in general, driver impairing medications, driver impairing diseases, drug-drug conflicts, and drug-disease conflicts.

Odds ratios for driver impairing drugs, driver impairing disease groups, drug-drug conflicts, and drug-disease conflicts were calculated without controlling other factors. We computed their corresponding 95 percent confidence intervals and p-values against the null hypothesis that the odds ratio was equal to one.

In addition to the McNemar analysis, we built a model to predict motor vehicle crash (MVC) risk, SAS PROC PHREG with a forward selection option was used to conduct an unconditional logistic regression. We defined the dependant variable as 1 for cases and 0 for controls. Independent variables included number of medications used, number of driver impairing medications used, number of driver impairing disease groups, number of drug-drug conflicts, number of drug-disease conflicts, and baseline

driver impairing medical conditions. Number of medications used and number of driver impairing medications used were determined to have multi-colinearity and only number of driver impairing medications was left in the logistic regression model. Number of driver-impairing medications used, number of driver-impairing disease groups, and number of drug-drug conflicts have three computational values while number of medications used and number of drug-disease conflicts have two categories.

Table 1: Regression Analysis Variables

Variables	***Values***
Number of Medications	No Medications
	1 or more
Number of Driver Impairing Medications	No Impairing Drugs
	1 – 2
	3 or more
Number of Driver Impairing Diseases	No Impairing Diseases
	1 – 2
	3 or more
Number of Drug-Drug Conflicts	No Drug-Drug Conflicts
	1 – 2
	3 or more
Number of Drug-Disease Conflicts	No Drug-Disease Conflicts
	1 or more

Reference groups for number of medications, number of driver impairing medications, number of driver impairing diseases, number of drug-drug conflicts, and number of drug-disease conflicts were 'No Medications', 'No Impairing Drugs', 'No Impairing Diseases', 'No Drug-Drug Conflicts', and 'No Drug-Disease Conflicts' respectively. Odds ratios and 95 percent confidence intervals were computed for those variables with and without control of other variables.

3. Eligibility and Case-Control Matching Procedures

- Case group: All patients with one or more claims with an ICD9-9-CM code indicative of a motor vehicle crash (see Figure 1) AND at least six months of continuous enrollment prior to the first claim with a crash code.
- Control group: Three patients were randomly matched to each case patient. For each control, a match number was provided that linked the control to the case. Matching was based on the following matching criteria:
    - No claims with any of the motor vehicle crash codes listed in Appendix V.
    - Age (as of January 1998), within 5 years of the age of the case.
    - Sex same as the case patient.
    - At least 6 months of continuous enrollment prior to the first claim date with a crash code of the corresponding case patient.

In addition, only patients with drug benefits were included for study, as evidenced by the presence of at least one paid pharmacy claim during the period of observation.
Patients aged 65 years and older were included only if they were part of a Medicare Risk plan, as full medical and pharmacy utilization data was required for this analysis.

4. Preparation of Analysis File

A case file, a control file, and a crosswalk file, which links each control patient to each case patient, were prepared for analysis. The case file and control files contained the Patient ID and information about enrollment, demographics, medical claims, and pharmacy claims. The crosswalk file contained the case Patient ID, control Patient ID and match number. We also prepared files for medication classes, potential driver impairing medications (Appendix I), potential driver impairing diseases (Appendix II), drug interactions conflicts (Appendix III), and drug-disease conflicts (Appendix IV).

III. RESULTS

A. Non-proprietary Database: Descriptive Analysis

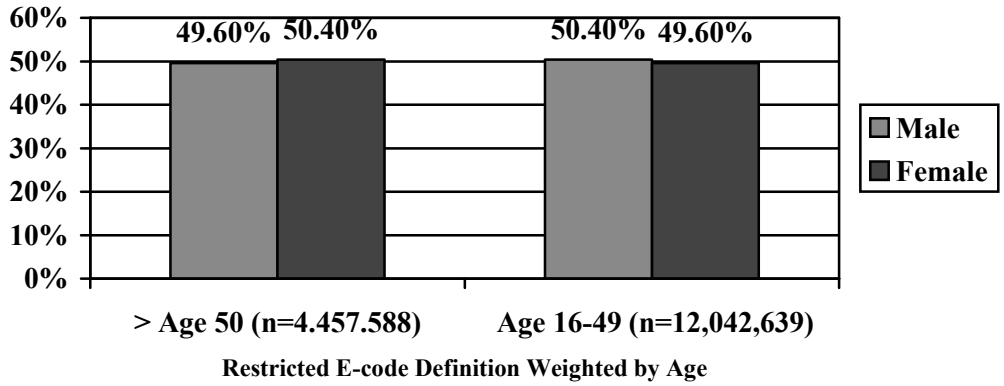
1. General Findings: Descriptive Analysis

a. Demographics

The NAMCS dataset contained both unweighted and weighted numbers and percentages. The weighted numbers are projected to the whole U.S. population while the unweighted is the actual numbers obtained from the survey. This report will summarize the weighted findings for physician visits for patients with the Restricted Definition of E-codes for Motor Vehicles.

Over Age 50 individuals represented 27 percent of physician visits. Females represented 50.4 percent of the over 50 age group, but only 49.6 percent of the 16-49 age group (see Figure 2 and Appendix VI, Table 1b).

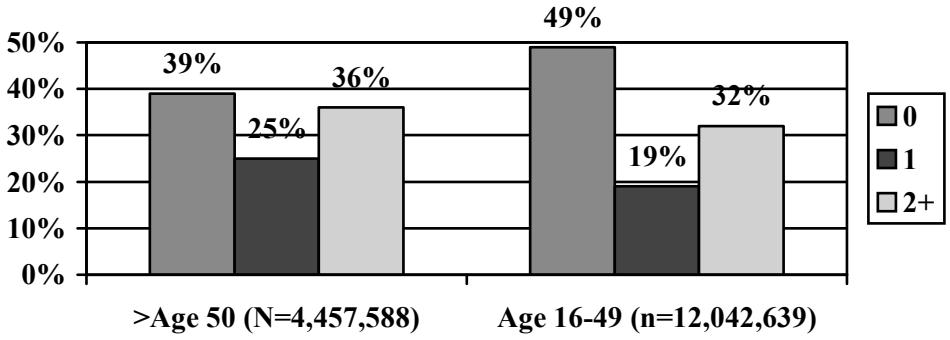
Figure 2: Non-Proprietary Database Demographics



b. Number of Medications

For the over 50 age group, within the NAMCS database, 61 percent of visits had medication mentions. Of those, 25 percent had mentions of only one drug and 36 percent had mentions of between 2 and 6 drugs (see Figure 3). In contrast, in the Ages 16-49 group, 51 percent of visits had medication mentions (19 percent had mentions of only one drug, while 32 percent of the visits had mentions of between 2-6 drugs). The survey did not list mentions of more than six drugs. (See Appendix VI, Table 2b). As expected, a greater percentage of visits for the over 50 age group had mentions of drug use than did visits for the Ages 16-49 group (61% versus 51% respectively).

Figure 3: Non-Proprietary Database Number of Medications by Age Strata



c. Frequently Used Medication Classes

The most frequently mentioned medication classes in the over 50 age group visits (see Appendix VI, Table 2b), in descending order by frequency of use, are listed below (See Table 2). An * identifies the Potentially Driver-Impairing Drug Classes. Both groups received frequent mentions of potentially impairing drug classes. The older

adult group adds cardiovascular medication mentions to their top ten list, while the younger group has more anti-asthmatic and anticonvulsant medication group mentions. Both had mentions of use of pain relievers, muscle relaxants and antidepressants. Skeletal Muscle Relaxants, Antidepressants, and Anti-anxiety Agents are considered to be inappropriate for use in individuals over 65 (Beers, 1997).

Table 2: Most Frequently Used Medication Classes

Most Frequently Used Medication Classes		
Medication Classes	***Weighted > Age 50 Group (n=4,457,588)***	***Weighted Age 16-49 Group (n=12,042,639)***
*ANTIARTHRITICS	19%	16%
*SKELETAL, MUSCLE RELAXANTS	15%	15%
*ANALGESICS, NARCOTIC	14%	12.4%
*NSAID	10%	11%
ANALGESICS, NON-NARCOTIC	8%	10%
*ANTIDEPRESSANTS	7.5%	7%
*DISORDERS, ACID/PEPTIC	7%	4%
*ANTI-ANXIETY AGENTS	6%	2.4%
*BETA BLOCKERS	5%	--
*ACE INHIBITORS	4.7%	--
*ANTICONVULSANTS	--	2%
ANTIASTHMATICS/BRONCHODILATORS	--	1.7%

The most frequently mentioned medication classes in the Under Age 50 Group visits (See Appendix VI, Table 2b), in descending order by frequency of use, is listed above. (See Table 2). An * identifies the PDI medication classes.

d. Most Frequent Drug Combinations

The most frequently appearing mentions of drug combinations in the Over Age 50 Group visits are provided in descending order of frequency in Table 3. (See also Appendix VI, Table 3b). The Over 50 age group received mentions of use of multiple medication classes, many which interact to potentiate driver impairing effects. For example, narcotic analgesics used with muscle relaxants, antidepressants, or anti-anxiety agents will result in potential sedated and confused reactions.

Table 3: Most Frequently Appearing Drug Combinations in the Over Age 50 Group

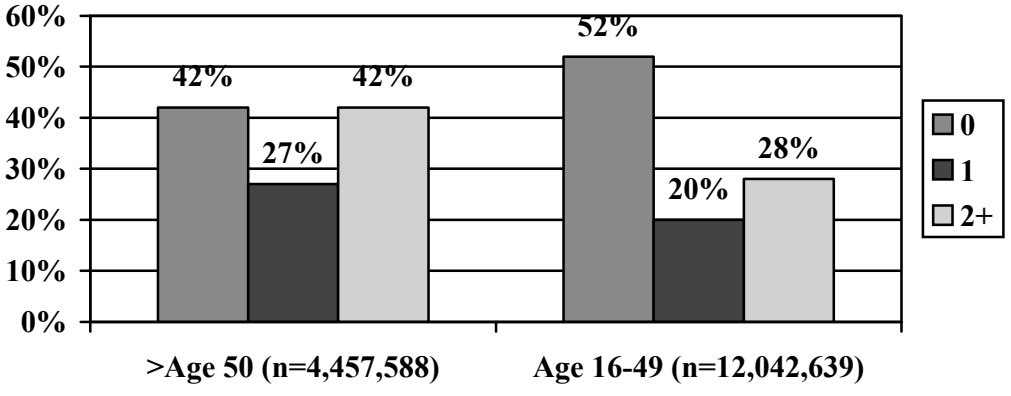
Most Frequently Appearing Drug Combinations by Percent in the > Age 50 Group (n=4,457,588)	
Drug Combinations	
• Narcotics, Antianxiety Agents, Antiarthritics, Skeletal Muscle Relaxants	2.7%
• Nacotics, Antiarthritics, GI Disorder, Anti-Hyperlipidemic Agents, Skeletal Muscle Relaxants	2.3%
• Ace Inhibitor Hypotensive, Narcotics, Antidepressants	2.0%
• Alpha Agonists, Antidiarrheal agents, GI Disorder, Diuretics, Homeopathic drugs, Potassium Supplements	1.8%
• Narcotics, Antianxiety Agents, Antidepressants, Antihypertensives, Calcium Metabolism, Thyroid Hormones	1.4%
• Ace Inhibitor Hypotensive, Steroids, Non-narcotic Analgesics, Antiarrhythmics, Topical	1.4%
• Ace Inhibitor Hypotensive, Antiarthritics, Beta Blockers	1.3%

e. Use of Potentially Driver Impairing (PDI) Medications

The survey data was further analyzed to identify the rate of mentions of use of medications that we defined as being potentially driver impairing. (Appendix VI, Table 4b).

More than 58 percent of the Over Age 50 Group visits mentioned one or more PDI medications. Twenty-seven percent had mentions of one PDI medication and close to one-third (31%) had mentions of two or more PDI drugs. Over 48 percent of the Under Age 50 Group visits received one or more PDI medication mentions. Twenty percent had mentions of one PDI medication, and 28 percent had mentions of two to six PDI medications. (See Figure 4).

Figure 4: Use of Driver-Impairing Medications



f. Appearance of Potentially Driver Impairing (PDI) Medical Conditions

We performed additional analysis to identify the percentage of individuals in the motor vehicle crash (MVC) group visits (weighted) with mention of potentially driver impairing medical conditions. (Appendix VI, Table 6b).

Although both older and younger individuals with the definition of motor vehicle crashes received mentions of potential driver impairing diseases, the older adults had greater percentages of physician mentions of Driver Impairing Medical Conditions. (See Table 4).

Table 4: Appearance of Driver Impairing Medical Conditions

Medical Condition	***Weighted > Age 50 Group (n=4,457,588)***	***Weighted Age 16-49 Group (n=12,042,639)***
Hypertension	7.7%	--
CNS Excitation	6.8%	6.8%
Peripheral Neuropathy	2.6%	--
Ankylosing Spondylitis	2.1%	--
Psychoses	2.1%	1.4%
Diabetes Mellitus I and II	1.8%	--
Depression	1.6%	0.97%
Head Trauma	-	1.2%
Alcoholism	1.4%	--
Congestive Heart Failure	1.4%	--
Thyroid Disease	--	0.5%
Anxiety Disorder	--	0.45%
Bipolar Disorder	--	0.3%

g. Drug Interactions and Drug Disease Conflicts

We performed further analyses to determine whether the use of multiple medications, which increase the risk of drug interactions and drug/disease conflicts, were mentioned more frequently in the crash involved individuals' visits (Appendix VI, Tables 5b and 8b). We looked for drug interaction mentions that result in increased driver impairing effects (e.g., a drug interferes with the metabolism of the other drug and results in increased blood levels and side effects) and disease/drug interactions that can result in aggravation of a driver impairing disease (e.g., a drug can cause hypoglycemic effects in a diabetic) or a disease that can influence the side effects of a PDI drug (e.g., hepatic dysfunction can impair metabolism of a drug and thus increase side effects).

In terms of the number of drug-drug conflicts, visits with older patients seem to be more likely to have more drug mentions with drug-drug conflicts (14%). Only five percent of the drug mentions in the Age 16-49 group visits were drug/drug conflicts. We were not able to detect drug/disease conflicts in this dataset.

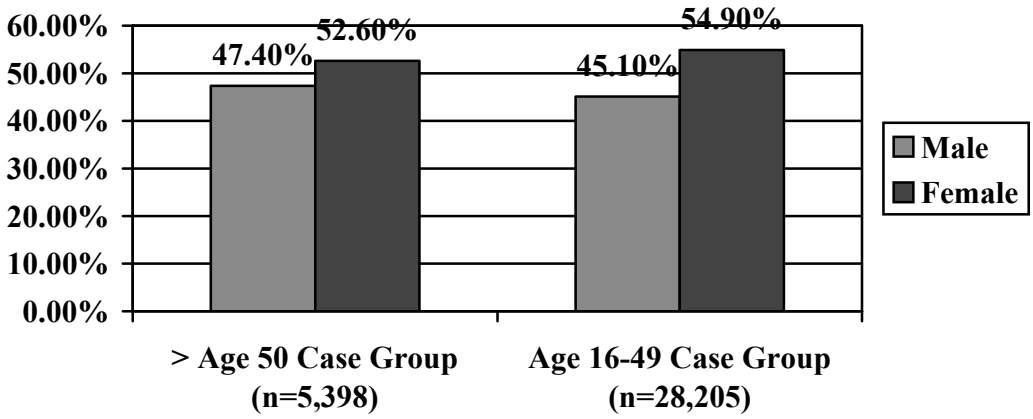
B. Proprietary Database: Descriptive Analysis

1. General Findings: Descriptive Analysis

a. Demographics

The total number of cases is 33,605. The number of **Over Age 50 Cases** in the motor vehicle crash E-code group is 5,398 or 16 percent of the total. The number and percent of Over Age 50 females in the case group is 2,842 or 52.6 percent and the Over Age 50 males group has 2,556 patients or 47.4 percent (See Figure 5). The remainder of the case group (28,205 patients) is between age 16 and 49. Females represent 54.9 percent and males 45.1 percent. There are three age- and sex-matched controls for each case. (Appendix VII, Tables 1a and 1b).

Figure 5: Proprietary Database Demographics



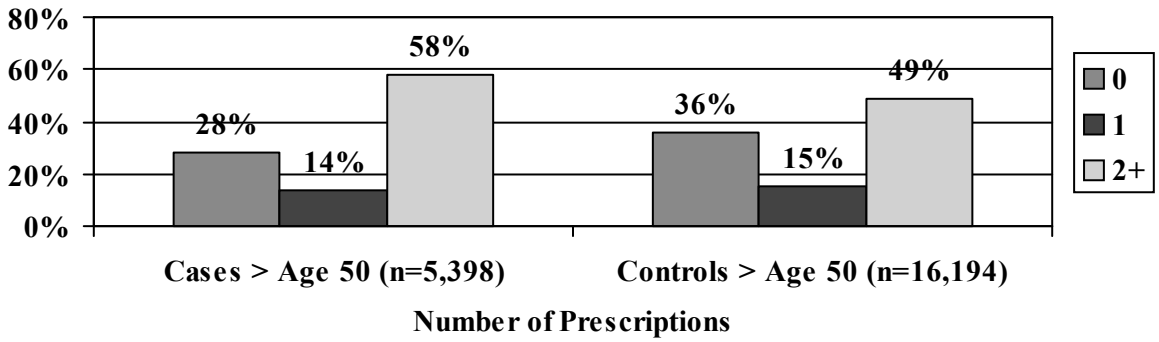
b. Number of Medications

In the **Over Age 50 Case Group**, the number of prescriptions per crash victim ranged between zero and 36 prescriptions in the 60-day period immediately precedent to their motor vehicle crash (the Event Window). Twenty-eight percent of the **Over Age 50 Case Group** received no prescriptions, and 14 percent received one prescription. Fifty-eight percent of the **Over Age 50 Case Group** received two or more prescriptions (See Figure 6). Sex differences were apparent since 65 percent of **Over Age 50 Case Group** females used two or more prescriptions in the 60-day analysis period in contrast to 51 percent of males. (Appendix VII, Table 2a and 2b).

In the **Over Age 50 Control Group** the number of prescriptions per person ranged between zero and 30 prescriptions in a 60-day period. Thirty-six percent of the **Over Age 50 Controls** received no prescriptions, 15 percent received one prescription and 49 percent received two or more prescriptions. Fifty-four percent of females received two or more prescriptions compared to 43 percent of males. (See Figure 6).

Over Age 50 Case Group patients tended to have a higher rate of drug utilization as evidenced by the fact that 36 percent of **Control** patients Over Age 50 used no prescriptions compared to 28 percent of **Case** patients Over Age 50. (See Figure 6.) The rate of Case patients over the age of 50 receiving two or more prescriptions was 1.2 times higher than the rate for the corresponding control patients.

Figure 6: Case and Control Medication Use Frequency Over Age 50



c. Frequently Used Medication Classes

The most frequently used medication classes in the **Over 50 Case Group** and the Over 50 Control Group are listed below, in descending order by frequency of use. (See Table 5). An * identifies drug classes characterized as Potentially Driver-Impairing (PDI) Medication classes.

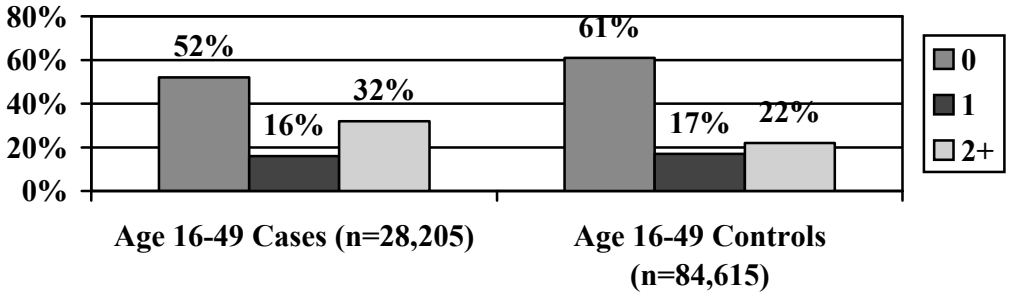
Table 5: Frequency of Use by Medication Class for Cases and Controls Over Age 50

Medication Classes	***> Age 50 Case Group (n=5,398)***	***> Age 50 Control Group (n=16,194)***
ESTROGENIC AGENS	15%	13.3%
*NARCOTIC ANALGESICS	13.4%	--
LIPID LOWERING DRUGS	13.1%	13%
NSAIDS AND COX INHIBITORS	12.4%	--
*HYPOTENSIVES, ACE INHIBITORS	11.7%	9.8%
*GASTRIC AND SECRETION REDUCERS	11%	7.5%
*CALCIUM CHANNEL BLOCKERS	9%	7.4%
*SSRI ANTIDEPRESSANTS	8.3%	5.5%
*BETA-ADRENERGIC BLOCKING AGENTS	7.8%	--
*ANTIHISTIMINES	7.7%	5.3%
PENICILLINS	--	4%
*ANTIANXIETY AGENTS	7.1%	3.7%
THYROID HORMONES	6.7%	--
HYPOGLYCEMICS, INSULIN-RELEASE	5.3%	--
SKELETAL MUSCLE RELAXANTS	4.7%	--
*GLUCOCORTICOIDS	4.3%	3.2%
MACROLIDES	--	2.8%

Approximately one-third of the case patients **Over Age 50** used a drug from one of the drug classes considered inappropriate for use in older individuals (Beers, 1997). Estrogenic drugs represent the most frequently used drug class in both the cases and controls. This class of drugs is used for treatment of menopausal symptoms and should not impair driving. Lipid lowering drugs, hypotensive drugs, and other treatment of cardiovascular conditions were commonly used in both groups. Certain PDI medications appeared to be used more frequently in the Case group than the Control group. For example, narcotic analgesics were used by 13.4 percent of the **Over Age 50 Case Group** compared to only 6 percent of the **Over Age 50 Control Group**. Similarly, the skeletal muscle relaxants were used by 4.7 percent of the **Over Age 50 Case Group** compared to slightly over 1 percent of the **Over Age 50 Control Group.** Anti-anxiety agents were used by 7.1 percent of the **Over Age 50 Case Group** in contrast to 3.7 percent of the **Over Age 50 Control Group**.

Though not required within the scope of this study, a brief analysis of the characteristics of medication use within individuals ages 16-49 was carried out. The number of prescriptions received during the Event Window for the **Age 16-49 Case Group** ranged between zero and 37 prescriptions per person. Fifty-two percent of the **Age 16-49 Case Group** received no prescriptions, 16 percent received one prescription and 32 percent received two or more prescriptions. (See Figure 7). Thirty-nine percent of females used two or more prescriptions, while 24 percent of males received one or more prescriptions.

Figure 7: Case and Control Medication Use Frequency Ages 16-49



The number of prescriptions in the **Age 16-49 Control Group** ranged from zero to 34 prescriptions. Within this group 61 percent received no prescriptions, 17 percent received one prescription, and 22 percent received two or more prescriptions. Twenty-six percent of female patients received one or more prescriptions in contrast to 18 percent of males.

The most frequently used medication classes in the **Age 16-49 Case Group** and the **Age 16-49 Control Group** are listed below, in descending order by frequency of use. (See Table 6). An * identifies the Potentially Driver-Impairing (PDI) drug classes.

Table 6: Frequency of Use by Medication Class for Cases and Controls Ages 16-49

Medication Class	*Ages 16-49 Case Group*	*Medication Class*	*Ages 16-49 Control Group*
*ANAGELSICS, NARCOTIS	10.2%	CONTRACEPTIVES	7%
*NSAIDS, COX2 INHIBITORS	7.3%	*ANTIHISTIMINES	4.3%
CONTRACEPTIVES, ORAL	5.7%	PENICILLINS	4.1%
*SSRIs	6.2%	*ANALGESICS, NARCOTICS	4.0%
*ANTIHISTIMINES	5.6%	*SSRIs	3.9%
PENICILLINS	5.4%	*NSAIDS, COX 2 INHIB	3.2%
MACROLIDES	4.2%	MACROLIDES	2.9%
*SKELETAL MUSC RELAX	4.1%	*GI ACID SECR REDUCERS	2.1%
*GI ACID SECRETION REDUCERS	3.5%	*BETA-ADRENERGIC	1.9%
*BETA BLOCKING AGENTS	2.9%	TETRACYCLINES	1.9%
EXPECTORANTS	2.7%	NASAL STEROIDS	1.7%
*GLUCOCORTICOIDS	4.3%	*GLUCOCORTICOIDS	1.7%
*ANTICONVULSANTS	2.6%	EXPECTORANTS	1.5%
CEPHALOSORINS – 1ST gen	2.0%	*ANTI-ANXIETY AGENTS	1.5%
THYROID HORMONES	1.9%	*THYROID HORMONES	1.2%

Oral Contraceptives were frequently used drugs in both the Ages 16-49 cases and controls. Other drug classes frequently used in both groups included antihistamines, antibiotics, beta-adrenergic anti-asthma agents, glucocorticoids, and expectorants. PDI medications appeared to be used more frequently in the Case group than the Control group. For example, the narcotic analgesic class was used by 10 percent of the Ages 16-49 Case Group compared to 4 percent of the Ages 16-49 Control Group. Similarly, the skeletal muscle relaxant class was used by 4.1 percent of the Ages 16-49 Case Group compared to less than 1 percent of the Ages 16-49 Control Group. SSRI antidepressants were used by 6.2 percent of the Case Group while only 3.9 percent of the Control Group used this class.

Individuals Ages 16-49 involved in a crash were more likely to be taking medications than non-crash-involved individuals (48% versus 39%). Ages 16-49 Case patients had more than two prescriptions by a factor of 1.5 times more than the control patients (See Figures 8 and 9) did.

Comparing Ages 16-49 Cases and Ages 16-49 Controls to the Over Age 50 Cases and Controls reinforces the observation that older individuals in general use more prescriptions than younger individuals do. (See Figures 8 and 9). Almost twice as many younger individuals versus older individuals received no prescriptions (cases 52% versus 28% and controls 61% versus 36%), while a greater percentage of older individuals received multiple prescriptions than younger cases and controls respectively (58% versus 32% and 49% versus 22%). The use of multiple prescriptions greatly increases the potential for driver impairment from medication drug interactions.

Figure 8: Comparison of Cases Between Age Groups by Number of Medications

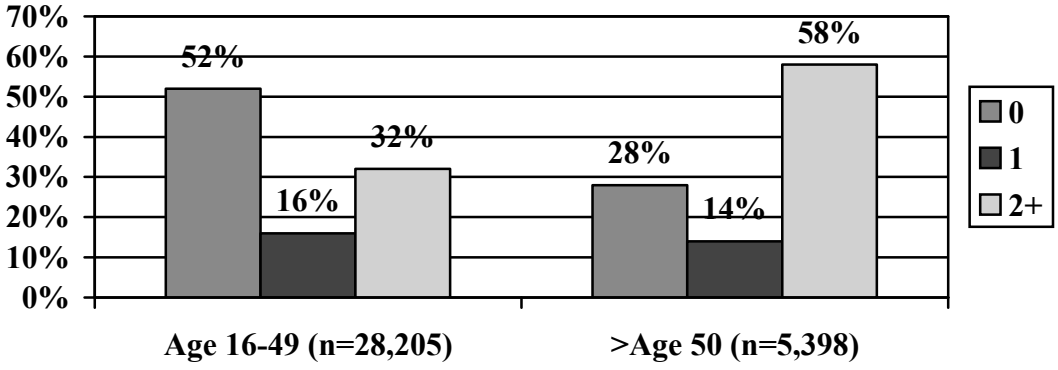
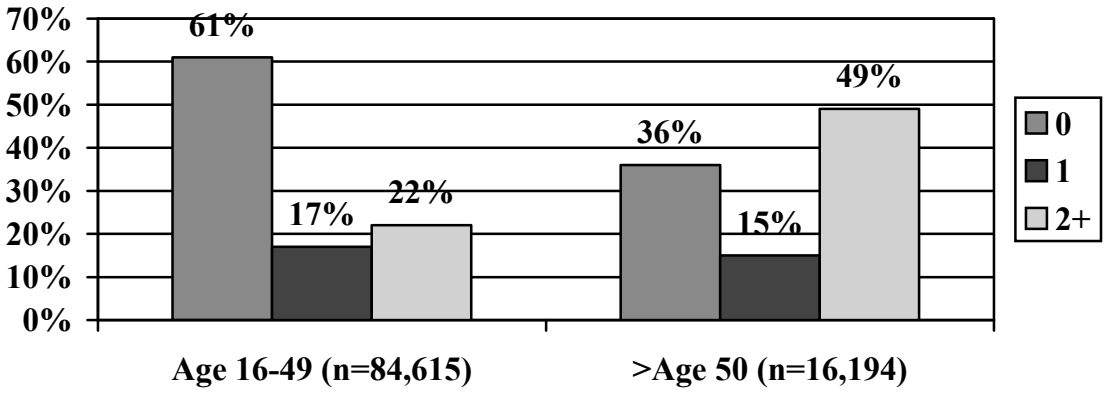


Figure 9: Comparison of Controls Between Age Groups by Number of Medications



d. Most Frequently Appearing Drug Combinations

The most frequently appearing drug combinations in the Over Age 50 Case Group were in descending order of frequency (for full list see Appendix VII, Tables 3a and 3b):

Table 7: Most Frequently Appearing Drug Combinations in Cases Over Age 50

Most Frequently Appearing Drug Combinations in Cases Over Age 50
Narcotics and NSAIDs
Skeletal Muscle Relaxants and NSAIDs
Narcotics and Skeletal Muscle Relaxants
Narcotics and Skeletal Muscle Relaxants and NSAIDs
Narcotics and Antibiotics
Gastric Acid Secretion Reducers and Narcotics
Anti-Anxiety Drugs and Narcotics
Serotonin Reuptake Inhibitor (SSRI) Antidepressants and Narcotics
Narcotics and NSAIDs and Antibiotics

Narcotics and skeletal muscle relaxants and narcotics and anti-anxiety drugs are combinations that result in a potentiating effect causing extreme disorientation. Certain antibiotics and gastric acid secretion reducers inhibit the metabolism of narcotics and other drugs. SSRIs inhibit the metabolism of narcotics and by themselves cause anxiety and disorientation.

The most frequently appearing drug combinations in the Over Age 50 Control Group were in descending order of frequency:

Table 8: Most Frequently Appearing Drug Combinations in Controls Over Age 50

Most Frequently Appearing Drug Combinations in Controls Over Age 50
Estrogens and Progestational Agents
Narcotics and NSAIDs
Expectorants and Macrolides
Beta Adrenergics and Glucocorticoids
Narcotics and Antibiotics
Skeletal Muscle Relaxants and NSAIDs
Nasal Anti-inflammatory Steroids and Antihistamines
Penicillins and Antihistamines

e. Use of Driver-Impairing Medications

The data were further analyzed to identify the rate of use of medications that we defined as being potentially driver impairing (PDI). (Refer to Appendix VII, Table 4a and 4b). See Table 9 below for examples of driver impairing drug classes and their possible effects.

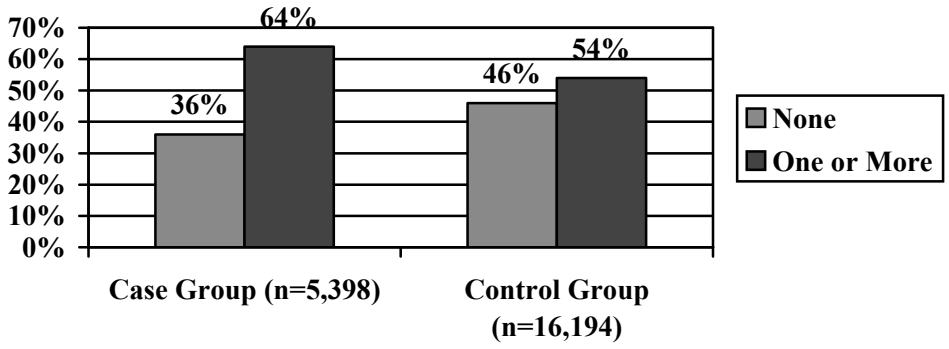
Table 9: Examples of Drug Classes That May Impair Driving

Drug Class	*Possible Effects*
Anti Diabetic Drugs	Hypoglycemia
Anticholinergics	Blurred vision
Narcotic analgesics	Sedation
Anti-hypertensive drugs	Hypotension
Sedative/Hypnotics	Sedation
Antidepressants	Sedation, dizziness
Allergy drugs	Sedation, dizziness
Anti-arrhythmics	Fainting (syncope)
Anticonvulsants	Ataxia, dizziness, sedation
Skeletal Muscle Relaxants	Dizziness, sedation

Many of the above mentioned driver impairing drug classes have been determined to be potentially inappropriate for use particularly by older adults. These drugs cause excessive sedation, confusion, orthostatic hypotension, cardiac effects, depression, and weakness. Additional types of drugs are risky when used in the older adult with certain underlying medical conditions, such as cardiac conditions, depression, seizure disorders, respiratory disorders, parkinsonism, and cognitive impairment. The use of these potentially inappropriate drugs in older patients with these conditions may exacerbate these conditions or cause CNS side effects (Fick, 2003).

The use of PDI medications is widespread in the both case groups. Approximately 64 percent of the **Over Age 50 Case** patients received potentially driver-impairing medications. In contrast, 54 percent of the **Over Age 50 Control** patients received potentially driver-impairing medications. (See Figure 10). Similarly, 35 percent of the **Under Age 50 Case** patients received potentially driver-impairing medications compared to 24 percent of the **Under Age 50 Control** patients.

Figure 10: Potential Driver Impairing Medication Use in Over Age 50 Cases and Controls



Interestingly, 19 percent of the Over Age 50 Case Females who had one or more prescriptions (2,204 patients) had received a prescription for the Narcotic Analgesic Class in the 60 day period preceding the motor vehicle crash. Similarly, 19 percent of the Over Age 50 Case Males who had one or more prescriptions (1,660 patients) had received a prescription for the Narcotic Analgesic Class. Furthermore, 8 percent of prescription-receiving females in the Over Age 50 Case group received prescriptions for Skeletal Muscle Relaxants. And a somewhat fewer number (5%) of prescription-taking males received prescriptions for Skeletal Muscle Relaxants. Both the narcotic analgesic class and the skeletal muscle relaxant class are extremely driver impairing.

Other worrisome PDI medication classes that appeared in frequencies greater than 5 percent of Cases Over Age 50 include Antidepressants (18%), Anti-Diabetic Agents (14%), Anti-anxiety agents (10%), Anticonvulsants (5%), and Anti-hypertensive Agents (38%). (Refer to Appendix VII, Table 4a and 4b).

f. Appearance of PDI Medical Conditions

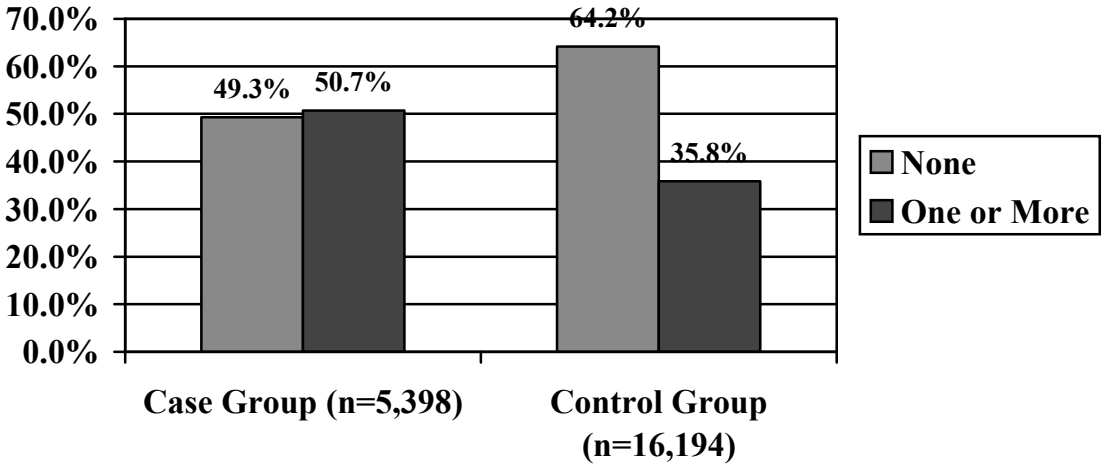
We performed additional analysis to identify the percentage of individuals in the Case group and the Control group who have been diagnosed with PDI medical conditions. (Appendix VII, Tables 7a and 7b). See Table 10 below for examples of driver impairing medical conditions and their possible effects.

Table 10: Examples of Medical Conditions That May Impair Driving

Condition	***Possible Effects***
Diabetes	Hypoglycemia
Arthritis	Stiffness
Epilepsy	Seizures
Depression	Inattentiveness
Insomnia	Daytime Sleepiness
Arrhythmias	Fainting (syncope)
Cardiovascular disease	Stroke, MI,
Alzheimer's	Confusion
Parkinsonism	Stiffness, dementia

Of considerable note is that nearly 51 percent of **the Over Age 50 Case** patients submitted an insurance claim for a diagnosis for PDI conditions in the Event Window. This is especially important in light of the fact that only 36 percent of the **Over Age 50 Control** patients submitted an insurance claim for a PDI condition. Clearly, a higher percentage of individuals in the crash-involved groups had been diagnosed with one of the PDI conditions (See Figure 11).

Figure 11: Potential Driver Impairing Disease Appearance in Over Age 50 Cases and Controls



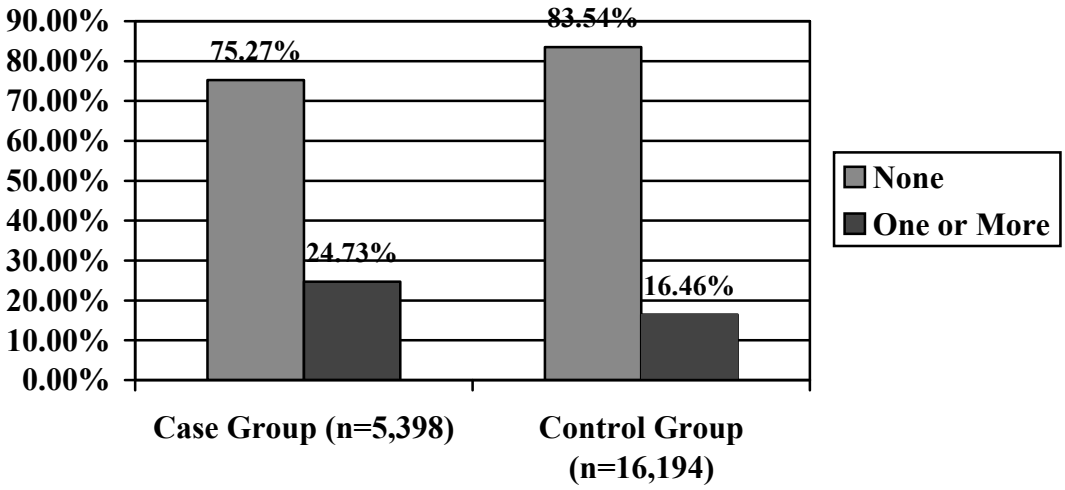
The most frequently appearing diagnoses in the **Over Age 50 Case Group** are Cardiovascular Disease (17.9%), Hypertension (16%), Allergies (15%), Diabetes (9.7%), and Respiratory Infections (7.4%). In the **Over Age 50 Control Group** the most frequently appearing diagnoses group are Cardiovascular Diseases (8.9%), Hypertension (8%), Allergies (6%), Diabetes (4%), and Respiratory Infections (4%). Thus, while the top five conditions are basically the same in the cases and controls, the frequency of appearance is about twice the rate in the cases than in the controls.

g. Drug Interactions and Drug/Disease Conflicts

We performed further analyses on the prescription and medical data to determine whether the use of multiple medications, which increases the risk of drug/drug interactions and drug/disease conflicts, occurred more frequently among the crash-involved drivers. We looked for three factors that can have driver-impairing effects: drug interactions, disease/drug interactions that aggravate a driver impairing disease, or a disease that can influence the side effects of a driver-impairing drug.

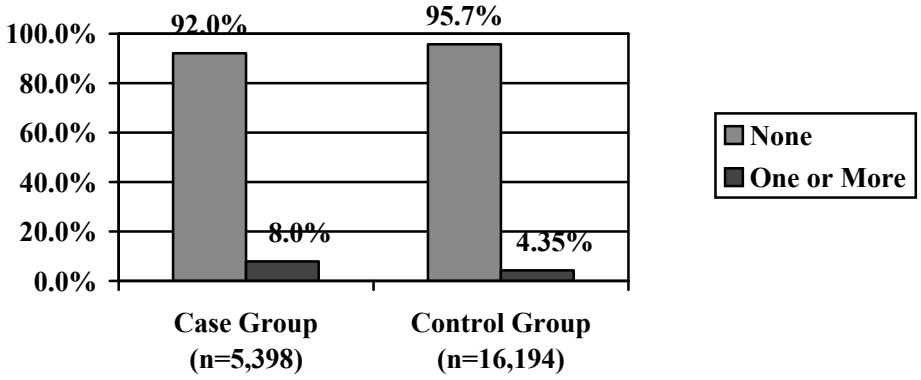
We identified 24 percent of the Over Age 50 Case patients as exhibiting overlapping use of medications that are known to interact. (Appendix VII, Table 5a and 5b). Conversely, only 16 percent of the Over Age 50 Control patients exhibited concomitant use of interacting medications. (See Figure 12). In the Ages 16-49 case group, 8 percent exhibited overlapping drugs know to interact, compared to only four percent (4%) of the Ages 16-49 controls.

Figure 12: Drug Interaction Conflicts Among Over Age 50 Cases and Controls



Eight percent (8%) of the Over Age 50 Case patients exhibited potential Drug/Disease conflicts compared to only 4 percent in the control group (See Figure 13). (Refer also to Appendix VII, Tables 8a and 8b). Among the Ages 16-49 Cases 2 percent exhibited potential drug/disease conflicts compared to 1 percent of the controls.

Figure 13: Drug/Disease Conflicts Among Cases and Controls Over Age 50



2. General Findings: Case Control Analysis

The odds ratios for driver impairing medications used, driver impairing disease groups present, drug interaction conflicts, and drug-disease conflicts are listed in Appendix VIII Table 1 through Table 4.

a. Driver Impairing Medications

As indicated by Appendix VIII, Table 1, 39 of the 90 driver impairing drug pharmacologic classes had point estimate odds ratios over 1.2, with the lower bound also over 1.1 (indicating $p \leq .05$). Of these 35 pharmacologic classes, 27 have specific warnings about sedation, dizziness, drowsiness, and the need for caution when driving especially until the effects of the drug on driving are known.

Over age 50 drivers taking specific driver-impairing medications seem more likely to be involved in motor vehicle crashes than those not taking these medications (See Table 11). For example, the likelihood of being involved in an MVC for people taking barbiturates is 7.50 times greater than that for people not taking barbiturates. People taking antihistamines were three times more likely to have an MVC than people not taking antihistamines. Non-narcotic antitussives (also available as a common nonprescription medicine) appear to increase MVC risk by 123 percent.

This study did not consider the possible influence of maturation bias or survivor effects. We were not able to determine *de novo* exposure or prolonged exposure to prescribed medications. These are useful variables to evaluate because certain side effects are more prominent at the initiation of therapy and with continued use the body adapts to these side effects. Further research is needed to assess MVC risks when comparing initial medication use with longer-term medication use.

Table 11: Top 15 Medication classes with Highest Odds Ratios ($p \leq .05$)[2]

Drug Class	*Odds Ratio (OR) with 95% C.I.*	*Possible Effects*	*Indication for Use*
BARBITURATES	7.50 (2.35, 23.91)	Drowsiness	Nervousness, Seizures
ANTIHISTAMINES	3.00 (1.05, 8.55)	Dizziness, bronchospasm. Avoid alcohol and other medicines that affect the CNS	Asthma, Allergies
ANTITUSSIVES, NON-NARCOTIC	2.23 (1.30, 3.82)	Dizziness, drowsiness, depression	Cough
ANALGESICS, NARCOTICS	2.22 (1.98, 2.49)	Dizziness, drowsiness, blurred vision	Pain
ANTIPSYCHOTICS, ATYPICAL, DOPAMINE, & SEROTONIN ANTAG	2.20 (1.37, 3.52)	Drowsiness	Schizophrenia
SKELETAL MUSCLE RELAXANTS	2.09 (1.71, 2.55)	Dizziness, drowsiness, lightheadedness	Muscle Spasms
ANTI-ANXIETY DRUGS	2.00 (1.72, 2.31)	Drowsiness	Anxiety
ANTICONVULSANTS	1.97 (1.64, 2.38)	Drowsiness	Seizures
SEROTONIN-2 ANTAGONIST/REUPTAKE INHIBITORS (SARIS)	1.90 (1.49, 2.44)	Dizziness, drowsiness, headache, confusion	Depression
BELLADONNA ALKALOIDS	1.85 (1.08, 3.19)	Dizziness, drowsiness, confusion	GI symptoms
INSULINS	1.80 (1.45, 2.22)	Hypoglycemia	Diabetes Mellitus
HYPOTENSIVES, SYMPATHOLYTIC	1.79 (1.17, 2.74)	Hypotension, drowsiness, blurred vision	Hypertension
SEROTONIN-NOREPINEPHRINE REUPTAKE INHIB (e.g., VENLAFAXINE)	1.78 (1.19, 2.66)	Dizziness, drowsiness, hypertension, seizures	Depression
PLATELET AGGREGATION INHIBITORS	1.69 (1.17, 2.43)	Headache, weakness, shakes, aches	Stroke prevention
ANTIEMETIC/ANTIVERTIGO AGENTS	1.63 (1.17, 2.28)	Drowsiness, dizziness	Nausea, vomiting, vertigo

Seven of the fifteen medication classes in our analysis with highest odds ratios are drug classes that have been reported to be especially problematic in older patients (Beers MH, 1997). Medications classes such as barbiturates, belladonna alkaloids, antihistamines, long half-life anti-anxiety agents, antiemetic/antivertigo agents, certain narcotic analgesics, skeletal muscle relaxants, certain platelet aggregation inhibitors, fluoxetine, certain hypotensives, and certain antipsychotic agents are considered potentially inappropriate for use in older adults (Curtis et al., 2004).

[2] Study subjects taking barbiturates and mast cell stabilizers had the highest Odds Ratios. However, there are only ten cases and four controls taking barbiturates and seven cases and seven controls taking mast cell stabilizers. The Odds Ratios for those two drugs need to be confirmed by further studies. The remaining drug classes exhibited larger numbers of study subjects taking these drugs.

A review of the literature identified a number of articles that assessed the relationship between medications and automobile crashes in the older adult. An article published by McGwin in 2000 found that drivers over age 65 in Alabama had elevated odds ratios (OR) at the 95 percent confidence interval for involvement in at-fault automobile crashes for the following medication classes:

NSAIDs	**OR=1.7 (CI: 1.0, 2.6);**
ACE Inhibitor hypotensives	**OR=1.6 (CI: 1.0, 2.7);**
Anticoagulants	**OR=2.6 (CI: 1.0, 73)**
Benzodiazepine use	**OR=5.2 (CI: 0.9, 30).**

And in 2000, Sims reported:

Hypnotic medications	**RR=2.9; 95% CI:1.3, 6.6; p=0.01 (Sims, et al, 2000)**

The results of our analyses were remarkably similar:

NSAIDs	**OR=1.58 (CI: 1.41, 1.76)**
ACE Inhibitors	**OR=1.23 (CI: 1.11, 1.37);**
Oral Anticoagulants	**OR=1.31 (CI: 1.01, 1.70), and**
Benzodiazepine anti-anxiety	**OR=2.0 (CI: 1.72, 2.31).**

In each of these cases, the Odds Ratios (or relative risk in the case of the Sims study) identified were similar in magnitude to those of the cited studies.

Additional studies published in years 1992-2000, report associations among medication usage, the older adult, and motor vehicle crashes (Foley, 1995, Leveille, 1994, Ray, 1992, Hemmelgam, 1997, Hu, 1998, and Koepsell, 1994).

b. Driver Impairing Disease Groups

Study subjects with driver-impairing diseases appeared more likely to have a MVC than subjects that present without these disorders. For example, the Odds Ratio for head trauma is 36, suggesting that subjects with a history of that condition[3] were 36 times more likely to be involved in a MVC than people without that history. Acidosis had the second highest Odds Ratio of 15. The study design methodology attempted to rule out head trauma as a result of a MVC by employing temporal sequence and date of service screens. The resulting risk was a measure of subjects with existing head trauma who subsequently experienced an MVC.

As indicated by Appendix VIII, Table 2, 79 of the 200 driver impairing disease classes (40%) had statistically significant odds ratios over 1.4. The fifteen disease groups with highest odds ratios are shown below in Table 12. Note that many of these disease groups have either a small number of cases with diseases or small number of controls

[3] The study design methodology attempted to rule out head trauma as a result of an MVC by employing temporal sequence and date of service screens. The resulting risk was a measure of subjects with existing head trauma, who subsequently experienced an MVC.

with diseases or both, and although the p values were less than or equal to .05, caution must be taken when using these estimated values for Odds Ratios. For example, the disease group "acidosis" had only five cases and one control with the disease; disease group "neurotic disorder" had four cases and one control with the disease; disease group "delirium, acute" had four cases and one control with the disease; disease group "consciousness alteration" had 12 cases and four controls with the disease.

Conversely, the following disease groups had more than 50 cases and elevated Odds Ratios ($p \leq .05$): Depression, Ankylosing Spondylitis, Anxiety Disorders, CNS Excitation (nervousness, confusion), Back Pain, Congestive Heart Failure, Asthma, Diabetes Mellitus, Abdominal Pain, COPD, Ischemic Heart Disease, Cardiovascular Disease, GI Hemorrhage, Hypertension, Respiratory Infections, Arthritis, Bleeding, Arrhythmias, and Thyroid Disease.

The conditions that we identified with elevated Odds Ratios can be grouped by Disorder Type as follows:

CNS Disorders: Depression, Anxiety Disorders, Nervousness and Confusion, Neurotic Disorders, Delirium, Drowsiness, personality Disorders, Alcoholism, Insomnia, Extrapyramidal Reactions, Anxiety Disorders, and Bipolar Disorders

Previous studies have shown some association between depression and crashes (Sims, 2000). Patients who suffer from depression may be at higher risk for motor vehicle crashes. They have impaired attention and concentration, anxiety, irritability, agitation, fatigue, insomnia, and weakness. The depressed patient may also take risks, make suicidal gestures, or consume alcohol. Similarly, side effects of antidepressants may adversely affect cognitive and psychomotor function. Crashes may also result from the tricyclic anti-depressant drug-induced postural hypotension, cardiac arrhythmias, and convulsions (Edwards, 1995). Alcoholism and alcohol use have definitively been associated with motor vehicle crashes by numerous studies, both in the U.S. and worldwide. In our study we found an increased risk of automobile crashes in patients with the conditions below showing elevated significant risks.

Depression,	OR=3.99; CI:3.19, 4.99; p=.000.
Alcoholism	OR=5.44; CI:2.95-10.01, p=.000;
Stress disorders	OR=5.4; CI:1.81-16.11, p=.002;
Psychoses	OR=3.27; CI:1.44-7.42, p=.005;
Insomnia	OR=3.16; CI:1.69-5.92, p=.000;
Anxiety disorders	OR=2.87; CI:2.03-4.04, p=.000;
Drowsiness	OR=9.0; CI:2.9-27.91, p=.000;
Extrapyramidal disorders	OR=3.6; CI:1.56-8.33, p=.003; and
CNS excitation	OR=2.55; CI:1.94-3.35, p=.000

Joint and Muscle Disorders: Ankylosing Spondylitis, Arthritis, Osteoarthritis, Back Pain, and Muscle Spasms

Arthritis, history of falls, back pain and other impairments of physical function have been associated with increased crash involvement among older adults (Lyman, 2001 and Sims, 2001). In our analysis, we found increased risks in patients with:

Ankylosing spondylitis,	OR=3.33; CI:2.23-4.96, p=.000;
Back pain,	OR=2.42; CI:2.03-2.88, p=.000;
Fractures and injuries,	OR=2.34; CI:2.04-2.69, p=.000;
Muscle spasms,	OR=2.15; CI:1.33-3.5, p=.002; and
Arthritis,	OR=1.54; CI:1.12-2.11, p=.008.

Endocrine Disorders: Diabetes Mellitus and Thyroid Disorder

The impact of diabetes mellitus on older drivers has been questioned. Although McGwin et al. (1999) reported an adjusted OR of 2.5 (CI: 0.9-7.2) among drivers over age 65 who had been involved in crashes in the 4-year study period, he concludes that there is no evidence that older drivers with diabetes are at increased risk for automobile crashes. He does state that there remains the possibility that those with more severe diabetes or have had multiple crashes are at increased risk (McGwin, 1999). Conversely, Koepsell et al. found injury risk 2.6 times higher in older diabetic drivers (95% CI:1.4-4.7) and especially those treated with insulin (OR=5.8; CI:1.2-28.7) or oral hypoglycemic agents (OR=3.1; CI:0.9-11.0) (Koepsell, 1994). Drivers with medical conditions that can change abruptly, such as diabetes, are at increased risk for crashes (Carr, 2000). Our analysis showed an association of:

Diabetes mellitus,	OR=2.07; CI:1.81-2.37, p=.000.
Diabetic ketoacidosis,	OR=5.44; CI:1.81-16.11, p=.002.

Cardiovascular Disorders: Congestive Heart Failure, Ischemic Heart Disease, Cardiovascular Disease, Hypertension, Arrhythmias, Hypotension, Syncope, Angina, and Edema

McGwin (2000) found that older drivers with heart disease OR=1.5 (CI:1.0-2.2) or stroke OR=1.9 (CI: 0.9-3.9) were more likely to be involved in at-fault automobile crashes. Sims et al. (2000) noted increased risk with self-reported stroke or transient ischemic attacks (RR=2.7; CI:1.1-6.6 p=.03). Gresset et al. (1994) reported that arrhythmias were associated with a significant increased risk of road crashes (OR=1.63, CI:1.0-2.65). Koepsell et al. (1994) found increases in injury risk in older drivers with coronary artery disease OR=1.4. Our analysis similarly showed an increase in risk for motor vehicle crashes and various cardiovascular disorders.

Angina, OR=2.18; CI:1.15-4.15, p=.018;
Congestive heart failure, OR=2.1; CI:1.53-2.89, p=.000;
CVA, OR=1.97; CI:1.2-3.25, p=.008;
Ischemic heart disease, OR=1.83; CI:1.48-2.27, p=.000;
Stroke, OR=1.69; CI:1.07-2.67, p=.025;
Hypertension, OR=1.65; CI:1.48-1.84, p=.000; and
Arrhythmias, OR=1.5; CI:1.16-1.94, p=.002.

Respiratory Disorders: Asthma, COPD, Respiratory Infections, Bronchopneumonia, and pulmonary edema.

Respiratory disorders are not specifically associated with increased risk for driver impairment. However, individuals with respiratory disorders often suffer from reduced sleep quality associated with breathing difficulties. Sleep apnea has been associated with increased risk of motor vehicle crashes (Masa et al., 2000). In our analysis we did find increased risk in patients with:

Asthma, OR=2.08; CI:1.55-2.8, p=.000;
COPD, OR=1.89; CI:1.47-2.43, p=.000;
Respiratory Infections, OR=1.56; CI:1.35-1.82, p=.000;
Sleep apnea, OR=1.83; CI:1.26-2.67, p=.002; and
Pulmonary edema, OR=2.63; CI:1.28-5.38, p=.008.

Table 12: Top 15 Disease groups with Highest Odds Ratios (p≤.05)

Disease Groups	***Odds Ratio with 95% C.I.***	***Driver Impairing Effects***
HEAD TRAUMA	36.00 (11.09, 116.90)	Confusion, dizziness, drowsiness
ACIDOSIS	15.00 (1.75, 128.40)	
NEUROTIC DISORDER	12.00 (1.34, 107.37)	Confusion
DELIRIUM, ACUTE	10.50 (2.18, 50.55)	Confusion, seizures
CONSCIOUSNESS ALTERATION	9.00 (2.90, 27.91)	Drowsiness,
PERSONALITY DISORDERS	9.00 (1.82, 44.59)	Confusion, impaired judgment
HEMORRHAGE, UNSPEC	6.00 (1.10, 32.76)	Dizziness
ALCOHOLISM	5.44 (2.95, 10.01)	Confusion, dizziness, drowsiness, impaired judgment
DIABETIC KETOACIDOSIS	5.40 (1.81, 16.11)	Confusion, dizziness, impaired judgment
STRESS DISORDERS	5.40 (1.81, 16.11)	Impaired judgment
VISUAL DISTURBANCES	4.71 (1.83, 12.16)	Impaired vision
DEPRESSION	3.99 (3.19, 4.99)	Confusion, drowsiness, impaired judgment
PSYCHIATRIC DISORDERS	3.72 (2.99, 4.63)	Confusion, anxiety, drowsiness, impaired judgment
PLEURAL EFFUSION	3.69 (1.78, 7.68)	Breathing difficulties
EXTRAPYRAMIDAL REACTIONS	3.60 (1.56, 8.33)	Tremors, muscle difficulties

Head trauma and some other disease groups such as hemorrhage and alteration of consciousness could be both causes and results of MVCs. Due to the limitations of claims data, it is difficult to determine with assurance the true temporal relationship that existed.

c. Drug Interaction Conflicts and Drug-Disease Conflicts

Drug interaction conflicts and drug-disease conflicts that result in increased driver impairing effects were also analyzed.[4] Odds ratios of each conflict are displayed in Appendix VIII, Tables 3 and 4. Most conflicts have either a small number of cases, a small number of controls, or both, which makes the full assessment of their effects problematic without further analysis.

Table 13 listed 10 drug-drug (interaction) conflicts with highest statistically significant odds ratios, and Table 14 shows the 10 drug-disease conflicts with the highest statistically significant odds ratios.

The study results suggest that interacting medicines had higher Odds Ratios than when the same medicines were taken alone. For example, Odds Ratios for insulin-release stimulant type hypoglycemics and for tricyclic antidepressants were 1.50 and 1.41 respectively, while Odds Ratio for subjects taking both was 4.50.[5] The magnitude that the Odds Ratio is increased due to the presence of an interacting drug varies among drug-drug pairs. The Odds Ratio for serotonin-norepinephrine reuptake-inhibitors (SNRIs) antidepressants itself is 1.78 and for non-barbiturate sedative-hypnotics is 1.48. If each were used together with anticonvulsants, the Odds Ratios became 3.67 and 3.92 respectively. It is interesting to note that the Odds Ratios for certain drugs alone were higher than together with other drugs. For example, the Odds Ratio for barbiturates itself is 7.50 but is 6.00 when taken with anticonvulsants.[6] Due to small sample sizes (there were ten cases and four controls taking barbiturates and six cases and three controls taking both barbiturates and anticonvulsants), extra caution needs to be taken when examining the risk shift for these conflicts.

[4] Therapeutic conflicts between medications and existing diseases and other drugs were determined using a proprietary set of clinical rules used in the RxWise™ adverse drug event detection system

[5] Co-linearity with the underlying diseases cannot be ruled out by our study methodology

[6] This may be clinically reasonable due to the fact that the efficacy of some common anticonvulsants are potentiated by barbiturates used in smaller doses than those doses used for sedation alone

Table 13: Drug Interaction Conflicts with Highest Odds Ratios (p≤.05)

Drug 1	*Drug 2*	*Odds Ratio with 95% C.I.*
ANTICONVULSANTS	ANTIFUNGAL AGENTS	21.00 (2.58, 170.69)
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	QUINOLONES	21.00 (2.58, 170.69)
SKELETAL MUSCLE RELAXANTS	ANTIPSYCHOTICS, ATYPICAL, DOPAMINE, & SEROTONIN ANTAG	18.00 (2.17, 149.52)
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ABSORBABLE SULFONAMIDES	15.00 (1.75, 128.40)
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	15.00 (1.75, 128.40)
ANTICONVULSANTS	BELLADONNA ALKALOIDS	12.00 (1.34, 107.37)
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIPSYCHOTICS, ATYPICAL, DOPAMINE,& SEROTONIN ANTAG	10.50 (2.18, 50.55)
ANTI-ANXIETY DRUGS	LINCOSAMIDES	7.50 (1.46, 38.66)
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	7.50 (1.46, 38.66)
BARBITURATES	ANTICONVULSANTS	6.00 (1.50, 23.99)

Most drug-disease conflicts had higher Odds Ratios than the drugs and diseases alone. Narcotic analgesics had an Odds Ratio of 2.22 while the Odds Ratio of the conflict of narcotic analgesics and Chronic Hepatitis C without coma is 12.00. The Odds Ratio of alpha/beta-adrenergic blocking agents itself is 1 compared to 7.5 for the conflict of alpha/beta-adrenergic blocking agents and other primary cardiomyopathies.

As indicated in Appendix VIII, Table 3 and Table 4, only a small number of cases and controls experienced drug-drug conflicts and drug-disease conflicts. The estimated Odds Ratios and their 95 percent confidence interval are questionable. It is also premature to come to any conclusion about the increase and decrease of Odds Ratios for the conflicts compared to those for the drugs and diseases alone.

Table 14: Drug Disease Conflicts with Highest Odds Ratios (p≤.05)

Drug	*Disease*	*Odds Ratio with 95% C.I.*
GLUCOCORTICOIDS	ANXIETY STATE UNSPEC	15.00 (1.75, 128.40)
ANALGESICS, NARCOTICS	CHR HEPATITIS C WOCOMA	12.00 (1.34, 107.37)
ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	UNS HYPERTENSION	12.00 (1.34, 107.37)
ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	OTH PRIMARY CARDIOMYOPATHIES	7.50 (1.46, 38.66)
CALCIUM CHANNEL BLOCKING AGENTS	SYNCOPE/COLLAPSE	7.00 (1.81, 27.07)
HYPOTENSIVES, ACE INHIBITORS	SYNCOPE/COLLAPSE	6.75 (2.08, 21.92)
ORAL ANTICOAGULANTS, COUMARIN TYPE	OTH PRIMARY CARDIOMYOPATHIES	6.00 (1.10, 32.76)
HYPOTENSIVES, SYMPATHOLYTIC	DIABETES UNCOMPL TYPE II	4.50 (1.60, 12.64)
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE I	3.67 (1.52, 8.85)
BETA-ADRENERGIC AGENTS	BENIGN HYPERTENSION	3.20 (1.58, 6.47)

d. Odds Ratios for Categorical Variables

Number of medications used, number of driver-impairing medications used, number of driver-impairing disease groups, number of drug-drug conflicts, and number of drug-disease conflicts have been converted into categorical variables. The unadjusted Odds Ratios are shown in Table 15.

Table 15: Odds Ratios of Categorical Variables

Group	*Odds Ratio with 95% C.I.*
1 or more medications	1.43 (1.32, 1.54)
1 – 2 PDI medications	1.29 (1.19, 1.41)
3 or more PDI medications	1.87 (1.70, 2.06)
1 – 2 PDI diseases	1.49 (1.37, 1.63)
3 or more PDI diseases	2.20 (2.01, 2.42)
1 – 2 drug-drug conflicts	1.47 (1.33, 1.63)
3 or more drug-drug conflicts	1.92 (1.67, 2.21)
1 or more drug-disease conflicts	2.18 (1.89, 2.52)

Study subjects taking any medications are 1.43 times more likely to be involved in a MVC than people taking no medications.

Compared with study subjects taking no driver-impairing medications, those taking one or two driver-impairing medications are 1.29 times more likely to be involved in a

MVC, while the Odds Ratio for people taking three or more is 1.87. Clearly, study subjects taking driver-impairing medications have higher MVC risk. The more driver-impairing medications study subjects use the higher the MVC risk.

A similar relationship is observed for driver-impairing disease and drug-drug interactions. The risk for study subjects with one or two driver-impairing diseases is 1.49 times higher for people without any driver-impairing diseases, while the Odds Ratios for those with three or more driver-impairing diseases increases to 2.20. Drug-drug conflicts appear to increase the risk of being involved in MVCs. One or two drug-drug conflicts increase the odds by 47 percent while three or more drug-drug interactions increase the MVC odds by 92 percent.

The risk of experiencing a MVC for study subjects with at least one drug-disease conflict is 1.2 times higher than for people without any drug-disease conflicts.

e. Logistic Regression Analysis

A conditional logistic regression was performed using categorical variables for number of medications used, number of driver-impairing medications used, number of driver-impairing disease groups, number of drug interaction conflicts, and number of drug-disease conflicts. Most of the variables left in the model by Forward selection and their Odds Ratios are shown in Table 16. The residual chi-square, which indicates the goodness-of-fit, is 182.18 with a degree of freedom of 193 and p-value of 0.70. The model fits adequately. The same model was tested using unconditional logistic regression by adding the two matching variables: age and sex. The result is quite similar. The Hosmer and Lemeshow Goodness-of-Fit test[7] indicates again the model fits adequately (p-value=0.3234).

Although variables for Hypersensitivity Pneumonitis (Yes/No), Tuberculosis (Yes/No), Radiation Therapy ICD (Yes/No), Contraceptive Measures (Yes/No), Electrolyte Disorders (Yes/No), and Sickle Cell Anemia (Yes/No) were also left in the model, the p-values indicated that none of these Odds Ratios were significantly different from 1. Only one case had Hypersensitivity Pneumonitis. Five cases had Tuberculosis. Three cases had Contraceptive Measures. Six cases had Electrolyte Disorders. And one case had Sickle Cell Anemia.

The adjusted Odd Ratios differ from the unadjusted ones. For example, people taking one or two driver-impairing medications had an Odds Ratio of 1.17 after adjusting for other variables compared to the unadjusted 1.29. Every Odds Ratio except that for Hepatic Dysfunction was smaller than the unadjusted correspondents. Compared to the unadjusted 2.73, people with HEPATIC DYSFUNCTION had Odds Ratio of 3.0. GI Ulcer, Hepatitis, and Lipid Abnormalities had Odds Ratios of 1.20, 1.36, and 1.12 when computed directly, while their Odds Ratios became 0.53, 0.29, and 0.76 in the regression model.

[7] Goodness-of-fit statistics examine the difference between the observed frequency and the expected frequency for groups of patients. The statistic can be used to determine if the model provides a good fit for the data. If the P-value is large, then the model is well calibrated and fits the data well; if the P-value is small (smaller than alpha), then the model is not well calibrated. One such statistic is the Hosmer-Lemeshow goodness-of-fit statistic.

Table 16: Adjusted Odds Ratios from the Regression Model

Variable	*Odds Ratio with 95% C.I.*
1 – 2 PDI medications (Yes/No)	1.17 (1.08, 1.28)
3 or more PDI medications (Yes/No)	1.38 (1.25, 1.52)
1 – 2 PDI diseases (Yes/No)	1.15 (1.04, 1.27)
3 or more PDI diseases (Yes/No)	1.27 (1.09, 1.47)
Alcoholism (Yes/No)	2.44 (1.23, 4.85)
Asthma (Yes/No)	1.48 (1.07, 2.04)
Cardiovascular Disease (Yes/No)	1.16 (1.01, 1.32)
Depression (Yes/No)	2.02 (1.50, 2.73)
Encephalopathic Syndrome (Yes/No)	0.10 (0.01, 0.92)
GI Ulcer (Yes/No)	0.53 (0.30, 0.91)
Hepatic Dysfunction (Yes/No)	3.00 (1.61, 5.61)
Hepatitis (Yes/No)	0.29 (0.10, 0.82)
Hyperthyroidism (Yes/No)	2.50 (1.03, 6.09)
Anaphylactic Shock (Yes/No)	2.01 (1.23, 3.28)
Lipid Abnormalities (Yes/No)	0.76 (0.65, 0.88)
Lymphadenopathy (Yes/No)	0.10 (0.01, 0.76)
Diabetes Mellitus I and II (Yes/No)	1.49 (1.27, 1.75)
Head Trauma (Yes/No)	16.87 (5.00, 56.91)
Ketoacidosis (Yes/No)	3.45 (1.05, 11.41)
Syncope (Yes/No)	2.04 (1.16, 3.61)
Diarrhea, Gastroenteritis (Yes/No)	1.45 (1.17, 1.80)
CNS Excitation (Yes/No)	1.62 (1.21, 2.18)
Pleural Effusion-D (Yes/No)	2.34 (1.06, 5.14)
Surgery (Yes/No)	2.32 (1.04, 5.17)
Colon, Irritable (Yes/No)	0.39 (0.18, 0.85)
Gerd (Yes/No)	1.53 (1.14, 2.05)
Cancer (Yes/No)	0.61 (0.47, 0.79)
Fractures and Injuries (Yes/No)	1.67 (1.43, 1.95)
Ankylosing Spondylitis (Yes/No)	1.87 (1.22, 2.88)
Psychoses, Drug Induced (Yes/No)	1.69 (1.25, 2.28)
Visual Disturbances (Yes/No)	2.93 (1.05, 8.18)
Back Pain (Yes/No)	1.73 (1.43, 2.09)

The regression model showed an increase in risk among patients receiving one or more PDI medications (OR=1.17; CI:1.08-1.28) and one or more PDI diagnoses (OR=1.15; CI:1.04-1.27). Alcoholism, Asthma, Cardiovascular Disease, Depression, Hepatic Dysfunction, Hyperthyroidism, Anaphylactic shock, Diabetes Mellitus, Head trauma, Ketoacidosis, Syncope, Gastroenteritis, CNS Excitation, Pleural Effusion, GERD, Fractures and Injuries, Psychoses, Visual Disturbances, and Back Pain continued to demonstrate an association among older drivers and motor vehicle crashes. The medications used to treat these conditions, like a double-edged sword, ameliorate the

underlying condition but also exacerbate other conditions and cause new symptoms with unwanted side effects.

Conditions such as heart disease, insomnia, parkinsonism, cognitive impairment, seizure disorders, COPD, syncope, falls, and diabetes can be negatively impacted by many drugs that are considered inappropriate in the older adult. Our analysis found that many of the potentially inappropriate medications for use by older adults (Beers, 1997) were used by our study patients and many resulted in increased risk for motor vehicle crashes.

IV. CONCLUSIONS

The results of this analysis suggest that both the kinds and number of medication exposures and the characteristics of diseases/disorders present among study subjects may predict an increase in risk for MVCs among older adults. Sample size and claims data constraints place limits on the strength of some of the associations observed. However, from a public policy perspective, these observations provide ample foundation for both further study and targeted consumer and provide educational interventions directed at pre-empting some of the MVC risk through more selective prescription and use of medications concomitant with driving.

It should be noted that the utility of administrative claim data for the purpose of estimating risk of MVC is not conclusively established by this analysis. Historically, claims data has proven to be useful in analysis of medical events relating to the provision of physician, hospital, and pharmaceutical services. Methods can be employed to mitigate the common sources of error in claims databases. However, in this study the use of claims data may require careful design and validation strategies. The use of ICD9 'E' codes for the specification of 'driver' and 'non-driver' status has not been subject to rigorous validation. Because the influence of a PDI disorder or medication is only relevant to the driver involved in a crash, variability in the integrity of coding specificity with respect to driver/non-driver designation could render any attribution of causality moot. Though analysis of administrative claims data remains a relatively inexpensive mechanism for examining the relationship between PDI and MVC among elderly drivers, future studies using these data must include a validation component to elucidate the extent to which driver misidentification may influence results.

From a public policy perspective, the general observations from this analysis are particularly timely given the changes in Medicare to implement drug reimbursement in 2006. This legislation will significantly reduce the cost of medications for Medicare beneficiaries. From an economic perspective, financial barriers to medications act as a governor on excessive and volitional pharmaceutical use, particularly among those with significant budget constraints (e.g., fixed/low income older adults). However, as those financial barriers are lowered, consumers exhibit 'pent up' demand for medications. As has been reported in many studies involving the new implementation of pharmaceutical benefit programs for employers who had previously offered no subsidy for pharmaceuticals, the 'pent-up' demand results in a near- and medium-term surge in medication requests to physicians and subsequent medication usage by beneficiaries. As our results suggest, the numbers of different medications used by study subjects may predict higher risk for MVCs. Thus, a possible unexpected collateral outcome of

making pharmaceuticals more affordable for older adults may be an increase in motor vehicle crashes for this population.

As the population continues to age, an increasingly complex interplay of factors will impact driving safety. Older adults will develop chronic diseases that have driver impairing characteristics such as heart disease and the potential for arrhythmias and syncope; diabetes and the potential for ketoacidosis, hypoglycemia and retinal deterioration; depression and the potential for cognitive disturbances; back pain, arthritis, physical mobility impairment and distracting pain. Layered on to the underlying chronic diseases are the medications used to treat those conditions along with their potential to exacerbate other co-existing conditions, induce side effects, and promote dangerous drug interactions. By demonstrating the potential link between multiple drug therapies and MVCs, this study serves to highlight the need for further examination of the relationships between drugs, diseases and the older driver and the subsequent development of educational programs to increase consumer and healthcare provider awareness of this potential safety issue.

Bibliography

Beers MH, Explicit Criteria for Determining Potentially Inappropriate Medication Use by the Elderly: An Update. *Archives of Internal Medicine*, 1997; 157, 1531-1536.

Carr DB. Cardiovascular Medicine Update: The Older Adult Driver. American Family Physician 2000 Jan; 61(1).

Chan M, Nicklason F, Vial JH. Adverse drug events as a cause of hospital admission in the elderly. *Intern Med J.* 2001 May-Jun;31(4):199-205

Curtis LH, Ostbye T, Sendersky V, Hutchison S, Dans PE, Wright A, Woosley RL, Schulman KA. Inappropriate prescribing for elderly Americans in a large outpatient population. Arch Intern Med. 2004 Aug 9-23;164(15):1621-5.

Edwards JG. Depression, antidepressants, and accidents. Editorial. BMJ 1995;311:887-888.

Ellenhorn's Medical Toxicology, 2nd ed

Federal Interagency Forum on Aging Related Statistics, 2000.

Federspiel CF, Ray WA, Schaffner W, Medicaid records as a valid data source: the Tennessee experience. Med Care. 1976 Feb;14(2):166-72

Fick DM, et al. Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. Arch Intern Med;163, Dec 8/22/2003.

Foley DJ, et al. Risk factors for motor vehicle crashes among older drivers in a rural community. J Am Geriatr Soc. 1995 Jul;43(7):776-781.

Gresset J, Meyer F. Risk of automobile accidents among elderly drivers with impairments or chronic diseases. Can J Public Health. 1994 Jul-Aug;85(4):282-5.

Hanlon JT, Schmader KE, Koronkowski MJ, et.al., Adverse drug events in high risk older outpatients. J Am Geriatr Soc. 1997 Aug;45(8):945-8

Hemmelgarn B, et al. Benzodiazepine use and the risk of motor vehicle crash in the elderly. JAMA 1997 Jul2;278(1):27-31.

Hennessy S, Bilker WB, Weber A, Strom BL, Descriptive analyses of the integrity of a US Medicaid claims database, Pharmacoepidemiol Drug Saf. 2003 Mar;12(2):103-11

Hohl C, Dankoff J, Colacone A, Afilalo M. Polypharmacy, adverse drug-related events, and potential adverse drug interactions in elderly patients presenting to an emergency department. *Ann Emerg Med* 2001; 38:666-671

Hu PS, et al. Crash risks of older drivers: a panel data analysis. Accid Anal Prev 1998 Sep;30(5):569-81.

Jacobs P, Lier D, Schopflocher D. Long term medical costs of motor vehicle casualties in Alberta (1999): a population - based, incidence approach. Accid Anal Prev. 2004 Nov;36(6):1099-103

Kelly R, T. Warke, and I. Steele ”Medical restrictions to driving: the awareness of patients and doctors” Postgrad. Med. J., September 1, 1999; 75(887): 537 - 539.

Koepsell TD et al. Medical conditions and motor vehicle collision injuries in older adults. J Am Geriatr Soc. 1994 Jul;42(7):695-700.

Leveille SG, et al. Psychoactive medications and injurious motor vehicle collisions involving older drivers. Epidemiology, 1994 Nov;5(6):591-598.

Li, G., E. R. Braver, et al. (2003). "Fragility versus excessive crash involvement as determinants of high death rates per vehicle-mile of travel among older drivers." Accid Anal Prev 35(2): 227-35.

Lyman JM, et al. Factors related to driving difficulty and habits in older drivers. Accid Anal Prev. 2001 May;33(3):413-21.

Masa JF, et al. Habitually sleepy drivers have a high frequency of automobile crashes associated with respiratory disorders during sleep. Am J Respir Crit Care Med. 2000 Oct;162(4 Pt1):1407-12.

McGwin G Jr, Sims RV, Pulley L, Roseman JM. Relations among chronic medical conditions, medications, and automobile crashes in the elderly: a population-based case-control study. Am J Epidemiol. 2000 Sep 1;152(5):424-31.

McGwin G, et al. Diabetes and automobile crashes in the elderly. A population-based case-control study. Diabetes Care. 1999 Feb;22(2):220-7.

Millar, WJ, "Older Drivers: A Complex Public Health Issue", Health Reports, Autumn 1999, Vol. 11, No.2, 1999

Morgan R, King D. The older driver: A review. Postgrad Med J 1995;71(839):525-528.

Morse ML. "Detecting Adverse Drug Reactions: The Record-Linkage System—A Duality of Purpose." International Journal of Risk and Safety in Medicine 2:51-56; 1991

National Center for Health Statistics, Centers for Disease Control and Prevention. 1998. 1998 NAMCS Micro-data file Documentation.

National Center for Health Statistics, Centers for Disease Control and Prevention. 1999. 1999 NAMCS Micro-data file Documentation.

National Center for Health Statistics, Centers for Disease Control and Prevention. 2000. 2000 NAMCS Micro-data file Documentation.

Noble: Textbook of Primary Care Medicine**,** 3rd Ed

Oak Ridge National Laboratory, 2005.

Owsley C. Vision and driving in the elderly. Optom Vis Sci, 1994, 71, 727-35

Owsley C, G McGwin Jr, M Sloane, J Wells, BT Stalvey, and S Gauthreaux
Impact of Cataract Surgery on Motor Vehicle Crash Involvement by Older Adults
JAMA, August 21, 2002; 288(7): 841 - 849

Quan H, Parsons GA, Ghali WA, Validity of information on comorbidity derived from ICD-9-CCM administrative data, Med Care. 2002 Aug;40(8):675-85.

Ray WA, Fought RL, Decker MD, Psychoactive drugs and the risk of injurious motor vehicle crashes in elderly drivers, Am J Epidemiol. 1992 Oct 1;136(7):873-83

Roos LL, Walld R, Wajda A, Bond R, Hartford K. Record linkage strategies, outpatient procedures, and administrative data. Med Care. 1996 Jun;34(6):570-82

Sims RV, et al. Mobility impairments in crash-involved older drivers. J Aging Health 2001 Aug;13(3):430-8.

Sims RV, et al. Exploratory study of incident vehicle crashes among older drivers. J Gerontol A Biol Sci Med Sci. 2000 Jan;55(1):M22-27.

Strom BL, Morse ML. "Use of Computerized Databases to Survey Drug Utilization in Relation to Diagnoses." Acta Med Scand Suppl . 721:13-20, 1988.

Strom BL, Carson JL, Morse ML, Soper KA. "A Novel Approach to a Long-Term Post-Marketing Surveillance Study, Using Medicaid Billing Data." Clinical Pharmacology and Therapeutics, 35:278; 1984

US Department of Transportation. The Changing Face of Transportation. 2000 http://www.bts.gov/publications/the_changing_face_of_transportation/chapter_03.html. Accessed March 2005.

Walker AM. Pattern recognition in health insurance claims databases. Pharmacoepidemiol Drug Saf. 2001 Aug-Sep;10(5):393-7

Wilchesky M, Tamblyn RM, Huang A. Validation of diagnostic codes within medical services claims. J Clin Epidemiol. 2004 Feb;57(2):131-41

Willcox SM, et al. Inappropriate Drug Prescribing for the Community-Dwelling Elderly. *JAMA* 272:292-296, 1994.

Worth RM, Mytinger RE. Medical insurance claims as a source of data for research: accuracy of diagnostic coding. Hawaii Med J. 1996 Jan;55(1):9-11

Appendix I. Potentially Driver Impairing (PDI) Drug Classes

Potential driving impairing drug classes include 409, 500-508, 510, 512-635, 800, 874, 878, 912, 1036-1037, 1300, 1371-1374, 1500, 1566-1570, 1671, 1700, 1720-1728, 1864, 1940, 1943-1945

C. List of National Drug Code Directory Drug Classes, 1995

CODE	DRUG CLASS
0100	ANESTHETIC DRUGS
0117	Anesthetics, Local (Injectable)
0118	Anesthetics, General
0119	Adjuncts to Anesthesia / Analeptics
0120	Medicinal Gases
0121	Anesthetics, Topical
0122	Anesthetics, Ophthalmic
0123	Anesthetics, Rectal
0200	ANTIDOTES
0281	Antidotes, Specific
0283	Antidotes, General
0285	Antitoxins / Antivenins
0286	Anaphylaxis Treatment Kit
0300	ANTIMICROBIAL AGENTS
0346	Penicillins
0347	Cephalosporins
0348	Erythromycins/Lincosamides/Macrolides
0349	Polymyxins
0350	Tetracyclines
0351	Chloramphenicol/Derivatives
0352	Aminoglycosides
0353	Sulfonamides and Trimethoprim
0354	Urinary Tract Antiseptics
0355	Miscellaneous Antibacterial Agents
0356	Antimycobacterial/Anti-Leprosy Agents
0357	Quinolones/Derivatives
0358	Antifungals
0388	Antiviral Agents
0400	HEMATOLOGIC AGENTS
0408	Deficiency Anemias
0409	Anticoagulants/Thrombolytics
0410	Blood Components/Substitutes
0411	Hemostatics/Antihemophelics
0500	CARDIOVASCULAR-RENAL DRUGS
0501	Cardiac Glycosides
0502	Antiarrhythmic Agents
0503	Antianginal Agents
0504	Vascular Disorders, Cerebral/Peripheral
0505	Agents Used to Treat Shock/Hypotension
0506	Antihypertensive Agents
0507	Diuretics
0508	Coronary Vasodilators
0509	Relaxants/Stimulants, Urinary Tract
0510	Calcium Channel Blockers
0511	Carbonic Anhydrase Inhibitors
0512	Beta Blockers
0513	Alpha Agonist/Alpha Blockers
0514	ACE Inhibitors
0600	CENTRAL NERVOUS SYSTEM
0626	Sedatives and Hypnotics
0627	Antianxiety Agents
0628	Antipsychotic/Antimanics
0630	Antidepressants
0631	Anorexiants/CNS Stimulants
0632	CNS, Miscellaneous
0633	Alzheimer-Type Dementia
0634	Sleep Aid Products-OTC
0635	Antiemetics
0700	CONTRAST MEDIA/RADIOPHARMACEUT.
0789	Diagnostics, Radiopaque & Nonradioactive
0790	Diagnostics - Radiopharmaceuticals
0791	Therapeutics - Radiopharmaceuticals
0792	Miscellaneous
0800	GASTROINTESTINAL AGENTS
0874	Disorders, Acid/Peptic
0875	Antidiarrheals
0876	Laxatives
0877	Miscellaneous Gastrointestinals
0878	Antispasmodics/Anticholinergics
0879	Antacids
0900	METABOLIC/NUTRIENTS
0912	Hyperlipidemia
0913	Vitamins/Minerals
0914	Nutrition, Enteral/Parenteral
0915	Repl/Regs of Electrolytes/Water Balance
0916	Calcium Metabolism
0917	Hematopoietic Growth Factor
1000	HORMONES/HORMONAL MECHANISMS
1032	Adrenal Corticosteroids
1033	Androgens/Anabolic Steroids
1034	Estrogens/Progestins
1035	Anterior Pituitary/Hypothalamic Function
1036	Blood Glucose Regulators
1037	Thyroid/Antithyroid
1038	Antidiuretics
1039	Relaxants/Stimulants, Uterine
1040	Contraceptives
1041	Infertility
1042	Growth Hormone Secretion Disorder

Appendix I. Potentially Driver Impairing (PDI) Drug Classes

1100 IMMUNOLOGICS
- 1180 Vaccines/Antisera
- 1181 Immunomodulators
- 1182 Allergenic extracts
- 1183 Immune serums

1200 SKIN/MUCOUS MEMBRANE
- 1264 Antiseptics/Disinfectants
- 1265 Dermatologics, Misc.
- 1266 Keratolytics
- 1267 Antiperspirants
- 1268 Topical Steroids
- 1269 Burn/Sunburn, Sunscreen/Suntan Products
- 1270 Acne Products
- 1271 Topical Anti-infectives
- 1272 Anorectal Products
- 1273 Personal Care (Vaginal) Products
- 1274 Dermatitis/Antipruritics
- 1275 Topical Analgesics

1300 NEUROLOGIC DRUGS
- 1371 Extrapyramidal Movement Disorders
- 1372 Myasthenia Gravis
- 1373 Skeletal Muscle Hyperactivity
- 1374 Anticonvulsants

1400 ONCOLYTICS
- 1479 Antineoplastics, Miscellaneous
- 1480 Hormonal/Biological Response Mod.
- 1481 Antimetabolites
- 1482 Antibiotics,Alkaloids,Enzymes
- 1483 DNA Damaging Drugs

1500 OPHTHALMICS
- 1566 Glaucoma
- 1567 Cycloplegics/Mydriatics
- 1568 Ocular Anti-infective/Anti-inflammatory
- 1569 Miscellaneous Ophthalmics
- 1570 Decongestants/Antiallergy Agents
- 1571 Contact Lens Products

1600 OTOLOGICS
- 1670 Otic, Topical (Misc)
- 1671 Vertigo/Motion Sickness/Vomiting

1700 RELIEF OF PAIN
- 1720 Analgesics/General
- 1721 Analgesics, Narcotic
- 1722 Analgesics, Non-Narcotic
- 1723 Antimigraine/Other Headaches
- 1724 Antiarthritics
- 1725 Antigout
- 1726 Central Pain Syndrome
- 1727 NSAID
- 1728 Antipyretics
- 1729 Menstrual Products

1800 ANTIPARASITICS
- 1860 Antiprotozoals
- 1862 Anthelmintics
- 1863 Scabicides/Pediculicides
- 1864 Antimalarials

1900 RESPIRATORY TRACT
- 1940 Antiasthmatics/Bronchodilators
- 1941 Nasal Decongestants
- 1943 Antitussives/Expectorants/Mucolytics
- 1944 Antihistamines
- 1945 Cold Remedies
- 1946 Lozenge Products
- 1947 Corticosteroid-Inhalation/Nasal

2000 UNCLASSIFIED/MISCELLANEOUS
- 2087 Unclassified
- 2095 Pharmaceutical Aids
- 2096 Surgical Aids
- 2097 Dental Preparation
- 2098 Dentrifice/Denture Products
- 2099 Mouth Pine, Cold Sore, Canker

2100 HOMEOPATHIC PRODUCTS

Appendix II. Potentially Driver Impairing (PDI) Medical Conditions

ICD Group	Potentially Driver Impairing Diagnoses
1566	ABUSE- DRUG
1986	ALCOHOLIC LIVER DISEASE
262	ALCOHOLISM
2646	ALZHEIMER
360	ANAPHYLACTIC SHOCK
268	ANGINA, PECTORIS
269	ANGINA, UNSTABLE
361	ANGIONEUROTIC EDEMA
2658	ANKYLOSING SPONDYLITIS
1562	ANXIETY DISORDERS
273	ARRHYTHMIAS
2602	ARTHRITIS, OSTEOARTHRITIS
2657	ARTHRITIS, PSORIATIC
2601	ARTHRITIS, RHEUMATOID
2603	ARTHROPATHIES, OTHER
274	ASTHMA
275	ATRIAL FIBRILLATION
276	AV BLOCK II TO III
315	BIPOLAR DISORDER
277	BLEPHARASPASM
281	BRADYCARDIA
1203	BRAIN HEMORRHAGE
286	CARDIAC ARREST
287	CARDIOVASCULAR DISEASE
300	CEREBRAL ARTERIOSCLEROSIS
301	CEREBRAL PALSY
306	CIRRHOSIS
307	CNS DEMYELINATING DIS
1409	CNS EXCITATION
102	CONGESTIVE HEART FAILURE
309	COPD
312	DEHYDRATION
1702	DELIRIUM
313	DEMENTIA
314	DEPRESSION
422	DIABETES MELLITUS I AND II
1567	DRUG INDUCED PSYCH DISORDERS
317	DYSKINESIAS
1461	ELECTROLYTE DISORDERS
319	ENCEPHALOPATHIC SYNDROME
320	EPILEPSY
397	EXTRAPYRAMIDAL REACTIONS
2624	FRACTURES AND INJURIES

Appendix II. Potentially Driver Impairing (PDI) Medical Conditions

ICD Group	Potentially Driver Impairing Diagnoses
385	GLAUCOMA,NARROW ANGLE
330	HALLUCINATIONS
424	HEAD TRAUMA
331	HEART BLOCK
347	HYPERTENSION
348	HYPERTHYROIDISM
351	HYPOTENSION
352	HYPOTHYROIDISM
1381	ISCHEMIC HEART DISEASE
367	KIDNEY STONES
421	MALIGNANT NEOPLASM, CNS
379	MYASTHENIA GRAVIS
380	MYELODYSPLASTIC SYNDROME
378	MYOCARDIAL ISCHEMIA
364	MYOCARDITIS
383	MYOPATHY
387	NEUROLEPTIC MALIGNANT SYNDROME
2513	NEUROPATHIES
1671	NUTRITIONAL/ NEURO DEFICIENCY
392	OPTIC NEURITIS
2650	OSTEOGENESIS IMPERFECTA
393	OSTEOMALACIA
2652	OSTEOSARCOMA
394	PANCREATITIS
2461	PANIC DISORDERS
395	PARKINSONISM,PRIMARY
396	PARKINSONISM,SECONDARY
400	PERIPHERAL NEUROPATHY
404	PSEUDOTUMOR CEREBRI
1561	PSYCHOSES
2662	PSYCHOSES, DRUG INDUCED
407	PULMONARY EDEMA
408	PULMONARY EMBOLUS
2653	RENAL OSTEODYSTROPHY
363	RHABDOMYOLYSIS
1977	SEROTONIN SYNDROME SYMPTOMS
1564	STRESS DISORDERS
2648	STROKE
1101	SUBARACHNOID HEMORRHAGE
1894	SUICIDAL BEHAVIOR
919	SYMPTOMS OF DIG-TOXICITY
2581	SYMPTOMS OF ERGOTISM
949	SYNCOPE
1102	VENTRICULAR ARRHYTHMIA

Appendix II. Potentially Driver Impairing (PDI) Medical Conditions

ICD Group	Potentially Driver Impairing Diagnoses
1460	VOLUME DEPLETION

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
SKELETAL MUSCLE RELAXANTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG
ANTICONVULSANTS	BELLADONNA ALKALOIDS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	LINCOSAMIDES
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	QUINOLONES
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG
ANTICONVULSANTS	ANTIFUNGAL AGENTS
HYPOTENSIVES, ACE INHIBITORS	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION
INSULINS	LINCOSAMIDES
HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	GASTRIC ACID SECRETION REDUCERS
EYE ANTIINFLAMMATORY AGENTS	MACROLIDES
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ABSORBABLE SULFONAMIDES
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
ANTI-ANXIETY DRUGS	LINCOSAMIDES
DIGITALIS GLYCOSIDES	TETRACYCLINES
EXPECTORANTS	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE
INSULINS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
BARBITURATES	ANALGESICS,NARCOTICS
SEDATIVE-HYPNOTICS,NON-BARBITURATE	BELLADONNA ALKALOIDS
ANTI-ANXIETY DRUGS	ANTIFUNGAL ANTIBIOTICS
ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	QUINOLONES
ANALGESIC/ANTIPYRETICS, SALICYLATES	ORAL ANTICOAGULANTS,COUMARIN TYPE
ANTICONVULSANTS	ANTIFUNGAL ANTIBIOTICS
ANTIEMETIC/ANTIVERTIGO AGENTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG
BELLADONNA ALKALOIDS	NITROFURAN DERIVATIVES
ORAL ANTICOAGULANTS,COUMARIN TYPE	LINCOSAMIDES
LIPOTROPICS	LINCOSAMIDES
SKELETAL MUSCLE RELAXANTS	MACROLIDES
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	LINCOSAMIDES
EXPECTORANTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG
EXPECTORANTS	ANTIVIRALS, GENERAL
INSULINS	ANALGESIC/ANTIPYRETICS,NON-SALICYLATE
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ANALGESIC/ANTIPYRETICS,NON-SALICYLATE
BARBITURATES	ANTICONVULSANTS

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	ANTIVIRALS, GENERAL
ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	MACROLIDES
BETA-ADRENERGIC AGENTS	NITROFURAN DERIVATIVES
EYE ANTIHISTAMINES	LOOP DIURETICS
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS
SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANTICONVULSANTS
ANTICONVULSANTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
GLUCOCORTICOIDS	LINCOSAMIDES
THIAZIDE AND RELATED DIURETICS	LEUKOTRIENE RECEPTOR ANTAGONISTS
SKELETAL MUSCLE RELAXANTS	QUINOLONES
ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	BETA-ADRENERGIC BLOCKING AGENTS
BETA-ADRENERGIC AGENTS	LINCOSAMIDES
DIGITALIS GLYCOSIDES	ANTI-ANXIETY DRUGS
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANALGESICS,NARCOTICS
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	QUINOLONES
BETA-ADRENERGIC AGENTS	MAST CELL STABILIZERS
ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	ANTIHISTAMINES
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)
ANTI-ANXIETY DRUGS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
ANTI-ANXIETY DRUGS	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB
ORAL ANTICOAGULANTS,COUMARIN TYPE	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE
DIGITALIS GLYCOSIDES	THIAZIDE AND RELATED DIURETICS
DIGITALIS GLYCOSIDES	ANTIFUNGAL AGENTS
ANTIARRHYTHMICS	QUINOLONES
ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS
CALCIUM CHANNEL BLOCKING AGENTS	ANTIFUNGAL ANTIBIOTICS
INSULINS	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS
INSULINS	MACROLIDES
INSULINS	NITROFURAN DERIVATIVES
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	TRICYCLIC ANTIDEPRESSANT/PHENOTHIAZINE COMBINATNS
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ANALGESIC/ANTIPYRETICS, SALICYLATES
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	LINCOSAMIDES
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ANALGESIC/ANTIPYRETICS, SALICYLATES

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	ORAL ANTICOAGULANTS,COUMARIN TYPE
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	LINCOSAMIDES
HYPERURICEMIA TX - PURINE INHIBITORS	MACROLIDES
HYPERURICEMIA TX - PURINE INHIBITORS	QUINOLONES
HYPERURICEMIA TX - PURINE INHIBITORS	ANTIVIRALS, GENERAL
SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANTIFUNGAL ANTIBIOTICS
ANTI-ANXIETY DRUGS	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS
ANTI-ANXIETY DRUGS	MAOIS - NON-SELECTIVE & IRREVERSIBLE
ANTI-ANXIETY DRUGS	ANTIFUNGAL AGENTS
ANTI-ANXIETY DRUGS	IMMUNOSUPPRESSIVES
ANTI-PSYCHOTICS,PHENOTHIAZINES	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)
ANTI-PSYCHOTICS,PHENOTHIAZINES	MACROLIDES
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	TRICYCLIC ANTIDEPRESSANT/BENZODIAZEPINE COMBINATNS
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIPSYCHOTICS,DOPAMINE ANTAGONISTS, THIOXANTHENES
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	LINCOSAMIDES
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIFUNGAL ANTIBIOTICS
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIFUNGAL AGENTS
ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	MACROLIDES
ANALGESICS,NARCOTICS	ANTIPSYCHOTICS,DOPAMINE ANTAGONISTS,BUTYROPHENONES
ANALGESICS,NARCOTICS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG
ANALGESIC/ANTIPYRETICS, SALICYLATES	PLATELET AGGREGATION INHIBITORS
ANTIMIGRAINE PREPARATIONS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
ANTICONVULSANTS	LINCOSAMIDES
ANTITUSSIVES,NON-NARCOTIC	ANTIVIRALS, GENERAL
SKELETAL MUSCLE RELAXANTS	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS
SKELETAL MUSCLE RELAXANTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
ANTIEMETIC/ANTIVERTIGO AGENTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	MACROLIDES

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	ANTIFUNGAL AGENTS
NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS
ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	QUINOLONES
ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	ANTIMALARIAL DRUGS
ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	ANTIVIRALS, GENERAL
BELLADONNA ALKALOIDS	ORAL ANTICOAGULANTS,COUMARIN TYPE
HEPARIN AND RELATED PREPARATIONS	CEPHALOSPORINS - 1ST GENERATION
ORAL ANTICOAGULANTS,COUMARIN TYPE	PLATELET AGGREGATION INHIBITORS
ORAL ANTICOAGULANTS,COUMARIN TYPE	IMMUNOSUPPRESSIVES
EYE ANTIHISTAMINES	MACROLIDES
EYE ANTIHISTAMINES	QUINOLONES
LOOP DIURETICS	MAST CELL STABILIZERS
LOOP DIURETICS	LEUKOTRIENE RECEPTOR ANTAGONISTS
COLCHICINE	QUINOLONES
ANTIVIRALS, GENERAL	ANTIVIRALS, HIV-SPECIFIC, NUCLEOSIDE ANALOG, RTI
ANTIVIRALS, GENERAL	ANTIVIRALS, HIV-SPECIFIC, NON-NUCLEOSIDE, RTI
ANTIVIRALS, HIV-SPECIFIC, NUCLEOSIDE ANALOG, RTI	ANTIVIRALS, HIV-SPECIFIC, NON-NUCLEOSIDE, RTI
MAST CELL STABILIZERS	LEUKOTRIENE RECEPTOR ANTAGONISTS
CALCIUM CHANNEL BLOCKING AGENTS	SEROTONIN-2 ANTAGONIST/REUPTAKE INHIBITORS (SARIS)
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	MACROLIDES
ANTI-ANXIETY DRUGS	MACROLIDES
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	QUINOLONES
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	LIPOTROPICS
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB
ANTIARRHYTHMICS	CALCIUM CHANNEL BLOCKING AGENTS
ANTICONVULSANTS	ORAL ANTICOAGULANTS,COUMARIN TYPE
ANTI-ANXIETY DRUGS	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)
SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANALGESICS,NARCOTICS
DIGITALIS GLYCOSIDES	MACROLIDES
EXPECTORANTS	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ORAL ANTICOAGULANTS,COUMARIN TYPE
DIGITALIS GLYCOSIDES	ANTIARRHYTHMICS
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANALGESICS,NARCOTICS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)
ANTI-ANXIETY DRUGS	BETA-ADRENERGIC AGENTS

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
SKELETAL MUSCLE RELAXANTS	NITROFURAN DERIVATIVES
INSULINS	PLATELET AGGREGATION INHIBITORS
ANTICONVULSANTS	MACROLIDES
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ANTIFUNGAL AGENTS
ANTICONVULSANTS	NITROFURAN DERIVATIVES
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	BETA-ADRENERGIC BLOCKING AGENTS
POTASSIUM SPARING DIURETICS IN COMBINATION	LEUKOTRIENE RECEPTOR ANTAGONISTS
ANTI-ANXIETY DRUGS	QUINOLONES
HYPERURICEMIA TX - PURINE INHIBITORS	GASTRIC ACID SECRETION REDUCERS
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)
ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	BETA-ADRENERGIC BLOCKING AGENTS
SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANTIFUNGAL AGENTS
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	MACROLIDES
INSULINS	GASTRIC ACID SECRETION REDUCERS
GLUCOCORTICOIDS	MACROLIDES
SKELETAL MUSCLE RELAXANTS	BETA-ADRENERGIC BLOCKING AGENTS
ANTIARRHYTHMICS	GASTRIC ACID SECRETION REDUCERS
CALCIUM CHANNEL BLOCKING AGENTS	LINCOSAMIDES
ANTI-PSYCHOTICS,PHENOTHIAZINES	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIVIRALS, GENERAL
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIVIRALS, GENERAL
ANTICONVULSANTS	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS
ORAL ANTICOAGULANTS,COUMARIN TYPE	CEPHALOSPORINS - 1ST GENERATION
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIMIGRAINE PREPARATIONS
ANTI-ANXIETY DRUGS	LEUKOTRIENE RECEPTOR ANTAGONISTS
ANTITUSSIVES,NON-NARCOTIC	ANTIHISTAMINES
CALCIUM CHANNEL BLOCKING AGENTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	NITROFURAN DERIVATIVES
SEROTONIN-2 ANTAGONIST/REUPTAKE INHIBITORS (SARIS)	BETA-ADRENERGIC BLOCKING AGENTS
NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)	BETA-ADRENERGIC BLOCKING AGENTS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIPARKINSONISM DRUGS,ANTICHOLINERGIC

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	LIPOTROPICS
CALCIUM CHANNEL BLOCKING AGENTS	GASTRIC ACID SECRETION REDUCERS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	MACROLIDES
CALCIUM CHANNEL BLOCKING AGENTS	MACROLIDES
ANTICONVULSANTS	PLATELET AGGREGATION INHIBITORS
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ORAL ANTICOAGULANTS,COUMARIN TYPE
BETA-ADRENERGIC BLOCKING AGENTS	ANTIMALARIAL DRUGS
EXPECTORANTS	ANTIHISTAMINES
INSULINS	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)
INSULINS	ANTIFUNGAL AGENTS
PLATELET AGGREGATION INHIBITORS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	MACROLIDES
PLATELET AGGREGATION INHIBITORS	THYROID HORMONES
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	GASTRIC ACID SECRETION REDUCERS
INSULINS	BETA-ADRENERGIC BLOCKING AGENTS
INSULINS	LIPOTROPICS
CALCIUM CHANNEL BLOCKING AGENTS	ALPHA-ADRENERGIC BLOCKING AGENTS
BETA-ADRENERGIC AGENTS	MACROLIDES
DIGITALIS GLYCOSIDES	CALCIUM CHANNEL BLOCKING AGENTS
DIGITALIS GLYCOSIDES	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS
ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	CALCIUM CHANNEL BLOCKING AGENTS
ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	ALPHA-ADRENERGIC BLOCKING AGENTS
CALCIUM CHANNEL BLOCKING AGENTS	ANTI-ULCER PREPARATIONS
EXPECTORANTS	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB
EXPECTORANTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
INSULINS	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB
INSULINS	ANTIVIRALS, GENERAL
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	PLATELET AGGREGATION INHIBITORS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ABSORBABLE SULFONAMIDES
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	NITROFURAN DERIVATIVES

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	PLATELET AGGREGATION INHIBITORS
ANTI-ANXIETY DRUGS	NITROFURAN DERIVATIVES
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIPARKINSONISM DRUGS,OTHER
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIFUNGAL AGENTS
ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	ANTIVIRALS, GENERAL
ANTICONVULSANTS	IMMUNOSUPPRESSIVES
SKELETAL MUSCLE RELAXANTS	LINCOSAMIDES
SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	ORAL ANTICOAGULANTS,COUMARIN TYPE
BELLADONNA ALKALOIDS	ANTIFUNGAL AGENTS
BETA-ADRENERGIC AGENTS	BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION
BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION	BETA-ADRENERGIC BLOCKING AGENTS
BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION	LEUKOTRIENE RECEPTOR ANTAGONISTS
LIPOTROPICS	MACROLIDES
LIPOTROPICS	ANTIFUNGAL ANTIBIOTICS
HEPARIN AND RELATED PREPARATIONS	ORAL ANTICOAGULANTS,COUMARIN TYPE
ORAL ANTICOAGULANTS,COUMARIN TYPE	QUINOLONES
ORAL ANTICOAGULANTS,COUMARIN TYPE	CEPHALOSPORINS - 2ND GENERATION
EYE ANTIINFLAMMATORY AGENTS	POTASSIUM SPARING DIURETICS
EYE ANTIHISTAMINES	POTASSIUM SPARING DIURETICS IN COMBINATION
ANTIMALARIAL DRUGS	ANTIVIRALS, GENERAL
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	GASTRIC ACID SECRETION REDUCERS
LIPOTROPICS	QUINOLONES
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ORAL ANTICOAGULANTS,COUMARIN TYPE
INSULINS	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	QUINOLONES
INSULINS	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)
CALCIUM CHANNEL BLOCKING AGENTS	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)
INSULINS	QUINOLONES
GLUCOCORTICOIDS	IMMUNOSUPPRESSIVES
DIGITALIS GLYCOSIDES	LOOP DIURETICS
SKELETAL MUSCLE RELAXANTS	ORAL ANTICOAGULANTS,COUMARIN TYPE
HYPOTENSIVES, ACE INHIBITORS	CALCIUM CHANNEL BLOCKING AGENTS

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	GASTRIC ACID SECRETION REDUCERS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ORAL ANTICOAGULANTS,COUMARIN TYPE
HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	LIPOTROPICS
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE
PLATELET AGGREGATION INHIBITORS	QUINOLONES
HYPOTENSIVES, ACE INHIBITORS	POTASSIUM SPARING DIURETICS IN COMBINATION
INSULINS	ABSORBABLE SULFONAMIDES
LIPOTROPICS	NITROFURAN DERIVATIVES
LIPOTROPICS	ANTIFUNGAL AGENTS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)
POTASSIUM SPARING DIURETICS	LOOP DIURETICS
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	ANTIFUNGAL AGENTS
SKELETAL MUSCLE RELAXANTS	PLATELET AGGREGATION INHIBITORS
BELLADONNA ALKALOIDS	MACROLIDES
BETA-ADRENERGIC AGENTS	BETA-ADRENERGIC BLOCKING AGENTS
ORAL ANTICOAGULANTS,COUMARIN TYPE	THYROID HORMONES
INSULINS	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)
ANTIMIGRAINE PREPARATIONS	BETA-ADRENERGIC BLOCKING AGENTS
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	LIPOTROPICS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	LIPOTROPICS
ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	THIAZIDE AND RELATED DIURETICS
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIMIGRAINE PREPARATIONS
ORAL ANTICOAGULANTS,COUMARIN TYPE	MACROLIDES
HYPOTENSIVES, ACE INHIBITORS	LOOP DIURETICS
BETA-ADRENERGIC AGENTS	LEUKOTRIENE RECEPTOR ANTAGONISTS
DIGITALIS GLYCOSIDES	POTASSIUM SPARING DIURETICS IN COMBINATION
LIPOTROPICS	IMMUNOSUPPRESSIVES
CALCIUM CHANNEL BLOCKING AGENTS	BETA-ADRENERGIC BLOCKING AGENTS
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	BETA-ADRENERGIC BLOCKING AGENTS
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	QUINOLONES
HYPOTENSIVES, ACE INHIBITORS	THIAZIDE AND RELATED DIURETICS
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	LIPOTROPICS
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	LIPOTROPICS
ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	LOOP DIURETICS

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
CALCIUM CHANNEL BLOCKING AGENTS	CHOLINESTERASE INHIBITORS
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	NITROFURAN DERIVATIVES
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ANTIFUNGAL AGENTS
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ANTIVIRALS, GENERAL
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	ANALGESIC/ANTIPYRETICS, SALICYLATES
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	MACROLIDES
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	NITROFURAN DERIVATIVES
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIPARKINSONISM DRUGS,OTHER
ANALGESIC/ANTIPYRETICS,NON-SALICYLATE	PLATELET AGGREGATION INHIBITORS
ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	BETA-ADRENERGIC AGENTS
ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	BETA-ADRENERGIC BLOCKING AGENTS
PLATELET AGGREGATION INHIBITORS	CEPHALOSPORINS - 1ST GENERATION
GLUCOCORTICOIDS	NITROFURAN DERIVATIVES
EYE ANTIINFLAMMATORY AGENTS	QUINOLONES
THIAZIDE AND RELATED DIURETICS	POTASSIUM SPARING DIURETICS IN COMBINATION
COLCHICINE	MACROLIDES
ANTIVIRALS, HIV-SPECIFIC, PROTEASE INHIBITORS	ANTIVIRALS, HIV-SPECIFIC, NUCLEOSIDE ANALOG, RTI
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	BETA-ADRENERGIC BLOCKING AGENTS
CALCIUM CHANNEL BLOCKING AGENTS	ANTIFUNGAL AGENTS
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	GASTRIC ACID SECRETION REDUCERS
CALCIUM CHANNEL BLOCKING AGENTS	IMMUNOSUPPRESSIVES
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)
ANTI-ANXIETY DRUGS	ANTIVIRALS, GENERAL
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	BETA-ADRENERGIC BLOCKING AGENTS
DIGITALIS GLYCOSIDES	BETA-ADRENERGIC BLOCKING AGENTS
DIGITALIS GLYCOSIDES	HYPOTENSIVES,SYMPATHOLYTIC
DIGITALIS GLYCOSIDES	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST
DIGITALIS GLYCOSIDES	POTASSIUM SPARING DIURETICS
CALCIUM CHANNEL BLOCKING AGENTS	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	PLATELET AGGREGATION INHIBITORS
HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)

APPENDIX III. DRUG INTERACTION CONFLICTS

DRUG CLASS	DRUG CLASS
HYPOTENSIVES, ACE INHIBITORS	POTASSIUM SPARING DIURETICS
LIPOTROPICS	ANTIVIRALS, GENERAL
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	PLATELET AGGREGATION INHIBITORS
GLUCOCORTICOIDS	ANTIFUNGAL AGENTS
ALPHA-ADRENERGIC BLOCKING AGENTS	BETA-ADRENERGIC BLOCKING AGENTS
THIAZIDE AND RELATED DIURETICS	LOOP DIURETICS
ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	POTASSIUM SPARING DIURETICS IN COMBINATION
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ANTIVIRALS, GENERAL
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB
ORAL ANTICOAGULANTS,COUMARIN TYPE	ABSORBABLE SULFONAMIDES
GLUCOCORTICOIDS	ANTIFUNGAL ANTIBIOTICS
CHOLINESTERASE INHIBITORS	BETA-ADRENERGIC BLOCKING AGENTS
INSULINS	ORAL ANTICOAGULANTS,COUMARIN TYPE
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	PLATELET AGGREGATION INHIBITORS
POTASSIUM SPARING DIURETICS IN COMBINATION	LOOP DIURETICS
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	QUINOLONES
ANTIARRHYTHMICS	LIPOTROPICS
SKELETAL MUSCLE RELAXANTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG

APPENDIX IV. DRUG-DISEASE CONFLICTS

DRUG CLASS	DISEASE CONFLICT
GLUCOCORTICOIDS	ANXIETY STATE UNSPEC
ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	UNS HYPERTENSION
ANALGESICS,NARCOTICS	CHR HEPATITIS C WOCOMA
LOOP DIURETICS	AC/UNS HEPATITIS C WOCOMA
BETA-ADRENERGIC AGENTS	PRIMARY PULMONARY HYPERTENSION
ANALGESICS,NARCOTICS	CIRRHOSIS LIVER WO ALCOHOL
CALCIUM CHANNEL BLOCKING AGENTS	SYNCOPE/COLLAPSE
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	SYNCOPE/COLLAPSE
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	CHR HEPATITIS C WOCOMA
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES RENAL MANIF TYPE II
LOOP DIURETICS	DIABETES RENAL MANIF TYPE II
GLUCOCORTICOIDS	DEPRESSIVE TYPE PSYCHOSIS
GLUCOCORTICOIDS	MAJ DEPRESS DIS SGL EPI MODERATE
ANTIHISTAMINES	UNS AFFECTIVE PSYCHOSIS
ANTIHISTAMINES	GRAND MALY WO INTRACT EPILEPSY
BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION	BENIGN HYPERTENSION
NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	HYPERTENSIVE HEART DIS UNSPEC
BETA-ADRENERGIC BLOCKING AGENTS	UNS HEART FAILURE
INSULINS	CIRRHOSIS LIVER WO ALCOHOL
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	OTH CHRONIC NONALCOHOLIC LIVER DIS
ANTICONVULSANTS	CHRONIC RENAL FAILURE
DIGITALIS GLYCOSIDES	SYNCOPE/COLLAPSE
ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	OTH PRIMARY CARDIOMYOPATHIES
INSULINS	DIABETES RENAL MANIF TYPE II
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	CHRONIC RENAL FAILURE
QUINOLONES	CHRONIC RENAL FAILURE
HYPOTENSIVES, ACE INHIBITORS	SYNCOPE/COLLAPSE
ORAL ANTICOAGULANTS,COUMARIN TYPE	OTH PRIMARY CARDIOMYOPATHIES
HYPOTENSIVES,SYMPATHOLYTIC	DIABETES UNCOMPL TYPE II
BETA-ADRENERGIC AGENTS	BENIGN HYPERTENSION
ANALGESICS,NARCOTICS	HEPATITIS B WO COMA AC/UNS WO DELTA
ANALGESICS,NARCOTICS	CHR HEPATITIS C W COMA
POTASSIUM SPARING DIURETICS	AC/UNS HEPATITIS C WOCOMA
ANTICONVULSANTS	CHR HEPATITIS C WOCOMA
HYPOTENSIVES,SYMPATHOLYTIC	DIABETES UNCOMP TYPE II UNCONTRD
HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES RENAL MANIF TYPE II
HYPOTENSIVES, ACE INHIBITORS	DIABETES RENAL MANIF TYPE I
THIAZIDE AND RELATED DIURETICS	DIABETES RENAL MANIF TYPE I
QUINOLONES	DIABETES RENAL MANIF TYPE I
INSULINS	DIABETES RENAL MANIF TYPE II UNC
HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES EYE MANIF TYPE II
HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES NEURO MANIF TYPE II

APPENDIX IV. DRUG-DISEASE CONFLICTS

DRUG CLASS	DISEASE CONFLICT
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES NEUR MANIF TYPE II UNCN
ANTI-ANXIETY DRUGS	ACUTE DELIRIUM
ANTI-MANIA DRUGS	BIPOLAR AFFECT DIS DEPRESS UNS
ANTI-MANIA DRUGS	UNS MANIC DEPRESSIVE PSYCHOSIS
SEDATIVE-HYPNOTICS,NON-BARBITURATE	UNS AFFECTIVE PSYCHOSIS
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	UNS AFFECTIVE PSYCHOSIS
ANTICONVULSANTS	UNS AFFECTIVE PSYCHOSIS
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	OTHER AFFECTIVE PSYCHOSES
GLUCOCORTICOIDS	NEUROTIC DEPRESSION
GLUCOCORTICOIDS	ADJUST REAC BRIEF DEPRESSIVE
GLUCOCORTICOIDS	PETIT MAL WO INTRACT EPILEPSY
ANTIHISTAMINES	PETIT MAL WO INTRACT EPILEPSY
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	GRAND MALY WO INTRACT EPILEPSY
GLUCOCORTICOIDS	GRAND MALY WO INTRACT EPILEPSY
LOOP DIURETICS	UNS EPILEPSY WO INTRACT EPILEPSY
NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	MALIGNANT HYPERTENSION
BETA-ADRENERGIC BLOCKING AGENTS	HYPERTEN HEART DIS W CHF
INSULINS	RENAL HYPERT UNSPEC/FAILURE
SEDATIVE-HYPNOTICS,NON-BARBITURATE	RENAL HYPERT UNSPEC/FAILURE
ANTICONVULSANTS	RENAL HYPERT UNSPEC/FAILURE
LOOP DIURETICS	RENAL HYPERT UNSPEC/FAILURE
BETA-ADRENERGIC AGENTS	OTH PRIMARY CARDIOMYOPATHIES
ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	CONGESTIVE HEART FAILURE
DIGITALIS GLYCOSIDES	LEFT HEART FAILURE
INSULINS	LEFT HEART FAILURE
ORAL ANTICOAGULANTS,COUMARIN TYPE	LEFT HEART FAILURE
BETA-ADRENERGIC AGENTS	CARDIOMEGALY
SEDATIVE-HYPNOTICS,NON-BARBITURATE	OBSTRUCT CHRON BRONCHITIS W EXAC
BETA-ADRENERGIC BLOCKING AGENTS	OTH EMPHYSEMA
ANALGESIC/ANTIPYRETICS,NON-SALICYLATE	UNS ASTHMA WOSTATUS ASTHMATICUS
POTASSIUM SPARING DIURETICS	ALCOHOLIC CIRRHOSIS LIVER
ANALGESICS,NARCOTICS	BILIARY CIRRHOSIS
GLUCOCORTICOIDS	BILIARY CIRRHOSIS
ANTI-ANXIETY DRUGS	OTH CHRONIC NONALCOHOLIC LIVER DIS
LIPOTROPICS	OTH CHRONIC NONALCOHOLIC LIVER DIS
ANALGESICS,NARCOTICS	OTH SEQUELAE CHRONIC LIVER DISEASE
ANALGESICS,NARCOTICS	UNS HEPATITIS
LIPOTROPICS	UNS HEPATITIS
NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	UNS HEPATITIS
CALCIUM CHANNEL BLOCKING AGENTS	OTHER DISORDERS LIVER
HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	UNS DISORDER LIVER
BETA-ADRENERGIC BLOCKING AGENTS	UNS DISORDER LIVER
GLUCOCORTICOIDS	UNS DISORDER LIVER
LOOP DIURETICS	UNS DISORDER LIVER
HYPOTENSIVES, ACE INHIBITORS	UNS ACUTE RENAL FAILURE

APPENDIX IV. DRUG-DISEASE CONFLICTS

DRUG CLASS	DISEASE CONFLICT
POTASSIUM SPARING DIURETICS IN COMBINATION	UNS ACUTE RENAL FAILURE
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	CHRONIC RENAL FAILURE
SEDATIVE-HYPNOTICS,NON-BARBITURATE	CHRONIC RENAL FAILURE
ANALGESIC/ANTIPYRETICS,NON-SALICYLATE	CHRONIC RENAL FAILURE
DIGITALIS GLYCOSIDES	UNS RENAL FAILURE
HYPOTENSIVES, ACE INHIBITORS	UNS RENAL FAILURE
SEDATIVE-HYPNOTICS,NON-BARBITURATE	SYNCOPE/COLLAPSE
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	SYNCOPE/COLLAPSE
ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	SYNCOPE/COLLAPSE
INSULINS	KIDNEY REPLACED BY TRANSPLANT
INSULINS	RENAL DIALYSIS STATUS
ANALGESICS,NARCOTICS	RENAL DIALYSIS STATUS
NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	BENIGN HYPERTENSION
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE I
NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	UNS HYPERTENSION
GLUCOCORTICOIDS	DEPRESSIVE DISORDER NEC
BETA-ADRENERGIC BLOCKING AGENTS	UNS ASTHMA WOSTATUS ASTHMATICUS
LOOP DIURETICS	CIRRHOSIS LIVER WO ALCOHOL
ANALGESICS,NARCOTICS	UNS RENAL FAILURE
HYPOTENSIVES, ACE INHIBITORS	DIABETES RENAL MANIF TYPE II
LEUKOTRIENE RECEPTOR ANTAGONISTS	BENIGN HYPERTENSION
NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	CONGESTIVE HEART FAILURE
HYPOTENSIVES, ACE INHIBITORS	CHRONIC RENAL FAILURE
HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES UNCOMPL TYPE II
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	CONGESTIVE HEART FAILURE
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	CONGESTIVE HEART FAILURE
BETA-ADRENERGIC AGENTS	UNS HYPERTENSION
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	CONGESTIVE HEART FAILURE
BETA-ADRENERGIC BLOCKING AGENTS	CHRONIC RENAL FAILURE
LOOP DIURETICS	CHRONIC RENAL FAILURE
HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES UNCOMPL TYPE I
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMP TYPE II UNCONTRD
HYPOTENSIVES,MISCELLANEOUS	DIABETES UNCOMPL TYPE II
ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE II
ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE I
HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES UNCOMP TYPE II UNCONTRD
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES NEURO MANIF TYPE I

APPENDIX IV. DRUG-DISEASE CONFLICTS

DRUG CLASS	DISEASE CONFLICT
GLUCOCORTICOIDS	PANIC DISORDER
LEUKOTRIENE RECEPTOR ANTAGONISTS	UNS HYPERTENSION
NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	BENIGN HYPERTEN HEART DIS UNSPEC
BETA-ADRENERGIC AGENTS	HYPERTEN HEART DIS W CHF
DIGITALIS GLYCOSIDES	OTH PRIMARY CARDIOMYOPATHIES
LEUKOTRIENE RECEPTOR ANTAGONISTS	CONGESTIVE HEART FAILURE
SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	UNS CARDIOVASCULAR DISEASE
CALCIUM CHANNEL BLOCKING AGENTS	UNS HEPATITIS
ANALGESICS,NARCOTICS	UNS DISORDER LIVER
ANALGESICS,NARCOTICS	UNS ACUTE RENAL FAILURE
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	CHRONIC RENAL FAILURE
HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	CHRONIC RENAL FAILURE
ANALGESICS,NARCOTICS	CHRONIC RENAL FAILURE
INSULINS	UNS RENAL FAILURE
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	UNS RENAL FAILURE
INSULINS	SYNCOPE/COLLAPSE
BETA-ADRENERGIC BLOCKING AGENTS	KIDNEY REPLACED BY TRANSPLANT
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE II
ORAL ANTICOAGULANTS,COUMARIN TYPE	CONGESTIVE HEART FAILURE
BETA-ADRENERGIC AGENTS	CONGESTIVE HEART FAILURE
INSULINS	CHRONIC RENAL FAILURE
DIGITALIS GLYCOSIDES	CONGESTIVE HEART FAILURE
NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	VOLUME DEPLETION DISORDER
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	OTH PRIMARY CARDIOMYOPATHIES
BETA-ADRENERGIC BLOCKING AGENTS	SYNCOPE/COLLAPSE
SEDATIVE-HYPNOTICS,NON-BARBITURATE	AC/UNS HEPATITIS C WOCOMA
ANALGESICS,NARCOTICS	AC/UNS HEPATITIS C WOCOMA
HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	DIABETES RENAL MANIF TYPE II
INSULINS	DIABETES RENAL MANIF TYPE I
DIGITALIS GLYCOSIDES	UNS HEART FAILURE
BETA-ADRENERGIC BLOCKING AGENTS	OBSTRUCT CHRON BRONCHITIS W EXAC
ANALGESIC/ANTIPYRETICS, SALICYLATES	UNS ASTHMA WOSTATUS ASTHMATICUS
SEDATIVE-HYPNOTICS,NON-BARBITURATE	CHRONIC AIRWAY OBSTRUCTION NEC
LOOP DIURETICS	UNS RENAL FAILURE
VASODILATORS,CORONARY	SYNCOPE/COLLAPSE
BETA-ADRENERGIC BLOCKING AGENTS	CHRONIC AIRWAY OBSTRUCTION NEC
BETA-ADRENERGIC BLOCKING AGENTS	OTH PRIMARY CARDIOMYOPATHIES
TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	CONGESTIVE HEART FAILURE
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	DIABETES RENAL MANIF TYPE II
INSULINS	OTH PRIMARY CARDIOMYOPATHIES
INSULINS	CONGESTIVE HEART FAILURE
HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	CONGESTIVE HEART FAILURE

APPENDIX IV. DRUG-DISEASE CONFLICTS

DRUG CLASS	DISEASE CONFLICT
PLATELET AGGREGATION INHIBITORS	CONGESTIVE HEART FAILURE
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES EYE MANIF TYPE II
POTASSIUM SPARING DIURETICS	CIRRHOSIS LIVER WO ALCOHOL
BETA-ADRENERGIC BLOCKING AGENTS	CONGESTIVE HEART FAILURE
BETA-ADRENERGIC BLOCKING AGENTS	DIABETES NEURO MANIF TYPE II
GLUCOCORTICOIDS	ANXIETY STATE UNSPEC

Appendix V. ICD-9-CM Codes for Motor Vehicle Accidents

Definitions and Examples Related to Transport Accidents

Transport Accident (ES800-E848)
Any accident involving device designed primarily for, or being used at the time primarily for conveying persons or goods from one place to another.

Includes: accidents involving: aircraft and spacecraft (E840-E845); watercraft (E830-E838); motor vehicle (E810-E825); railway (E800-E807); other road vehicles (E826-E829)

Motor Vehicle Accident (ES800-E848)
A transport accident involving a motor vehicle. It is defined as a motor vehicle traffic accident or as a motor vehicle nontraffic accident according to whether the accident occurs on a public highway or elsewhere.

Excludes: injury or damage due to cataclysm
injury or damage while a motor vehicle, not under its own power; is being loaded on, or unloaded from, another conveyance.

Motor Vehicle Traffic Accident
Any motor vehicle accident occurring on a public highway (i.e., originating, terminating, or involving a vehicle partially on the highway). A motor vehicle accident is assumed to have occurred on the highway unless another place is specified, except in the case of accidents involving only off-read motor vehicles which are classified as nontraffic accidents unless the contrary is stated.

Motor Vehicle Nontraffic Accident
Any motor vehicle accident which occurs entirely in any place other than a public highway.

Public Highway (Trafficway) or Street
The entire width between property lines (or other boundary lines) of every way or place, of which any part is open to the use of the public for purposes of vehicular traffic as a matter of right or custom. A roadway is that party of the public highway designed, improved, or ordinarily used, for vehicular travel.

Includes: approaches (public) to: docks, public building, station

Excludes: *driveway (private); parking lot; ramp*
roads in: airfield; farm; industrial premises; mine; private grounds; quarry.

Motor Vehicle
Any mechanically or electrically powered device not operated on rails, upon which any person or property may be transported or drawn upon a highway. Any object such as a trailer, coaster, sled, or wagon being towed by a motor vehicle is considered a part of the motor vehicle.

Includes: automobile (any type) bus; construction machinery, farm and industrial machinery, steam roller, tractor, army tank, highway grader, or similar vehicle on wheels or treads, while in transport under own power; fire engine (motorized); motorcycle; motorized bicycle (moped) or scoter; trolley bus not operating on rails; truck; van.

Excludes: devices used solely to move persons or material within the confines of a building and its premises, such as: building elevator; coal car in mine; electric baggage or mail truck used solely within a railroad station; electric truck used solely within an industrial plant; moving overhead crane.

Motorcycle

A two-wheeled motor vehicle having one or two riding saddles and sometimes having a third when for the support of a sidecar. The sidecar is considered part of the motorcycle.

Includes: motorized: bicycle (moped); scooter; tricycle.

Off-Road Motor Vehicle

A motor vehicle of special design, to enable it to negotiate rough or soft terrain or snow. Examples of special design are high construction, special wheels and tires, drives by treads, or support on a cushion of air.

Includes: all terrain vehicle (ATV); army tank; hovercraft, on land or swamp; snowmobile.

Driver

A driver of a motor vehicle is the occupant of the motor vehicle operating it or intending to operate it. A motorcyclist is the driver of a motorcycle. Other authorized occupants of a motor vehicle are passengers.

Other Road Vehicle

Any device, except a motor vehicle in, on, or by which any person or property may be transported on a highway.

Includes: animal carrying a person or goods; animal-drawn vehicles; animal harnessed to conveyance; bicycle (pedal cycle); streetcar; tricycle (pedal).

Excludes: pedestrian conveyance (definition (q))

Note: For definitions of motor vehicle traffic accident, and related terms, see definitions (e) to (k).

Excludes: accidents involving motor vehicle and aircraft

Appendix V. ICD-9-CM Codes for Motor Vehicle Accidents

The following fourth-digit subdivisions are for use with categories E810-E819 to identify the injured person:

.0 Driver of motor vehicle other than motorcycle
(See definition (1).

.1 Passenger in motor vehicle other than motorcycle
(See definition (1).

.2 Motorcyclist
See definition (1)

.3 Passenger on motorcycle
See definition (1).

.4 Occupant of streetcar

.5 Rider of animal; occupant of animal-drawn vehicle

.6 Pedal cyclist
See definition (p)

.7 Pedestrian
See definition (r)

.8 Other specified person
Occupant of vehicle other than above; Person in railway train involved in accident; Unauthorized rider of motor vehicle.

.9 Unspecified person

Appendix V. ICD-9-CM Codes for Motor Vehicle Accidents

MOTOR VEHICLE TRAFFIC ACCIDENTS (E810-E819)

- Note: For definitions of motor vehicle traffic accident, and related terms, see definitions (e) to (k).
  - Excludes: accidents involving motor vehicle and aircraft (E840.0-E845.9)
- The following fourth-digit subdivisions are for use with categories E810-E819 to identify the injured person:
  - .0 Driver of motor vehicle other than motorcycle
    See definition (l)
  - .1 Passenger in motor vehicle other than motorcycle
    See definition (l)
  - .2 Motorcyclist
    See definition (l)
  - .3 Passenger on motorcycle
    See definition (l)
  - .4 Occupant of streetcar
  - .5 Rider of animal; occupant of animal-drawn vehicle
  - .6 Pedal cyclist
    See definition (p)
  - .7 Pedestrian
    See definition (r)
  - .8 Other specified person
    Occupant of vehicle other than above
    Person in railway train involved in accident
    Unauthorized rider of motor vehicle
  - .9 Unspecified person

- **E810 Motor vehicle traffic accident involving collision with train**
  - Requires fourth digit. See beginning of section E800-E845 for codes and definitions.
  - Excludes: motor vehicle collision with object set in motion by railway train (E815.0-E815.9)
    - railway train hit by object set in motion by motor vehicle (E818.0-E818.9)
- **E811 Motor vehicle traffic accident involving re-entrant collision with another motor vehicle**
  Includes: collision between motor vehicle, which accidentally leaves the roadway then re-enters the same roadway, or the opposite roadway on a divided highway, and another motor vehicle
  Excludes: collision on the same roadway when none of the motor vehicles involved have left and re-entered the roadway (E812.0-E812.9)

- **E812 Other motor vehicle traffic accident involving collision with motor vehicle**
  Includes: collision with another motor vehicle parked, stopped, stalled, disabled, or abandoned on the highway
    motor vehicle collision NOS
  Excludes: collision with object set in motion by another motor vehicle (E815.0-E815.9)
    re-entrant collision with another motor vehicle (E811.0-E811.9)

- **E813 Motor vehicle traffic accident involving collision with other vehicle**

Includes: collision between motor vehicle, any kind, and:
other road (nonmotor transport) vehicle, such as:
animal carrying a person
animal-drawn vehicle
pedal cycle
streetcar
Excludes: collision with:
object set in motion by nonmotor road vehicle (E815.0-E815.9)
pedestrian (E814.0-E814.9)
nonmotor road vehicle hit by object set in motion by motor vehicle (E818.0-E818.9)

- **E814 Motor vehicle traffic accident involving collision with pedestrian**
  Includes: collision between motor vehicle, any kind, and pedestrian
  pedestrian dragged, hit, or run over by motor vehicle, any kind
  Excludes: pedestrian hit by object set in motion by motor vehicle (E818.0-E818.9)

- **E815 Other motor vehicle traffic accident involving collision on the highway**
  Includes: collision (due to loss of control) (on highway) between motor vehicle, any kind, and:
  abutment (bridge) (overpass)
  animal (herded) (unattended)
  fallen stone, traffic sign, tree, utility pole
  guard rail or boundary fence
  inter-highway divider
  landslide (not moving)
  object set in motion by railway train or road vehicle (motor) (nonmotor)
  object thrown in front of motor vehicle
  safety island
  temporary traffic sign or marker
  wall of cut made for road
  other object, fixed, movable, or moving
  Excludes: collision with:
  any object off the highway (resulting from loss of control) (E816.0-E816.9)
  any object which normally would have been off the highway and is not stated to have been on it (E816.0-E816.9)
  motor vehicle parked, stopped, stalled, disabled, or abandoned on highway (E812.0-E812.9)
  moving landslide (E909.2)
  motor vehicle hit by object:
  set in motion by railway train or road vehicle (motor) (nonmotor) (E818.0-E818.9)
  thrown into or on vehicle (E818.0-E818.9)

- **E816 Motor vehicle traffic accident due to loss of control, without collision on the highway**
  Includes: motor vehicle:
  failing to make curve and:

colliding with object off the highway
overturning
stopping abruptly off the highway
going out of control (due to)
blowout and:
colliding with object off the highway
overturning
stopping abruptly off the highway
burst tire and:
colliding with object off the highway
overturning
stopping abruptly off the highway
driver falling asleep and:
colliding with object off the highway
overturning
stopping abruptly off the highway
driver inattention and:
colliding with object off the highway
overturning
stopping abruptly off the highway
excessive speed and:
colliding with object off the highway
overturning
stopping abruptly off the highway
failure of mechanical part and:
colliding with object off the highway
overturning
stopping abruptly off the highway

Excludes: collision on highway following loss of control (E810.0-E815.9)
loss of control of motor vehicle following collision on the highway (E810.0-E815.9)

- **E817 Noncollision motor vehicle traffic accident while boarding or alighting**
  Includes: fall down stairs of motor bus while boarding or alighting
  fall from car in street while boarding or alighting
  injured by moving part of the vehicle while boarding or alighting
  trapped by door of motor bus boarding or alighting while boarding or alighting

- **E818 Other noncollision motor vehicle traffic accident**
  Includes: accidental poisoning from exhaust gas generated by motor vehicle while in motion
  breakage of any part of motor vehicle while in motion
  explosion of any part of motor vehicle while in motion
  fall, jump, or being accidentally pushed from motor vehicle while in motion
  fire starting in motor vehicle while in motion
  hit by object thrown into or on motor vehicle while in motion
  injured by being thrown against some part of, or object in motor vehicle while in motion

injury from moving part of motor vehicle while in motion
object falling in or on motor vehicle while in motion
object thrown on motor vehicle while in motion
collision of railway train or road vehicle except motor vehicle, with object set in motion by motor vehicle
motor vehicle hit by object set in motion by railway train or road vehicle (motor) (nonmotor)
pedestrian, railway train, or road vehicle (motor) (nonmotor) hit by object set in motion by motor vehicle

Excludes: collision between motor vehicle and:
object set in motion by railway train or road vehicle (motor) (nonmotor) (E815.0-E815.9)
object thrown towards the motor vehicle (E815.0-E815.9)
person overcome by carbon monoxide generated by stationary motor vehicle off the roadway with motor running (E868.2)

- **E819 Motor vehicle traffic accident of unspecified nature**
  Includes: motor vehicle traffic accident NOS
  traffic accident NOS

MOTOR VEHICLE NONTRAFFIC ACCIDENTS (E820-E825)

- Note: For definitions of motor vehicle nontraffic accident and related terms see definition (a) to (k).
  - Includes: accidents involving motor vehicles being used in recreational or sporting activities off the highway
    - collision and noncollision motor vehicle accidents occurring entirely off the highway
  - Excludes: accidents involving motor vehicle and:
    - aircraft (E840.0-E845.9)
    - watercraft (E830.0-E838.9)
    - accidents, not on the public highway, involving agricultural and construction machinery but not involving another motor vehicle (E919.0, E919.2, E919.7)
- The following fourth-digit subdivisions are for use with categories E820-E825 to identify the injured person:
  - .0 Driver of motor vehicle other than motorcycle
    - See definition (l)
  - .1 Passenger in motor vehicle other than motorcycle
    - See definition (l)
  - .2 Motorcyclist
    - See definition (l)
  - .3 Passenger on motorcycle
    - See definition (l)
  - .4 Occupant of streetcar
  - .5 Rider of animal; occupant of animal-drawn vehicle
  - .6 Pedal cyclist
    - See definition (p)

- .7 Pedestrian
  - See definition (r)
- .8 Other specified person
  - Occupant of vehicle other than above
  - Person on railway train involved in accident
  - Unauthorized rider of motor vehicle
- .9 Unspecified person

- **E820 Nontraffic accident involving motor-driven snow vehicle**

  Includes: breakage of part of motor-driven snow vehicle (not on public highway)
  fall from motor-driven snow vehicle (not on public highway)
  hit by motor-driven snow vehicle (not on public highway)
  overturning of motor-driven snow vehicle (not on public highway)
  run over or dragged by motor-driven snow vehicle (not on public highway)
  collision of motor-driven snow vehicle with:
  animal (being ridden) (-drawn vehicle)
  another off-road motor vehicle
  other motor vehicle, not on public highway
  railway train
  other object, fixed or movable
  injury caused by rough landing of motor-driven snow vehicle (after leaving ground on rough terrain)

  Excludes: accident on the public highway involving motor driven snow vehicle (E810.0-E819.9)

- **E821 Nontraffic accident involving other off-road motor vehicle**

  Includes: breakage of part of off-road motor vehicle, except snow vehicle (not on public highway)
  fall from off-road motor vehicle, except snow vehicle (not on public highway)
  hit by off-road motor vehicle, except snow vehicle (not on public highway)
  overturning of off-road motor vehicle, except snow vehicle (not on public highway)
  run over or dragged by off-road motor vehicle, except snow vehicle (not on public highway)
  thrown against some part of or object in off-road motor vehicle, except snow vehicle (not on public highway)
  collision with:
  animal (being ridden) (-drawn vehicle)
  another off-road motor vehicle, except snow vehicle
  other motor vehicle, not on public highway
  other object, fixed or movable

  Excludes: accident on public highway involving off-road motor vehicle (E810.0-E819.9)
  collision between motor driven snow vehicle and other off-road motor vehicle (E820.0-E820.9)
  hovercraft accident on water (E830.0-E838.9)

- **E822 Other motor vehicle nontraffic accident involving collision with moving object**

Includes: collision, not on public highway, between motor vehicle, except off-road motor vehicle and:
animal
nonmotor vehicle
other motor vehicle, except off-road motor vehicle
pedestrian
railway train
other moving object
Excludes: collision with:
motor-driven snow vehicle (E820.0-E820.9)
other off-road motor vehicle (E821.0-E821.9)

- **E823 Other motor vehicle nontraffic accident involving collision with stationary object**
  Includes: collision, not on public highway, between motor vehicle, except off-road motor vehicle, and any object, fixed or movable, but not in motion

- **E824 Other motor vehicle nontraffic accident while boarding and alighting**
  Includes: fall while boarding or alighting from motor vehicle except off-road motor vehicle, not on public highway
  injury from moving part of motor vehicle while boarding or alighting from motor vehicle except off-road motor vehicle, not on public highway
  trapped by door of motor vehicle while boarding or alighting from motor vehicle except off-road motor vehicle, not on public highway

- **E825 Other motor vehicle nontraffic accident of other and unspecified nature**
  Includes: accidental poisoning from carbon monoxide generated by motor vehicle while in motion, not on public highway
  breakage of any part of motor vehicle while in motion, not on public highway
  explosion of any part of motor vehicle while in motion, not on public highway
  fall, jump, or being accidentally pushed from motor vehicle while in motion, not on public highway
  fire starting in motor vehicle while in motion, not on public highway
  hit by object thrown into, towards, or on motor vehicle while in motion, not on public highway
  injured by being thrown against some part of, or object in motor vehicle while in motion, not on public highway
  injury from moving part of motor vehicle while in motion, not on public highway
  object falling in or on motor vehicle while in motion, not on public highway
  motor vehicle nontraffic accident NOS
  Excludes: fall from or in stationary motor vehicle (E884.9, E885)
  overcome by carbon monoxide or exhaust gas generated by stationary motor vehicle off the roadway with motor running (E868.2)
  struck by falling object from or in stationary motor vehicle (E916)

- **E826 Pedal cycle accident**
  Includes: breakage of any part of pedal cycle

collision between pedal cycle and:
animal (being ridden) (herded) (unattended)
another pedal cycle
nonmotor road vehicle, any
pedestrian
other object, fixed, movable, or moving, not set in motion by motor vehicle, railway train, or aircraft
entanglement in wheel of pedal cycle
fall from pedal cycle
hit by object falling or thrown on the pedal cycle
pedal cycle accident NOS
pedal cycle overturned

- **E827 Animal-drawn vehicle accident**
  Includes: breakage of any part of vehicle
  collision between animal-drawn vehicle and:
  animal (being ridden) (herded) (unattended)
  nonmotor road vehicle, except pedal cycle
  pedestrian, pedestrian conveyance, or pedestrian vehicle
  other object, fixed, movable, or moving, not set in motion by motor vehicle, railway train, or aircraft
  fall from animal-drawn vehicle
  knocked down by animal-drawn vehicle
  overturning of animal-drawn vehicle
  run over by animal-drawn vehicle
  thrown from animal-drawn vehicle
  Excludes: collision of animal-drawn vehicle with pedal cycle (E826.0-E826.9)

- **E828 Accident involving animal being ridden**
  Includes: collision between animal being ridden and:
  another animal
  nonmotor road vehicle, except pedal cycle, and animal-drawn vehicle
  pedestrian, pedestrian conveyance, or pedestrian vehicle
  other object, fixed, movable, or moving, not set in motion by motor vehicle, railway train, or aircraft
  fall from animal being ridden
  knocked down by animal being ridden
  thrown from animal being ridden
  trampled by animal being ridden
  ridden animal stumbled and fell
  Excludes: collision of animal being ridden with:
  animal-drawn vehicle (E827.0-E827.9)
  pedal cycle (E826.0-E826.9)

- **E829 Other road vehicle accidents**
  Includes: accident while boarding or alighting from

streetcar
nonmotor road vehicle not classifiable to E826-E828
blow from object in
streetcar
nonmotor road vehicle not classifiable to E826-E828
breakage of any part of
streetcar
nonmotor road vehicle not classifiable to E826-E828
caught in door of
streetcar
nonmotor road vehicle not classifiable to E826-E828
derailment of
streetcar
nonmotor road vehicle not classifiable to E826-E828
fall in, on, or from
streetcar
nonmotor road vehicle not classifiable to E826-E828
fire in
streetcar
nonmotor road vehicle not classifiable to E826-E828
collision between streetcar or nonmotor road vehicle, except as in E826-E828, and:
animal (not being ridden)
another nonmotor road vehicle not classifiable to E826-E828
pedestrian
other object, fixed, movable, or moving, not set in motion by motor vehicle, railway train, or aircraft
nonmotor road vehicle accident NOS
streetcar accident NOS

Excludes: collision with:
animal being ridden (E828.0-E828.9)
animal-drawn vehicle (E827.0-E827.9)
pedal cycle (E826.0-E826.9)

- **E830 Accident to watercraft causing submersion**
  Requires fourth digit. See beginning of section E800-E845 for codes and definitions.
  Includes: submersion and drowning due to:
  boat overturning
  boat submerging
  falling or jumping from burning ship
  falling or jumping from crushed watercraft
  ship sinking
  other accident to watercraft

- **E831 Accident to watercraft causing other injury**
  Includes: any injury, except submersion and drowning, as a result of an accident to watercraft

burned while ship on fire
crushed between ships in collision
crushed by lifeboat after abandoning ship
fall due to collision or other accident to watercraft
hit by falling object due to accident to watercraft
injured in watercraft accident involving collision
struck by boat or part thereof after fall or jump from damaged boat

Excludes: burns from localized fire or explosion on board ship (E837.0-E837.9)

- **E832 Other accidental submersion or drowning in water transport accident**

  Requires fourth digit. See beginning of section E800-E845 for codes and definitions.

  Includes: submersion or drowning as a result of an accident other than accident to the watercraft, such as:

  fall:
  from gangplank
  from ship
  overboard
  thrown overboard by motion of ship
  washed overboard

  Excludes: submersion or drowning of swimmer or diver who voluntarily jumps from boat not involved in an accident (E910.0-E910.9)

Appendix VI. Nonproprietary Database, Restrict Definition

Table 1a. Number of Physician Visits of MVA Patients by Age and Gender

	Gender					
	Male		Female		Both	
	N	PCTN	N	PCTN	N	PCTN
Age Group						
Under 50	202	72	201	75	403	74
50+	79	28	66	25	145	26
All Age	281	100	267	100	548	100

Appendix VI. Nonproprietary Database, Restrict Definition

Table 1b. Number of Physician Visits MVA Patients by Age and Gender (Weighted)

	Gender				Both	
	Male		Female			
	N	PCTN	N	PCTN	N	PCTN
Age Group						
Under 50	6,073,420	73	5,969,219	73	12,042,639	73
50+	2,211,212	27	2,246,376	27	4,457,588	27
All Age	8,284,632	100	8,215,595	100	16,500,227	100

Appendix VI. Nonproprietary Database, Restrict Definition

Table 2a. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Medications

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Medications Recorded						
Under 50							
	0	100	50	111	55	211	52
	1	48	24	38	19	86	21
	2	26	13	35	17	61	15
	3	18	9	10	5	28	7
	4	6	3	3	1	9	2
	5	2	1			2	0
	6	2	1	4	2	6	1
	All	202	100	201	100	403	100
50+	Number of Medications Recorded						
	0	37	47	30	45	67	46
	1	21	27	15	23	36	25
	2	11	14	11	17	22	15
	3	6	8	8	12	14	10
	4			1	2	1	1
	5	1	1			1	1
	6	3	4	1	2	4	3
	All	79	100	66	100	145	100
All Age	Number of Medications Recorded						
	0	137	49	141	53	278	51
	1	69	25	53	20	122	22
	2	37	13	46	17	83	15
	3	24	9	18	7	42	8
	4	6	2	4	1	10	2
	5	3	1			3	1

Appendix VI. Nonproprietary Database, Restrict Definition

Table 2a. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Medications

		Gender					
		Male		Female		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Medications Recorded						
	6	5	2	5	2	10	2
	All	281	100	267	100	548	100

Appendix VI. Nonproprietary Database, Restrict Definition

Table 2b. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Medications (Weighted)

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Medications Recorded						
Under 50	0	2,841,274	47	3,079,362	52	5,920,636	49
	1	1,286,281	21	1,037,349	17	2,323,630	19
	2	998,445	16	1,125,928	19	2,124,373	18
	3	684,345	11	427,516	7	1,111,861	9
	4	157,643	3	119,860	2	277,503	2
	5	66,612	1			66,612	1
	6	38,820	1	179,204	3	218,024	2
	All	6,073,420	100	5,969,219	100	12,042,639	100
50+	Number of Medications Recorded						
	0	919,741	42	814,643	36	1,734,384	39
	1	559,257	25	575,021	26	1,134,278	25
	2	236,868	11	425,836	19	662,704	15
	3	193,142	9	264,325	12	457,467	10
	4			120,767	5	120,767	3
	5	59,983	3			59,983	1
	6	242,221	11	45,784	2	288,005	6
	All	2,211,212	100	2,246,376	100	4,457,588	100
All Age	Number of Medications Recorded						
	0	3,761,015	45	3,894,005	47	7,655,020	46
	1	1,845,538	22	1,612,370	20	3,457,908	21
	2	1,235,313	15	1,551,764	19	2,787,077	17
	3	877,487	11	691,841	8	1,569,328	10
	4	157,643	2	240,627	3	398,270	2
	5	126,595	2			126,595	1

Appendix VI. Nonproprietary Database, Restrict Definition

Table 2b. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Medications (Weighted)

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Medications Recorded						
	6	281,041	3	224,988	3	506,029	3
	All	8,284,632	100	8,215,595	100	16,500,227	100

APPENDIX VI. Table 3a. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Male	Under 50	Antiarthritics						13	18
Male	Under 50	NSAID						10	14
Male	Under 50	Antidepressants						7	10
Male	Under 50	Analgesics, narcotic						6	8
Male	Under 50	Analgesics, non-narcotic						6	8
Male	Under 50	Analgesics, narcotic	Antiarthritics					3	4
Male	Under 50	Antiarthritics	Skeletal muscle hyperactivity					3	4
Male	Under 50	Analgesics, non-narcotic	Antiarthritics					2	3
Male	Under 50	Analgesics, non-narcotic	Antidepressants					2	3
Male	Under 50	NSAID	Skeletal muscle hyperactivity					2	3
Male	Under 50	Adrenal corticosteroids	Cephalosporins					1	1
Male	Under 50	Alpha agonist/alpha blockers	Antidepressants	Antidepressants	Antipsychotic/antimanics			1	1
Male	Under 50	Analgesics, narcotic	Analgesics, non-narcotic	Antidepressants	NSAID			1	1
Male	Under 50	Analgesics, narcotic	Analgesics/general					1	1
Male	Under 50	Analgesics, narcotic	Anesthetics, local (injectable)	Topical steroids				1	1
Male	Under 50	Analgesics, narcotic	Antianxiety agents	Antiarthritics				1	1
Male	Under 50	Analgesics, narcotic	Antianxiety agents	Anticonvulsants	Antidepressants			1	1
Male	Under 50	Analgesics, narcotic	Antianxiety agents	Disorders, acid/peptic	Skeletal muscle hyperactivity			1	1
Male	Under 50	Analgesics, narcotic	Antianxiety agents	Skeletal muscle hyperactivity				1	1
Male	Under 50	Analgesics, narcotic	Antiarthritics	Anticonvulsants	Antidepressants	Disorders, acid/peptic	Vitamins/minerals	1	1
Male	Under 50	Analgesics, narcotic	NSAID					1	1
Male	Under 50	Analgesics, narcotic	Skeletal muscle hyperactivity					1	1
Male	Under 50	Analgesics, non-narcotic	Antidepressants	Antidepressants				1	1
Male	Under 50	Analgesics, non-narcotic	Skeletal muscle hyperactivity					1	1

APPENDIX VI. Table 3a. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Male	Under 50	Antiarthritics	Disorders, acid/peptic					1	1
Male	Under 50	Anticonvulsants						1	1
Male	Under 50	Anticonvulsants	Antidepressants					1	1
Male	Under 50	Ocular anti-infective/anti-inflammatory						1	1
Male	Under 50	Unclassified						1	1
Male	50+	Antiarthritics						5	17
Male	50+	Anticonvulsants						3	10
Male	50+	Antidepressants						3	10
Male	50+	NSAID						3	10
Male	50+	NSAID	Skeletal muscle hyperactivity					2	7
Male	50+	Skeletal muscle hyperactivity						2	7
Male	50+	ACE inhibitors	Adrenal corticosteroids	Analgesics, non-narcotic	Antiarrhythmic agents	Topical anti-infectives		1	3
Male	50+	ACE inhibitors	Antiarthritics	Beta blockers				1	3
Male	50+	Adrenal corticosteroids						1	3
Male	50+	Alpha agonist/alpha blockers	Antidiarrheals	Disorders, acid/peptic	Diuretics	Homeopathic products	Repl/regs of electrolytes/water balance	1	3
Male	50+	Analgesics, narcotic						1	3
Male	50+	Analgesics, narcotic	Antianxiety agents	Antidepressants	Antihypertensive agents	Calcium metabolism	Thyroid/antithyroid	1	3
Male	50+	Analgesics, narcotic	Antiarthritics	Antiarthritics	Disorders, acid/peptic	Hyperlipidemia	Skeletal muscle hyperactivity	1	3
Male	50+	Analgesics, narcotic	NSAID					1	3
Male	50+	Analgesics, non-narcotic						1	3
Male	50+	Analgesics, non-narcotic	Antidepressants	Antidepressants				1	3
Male	50+	Analgesics, non-narcotic	NSAID					1	3
Male	50+	Analgesics, non-narcotic	Skeletal muscle hyperactivity					1	3
Female	Under 50	Antiarthritics						9	13
Female	Under 50	Analgesics, narcotic						7	10

APPENDIX VI. Table 3a. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Female	Under 50	NSAID	Skeletal muscle hyperactivity					6	9
Female	Under 50	Analgesics, narcotic	Antiarthritics	Skeletal muscle hyperactivity				5	7
Female	Under 50	NSAID						5	7
Female	Under 50	Antiarthritics	Skeletal muscle hyperactivity					4	6
Female	Under 50	Skeletal muscle hyperactivity						4	6
Female	Under 50	Analgesics, narcotic	Antiarthritics					3	4
Female	Under 50	Analgesics, narcotic	Skeletal muscle hyperactivity					3	4
Female	Under 50	Unclassified						3	4
Female	Under 50	Adrenal corticosteroids						2	3
Female	Under 50	Antiarthritics	Disorders, acid/peptic					2	3
Female	Under 50	Anticonvulsants						2	3
Female	Under 50	Adrenal corticosteroids	Analgesics, non-narcotic					1	1
Female	Under 50	Adrenal corticosteroids	Anesthetics, local (injectable)					1	1
Female	Under 50	Adrenal corticosteroids	Topical analgesics					1	1
Female	Under 50	Alpha agonist/alpha blockers	Analgesics, narcotic	Anticoagulants/thrombolytics	Antidepressants	Antidepressants	Relaxants/stimulants, urinary tract	1	1
Female	Under 50	Analgesics, narcotic	Analgesics, narcotic	Analgesics, narcotic				1	1
Female	Under 50	Analgesics, narcotic	Analgesics, narcotic	Antidepressants	Antihistamines	CNS, miscellaneous	Skeletal muscle hyperactivity	1	1
Female	Under 50	Analgesics, narcotic	Antianxiety agents	Antiasthmatics/bronchodilators	Calcium channel blockers	Disorders, acid/peptic	Disorders, acid/peptic	1	1
Female	Under 50	Analgesics, narcotic	NSAID					1	1
Female	Under 50	Analgesics, narcotic	NSAID	Skeletal muscle hyperactivity				1	1
Female	Under 50	Analgesics, non-narcotic						1	1
Female	Under 50	Analgesics, non-narcotic	Antiarthritics					1	1
Female	Under 50	Analgesics, non-narcotic	Skeletal muscle hyperactivity					1	1

APPENDIX VI. Table 3a. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Female	Under 50	Anticonvulsants	Antidepressants					1	1
Female	Under 50	Antidepressants						1	1
Female	Under 50	Topical steroids						1	1
Female	50+	Analgesics, narcotic						4	18
Female	50+	Antiarthritics						3	14
Female	50+	NSAID						3	14
Female	50+	Analgesics, narcotic	Antiarthritics					2	9
Female	50+	Analgesics, narcotic	NSAID	Skeletal muscle hyperactivity				2	9
Female	50+	ACE inhibitors	Analgesics, narcotic	Antidepressants				1	5
Female	50+	Adrenal corticosteroids	NSAID					1	5
Female	50+	Analgesics, narcotic	Antianxiety agents	Antiarthritics	Skeletal muscle hyperactivity			1	5
Female	50+	Analgesics, non-narcotic						1	5
Female	50+	Analgesics, non-narcotic	NSAID					1	5
Female	50+	NSAID	Skeletal muscle hyperactivity					1	5
Female	50+	Ocular anti-infective/anti-inflammatory						1	5
Female	50+	Topical steroids						1	5

APPENDIX VI. Table 3b. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes (Weighted)

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Male	Under 50	Antiarthritics						399,959	18
Male	Under 50	NSAID						322,255	14
Male	Under 50	Analgesics, non-narcotic						173,906	8
Male	Under 50	Antidepressants						164,156	7
Male	Under 50	Analgesics, narcotic						128,470	6
Male	Under 50	Analgesics, narcotic	Skeletal muscle hyperactivity					108,225	5
Male	Under 50	Analgesics, non-narcotic	Antidepressants					104,035	5
Male	Under 50	Analgesics, non-narcotic	Skeletal muscle hyperactivity					93,513	4
Male	Under 50	Analgesics, non-narcotic	Antidepressants	Antidepressants				91,252	4
Male	Under 50	Analgesics, non-narcotic	Antiarthritics					83,037	4
Male	Under 50	Adrenal corticosteroids	Cephalosporins					63,189	3
Male	Under 50	NSAID	Skeletal muscle hyperactivity					59,262	3
Male	Under 50	Analgesics, narcotic	Antiarthritics					58,560	3
Male	Under 50	Analgesics, narcotic	Antianxiety agents	Disorders, acid/peptic	Skeletal muscle hyperactivity			56,544	2
Male	Under 50	Antiarthritics	Skeletal muscle hyperactivity					51,483	2
Male	Under 50	Analgesics, narcotic	NSAID					46,793	2
Male	Under 50	Analgesics, narcotic	Antianxiety agents	Antiarthritics				42,024	2
Male	Under 50	Analgesics, narcotic	Analgesics/general					40,954	2
Male	Under 50	Analgesics, narcotic	Anesthetics, local (injectable)	Topical steroids				37,719	2
Male	Under 50	Analgesics, narcotic	Antianxiety agents	Skeletal muscle hyperactivity				31,758	1
Male	Under 50	Anticonvulsants						24,290	1

APPENDIX VI. Table 3b. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes (Weighted)

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Male	Under 50	Ocular anti-infective/anti-inflammatory						13,496	1
Male	Under 50	Analgesics, narcotic	Analgesics, non-narcotic	Antidepressants	NSAID			12,870	1
Male	Under 50	Analgesics, narcotic	Antianxiety agents	Anticonvulsants	Antidepressants			12,055	1
Male	Under 50	Alpha agonist/alpha blockers	Antidepressants	Antidepressants	Antipsychotic/antimanics			11,055	0
Male	Under 50	Anticonvulsants	Antidepressants					11,055	0
Male	Under 50	Antiarthritics	Disorders, acid/peptic					9,398	0
Male	Under 50	Analgesics, narcotic	Antiarthritics	Anticonvulsants	Antidepressants	Disorders, acid/peptic	Vitamins/minerals	7,512	0
Male	Under 50	Unclassified						3,842	0
Male	50+	Antiarthritics						148,489	15
Male	50+	Analgesics, narcotic	Antiarthritics	Antiarthritics	Disorders, acid/peptic	Hyperlipidemia	Skeletal muscle hyperactivity	100,188	10
Male	50+	Antidepressants						98,513	10
Male	50+	Alpha agonist/alpha blockers	Antidiarrheals	Disorders, acid/peptic	Diuretics	Homeopathic products	Repl/regs of electrolytes/water balance	78,876	8
Male	50+	NSAID						63,875	7
Male	50+	Analgesics, narcotic	Antianxiety agents	Antidepressants	Antihypertensive agents	Calcium metabolism	Thyroid/antithyroid	63,157	7
Male	50+	ACE inhibitors	Adrenal corticosteroids	Analgesics, non-narcotic	Antiarrhythmic agents	Topical anti-infectives		59,983	6
Male	50+	Anticonvulsants						58,855	6
Male	50+	ACE inhibitors	Antiarthritics	Beta blockers				55,893	6
Male	50+	NSAID	Skeletal muscle hyperactivity					52,464	5
Male	50+	Analgesics, non-narcotic						46,811	5
Male	50+	Skeletal muscle hyperactivity						42,139	4
Male	50+	Analgesics, non-narcotic	Skeletal muscle hyperactivity					42,024	4

APPENDIX VI. Table 3b. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes (Weighted)

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Male	50+	Analgesics, narcotic						20,319	2
Male	50+	Analgesics, narcotic	NSAID					15,935	2
Male	50+	Analgesics, non-narcotic	NSAID					7,512	1
Male	50+	Adrenal corticosteroids						4,765	0
Male	50+	Analgesics, non-narcotic	Antidepressants	Antidepressants				2,893	0
Female	Under 50	NSAID	Skeletal muscle hyperactivity					273,057	12
Female	Under 50	Analgesics, narcotic	Antiarthritics	Skeletal muscle hyperactivity				268,835	12
Female	Under 50	Antiarthritics						255,117	11
Female	Under 50	NSAID						232,209	10
Female	Under 50	Analgesics, narcotic						150,847	7
Female	Under 50	Antiarthritics	Skeletal muscle hyperactivity					137,185	6
Female	Under 50	Analgesics, narcotic	Antiarthritics					126,808	5
Female	Under 50	Unclassified						121,288	5
Female	Under 50	Skeletal muscle hyperactivity						91,674	4
Female	Under 50	Antiarthritics	Disorders, acid/peptic					84,694	4
Female	Under 50	Analgesics, non-narcotic	Skeletal muscle hyperactivity					72,699	3
Female	Under 50	Analgesics, narcotic	Antianxiety agents	Antiasthmatics/bronchodilators	Calcium channel blockers	Disorders, acid/peptic	Disorders, acid/peptic	71,982	3
Female	Under 50	Adrenal corticosteroids						67,600	3
Female	Under 50	Analgesics, narcotic	Skeletal muscle hyperactivity					58,557	3
Female	Under 50	Analgesics, narcotic	NSAID	Skeletal muscle hyperactivity				44,394	2

APPENDIX VI. Table 3b. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes (Weighted)

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Female	Under 50	Adrenal corticosteroids	Analgesics, non-narcotic					43,023	2
Female	Under 50	Anticonvulsants						35,797	2
Female	Under 50	Alpha agonist/alpha blockers	Analgesics, narcotic	Anticoagulants/thrombolytics	Antidepressants	Antidepressants	Relaxants/stimulants, urinary tract	31,308	1
Female	Under 50	Analgesics, non-narcotic	Antiarthritics					24,453	1
Female	Under 50	Analgesics, narcotic	NSAID					21,815	1
Female	Under 50	Topical steroids						18,747	1
Female	Under 50	Anticonvulsants	Antidepressants					17,876	1
Female	Under 50	Adrenal corticosteroids	Anesthetics, local (injectable)					14,663	1
Female	Under 50	Analgesics, narcotic	Analgesics, narcotic	Antidepressants	Antihistamines	CNS, miscellaneous	Skeletal muscle hyperactivity	14,663	1
Female	Under 50	Adrenal corticosteroids	Topical analgesics					12,877	1
Female	Under 50	Analgesics, non-narcotic						11,514	0
Female	Under 50	Antidepressants						7,684	0
Female	Under 50	Analgesics, narcotic	Analgesics, narcotic	Analgesics, narcotic				6,027	0
Female	50+	Analgesics, narcotic	Antianxiety agents	Antiarthritics	Skeletal muscle hyperactivity			120,767	14
Female	50+	NSAID						119,756	14
Female	50+	Antiarthritics						116,216	14
Female	50+	ACE inhibitors	Analgesics, narcotic	Antidepressants				91,242	11
Female	50+	Analgesics, narcotic						83,399	10
Female	50+	Analgesics, non-narcotic						79,797	9
Female	50+	Ocular anti-infective/anti-inflammatory						67,835	8
Female	50+	Analgesics, narcotic	Antiarthritics					35,840	4

APPENDIX VI. Table 3b. Number of Physician Visits of MVA Patients by Gender, Age Group, and Specific Combinations of Drug Classes (Weighted)

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	Drug Class 4	Drug Class 5	Drug Class 6	N	PCTN
Female	50+	Adrenal corticosteroids	NSAID					32,511	4
Female	50+	Topical steroids						30,263	4
Female	50+	Analgesics, narcotic	NSAID	Skeletal muscle hyperactivity				27,300	3
Female	50+	NSAID	Skeletal muscle hyperactivity					22,791	3
Female	50+	Analgesics, non-narcotic	NSAID					18,337	2

Appendix VI. Nonproprietary Database, Restrict Definition

Table 4a. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Potential Driver Impairing Medications

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Medications						
Under 50	0	106	52	122	61	228	57
	1	48	24	36	18	84	21
	2	29	14	30	15	59	15
	3	11	5	9	4	20	5
	4	5	2	1	0	6	1
	5	2	1	1	0	3	1
	6	1	0	2	1	3	1
	All	202	100	201	100	403	100
50+	Number of Potential Impairing Medications						
	0	41	52	32	48	73	50
	1	20	25	16	24	36	25
	2	10	13	9	14	19	13
	3	6	8	7	11	13	9
	4			1	2	1	1
	5	1	1	1	2	2	1
	6	1	1			1	1
	All	79	100	66	100	145	100
All Age	Number of Potential Impairing Medications						
	0	147	52	154	58	301	55
	1	68	24	52	19	120	22
	2	39	14	39	15	78	14
	3	17	6	16	6	33	6

Appendix VI. Nonpropriety Database, Restrict Definition

Table 4a. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Potential Driver Impairing Medications

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Potential Impairing Medications						
	4	5	2	2	1	7	1
	5	3	1	2	1	5	1
	6	2	1	2	1	4	1
	All	281	100	267	100	548	100

Appendix VI. Nonpropriety Database, Restrict Definition

Table 4b. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Potential Driver Impairing Medications

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Medications						
Under 50	0	2,984,378	49	3,358,017	56	6,342,395	53
	1	1,350,510	22	1,084,545	18	2,435,055	20
	2	1,028,611	17	999,880	17	2,028,491	17
	3	511,965	8	401,945	7	913,910	8
	4	153,775	3	6,879	0	160,654	1
	5	12,873	0	31,308	1	44,181	0
	6	31,308	1	86,645	1	117,953	1
	All	6,073,420	100	5,969,219	100	12,042,639	100
50+	Number of Potential Impairing Medications						
	0	1,008,577	46	872,853	39	1,881,430	42
	1	532,692	24	686,634	31	1,219,326	27
	2	248,612	11	309,768	14	558,380	13
	3	257,986	12	210,570	9	468,556	11
	4			120,767	5	120,767	3
	5	63,157	3	45,784	2	108,941	2
	6	100,188	5			100,188	2
	All	2,211,212	100	2,246,376	100	4,457,588	100
All Age	Number of Potential Impairing Medications						
	0	3,992,955	48	4,230,870	51	8,223,825	50
	1	1,883,202	23	1,771,179	22	3,654,381	22
	2	1,277,223	15	1,309,648	16	2,586,871	16
	3	769,951	9	612,515	7	1,382,466	8

Appendix VI. Nonproprietary Database, Restrict Definition

Table 4b. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Potential Driver Impairing Medications

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Potential Impairing Medications						
	4	153,775	2	127,646	2	281,421	2
	5	76,030	1	77,092	1	153,122	1
	6	131,496	2	86,645	1	218,141	1
	All	8,284,632	100	8,215,595	100	16,500,227	100

Appendix VI. Nonproprietary Database, Restrict Definition

Table 5a. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Conflict Medications

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Drug-Drug Conflicts						
Under 50	0	185	92	193	96	378	94
	1	7	3	3	1	10	2
	2	4	2	1	0	5	1
	3	1	0			1	0
	4	2	1			2	0
	5	1	0	1	0	2	0
	6	2	1	1	0	3	1
	7			1	0	1	0
	10			1	0	1	0
	All	202	100	201	100	403	100
50+	Number of Drug-Drug Conflicts						
	0	75	95	57	86	132	91
	1	2	3	8	12	10	7
	2	2	3			2	1
	4			1	2	1	1
	All	79	100	66	100	145	100
All Age	Number of Drug-Drug Conflicts						
	0	260	93	250	94	510	93
	1	9	3	11	4	20	4
	2	6	2	1	0	7	1
	3	1	0			1	0
	4	2	1	1	0	3	1
	5	1	0	1	0	2	0
	6	2	1	1	0	3	1

Appendix VI. Nonproprietary Database, Restrict Definition

Table 5a. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Conflict Medications

		Gender					
		Male		Female		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Drug-Drug Conflicts						
	7			1	0	1	0
	10			1	0	1	0
	All	281	100	267	100	548	100

Appendix VI. Nonproprietary Database, Restrict Definition

Table 5b. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Conflict Medications (Weighted)

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Drug-Drug Conflicts						
Under 50	0	5,714,275	94	5,750,312	96	11,464,587	95
	1	155,752	3	27,648	0	183,400	2
	2	119,255	2	12,055	0	131,310	1
	3	16,847	0			16,847	0
	4	43,363	1			43,363	0
	5	7,512	0	14,663	0	22,175	0
	6	16,416	0	71,982	1	88,398	1
	7			31,308	1	31,308	0
	10			61,251	1	61,251	1
	All	6,073,420	100	5,969,219	100	12,042,639	100
50+	Number of Drug-Drug Conflicts						
	0	2,026,019	92	1,797,027	80	3,823,046	86
	1	21,848	1	403,565	18	425,413	10
	2	163,345	7			163,345	4
	4			45,784	2	45,784	1
	All	2,211,212	100	2,246,376	100	4,457,588	100
All Age	Number of Drug-Drug Conflicts						
	0	7,740,294	93	7,547,339	92	15,287,633	93
	1	177,600	2	431,213	5	608,813	4
	2	282,600	3	12,055	0	294,655	2
	3	16,847	0			16,847	0
	4	43,363	1	45,784	1	89,147	1
	5	7,512	0	14,663	0	22,175	0
	6	16,416	0	71,982	1	88,398	1

Appendix VI. Nonproprietary Database, Restrict Definition

Table 5b. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Conflict Medications (Weighted)

		Gender					
		Male		Female		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Drug-Drug Conflicts						
	7			31,308	0	31,308	0
	10			61,251	1	61,251	0
	All	8,284,632	100	8,215,595	100	16,500,227	100

Table 6a. Number of Physician Visits of MVA Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N	PCTN
Male	Under 50	FRACTURES AND INJURIES	89	66
Male	Under 50	CNS EXCITATION	13	10
Male	Under 50	PSYCHOSES, DRUG INDUCED	7	5
Male	Under 50	DEPRESSION	6	4
Male	Under 50	HEAD TRAUMA	3	2
Male	Under 50	ANXIETY DISORDERS	2	1
Male	Under 50	BIPOLAR DISORDER	2	1
Male	Under 50	SEROTONIN SYNDROME SYMPTOMS	2	1
Male	Under 50	ANKYLOSING SPONDYLITIS	1	1
Male	Under 50	ARTHROPATHIES, OTHER	1	1
Male	Under 50	EPILEPSY	1	1
Male	Under 50	HYPERTHYROIDISM	1	1
Male	Under 50	OBESITY	1	1
Male	Under 50	PANIC DISORDERS	1	1
Male	Under 50	PERSONALITY DISORDERS	1	1
Male	Under 50	SUICIDAL BEHAVIOR	1	1
Male	Under 50	THYROID DISEASE	1	1
Male	Under 50	TUBERCULOSIS	1	1
Male	50+	FRACTURES AND INJURIES	28	42
Male	50+	ANEURYSM	3	4
Male	50+	CARDIOVASCULAR DISEASE	3	4
Male	50+	CNS EXCITATION	3	4
Male	50+	HYPERTENSION	3	4
Male	50+	PERIPHERAL NEUROPATHY	3	4
Male	50+	SEROTONIN SYNDROME SYMPTOMS	3	4
Male	50+	STROKE	3	4
Male	50+	ANKYLOSING SPONDYLITIS	2	3
Male	50+	DEPRESSION	2	3
Male	50+	ARRHYTHMIAS	1	1
Male	50+	ARTHRITIS, RHEUMATOID	1	1
Male	50+	ATRIAL FIBRILLATION	1	1
Male	50+	CNS DEMYELINATING DIS	1	1
Male	50+	DIABETES MELLITUS I AND II	1	1
Male	50+	DYSKINESIAS	1	1
Male	50+	GASTRITIS	1	1
Male	50+	GI HEMORRHAGE	1	1
Male	50+	HYPERLIPIDEMIA-2	1	1
Male	50+	LIPID ABNORMALITIES	1	1
Male	50+	LUPUS	1	1
Male	50+	PSYCHOSES, DRUG INDUCED	1	1
Male	50+	SYMPTOMS OF GI IRRITATION	1	1
Male	50+	TEST	1	1
Female	Under 50	FRACTURES AND INJURIES	95	70
Female	Under 50	CNS EXCITATION	13	10
Female	Under 50	HEAD TRAUMA	4	3
Female	Under 50	GI HEMORRHAGE	2	1
Female	Under 50	GI ULCER	2	1
Female	Under 50	PSYCHOSES, DRUG INDUCED	2	1
Female	Under 50	ALCOHOLISM	1	1

Table 6a. Number of Physician Visits of MVA Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N	PCTN
Female	Under 50	ANXIETY DISORDERS	1	1
Female	Under 50	ARTHROPATHIES, OTHER	1	1
Female	Under 50	BIPOLAR DISORDER	1	1
Female	Under 50	BLEEDING	1	1
Female	Under 50	DEEP VEIN THROMBOSIS	1	1
Female	Under 50	DEPRESSION	1	1
Female	Under 50	DIABETES MELLITUS I AND II	1	1
Female	Under 50	HEMOPTYSIS	1	1
Female	Under 50	HIV	1	1
Female	Under 50	HYPOTHYROIDISM	1	1
Female	Under 50	PERIPHERAL NEUROPATHY	1	1
Female	Under 50	RESPIRATORY INFECTIONS	1	1
Female	Under 50	SEROTONIN SYNDROME SYMPTOMS	1	1
Female	Under 50	STRESS DISORDERS	1	1
Female	Under 50	TEST	1	1
Female	Under 50	THYROID DISEASE	1	1
Female	50+	FRACTURES AND INJURIES	26	50
Female	50+	CNS EXCITATION	4	8
Female	50+	PSYCHOSES, DRUG INDUCED	3	6
Female	50+	CARDIOVASCULAR DISEASE	2	4
Female	50+	SEROTONIN SYNDROME SYMPTOMS	2	4
Female	50+	ALCOHOLISM	1	2
Female	50+	ANKYLOSING SPONDYLITIS	1	2
Female	50+	ANXIETY DISORDERS	1	2
Female	50+	BLEEDING	1	2
Female	50+	CONGESTIVE HEART FAILURE	1	2
Female	50+	COPD	1	2
Female	50+	DEPRESSION	1	2
Female	50+	HEMATURIA	1	2
Female	50+	HYPERSENSITIVITY REACTIONS	1	2
Female	50+	HYPERTENSION	1	2
Female	50+	LACTIC ACIDOSIS SYMPTOMS	1	2
Female	50+	PERIPHERAL NEUROPATHY	1	2
Female	50+	PERSONALITY DISORDERS	1	2
Female	50+	PSYCHOSES	1	2
Female	50+	SUICIDAL BEHAVIOR	1	2

Table 6b. Number of Physician Visits of MVA Patients by Age, Gender, and Potential Driver Impairing Disease Groups (Weighted)

Gender	Age Group	Disease Group	N	PCTN
Male	Under 50	FRACTURES AND INJURIES	2,887,395	72
Male	Under 50	CNS EXCITATION	491,691	12
Male	Under 50	PSYCHOSES, DRUG INDUCED	140,095	3
Male	Under 50	DEPRESSION	106,312	3
Male	Under 50	HEAD TRAUMA	70,387	2
Male	Under 50	OBESITY	46,733	1
Male	Under 50	TUBERCULOSIS	45,075	1
Male	Under 50	SEROTONIN SYNDROME SYMPTOMS	40,236	1
Male	Under 50	ANXIETY DISORDERS	32,471	1
Male	Under 50	BIPOLAR DISORDER	26,755	1
Male	Under 50	PERSONALITY DISORDERS	25,595	1
Male	Under 50	SUICIDAL BEHAVIOR	25,595	1
Male	Under 50	ARTHROPATHIES, OTHER	19,304	0
Male	Under 50	HYPERTHYROIDISM	17,923	0
Male	Under 50	THYROID DISEASE	17,923	0
Male	Under 50	PANIC DISORDERS	11,055	0
Male	Under 50	ANKYLOSING SPONDYLITIS	7,512	0
Male	Under 50	EPILEPSY	3,842	0
Male	50+	FRACTURES AND INJURIES	790,192	33
Male	50+	CARDIOVASCULAR DISEASE	238,285	10
Male	50+	HYPERTENSION	238,285	10
Male	50+	SEROTONIN SYNDROME SYMPTOMS	238,285	10
Male	50+	PERIPHERAL NEUROPATHY	105,465	4
Male	50+	HYPERLIPIDEMIA-2	100,188	4
Male	50+	LIPID ABNORMALITIES	100,188	4
Male	50+	DIABETES MELLITUS I AND II	78,876	3
Male	50+	TEST	78,876	3
Male	50+	DEPRESSION	69,759	3
Male	50+	LUPUS	59,983	3
Male	50+	ANKYLOSING SPONDYLITIS	55,958	2
Male	50+	CNS EXCITATION	44,304	2
Male	50+	ANEURYSM	42,335	2
Male	50+	STROKE	42,335	2
Male	50+	ARTHRITIS, RHEUMATOID	32,511	1
Male	50+	GASTRITIS	17,104	1
Male	50+	GI HEMORRHAGE	17,104	1
Male	50+	SYMPTOMS OF GI IRRITATION	17,104	1
Male	50+	PSYCHOSES, DRUG INDUCED	10,538	0
Male	50+	CNS DEMYELINATING DIS	5,786	0
Male	50+	DYSKINESIAS	5,786	0
Male	50+	ARRHYTHMIAS	4,765	0
Male	50+	ATRIAL FIBRILLATION	4,765	0
Female	Under 50	FRACTURES AND INJURIES	3,043,102	71
Female	Under 50	CNS EXCITATION	491,104	12
Female	Under 50	GI HEMORRHAGE	84,694	2
Female	Under 50	GI ULCER	84,694	2
Female	Under 50	HEAD TRAUMA	77,613	2
Female	Under 50	RESPIRATORY INFECTIONS	70,634	2
Female	Under 50	HIV	61,251	1

Table 6b. Number of Physician Visits of MVA Patients by Age, Gender, and Potential Driver Impairing Disease Groups (Weighted)

Gender	Age Group	Disease Group	N	PCTN
Female	Under 50	HYPOTHYROIDISM	42,347	1
Female	Under 50	THYROID DISEASE	42,347	1
Female	Under 50	PSYCHOSES, DRUG INDUCED	31,954	1
Female	Under 50	BLEEDING	29,145	1
Female	Under 50	HEMOPTYSIS	29,145	1
Female	Under 50	ARTHROPATHIES, OTHER	28,682	1
Female	Under 50	ANXIETY DISORDERS	21,416	1
Female	Under 50	DIABETES MELLITUS I AND II	20,083	0
Female	Under 50	STRESS DISORDERS	20,083	0
Female	Under 50	TEST	20,083	0
Female	Under 50	PERIPHERAL NEUROPATHY	17,155	0
Female	Under 50	SEROTONIN SYNDROME SYMPTOMS	14,663	0
Female	Under 50	ALCOHOLISM	10,538	0
Female	Under 50	BIPOLAR DISORDER	10,538	0
Female	Under 50	DEPRESSION	10,538	0
Female	Under 50	DEEP VEIN THROMBOSIS	6,027	0
Female	50+	FRACTURES AND INJURIES	780,948	39
Female	50+	CNS EXCITATION	258,496	13
Female	50+	SEROTONIN SYNDROME SYMPTOMS	172,885	9
Female	50+	CARDIOVASCULAR DISEASE	170,526	8
Female	50+	HYPERTENSION	106,606	5
Female	50+	PSYCHOSES, DRUG INDUCED	83,874	4
Female	50+	ALCOHOLISM	63,920	3
Female	50+	CONGESTIVE HEART FAILURE	63,920	3
Female	50+	BLEEDING	53,755	3
Female	50+	HEMATURIA	53,755	3
Female	50+	COPD	45,149	2
Female	50+	PSYCHOSES	43,933	2
Female	50+	ANKYLOSING SPONDYLITIS	36,361	2
Female	50+	ANXIETY DISORDERS	21,416	1
Female	50+	PERSONALITY DISORDERS	18,525	1
Female	50+	SUICIDAL BEHAVIOR	18,525	1
Female	50+	PERIPHERAL NEUROPATHY	11,788	1
Female	50+	HYPERSENSITIVITY REACTIONS	5,626	0
Female	50+	LACTIC ACIDOSIS SYMPTOMS	5,626	0
Female	50+	DEPRESSION	2,893	0

Appendix VI. Nonproprietary Database, Restrict Definition

Table 7a. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Potential Driver Impairing Disease Groups

		Gender					
		Male		Female		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Disease Groups						
Under 50	0	89	44	91	45	180	45
	1	96	48	92	46	188	47
	2	14	7	13	6	27	7
	3	2	1	3	1	5	1
	4	1	0	2	1	3	1
	All	202	100	201	100	403	100
50+	Number of Potential Impairing Disease Groups						
	0	35	44	28	42	63	43
	1	34	43	28	42	62	43
	2	4	5	7	11	11	8
	3	1	1	2	3	3	2
	4	3	4	1	2	4	3
	5	2	3			2	1
	All	79	100	66	100	145	100
All Age	Number of Potential Impairing Disease Groups						
	0	124	44	119	45	243	44
	1	130	46	120	45	250	46
	2	18	6	20	7	38	7
	3	3	1	5	2	8	1
	4	4	1	3	1	7	1
	5	2	1			2	0
	All	281	100	267	100	548	100

Appendix VI. Nonproprietary Database, Restrict Definition

Table 7b. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Potential Driver Impairing Disease Groups (Weighted)

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Disease Groups						
Under 50	0	2,593,123	43	2,546,055	43	5,139,178	43
	1	3,003,455	49	2,745,844	46	5,749,299	48
	2	429,137	7	540,589	9	969,726	8
	3	36,650	1	106,110	2	142,760	1
	4	11,055	0	30,621	1	41,676	0
	All	6,073,420	100	5,969,219	100	12,042,639	100
50+	Number of Potential Impairing Disease Groups						
	0	919,305	42	989,177	44	1,908,482	43
	1	917,876	42	791,528	35	1,709,404	38
	2	80,410	4	276,620	12	357,030	8
	3	33,467	2	82,445	4	115,912	3
	4	81,090	4	106,606	5	187,696	4
	5	179,064	8			179,064	4
	All	2,211,212	100	2,246,376	100	4,457,588	100
All Age	Number of Potential Impairing Disease Groups						
	0	3,512,428	42	3,535,232	43	7,047,660	43
	1	3,921,331	47	3,537,372	43	7,458,703	45
	2	509,547	6	817,209	10	1,326,756	8
	3	70,117	1	188,555	2	258,672	2
	4	92,145	1	137,227	2	229,372	1
	5	179,064	2			179,064	1
	All	8,284,632	100	8,215,595	100	16,500,227	100

Appendix VI. Nonproprietary Database, Restrict Definition

Table 8a. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Disease-Drug Conflicts

		Gender					
		Male		Female		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Disease-Drug Conflicts						
Under 50	0	201	100	201	100	402	100
	1	1	0			1	0
	All	202	100	201	100	403	100
50+	Number of Disease-Drug Conflicts						
	0	79	100	66	100	145	100
	All	79	100	66	100	145	100
All Age	Number of Disease-Drug Conflicts						
	0	280	100	267	100	547	100
	1	1	0			1	0
	All	281	100	267	100	548	100

Appendix VI. Nonproprietary Database, Restrict Definition

Table 8b. Number of Physician Visits of MVA Patients by Age, Gender, and Number of Disease-Drug Conflicts (Weighted)

		Gender				Both	
		Male		Female			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Disease-Drug Conflicts						
Under 50	0	6,057,720	100	5,969,219	100	12,026,939	100
	1	15,700	0			15,700	0
	All	6,073,420	100	5,969,219	100	12,042,639	100
50+	Number of Disease-Drug Conflicts						
	0	2,211,212	100	2,246,376	100	4,457,588	100
	All	2,211,212	100	2,246,376	100	4,457,588	100
All Age	Number of Disease-Drug Conflicts						
	0	8,268,932	100	8,215,595	100	16,484,527	100
	1	15,700	0			15,700	0
	All	8,284,632	100	8,215,595	100	16,500,227	100

Appendix VII. Nonproprietary Database, Restrict Definition

Table 1a. Number of Patients by Age and Gender
Case Group

	Gender				Both	
	Female		Male			
	N	PCTN	N	PCTN	N	PCTN
Age Group						
Under 50	15,479	84	12,728	83	28,207	84
50+	2,842	16	2,556	17	5,398	16
All Age	18,321	100	15,284	100	33,605	100

Appendix VII. Nonproprietary Database, Restrict Definition

Table 1b. Number of Patients by Age and Gender
Control Group

	Gender				Both	
	Female		Male			
	N	PCTN	N	PCTN	N	PCTN
Age Group						
Under 50	46,437	84	38,184	83	84,621	84
50+	8,526	16	7,668	17	16,194	16
All Age	54,963	100	45,852	100	100,815	100

Appendix VII. Nonproprietary Database, Restrict Definition

Table 2a. Number of Patients by Age, Gender, and Number of Medications
Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Medications						
Under 50	0	6,652	43	8,034	63	14,686	52
	1	2,790	18	1,715	13	4,505	16
	2	2,013	13	1,224	10	3,237	11
	3	1,286	8	635	5	1,921	7
	4	890	6	402	3	1,292	5
	5	517	3	257	2	774	3
	6	369	2	144	1	513	2
	7	270	2	95	1	365	1
	8	185	1	60	0	245	1
	9	131	1	42	0	173	1
	10	87	1	34	0	121	0
	11	65	0	18	0	83	0
	12	42	0	21	0	63	0
	13	31	0	11	0	42	0
	14	36	0	11	0	47	0
	15	28	0	6	0	34	0
	16	18	0	6	0	24	0
	17	15	0	1	0	16	0
	18	9	0	2	0	11	0
	19	6	0	1	0	7	0
	20	7	0	2	0	9	0
	21	6	0	3	0	9	0
	22	4	0	2	0	6	0
	23	4	0			4	0
	24	3	0			3	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 2a. Number of Patients by Age, Gender, and Number of Medications
Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Medications						
Under 50	25	4	0			4	0
	26	2	0			2	0
	27	1	0			1	0
	28	1	0	1	0	2	0
	29	1	0			1	0
	31	1	0			1	0
	32	2	0			2	0
	34	1	0			1	0
	35	1	0			1	0
	36	1	0			1	0
	37			1	0	1	0
	All	15,479	100	12,728	100	28,207	100
50+	Number of Medications						
	0	638	22	896	35	1,534	28
	1	378	13	367	14	745	14
	2	369	13	331	13	700	13
	3	328	12	231	9	559	10
	4	280	10	195	8	475	9
	5	187	7	125	5	312	6
	6	161	6	91	4	252	5
	7	111	4	84	3	195	4
	8	83	3	53	2	136	3
	9	67	2	52	2	119	2
	10	55	2	26	1	81	2

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 2a. Number of Patients by Age, Gender, and Number of Medications
Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Medications						
50+	11	30	1	34	1	64	1
	12	26	1	20	1	46	1
	13	32	1	9	0	41	1
	14	25	1	16	1	41	1
	15	15	1	7	0	22	0
	16	10	0	2	0	12	0
	17	10	0	7	0	17	0
	18	5	0	3	0	8	0
	19	7	0	1	0	8	0
	20	4	0	1	0	5	0
	21	5	0	2	0	7	0
	22	3	0			3	0
	23	2	0	2	0	4	0
	24	2	0			2	0
	25	2	0			2	0
	26	1	0	1	0	2	0
	27	1	0			1	0
	28	1	0			1	0
	29	1	0			1	0
	30	1	0			1	0
	32	1	0			1	0
	36	1	0			1	0
	All	2,842	100	2,556	100	5,398	100

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 2a. Number of Patients by Age, Gender, and Number of Medications Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Medications						
	0	7,290	40	8,930	58	16,220	48
	1	3,168	17	2,082	14	5,250	16
	2	2,382	13	1,555	10	3,937	12
	3	1,614	9	866	6	2,480	7
	4	1,170	6	597	4	1,767	5
	5	704	4	382	2	1,086	3
	6	530	3	235	2	765	2
	7	381	2	179	1	560	2
	8	268	1	113	1	381	1
	9	198	1	94	1	292	1
	10	142	1	60	0	202	1
	11	95	1	52	0	147	0
	12	68	0	41	0	109	0
	13	63	0	20	0	83	0
	14	61	0	27	0	88	0
	15	43	0	13	0	56	0
	16	28	0	8	0	36	0
	17	25	0	8	0	33	0
	18	14	0	5	0	19	0
	19	13	0	2	0	15	0
	20	11	0	3	0	14	0
	21	11	0	5	0	16	0
	22	7	0	2	0	9	0
	23	6	0	2	0	8	0
	24	5	0			5	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 2a. Number of Patients by Age, Gender, and Number of Medications Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Medications						
	25	6	0			6	0
	26	3	0	1	0	4	0
	27	2	0			2	0
	28	2	0	1	0	3	0
	29	2	0			2	0
	30	1	0			1	0
	31	1	0			1	0
	32	3	0			3	0
	34	1	0			1	0
	35	1	0			1	0
	36	2	0			2	0
	37			1	0	1	0
	All	18,321	100	15,284	100	33,605	100

Appendix VII. Nonproprietary Database, Restrict Definition

Table 2b. Number of Patients by Age, Gender, and Number of Medications
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Medications						
Under 50	0	25,338	55	26,475	69	51,813	61
	1	8,953	19	5,018	13	13,971	17
	2	5,262	11	3,084	8	8,346	10
	3	2,753	6	1,528	4	4,281	5
	4	1,651	4	855	2	2,506	3
	5	919	2	500	1	1,419	2
	6	540	1	279	1	819	1
	7	349	1	153	0	502	1
	8	216	0	97	0	313	0
	9	139	0	65	0	204	0
	10	119	0	48	0	167	0
	11	65	0	24	0	89	0
	12	27	0	13	0	40	0
	13	24	0	11	0	35	0
	14	23	0	11	0	34	0
	15	9	0	3	0	12	0
	16	18	0	6	0	24	0
	17	7	0	1	0	8	0
	18	5	0	4	0	9	0
	19	8	0	1	0	9	0
	20	3	0	3	0	6	0
	21	4	0	1	0	5	0
	22	1	0	1	0	2	0
	23	1	0	1	0	2	0
	24	2	0			2	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 2b. Number of Patients by Age, Gender, and Number of Medications
Control Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Medications						
Under 50	28			1	0	1	0
	29	1	0			1	0
	34			1	0	1	0
	All	46,437	100	38,184	100	84,621	100
50+	Number of Medications						
	0	2,675	31	3,197	42	5,872	36
	1	1,251	15	1,144	15	2,395	15
	2	1,205	14	999	13	2,204	14
	3	888	10	683	9	1,571	10
	4	676	8	481	6	1,157	7
	5	463	5	332	4	795	5
	6	383	4	239	3	622	4
	7	268	3	169	2	437	3
	8	205	2	122	2	327	2
	9	114	1	95	1	209	1
	10	97	1	47	1	144	1
	11	88	1	40	1	128	1
	12	53	1	34	0	87	1
	13	42	0	29	0	71	0
	14	31	0	15	0	46	0
	15	20	0	12	0	32	0
	16	14	0	6	0	20	0
	17	9	0	8	0	17	0
	18	8	0	4	0	12	0

(Continued)

Table 2b. Number of Patients by Age, Gender, and Number of Medications
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Medications						
50+	19	8	0	4	0	12	0
	20	5	0	3	0	8	0
	21	9	0	1	0	10	0
	22			1	0	1	0
	23	6	0			6	0
	24	3	0	1	0	4	0
	25			1	0	1	0
	26	3	0	1	0	4	0
	27	1	0			1	0
	30	1	0			1	0
	All	8,526	100	7,668	100	16,194	100
All Age	Number of Medications						
	0	28,013	51	29,672	65	57,685	57
	1	10,204	19	6,162	13	16,366	16
	2	6,467	12	4,083	9	10,550	10
	3	3,641	7	2,211	5	5,852	6
	4	2,327	4	1,336	3	3,663	4
	5	1,382	3	832	2	2,214	2
	6	923	2	518	1	1,441	1
	7	617	1	322	1	939	1
	8	421	1	219	0	640	1
	9	253	0	160	0	413	0
	10	216	0	95	0	311	0
	11	153	0	64	0	217	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 2b. Number of Patients by Age, Gender, and Number of Medications
Control Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Medications						
	12	80	0	47	0	127	0
	13	66	0	40	0	106	0
	14	54	0	26	0	80	0
	15	29	0	15	0	44	0
	16	32	0	12	0	44	0
	17	16	0	9	0	25	0
	18	13	0	8	0	21	0
	19	16	0	5	0	21	0
	20	8	0	6	0	14	0
	21	13	0	2	0	15	0
	22	1	0	2	0	3	0
	23	7	0	1	0	8	0
	24	5	0	1	0	6	0
	25			1	0	1	0
	26	3	0	1	0	4	0
	27	1	0			1	0
	28			1	0	1	0
	29	1	0			1	0
	30	1	0			1	0
	34			1	0	1	0
	All	54,963	100	45,852	100	100815	100

Table 3a. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	N	PCTN
Female	Under 50	CONTRACEPTIVES,ORAL			658	21
Female	Under 50	PRENATAL VITAMIN PREPARATIONS			214	7
Female	Under 50	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)			211	7
Female	Under 50	ANALGESICS,NARCOTICS			192	6
Female	Under 50	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE			152	5
Female	Under 50	PENICILLINS			144	5
Female	Under 50	ANTIHISTAMINES			108	3
Female	Under 50	MACROLIDES			103	3
Female	Under 50	THYROID HORMONES			77	2
Female	Under 50	ESTROGENIC AGENTS			72	2
Female	Under 50	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		71	2
Female	Under 50	BETA-ADRENERGIC AGENTS			57	2
Female	Under 50	ABSORBABLE SULFONAMIDES			55	2
Female	Under 50	GASTRIC ACID SECRETION REDUCERS			55	2
Female	Under 50	ANALGESICS,NARCOTICS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		51	2
Female	Under 50	ANALGESICS,NARCOTICS	PENICILLINS		49	2
Female	Under 50	CEPHALOSPORINS - 1ST GENERATION			48	2
Female	Under 50	TETRACYCLINES			44	1
Female	Under 50	ANTICONVULSANTS			42	1
Female	Under 50	TOPICAL ANTI-INFLAMMATORY STEROIDAL			38	1
Female	Under 50	ANALGESICS,NARCOTICS	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	36	1
Female	Under 50	ANTI-ANXIETY DRUGS			36	1
Female	Under 50	CONTRACEPTIVES,ORAL	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)		36	1
Female	Under 50	SKELETAL MUSCLE RELAXANTS			36	1
Female	Under 50	ANTIFUNGAL AGENTS			34	1
Female	Under 50	TOPICAL ANTIBIOTICS			34	1

Table 3a. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	N	PCTN
Female	Under 50	CONTRACEPTIVES,ORAL	ANTIHISTAMINES		32	1
Female	Under 50	ANTIVIRALS, GENERAL			31	1
Female	Under 50	ANTIMIGRAINE PREPARATIONS			29	1
Female	Under 50	ANALGESICS,NARCOTICS	SKELETAL MUSCLE		28	1
Female	Under 50	EXPECTORANTS			26	1
Female	Under 50	EXPECTORANTS	MACROLIDES		26	1
Female	Under 50	COUGH AND/OR COLD PREPARATIONS			24	1
Female	Under 50	NASAL ANTI-INFLAMMATORY STEROIDS			24	1
Female	Under 50	QUINOLONES			24	1
Female	Under 50	BETA-ADRENERGIC BLOCKING AGENTS			21	1
Female	Under 50	EXPECTORANTS	PENICILLINS		21	1
Female	Under 50	OPHTHALMIC ANTIBIOTICS			21	1
Female	Under 50	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	PENICILLINS		20	1
Female	Under 50	PENICILLINS	ANTIHISTAMINES		20	1
Female	Under 50	GLUCOCORTICOIDS			17	1
Female	Under 50	HYPOTENSIVES, ACE INHIBITORS			16	1
Female	Under 50	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)			16	1
Female	Under 50	LIPOTROPICS			14	0
Female	Under 50	NASAL ANTI-INFLAMMATORY STEROIDS	ANTIHISTAMINES		14	0
Female	Under 50	TOPICAL ANTIFUNGALS			13	0
Female	Under 50	INSULINS			11	0
Female	Under 50	CALCIUM CHANNEL BLOCKING AGENTS			10	0
Female	Under 50	ANALGESICS,NARCOTICS	CEPHALOSPORINS - 1ST GENERATION		8	0
Female	Under 50	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE			6	0
Female	50+	ESTROGENIC AGENTS			94	25

Table 3a. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	N	PCTN
Female	50+	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE			23	6
Female	50+	THYROID HORMONES			23	6
Female	50+	ANALGESICS,NARCOTICS			22	6
Female	50+	LIPOTROPICS			21	6
Female	50+	CALCIUM CHANNEL BLOCKING AGENTS			18	5
Female	50+	HYPOTENSIVES, ACE INHIBITORS			17	5
Female	50+	GASTRIC ACID SECRETION REDUCERS			14	4
Female	50+	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)			12	3
Female	50+	ANTIHISTAMINES			9	2
Female	50+	ANALGESICS,NARCOTICS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		8	2
Female	50+	ANTI-ANXIETY DRUGS			8	2
Female	50+	ANTICONVULSANTS			8	2
Female	50+	ANALGESICS,NARCOTICS	SKELETAL MUSCLE		6	2
Female	50+	ANALGESICS,NARCOTICS	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	6	2
Female	50+	EXPECTORANTS			6	2
Female	50+	SKELETAL MUSCLE RELAXANTS			6	2
Female	50+	TOPICAL ANTI-INFLAMMATORY STEROIDAL			6	2
Female	50+	CEPHALOSPORINS - 1ST GENERATION			5	1
Female	50+	GLUCOCORTICOIDS			5	1
Female	50+	QUINOLONES			5	1
Female	50+	TOPICAL ANTIFUNGALS			5	1
Female	50+	BETA-ADRENERGIC BLOCKING AGENTS			4	1
Female	50+	CONTRACEPTIVES,ORAL			4	1
Female	50+	OPHTHALMIC ANTIBIOTICS			4	1
Female	50+	ANALGESICS,NARCOTICS	CEPHALOSPORINS - 1ST GENERATION		3	1

Table 3a. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	N	PCTN
Female	50+	ANTIFUNGAL AGENTS			3	1
Female	50+	ANTIMIGRAINE PREPARATIONS			3	1
Female	50+	BETA-ADRENERGIC AGENTS			3	1
Female	50+	MACROLIDES			3	1
Female	50+	PENICILLINS			3	1
Female	50+	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		3	1
Female	50+	ANTIVIRALS, GENERAL			2	1
Female	50+	COUGH AND/OR COLD PREPARATIONS			2	1
Female	50+	INSULINS			2	1
Female	50+	ABSORBABLE SULFONAMIDES			1	0
Female	50+	ANALGESICS,NARCOTICS	PENICILLINS		1	0
Female	50+	NASAL ANTI-INFLAMMATORY STEROIDS			1	0
Female	50+	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	PENICILLINS		1	0
Female	50+	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)			1	0
Female	50+	TETRACYCLINES			1	0
Male	Under 50	ANALGESICS,NARCOTICS			251	13
Male	Under 50	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE			138	7
Male	Under 50	PENICILLINS			119	6
Male	Under 50	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)			117	6
Male	Under 50	ANTIHISTAMINES			103	5
Male	Under 50	GASTRIC ACID SECRETION REDUCERS			86	4
Male	Under 50	MACROLIDES			75	4
Male	Under 50	ANALGESICS,NARCOTICS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		63	3
Male	Under 50	CEPHALOSPORINS - 1ST GENERATION			61	3
Male	Under 50	ANTICONVULSANTS			59	3

Table 3a. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	N	PCTN
Male	Under 50	TETRACYCLINES			57	3
Male	Under 50	ANALGESICS,NARCOTICS	PENICILLINS		50	3
Male	Under 50	BETA-ADRENERGIC AGENTS			50	3
Male	Under 50	ANALGESICS,NARCOTICS	SKELETAL MUSCLE		49	2
Male	Under 50	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		38	2
Male	Under 50	BETA-ADRENERGIC BLOCKING AGENTS			35	2
Male	Under 50	HYPOTENSIVES, ACE INHIBITORS			34	2
Male	Under 50	SKELETAL MUSCLE RELAXANTS			34	2
Male	Under 50	TOPICAL ANTI-INFLAMMATORY STEROIDAL			34	2
Male	Under 50	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE			32	2
Male	Under 50	LIPOTROPICS			28	1
Male	Under 50	ANALGESICS,NARCOTICS	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	27	1
Male	Under 50	ANTI-ANXIETY DRUGS			27	1
Male	Under 50	TOPICAL ANTIBIOTICS			27	1
Male	Under 50	ANALGESICS,NARCOTICS	CEPHALOSPORINS - 1ST GENERATION		26	1
Male	Under 50	QUINOLONES			26	1
Male	Under 50	THYROID HORMONES			26	1
Male	Under 50	GLUCOCORTICOIDS			25	1
Male	Under 50	EXPECTORANTS			23	1
Male	Under 50	EXPECTORANTS	PENICILLINS		22	1
Male	Under 50	TOPICAL ANTIFUNGALS			22	1
Male	Under 50	EXPECTORANTS	MACROLIDES		21	1
Male	Under 50	ABSORBABLE SULFONAMIDES			19	1
Male	Under 50	ANTIVIRALS, GENERAL			19	1
Male	Under 50	INSULINS			18	1
Male	Under 50	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	PENICILLINS		18	1
Male	Under 50	OPHTHALMIC ANTIBIOTICS			18	1

Table 3a. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	N	PCTN
Male	Under 50	NASAL ANTI-INFLAMMATORY STEROIDS	ANTIHISTAMINES		17	1
Male	Under 50	CALCIUM CHANNEL BLOCKING AGENTS			15	1
Male	Under 50	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)			14	1
Male	Under 50	PENICILLINS	ANTIHISTAMINES		13	1
Male	Under 50	NASAL ANTI-INFLAMMATORY STEROIDS			12	1
Male	Under 50	COUGH AND/OR COLD PREPARATIONS			11	1
Male	Under 50	ANTIFUNGAL AGENTS			10	1
Male	Under 50	ANTIMIGRAINE PREPARATIONS			7	0
Male	Under 50	CONTRACEPTIVES,ORAL			5	0
Male	Under 50	CONTRACEPTIVES,ORAL	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)		1	0
Male	50+	LIPOTROPICS			45	12
Male	50+	HYPOTENSIVES, ACE INHIBITORS			34	9
Male	50+	ANALGESICS,NARCOTICS			31	8
Male	50+	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE			31	8
Male	50+	GASTRIC ACID SECRETION REDUCERS			27	7
Male	50+	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)			17	5
Male	50+	CALCIUM CHANNEL BLOCKING AGENTS			16	4
Male	50+	ANTIHISTAMINES			13	4
Male	50+	BETA-ADRENERGIC BLOCKING AGENTS			12	3
Male	50+	TOPICAL ANTI-INFLAMMATORY STEROIDAL			11	3
Male	50+	ANALGESICS,NARCOTICS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		8	2
Male	50+	ANALGESICS,NARCOTICS	PENICILLINS		8	2

Table 3a. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	N	PCTN
Male	50+	MACROLIDES			8	2
Male	50+	ANTI-ANXIETY DRUGS			7	2
Male	50+	ANTICONVULSANTS			7	2
Male	50+	GLUCOCORTICOIDS			7	2
Male	50+	INSULINS			7	2
Male	50+	NASAL ANTI-INFLAMMATORY STEROIDS	ANTIHISTAMINES		6	2
Male	50+	PENICILLINS			6	2
Male	50+	TETRACYCLINES			6	2
Male	50+	THYROID HORMONES			6	2
Male	50+	NASAL ANTI-INFLAMMATORY STEROIDS			5	1
Male	50+	OPHTHALMIC ANTIBIOTICS			5	1
Male	50+	SKELETAL MUSCLE RELAXANTS			5	1
Male	50+	ANALGESICS,NARCOTICS	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	4	1
Male	50+	ANTIFUNGAL AGENTS			4	1
Male	50+	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		4	1
Male	50+	TOPICAL ANTIFUNGALS			4	1
Male	50+	BETA-ADRENERGIC AGENTS			3	1
Male	50+	EXPECTORANTS			3	1
Male	50+	EXPECTORANTS	MACROLIDES		3	1
Male	50+	QUINOLONES			3	1
Male	50+	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)			3	1
Male	50+	COUGH AND/OR COLD PREPARATIONS			2	1
Male	50+	ESTROGENIC AGENTS			2	1
Male	50+	PENICILLINS	ANTIHISTAMINES		2	1
Male	50+	ABSORBABLE SULFONAMIDES			1	0
Male	50+	ANALGESICS,NARCOTICS	SKELETAL MUSCLE		1	0
Male	50+	ANTIMIGRAINE PREPARATIONS			1	0
Male	50+	ANTIVIRALS, GENERAL			1	0

Table 3a. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	Drug Class 3	N	PCTN
Male	50+	CEPHALOSPORINS - 1ST GENERATION			1	0
Male	50+	EXPECTORANTS	PENICILLINS		1	0

Table 3b. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	N	PCTN
Female	Under 50	CONTRACEPTIVES,ORAL		3,011	31
Female	Under 50	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)		626	7
Female	Under 50	PENICILLINS		551	6
Female	Under 50	PRENATAL VITAMIN PREPARATIONS		494	5
Female	Under 50	ANTIHISTAMINES		391	4
Female	Under 50	THYROID HORMONES		309	3
Female	Under 50	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		299	3
Female	Under 50	ANALGESICS,NARCOTICS		293	3
Female	Under 50	MACROLIDES		286	3
Female	Under 50	TETRACYCLINES		192	2
Female	Under 50	ESTROGENIC AGENTS		176	2
Female	Under 50	GASTRIC ACID SECRETION REDUCERS		156	2
Female	Under 50	ABSORBABLE SULFONAMIDES		150	2
Female	Under 50	TOPICAL ANTI-INFLAMMATORY STEROIDAL		141	1
Female	Under 50	TOPICAL ANTIBIOTICS		134	1
Female	Under 50	BETA-ADRENERGIC AGENTS		130	1
Female	Under 50	CEPHALOSPORINS - 1ST GENERATION		119	1
Female	Under 50	CONTRACEPTIVES,ORAL	SEROTONIN SPECIFIC REUPTAKE INHIBITOR	116	1
Female	Under 50	ANALGESICS,NARCOTICS	PENICILLINS	113	1
Female	Under 50	CONTRACEPTIVES,ORAL	ANTIHISTAMINES	106	1
Female	Under 50	ANTIMIGRAINE PREPARATIONS		90	1
Female	Under 50	ANTI-ANXIETY DRUGS		89	1
Female	Under 50	BETA-ADRENERGIC BLOCKING AGENTS		86	1
Female	Under 50	ANTIFUNGAL AGENTS		81	1
Female	Under 50	QUINOLONES		81	1
Female	Under 50	NASAL ANTI-INFLAMMATORY STEROIDS	ANTIHISTAMINES	79	1
Female	Under 50	EXPECTORANTS		77	1
Female	Under 50	ANTIVIRALS, GENERAL		76	1
Female	Under 50	NASAL ANTI-INFLAMMATORY STEROIDS		76	1
Female	Under 50	ANTICONVULSANTS		75	1
Female	Under 50	OPHTHALMIC ANTIBIOTICS		72	1
Female	Under 50	EXPECTORANTS	MACROLIDES	71	1
Female	Under 50	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)		64	1
Female	Under 50	GLUCOCORTICOIDS		63	1
Female	Under 50	HYPOTENSIVES, ACE INHIBITORS		63	1
Female	Under 50	ANALGESICS,NARCOTICS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TY	60	1

Table 3b. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	N	PCTN
Female	Under 50	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB		56	1
Female	Under 50	TOPICAL ANTIFUNGALS		53	1
Female	Under 50	VITAMIN A DERIVATIVES		52	1
Female	Under 50	SKELETAL MUSCLE RELAXANTS		50	1
Female	Under 50	CEPHALOSPORINS - 2ND GENERATION		49	1
Female	Under 50	VITAMIN A DERIVATIVES	TETRACYCLINES	49	1
Female	Under 50	BETA-ADRENERGIC AGENTS	GLUCOCORTICOIDS	47	0
Female	Under 50	CALCIUM CHANNEL BLOCKING AGENTS		45	0
Female	Under 50	EXPECTORANTS	PENICILLINS	45	0
Female	Under 50	PENICILLINS	ANTIHISTAMINES	44	0
Female	Under 50	LIPOTROPICS		41	0
Female	Under 50	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TY	35	0
Female	Under 50	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE		25	0
Female	Under 50	ESTROGENIC AGENTS	PROGESTATIONAL AGENTS	24	0
Female	50+	ESTROGENIC AGENTS		417	32
Female	50+	THYROID HORMONES		79	6
Female	50+	ESTROGENIC AGENTS	PROGESTATIONAL AGENTS	73	6
Female	50+	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		68	5
Female	50+	HYPOTENSIVES, ACE INHIBITORS		59	5
Female	50+	LIPOTROPICS		56	4
Female	50+	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)		56	4
Female	50+	BETA-ADRENERGIC BLOCKING AGENTS		51	4
Female	50+	ANTIHISTAMINES		46	4
Female	50+	PENICILLINS		35	3
Female	50+	CALCIUM CHANNEL BLOCKING AGENTS		33	3
Female	50+	GASTRIC ACID SECRETION REDUCERS		32	2
Female	50+	ANALGESICS,NARCOTICS		26	2
Female	50+	ANTI-ANXIETY DRUGS		18	1
Female	50+	ANTIMIGRAINE PREPARATIONS		17	1
Female	50+	QUINOLONES		17	1
Female	50+	MACROLIDES		16	1
Female	50+	NASAL ANTI-INFLAMMATORY STEROIDS		16	1
Female	50+	CONTRACEPTIVES,ORAL		14	1
Female	50+	TOPICAL ANTI-INFLAMMATORY STEROIDAL		14	1
Female	50+	GLUCOCORTICOIDS		12	1
Female	50+	ANTICONVULSANTS		11	1

Table 3b. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	N	PCTN
Female	50+	ABSORBABLE SULFONAMIDES		9	1
Female	50+	BETA-ADRENERGIC AGENTS		9	1
Female	50+	SKELETAL MUSCLE RELAXANTS		9	1
Female	50+	CEPHALOSPORINS - 1ST GENERATION		8	1
Female	50+	EXPECTORANTS	MACROLIDES	8	1
Female	50+	NASAL ANTI-INFLAMMATORY STEROIDS	ANTIHISTAMINES	8	1
Female	50+	BETA-ADRENERGIC AGENTS	GLUCOCORTICOIDS	7	1
Female	50+	ANALGESICS,NARCOTICS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TY	6	0
Female	50+	OPHTHALMIC ANTIBIOTICS		6	0
Female	50+	TOPICAL ANTIFUNGALS		6	0
Female	50+	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB		6	0
Female	50+	EXPECTORANTS		5	0
Female	50+	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)		5	0
Female	50+	TOPICAL ANTIBIOTICS		5	0
Female	50+	ANTIFUNGAL AGENTS		4	0
Female	50+	PENICILLINS	ANTIHISTAMINES	4	0
Female	50+	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TY	4	0
Female	50+	TETRACYCLINES		4	0
Female	50+	ANTIVIRALS, GENERAL		3	0
Female	50+	CEPHALOSPORINS - 2ND GENERATION		3	0
Female	50+	CONTRACEPTIVES,ORAL	ANTIHISTAMINES	3	0
Female	50+	ANALGESICS,NARCOTICS	PENICILLINS	2	0
Female	50+	EXPECTORANTS	PENICILLINS	2	0
Female	50+	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE		1	0
Male	Under 50	PENICILLINS		451	8
Male	Under 50	ANTIHISTAMINES		377	7
Male	Under 50	ANALGESICS,NARCOTICS		325	6
Male	Under 50	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		302	6
Male	Under 50	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)		282	5
Male	Under 50	GASTRIC ACID SECRETION REDUCERS		270	5
Male	Under 50	TETRACYCLINES		262	5
Male	Under 50	MACROLIDES		236	4
Male	Under 50	LIPOTROPICS		182	3
Male	Under 50	BETA-ADRENERGIC AGENTS		174	3
Male	Under 50	ANTICONVULSANTS		151	3
Male	Under 50	TOPICAL ANTI-INFLAMMATORY STEROIDAL		138	3

Table 3b. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	N	PCTN
Male	Under 50	HYPOTENSIVES, ACE INHIBITORS		123	2
Male	Under 50	CEPHALOSPORINS - 1ST GENERATION		122	2
Male	Under 50	NASAL ANTI-INFLAMMATORY STEROIDS		107	2
Male	Under 50	ANALGESICS,NARCOTICS	PENICILLINS	104	2
Male	Under 50	TOPICAL ANTIBIOTICS		96	2
Male	Under 50	BETA-ADRENERGIC BLOCKING AGENTS		95	2
Male	Under 50	TOPICAL ANTIFUNGALS		94	2
Male	Under 50	THYROID HORMONES		90	2
Male	Under 50	NASAL ANTI-INFLAMMATORY STEROIDS	ANTIHISTAMINES	88	2
Male	Under 50	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE		87	2
Male	Under 50	GLUCOCORTICOIDS		79	1
Male	Under 50	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)		78	1
Male	Under 50	VITAMIN A DERIVATIVES	TETRACYCLINES	73	1
Male	Under 50	ANTIVIRALS, GENERAL		72	1
Male	Under 50	ANALGESICS,NARCOTICS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TY	70	1
Male	Under 50	EXPECTORANTS	MACROLIDES	68	1
Male	Under 50	ABSORBABLE SULFONAMIDES		66	1
Male	Under 50	OPHTHALMIC ANTIBIOTICS		66	1
Male	Under 50	QUINOLONES		64	1
Male	Under 50	CALCIUM CHANNEL BLOCKING AGENTS		59	1
Male	Under 50	EXPECTORANTS		55	1
Male	Under 50	BETA-ADRENERGIC AGENTS	GLUCOCORTICOIDS	50	1
Male	Under 50	VITAMIN A DERIVATIVES		49	1
Male	Under 50	ANTIMIGRAINE PREPARATIONS		47	1
Male	Under 50	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TY	45	1
Male	Under 50	ANTI-ANXIETY DRUGS		42	1
Male	Under 50	CONTRACEPTIVES,ORAL		41	1
Male	Under 50	PENICILLINS	ANTIHISTAMINES	39	1
Male	Under 50	EXPECTORANTS	PENICILLINS	38	1
Male	Under 50	ANTIFUNGAL AGENTS		37	1
Male	Under 50	CEPHALOSPORINS - 2ND GENERATION		35	1
Male	Under 50	SKELETAL MUSCLE RELAXANTS		30	1
Male	Under 50	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB		28	1
Male	Under 50	PRENATAL VITAMIN PREPARATIONS		10	0
Male	Under 50	ESTROGENIC AGENTS		4	0
Male	Under 50	CONTRACEPTIVES,ORAL	ANTIHISTAMINES	2	0

Table 3b. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	N	PCTN
Male	Under 50	CONTRACEPTIVES,ORAL	SEROTONIN SPECIFIC REUPTAKE INHIBITOR	2	0
Male	50+	LIPOTROPICS		169	16
Male	50+	HYPOTENSIVES, ACE INHIBITORS		107	10
Male	50+	GASTRIC ACID SECRETION REDUCERS		79	8
Male	50+	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE		71	7
Male	50+	BETA-ADRENERGIC BLOCKING AGENTS		69	7
Male	50+	CALCIUM CHANNEL BLOCKING AGENTS		55	5
Male	50+	PENICILLINS		45	4
Male	50+	ANALGESICS,NARCOTICS		35	3
Male	50+	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)		34	3
Male	50+	TOPICAL ANTI-INFLAMMATORY STEROIDAL		31	3
Male	50+	THYROID HORMONES		30	3
Male	50+	ANTIHISTAMINES		28	3
Male	50+	TOPICAL ANTIFUNGALS		19	2
Male	50+	MACROLIDES		18	2
Male	50+	NASAL ANTI-INFLAMMATORY STEROIDS		17	2
Male	50+	ANTICONVULSANTS		16	2
Male	50+	BETA-ADRENERGIC AGENTS		16	2
Male	50+	ANTI-ANXIETY DRUGS		14	1
Male	50+	CEPHALOSPORINS - 1ST GENERATION		13	1
Male	50+	QUINOLONES		13	1
Male	50+	ANALGESICS,NARCOTICS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TY	12	1
Male	50+	ANALGESICS,NARCOTICS	PENICILLINS	11	1
Male	50+	EXPECTORANTS		10	1
Male	50+	EXPECTORANTS	MACROLIDES	10	1
Male	50+	GLUCOCORTICOIDS		10	1
Male	50+	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)		10	1
Male	50+	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB		10	1
Male	50+	ABSORBABLE SULFONAMIDES		9	1
Male	50+	BETA-ADRENERGIC AGENTS	GLUCOCORTICOIDS	9	1
Male	50+	TETRACYCLINES		9	1
Male	50+	SKELETAL MUSCLE RELAXANTS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TY	8	1
Male	50+	ANTIFUNGAL AGENTS		7	1
Male	50+	ANTIVIRALS, GENERAL		7	1
Male	50+	ESTROGENIC AGENTS		5	0
Male	50+	PENICILLINS	ANTIHISTAMINES	5	0

Table 3b. Number of Patients by Gender, Age Group, and Specific Combinations of Drug Classes

Gender	Age Group	Drug Class 1	Drug Class 2	N	PCTN
Male	50+	CEPHALOSPORINS - 2ND GENERATION		3	0
Male	50+	NASAL ANTI-INFLAMMATORY STEROIDS	ANTIHISTAMINES	3	0
Male	50+	OPHTHALMIC ANTIBIOTICS		3	0
Male	50+	SKELETAL MUSCLE RELAXANTS		3	0
Male	50+	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE		2	0
Male	50+	ANTIMIGRAINE PREPARATIONS		2	0
Male	50+	ESTROGENIC AGENTS	PROGESTATIONAL AGENTS	2	0
Male	50+	EXPECTORANTS	PENICILLINS	2	0
Male	50+	CONTRACEPTIVES,ORAL		1	0
Male	50+	TOPICAL ANTIBIOTICS		1	0

Table 4a. Number of Patients by Age, Gender, and Number of Driver Impairing Medications Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Medications						
Under 50	0	9,244	60	8,966	70	18,210	65
	1	2,872	19	2,015	16	4,887	17
	2	1,555	10	933	7	2,488	9
	3	791	5	411	3	1,202	4
	4	435	3	191	2	626	2
	5	237	2	107	1	344	1
	6	143	1	48	0	191	1
	7	89	1	20	0	109	0
	8	48	0	14	0	62	0
	9	23	0	11	0	34	0
	10	17	0	6	0	23	0
	11	11	0	4	0	15	0
	12	7	0	1	0	8	0
	13	4	0	1	0	5	0
	14	1	0			1	0
	18	1	0			1	0
	19	1	0			1	0
	All	15,479	100	12,728	100	28,207	100
50+	Number of Potential Impairing Medications						
	0	922	32	1,019	40	1,941	36
	1	556	20	515	20	1,071	20
	2	441	16	353	14	794	15

(Continued)

Table 4a. Number of Patients by Age, Gender, and Number of Driver Impairing Medications Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Medications						
50+							
	3	333	12	244	10	577	11
	4	221	8	159	6	380	7
	5	149	5	110	4	259	5
	6	77	3	62	2	139	3
	7	63	2	43	2	106	2
	8	25	1	26	1	51	1
	9	24	1	12	0	36	1
	10	13	0	8	0	21	0
	11	6	0	4	0	10	0
	12	5	0			5	0
	13	3	0			3	0
	14	3	0			3	0
	15	1	0			1	0
	18			1	0	1	0
	All	2,842	100	2,556	100	5,398	100
All Age	Number of Potential Impairing Medications						
	0	10,166	55	9,985	65	20,151	60
	1	3,428	19	2,530	17	5,958	18
	2	1,996	11	1,286	8	3,282	10
	3	1,124	6	655	4	1,779	5
	4	656	4	350	2	1,006	3
	5	386	2	217	1	603	2

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 4a. Number of Patients by Age, Gender, and Number of Driver Impairing Medications Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Potential Impairing Medications						
	6	220	1	110	1	330	1
	7	152	1	63	0	215	1
	8	73	0	40	0	113	0
	9	47	0	23	0	70	0
	10	30	0	14	0	44	0
	11	17	0	8	0	25	0
	12	12	0	1	0	13	0
	13	7	0	1	0	8	0
	14	4	0			4	0
	15	1	0			1	0
	18	1	0	1	0	2	0
	19	1	0			1	0
	All	18,321	100	15,284	100	33,605	100

Table 4b. Number of Patients by Age, Gender, and Number of Driver Impairing Medications
Control Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Medications						
Under 50	0	34,107	73	29,833	78	63,940	76
	1	7,432	16	5,270	14	12,702	15
	2	2,858	6	1,834	5	4,692	6
	3	1,134	2	754	2	1,888	2
	4	471	1	258	1	729	1
	5	218	0	135	0	353	0
	6	114	0	52	0	166	0
	7	59	0	27	0	86	0
	8	18	0	12	0	30	0
	9	15	0	6	0	21	0
	10	3	0	1	0	4	0
	11	5	0	1	0	6	0
	12	1	0	1	0	2	0
	13	2	0			2	0
	All	46,437	100	38,184	100	84,621	100
50+	Number of Potential Impairing Medications						
	0	3,755	44	3,617	47	7,372	46
	1	1,720	20	1,513	20	3,233	20
	2	1,204	14	1,068	14	2,272	14
	3	783	9	622	8	1,405	9
	4	424	5	382	5	806	5
	5	267	3	210	3	477	3

(Continued)

Table 4b. Number of Patients by Age, Gender, and Number of Driver Impairing Medications
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Medications						
50+	6	151	2	114	1	265	2
	7	100	1	70	1	170	1
	8	51	1	38	0	89	1
	9	34	0	17	0	51	0
	10	20	0	4	0	24	0
	11	12	0	6	0	18	0
	12	3	0	4	0	7	0
	13	1	0	1	0	2	0
	15	1	0	1	0	2	0
	18			1	0	1	0
	All	8,526	100	7,668	100	16,194	100
All Age	Number of Potential Impairing Medications						
	0	37,862	69	33,450	73	71,312	71
	1	9,152	17	6,783	15	15,935	16
	2	4,062	7	2,902	6	6,964	7
	3	1,917	3	1,376	3	3,293	3
	4	895	2	640	1	1,535	2
	5	485	1	345	1	830	1
	6	265	0	166	0	431	0
	7	159	0	97	0	256	0
	8	69	0	50	0	119	0
	9	49	0	23	0	72	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 4b. Number of Patients by Age, Gender, and Number of Driver Impairing Medications
Control Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Potential Impairing Medications						
	10	23	0	5	0	28	0
	11	17	0	7	0	24	0
	12	4	0	5	0	9	0
	13	3	0	1	0	4	0
	15	1	0	1	0	2	0
	18			1	0	1	0
	All	54,963	100	45,852	100	100815	100

Table 5a. Number of Patients by Age, Gender, and Number of Drug-Drug Conflicts Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Drug Drug Conflicts						
Under 50	0	13,900	90	11,992	94	25,892	92
	1	833	5	452	4	1,285	5
	2	274	2	120	1	394	1
	3	192	1	68	1	260	1
	4	80	1	27	0	107	0
	5	61	0	20	0	81	0
	6	42	0	16	0	58	0
	7	24	0	10	0	34	0
	8	16	0	5	0	21	0
	9	13	0	5	0	18	0
	10	10	0	2	0	12	0
	11	6	0	2	0	8	0
	12	7	0	1	0	8	0
	13	3	0			3	0
	14			1	0	1	0
	15	5	0	1	0	6	0
	16	2	0	2	0	4	0
	17	2	0			2	0
	18	1	0	2	0	3	0
	19	4	0			4	0
	21			1	0	1	0
	23	2	0	1	0	3	0
	24	1	0			1	0
	50	1	0			1	0
	All	15,479	100	12,728	100	28,207	100

(Continued)

Table 5a. Number of Patients by Age, Gender, and Number of Drug-Drug Conflicts Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Drug Drug Conflicts						
50+	0	2,126	75	2,000	78	4,126	76
	1	365	13	280	11	645	12
	2	119	4	77	3	196	4
	3	79	3	78	3	157	3
	4	33	1	35	1	68	1
	5	22	1	24	1	46	1
	6	25	1	20	1	45	1
	7	16	1	9	0	25	0
	8	10	0	10	0	20	0
	9	16	1	6	0	22	0
	10	6	0	3	0	9	0
	11	8	0	6	0	14	0
	12	1	0	3	0	4	0
	13	3	0	2	0	5	0
	14	5	0	1	0	6	0
	17	3	0			3	0
	19	1	0			1	0
	22	1	0			1	0
	23	1	0	1	0	2	0
	24	1	0			1	0
	27	1	0			1	0
	31			1	0	1	0
	All	2,842	100	2,556	100	5,398	100

(Continued)

Table 5a. Number of Patients by Age, Gender, and Number of Drug-Drug Conflicts Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Drug Drug Conflicts						
	0	16,026	87	13,992	92	30,018	89
	1	1,198	7	732	5	1,930	6
	2	393	2	197	1	590	2
	3	271	1	146	1	417	1
	4	113	1	62	0	175	1
	5	83	0	44	0	127	0
	6	67	0	36	0	103	0
	7	40	0	19	0	59	0
	8	26	0	15	0	41	0
	9	29	0	11	0	40	0
	10	16	0	5	0	21	0
	11	14	0	8	0	22	0
	12	8	0	4	0	12	0
	13	6	0	2	0	8	0
	14	5	0	2	0	7	0
	15	5	0	1	0	6	0
	16	2	0	2	0	4	0
	17	5	0			5	0
	18	1	0	2	0	3	0
	19	5	0			5	0
	21			1	0	1	0
	22	1	0			1	0
	23	3	0	2	0	5	0
	24	2	0			2	0
	27	1	0			1	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 5a. Number of Patients by Age, Gender, and Number of Drug-Drug Conflicts Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Drug Drug Conflicts						
	31			1	0	1	0
	50	1	0			1	0
	All	18,321	100	15,284	100	33,605	100

Table 5b. Number of Patients by Age, Gender, and Number of Drug-Drug Conflicts
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Drug Drug Conflicts						
Under 50	0	44,354	96	36,901	97	81,255	96
	1	1,363	3	869	2	2,232	3
	2	331	1	191	1	522	1
	3	212	0	113	0	325	0
	4	77	0	38	0	115	0
	5	34	0	18	0	52	0
	6	22	0	25	0	47	0
	7	19	0	8	0	27	0
	8	7	0	8	0	15	0
	9	4	0	5	0	9	0
	10	4	0			4	0
	11	2	0	1	0	3	0
	12	3	0	1	0	4	0
	13			3	0	3	0
	15	1	0			1	0
	16			2	0	2	0
	17	1	0			1	0
	18	2	0			2	0
	29	1	0			1	0
	33			1	0	1	0
	All	46,437	100	38,184	100	84,621	100
50+	Number of Drug Drug Conflicts						
	0	7,124	84	6,424	84	13,548	84
	1	749	9	667	9	1,416	9

(Continued)

Table 5b. Number of Patients by Age, Gender, and Number of Drug-Drug Conflicts Control Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Drug Drug Conflicts						
50+	2	263	3	204	3	467	3
	3	161	2	149	2	310	2
	4	57	1	66	1	123	1
	5	42	0	46	1	88	1
	6	45	1	42	1	87	1
	7	20	0	13	0	33	0
	8	21	0	13	0	34	0
	9	9	0	8	0	17	0
	10	10	0	7	0	17	0
	11	7	0	7	0	14	0
	12	3	0	4	0	7	0
	13	3	0	6	0	9	0
	14	6	0			6	0
	15	1	0	4	0	5	0
	16			2	0	2	0
	17	2	0	1	0	3	0
	18	1	0	1	0	2	0
	19	1	0			1	0
	20			2	0	2	0
	22			1	0	1	0
	25	1	0			1	0
	32			1	0	1	0
	All	8,526	100	7,668	100	16,194	100

(Continued)

Table 5b. Number of Patients by Age, Gender, and Number of Drug-Drug Conflicts
Control Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Drug Drug Conflicts						
	0	51,478	94	43,325	94	94,803	94
	1	2,112	4	1,536	3	3,648	4
	2	594	1	395	1	989	1
	3	373	1	262	1	635	1
	4	134	0	104	0	238	0
	5	76	0	64	0	140	0
	6	67	0	67	0	134	0
	7	39	0	21	0	60	0
	8	28	0	21	0	49	0
	9	13	0	13	0	26	0
	10	14	0	7	0	21	0
	11	9	0	8	0	17	0
	12	6	0	5	0	11	0
	13	3	0	9	0	12	0
	14	6	0			6	0
	15	2	0	4	0	6	0
	16			4	0	4	0
	17	3	0	1	0	4	0
	18	3	0	1	0	4	0
	19	1	0			1	0
	20			2	0	2	0
	22			1	0	1	0
	25	1	0			1	0
	29	1	0			1	0
	32			1	0	1	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 5b. Number of Patients by Age, Gender, and Number of Drug-Drug Conflicts
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Drug Drug Conflicts						
	33			1	0	1	0
	All	54,963	100	45,852	100	100815	100

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	HYPERSENSITIVITY REACTIONS	1,815
Female	Under 50	RESPIRATORY INFECTIONS	1,620
Female	Under 50	FRACTURES AND INJURIES	1,453
Female	Under 50	PREGNANCY	902
Female	Under 50	DEPRESSION	868
Female	Under 50	PSYCHOSES, DRUG INDUCED	758
Female	Under 50	DIARRHEA, GASTROENTERITIS	655
Female	Under 50	CONTRACEPTIVE MEASURES	533
Female	Under 50	CNS EXCITATION	468
Female	Under 50	ORAL CONTRACEPTION	442
Female	Under 50	ABDOMINAL PAIN	390
Female	Under 50	LACTIC ACIDOSIS SYMPTOMS	346
Female	Under 50	ASTHMA	316
Female	Under 50	SYMPTOMS OF DIG-TOXICITY	294
Female	Under 50	CARDIOVASCULAR DISEASE	285
Female	Under 50	ABNL PREG TERMINATED OR DELIV	269
Female	Under 50	ANXIETY DISORDERS	261
Female	Under 50	HYPERTENSION	261
Female	Under 50	SYMPTOMS OF GI IRRITATION	246
Female	Under 50	COND- REYE SYNDROME RELATED	236
Female	Under 50	THYROID DISEASE	228
Female	Under 50	HEMATOLOGIC DISORDERS	214
Female	Under 50	DIABETES MELLITUS I AND II	188
Female	Under 50	TUBERCULOSIS	186
Female	Under 50	SYMPTOMS OF ERGOTISM	181
Female	Under 50	LIPID ABNORMALITIES	178
Female	Under 50	HIV	176
Female	Under 50	COUGH	174
Female	Under 50	CONTRACEPTION- IMPLANTS	164
Female	Under 50	GERD	148
Female	Under 50	CONTRACEPTION- INJECTION (D)	146
Female	Under 50	CHRONIC OTITIS MEDIA	144
Female	Under 50	PANCYTOPENIA	136
Female	Under 50	ANEMIAS, OTHER	123
Female	Under 50	NORMAL PREG TERMINATED	122
Female	Under 50	NORMAL PREGNANCT TERMINATED	122
Female	Under 50	GI HEMORRHAGE	107
Female	Under 50	ANAPHYLACTIC SHOCK	100
Female	Under 50	HEAD TRAUMA	98
Female	Under 50	HEPATIC DYSFUNCTION	98
Female	Under 50	BLEEDING	96
Female	Under 50	OBESITY	95
Female	Under 50	VIRAL ILLNESSES	91
Female	Under 50	MILD FUNGAL INFECTIONS	86
Female	Under 50	BIPOLAR DISORDER	85
Female	Under 50	SYNCOPE	81
Female	Under 50	DIARRHEA	78
Female	Under 50	GASTRITIS	74
Female	Under 50	HEPATITIS	73
Female	Under 50	HEMATURIA	68

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	ALCOHOLISM	67
Female	Under 50	ARRHYTHMIAS	64
Female	Under 50	CANCER	55
Female	Under 50	EDEMA	51
Female	Under 50	ANKYLOSING SPONDYLITIS	49
Female	Under 50	ANEMIA,DEF.FE,OTH	48
Female	Under 50	COLON, IRRITABLE	47
Female	Under 50	ACUTE OTITIS MEDIA	45
Female	Under 50	BRONCHOPNEUMONIA	45
Female	Under 50	PANIC DISORDERS	44
Female	Under 50	PERSONALITY DISORDERS	42
Female	Under 50	ARTHRITIS, RHEUMATOID	39
Female	Under 50	DEHYDRATION	39
Female	Under 50	DERMATITIS,MACULOPAPULAR	39
Female	Under 50	VOLUME DEPLETION	39
Female	Under 50	LYMPHADENOPATHY	38
Female	Under 50	SYMPTOMS OF QUINIDINE-TOXICITY	37
Female	Under 50	COPD	36
Female	Under 50	KIDNEY STONES	36
Female	Under 50	HYPERTHYROIDISM	35
Female	Under 50	ABUSE- DRUG	34
Female	Under 50	PERIPHERAL NEUROPATHY	34
Female	Under 50	STRESS DISORDERS	34
Female	Under 50	PREG TERMINATION- CHEMICAL	33
Female	Under 50	SUICIDAL BEHAVIOR	33
Female	Under 50	EPILEPSY	31
Female	Under 50	PLEURAL EFFUSION-D	29
Female	Under 50	ARTHRITIS, OSTEOARTHRITIS	28
Female	Under 50	CHOLELITHIASIS	28
Female	Under 50	GALLSTONES	28
Female	Under 50	CNS DEMYELINATING DIS	26
Female	Under 50	DYSKINESIAS	26
Female	Under 50	GI ULCER	26
Female	Under 50	HEMATEMESIS	25
Female	Under 50	DEEP VEIN THROMBOSIS	24
Female	Under 50	LUPUS	22
Female	Under 50	CONGESTIVE HEART FAILURE	21
Female	Under 50	RENAL DISEASE	21
Female	Under 50	PSYCHOSES	20
Female	Under 50	PULMONARY DISORDERS	19
Female	Under 50	RENAL FAILURE-GENERAL	19
Female	Under 50	BREAST CANCER, FEMALE	18
Female	Under 50	PSORIASIS	18
Female	Under 50	PULMONARY FIBROSIS	18
Female	Under 50	RENAL FAILURE W/O HTN	18
Female	Under 50	ANEURYSM	17
Female	Under 50	BLEEDING RISK DIAGNOSIS	17
Female	Under 50	ANGINA, PECTORIS	16
Female	Under 50	ISCHEMIC HEART DISEASE	16
Female	Under 50	PULMONARY EDEMA	16

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	SUICIDE	16
Female	Under 50	OSTEOPOROSIS	15
Female	Under 50	ANOREXIA	14
Female	Under 50	CROHN'S DISEASE	14
Female	Under 50	LEUKOPENIA	14
Female	Under 50	PRURITUS	14
Female	Under 50	EPISTAXIS	13
Female	Under 50	HEMORRHAGIC DISORDERS	13
Female	Under 50	SEVERE FUNGAL INFECTIONS	13
Female	Under 50	MENOPAUSE	12
Female	Under 50	BOWEL OBSTRUCTION	11
Female	Under 50	RELATED TO FETAL OUTCOMES	11
Female	Under 50	STEATORRHEA	11
Female	Under 50	STROKE	11
Female	Under 50	ALBUMINURIA/ NEPHROPATHY	10
Female	Under 50	BRAIN HEMORRHAGE	10
Female	Under 50	THROMBOCYTOPENIA	10
Female	Under 50	THROMBOPHLEBITIS	10
Female	Under 50	URINARY RETENTION	10
Female	Under 50	BULIMIA	9
Female	Under 50	COLON POLYPS	9
Female	Under 50	EXTRAPYRAMIDAL REACTIONS	9
Female	Under 50	HEPATITIS, ALLER CHOLESTATIC	9
Female	Under 50	TELANGLECTASIS	9
Female	Under 50	AGRANULOCYTOSIS	8
Female	Under 50	HEPATIC CIRRHOSIS	8
Female	Under 50	HEPATOMEGALY WITH STEATOSIS	8
Female	Under 50	HYPOTENSION	8
Female	Under 50	MYELOSUPPRESSION	8
Female	Under 50	NEUTROPENIA	8
Female	Under 50	COAGULATION DEFECTS	7
Female	Under 50	ELECTROLYTE DISORDERS	7
Female	Under 50	ILEUS, PARALYTIC	7
Female	Under 50	MYOCARDIAL ISCHEMIA	7
Female	Under 50	NUTRITIONAL/ NEURO DEFICIENCY	7
Female	Under 50	OSTEOSARCOMA	7
Female	Under 50	PULMONARY EMBOLUS	7
Female	Under 50	THROMBOCYTOPENIA, SECONDARY	7
Female	Under 50	UREMIA	7
Female	Under 50	ANGINA, UNSTABLE	6
Female	Under 50	APPENDICITIS	6
Female	Under 50	ARTHROPATHIES, OTHER	6
Female	Under 50	COLITIS	6
Female	Under 50	DELIRIUM	6
Female	Under 50	DEMENTIA	6
Female	Under 50	DRUG INDUCED PSYCH DISORDERS	6
Female	Under 50	GI OBSTRUCTION	6
Female	Under 50	HEMOLYSIS	6
Female	Under 50	INTERSTITIAL PNEUMONITIS	6
Female	Under 50	PANCREATITIS	6

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	PROTEINURIA	6
Female	Under 50	VENTRICULAR ARRHYTHMIA	6
Female	Under 50	ANGIONEUROTIC EDEMA	5
Female	Under 50	COLON LESIONS	5
Female	Under 50	GLAUCOMA	5
Female	Under 50	HEMOLYTIC ANEMIA, HERED	5
Female	Under 50	HYPERSECRETORY STATES	5
Female	Under 50	NEUROPATHIES	5
Female	Under 50	ATRIAL FIBRILLATION	4
Female	Under 50	BRADYCARDIA	4
Female	Under 50	CHOLESTATIC JAUNDICE	4
Female	Under 50	ENCEPHALOPATHIC SYNDROME	4
Female	Under 50	EXFOLIATIVE DERMATITIS	4
Female	Under 50	HEMOPTYSIS	4
Female	Under 50	INTRA-ABDOMINAL HEMORRHAGE	4
Female	Under 50	MALIGNANT NEOPLASM, CNS	4
Female	Under 50	NASAL POLYPS	4
Female	Under 50	OPTIC NEURITIS	4
Female	Under 50	PRERENAL AZOTEMIA	4
Female	Under 50	PSEUDOTUMOR CEREBRI	4
Female	Under 50	PULMONARY EMBOLUS, PREVIOUS	4
Female	Under 50	ALCOHOLIC LIVER DISEASE	3
Female	Under 50	ARTHRITIS, PSORIATIC	3
Female	Under 50	CYSTIC FIBROSIS	3
Female	Under 50	HEART BLOCK	3
Female	Under 50	JAUNDICE	3
Female	Under 50	OBSTRUCTIVE UROPATHY	3
Female	Under 50	RENAL CALCIFICATION	3
Female	Under 50	ADDISON'S DISEASE	2
Female	Under 50	ADRENAL INSUFFICIENCY	2
Female	Under 50	ALZHEIMER	2
Female	Under 50	ANEMIA,MEGALOBLASTIC	2
Female	Under 50	BLOOD DYSCRASIAS	2
Female	Under 50	CEREBRAL PALSY	2
Female	Under 50	COLOSTOMY/ ILEOSTOMY	2
Female	Under 50	CRYSTALLURIA	2
Female	Under 50	ERYTHEMA MULTIFORME	2
Female	Under 50	GOUT	2
Female	Under 50	KETOACIDOSIS	2
Female	Under 50	MYASTHENIA GRAVIS	2
Female	Under 50	PSEUDOMEMBRANOUS COLITIS	2
Female	Under 50	RHABDOMYOLYSIS	2
Female	Under 50	SICKLE CELL ANEMIA	2
Female	Under 50	STEVENS JOHNSON SYNDROME	2
Female	Under 50	ALVEOLITIS,FIBROSING	1
Female	Under 50	ANURIA	1
Female	Under 50	AV BLOCK II TO III	1
Female	Under 50	BULLOUS RASH	1
Female	Under 50	CEREBRAL ARTERIOSCLEROSIS	1
Female	Under 50	CIRRHOSIS	1

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	FAVISM	1
Female	Under 50	G6PD	1
Female	Under 50	G6PD DEFICIENCY	1
Female	Under 50	GLAUCOMA,NARROW ANGLE	1
Female	Under 50	HALLUCINATIONS	1
Female	Under 50	HEMOLYTIC ANEMIA, ACQ	1
Female	Under 50	HEPATIC FAILURE	1
Female	Under 50	HYPERCALCEMIA	1
Female	Under 50	HYPERSENSITIVITY PNEUMONITIS	1
Female	Under 50	MALIGNANT MELANOMA	1
Female	Under 50	MYOPATHY	1
Female	Under 50	OLIGURIA	1
Female	Under 50	RADIATION THERAPY ICD	1
Female	Under 50	RENAL OSTEODYSTROPHY	1
Female	Under 50	RETROPERITONEAL FIBROSIS	1
Female	Under 50	SUBARACHNOID HEMORRHAGE	1
Female	50+	CARDIOVASCULAR DISEASE	383
Female	50+	HYPERTENSION	356
Female	50+	HYPERSENSITIVITY REACTIONS	315
Female	50+	FRACTURES AND INJURIES	297
Female	50+	DIABETES MELLITUS I AND II	212
Female	50+	RESPIRATORY INFECTIONS	202
Female	50+	LIPID ABNORMALITIES	196
Female	50+	DEPRESSION	144
Female	50+	PSYCHOSES, DRUG INDUCED	138
Female	50+	DIARRHEA, GASTROENTERITIS	118
Female	50+	THYROID DISEASE	111
Female	50+	SYMPTOMS OF GI IRRITATION	92
Female	50+	CNS EXCITATION	79
Female	50+	SYMPTOMS OF DIG-TOXICITY	75
Female	50+	TUBERCULOSIS	66
Female	50+	ABDOMINAL PAIN	65
Female	50+	CANCER	64
Female	50+	GERD	62
Female	50+	ASTHMA	61
Female	50+	HEMATOLOGIC DISORDERS	60
Female	50+	LACTIC ACIDOSIS SYMPTOMS	60
Female	50+	COPD	52
Female	50+	HEPATIC DYSFUNCTION	51
Female	50+	ANXIETY DISORDERS	47
Female	50+	OSTEOPOROSIS	43
Female	50+	ARTHRITIS, OSTEOARTHRITIS	42
Female	50+	ISCHEMIC HEART DISEASE	42
Female	50+	MILD FUNGAL INFECTIONS	41
Female	50+	ARRHYTHMIAS	40
Female	50+	HEPATITIS	39
Female	50+	GI HEMORRHAGE	38
Female	50+	COUGH	37
Female	50+	ANKYLOSING SPONDYLITIS	36
Female	50+	BLEEDING	34

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	50+	COND- REYE SYNDROME RELATED	31
Female	50+	CONGESTIVE HEART FAILURE	30
Female	50+	SYMPTOMS OF ERGOTISM	29
Female	50+	ANEMIAS, OTHER	28
Female	50+	PANCYTOPENIA	28
Female	50+	ANAPHYLACTIC SHOCK	27
Female	50+	BREAST CANCER, FEMALE	27
Female	50+	ANEMIA,DEF.FE,OTH	26
Female	50+	OBESITY	25
Female	50+	EDEMA	24
Female	50+	DIARRHEA	23
Female	50+	GASTRITIS	23
Female	50+	BRONCHOPNEUMONIA	21
Female	50+	HEAD TRAUMA	21
Female	50+	PERIPHERAL NEUROPATHY	21
Female	50+	ATRIAL FIBRILLATION	20
Female	50+	ARTHRITIS, RHEUMATOID	19
Female	50+	HIV	19
Female	50+	MENOPAUSE	19
Female	50+	SYMPTOMS OF QUINIDINE-TOXICITY	19
Female	50+	CHRONIC OTITIS MEDIA	18
Female	50+	DEEP VEIN THROMBOSIS	18
Female	50+	COLON POLYPS	17
Female	50+	HEMATURIA	17
Female	50+	VIRAL ILLNESSES	17
Female	50+	GI ULCER	16
Female	50+	SYNCOPE	16
Female	50+	STROKE	15
Female	50+	ANGINA, PECTORIS	14
Female	50+	RENAL FAILURE-GENERAL	14
Female	50+	ANEURYSM	13
Female	50+	BIPOLAR DISORDER	13
Female	50+	HEMATEMESIS	13
Female	50+	RENAL FAILURE W/O HTN	12
Female	50+	CNS DEMYELINATING DIS	11
Female	50+	GLAUCOMA	11
Female	50+	COLON, IRRITABLE	10
Female	50+	DERMATITIS,MACULOPAPULAR	10
Female	50+	MYOCARDIAL ISCHEMIA	10
Female	50+	PLEURAL EFFUSION-D	10
Female	50+	RENAL DISEASE	10
Female	50+	ALCOHOLISM	9
Female	50+	CHOLELITHIASIS	9
Female	50+	DYSKINESIAS	9
Female	50+	GALLSTONES	9
Female	50+	LUPUS	9
Female	50+	NUTRITIONAL/ NEURO DEFICIENCY	9
Female	50+	BLEEDING RISK DIAGNOSIS	8
Female	50+	DEMENTIA	8
Female	50+	EXTRAPYRAMIDAL REACTIONS	8

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	50+	ARTHROPATHIES, OTHER	7
Female	50+	DEHYDRATION	7
Female	50+	EPILEPSY	7
Female	50+	HEPATIC CIRRHOSIS	7
Female	50+	HYPERTHYROIDISM	7
Female	50+	KIDNEY STONES	7
Female	50+	PULMONARY EMBOLUS	7
Female	50+	STEATORRHEA	7
Female	50+	STRESS DISORDERS	7
Female	50+	VOLUME DEPLETION	7
Female	50+	ACUTE OTITIS MEDIA	6
Female	50+	ALBUMINURIA/ NEPHROPATHY	6
Female	50+	EPISTAXIS	6
Female	50+	GOUT	6
Female	50+	KETOACIDOSIS	6
Female	50+	NEUROPATHIES	6
Female	50+	OSTEOSARCOMA	6
Female	50+	PSYCHOSES	6
Female	50+	PULMONARY DISORDERS	6
Female	50+	PULMONARY FIBROSIS	6
Female	50+	VENTRICULAR ARRHYTHMIA	6
Female	50+	ANGINA, UNSTABLE	5
Female	50+	HYPOTENSION	5
Female	50+	INTERSTITIAL PNEUMONITIS	5
Female	50+	PANIC DISORDERS	5
Female	50+	BRAIN HEMORRHAGE	4
Female	50+	CIRRHOSIS	4
Female	50+	CROHN'S DISEASE	4
Female	50+	ELECTROLYTE DISORDERS	4
Female	50+	GI OBSTRUCTION	4
Female	50+	HYPERSECRETORY STATES	4
Female	50+	LEUKOPENIA	4
Female	50+	MYELOSUPPRESSION	4
Female	50+	PSORIASIS	4
Female	50+	PULMONARY EDEMA	4
Female	50+	URINARY RETENTION	4
Female	50+	AGRANULOCYTOSIS	3
Female	50+	BOWEL OBSTRUCTION	3
Female	50+	COAGULATION DEFECTS	3
Female	50+	COLOSTOMY/ ILEOSTOMY	3
Female	50+	DELIRIUM	3
Female	50+	HEART BLOCK	3
Female	50+	HEPATITIS, ALLER CHOLESTATIC	3
Female	50+	HEPATOMEGALY WITH STEATOSIS	3
Female	50+	INTRA-ABDOMINAL HEMORRHAGE	3
Female	50+	NEUTROPENIA	3
Female	50+	PARKINSONISM,PRIMARY	3
Female	50+	PERSONALITY DISORDERS	3
Female	50+	PROTEINURIA	3
Female	50+	PRURITUS	3

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	50+	RADIATION THERAPY ICD	3
Female	50+	SUICIDAL BEHAVIOR	3
Female	50+	TELANGLECTASIS	3
Female	50+	ANEMIA,MEGALOBLASTIC	2
Female	50+	ANGIONEUROTIC EDEMA	2
Female	50+	APLASTIC ANEMIA	2
Female	50+	BRADYCARDIA	2
Female	50+	COLITIS	2
Female	50+	CRYSTALLURIA	2
Female	50+	HALLUCINATIONS	2
Female	50+	MALIGNANT NEOPLASM, CNS	2
Female	50+	MYELODYSPLASTIC SYNDROME	2
Female	50+	OSTEOMALACIA	2
Female	50+	PULMONARY EMBOLUS, PREVIOUS	2
Female	50+	SEVERE FUNGAL INFECTIONS	2
Female	50+	SUBARACHNOID HEMORRHAGE	2
Female	50+	SUICIDE	2
Female	50+	THROMBOPHLEBITIS	2
Female	50+	ADDISON'S DISEASE	1
Female	50+	ADRENAL INSUFFICIENCY	1
Female	50+	ALVEOLITIS,FIBROSING	1
Female	50+	ANOREXIA	1
Female	50+	ARTHRITIS, PSORIATIC	1
Female	50+	AV BLOCK II TO III	1
Female	50+	BLOOD DYSCRASIAS	1
Female	50+	CARDIAC ARREST	1
Female	50+	COLON LESIONS	1
Female	50+	CONTRACEPTION- INJECTION (D)	1
Female	50+	CONTRACEPTIVE MEASURES	1
Female	50+	DRUG INDUCED PSYCH DISORDERS	1
Female	50+	ENCEPHALOPATHIC SYNDROME	1
Female	50+	ERYTHEMA MULTIFORME	1
Female	50+	EXFOLIATIVE DERMATITIS	1
Female	50+	GLAUCOMA,NARROW ANGLE	1
Female	50+	HEMOPTYSIS	1
Female	50+	HEMORRHAGIC DISORDERS	1
Female	50+	HEPATIC FAILURE	1
Female	50+	HYPERCALCEMIA	1
Female	50+	HYPERSENSITIVITY PNEUMONITIS	1
Female	50+	ILEUS, PARALYTIC	1
Female	50+	MALIGNANT MELANOMA	1
Female	50+	NASAL POLYPS	1
Female	50+	OPTIC NEURITIS	1
Female	50+	ORAL CONTRACEPTION	1
Female	50+	PANCREATITIS	1
Female	50+	PREGNANCY	1
Female	50+	PRERENAL AZOTEMIA	1
Female	50+	PSEUDOMEMBRANOUS COLITIS	1
Female	50+	RELATED TO FETAL OUTCOMES	1
Female	50+	RHABDOMYOLYSIS	1

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	50+	STEVENS JOHNSON SYNDROME	1
Female	50+	THROMBOCYTOPENIA	1
Female	50+	THROMBOCYTOPENIA, SECONDARY	1
Female	50+	UREMIA	1
Male	Under 50	FRACTURES AND INJURIES	1,371
Male	Under 50	HYPERSENSITIVITY REACTIONS	884
Male	Under 50	RESPIRATORY INFECTIONS	828
Male	Under 50	SEROTONIN SYNDROME SYMPTOMS	422
Male	Under 50	PSYCHOSES, DRUG INDUCED	320
Male	Under 50	DEPRESSION	305
Male	Under 50	DIARRHEA, GASTROENTERITIS	258
Male	Under 50	CARDIOVASCULAR DISEASE	251
Male	Under 50	HYPERTENSION	225
Male	Under 50	DIABETES MELLITUS I AND II	186
Male	Under 50	CNS EXCITATION	179
Male	Under 50	LIPID ABNORMALITIES	167
Male	Under 50	SYMPTOMS OF GI IRRITATION	150
Male	Under 50	SYMPTOMS OF DIG-TOXICITY	146
Male	Under 50	ABDOMINAL PAIN	141
Male	Under 50	ANXIETY DISORDERS	140
Male	Under 50	LACTIC ACIDOSIS SYMPTOMS	130
Male	Under 50	ASTHMA	129
Male	Under 50	HEAD TRAUMA	119
Male	Under 50	ALCOHOLISM	110
Male	Under 50	COND- REYE SYNDROME RELATED	106
Male	Under 50	COUGH	101
Male	Under 50	TUBERCULOSIS	90
Male	Under 50	GERD	88
Male	Under 50	MILD FUNGAL INFECTIONS	82
Male	Under 50	GI HEMORRHAGE	80
Male	Under 50	CHRONIC OTITIS MEDIA	77
Male	Under 50	HEMATOLOGIC DISORDERS	77
Male	Under 50	HEPATIC DYSFUNCTION	73
Male	Under 50	BLEEDING	68
Male	Under 50	SYMPTOMS OF ERGOTISM	68
Male	Under 50	ARRHYTHMIAS	57
Male	Under 50	VIRAL ILLNESSES	57
Male	Under 50	HEPATITIS	51
Male	Under 50	GASTRITIS	50
Male	Under 50	ANAPHYLACTIC SHOCK	49
Male	Under 50	ACUTE OTITIS MEDIA	44
Male	Under 50	DIARRHEA	44
Male	Under 50	ANEMIAS, OTHER	43
Male	Under 50	BRONCHOPNEUMONIA	42
Male	Under 50	PANCYTOPENIA	39
Male	Under 50	ISCHEMIC HEART DISEASE	35
Male	Under 50	BIPOLAR DISORDER	33
Male	Under 50	CANCER	33
Male	Under 50	COPD	33
Male	Under 50	HEMATURIA	33

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	Under 50	KIDNEY STONES	31
Male	Under 50	SYNCOPE	31
Male	Under 50	ABUSE- DRUG	30
Male	Under 50	SYMPTOMS OF QUINIDINE-TOXICITY	30
Male	Under 50	THYROID DISEASE	30
Male	Under 50	GI ULCER	29
Male	Under 50	CONTRACEPTIVE MEASURES	28
Male	Under 50	PLEURAL EFFUSION-D	28
Male	Under 50	ANEURYSM	25
Male	Under 50	DEEP VEIN THROMBOSIS	25
Male	Under 50	HEMATEMESIS	25
Male	Under 50	ARTHRITIS, OSTEOARTHRITIS	24
Male	Under 50	ANKYLOSING SPONDYLITIS	23
Male	Under 50	DYSKINESIAS	23
Male	Under 50	OBESITY	22
Male	Under 50	PANIC DISORDERS	21
Male	Under 50	EPILEPSY	20
Male	Under 50	PERIPHERAL NEUROPATHY	20
Male	Under 50	BRAIN HEMORRHAGE	19
Male	Under 50	DEHYDRATION	19
Male	Under 50	RENAL DISEASE	19
Male	Under 50	VOLUME DEPLETION	19
Male	Under 50	ANGINA, PECTORIS	16
Male	Under 50	CONGESTIVE HEART FAILURE	16
Male	Under 50	HIV	16
Male	Under 50	PULMONARY DISORDERS	16
Male	Under 50	RENAL FAILURE W/O HTN	16
Male	Under 50	RENAL FAILURE-GENERAL	16
Male	Under 50	STRESS DISORDERS	16
Male	Under 50	EDEMA	15
Male	Under 50	PULMONARY FIBROSIS	15
Male	Under 50	GOUT	14
Male	Under 50	ORAL CONTRACEPTION	13
Male	Under 50	SUICIDE	13
Male	Under 50	BLEEDING RISK DIAGNOSIS	12
Male	Under 50	DERMATITIS,MACULOPAPULAR	12
Male	Under 50	EPISTAXIS	12
Male	Under 50	HEPATITIS, ALLER CHOLESTATIC	12
Male	Under 50	MYOCARDIAL ISCHEMIA	12
Male	Under 50	PSYCHOSES	12
Male	Under 50	ANEMIA,DEF.FE,OTH	11
Male	Under 50	ARTHRITIS, RHEUMATOID	11
Male	Under 50	COLON POLYPS	11
Male	Under 50	CONTRACEPTION- INJECTION (D)	11
Male	Under 50	EXTRAPYRAMIDAL REACTIONS	11
Male	Under 50	ANGINA, UNSTABLE	10
Male	Under 50	COLITIS	10
Male	Under 50	COLON, IRRITABLE	10
Male	Under 50	LYMPHADENOPATHY	10
Male	Under 50	PULMONARY EMBOLUS	10

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	Under 50	STROKE	10
Male	Under 50	ALBUMINURIA/ NEPHROPATHY	9
Male	Under 50	ARTHROPATHIES, OTHER	9
Male	Under 50	ATRIAL FIBRILLATION	9
Male	Under 50	PULMONARY EDEMA	9
Male	Under 50	COAGULATION DEFECTS	8
Male	Under 50	HEPATIC CIRRHOSIS	8
Male	Under 50	HYPOTENSION	8
Male	Under 50	PSORIASIS	8
Male	Under 50	APPENDICITIS	7
Male	Under 50	NUTRITIONAL/ NEURO DEFICIENCY	7
Male	Under 50	PERSONALITY DISORDERS	7
Male	Under 50	SUICIDAL BEHAVIOR	7
Male	Under 50	VENTRICULAR ARRHYTHMIA	7
Male	Under 50	CHOLELITHIASIS	6
Male	Under 50	CROHN'S DISEASE	6
Male	Under 50	GALLSTONES	6
Male	Under 50	GI OBSTRUCTION	6
Male	Under 50	HEMOLYSIS	6
Male	Under 50	HEMOLYTIC ANEMIA, HERED	6
Male	Under 50	INTRA-ABDOMINAL HEMORRHAGE	6
Male	Under 50	STEATORRHEA	6
Male	Under 50	BRADYCARDIA	5
Male	Under 50	CNS DEMYELINATING DIS	5
Male	Under 50	DRUG INDUCED PSYCH DISORDERS	5
Male	Under 50	HEMOPTYSIS	5
Male	Under 50	HEMORRHAGIC DISORDERS	5
Male	Under 50	HEPATOMEGALY WITH STEATOSIS	5
Male	Under 50	NEUROPATHIES	5
Male	Under 50	PANCREATITIS	5
Male	Under 50	SUBARACHNOID HEMORRHAGE	5
Male	Under 50	ALCOHOLIC LIVER DISEASE	4
Male	Under 50	BOWEL OBSTRUCTION	4
Male	Under 50	DEMENTIA	4
Male	Under 50	INTERSTITIAL PNEUMONITIS	4
Male	Under 50	MYELOSUPPRESSION	4
Male	Under 50	NASAL POLYPS	4
Male	Under 50	OSTEOSARCOMA	4
Male	Under 50	PROTEINURIA	4
Male	Under 50	SICKLE CELL ANEMIA	4
Male	Under 50	THROMBOPHLEBITIS	4
Male	Under 50	ADRENAL INSUFFICIENCY	3
Male	Under 50	APLASTIC ANEMIA	3
Male	Under 50	CARDIAC ARREST	3
Male	Under 50	CIRRHOSIS	3
Male	Under 50	ENCEPHALOPATHIC SYNDROME	3
Male	Under 50	GLAUCOMA	3
Male	Under 50	HEART BLOCK	3
Male	Under 50	HYPERSECRETORY STATES	3
Male	Under 50	HYPERTHYROIDISM	3

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	Under 50	ILEUS, PARALYTIC	3
Male	Under 50	LUPUS	3
Male	Under 50	MEASLES	3
Male	Under 50	OSTEOPOROSIS	3
Male	Under 50	PERICARDIAL DISEASE	3
Male	Under 50	PERICARDIAL EFFUSION	3
Male	Under 50	PRURITUS	3
Male	Under 50	RHABDOMYOLYSIS	3
Male	Under 50	THROMBOCYTOPENIA	3
Male	Under 50	UREMIA	3
Male	Under 50	URINARY RETENTION	3
Male	Under 50	ADDISON'S DISEASE	2
Male	Under 50	BLOOD DYSCRASIAS	2
Male	Under 50	CHOLESTATIC JAUNDICE	2
Male	Under 50	COLON LESIONS	2
Male	Under 50	ELECTROLYTE DISORDERS	2
Male	Under 50	JAUNDICE	2
Male	Under 50	KETOACIDOSIS	2
Male	Under 50	LEUKOPENIA	2
Male	Under 50	MALIGNANT MELANOMA	2
Male	Under 50	MYELODYSPLASTIC SYNDROME	2
Male	Under 50	PRERENAL AZOTEMIA	2
Male	Under 50	PULMONARY EMBOLUS, PREVIOUS	2
Male	Under 50	RELATED TO FETAL OUTCOMES	2
Male	Under 50	SEVERE FUNGAL INFECTIONS	2
Male	Under 50	TELANGLECTASIS	2
Male	Under 50	THROMBOCYTOPENIA, SECONDARY	2
Male	Under 50	AGRANULOCYTOSIS	1
Male	Under 50	ALVEOLITIS,FIBROSING	1
Male	Under 50	ALZHEIMER	1
Male	Under 50	ANGIONEUROTIC EDEMA	1
Male	Under 50	ANOREXIA	1
Male	Under 50	AV BLOCK II TO III	1
Male	Under 50	BENIGN PROSTATIC HYPERTROPHY	1
Male	Under 50	BLEPHARASPASM	1
Male	Under 50	BOWEL PERFORATION	1
Male	Under 50	BULIMIA	1
Male	Under 50	CEREBRAL PALSY	1
Male	Under 50	COLOSTOMY/ ILEOSTOMY	1
Male	Under 50	CRYSTALLURIA	1
Male	Under 50	CYSTIC FIBROSIS	1
Male	Under 50	DELIRIUM	1
Male	Under 50	EXFOLIATIVE DERMATITIS	1
Male	Under 50	GLAUCOMA,NARROW ANGLE	1
Male	Under 50	HALLUCINATIONS	1
Male	Under 50	MALIGNANT NEOPLASM, CNS	1
Male	Under 50	MEGACOLON	1
Male	Under 50	MYOPATHY	1
Male	Under 50	NEPHROGENIC DIABETES INSIPIDUS	1
Male	Under 50	NEUTROPENIA	1

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	Under 50	OPTIC NEURITIS	1
Male	Under 50	PARKINSONISM,PRIMARY	1
Male	Under 50	PORPHYRIAS	1
Male	Under 50	PROSTATIC HYPERTROPHY	1
Male	Under 50	RADIATION THERAPY ICD	1
Male	Under 50	RENAL CALCIFICATION	1
Male	Under 50	RETROPERITONEAL FIBROSIS	1
Male	Under 50	THIAMINE DEFICIENCY	1
Male	50+	CARDIOVASCULAR DISEASE	332
Male	50+	HYPERTENSION	293
Male	50+	HYPERSENSITIVITY REACTIONS	245
Male	50+	FRACTURES AND INJURIES	244
Male	50+	DIABETES MELLITUS I AND II	229
Male	50+	LIPID ABNORMALITIES	214
Male	50+	RESPIRATORY INFECTIONS	157
Male	50+	ISCHEMIC HEART DISEASE	114
Male	50+	DIARRHEA, GASTROENTERITIS	96
Male	50+	PSYCHOSES, DRUG INDUCED	74
Male	50+	SYMPTOMS OF DIG-TOXICITY	74
Male	50+	SYMPTOMS OF GI IRRITATION	72
Male	50+	DEPRESSION	68
Male	50+	COPD	66
Male	50+	ARRHYTHMIAS	62
Male	50+	HEPATIC DYSFUNCTION	56
Male	50+	HEMATOLOGIC DISORDERS	53
Male	50+	ABDOMINAL PAIN	52
Male	50+	CANCER	50
Male	50+	LACTIC ACIDOSIS SYMPTOMS	49
Male	50+	GERD	45
Male	50+	CONGESTIVE HEART FAILURE	43
Male	50+	BLEEDING	40
Male	50+	CNS EXCITATION	39
Male	50+	SYMPTOMS OF ERGOTISM	39
Male	50+	HEPATITIS	36
Male	50+	SYMPTOMS OF QUINIDINE-TOXICITY	36
Male	50+	COND- REYE SYNDROME RELATED	35
Male	50+	TUBERCULOSIS	35
Male	50+	COUGH	34
Male	50+	ATRIAL FIBRILLATION	33
Male	50+	ANXIETY DISORDERS	31
Male	50+	HEAD TRAUMA	30
Male	50+	ASTHMA	29
Male	50+	GI HEMORRHAGE	29
Male	50+	ANGINA, PECTORIS	28
Male	50+	PANCYTOPENIA	28
Male	50+	BRONCHOPNEUMONIA	27
Male	50+	ANEMIAS, OTHER	25
Male	50+	ALCOHOLISM	24
Male	50+	ARTHRITIS, OSTEOARTHRITIS	24
Male	50+	MILD FUNGAL INFECTIONS	24

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	50+	ANKYLOSING SPONDYLITIS	23
Male	50+	THYROID DISEASE	23
Male	50+	ANEURYSM	20
Male	50+	COLON POLYPS	20
Male	50+	HEMATURIA	19
Male	50+	STROKE	19
Male	50+	MYOCARDIAL ISCHEMIA	17
Male	50+	SYNCOPE	17
Male	50+	ANAPHYLACTIC SHOCK	16
Male	50+	ANEMIA,DEF.FE,OTH	16
Male	50+	EDEMA	16
Male	50+	GLAUCOMA	16
Male	50+	GI ULCER	15
Male	50+	HEMATEMESIS	15
Male	50+	CHRONIC OTITIS MEDIA	14
Male	50+	DIARRHEA	14
Male	50+	RENAL FAILURE-GENERAL	14
Male	50+	ANGINA, UNSTABLE	13
Male	50+	OBESITY	13
Male	50+	RENAL FAILURE W/O HTN	13
Male	50+	DEEP VEIN THROMBOSIS	12
Male	50+	PLEURAL EFFUSION-D	12
Male	50+	PULMONARY EDEMA	12
Male	50+	VIRAL ILLNESSES	12
Male	50+	ACUTE OTITIS MEDIA	11
Male	50+	BLEEDING RISK DIAGNOSIS	11
Male	50+	KIDNEY STONES	11
Male	50+	NUTRITIONAL/ NEURO DEFICIENCY	11
Male	50+	GASTRITIS	10
Male	50+	BENIGN PROSTATIC HYPERTROPHY	9
Male	50+	HEART BLOCK	9
Male	50+	PROSTATIC HYPERTROPHY	9
Male	50+	VENTRICULAR ARRHYTHMIA	9
Male	50+	ALBUMINURIA/ NEPHROPATHY	8
Male	50+	ARTHRITIS, RHEUMATOID	8
Male	50+	CHOLELITHIASIS	8
Male	50+	GALLSTONES	8
Male	50+	PSORIASIS	8
Male	50+	RENAL DISEASE	8
Male	50+	COAGULATION DEFECTS	7
Male	50+	DERMATITIS,MACULOPAPULAR	7
Male	50+	GI OBSTRUCTION	7
Male	50+	HEPATIC CIRRHOSIS	7
Male	50+	HYPOTENSION	7
Male	50+	PERIPHERAL NEUROPATHY	7
Male	50+	PSYCHOSES	7
Male	50+	GOUT	6
Male	50+	STEATORRHEA	6
Male	50+	URINARY RETENTION	6
Male	50+	BOWEL OBSTRUCTION	5

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	50+	BRAIN HEMORRHAGE	5
Male	50+	DYSKINESIAS	5
Male	50+	EXTRAPYRAMIDAL REACTIONS	5
Male	50+	HEMORRHAGIC DISORDERS	5
Male	50+	INTERSTITIAL PNEUMONITIS	5
Male	50+	OSTEOPOROSIS	5
Male	50+	PULMONARY DISORDERS	5
Male	50+	PULMONARY FIBROSIS	5
Male	50+	AV BLOCK II TO III	4
Male	50+	BIPOLAR DISORDER	4
Male	50+	DEHYDRATION	4
Male	50+	DELIRIUM	4
Male	50+	EPILEPSY	4
Male	50+	HEPATITIS, ALLER CHOLESTATIC	4
Male	50+	INTRA-ABDOMINAL HEMORRHAGE	4
Male	50+	KETOACIDOSIS	4
Male	50+	UREMIA	4
Male	50+	VOLUME DEPLETION	4
Male	50+	ADDISON'S DISEASE	3
Male	50+	ADRENAL INSUFFICIENCY	3
Male	50+	ARTHRITIS, PSORIATIC	3
Male	50+	CARDIAC ARREST	3
Male	50+	CIRRHOSIS	3
Male	50+	COLOSTOMY/ ILEOSTOMY	3
Male	50+	CONTRACEPTIVE MEASURES	3
Male	50+	CROHN'S DISEASE	3
Male	50+	DEMENTIA	3
Male	50+	HEMOLYSIS	3
Male	50+	HYPERSECRETORY STATES	3
Male	50+	HYPERTHYROIDISM	3
Male	50+	ILEUS, PARALYTIC	3
Male	50+	LEUKOPENIA	3
Male	50+	MYELODYSPLASTIC SYNDROME	3
Male	50+	NASAL POLYPS	3
Male	50+	PERSONALITY DISORDERS	3
Male	50+	PROTEINURIA	3
Male	50+	ALCOHOLIC LIVER DISEASE	2
Male	50+	ANOREXIA	2
Male	50+	APLASTIC ANEMIA	2
Male	50+	APPENDICITIS	2
Male	50+	BRADYCARDIA	2
Male	50+	COLON, IRRITABLE	2
Male	50+	ELECTROLYTE DISORDERS	2
Male	50+	EPISTAXIS	2
Male	50+	GLAUCOMA,NARROW ANGLE	2
Male	50+	HEMOLYTIC ANEMIA, HERED	2
Male	50+	HEPATOMEGALY WITH STEATOSIS	2
Male	50+	MALIGNANT NEOPLASM, CNS	2
Male	50+	MYELOSUPPRESSION	2
Male	50+	NEUROPATHIES	2

APPENDIX VII. Table 6a. Number of Case Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	50+	PANCREATITIS	2
Male	50+	PANIC DISORDERS	2
Male	50+	PRERENAL AZOTEMIA	2
Male	50+	STRESS DISORDERS	2
Male	50+	TELANGLECTASIS	2
Male	50+	ABUSE- DRUG	1
Male	50+	AGRANULOCYTOSIS	1
Male	50+	ALZHEIMER	1
Male	50+	ANEMIA,MEGALOBLASTIC	1
Male	50+	ANGIONEUROTIC EDEMA	1
Male	50+	ARTHROPATHIES, OTHER	1
Male	50+	BULLOUS RASH	1
Male	50+	CARDIAC VALVE FIBROSIS	1
Male	50+	CEREBRAL PALSY	1
Male	50+	CNS DEMYELINATING DIS	1
Male	50+	COLITIS	1
Male	50+	CRYSTALLURIA	1
Male	50+	ENCEPHALOPATHIC SYNDROME	1
Male	50+	ERYTHEMA MULTIFORME	1
Male	50+	FECAL IMPACTION	1
Male	50+	HEMOLYTIC ANEMIA, ACQ	1
Male	50+	HEMOLYTIC UREMIC SYNDR	1
Male	50+	HEMOPTYSIS	1
Male	50+	HEPATIC FAILURE	1
Male	50+	LYMPHADENOPATHY	1
Male	50+	MALIGNANT MELANOMA	1
Male	50+	MYASTHENIA GRAVIS	1
Male	50+	NEUTROPENIA	1
Male	50+	OBSTRUCTIVE UROPATHY	1
Male	50+	OPTIC NEURITIS	1
Male	50+	ORAL CONTRACEPTION	1
Male	50+	PARKINSONISM,PRIMARY	1
Male	50+	PREGNANCY	1
Male	50+	PULMONARY EMBOLUS	1
Male	50+	RADIATION THERAPY ICD	1
Male	50+	RETROPERITONEAL FIBROSIS	1
Male	50+	SICKLE CELL ANEMIA	1
Male	50+	STEVENS JOHNSON SYNDROME	1
Male	50+	SUDDEN DEATH	1
Male	50+	SUICIDAL BEHAVIOR	1
Male	50+	THROMBOCYTOPENIA	1
Male	50+	THROMBOCYTOPENIA, SECONDARY	1
Male	50+	THROMBOPHLEBITIS	1

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	HYPERSENSITIVITY REACTIONS	3,300
Female	Under 50	RESPIRATORY INFECTIONS	2,986
Female	Under 50	FRACTURES AND INJURIES	1,650
Female	Under 50	PREGNANCY	1,513
Female	Under 50	CONTRACEPTIVE MEASURES	1,056
Female	Under 50	DIARRHEA, GASTROENTERITIS	986
Female	Under 50	ORAL CONTRACEPTION	899
Female	Under 50	ABNL PREG TERMINATED OR DELIV	694
Female	Under 50	CNS EXCITATION	596
Female	Under 50	DEPRESSION	578
Female	Under 50	ABDOMINAL PAIN	574
Female	Under 50	PSYCHOSES, DRUG INDUCED	528
Female	Under 50	LACTIC ACIDOSIS SYMPTOMS	513
Female	Under 50	NORMAL PREG TERMINATED	506
Female	Under 50	NORMAL PREGNANCT TERMINATED	506
Female	Under 50	THYROID DISEASE	487
Female	Under 50	HIV	424
Female	Under 50	CARDIOVASCULAR DISEASE	423
Female	Under 50	HYPERTENSION	397
Female	Under 50	ASTHMA	396
Female	Under 50	SYMPTOMS OF DIG-TOXICITY	351
Female	Under 50	LIPID ABNORMALITIES	342
Female	Under 50	CONTRACEPTION- IMPLANTS	330
Female	Under 50	TUBERCULOSIS	319
Female	Under 50	HEMATOLOGIC DISORDERS	316
Female	Under 50	SYMPTOMS OF GI IRRITATION	315
Female	Under 50	DIABETES MELLITUS I AND II	302
Female	Under 50	COUGH	278
Female	Under 50	COND- REYE SYNDROME RELATED	268
Female	Under 50	CHRONIC OTITIS MEDIA	251
Female	Under 50	ANXIETY DISORDERS	208
Female	Under 50	PANCYTOPENIA	188
Female	Under 50	OBESITY	175
Female	Under 50	SYMPTOMS OF ERGOTISM	173
Female	Under 50	GERD	171
Female	Under 50	ANAPHYLACTIC SHOCK	166
Female	Under 50	CONTRACEPTION- INJECTION (D)	165
Female	Under 50	MILD FUNGAL INFECTIONS	165
Female	Under 50	ANEMIAS, OTHER	164
Female	Under 50	HEPATIC DYSFUNCTION	158
Female	Under 50	CANCER	146
Female	Under 50	GI HEMORRHAGE	145
Female	Under 50	BLEEDING	128
Female	Under 50	VIRAL ILLNESSES	126
Female	Under 50	HEPATITIS	120
Female	Under 50	ACUTE OTITIS MEDIA	113
Female	Under 50	DIARRHEA	113
Female	Under 50	GASTRITIS	101
Female	Under 50	BRONCHOPNEUMONIA	94
Female	Under 50	HEMATURIA	92

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	ANEMIA,DEF.FE,OTH	85
Female	Under 50	ARTHRITIS, RHEUMATOID	83
Female	Under 50	PREG TERMINATION- CHEMICAL	83
Female	Under 50	ARRHYTHMIAS	78
Female	Under 50	COLON, IRRITABLE	78
Female	Under 50	LYMPHADENOPATHY	78
Female	Under 50	SYNCOPE	70
Female	Under 50	CHOLELITHIASIS	67
Female	Under 50	GALLSTONES	67
Female	Under 50	HYPERTHYROIDISM	63
Female	Under 50	KIDNEY STONES	59
Female	Under 50	DEHYDRATION	54
Female	Under 50	VOLUME DEPLETION	54
Female	Under 50	DERMATITIS,MACULOPAPULAR	50
Female	Under 50	BREAST CANCER, FEMALE	48
Female	Under 50	EDEMA	48
Female	Under 50	PSORIASIS	42
Female	Under 50	ANOREXIA	40
Female	Under 50	ARTHRITIS, OSTEOARTHRITIS	40
Female	Under 50	BIPOLAR DISORDER	40
Female	Under 50	EPILEPSY	40
Female	Under 50	ALCOHOLISM	39
Female	Under 50	LUPUS	39
Female	Under 50	CNS DEMYELINATING DIS	38
Female	Under 50	COPD	36
Female	Under 50	PANIC DISORDERS	36
Female	Under 50	PERIPHERAL NEUROPATHY	35
Female	Under 50	GI ULCER	34
Female	Under 50	ANKYLOSING SPONDYLITIS	33
Female	Under 50	DYSKINESIAS	32
Female	Under 50	HEMATEMESIS	32
Female	Under 50	MENOPAUSE	32
Female	Under 50	BLEEDING RISK DIAGNOSIS	31
Female	Under 50	CROHN'S DISEASE	31
Female	Under 50	CRYSTALLURIA	30
Female	Under 50	DEEP VEIN THROMBOSIS	29
Female	Under 50	ALBUMINURIA/ NEPHROPATHY	28
Female	Under 50	OSTEOPOROSIS	28
Female	Under 50	RENAL DISEASE	28
Female	Under 50	SYMPTOMS OF QUINIDINE-TOXICITY	28
Female	Under 50	COLITIS	27
Female	Under 50	COLON POLYPS	27
Female	Under 50	ISCHEMIC HEART DISEASE	26
Female	Under 50	STEATORRHEA	26
Female	Under 50	PRURITUS	25
Female	Under 50	PULMONARY DISORDERS	24
Female	Under 50	PULMONARY FIBROSIS	24
Female	Under 50	RENAL FAILURE-GENERAL	24
Female	Under 50	HEMORRHAGIC DISORDERS	23
Female	Under 50	PLEURAL EFFUSION-D	23

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	EPISTAXIS	22
Female	Under 50	PERSONALITY DISORDERS	22
Female	Under 50	RENAL FAILURE W/O HTN	22
Female	Under 50	PRERENAL AZOTEMIA	21
Female	Under 50	PROTEINURIA	20
Female	Under 50	GI OBSTRUCTION	17
Female	Under 50	LEUKOPENIA	17
Female	Under 50	THROMBOPHLEBITIS	17
Female	Under 50	ABUSE- DRUG	16
Female	Under 50	CONGESTIVE HEART FAILURE	16
Female	Under 50	URINARY RETENTION	16
Female	Under 50	ANGINA, PECTORIS	15
Female	Under 50	EXTRAPYRAMIDAL REACTIONS	15
Female	Under 50	MYELOSUPPRESSION	15
Female	Under 50	PSYCHOSES	15
Female	Under 50	STROKE	14
Female	Under 50	SUICIDAL BEHAVIOR	14
Female	Under 50	THROMBOCYTOPENIA	14
Female	Under 50	ANEURYSM	13
Female	Under 50	APPENDICITIS	13
Female	Under 50	HEMOLYSIS	13
Female	Under 50	HEPATITIS, ALLER CHOLESTATIC	13
Female	Under 50	NASAL POLYPS	13
Female	Under 50	PULMONARY EMBOLUS	13
Female	Under 50	TELANGLECTASIS	13
Female	Under 50	ARTHROPATHIES, OTHER	12
Female	Under 50	COLOSTOMY/ ILEOSTOMY	12
Female	Under 50	NUTRITIONAL/ NEURO DEFICIENCY	12
Female	Under 50	SEVERE FUNGAL INFECTIONS	12
Female	Under 50	STRESS DISORDERS	12
Female	Under 50	ANGIONEUROTIC EDEMA	11
Female	Under 50	HEPATIC CIRRHOSIS	11
Female	Under 50	PULMONARY EDEMA	11
Female	Under 50	AGRANULOCYTOSIS	10
Female	Under 50	BOWEL OBSTRUCTION	10
Female	Under 50	BULIMIA	10
Female	Under 50	ENCEPHALOPATHIC SYNDROME	10
Female	Under 50	HEMOLYTIC ANEMIA, HERED	10
Female	Under 50	NEUTROPENIA	10
Female	Under 50	PANCREATITIS	10
Female	Under 50	THROMBOCYTOPENIA, SECONDARY	10
Female	Under 50	COAGULATION DEFECTS	9
Female	Under 50	GLAUCOMA	9
Female	Under 50	HEAD TRAUMA	9
Female	Under 50	HEPATOMEGALY WITH STEATOSIS	9
Female	Under 50	SUICIDE	9
Female	Under 50	VENTRICULAR ARRHYTHMIA	9
Female	Under 50	CHICKEN POX	8
Female	Under 50	MALIGNANT MELANOMA	8
Female	Under 50	RELATED TO FETAL OUTCOMES	8

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	UREMIA	8
Female	Under 50	ANEMIA,MEGALOBLASTIC	7
Female	Under 50	ATRIAL FIBRILLATION	7
Female	Under 50	CEREBRAL PALSY	7
Female	Under 50	CHOLESTATIC JAUNDICE	7
Female	Under 50	GOUT	7
Female	Under 50	INTERSTITIAL PNEUMONITIS	7
Female	Under 50	MYOCARDIAL ISCHEMIA	7
Female	Under 50	OPTIC NEURITIS	7
Female	Under 50	ANGINA, UNSTABLE	6
Female	Under 50	EXFOLIATIVE DERMATITIS	6
Female	Under 50	HYPERSECRETORY STATES	6
Female	Under 50	NEUROPATHIES	6
Female	Under 50	SICKLE CELL ANEMIA	6
Female	Under 50	ARTHRITIS, PSORIATIC	5
Female	Under 50	COLON LESIONS	5
Female	Under 50	CYSTIC FIBROSIS	5
Female	Under 50	HEART BLOCK	5
Female	Under 50	JAUNDICE	5
Female	Under 50	MALIGNANT NEOPLASM, CNS	5
Female	Under 50	RENAL CALCIFICATION	5
Female	Under 50	BRAIN HEMORRHAGE	4
Female	Under 50	HEMOPTYSIS	4
Female	Under 50	HYPOTENSION	4
Female	Under 50	INTESTINAL ATONY	4
Female	Under 50	OSTEOSARCOMA	4
Female	Under 50	RADIATION THERAPY ICD	4
Female	Under 50	BRADYCARDIA	3
Female	Under 50	BULLOUS RASH	3
Female	Under 50	CIRRHOSIS	3
Female	Under 50	ELECTROLYTE DISORDERS	3
Female	Under 50	HEMOLYTIC ANEMIA, ACQ	3
Female	Under 50	ILEUS, PARALYTIC	3
Female	Under 50	INTRA-ABDOMINAL HEMORRHAGE	3
Female	Under 50	KETOACIDOSIS	3
Female	Under 50	MYOPATHY	3
Female	Under 50	OBSTRUCTIVE UROPATHY	3
Female	Under 50	PSEUDOTUMOR CEREBRI	3
Female	Under 50	PULMONARY EMBOLUS, PREVIOUS	3
Female	Under 50	RETROPERITONEAL FIBROSIS	3
Female	Under 50	ADDISON'S DISEASE	2
Female	Under 50	ADRENAL INSUFFICIENCY	2
Female	Under 50	ALCOHOLIC LIVER DISEASE	2
Female	Under 50	APLASTIC ANEMIA	2
Female	Under 50	BLEPHARASPASM	2
Female	Under 50	DEMENTIA	2
Female	Under 50	ERYTHEMA MULTIFORME	2
Female	Under 50	HALLUCINATIONS	2
Female	Under 50	HEPATIC FAILURE	2
Female	Under 50	MYASTHENIA GRAVIS	2

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	Under 50	PARKINSONISM,PRIMARY	2
Female	Under 50	PERICARDIAL DISEASE	2
Female	Under 50	PERICARDIAL EFFUSION	2
Female	Under 50	STEVENS JOHNSON SYNDROME	2
Female	Under 50	AV BLOCK II TO III	1
Female	Under 50	BLOOD DYSCRASIAS	1
Female	Under 50	BOWEL PERFORATION	1
Female	Under 50	CEREBRAL ARTERIOSCLEROSIS	1
Female	Under 50	DRUG INDUCED PSYCH DISORDERS	1
Female	Under 50	FECAL IMPACTION	1
Female	Under 50	GLAUCOMA,NARROW ANGLE	1
Female	Under 50	HYPERCALCEMIA	1
Female	Under 50	HYPOPROTHROMINEMIA	1
Female	Under 50	MYELODYSPLASTIC SYNDROME	1
Female	Under 50	SUBARACHNOID HEMORRHAGE	1
Female	50+	CARDIOVASCULAR DISEASE	731
Female	50+	HYPERTENSION	673
Female	50+	HYPERSENSITIVITY REACTIONS	630
Female	50+	LIPID ABNORMALITIES	530
Female	50+	RESPIRATORY INFECTIONS	415
Female	50+	FRACTURES AND INJURIES	369
Female	50+	DIABETES MELLITUS I AND II	294
Female	50+	THYROID DISEASE	229
Female	50+	DIARRHEA, GASTROENTERITIS	204
Female	50+	CANCER	180
Female	50+	SYMPTOMS OF GI IRRITATION	157
Female	50+	SYMPTOMS OF DIG-TOXICITY	140
Female	50+	LACTIC ACIDOSIS SYMPTOMS	136
Female	50+	HEMATOLOGIC DISORDERS	133
Female	50+	PSYCHOSES, DRUG INDUCED	115
Female	50+	ABDOMINAL PAIN	114
Female	50+	TUBERCULOSIS	114
Female	50+	DEPRESSION	113
Female	50+	COUGH	104
Female	50+	HEPATIC DYSFUNCTION	104
Female	50+	OSTEOPOROSIS	104
Female	50+	COPD	102
Female	50+	GERD	100
Female	50+	CNS EXCITATION	99
Female	50+	ASTHMA	97
Female	50+	BREAST CANCER, FEMALE	89
Female	50+	HEPATITIS	88
Female	50+	ARTHRITIS, OSTEOARTHRITIS	86
Female	50+	ISCHEMIC HEART DISEASE	85
Female	50+	ARRHYTHMIAS	78
Female	50+	ARTHRITIS, RHEUMATOID	73
Female	50+	GI HEMORRHAGE	71
Female	50+	ANEMIAS, OTHER	66
Female	50+	MENOPAUSE	66
Female	50+	SYMPTOMS OF ERGOTISM	65

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	50+	MILD FUNGAL INFECTIONS	64
Female	50+	PANCYTOPENIA	64
Female	50+	BLEEDING	60
Female	50+	GLAUCOMA	55
Female	50+	HIV	54
Female	50+	ANEMIA,DEF.FE,OTH	53
Female	50+	CONGESTIVE HEART FAILURE	52
Female	50+	OBESITY	51
Female	50+	COND- REYE SYNDROME RELATED	49
Female	50+	DIARRHEA	47
Female	50+	ANXIETY DISORDERS	46
Female	50+	GASTRITIS	46
Female	50+	ANGINA, PECTORIS	41
Female	50+	ATRIAL FIBRILLATION	40
Female	50+	EDEMA	39
Female	50+	HEMATURIA	36
Female	50+	BRONCHOPNEUMONIA	35
Female	50+	COLON, IRRITABLE	35
Female	50+	COLON POLYPS	34
Female	50+	ANAPHYLACTIC SHOCK	32
Female	50+	ANKYLOSING SPONDYLITIS	31
Female	50+	STROKE	27
Female	50+	GI ULCER	25
Female	50+	SYMPTOMS OF QUINIDINE-TOXICITY	25
Female	50+	MYOCARDIAL ISCHEMIA	23
Female	50+	PERIPHERAL NEUROPATHY	23
Female	50+	PSORIASIS	23
Female	50+	STEATORRHEA	23
Female	50+	ANEURYSM	20
Female	50+	DEEP VEIN THROMBOSIS	20
Female	50+	RENAL FAILURE-GENERAL	20
Female	50+	RENAL FAILURE W/O HTN	19
Female	50+	BLEEDING RISK DIAGNOSIS	18
Female	50+	HEMATEMESIS	18
Female	50+	ANGINA, UNSTABLE	17
Female	50+	CHOLELITHIASIS	17
Female	50+	CHRONIC OTITIS MEDIA	17
Female	50+	GALLSTONES	17
Female	50+	DERMATITIS,MACULOPAPULAR	16
Female	50+	DYSKINESIAS	16
Female	50+	SYNCOPE	16
Female	50+	VIRAL ILLNESSES	16
Female	50+	CNS DEMYELINATING DIS	15
Female	50+	DEMENTIA	15
Female	50+	RENAL DISEASE	15
Female	50+	HEART BLOCK	14
Female	50+	ALBUMINURIA/ NEPHROPATHY	13
Female	50+	LUPUS	13
Female	50+	NUTRITIONAL/ NEURO DEFICIENCY	12
Female	50+	ARTHROPATHIES, OTHER	11

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	50+	DEHYDRATION	11
Female	50+	EXTRAPYRAMIDAL REACTIONS	11
Female	50+	KIDNEY STONES	11
Female	50+	VOLUME DEPLETION	11
Female	50+	HYPERTHYROIDISM	10
Female	50+	LEUKOPENIA	10
Female	50+	LYMPHADENOPATHY	10
Female	50+	MYELOSUPPRESSION	10
Female	50+	ACUTE OTITIS MEDIA	9
Female	50+	AGRANULOCYTOSIS	9
Female	50+	AV BLOCK II TO III	9
Female	50+	BIPOLAR DISORDER	9
Female	50+	COAGULATION DEFECTS	9
Female	50+	NEUROPATHIES	9
Female	50+	NEUTROPENIA	9
Female	50+	PSYCHOSES	9
Female	50+	PULMONARY DISORDERS	9
Female	50+	PULMONARY EDEMA	9
Female	50+	PULMONARY FIBROSIS	9
Female	50+	THROMBOPHLEBITIS	9
Female	50+	COLITIS	8
Female	50+	CROHN'S DISEASE	8
Female	50+	EPILEPSY	8
Female	50+	INTERSTITIAL PNEUMONITIS	8
Female	50+	PLEURAL EFFUSION-D	8
Female	50+	TELANGLECTASIS	8
Female	50+	HEMORRHAGIC DISORDERS	7
Female	50+	PANIC DISORDERS	7
Female	50+	PRURITUS	7
Female	50+	ALZHEIMER	6
Female	50+	BOWEL OBSTRUCTION	6
Female	50+	GI OBSTRUCTION	6
Female	50+	GLAUCOMA,NARROW ANGLE	6
Female	50+	HEPATIC CIRRHOSIS	6
Female	50+	HEPATOMEGALY WITH STEATOSIS	6
Female	50+	HYPERSECRETORY STATES	6
Female	50+	OSTEOSARCOMA	6
Female	50+	SEVERE FUNGAL INFECTIONS	6
Female	50+	ALCOHOLISM	5
Female	50+	ANEMIA,MEGALOBLASTIC	5
Female	50+	ARTHRITIS, PSORIATIC	5
Female	50+	BLOOD DYSCRASIAS	5
Female	50+	EPISTAXIS	5
Female	50+	GOUT	5
Female	50+	MYELODYSPLASTIC SYNDROME	5
Female	50+	OPTIC NEURITIS	5
Female	50+	PARKINSONISM,PRIMARY	5
Female	50+	STRESS DISORDERS	5
Female	50+	UREMIA	5
Female	50+	ANOREXIA	4

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	50+	BRAIN HEMORRHAGE	4
Female	50+	COLOSTOMY/ ILEOSTOMY	4
Female	50+	CRYSTALLURIA	4
Female	50+	ENCEPHALOPATHIC SYNDROME	4
Female	50+	MALIGNANT MELANOMA	4
Female	50+	PERSONALITY DISORDERS	4
Female	50+	PULMONARY EMBOLUS, PREVIOUS	4
Female	50+	THROMBOCYTOPENIA	4
Female	50+	APLASTIC ANEMIA	3
Female	50+	BRADYCARDIA	3
Female	50+	COLON LESIONS	3
Female	50+	DELIRIUM	3
Female	50+	EXFOLIATIVE DERMATITIS	3
Female	50+	HEPATITIS, ALLER CHOLESTATIC	3
Female	50+	HYPERCALCEMIA	3
Female	50+	KETOACIDOSIS	3
Female	50+	PANCREATITIS	3
Female	50+	PULMONARY EMBOLUS	3
Female	50+	SUICIDAL BEHAVIOR	3
Female	50+	THROMBOCYTOPENIA, SECONDARY	3
Female	50+	URINARY RETENTION	3
Female	50+	VENTRICULAR ARRHYTHMIA	3
Female	50+	ALVEOLITIS,FIBROSING	2
Female	50+	ANGIONEUROTIC EDEMA	2
Female	50+	CARDIAC VALVE FIBROSIS	2
Female	50+	CEREBRAL PALSY	2
Female	50+	CIRRHOSIS	2
Female	50+	HEMOPTYSIS	2
Female	50+	HYPOPROTHROMINEMIA	2
Female	50+	HYPOTENSION	2
Female	50+	INTRA-ABDOMINAL HEMORRHAGE	2
Female	50+	MALIGNANT NEOPLASM, CNS	2
Female	50+	PROTEINURIA	2
Female	50+	RHABDOMYOLYSIS	2
Female	50+	SUBARACHNOID HEMORRHAGE	2
Female	50+	ABNL PREG TERMINATED OR DELIV	1
Female	50+	ALCOHOLIC LIVER DISEASE	1
Female	50+	APPENDICITIS	1
Female	50+	BLEPHARASPASM	1
Female	50+	BULLOUS RASH	1
Female	50+	CEREBRAL ARTERIOSCLEROSIS	1
Female	50+	CHOLESTATIC JAUNDICE	1
Female	50+	CONTRACEPTIVE MEASURES	1
Female	50+	DRUG INDUCED PSYCH DISORDERS	1
Female	50+	FECAL IMPACTION	1
Female	50+	HALLUCINATIONS	1
Female	50+	HEAD TRAUMA	1
Female	50+	HEPATIC FAILURE	1
Female	50+	ILEUS, PARALYTIC	1
Female	50+	MYOPATHY	1

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Female	50+	NASAL POLYPS	1
Female	50+	ORAL CONTRACEPTION	1
Female	50+	RADIATION THERAPY ICD	1
Female	50+	RELATED TO FETAL OUTCOMES	1
Female	50+	RENAL CALCIFICATION	1
Female	50+	SUICIDE	1
Male	Under 50	HYPERSENSITIVITY REACTIONS	1,652
Male	Under 50	RESPIRATORY INFECTIONS	1,601
Male	Under 50	FRACTURES AND INJURIES	1,526
Male	Under 50	CARDIOVASCULAR DISEASE	476
Male	Under 50	LIPID ABNORMALITIES	475
Male	Under 50	HYPERTENSION	451
Male	Under 50	DIARRHEA, GASTROENTERITIS	386
Male	Under 50	DIABETES MELLITUS I AND II	274
Male	Under 50	PSYCHOSES, DRUG INDUCED	266
Male	Under 50	DEPRESSION	239
Male	Under 50	SYMPTOMS OF GI IRRITATION	235
Male	Under 50	ASTHMA	215
Male	Under 50	CNS EXCITATION	214
Male	Under 50	LACTIC ACIDOSIS SYMPTOMS	201
Male	Under 50	ABDOMINAL PAIN	196
Male	Under 50	MILD FUNGAL INFECTIONS	178
Male	Under 50	TUBERCULOSIS	178
Male	Under 50	CHRONIC OTITIS MEDIA	177
Male	Under 50	SYMPTOMS OF DIG-TOXICITY	171
Male	Under 50	COUGH	167
Male	Under 50	GERD	150
Male	Under 50	HEPATIC DYSFUNCTION	133
Male	Under 50	COND- REYE SYNDROME RELATED	122
Male	Under 50	ANXIETY DISORDERS	112
Male	Under 50	HEPATITIS	106
Male	Under 50	GI HEMORRHAGE	99
Male	Under 50	CANCER	91
Male	Under 50	ANAPHYLACTIC SHOCK	86
Male	Under 50	BLEEDING	85
Male	Under 50	HEMATOLOGIC DISORDERS	81
Male	Under 50	SYMPTOMS OF ERGOTISM	81
Male	Under 50	VIRAL ILLNESSES	75
Male	Under 50	CONTRACEPTIVE MEASURES	69
Male	Under 50	ACUTE OTITIS MEDIA	66
Male	Under 50	THYROID DISEASE	63
Male	Under 50	BRONCHOPNEUMONIA	62
Male	Under 50	DIARRHEA	61
Male	Under 50	ARRHYTHMIAS	60
Male	Under 50	GASTRITIS	60
Male	Under 50	KIDNEY STONES	57
Male	Under 50	ISCHEMIC HEART DISEASE	53
Male	Under 50	PANCYTOPENIA	52
Male	Under 50	HEMATURIA	50
Male	Under 50	PSORIASIS	50

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	Under 50	OBESITY	45
Male	Under 50	ALCOHOLISM	42
Male	Under 50	HIV	42
Male	Under 50	COPD	37
Male	Under 50	LYMPHADENOPATHY	35
Male	Under 50	ARTHRITIS, RHEUMATOID	34
Male	Under 50	SYNCOPE	34
Male	Under 50	EPILEPSY	33
Male	Under 50	ARTHRITIS, OSTEOARTHRITIS	32
Male	Under 50	ANEMIAS, OTHER	31
Male	Under 50	COLON, IRRITABLE	31
Male	Under 50	RENAL DISEASE	31
Male	Under 50	ORAL CONTRACEPTION	30
Male	Under 50	GOUT	29
Male	Under 50	HEMATEMESIS	29
Male	Under 50	RENAL FAILURE-GENERAL	29
Male	Under 50	SYMPTOMS OF QUINIDINE-TOXICITY	29
Male	Under 50	ANGINA, PECTORIS	27
Male	Under 50	ANKYLOSING SPONDYLITIS	26
Male	Under 50	RENAL FAILURE W/O HTN	26
Male	Under 50	DERMATITIS,MACULOPAPULAR	24
Male	Under 50	GI ULCER	24
Male	Under 50	DEHYDRATION	23
Male	Under 50	VOLUME DEPLETION	23
Male	Under 50	CROHN'S DISEASE	22
Male	Under 50	DYSKINESIAS	22
Male	Under 50	COLON POLYPS	21
Male	Under 50	EPISTAXIS	21
Male	Under 50	PERIPHERAL NEUROPATHY	21
Male	Under 50	ABUSE- DRUG	19
Male	Under 50	CONTRACEPTION- INJECTION (D)	19
Male	Under 50	STEATORRHEA	19
Male	Under 50	ALBUMINURIA/ NEPHROPATHY	18
Male	Under 50	PANIC DISORDERS	18
Male	Under 50	APPENDICITIS	17
Male	Under 50	COLITIS	17
Male	Under 50	EDEMA	17
Male	Under 50	GLAUCOMA	17
Male	Under 50	ATRIAL FIBRILLATION	16
Male	Under 50	BIPOLAR DISORDER	16
Male	Under 50	ARTHRITIS, PSORIATIC	15
Male	Under 50	CNS DEMYELINATING DIS	15
Male	Under 50	NUTRITIONAL/ NEURO DEFICIENCY	15
Male	Under 50	CONGESTIVE HEART FAILURE	14
Male	Under 50	DEEP VEIN THROMBOSIS	14
Male	Under 50	HEAD TRAUMA	14
Male	Under 50	BLEEDING RISK DIAGNOSIS	13
Male	Under 50	VENTRICULAR ARRHYTHMIA	13
Male	Under 50	ANEURYSM	12
Male	Under 50	EXTRAPYRAMIDAL REACTIONS	12

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	Under 50	HEPATITIS, ALLER CHOLESTATIC	12
Male	Under 50	PERSONALITY DISORDERS	12
Male	Under 50	PLEURAL EFFUSION-D	12
Male	Under 50	STROKE	12
Male	Under 50	ARTHROPATHIES, OTHER	11
Male	Under 50	BOWEL OBSTRUCTION	11
Male	Under 50	GI OBSTRUCTION	11
Male	Under 50	HEMORRHAGIC DISORDERS	11
Male	Under 50	PROTEINURIA	11
Male	Under 50	ANEMIA,DEF.FE,OTH	10
Male	Under 50	CHICKEN POX	10
Male	Under 50	HEPATIC CIRRHOSIS	10
Male	Under 50	LEUKOPENIA	10
Male	Under 50	NASAL POLYPS	10
Male	Under 50	PRURITUS	10
Male	Under 50	PULMONARY EDEMA	10
Male	Under 50	STRESS DISORDERS	10
Male	Under 50	THROMBOCYTOPENIA	10
Male	Under 50	URINARY RETENTION	10
Male	Under 50	CEREBRAL PALSY	9
Male	Under 50	CHOLELITHIASIS	9
Male	Under 50	GALLSTONES	9
Male	Under 50	HEART BLOCK	9
Male	Under 50	MYOCARDIAL ISCHEMIA	9
Male	Under 50	THROMBOCYTOPENIA, SECONDARY	9
Male	Under 50	ANGINA, UNSTABLE	8
Male	Under 50	BENIGN PROSTATIC HYPERTROPHY	8
Male	Under 50	HEMOPTYSIS	8
Male	Under 50	HEPATOMEGALY WITH STEATOSIS	8
Male	Under 50	PULMONARY DISORDERS	8
Male	Under 50	SEVERE FUNGAL INFECTIONS	8
Male	Under 50	SUICIDAL BEHAVIOR	8
Male	Under 50	BRAIN HEMORRHAGE	7
Male	Under 50	COLOSTOMY/ ILEOSTOMY	7
Male	Under 50	MALIGNANT NEOPLASM, CNS	7
Male	Under 50	NEUROPATHIES	7
Male	Under 50	PERICARDIAL EFFUSION	7
Male	Under 50	PULMONARY FIBROSIS	7
Male	Under 50	ANOREXIA	6
Male	Under 50	COAGULATION DEFECTS	6
Male	Under 50	CYSTIC FIBROSIS	6
Male	Under 50	ENCEPHALOPATHIC SYNDROME	6
Male	Under 50	HYPERSECRETORY STATES	6
Male	Under 50	HYPERTHYROIDISM	6
Male	Under 50	PERICARDIAL DISEASE	6
Male	Under 50	PROSTATIC HYPERTROPHY	6
Male	Under 50	EXFOLIATIVE DERMATITIS	5
Male	Under 50	ILEUS, PARALYTIC	5
Male	Under 50	LUPUS	5
Male	Under 50	MALIGNANT MELANOMA	5

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	Under 50	MYELOSUPPRESSION	5
Male	Under 50	OSTEOSARCOMA	5
Male	Under 50	PSYCHOSES	5
Male	Under 50	RENAL CALCIFICATION	5
Male	Under 50	AGRANULOCYTOSIS	4
Male	Under 50	HALLUCINATIONS	4
Male	Under 50	NEUTROPENIA	4
Male	Under 50	OBSTRUCTIVE UROPATHY	4
Male	Under 50	OPTIC NEURITIS	4
Male	Under 50	PANCREATITIS	4
Male	Under 50	PRERENAL AZOTEMIA	4
Male	Under 50	RADIATION THERAPY ICD	4
Male	Under 50	SUICIDE	4
Male	Under 50	THROMBOPHLEBITIS	4
Male	Under 50	ANGIONEUROTIC EDEMA	3
Male	Under 50	AV BLOCK II TO III	3
Male	Under 50	CIRRHOSIS	3
Male	Under 50	CRYSTALLURIA	3
Male	Under 50	DRUG INDUCED PSYCH DISORDERS	3
Male	Under 50	KETOACIDOSIS	3
Male	Under 50	MYOCARDITIS	3
Male	Under 50	MYOPATHY	3
Male	Under 50	PARKINSONISM,PRIMARY	3
Male	Under 50	PSEUDOMEMBRANOUS COLITIS	3
Male	Under 50	ALCOHOLIC LIVER DISEASE	2
Male	Under 50	APLASTIC ANEMIA	2
Male	Under 50	BRADYCARDIA	2
Male	Under 50	BULLOUS RASH	2
Male	Under 50	CARDIAC VALVE FIBROSIS	2
Male	Under 50	CHOLESTATIC JAUNDICE	2
Male	Under 50	COLON LESIONS	2
Male	Under 50	DEMENTIA	2
Male	Under 50	GLAUCOMA,NARROW ANGLE	2
Male	Under 50	HEMOLYSIS	2
Male	Under 50	HEMOLYTIC ANEMIA, HERED	2
Male	Under 50	INTERSTITIAL PNEUMONITIS	2
Male	Under 50	JAUNDICE	2
Male	Under 50	RELATED TO FETAL OUTCOMES	2
Male	Under 50	RETROPERITONEAL FIBROSIS	2
Male	Under 50	SICKLE CELL ANEMIA	2
Male	Under 50	SUBARACHNOID HEMORRHAGE	2
Male	Under 50	TELANGLECTASIS	2
Male	Under 50	ABNL PREG TERMINATED OR DELIV	1
Male	Under 50	ADDISON'S DISEASE	1
Male	Under 50	ADRENAL INSUFFICIENCY	1
Male	Under 50	ALZHEIMER	1
Male	Under 50	ANEMIA,MEGALOBLASTIC	1
Male	Under 50	BLEPHARASPASM	1
Male	Under 50	BOWEL PERFORATION	1
Male	Under 50	BREAST CANCER, FEMALE	1

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	Under 50	DELIRIUM	1
Male	Under 50	ERYTHEMA MULTIFORME	1
Male	Under 50	FECAL IMPACTION	1
Male	Under 50	HEPATIC FAILURE	1
Male	Under 50	HYPERSENSITIVITY PNEUMONITIS	1
Male	Under 50	HYPOTENSION	1
Male	Under 50	INTRA-ABDOMINAL HEMORRHAGE	1
Male	Under 50	OSTEOMALACIA	1
Male	Under 50	OSTEOPOROSIS	1
Male	Under 50	PREGNANCY	1
Male	Under 50	PULMONARY EMBOLUS, PREVIOUS	1
Male	Under 50	RENAL OSTEODYSTROPHY	1
Male	Under 50	STEVENS JOHNSON SYNDROME	1
Male	Under 50	UREMIA	1
Male	50+	CARDIOVASCULAR DISEASE	685
Male	50+	HYPERTENSION	621
Male	50+	LIPID ABNORMALITIES	551
Male	50+	DIABETES MELLITUS I AND II	390
Male	50+	HYPERSENSITIVITY REACTIONS	350
Male	50+	FRACTURES AND INJURIES	264
Male	50+	RESPIRATORY INFECTIONS	262
Male	50+	CANCER	207
Male	50+	ISCHEMIC HEART DISEASE	205
Male	50+	HEPATIC DYSFUNCTION	136
Male	50+	ARRHYTHMIAS	131
Male	50+	DIARRHEA, GASTROENTERITIS	126
Male	50+	HEPATITIS	112
Male	50+	SYMPTOMS OF GI IRRITATION	110
Male	50+	SYMPTOMS OF DIG-TOXICITY	107
Male	50+	TUBERCULOSIS	107
Male	50+	COPD	104
Male	50+	HEMATOLOGIC DISORDERS	98
Male	50+	BLEEDING	87
Male	50+	ATRIAL FIBRILLATION	79
Male	50+	GI HEMORRHAGE	70
Male	50+	PSYCHOSES, DRUG INDUCED	66
Male	50+	ANGINA, PECTORIS	64
Male	50+	CONGESTIVE HEART FAILURE	64
Male	50+	PANCYTOPENIA	63
Male	50+	ARTHRITIS, OSTEOARTHRITIS	61
Male	50+	ABDOMINAL PAIN	59
Male	50+	ANEMIAS, OTHER	59
Male	50+	GERD	58
Male	50+	DEPRESSION	57
Male	50+	LACTIC ACIDOSIS SYMPTOMS	57
Male	50+	MILD FUNGAL INFECTIONS	55
Male	50+	COUGH	54
Male	50+	GLAUCOMA	52
Male	50+	THYROID DISEASE	50
Male	50+	SYMPTOMS OF QUINIDINE-TOXICITY	49

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	50+	HEMATURIA	46
Male	50+	ASTHMA	43
Male	50+	COLON POLYPS	43
Male	50+	CNS EXCITATION	42
Male	50+	SYMPTOMS OF ERGOTISM	41
Male	50+	GI ULCER	40
Male	50+	COND- REYE SYNDROME RELATED	38
Male	50+	HEMATEMESIS	37
Male	50+	STROKE	37
Male	50+	BENIGN PROSTATIC HYPERTROPHY	36
Male	50+	ANEMIA,DEF.FE,OTH	35
Male	50+	BRONCHOPNEUMONIA	34
Male	50+	ANXIETY DISORDERS	32
Male	50+	PROSTATIC HYPERTROPHY	32
Male	50+	OBESITY	31
Male	50+	PERIPHERAL NEUROPATHY	31
Male	50+	RENAL FAILURE W/O HTN	31
Male	50+	GASTRITIS	30
Male	50+	RENAL FAILURE-GENERAL	30
Male	50+	ANEURYSM	29
Male	50+	EDEMA	29
Male	50+	MYOCARDIAL ISCHEMIA	28
Male	50+	CHRONIC OTITIS MEDIA	26
Male	50+	KIDNEY STONES	25
Male	50+	NUTRITIONAL/ NEURO DEFICIENCY	24
Male	50+	ANKYLOSING SPONDYLITIS	22
Male	50+	ARTHRITIS, RHEUMATOID	22
Male	50+	GOUT	22
Male	50+	PSORIASIS	22
Male	50+	ALBUMINURIA/ NEPHROPATHY	21
Male	50+	RENAL DISEASE	21
Male	50+	STEATORRHEA	21
Male	50+	VENTRICULAR ARRHYTHMIA	21
Male	50+	SYNCOPE	20
Male	50+	DIARRHEA	19
Male	50+	DEEP VEIN THROMBOSIS	18
Male	50+	ALCOHOLISM	16
Male	50+	ANAPHYLACTIC SHOCK	16
Male	50+	BLEEDING RISK DIAGNOSIS	16
Male	50+	VIRAL ILLNESSES	15
Male	50+	ACUTE OTITIS MEDIA	14
Male	50+	HEART BLOCK	14
Male	50+	HEPATIC CIRRHOSIS	13
Male	50+	ANGINA, UNSTABLE	12
Male	50+	BOWEL OBSTRUCTION	12
Male	50+	COLON, IRRITABLE	12
Male	50+	AV BLOCK II TO III	11
Male	50+	DEHYDRATION	11
Male	50+	HEMORRHAGIC DISORDERS	11
Male	50+	URINARY RETENTION	11

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	50+	VOLUME DEPLETION	11
Male	50+	CIRRHOSIS	10
Male	50+	NEUROPATHIES	10
Male	50+	PULMONARY DISORDERS	10
Male	50+	PULMONARY FIBROSIS	10
Male	50+	BIPOLAR DISORDER	9
Male	50+	BRADYCARDIA	9
Male	50+	COAGULATION DEFECTS	9
Male	50+	COLOSTOMY/ ILEOSTOMY	9
Male	50+	DERMATITIS,MACULOPAPULAR	9
Male	50+	INTERSTITIAL PNEUMONITIS	9
Male	50+	LYMPHADENOPATHY	9
Male	50+	PARKINSONISM,PRIMARY	9
Male	50+	DEMENTIA	8
Male	50+	GI OBSTRUCTION	8
Male	50+	HIV	8
Male	50+	PULMONARY EDEMA	8
Male	50+	CNS DEMYELINATING DIS	7
Male	50+	HYPOTENSION	7
Male	50+	ILEUS, PARALYTIC	7
Male	50+	NASAL POLYPS	7
Male	50+	OSTEOPOROSIS	7
Male	50+	PLEURAL EFFUSION-D	7
Male	50+	UREMIA	7
Male	50+	CROHN'S DISEASE	6
Male	50+	EPILEPSY	6
Male	50+	HEPATITIS, ALLER CHOLESTATIC	6
Male	50+	HYPERSECRETORY STATES	6
Male	50+	MYELOSUPPRESSION	6
Male	50+	THROMBOCYTOPENIA	6
Male	50+	THROMBOPHLEBITIS	6
Male	50+	CHOLELITHIASIS	5
Male	50+	GALLSTONES	5
Male	50+	OPTIC NEURITIS	5
Male	50+	OSTEOSARCOMA	5
Male	50+	THROMBOCYTOPENIA, SECONDARY	5
Male	50+	ALCOHOLIC LIVER DISEASE	4
Male	50+	ALZHEIMER	4
Male	50+	ANOREXIA	4
Male	50+	APLASTIC ANEMIA	4
Male	50+	ARTHROPATHIES, OTHER	4
Male	50+	BRAIN HEMORRHAGE	4
Male	50+	COLITIS	4
Male	50+	DYSKINESIAS	4
Male	50+	HEAD TRAUMA	4
Male	50+	LEUKOPENIA	4
Male	50+	MYELODYSPLASTIC SYNDROME	4
Male	50+	PANIC DISORDERS	4
Male	50+	PRERENAL AZOTEMIA	4
Male	50+	PRURITUS	4

APPENDIX VII. Table 6b. Number of Control Patients by Age, Gender, and Potential Driver Impairing Disease Groups

Gender	Age Group	Disease Group	N
Male	50+	PULMONARY EMBOLUS	4
Male	50+	RADIATION THERAPY ICD	4
Male	50+	ANEMIA,MEGALOBLASTIC	3
Male	50+	COLON LESIONS	3
Male	50+	ENCEPHALOPATHIC SYNDROME	3
Male	50+	EPISTAXIS	3
Male	50+	EXFOLIATIVE DERMATITIS	3
Male	50+	HEMOPTYSIS	3
Male	50+	MALIGNANT MELANOMA	3
Male	50+	PROTEINURIA	3
Male	50+	PSYCHOSES	3
Male	50+	SEVERE FUNGAL INFECTIONS	3
Male	50+	AGRANULOCYTOSIS	2
Male	50+	APPENDICITIS	2
Male	50+	ARTHRITIS, PSORIATIC	2
Male	50+	HEPATOMEGALY WITH STEATOSIS	2
Male	50+	HYPERCALCEMIA	2
Male	50+	HYPERTHYROIDISM	2
Male	50+	KETOACIDOSIS	2
Male	50+	MALIGNANT NEOPLASM, CNS	2
Male	50+	MYASTHENIA GRAVIS	2
Male	50+	NEUTROPENIA	2
Male	50+	PANCREATITIS	2
Male	50+	ALVEOLITIS,FIBROSING	1
Male	50+	BOWEL PERFORATION	1
Male	50+	CARDIAC ARREST	1
Male	50+	EXTRAPYRAMIDAL REACTIONS	1
Male	50+	GLAUCOMA,NARROW ANGLE	1
Male	50+	HALLUCINATIONS	1
Male	50+	HEMOLYSIS	1
Male	50+	HEMOLYTIC ANEMIA, HERED	1
Male	50+	MEASLES	1
Male	50+	MYOPATHY	1
Male	50+	OBSTRUCTIVE UROPATHY	1
Male	50+	OSTEOMALACIA	1
Male	50+	PERICARDIAL EFFUSION	1
Male	50+	PULMONARY EMBOLUS, PREVIOUS	1
Male	50+	RENAL CALCIFICATION	1
Male	50+	RHABDOMYOLYSIS	1
Male	50+	SUBARACHNOID HEMORRHAGE	1
Male	50+	TELANGLECTASIS	1

Table 7a. Number of Patients by Age, Gender, and Number of Driver Impairing Disease Groups Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Disease Groups						
Under 50	0	8,603	56	8,944	70	17,547	62
	1	2,433	16	1,602	13	4,035	14
	2	1,574	10	892	7	2,466	9
	3	1,052	7	508	4	1,560	6
	4	625	4	266	2	891	3
	5	366	2	169	1	535	2
	6	270	2	105	1	375	1
	7	182	1	76	1	258	1
	8	125	1	59	0	184	1
	9	84	1	33	0	117	0
	10	56	0	21	0	77	0
	11	28	0	17	0	45	0
	12	33	0	9	0	42	0
	13	11	0	6	0	17	0
	14	13	0	10	0	23	0
	15	1	0	4	0	5	0
	16	4	0	2	0	6	0
	17	7	0	3	0	10	0
	18	4	0			4	0
	19	2	0			2	0
	20	1	0			1	0
	21	2	0			2	0
	22			1	0	1	0
	24	1	0			1	0

(Continued)

Table 7a. Number of Patients by Age, Gender, and Number of Driver Impairing Disease Groups Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Disease Groups						
Under 50	26	1	0	1	0	2	0
	27	1	0			1	0
	All	15,479	100	12,728	100	28,207	100
50+	Number of Potential Impairing Disease Groups						
	0	1,321	46	1,338	52	2,659	49
	1	351	12	260	10	611	11
	2	312	11	248	10	560	10
	3	228	8	206	8	434	8
	4	167	6	112	4	279	5
	5	140	5	107	4	247	5
	6	90	3	75	3	165	3
	7	66	2	58	2	124	2
	8	45	2	40	2	85	2
	9	32	1	23	1	55	1
	10	21	1	16	1	37	1
	11	24	1	18	1	42	1
	12	9	0	15	1	24	0
	13	10	0	6	0	16	0
	14	7	0	9	0	16	0
	15	4	0	7	0	11	0
	16	8	0	5	0	13	0
	17	2	0	1	0	3	0

(Continued)

Table 7a. Number of Patients by Age, Gender, and Number of Driver Impairing Disease Groups
Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Disease Groups						
50+	18	3	0	3	0	6	0
	19	1	0	1	0	2	0
	20	1	0	2	0	3	0
	21			2	0	2	0
	22			1	0	1	0
	24			3	0	3	0
	All	2,842	100	2,556	100	5,398	100
All Age	Number of Potential Impairing Disease Groups						
	0	9,924	54	10,282	67	20,206	60
	1	2,784	15	1,862	12	4,646	14
	2	1,886	10	1,140	7	3,026	9
	3	1,280	7	714	5	1,994	6
	4	792	4	378	2	1,170	3
	5	506	3	276	2	782	2
	6	360	2	180	1	540	2
	7	248	1	134	1	382	1
	8	170	1	99	1	269	1
	9	116	1	56	0	172	1
	10	77	0	37	0	114	0
	11	52	0	35	0	87	0
	12	42	0	24	0	66	0
	13	21	0	12	0	33	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 7a. Number of Patients by Age, Gender, and Number of Driver Impairing Disease Groups Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Potential Impairing Disease Groups						
	14	20	0	19	0	39	0
	15	5	0	11	0	16	0
	16	12	0	7	0	19	0
	17	9	0	4	0	13	0
	18	7	0	3	0	10	0
	19	3	0	1	0	4	0
	20	2	0	2	0	4	0
	21	2	0	2	0	4	0
	22			2	0	2	0
	24	1	0	3	0	4	0
	26	1	0	1	0	2	0
	27	1	0			1	0
	All	18,321	100	15,284	100	33,605	100

Table 7b. Number of Patients by Age, Gender, and Number of Driver Impairing Disease Groups
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Disease Groups						
Under 50	0	34,038	73	31,710	83	65,748	78
	1	4,821	10	2,798	7	7,619	9
	2	3,275	7	1,836	5	5,111	6
	3	2,018	4	862	2	2,880	3
	4	991	2	357	1	1,348	2
	5	500	1	276	1	776	1
	6	307	1	137	0	444	1
	7	201	0	87	0	288	0
	8	88	0	53	0	141	0
	9	70	0	23	0	93	0
	10	53	0	22	0	75	0
	11	22	0	8	0	30	0
	12	21	0	4	0	25	0
	13	8	0	5	0	13	0
	14	8	0	2	0	10	0
	15	3	0	3	0	6	0
	16	5	0			5	0
	17	4	0			4	0
	18	1	0			1	0
	20			1	0	1	0
	21	1	0			1	0
	22	2	0			2	0
	All	46,437	100	38,184	100	84,621	100

(Continued)

Table 7b. Number of Patients by Age, Gender, and Number of Driver Impairing Disease Groups Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Disease Groups						
50+	0	5,325	62	5,069	66	10,394	64
	1	829	10	621	8	1,450	9
	2	768	9	629	8	1,397	9
	3	553	6	454	6	1,007	6
	4	286	3	216	3	502	3
	5	261	3	235	3	496	3
	6	168	2	131	2	299	2
	7	115	1	107	1	222	1
	8	72	1	63	1	135	1
	9	51	1	32	0	83	1
	10	34	0	35	0	69	0
	11	20	0	17	0	37	0
	12	12	0	16	0	28	0
	13	10	0	6	0	16	0
	14	3	0	7	0	10	0
	15	4	0	10	0	14	0
	16	5	0	3	0	8	0
	17	3	0	4	0	7	0
	18	1	0	5	0	6	0
	19	2	0	3	0	5	0
	20	2	0	1	0	3	0
	21	1	0	1	0	2	0
	22			2	0	2	0
	23			1	0	1	0

(Continued)

Table 7b. Number of Patients by Age, Gender, and Number of Driver Impairing Disease Groups
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Potential Impairing Disease Groups						
50+							
	34	1	0			1	0
	All	8,526	100	7,668	100	16,194	100
All Age	Number of Potential Impairing Disease Groups						
	0	39,363	72	36,779	80	76,142	76
	1	5,650	10	3,419	7	9,069	9
	2	4,043	7	2,465	5	6,508	6
	3	2,571	5	1,316	3	3,887	4
	4	1,277	2	573	1	1,850	2
	5	761	1	511	1	1,272	1
	6	475	1	268	1	743	1
	7	316	1	194	0	510	1
	8	160	0	116	0	276	0
	9	121	0	55	0	176	0
	10	87	0	57	0	144	0
	11	42	0	25	0	67	0
	12	33	0	20	0	53	0
	13	18	0	11	0	29	0
	14	11	0	9	0	20	0
	15	7	0	13	0	20	0
	16	10	0	3	0	13	0
	17	7	0	4	0	11	0
	18	2	0	5	0	7	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 7b. Number of Patients by Age, Gender, and Number of Driver Impairing Disease Groups Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Potential Impairing Disease Groups						
	19	2	0	3	0	5	0
	20	2	0	2	0	4	0
	21	2	0	1	0	3	0
	22	2	0	2	0	4	0
	23			1	0	1	0
	34	1	0			1	0
	All	54,963	100	45,852	100	100815	100

Table 8a. Number of Patients by Age, Gender, and Number of Disease-Drug Conflicts Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Disease-Drug Conflicts						
Under 50	0	15,172	98	12,543	99	27,715	98
	1	192	1	115	1	307	1
	2	46	0	40	0	86	0
	3	32	0	12	0	44	0
	4	13	0	4	0	17	0
	5	5	0	3	0	8	0
	6	4	0	6	0	10	0
	7	1	0	2	0	3	0
	8	6	0	1	0	7	0
	9	2	0			2	0
	10			1	0	1	0
	12	1	0	1	0	2	0
	13	1	0			1	0
	17	1	0			1	0
	18	1	0			1	0
	20	1	0			1	0
	27	1	0			1	0
	All	15,479	100	12,728	100	28,207	100
50+	Number of Disease-Drug Conflicts						
	0	2,603	92	2,364	92	4,967	92
	1	143	5	102	4	245	5
	2	48	2	40	2	88	2
	3	13	0	13	1	26	0

(Continued)

Table 8a. Number of Patients by Age, Gender, and Number of Disease-Drug Conflicts
Case Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Disease-Drug Conflicts						
50+	4	11	0	16	1	27	1
	5	5	0	6	0	11	0
	6	4	0	5	0	9	0
	7	7	0	3	0	10	0
	8	2	0	2	0	4	0
	9	1	0	3	0	4	0
	10	1	0	1	0	2	0
	11	1	0			1	0
	13	1	0			1	0
	18	1	0			1	0
	19	1	0			1	0
	21			1	0	1	0
	All	2,842	100	2,556	100	5,398	100
All Age	Number of Disease-Drug Conflicts						
	0	17,775	97	14,907	98	32,682	97
	1	335	2	217	1	552	2
	2	94	1	80	1	174	1
	3	45	0	25	0	70	0
	4	24	0	20	0	44	0
	5	10	0	9	0	19	0
	6	8	0	11	0	19	0
	7	8	0	5	0	13	0
	8	8	0	3	0	11	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 8a. Number of Patients by Age, Gender, and Number of Disease-Drug Conflicts Case Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Disease-Drug Conflicts						
	9	3	0	3	0	6	0
	10	1	0	2	0	3	0
	11	1	0			1	0
	12	1	0	1	0	2	0
	13	2	0			2	0
	17	1	0			1	0
	18	2	0			2	0
	19	1	0			1	0
	20	1	0			1	0
	21			1	0	1	0
	27	1	0			1	0
	All	18,321	100	15,284	100	33,605	100

Table 8b. Number of Patients by Age, Gender, and Number of Disease-Drug Conflicts
Control Group

		Gender				Both	
		Female		Male			
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Disease-Drug Conflicts						
Under 50	0	46,150	99	37,982	99	84,132	99
	1	193	0	137	0	330	0
	2	52	0	31	0	83	0
	3	19	0	14	0	33	0
	4	9	0	8	0	17	0
	5	3	0	3	0	6	0
	6	3	0	3	0	6	0
	7	3	0			3	0
	8	3	0	2	0	5	0
	10			2	0	2	0
	11			2	0	2	0
	25	1	0			1	0
	26	1	0			1	0
	All	46,437	100	38,184	100	84,621	100
50+	Number of Disease-Drug Conflicts						
	0	8,178	96	7,312	95	15,490	96
	1	209	2	205	3	414	3
	2	67	1	67	1	134	1
	3	29	0	30	0	59	0
	4	13	0	19	0	32	0
	5	10	0	7	0	17	0
	6	6	0	11	0	17	0
	7	3	0	2	0	5	0

(Continued)

Table 8b. Number of Patients by Age, Gender, and Number of Disease-Drug Conflicts
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
Age Group	Number of Disease-Drug Conflicts						
50+	8	3	0	5	0	8	0
	9	1	0	4	0	5	0
	10	1	0	1	0	2	0
	11	2	0	2	0	4	0
	12			1	0	1	0
	17	2	0			2	0
	21	1	0	1	0	2	0
	24	1	0			1	0
	26			1	0	1	0
	All	8,526	100	7,668	100	16,194	100
All Age	Number of Disease-Drug Conflicts						
	0	54,328	99	45,294	99	99,622	99
	1	402	1	342	1	744	1
	2	119	0	98	0	217	0
	3	48	0	44	0	92	0
	4	22	0	27	0	49	0
	5	13	0	10	0	23	0
	6	9	0	14	0	23	0
	7	6	0	2	0	8	0
	8	6	0	7	0	13	0
	9	1	0	4	0	5	0
	10	1	0	3	0	4	0
	11	2	0	4	0	6	0

(Continued)

Appendix VII. Nonproprietary Database, Restrict Definition

Table 8b. Number of Patients by Age, Gender, and Number of Disease-Drug Conflicts
Control Group

		Gender					
		Female		Male		Both	
		N	PCTN	N	PCTN	N	PCTN
All Age	Number of Disease-Drug Conflicts						
	12			1	0	1	0
	17	2	0			2	0
	21	1	0	1	0	2	0
	24	1	0			1	0
	25	1	0			1	0
	26	1	0	1	0	2	0
	All	54,963	100	45,852	100	100815	100

APPENDIX VIII. Table 1A Odds Ratios for Driver Impairing Drugs

HIC3	DRUG_NAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D
H2D	BARBITURATES	7.50	2.35	23.91	0.00	10	4499	4	13523
H2W	TRICYCLIC ANTIDEPRESSANT/PHENOTHIAZINE COMBINATNS	4.50	0.75	26.93	0.10	3	4506	2	13525
H2X	TRICYCLIC ANTIDEPRESSANT/BENZODIAZEPINE COMBINATNS	4.00	0.90	17.87	0.07	4	4505	3	13524
B3A	MUCOLYTICS	3.00	0.19	47.96	0.44	1	4508	1	13526
H7P	ANTIPSYCHOTICS,DOPAMINE ANTAGONISTS, THIOXANTHENES	3.00	0.42	21.30	0.27	2	4507	2	13525
N1D	PLATELET REDUCING AGENTS	3.00	0.19	47.96	0.44	1	4508	1	13526
R1R	URICOSURIC AGENTS	3.00	0.42	21.30	0.27	2	4507	2	13525
Z2F	MAST CELL STABILIZERS	3.00	1.05	8.55	0.04	7	4502	7	13520
J5G	BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION	2.40	0.95	6.08	0.06	8	4501	10	13517
H6C	ANTITUSSIVES,NON-NARCOTIC	2.23	1.30	3.82	0.00	23	4486	31	13496
H3A	ANALGESICS,NARCOTICS	2.22	1.98	2.49	0.00	557	3952	806	12721
H7T	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	2.20	1.37	3.52	0.00	30	4479	41	13486
H6H	SKELETAL MUSCLE RELAXANTS	2.09	1.71	2.55	0.00	167	4342	247	13280
M9K	HEPARIN AND RELATED PREPARATIONS	2.00	0.33	11.97	0.45	2	4507	3	13524
H2F	ANTI-ANXIETY DRUGS	2.00	1.72	2.31	0.00	315	4194	490	13037
H4B	ANTICONVULSANTS	1.97	1.64	2.38	0.00	189	4320	295	13232
H7E	SEROTONIN-2 ANTAGONIST/REUPTAKE INHIBITORS (SARIS)	1.90	1.49	2.44	0.00	105	4404	167	13360
H7B	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	1.88	0.85	4.13	0.12	10	4499	16	13511
J2A	BELLADONNA ALKALOIDS	1.85	1.08	3.19	0.03	21	4488	34	13493
S2J	ANTI-INFLAMMATORY TUMOR NECROSIS FACTOR INHIBITOR	1.80	0.43	7.53	0.42	3	4506	5	13522
C4G	INSULINS	1.80	1.45	2.22	0.00	140	4369	237	13290
A4B	HYPOTENSIVES,SYMPATHOLYTIC	1.79	1.17	2.74	0.01	34	4475	57	13470
H7C	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	1.78	1.19	2.66	0.00	38	4471	64	13463
Q6S	EYE SULFONAMIDES	1.76	0.81	3.85	0.15	10	4499	17	13510
M9P	PLATELET AGGREGATION INHIBITORS	1.69	1.17	2.43	0.01	46	4463	83	13444
Q6R	EYE ANTIHISTAMINES	1.67	0.89	3.13	0.11	15	4494	27	13500
H6J	ANTIEMETIC/ANTIVERTIGO AGENTS	1.63	1.17	2.28	0.00	54	4455	100	13427
H6A	ANTIPARKINSONISM DRUGS,OTHER	1.62	0.99	2.66	0.05	25	4484	47	13480
B3K	COUGH AND/OR COLD PREPARATIONS	1.62	1.19	2.20	0.00	63	4446	118	13409
H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	1.59	1.40	1.81	0.00	380	4129	741	12786
B3J	EXPECTORANTS	1.58	1.28	1.94	0.00	142	4367	275	13252
S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	1.58	1.41	1.76	0.00	534	3975	1066	12461
Z2A	ANTIHISTAMINES	1.55	1.36	1.78	0.00	349	4160	693	12834
D4K	GASTRIC ACID SECRETION REDUCERS	1.55	1.38	1.73	0.00	491	4018	995	12532
H3D	ANALGESIC/ANTIPYRETICS, SALICYLATES	1.51	0.98	2.33	0.06	31	4478	62	13465
C4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	1.50	1.28	1.76	0.00	238	4271	486	13041

APPENDIX VIII. Table 1A Odds Ratios for Driver Impairing Drugs

C4M	HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	1.50	0.51	4.39	0.46	5	4504	10	13517
P3L	ANTITHYROID PREPARATIONS	1.50	0.45	4.98	0.51	4	4505	8	13519
C4L	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	1.49	1.23	1.80	0.00	169	4340	345	13182
H2E	SEDATIVE-HYPNOTICS,NON-BARBITURATE	1.48	1.16	1.88	0.00	100	4409	206	13321
A2A	ANTIARRHYTHMICS	1.46	0.83	2.56	0.19	18	4491	37	13490
H2U	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	1.41	1.15	1.73	0.00	139	4370	300	13227
H2V	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	1.41	0.72	2.75	0.32	13	4496	28	13499
C7A	HYPERURICEMIA TX - PURINE INHIBITORS	1.36	0.95	1.94	0.09	45	4464	100	13427
J5D	BETA-ADRENERGIC AGENTS	1.35	1.12	1.64	0.00	157	4352	352	13175
C4N	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	1.35	1.01	1.80	0.04	68	4441	152	13375
R1M	LOOP DIURETICS	1.35	1.10	1.65	0.00	136	4373	306	13221
S2A	COLCHICINE	1.34	0.70	2.59	0.37	13	4496	29	13498
W4A	ANTIMALARIAL DRUGS	1.34	0.90	2.00	0.15	36	4473	81	13446
R1L	POTASSIUM SPARING DIURETICS IN COMBINATION	1.33	1.10	1.61	0.00	161	4348	366	13161
A7B	VASODILATORS,CORONARY	1.31	1.04	1.66	0.02	103	4406	237	13290
M9L	ORAL ANTICOAGULANTS,COUMARIN TYPE	1.31	1.01	1.70	0.04	84	4425	193	13334
P3A	THYROID HORMONES	1.29	1.12	1.48	0.00	307	4202	730	12797
A1A	DIGITALIS GLYCOSIDES	1.29	0.96	1.72	0.09	67	4442	157	13370
J8A	ANOREXIC AGENTS	1.29	0.33	4.97	0.72	3	4506	7	13520
H3F	ANTIMIGRAINE PREPARATIONS	1.26	0.92	1.73	0.14	57	4452	136	13391
H3E	ANALGESIC/ANTIPYRETICS,NON-SALICYLATE	1.26	0.82	1.95	0.30	29	4480	69	13458
A9A	CALCIUM CHANNEL BLOCKING AGENTS	1.25	1.10	1.41	0.00	401	4108	985	12542
H2M	ANTI-MANIA DRUGS	1.24	0.63	2.43	0.53	12	4497	29	13498
A4D	HYPOTENSIVES, ACE INHIBITORS	1.23	1.11	1.37	0.00	534	3975	1330	12197
D4B	ANTACIDS	1.20	0.23	6.23	0.83	2	4507	5	13522
J2D	ANTICHOLINERGICS/ANTISPASMODICS	1.20	0.61	2.34	0.59	12	4497	30	13497
R1H	POTASSIUM SPARING DIURETICS	1.20	0.69	2.07	0.51	18	4491	45	13482
H7D	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)	1.19	0.87	1.62	0.27	57	4452	144	13383
J7B	ALPHA-ADRENERGIC BLOCKING AGENTS	1.19	0.95	1.49	0.13	112	4397	284	13243
J9B	ANTISPASMODIC AGENTS	1.15	0.41	3.24	0.79	5	4504	13	13514
A4A	HYPOTENSIVES,VASODILATORS	1.13	0.44	2.88	0.81	6	4503	16	13511
Q6W	OPHTHALMIC ANTIBIOTICS	1.05	0.68	1.63	0.82	27	4482	77	13450
H2G	ANTI-PSYCHOTICS,PHENOTHIAZINES	1.05	0.44	2.48	0.91	7	4502	20	13507
M4E	LIPOTROPICS	1.00	0.91	1.11	0.94	588	3921	1758	11769
J7A	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	1.00	0.56	1.79	1.00	15	4494	45	13482
Q6I	EYE ANTIBIOTIC-CORTICOID COMBINATIONS	1.00	0.58	1.73	1.00	17	4492	51	13476
A4F	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	0.99	0.80	1.22	0.94	118	4391	357	13170

APPENDIX VIII. Table 1A Odds Ratios for Driver Impairing Drugs

Z4B	LEUKOTRIENE RECEPTOR ANTAGONISTS	0.99	0.64	1.52	0.96	28	4481	85	13442
R1F	THIAZIDE AND RELATED DIURETICS	0.97	0.79	1.18	0.74	126	4383	391	13136
J1B	CHOLINESTERASE INHIBITORS	0.96	0.46	2.04	0.92	9	4500	28	13499
H6B	ANTIPARKINSONISM DRUGS,ANTICHOLINERGIC	0.94	0.34	2.56	0.90	5	4504	16	13511
D4E	ANTI-ULCER PREPARATIONS	0.91	0.39	2.13	0.83	7	4502	23	13504
A4K	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	0.91	0.55	1.50	0.71	20	4489	66	13461
J7C	BETA-ADRENERGIC BLOCKING AGENTS	0.90	0.79	1.02	0.09	349	4160	1154	12373
Q6G	MIOTICS/OTHER INTRAOC. PRESSURE REDUCERS	0.83	0.62	1.12	0.22	56	4453	202	13325
J2B	ANTICHOLINERGICS,QUATERNARY AMMONIUM	0.80	0.27	2.41	0.69	4	4505	15	13512
D4F	ANTI-ULCER-H.PYLORI AGENTS	0.75	0.08	6.71	0.80	1	4508	4	13523
H7O	ANTIPSYCHOTICS,DOPAMINE ANTAGONISTS,BUTYROPHENONES	0.75	0.16	3.53	0.72	2	4507	8	13519
A4Y	HYPOTENSIVES,MISCELLANEOUS	0.74	0.49	1.12	0.15	29	4480	117	13410
Q6P	EYE ANTIINFLAMMATORY AGENTS	0.74	0.41	1.32	0.31	14	4495	57	13470
Q6J	MYDRIATICS	0.60	0.07	5.14	0.64	1	4508	5	13522
R1S	URINARY PH MODIFIERS	0.60	0.07	5.14	0.64	1	4508	5	13522
R1E	CARBONIC ANHYDRASE INHIBITORS	0.38	0.05	3.00	0.36	1	4508	8	13519

APPENDIX VIII. Table 1B Significant Odds Ratios for Driver Impairing Drugs

HIC3	DRUG_NAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D
H2D	BARBITURATES	7.50	2.35	23.91	0.00	10	4499	4	13523
Z2F	MAST CELL STABILIZERS	3.00	1.05	8.55	0.04	7	4502	7	13520
H6C	ANTITUSSIVES,NON-NARCOTIC	2.23	1.30	3.82	0.00	23	4486	31	13496
H3A	ANALGESICS,NARCOTICS	2.22	1.98	2.49	0.00	557	3952	806	12721
H7T	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	2.20	1.37	3.52	0.00	30	4479	41	13486
H6H	SKELETAL MUSCLE RELAXANTS	2.09	1.71	2.55	0.00	167	4342	247	13280
H2F	ANTI-ANXIETY DRUGS	2.00	1.72	2.31	0.00	315	4194	490	13037
H4B	ANTICONVULSANTS	1.97	1.64	2.38	0.00	189	4320	295	13232
H7E	SEROTONIN-2 ANTAGONIST/REUPTAKE INHIBITORS (SARIS)	1.90	1.49	2.44	0.00	105	4404	167	13360
J2A	BELLADONNA ALKALOIDS	1.85	1.08	3.19	0.03	21	4488	34	13493
C4G	INSULINS	1.80	1.45	2.22	0.00	140	4369	237	13290
A4B	HYPOTENSIVES,SYMPATHOLYTIC	1.79	1.17	2.74	0.01	34	4475	57	13470
H7C	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	1.78	1.19	2.66	0.00	38	4471	64	13463
M9P	PLATELET AGGREGATION INHIBITORS	1.69	1.17	2.43	0.01	46	4463	83	13444
H6J	ANTIEMETIC/ANTIVERTIGO AGENTS	1.63	1.17	2.28	0.00	54	4455	100	13427
H6A	ANTIPARKINSONISM DRUGS,OTHER	1.62	0.99	2.66	0.05	25	4484	47	13480
B3K	COUGH AND/OR COLD PREPARATIONS	1.62	1.19	2.20	0.00	63	4446	118	13409
H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	1.59	1.40	1.81	0.00	380	4129	741	12786
B3J	EXPECTORANTS	1.58	1.28	1.94	0.00	142	4367	275	13252
S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	1.58	1.41	1.76	0.00	534	3975	1066	12461
Z2A	ANTIHISTAMINES	1.55	1.36	1.78	0.00	349	4160	693	12834
D4K	GASTRIC ACID SECRETION REDUCERS	1.55	1.38	1.73	0.00	491	4018	995	12532
C4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	1.50	1.28	1.76	0.00	238	4271	486	13041
C4L	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	1.49	1.23	1.80	0.00	169	4340	345	13182
H2E	SEDATIVE-HYPNOTICS,NON-BARBITURATE	1.48	1.16	1.88	0.00	100	4409	206	13321
H2U	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	1.41	1.15	1.73	0.00	139	4370	300	13227
J5D	BETA-ADRENERGIC AGENTS	1.35	1.12	1.64	0.00	157	4352	352	13175
C4N	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	1.35	1.01	1.80	0.04	68	4441	152	13375
R1M	LOOP DIURETICS	1.35	1.10	1.65	0.00	136	4373	306	13221
R1L	POTASSIUM SPARING DIURETICS IN COMBINATION	1.33	1.10	1.61	0.00	161	4348	366	13161
A7B	VASODILATORS,CORONARY	1.31	1.04	1.66	0.02	103	4406	237	13290
M9L	ORAL ANTICOAGULANTS,COUMARIN TYPE	1.31	1.01	1.70	0.04	84	4425	193	13334
P3A	THYROID HORMONES	1.29	1.12	1.48	0.00	307	4202	730	12797
A9A	CALCIUM CHANNEL BLOCKING AGENTS	1.25	1.10	1.41	0.00	401	4108	985	12542
A4D	HYPOTENSIVES, ACE INHIBITORS	1.23	1.11	1.37	0.00	534	3975	1330	12197

APPENDIX VIII. Table 2A Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D
424	HEAD TRAUMA	36.00	11.09	116.90	0.00	36	4473	3	13524
369	LACTIC ACIDOSIS	15.00	1.75	128.40	0.01	5	4504	1	13526
1894	SUICIDAL BEHAVIOR	12.00	1.34	107.37	0.03	4	4505	1	13526
1702	DELIRIUM	10.50	2.18	50.55	0.00	7	4502	2	13525
286	CARDIAC ARREST	9.00	0.94	86.53	0.06	3	4506	1	13526
336	HEMOLYSIS	9.00	0.94	86.53	0.06	3	4506	1	13526
1563	PERSONALITY DISORDERS	9.00	1.82	44.59	0.01	6	4503	2	13525
3178	DROWSINESS	9.00	2.90	27.91	0.00	12	4497	4	13523
265	HEMOLYTIC ANEMIA, HERED	6.00	0.54	66.17	0.14	2	4507	1	13526
330	HALLUCINATIONS	6.00	0.54	66.17	0.14	2	4507	1	13526
340	HEPATIC FAILURE	6.00	0.54	66.17	0.14	2	4507	1	13526
393	OSTEOMALACIA	6.00	0.54	66.17	0.14	2	4507	1	13526
1363	INTRA-ABDOMINAL HEMORRHAGE	6.00	1.10	32.76	0.04	4	4505	2	13525
262	ALCOHOLISM	5.44	2.95	10.01	0.00	29	4480	16	13511
945	KETOACIDOSIS	5.40	1.81	16.11	0.00	9	4500	5	13522
1564	STRESS DISORDERS	5.40	1.81	16.11	0.00	9	4500	5	13522
3084	VISUAL DISTURBANCES	4.71	1.83	12.16	0.00	11	4498	7	13520
361	ANGIONEUROTIC EDEMA	4.50	0.75	26.93	0.10	3	4506	2	13525
2469	OCULAR HERPES SIMPLEX	4.50	0.75	26.93	0.10	3	4506	2	13525
314	DEPRESSION	3.99	3.19	4.99	0.00	185	4324	145	13382
2662	PSYCHOSES, DRUG INDUCED	3.72	2.99	4.63	0.00	184	4325	155	13372
1710	PLEURAL EFFUSION-D	3.69	1.78	7.68	0.00	16	4493	13	13514
397	EXTRAPYRAMIDAL REACTIONS	3.60	1.56	8.33	0.00	12	4497	10	13517
408	PULMONARY EMBOLUS	3.50	1.18	10.41	0.02	7	4502	6	13521
2002	SURGERY	3.46	1.65	7.27	0.00	15	4494	13	13514
2658	ANKYLOSING SPONDYLITIS	3.33	2.23	4.96	0.00	51	4458	46	13481
1561	PSYCHOSES	3.27	1.44	7.42	0.00	12	4497	11	13516
1963	HEPATIC CIRRHOSIS	3.25	1.48	7.12	0.00	13	4496	12	13515
3177	LACK OF COORDINATION	3.19	1.61	6.31	0.00	17	4492	16	13511
2820	INSOMNIA	3.16	1.69	5.92	0.00	20	4489	19	13508
325	ALVEOLITIS,FIBROSING	3.00	0.19	47.96	0.44	1	4508	1	13526
390	OBSTRUCTIVE UROPATHY	3.00	0.19	47.96	0.44	1	4508	1	13526
1421	RELATED TO FETAL OUTCOMES	3.00	0.19	47.96	0.44	1	4508	1	13526
1567	DRUG INDUCED PSYCH DISORDERS	3.00	0.19	47.96	0.44	1	4508	1	13526
1986	ALCOHOLIC LIVER DISEASE	3.00	0.42	21.30	0.27	2	4507	2	13525
2190	APPENDICITIS	3.00	0.42	21.30	0.27	2	4507	2	13525

APPENDIX VIII. Table 2A Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D
421	MALIGNANT NEOPLASM, CNS	3.00	0.75	12.00	0.12	4	4505	4	13523
1081	PROTEINURIA	3.00	0.75	12.00	0.12	4	4505	4	13523
1203	BRAIN HEMORRHAGE	3.00	0.97	9.30	0.06	6	4503	6	13521
351	HYPOTENSION	3.00	1.13	7.99	0.03	8	4501	8	13519
949	SYNCOPE	3.00	1.76	5.11	0.00	27	4482	27	13500
1562	ANXIETY DISORDERS	2.87	2.03	4.04	0.00	64	4445	67	13460
315	BIPOLAR DISORDER	2.81	1.39	5.69	0.00	15	4494	16	13511
360	ANAPHYLACTIC SHOCK	2.78	1.77	4.34	0.00	37	4472	40	13487
339	HEPATIC DYSFUNCTION	2.73	1.75	4.26	0.00	38	4471	43	13484
348	HYPERTHYROIDISM	2.73	1.16	6.42	0.02	10	4499	11	13516
306	CIRRHOSIS	2.63	0.95	7.24	0.06	7	4502	8	13519
407	PULMONARY EDEMA	2.63	1.28	5.38	0.01	14	4495	16	13511
2187	GI OBSTRUCTION	2.57	0.86	7.65	0.09	6	4503	7	13520
1409	CNS EXCITATION	2.55	1.94	3.35	0.00	97	4412	116	13411
3545	BLURRED VSION	2.50	0.76	8.19	0.13	5	4504	6	13521
311	DEEP VEIN THROMBOSIS	2.42	1.43	4.10	0.00	25	4484	31	13496
3203	BACK PAIN	2.42	2.03	2.88	0.00	234	4275	297	13230
1300	RADIATION THERAPY ICD	2.40	0.64	8.94	0.19	4	4505	5	13522
1406	HEPATOMEGALY WITH STEATOSIS	2.40	0.64	8.94	0.19	4	4505	5	13522
2642	ACUTE OTITIS MEDIA	2.40	1.24	4.63	0.01	16	4493	20	13507
2541	URINARY RETENTION	2.36	0.97	5.78	0.06	9	4500	12	13515
2624	FRACTURES AND INJURIES	2.34	2.04	2.69	0.00	382	4127	522	13005
1972	SYMPTOMS OF QUINIDINE-TOXICITY	2.31	1.58	3.37	0.00	48	4461	63	13464
1205	EPISTAXIS	2.25	0.78	6.48	0.13	6	4503	8	13519
2461	PANIC DISORDERS	2.25	0.78	6.48	0.13	6	4503	8	13519
2062	GERD	2.23	1.71	2.91	0.00	96	4413	130	13397
304	CHOLELITHIASIS	2.21	1.11	4.41	0.02	14	4495	19	13508
327	GALLSTONES	2.21	1.11	4.41	0.02	14	4495	19	13508
1709	LUPUS	2.18	0.88	5.42	0.09	8	4501	11	13516
269	ANGINA, UNSTABLE	2.18	1.15	4.15	0.02	16	4493	22	13505
317	DYSKINESIAS	2.17	1.06	4.42	0.03	13	4496	18	13509
283	BRONCHOPNEUMONIA	2.17	1.44	3.27	0.00	39	4470	54	13473
1703	COND- REYE SYNDROME RELATED	2.15	1.50	3.09	0.00	51	4458	71	13456
3205	MUSCLE SPASMS	2.15	1.33	3.50	0.00	28	4481	39	13488
380	MYELODYSPLASTIC SYNDROME	2.14	0.68	6.75	0.19	5	4504	7	13520
2203	EDEMA	2.13	1.40	3.25	0.00	37	4472	52	13475

APPENDIX VIII. Table 2A Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D
2644	CHRONIC OTITIS MEDIA	2.13	1.30	3.47	0.00	28	4481	40	13487
102	CONGESTIVE HEART FAILURE	2.10	1.53	2.89	0.00	65	4444	94	13433
274	ASTHMA	2.08	1.55	2.80	0.00	75	4434	109	13418
320	EPILEPSY	2.08	0.89	4.86	0.09	9	4500	13	13514
422	DIABETES MELLITUS I AND II	2.07	1.81	2.37	0.00	372	4137	568	12959
1942	TEST	2.07	1.81	2.37	0.00	372	4137	568	12959
2581	SYMPTOMS OF ERGOTISM	2.07	1.49	2.88	0.00	60	4449	87	13440
2153	ABDOMINAL PAIN	2.04	1.57	2.65	0.00	95	4414	142	13385
2443	SYMPTOMS OF GI IRRITATION	2.01	1.63	2.49	0.00	144	4365	218	13309
310	CRYSTALLURIA	2.00	0.33	11.97	0.45	2	4507	3	13524
1994	COAGULATION DEFECTS	2.00	0.90	4.45	0.09	10	4499	15	13512
1880	ANEURYSM	1.97	1.20	3.25	0.01	26	4483	40	13487
1282	DIARRHEA, GASTROENTERITIS	1.97	1.62	2.39	0.00	175	4334	273	13254
309	COPD	1.89	1.47	2.43	0.00	101	4408	163	13364
263	HEPATITIS, ALLER CHOLESTATIC	1.88	0.61	5.73	0.27	5	4504	8	13519
398	HEPATITIS,PELIOSIS	1.88	0.61	5.73	0.27	5	4504	8	13519
200	BLEEDING RISK DIAGNOSIS	1.86	1.03	3.35	0.04	18	4491	29	13498
373	DERMATITIS,MACULOPAPULAR	1.86	0.93	3.71	0.08	13	4496	21	13506
2971	SLEEP APNEA	1.83	1.26	2.67	0.00	44	4465	72	13455
1381	ISCHEMIC HEART DISEASE	1.83	1.48	2.27	0.00	142	4367	240	13287
101	MILD FUNGAL INFECTIONS	1.83	1.31	2.54	0.00	57	4452	94	13433
919	SYMPTOMS OF DIG-TOXICITY	1.82	1.46	2.28	0.00	126	4383	211	13316
1084	DIARRHEA	1.75	1.13	2.70	0.01	32	4477	55	13472
378	MYOCARDIAL ISCHEMIA	1.74	1.07	2.86	0.03	25	4484	43	13484
1683	HYPERSENSITIVITY REACTIONS	1.71	1.47	2.00	0.00	264	4245	472	13055
400	PERIPHERAL NEUROPATHY	1.70	1.05	2.74	0.03	26	4483	46	13481
287	CARDIOVASCULAR DISEASE	1.69	1.52	1.88	0.00	620	3889	1174	12353
561	RENAL FAILURE-GENERAL	1.69	1.02	2.80	0.04	24	4485	43	13484
2648	STROKE	1.69	1.07	2.67	0.03	29	4480	52	13475
1700	VIRAL ILLNESSES	1.69	0.97	2.93	0.06	20	4489	36	13491
2673	POLYMYALGIA RHEUMATICA	1.67	0.56	4.97	0.36	5	4504	9	13518
542	GI HEMORRHAGE	1.66	1.28	2.16	0.00	90	4419	163	13364
347	HYPERTENSION	1.65	1.48	1.84	0.00	557	3952	1075	12452
2185	COLOSTOMY/ ILEOSTOMY	1.64	0.61	4.42	0.33	6	4503	11	13516
2603	ARTHROPATHIES, OTHER	1.64	0.61	4.42	0.33	6	4503	11	13516
2652	OSTEOSARCOMA	1.64	0.61	4.42	0.33	6	4503	11	13516

APPENDIX VIII. Table 2A Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D
1102	VENTRICULAR ARRHYTHMIA	1.64	0.81	3.31	0.17	12	4497	22	13505
1343	LACTIC ACIDOSIS SYMPTOMS	1.63	1.26	2.11	0.00	88	4421	162	13365
356	INTERSTITIAL PNEUMONITIS	1.62	0.64	4.05	0.31	7	4502	13	13514
365	INTERSTITIAL PNEUMONITIS	1.62	0.64	4.05	0.31	7	4502	13	13514
370	LEUKOPENIA	1.62	0.64	4.05	0.31	7	4502	13	13514
861	RENAL DISEASE	1.61	0.86	3.01	0.14	15	4494	28	13499
3168	DIZZINESS	1.60	1.09	2.35	0.02	41	4468	78	13449
307	CNS DEMYELINATING DIS	1.57	0.76	3.26	0.22	11	4498	21	13506
2515	RESPIRATORY INFECTIONS	1.56	1.35	1.82	0.00	270	4239	527	13000
1340	COUGH	1.56	1.15	2.11	0.00	64	4445	124	13403
2602	ARTHRITIS, OSTEOARTHRITIS	1.54	1.12	2.11	0.01	59	4450	117	13410
1999	BLEEDING	1.51	1.11	2.05	0.01	62	4447	123	13404
301	CEREBRAL PALSY	1.50	0.14	16.54	0.74	1	4508	2	13525
363	RHABDOMYOLYSIS	1.50	0.14	16.54	0.74	1	4508	2	13525
1159	CARDIAC VALVE FIBROSIS	1.50	0.14	16.54	0.74	1	4508	2	13525
402	PRERENAL AZOTEMIA	1.50	0.27	8.19	0.64	2	4507	4	13523
1204	HEMOPTYSIS	1.50	0.27	8.19	0.64	2	4507	4	13523
353	ILEUS, PARALYTIC	1.50	0.38	6.00	0.57	3	4506	6	13521
1996	NASAL POLYPS	1.50	0.38	6.00	0.57	3	4506	6	13521
2654	CROHN'S DISEASE	1.50	0.56	4.00	0.42	6	4503	12	13515
406	PULMONARY FIBROSIS	1.50	0.61	3.72	0.38	7	4502	14	13513
1321	PULMONARY DISORDERS	1.50	0.61	3.72	0.38	7	4502	14	13513
1671	NUTRITIONAL/ NEURO DEFICIENCY	1.50	0.82	2.73	0.19	16	4493	32	13495
1202	HEMATEMESIS	1.50	0.91	2.47	0.11	23	4486	46	13481
273	ARRHYTHMIAS	1.50	1.16	1.94	0.00	89	4420	180	13347
1445	RENAL FAILURE W/O HTN	1.47	0.82	2.64	0.20	17	4492	35	13492
333	HEMATOLOGIC DISORDERS	1.44	1.13	1.85	0.00	95	4414	199	13328
266	ANEMIA,DEF.FE,OTH	1.43	0.95	2.15	0.08	35	4474	74	13453
268	ANGINA, PECTORIS	1.42	0.96	2.09	0.08	38	4471	81	13446
313	DEMENTIA	1.41	0.61	3.28	0.42	9	4500	20	13507
1407	OBESITY	1.40	0.93	2.10	0.11	34	4475	73	13454
1082	HEMATURIA	1.39	0.91	2.12	0.12	32	4477	69	13458
331	HEART BLOCK	1.38	0.70	2.74	0.35	12	4497	26	13501
868	THYROID DISEASE	1.37	1.09	1.73	0.01	108	4401	237	13290
341	HEPATITIS	1.36	0.65	2.88	0.42	10	4499	22	13505
275	ATRIAL FIBRILLATION	1.36	0.96	1.93	0.08	47	4462	104	13423

APPENDIX VIII. Table 2A Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D
2000	COLON POLYPS	1.36	0.87	2.13	0.18	28	4481	62	13465
312	DEHYDRATION	1.35	0.61	2.96	0.45	9	4500	20	13507
1460	VOLUME DEPLETION	1.35	0.61	2.96	0.45	9	4500	20	13507
2015	OSTEOPOROSIS	1.33	0.92	1.94	0.13	41	4468	93	13434
367	KIDNEY STONES	1.32	0.72	2.43	0.37	15	4494	34	13493
329	GOUT	1.30	0.62	2.74	0.48	10	4499	23	13504
352	HYPOTHYROIDISM	1.30	1.02	1.66	0.04	93	4416	215	13312
272	APLASTIC ANEMIA	1.29	0.33	4.97	0.72	3	4506	7	13520
1997	TELANGLECTASIS	1.29	0.33	4.97	0.72	3	4506	7	13520
2657	ARTHRITIS, PSORIATIC	1.29	0.33	4.97	0.72	3	4506	7	13520
2663	GASTRITIS	1.27	0.81	1.98	0.30	27	4482	64	13463
381	PANCYTOPENIA	1.23	0.87	1.74	0.23	46	4463	112	13415
281	BRADYCARDIA	1.20	0.38	3.83	0.76	4	4505	10	13517
328	GI ULCER	1.20	0.73	1.97	0.47	22	4487	55	13472
2513	NEUROPATHIES	1.17	0.49	2.79	0.73	7	4502	18	13509
2563	HYPERLIPIDEMIA-2	1.13	0.99	1.29	0.07	332	4177	890	12637
270	ANOREXIA	1.13	0.30	4.24	0.86	3	4506	8	13519
1083	PRURITUS	1.13	0.30	4.24	0.86	3	4506	8	13519
371	LIPID ABNORMALITIES	1.12	0.99	1.28	0.08	343	4166	925	12602
267	ANEMIAS, OTHER	1.12	0.78	1.61	0.54	41	4468	110	13417
261	AGRANULOCYTOSIS	1.09	0.35	3.43	0.88	4	4505	11	13516
279	BOWEL OBSTRUCTION	1.09	0.35	3.43	0.88	4	4505	11	13516
388	NEUTROPENIA	1.09	0.35	3.43	0.88	4	4505	11	13516
2066	HYPERSECRETORY STATES	1.09	0.35	3.43	0.88	4	4505	11	13516
1101	SUBARACHNOID HEMORRHAGE	1.00	0.10	9.61	1.00	1	4508	3	13524
2667	POLYMYOSITIS	1.00	0.10	9.61	1.00	1	4508	3	13524
385	GLAUCOMA,NARROW ANGLE	1.00	0.20	4.95	1.00	2	4507	6	13521
395	PARKINSONISM,PRIMARY	1.00	0.32	3.10	1.00	4	4505	12	13515
2601	ARTHRITIS, RHEUMATOID	1.00	0.63	1.59	1.00	24	4485	72	13455
860	MYELOSUPPRESSION	0.94	0.34	2.56	0.90	5	4504	16	13511
2069	STEATORRHEA	0.92	0.48	1.76	0.81	12	4497	39	13488
323	COLITIS	0.90	0.25	3.27	0.87	3	4506	10	13517
1756	MENOPAUSE	0.89	0.52	1.54	0.69	17	4492	57	13470
338	HEMORRHAGIC DISORDERS	0.88	0.33	2.39	0.81	5	4504	17	13510
374	MALIGNANT MELANOMA	0.86	0.18	4.13	0.85	2	4507	7	13520
376	ANEMIA,MEGALOBLASTIC	0.86	0.18	4.13	0.85	2	4507	7	13520

APPENDIX VIII. Table 2A Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D
2083	GLAUCOMA	0.84	0.53	1.32	0.44	24	4485	86	13441
276	AV BLOCK II TO III	0.83	0.31	2.24	0.72	5	4504	18	13509
282	BREAST CANCER, FEMALE	0.83	0.51	1.34	0.45	21	4488	76	13451
2070	ALBUMINURIA/ NEPHROPATHY	0.83	0.38	1.81	0.64	8	4501	29	13498
2511	CANCER	0.83	0.65	1.04	0.11	91	4418	330	13197
2202	UREMIA	0.82	0.23	2.93	0.76	3	4506	11	13516
409	PULMONARY EMBOLUS, PREVIOUS	0.75	0.08	6.71	0.80	1	4508	4	13523
2150	HYPERCALCEMIA	0.75	0.08	6.71	0.80	1	4508	4	13523
103	SEVERE FUNGAL INFECTIONS	0.75	0.16	3.53	0.72	2	4507	8	13519
342	HIV	0.75	0.16	3.53	0.72	2	4507	8	13519
867	THROMBOPHLEBITIS	0.75	0.21	2.66	0.66	3	4506	12	13515
2084	PROSTATIC HYPERTROPHY	0.75	0.33	1.72	0.50	7	4502	28	13499
2013	COLON, IRRITABLE	0.69	0.34	1.43	0.32	9	4500	39	13488
2528	BENIGN PROSTATIC HYPERTROPHY	0.67	0.29	1.54	0.34	7	4502	31	13496
405	PSORIASIS	0.63	0.31	1.29	0.20	9	4500	43	13484
278	BLOOD DYSCRASIAS	0.60	0.07	5.14	0.64	1	4508	5	13522
394	PANCREATITIS	0.60	0.07	5.14	0.64	1	4508	5	13522
319	ENCEPHALOPATHIC SYNDROME	0.43	0.05	3.48	0.43	1	4508	7	13520
2646	ALZHEIMER	0.43	0.05	3.48	0.43	1	4508	7	13520
865	THROMBOCYTOPENIA, SECONDARY	0.38	0.05	3.00	0.36	1	4508	8	13519
392	OPTIC NEURITIS	0.33	0.04	2.63	0.30	1	4508	9	13518
866	THROMBOCYTOPENIA	0.30	0.04	2.34	0.25	1	4508	10	13517
372	LYMPHADENOPATHY	0.14	0.02	1.01	0.05	1	4508	22	13505

APPENDIX VIII. Table 2B Significant Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D	
424	HEAD TRAUMA	36.00	11.09	116.90	0.000	36	4473	3	13524	
369	LACTIC ACIDOSIS	15.00	1.75	128.40	0.013	5	4504	1	13526	ACIDOSIS
1894	SUICIDAL BEHAVIOR/NEUROTIC DISORDER UNSPEC.	12.00	1.34	107.37	0.026	4	4505	1	13526	neurotic disorder unspec
1702	DELIRIUM	10.50	2.18	50.55	0.003	7	4502	2	13525	DELIRIUM TREMENS, DELIRIUM ACUTE, SUBACUTE
3178	DROWSINESS	9.00	2.90	27.91	0.000	12	4497	4	13523	CONSCIOUSNESS ALTER OTH
1563	PERSONALITY DISORDERS	9.00	1.82	44.59	0.007	6	4503	2	13525	neurotic disorder, PERSONALITY DISORDERS
1363	INTRA-ABDOMINAL HEMORRHAGE	6.00	1.10	32.76	0.039	4	4505	2	13525	
262	ALCOHOLISM	5.44	2.95	10.01	0.000	29	4480	16	13511	
945	KETOACIDOSIS	5.40	1.81	16.11	0.002	9	4500	5	13522	DIABETIC KETOACIDOSIS
1564	STRESS DISORDERS	5.40	1.81	16.11	0.002	9	4500	5	13522	STRESS DISORDERS
3084	VISUAL DISTURBANCES	4.71	1.83	12.16	0.001	11	4498	7	13520	VISUAL DISTURBANCES NOS
314	DEPRESSION	3.99	3.19	4.99	0.000	185	4324	145	13382	
2662	PSYCHOSES, DRUG INDUCED	3.72	2.99	4.63	0.000	184	4325	155	13372	drug induced sx, schizophrenia, mania, depression, confusion, anxiety, paranoia
1710	PLEURAL EFFUSION-D	3.69	1.78	7.68	0.000	16	4493	13	13514	
397	EXTRAPYRAMIDAL REACTIONS	3.60	1.56	8.33	0.003	12	4497	10	13517	TREMOR, EXTRAPYRAMIDAL SX
408	PULMONARY EMBOLUS	3.50	1.18	10.41	0.024	7	4502	6	13521	
2002	SURGERY	3.46	1.65	7.27	0.001	15	4494	13	13514	
2658	ANKYLOSING SPONDYLITIS	3.33	2.23	4.96	0.000	51	4458	46	13481	
1561	PSYCHOSES	3.27	1.44	7.42	0.005	12	4497	11	13516	
1963	HEPATIC CIRRHOSIS	3.25	1.48	7.12	0.003	13	4496	12	13515	
3177	LACK OF COORDINATION	3.19	1.61	6.31	0.001	17	4492	16	13511	
2820	INSOMNIA	3.16	1.69	5.92	0.000	20	4489	19	13508	
949	SYNCOPE	3.00	1.76	5.11	0.000	27	4482	27	13500	
351	HYPOTENSION	3.00	1.13	7.99	0.028	8	4501	8	13519	

APPENDIX VIII. Table 2B Significant Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D	
1562	ANXIETY DISORDERS	2.87	2.03	4.04	0.000	64	4445	67	13460	anxiety, panic, phobias
315	BIPOLAR DISORDER	2.81	1.39	5.69	0.004	15	4494	16	13511	
360	ANAPHYLACTIC SHOCK	2.78	1.77	4.34	0.000	37	4472	40	13487	urticaria, wheezing, anaphylactic shock, adverse eff of med, allergy unspec
339	HEPATIC DYSFUNCTION	2.73	1.75	4.26	0.000	38	4471	43	13484	
348	HYPERTHYROIDISM	2.73	1.16	6.42	0.022	10	4499	11	13516	
407	PULMONARY EDEMA	2.63	1.28	5.38	0.008	14	4495	16	13511	
1409	CNS EXCITATION	2.55	1.94	3.35	0.000	97	4412	116	13411	nervousness, headache, confusion
311	DEEP VEIN THROMBOSIS	2.42	1.43	4.10	0.001	25	4484	31	13496	
3203	BACK PAIN	2.42	2.03	2.88	0.000	234	4275	297	13230	sciatica, lumbago, backache
2642	ACUTE OTITIS MEDIA	2.40	1.24	4.63	0.009	16	4493	20	13507	
2624	FRACTURES AND INJURIES	2.34	2.04	2.69	0.000	382	4127	522	13005	
1972	SYMPTOMS OF QUINIDINE-TOXICITY	2.31	1.58	3.37	0.000	48	4461	63	13464	hypotension, bradycardia, v tach, av block, acute lung edema
2062	GERD	2.23	1.71	2.91	0.000	96	4413	130	13397	reflux esophagitis
304	CHOLELITHIASIS	2.21	1.11	4.41	0.024	14	4495	19	13508	
327	GALLSTONES	2.21	1.11	4.41	0.024	14	4495	19	13508	
269	ANGINA, UNSTABLE	2.18	1.15	4.15	0.018	16	4493	22	13505	
283	BRONCHOPNEUMONIA	2.17	1.44	3.27	0.000	39	4470	54	13473	pneumonias
317	DYSKINESIAS	2.17	1.06	4.42	0.034	13	4496	18	13509	
1703	COND- REYE SYNDROME RELATED	2.15	1.50	3.09	0.000	51	4458	71	13456	
3205	MUSCLE SPASMS	2.15	1.33	3.50	0.002	28	4481	39	13488	spasm of muscle
2203	EDEMA	2.13	1.40	3.25	0.000	37	4472	52	13475	
2644	CHRONIC OTITIS MEDIA	2.13	1.30	3.47	0.002	28	4481	40	13487	
102	CONGESTIVE HEART FAILURE	2.10	1.53	2.89	0.000	65	4444	94	13433	
274	ASTHMA	2.08	1.55	2.80	0.000	75	4434	109	13418	
422	DIABETES MELLITUS I AND II	2.07	1.81	2.37	0.000	372	4137	568	12959	
1942	TEST	2.07	1.81	2.37	0.000	372	4137	568	12959	
2581	SYMPTOMS OF ERGOTISM	2.07	1.49	2.88	0.000	60	4449	87	13440	
2153	ABDOMINAL PAIN	2.04	1.57	2.65	0.000	95	4414	142	13385	abdominal pain unspec
2443	SYMPTOMS OF GI IRRITATION	2.01	1.63	2.49	0.000	144	4365	218	13309	esophagitis, gastritis

APPENDIX VIII. Table 2B Significant Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D	
1880	ANEURYSM	1.97	1.20	3.25	0.008	26	4483	40	13487	cva, subarachnoid hemorrhage
1282	DIARRHEA, GASTROENTERITIS	1.97	1.62	2.39	0.000	175	4334	273	13254	abdominal pain, enteritis, ulcerative colitis
309	COPD	1.89	1.47	2.43	0.000	101	4408	163	13364	
200	BLEEDING RISK DIAGNOSIS	1.86	1.03	3.35	0.038	18	4491	29	13498	
2971	SLEEP APNEA	1.83	1.26	2.67	0.002	44	4465	72	13455	
1381	ISCHEMIC HEART DISEASE	1.83	1.48	2.27	0.000	142	4367	240	13287	coronary atherosclerosis
101	MILD FUNGAL INFECTIONS	1.83	1.31	2.54	0.000	57	4452	94	13433	
919	SYMPTOMS OF DIG-TOXICITY	1.82	1.46	2.28	0.000	126	4383	211	13316	nausea, vomiting, visual disturbances, arrhythmias, hypokalemia, hypomagnesemia
1084	DIARRHEA	1.75	1.13	2.70	0.012	32	4477	55	13472	
378	MYOCARDIAL ISCHEMIA	1.74	1.07	2.86	0.027	25	4484	43	13484	
1683	HYPERSENSITIVITY REACTIONS	1.71	1.47	2.00	0.000	264	4245	472	13055	allergy, wheezing, shock, hypotension
400	PERIPHERAL NEUROPATHY	1.70	1.05	2.74	0.031	26	4483	46	13481	
287	CARDIOVASCULAR DISEASE	1.69	1.52	1.88	0.000	620	3889	1174	12353	htn, chf, cardiomyopathy
561	RENAL FAILURE-GENERAL	1.69	1.02	2.80	0.041	24	4485	43	13484	diabetic & hypertensive renal dis, acute renal failure
2648	STROKE	1.69	1.07	2.67	0.025	29	4480	52	13475	cva, cerebral thrombosis
542	GI HEMORRHAGE	1.66	1.28	2.16	0.000	90	4419	163	13364	gi ulcer w/hemorrhage
347	HYPERTENSION	1.65	1.48	1.84	0.000	557	3952	1075	12452	
1343	LACTIC ACIDOSIS SYMPTOMS	1.63	1.26	2.11	0.000	88	4421	162	13365	
3168	DIZZINESS	1.60	1.09	2.35	0.017	41	4468	78	13449	
2515	RESPIRATORY INFECTIONS	1.56	1.35	1.82	0.000	270	4239	527	13000	sinusitis, bronchitis
1340	COUGH	1.56	1.15	2.11	0.004	64	4445	124	13403	
2602	ARTHRITIS, OSTEOARTHRITIS	1.54	1.12	2.11	0.008	59	4450	117	13410	
1999	BLEEDING	1.51	1.11	2.05	0.008	62	4447	123	13404	
273	ARRHYTHMIAS	1.50	1.16	1.94	0.002	89	4420	180	13347	
333	HEMATOLOGIC DISORDERS	1.44	1.13	1.85	0.004	95	4414	199	13328	anemias, sickle cell, thrombocytopenia, blood disease unspec.
868	THYROID DISEASE	1.37	1.09	1.73	0.007	108	4401	237	13290	

APPENDIX VIII. Table 2B Significant Odds Ratios for Driver Impairing Diseases

ICDGROUP	ICDGROUPNAME	OR	L_OR	U_OR	P-VALUE	A	B	C	D	
352	HYPOTHYROIDISM	1.30	1.02	1.66	0.035	93	4416	215	13312	
372	LYMPHADENOPATHY	0.14	0.02	1.01	0.051	1	4508	22	13505	

APPENDIX VIII. Table 3A Odds Ratios for Drug Interactions

DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
H4B W3B	ANTICONVULSANTS	ANTIFUNGAL AGENTS	21.00	2.58	170.69	0.00	7	4502	1	13526
H7C W1Q	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	QUINOLONES	21.00	2.58	170.69	0.00	7	4502	1	13526
H6H H7T	SKELETAL MUSCLE RELAXANTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	18.00	2.17	149.52	0.01	6	4503	1	13526
C4K W2A	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ABSORBABLE SULFONAMIDES	15.00	1.75	128.40	0.01	5	4504	1	13526
H2S H7B	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	15.00	1.75	128.40	0.01	5	4504	1	13526
H4B J2A	ANTICONVULSANTS	BELLADONNA ALKALOIDS	12.00	1.34	107.37	0.03	4	4505	1	13526
H2U H7T	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	10.50	2.18	50.55	0.00	7	4502	2	13525
C4M D4K	HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	GASTRIC ACID SECRETION REDUCERS	9.00	0.94	86.53	0.06	3	4506	1	13526
H2F W1K	ANTI-ANXIETY DRUGS	LINCOSAMIDES	7.50	1.46	38.66	0.02	5	4504	2	13525
H2S H7C	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	7.50	1.46	38.66	0.02	5	4504	2	13525
A2A W1Q	ANTIARRHYTHMICS	QUINOLONES	6.00	0.54	66.17	0.14	2	4507	1	13526
B3J H2V	EXPECTORANTS	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	6.00	0.54	66.17	0.14	2	4507	1	13526
C4G H3E	INSULINS	ANALGESIC/ANTIPYRETICS,NON-SALICYLATE	6.00	0.54	66.17	0.14	2	4507	1	13526
C4G H7C	INSULINS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	6.00	1.10	32.76	0.04	4	4505	2	13525
C4L W1K	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	LINCOSAMIDES	6.00	0.54	66.17	0.14	2	4507	1	13526
C4N H7C	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	6.00	0.54	66.17	0.14	2	4507	1	13526
H2D H3A	BARBITURATES	ANALGESICS,NARCOTICS	6.00	0.54	66.17	0.14	2	4507	1	13526
H2D H4B	BARBITURATES	ANTICONVULSANTS	6.00	1.50	23.99	0.01	6	4503	3	13524
H2F H7B	ANTI-ANXIETY DRUGS	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	6.00	0.54	66.17	0.14	2	4507	1	13526
H2V W1D	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	MACROLIDES	6.00	0.54	66.17	0.14	2	4507	1	13526
H2V W1Q	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	QUINOLONES	6.00	0.54	66.17	0.14	2	4507	1	13526
H3D M9L	ANALGESIC/ANTIPYRETICS, SALICYLATES	ORAL ANTICOAGULANTS,COUMARIN TYPE	6.00	0.54	66.17	0.14	2	4507	1	13526
H4B W3A	ANTICONVULSANTS	ANTIFUNGAL ANTIBIOTICS	6.00	0.54	66.17	0.14	2	4507	1	13526
H6J H7T	ANTIEMETIC/ANTIVERTIGO AGENTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	6.00	0.54	66.17	0.14	2	4507	1	13526
H7C W3B	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	ANTIFUNGAL AGENTS	6.00	0.54	66.17	0.14	2	4507	1	13526
M9L W1K	ORAL ANTICOAGULANTS,COUMARIN TYPE	LINCOSAMIDES	6.00	0.54	66.17	0.14	2	4507	1	13526
A1A W1D	DIGITALIS GLYCOSIDES	MACROLIDES	4.50	0.75	26.93	0.10	3	4506	2	13525
B3J H7T	EXPECTORANTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	4.50	0.75	26.93	0.10	3	4506	2	13525
C4K H2U	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	4.50	2.02	10.02	0.00	15	4494	10	13517
C7A W1D	HYPERURICEMIA TX - PURINE INHIBITORS	MACROLIDES	4.50	0.75	26.93	0.10	3	4506	2	13525
H2E J2A	SEDATIVE-HYPNOTICS,NON-BARBITURATE	BELLADONNA ALKALOIDS	4.50	0.75	26.93	0.10	3	4506	2	13525
H2G H2S	ANTI-PSYCHOTICS,PHENOTHIAZINES	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	4.50	0.75	26.93	0.10	3	4506	2	13525
H7C W5A	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	ANTIVIRALS, GENERAL	4.50	0.75	26.93	0.10	3	4506	2	13525
H7T W1D	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	MACROLIDES	4.50	0.75	26.93	0.10	3	4506	2	13525
J5D W2F	BETA-ADRENERGIC AGENTS	NITROFURAN DERIVATIVES	4.50	0.75	26.93	0.10	3	4506	2	13525
Q6R R1M	EYE ANTIHISTAMINES	LOOP DIURETICS	4.50	0.75	26.93	0.10	3	4506	2	13525
H7T Z2A	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	ANTIHISTAMINES	4.20	1.33	13.23	0.01	7	4502	5	13522
M9L S2B	ORAL ANTICOAGULANTS,COUMARIN TYPE	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	4.15	2.04	8.48	0.00	18	4491	13	13514
H6H W1D	SKELETAL MUSCLE RELAXANTS	MACROLIDES	4.07	2.04	8.12	0.00	19	4490	14	13513
H2S W1Q	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	QUINOLONES	4.00	2.17	7.37	0.00	24	4485	18	13509

APPENDIX VIII. Table 3A Odds Ratios for Drug Interactions

DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
H2U W3B	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIFUNGAL AGENTS	4.00	0.90	17.87	0.07	4	4505	3	13524
R1F Z4B	THIAZIDE AND RELATED DIURETICS	LEUKOTRIENE RECEPTOR ANTAGONISTS	4.00	0.90	17.87	0.07	4	4505	3	13524
H2E H4B	SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANTICONVULSANTS	3.92	1.91	8.08	0.00	17	4492	13	13514
B3J W5A	EXPECTORANTS	ANTIVIRALS, GENERAL	3.75	1.01	13.97	0.05	5	4504	4	13523
H3A H7T	ANALGESICS,NARCOTICS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	3.75	1.48	9.50	0.01	10	4499	8	13519
H7T J7C	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	BETA-ADRENERGIC BLOCKING AGENTS	3.75	1.01	13.97	0.05	5	4504	4	13523
H4B H7C	ANTICONVULSANTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	3.67	1.52	8.85	0.00	11	4498	9	13518
H2S H3A	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANALGESICS,NARCOTICS	3.64	2.72	4.85	0.00	104	4405	88	13439
J5D Z2F	BETA-ADRENERGIC AGENTS	MAST CELL STABILIZERS	3.60	1.10	11.80	0.03	6	4503	5	13522
M4E W1K	LIPOTROPICS	LINCOSAMIDES	3.60	1.10	11.80	0.03	6	4503	5	13522
M9L W1W	ORAL ANTICOAGULANTS,COUMARIN TYPE	CEPHALOSPORINS - 1ST GENERATION	3.60	1.10	11.80	0.03	6	4503	5	13522
H2F H7C	ANTI-ANXIETY DRUGS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	3.55	1.59	7.91	0.00	13	4496	11	13516
H2F W3B	ANTI-ANXIETY DRUGS	ANTIFUNGAL AGENTS	3.43	1.24	9.45	0.02	8	4501	7	13520
H2F H2U	ANTI-ANXIETY DRUGS	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	3.40	2.08	5.56	0.00	34	4475	30	13497
H2S H7T	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	3.40	1.70	6.81	0.00	17	4492	15	13512
A1A A2A	DIGITALIS GLYCOSIDES	ANTIARRHYTHMICS	3.38	1.30	8.75	0.01	9	4500	8	13519
C4N H2S	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	3.30	1.40	7.77	0.01	11	4498	10	13517
H6H W1Q	SKELETAL MUSCLE RELAXANTS	QUINOLONES	3.27	1.44	7.42	0.00	12	4497	11	13516
A1A W1C	DIGITALIS GLYCOSIDES	TETRACYCLINES	3.00	0.19	47.96	0.44	1	4508	1	13526
A1A W3B	DIGITALIS GLYCOSIDES	ANTIFUNGAL AGENTS	3.00	0.19	47.96	0.44	1	4508	1	13526
A4K A9A	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	CALCIUM CHANNEL BLOCKING AGENTS	3.00	0.19	47.96	0.44	1	4508	1	13526
A4K J7A	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	3.00	0.19	47.96	0.44	1	4508	1	13526
A9A W3A	CALCIUM CHANNEL BLOCKING AGENTS	ANTIFUNGAL ANTIBIOTICS	3.00	0.19	47.96	0.44	1	4508	1	13526
C4G W2F	INSULINS	NITROFURAN DERIVATIVES	3.00	0.42	21.30	0.27	2	4507	2	13525
C4G W5A	INSULINS	ANTIVIRALS, GENERAL	3.00	0.19	47.96	0.44	1	4508	1	13526
C4K H2W	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	TRICYCLIC ANTIDEPRESSANT/PHENOTHIAZINE COMBINATNS	3.00	0.19	47.96	0.44	1	4508	1	13526
C4K H3D	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ANALGESIC/ANTIPYRETICS, SALICYLATES	3.00	0.42	21.30	0.27	2	4507	2	13525
C4K H3E	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ANALGESIC/ANTIPYRETICS,NON-SALICYLATE	3.00	0.42	21.30	0.27	2	4507	2	13525
C4K W3B	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ANTIFUNGAL AGENTS	3.00	0.97	9.30	0.06	6	4503	6	13521
C4L H3D	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ANALGESIC/ANTIPYRETICS, SALICYLATES	3.00	0.19	47.96	0.44	1	4508	1	13526
C4N J7A	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	3.00	0.61	14.86	0.18	3	4506	3	13524
C4N M9L	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	ORAL ANTICOAGULANTS,COUMARIN TYPE	3.00	0.61	14.86	0.18	3	4506	3	13524
C7A W5A	HYPERURICEMIA TX - PURINE INHIBITORS	ANTIVIRALS, GENERAL	3.00	0.19	47.96	0.44	1	4508	1	13526
H2F W3A	ANTI-ANXIETY DRUGS	ANTIFUNGAL ANTIBIOTICS	3.00	0.19	47.96	0.44	1	4508	1	13526
H2F Z2E	ANTI-ANXIETY DRUGS	IMMUNOSUPPRESSIVES	3.00	0.19	47.96	0.44	1	4508	1	13526
H2G H2U	ANTI-PSYCHOTICS,PHENOTHIAZINES	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	3.00	0.42	21.30	0.27	2	4507	2	13525
H2G W1D	ANTI-PSYCHOTICS,PHENOTHIAZINES	MACROLIDES	3.00	0.42	21.30	0.27	2	4507	2	13525
H2S H2X	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	TRICYCLIC ANTIDEPRESSANT/BENZODIAZEPINE COMBINATNS	3.00	0.19	47.96	0.44	1	4508	1	13526
H2S W1K	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	LINCOSAMIDES	3.00	0.61	14.86	0.18	3	4506	3	13524
H2U H2V	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	3.00	0.42	21.30	0.27	2	4507	2	13525
H2U H7P	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIPSYCHOTICS,DOPAMINE ANTAGONISTS, THIOXANTHENES	3.00	0.19	47.96	0.44	1	4508	1	13526

APPENDIX VIII. Table 3A Odds Ratios for Drug Interactions

DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
H2U W1D	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	MACROLIDES	3.00	1.39	6.47	0.01	13	4496	13	13514
H2U W3A	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIFUNGAL ANTIBIOTICS	3.00	0.19	47.96	0.44	1	4508	1	13526
H2U W5A	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIVIRALS, GENERAL	3.00	0.42	21.30	0.27	2	4507	2	13525
H3A H7O	ANALGESICS,NARCOTICS	ANTIPSYCHOTICS,DOPAMINE ANTAGONISTS,BUTYROPHENONES	3.00	0.19	47.96	0.44	1	4508	1	13526
H3D M9P	ANALGESIC/ANTIPYRETICS, SALICYLATES	PLATELET AGGREGATION INHIBITORS	3.00	0.19	47.96	0.44	1	4508	1	13526
H3F H7C	ANTIMIGRAINE PREPARATIONS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	3.00	0.42	21.30	0.27	2	4507	2	13525
H6H H7B	SKELETAL MUSCLE RELAXANTS	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	3.00	0.19	47.96	0.44	1	4508	1	13526
H6H H7C	SKELETAL MUSCLE RELAXANTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	3.00	0.75	12.00	0.12	4	4505	4	13523
H6H W2F	SKELETAL MUSCLE RELAXANTS	NITROFURAN DERIVATIVES	3.00	0.61	14.86	0.18	3	4506	3	13524
H6J H7C	ANTIEMETIC/ANTIVERTIGO AGENTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	3.00	0.42	21.30	0.27	2	4507	2	13525
H7B H7T	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	3.00	0.42	21.30	0.27	2	4507	2	13525
H7C W1D	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	MACROLIDES	3.00	0.75	12.00	0.12	4	4505	4	13523
H7D J7A	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	3.00	0.19	47.96	0.44	1	4508	1	13526
H7T W1Q	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	QUINOLONES	3.00	0.19	47.96	0.44	1	4508	1	13526
H7T W4A	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	ANTIMALARIAL DRUGS	3.00	0.19	47.96	0.44	1	4508	1	13526
H7T W5A	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	ANTIVIRALS, GENERAL	3.00	0.19	47.96	0.44	1	4508	1	13526
J2A M9L	BELLADONNA ALKALOIDS	ORAL ANTICOAGULANTS,COUMARIN TYPE	3.00	0.19	47.96	0.44	1	4508	1	13526
J2A W2F	BELLADONNA ALKALOIDS	NITROFURAN DERIVATIVES	3.00	0.19	47.96	0.44	1	4508	1	13526
J5G J7C	BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION	BETA-ADRENERGIC BLOCKING AGENTS	3.00	0.19	47.96	0.44	1	4508	1	13526
M9K W1W	HEPARIN AND RELATED PREPARATIONS	CEPHALOSPORINS - 1ST GENERATION	3.00	0.19	47.96	0.44	1	4508	1	13526
M9L M9P	ORAL ANTICOAGULANTS,COUMARIN TYPE	PLATELET AGGREGATION INHIBITORS	3.00	1.05	8.55	0.04	7	4502	7	13520
M9L Z2E	ORAL ANTICOAGULANTS,COUMARIN TYPE	IMMUNOSUPPRESSIVES	3.00	0.19	47.96	0.44	1	4508	1	13526
Q6R W1Q	EYE ANTIHISTAMINES	QUINOLONES	3.00	0.19	47.96	0.44	1	4508	1	13526
R1M Z2F	LOOP DIURETICS	MAST CELL STABILIZERS	3.00	0.19	47.96	0.44	1	4508	1	13526
S2A W1Q	COLCHICINE	QUINOLONES	3.00	0.19	47.96	0.44	1	4508	1	13526
W5A W5J	ANTIVIRALS, GENERAL	ANTIVIRALS, HIV-SPECIFIC, NUCLEOSIDE ANALOG, RTI	3.00	0.19	47.96	0.44	1	4508	1	13526
W5A W5K	ANTIVIRALS, GENERAL	ANTIVIRALS, HIV-SPECIFIC, NON-NUCLEOSIDE, RTI	3.00	0.19	47.96	0.44	1	4508	1	13526
W5J W5K	ANTIVIRALS, HIV-SPECIFIC, NUCLEOSIDE ANALOG, RTI	ANTIVIRALS, HIV-SPECIFIC, NON-NUCLEOSIDE, RTI	3.00	0.19	47.96	0.44	1	4508	1	13526
Z2F Z4B	MAST CELL STABILIZERS	LEUKOTRIENE RECEPTOR ANTAGONISTS	3.00	0.61	14.86	0.18	3	4506	3	13524
B3J H2S	EXPECTORANTS	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	2.96	1.70	5.17	0.00	25	4484	26	13501
H4B M9L	ANTICONVULSANTS	ORAL ANTICOAGULANTS,COUMARIN TYPE	2.93	1.39	6.19	0.00	14	4495	15	13512
H4B W1D	ANTICONVULSANTS	MACROLIDES	2.80	1.35	5.80	0.01	14	4495	15	13512
H2E H3A	SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANALGESICS,NARCOTICS	2.79	1.85	4.20	0.00	45	4464	49	13478
H2F H2S	ANTI-ANXIETY DRUGS	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	2.71	2.02	3.64	0.00	85	4424	94	13433
C4L H2S	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	2.68	1.40	5.16	0.00	17	4492	19	13508
A1A R1F	DIGITALIS GLYCOSIDES	THIAZIDE AND RELATED DIURETICS	2.67	1.03	6.91	0.04	8	4501	9	13518
A9A H7E	CALCIUM CHANNEL BLOCKING AGENTS	SEROTONIN-2 ANTAGONIST/REUPTAKE INHIBITORS (SARIS)	2.63	1.28	5.38	0.01	14	4495	16	13511

APPENDIX VIII. Table 3A Odds Ratios for Drug Interactions

DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
A2A A9A	ANTIARRHYTHMICS	CALCIUM CHANNEL BLOCKING AGENTS	2.57	0.86	7.65	0.09	6	4503	7	13520
C4G W1D	INSULINS	MACROLIDES	2.57	0.86	7.65	0.09	6	4503	7	13520
H2S M9L	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ORAL ANTICOAGULANTS,COUMARIN TYPE	2.57	1.19	5.56	0.02	12	4497	14	13513
A9A H7C	CALCIUM CHANNEL BLOCKING AGENTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	2.50	0.76	8.19	0.13	5	4504	6	13521
H2S W2F	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	NITROFURAN DERIVATIVES	2.50	0.76	8.19	0.13	5	4504	6	13521
H2S W5A	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIVIRALS, GENERAL	2.50	0.76	8.19	0.13	5	4504	6	13521
H2U W1Q	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	QUINOLONES	2.45	1.02	5.92	0.05	9	4500	11	13516
C4K H2S	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	2.44	1.39	4.29	0.00	22	4487	27	13500
H2F W1D	ANTI-ANXIETY DRUGS	MACROLIDES	2.42	1.36	4.31	0.00	21	4488	26	13501
H2F J5D	ANTI-ANXIETY DRUGS	BETA-ADRENERGIC AGENTS	2.36	1.41	3.95	0.00	26	4483	33	13494
H2S H3F	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIMIGRAINE PREPARATIONS	2.35	1.27	4.35	0.01	18	4491	23	13504
H2U H3A	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANALGESICS,NARCOTICS	2.34	1.62	3.39	0.00	50	4459	64	13463
A1A H2F	DIGITALIS GLYCOSIDES	ANTI-ANXIETY DRUGS	2.33	0.87	6.27	0.09	7	4502	9	13518
A4K J7C	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	BETA-ADRENERGIC BLOCKING AGENTS	2.33	0.87	6.27	0.09	7	4502	9	13518
H6C Z2A	ANTITUSSIVES,NON-NARCOTIC	ANTIHISTAMINES	2.33	0.87	6.27	0.09	7	4502	9	13518
P5A W1D	GLUCOCORTICOIDS	MACROLIDES	2.31	1.51	3.55	0.00	37	4472	48	13479
C4L H2U	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	2.29	1.11	4.72	0.02	13	4496	17	13510
A2A D4K	ANTIARRHYTHMICS	GASTRIC ACID SECRETION REDUCERS	2.25	0.50	10.05	0.29	3	4506	4	13523
C4G M9P	INSULINS	PLATELET AGGREGATION INHIBITORS	2.25	0.78	6.48	0.13	6	4503	8	13519
H7C H7T	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	2.25	0.50	10.05	0.29	3	4506	4	13523
H7C M4E	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	LIPOTROPICS	2.25	0.78	6.48	0.13	6	4503	8	13519
M9L W1D	ORAL ANTICOAGULANTS,COUMARIN TYPE	MACROLIDES	2.25	0.50	10.05	0.29	3	4506	4	13523
C4G D4K	INSULINS	GASTRIC ACID SECRETION REDUCERS	2.21	1.32	3.70	0.00	25	4484	34	13493
H2F W1Q	ANTI-ANXIETY DRUGS	QUINOLONES	2.20	1.27	3.81	0.00	22	4487	30	13497
H7C J7C	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	BETA-ADRENERGIC BLOCKING AGENTS	2.14	0.68	6.75	0.19	5	4504	7	13520
C7A D4K	HYPERURICEMIA TX - PURINE INHIBITORS	GASTRIC ACID SECRETION REDUCERS	2.12	1.01	4.46	0.05	12	4497	17	13510
C4K W1D	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	MACROLIDES	2.05	1.06	3.94	0.03	15	4494	22	13505
B3J H7C	EXPECTORANTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	2.00	0.33	11.97	0.45	2	4507	3	13524
C4L W2A	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ABSORBABLE SULFONAMIDES	2.00	0.33	11.97	0.45	2	4507	3	13524
C4L W2F	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	NITROFURAN DERIVATIVES	2.00	0.33	11.97	0.45	2	4507	3	13524
C7A W1Q	HYPERURICEMIA TX - PURINE INHIBITORS	QUINOLONES	2.00	0.33	11.97	0.45	2	4507	3	13524
H2E W3B	SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANTIFUNGAL AGENTS	2.00	0.56	7.09	0.28	4	4505	6	13521
H2F W2F	ANTI-ANXIETY DRUGS	NITROFURAN DERIVATIVES	2.00	0.33	11.97	0.45	2	4507	3	13524
H2S W3B	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIFUNGAL AGENTS	2.00	0.71	5.62	0.19	6	4503	9	13518
H4B H7B	ANTICONVULSANTS	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	2.00	0.33	11.97	0.45	2	4507	3	13524
P5A W1K	GLUCOCORTICOIDS	LINCOSAMIDES	2.00	0.33	11.97	0.45	2	4507	3	13524
H2U M9L	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ORAL ANTICOAGULANTS,COUMARIN TYPE	1.88	0.61	5.73	0.27	5	4504	8	13519
M9L W1Q	ORAL ANTICOAGULANTS,COUMARIN TYPE	QUINOLONES	1.88	0.61	5.73	0.27	5	4504	8	13519
C4K C4M	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	1.80	0.43	7.53	0.42	3	4506	5	13522
C4M M4E	HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	LIPOTROPICS	1.80	0.43	7.53	0.42	3	4506	5	13522

APPENDIX VIII. Table 3A Odds Ratios for Drug Interactions

DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
H2S H6B	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIPARKINSONISM DRUGS,ANTICHOLINERGIC	1.80	0.43	7.53	0.42	3	4506	5	13522
H2U H7C	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	1.80	0.43	7.53	0.42	3	4506	5	13522
M9P S2B	PLATELET AGGREGATION INHIBITORS	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	1.80	0.65	4.95	0.26	6	4503	10	13517
A9A D4K	CALCIUM CHANNEL BLOCKING AGENTS	GASTRIC ACID SECRETION REDUCERS	1.77	1.35	2.33	0.00	85	4424	145	13382
C4K D4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	GASTRIC ACID SECRETION REDUCERS	1.75	1.13	2.73	0.01	31	4478	53	13474
H2S M4E	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	LIPOTROPICS	1.75	1.33	2.32	0.00	79	4430	136	13391
M9P P3A	PLATELET AGGREGATION INHIBITORS	THYROID HORMONES	1.75	0.69	4.45	0.24	7	4502	12	13515
B3J Z2A	EXPECTORANTS	ANTIHISTAMINES	1.74	1.06	2.86	0.03	25	4484	43	13484
H4B M9P	ANTICONVULSANTS	PLATELET AGGREGATION INHIBITORS	1.71	0.50	5.86	0.39	4	4505	7	13520
C4G H2S	INSULINS	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	1.69	0.75	3.82	0.21	9	4500	16	13511
C4L W1D	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	MACROLIDES	1.69	0.75	3.82	0.21	9	4500	16	13511
A1A J7A	DIGITALIS GLYCOSIDES	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	1.67	0.56	4.97	0.36	5	4504	9	13518
A9A W1D	CALCIUM CHANNEL BLOCKING AGENTS	MACROLIDES	1.67	0.96	2.88	0.07	20	4489	36	13491
C4G W1Q	INSULINS	QUINOLONES	1.67	0.77	3.61	0.20	10	4499	18	13509
C4L M9P	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	PLATELET AGGREGATION INHIBITORS	1.67	0.56	4.97	0.36	5	4504	9	13518
C4G J7C	INSULINS	BETA-ADRENERGIC BLOCKING AGENTS	1.62	0.95	2.75	0.08	21	4488	39	13488
H7E J7C	SEROTONIN-2 ANTAGONIST/REUPTAKE INHIBITORS (SARIS)	BETA-ADRENERGIC BLOCKING AGENTS	1.62	0.64	4.05	0.31	7	4502	13	13514
H2S W1D	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	MACROLIDES	1.61	0.96	2.70	0.07	22	4487	41	13486
M4E W3B	LIPOTROPICS	ANTIFUNGAL AGENTS	1.59	0.71	3.56	0.26	9	4500	17	13510
M4E W1Q	LIPOTROPICS	QUINOLONES	1.55	1.02	2.34	0.04	34	4475	66	13461
A9A J7B	CALCIUM CHANNEL BLOCKING AGENTS	ALPHA-ADRENERGIC BLOCKING AGENTS	1.53	0.96	2.43	0.07	27	4482	53	13474
J5D W1D	BETA-ADRENERGIC AGENTS	MACROLIDES	1.53	0.98	2.37	0.06	30	4479	59	13468
H2S H2U	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	1.51	0.91	2.50	0.11	23	4486	46	13481
A1A R1L	DIGITALIS GLYCOSIDES	POTASSIUM SPARING DIURETICS IN COMBINATION	1.50	0.38	6.00	0.57	3	4506	6	13521
A9A J1B	CALCIUM CHANNEL BLOCKING AGENTS	CHOLINESTERASE INHIBITORS	1.50	0.14	16.54	0.74	1	4508	2	13525
B3J H2U	EXPECTORANTS	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	1.50	0.51	4.39	0.46	5	4504	10	13517
C4G H2U	INSULINS	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	1.50	0.67	3.34	0.32	9	4500	18	13509
C4G W2A	INSULINS	ABSORBABLE SULFONAMIDES	1.50	0.51	4.39	0.46	5	4504	10	13517
C4K W1K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	LINCOSAMIDES	1.50	0.14	16.54	0.74	1	4508	2	13525
C4K W2F	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	NITROFURAN DERIVATIVES	1.50	0.14	16.54	0.74	1	4508	2	13525
C4L H7C	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	1.50	0.27	8.19	0.64	2	4507	4	13523
C4L M9L	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ORAL ANTICOAGULANTS,COUMARIN TYPE	1.50	0.56	4.00	0.42	6	4503	12	13515
C4N M9P	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	PLATELET AGGREGATION INHIBITORS	1.50	0.38	6.00	0.57	3	4506	6	13521
C4N W2F	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	NITROFURAN DERIVATIVES	1.50	0.14	16.54	0.74	1	4508	2	13525
H2E W3A	SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANTIFUNGAL ANTIBIOTICS	1.50	0.14	16.54	0.74	1	4508	2	13525
H2F Z4B	ANTI-ANXIETY DRUGS	LEUKOTRIENE RECEPTOR ANTAGONISTS	1.50	0.51	4.39	0.46	5	4504	10	13517
H2S H6A	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIPARKINSONISM DRUGS,OTHER	1.50	0.27	8.19	0.64	2	4507	4	13523
H4B W1K	ANTICONVULSANTS	LINCOSAMIDES	1.50	0.14	16.54	0.74	1	4508	2	13525
H4B W2F	ANTICONVULSANTS	NITROFURAN DERIVATIVES	1.50	0.27	8.19	0.64	2	4507	4	13523
H4B Z2E	ANTICONVULSANTS	IMMUNOSUPPRESSIVES	1.50	0.14	16.54	0.74	1	4508	2	13525
H6H M9P	SKELETAL MUSCLE RELAXANTS	PLATELET AGGREGATION INHIBITORS	1.50	0.27	8.19	0.64	2	4507	4	13523
H6H W1K	SKELETAL MUSCLE RELAXANTS	LINCOSAMIDES	1.50	0.14	16.54	0.74	1	4508	2	13525

APPENDIX VIII. Table 3A Odds Ratios for Drug Interactions

DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
H7C M9L	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	ORAL ANTICOAGULANTS,COUMARIN TYPE	1.50	0.14	16.54	0.74	1	4508	2	13525
H7D J7C	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)	BETA-ADRENERGIC BLOCKING AGENTS	1.50	0.56	4.00	0.42	6	4503	12	13515
J2A W1D	BELLADONNA ALKALOIDS	MACROLIDES	1.50	0.27	8.19	0.64	2	4507	4	13523
J2A W3B	BELLADONNA ALKALOIDS	ANTIFUNGAL AGENTS	1.50	0.14	16.54	0.74	1	4508	2	13525
J5D J5G	BETA-ADRENERGIC AGENTS	BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION	1.50	0.38	6.00	0.57	3	4506	6	13521
J5D W1K	BETA-ADRENERGIC AGENTS	LINCOSAMIDES	1.50	0.27	8.19	0.64	2	4507	4	13523
J5G Z4B	BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION	LEUKOTRIENE RECEPTOR ANTAGONISTS	1.50	0.14	16.54	0.74	1	4508	2	13525
J7A J7C	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	BETA-ADRENERGIC BLOCKING AGENTS	1.50	0.14	16.54	0.74	1	4508	2	13525
M4E W2F	LIPOTROPICS	NITROFURAN DERIVATIVES	1.50	0.51	4.39	0.46	5	4504	10	13517
M9K M9L	HEPARIN AND RELATED PREPARATIONS	ORAL ANTICOAGULANTS,COUMARIN TYPE	1.50	0.14	16.54	0.74	1	4508	2	13525
M9L W1X	ORAL ANTICOAGULANTS,COUMARIN TYPE	CEPHALOSPORINS - 2ND GENERATION	1.50	0.14	16.54	0.74	1	4508	2	13525
M9P W1Q	PLATELET AGGREGATION INHIBITORS	QUINOLONES	1.50	0.38	6.00	0.57	3	4506	6	13521
Q6R R1L	EYE ANTIHISTAMINES	POTASSIUM SPARING DIURETICS IN COMBINATION	1.50	0.14	16.54	0.74	1	4508	2	13525
Q6R W1D	EYE ANTIHISTAMINES	MACROLIDES	1.50	0.14	16.54	0.74	1	4508	2	13525
R1L Z4B	POTASSIUM SPARING DIURETICS IN COMBINATION	LEUKOTRIENE RECEPTOR ANTAGONISTS	1.50	0.27	8.19	0.64	2	4507	4	13523
R1M Z4B	LOOP DIURETICS	LEUKOTRIENE RECEPTOR ANTAGONISTS	1.50	0.27	8.19	0.64	2	4507	4	13523
S2A W1D	COLCHICINE	MACROLIDES	1.50	0.14	16.54	0.74	1	4508	2	13525
C4L D4K	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	GASTRIC ACID SECRETION REDUCERS	1.47	0.87	2.47	0.15	21	4488	43	13484
C4G C4K	INSULINS	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	1.45	0.78	2.69	0.24	15	4494	31	13496
H6H J7C	SKELETAL MUSCLE RELAXANTS	BETA-ADRENERGIC BLOCKING AGENTS	1.45	0.77	2.74	0.26	14	4495	29	13498
C4K C4L	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	1.44	1.13	1.85	0.00	94	4415	196	13331
H3F J7C	ANTIMIGRAINE PREPARATIONS	BETA-ADRENERGIC BLOCKING AGENTS	1.44	0.72	2.87	0.30	12	4497	25	13502
C4K C4N	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	1.44	0.95	2.16	0.08	34	4475	71	13456
M4E W1D	LIPOTROPICS	MACROLIDES	1.42	0.91	2.23	0.12	28	4481	59	13468
R1H R1M	POTASSIUM SPARING DIURETICS	LOOP DIURETICS	1.38	0.67	2.81	0.38	11	4498	24	13503
C4G W3B	INSULINS	ANTIFUNGAL AGENTS	1.36	0.47	3.92	0.57	5	4504	11	13516
C4L W1Q	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	QUINOLONES	1.33	0.58	3.07	0.50	8	4501	18	13509
H6H M9L	SKELETAL MUSCLE RELAXANTS	ORAL ANTICOAGULANTS,COUMARIN TYPE	1.33	0.41	4.33	0.63	4	4505	9	13518
M4E Z2E	LIPOTROPICS	IMMUNOSUPPRESSIVES	1.33	0.41	4.33	0.63	4	4505	9	13518
P5A Z2E	GLUCOCORTICOIDS	IMMUNOSUPPRESSIVES	1.33	0.41	4.33	0.63	4	4505	9	13518
C4G M4E	INSULINS	LIPOTROPICS	1.32	0.91	1.91	0.14	40	4469	91	13436
A4D A9A	HYPOTENSIVES, ACE INHIBITORS	CALCIUM CHANNEL BLOCKING AGENTS	1.31	1.03	1.66	0.03	100	4409	230	13297
A1A R1M	DIGITALIS GLYCOSIDES	LOOP DIURETICS	1.29	0.81	2.07	0.28	25	4484	58	13469
J7C W4A	BETA-ADRENERGIC BLOCKING AGENTS	ANTIMALARIAL DRUGS	1.29	0.33	4.97	0.72	3	4506	7	13520
C4L C4N	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	1.28	0.81	2.04	0.29	26	4483	61	13466
C4K M9L	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ORAL ANTICOAGULANTS,COUMARIN TYPE	1.28	0.55	2.98	0.57	8	4501	19	13508
C4G C4N	INSULINS	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	1.27	0.74	2.17	0.39	19	4490	45	13482
H2U M4E	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	LIPOTROPICS	1.24	0.80	1.92	0.35	28	4481	68	13459
C4N J7C	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	BETA-ADRENERGIC BLOCKING AGENTS	1.22	0.64	2.32	0.55	13	4496	32	13495
C4K W1Q	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	QUINOLONES	1.21	0.52	2.80	0.66	8	4501	20	13507
A1A A9A	DIGITALIS GLYCOSIDES	CALCIUM CHANNEL BLOCKING AGENTS	1.20	0.67	2.14	0.54	16	4493	40	13487

APPENDIX VIII. Table 3A Odds Ratios for Drug Interactions

DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
A9A H7D	CALCIUM CHANNEL BLOCKING AGENTS	NOREPINEPHRINE AND DOPAMINE REUPTAKE INHIB (NDRIS)	1.20	0.47	3.09	0.71	6	4503	15	13512
A9A W1K	CALCIUM CHANNEL BLOCKING AGENTS	LINCOSAMIDES	1.20	0.23	6.19	0.83	2	4507	5	13522
A9A W3B	CALCIUM CHANNEL BLOCKING AGENTS	ANTIFUNGAL AGENTS	1.20	0.38	3.83	0.76	4	4505	10	13517
C4N W3B	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	ANTIFUNGAL AGENTS	1.20	0.23	6.19	0.83	2	4507	5	13522
C4L M4E	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	LIPOTROPICS	1.19	0.87	1.63	0.28	56	4453	142	13385
A4D R1L	HYPOTENSIVES, ACE INHIBITORS	POTASSIUM SPARING DIURETICS IN COMBINATION	1.13	0.68	1.89	0.64	20	4489	53	13474
C4K M9P	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	PLATELET AGGREGATION INHIBITORS	1.13	0.30	4.24	0.86	3	4506	8	13519
A4D R1M	HYPOTENSIVES, ACE INHIBITORS	LOOP DIURETICS	1.12	0.79	1.58	0.53	44	4465	118	13409
A9A J7C	CALCIUM CHANNEL BLOCKING AGENTS	BETA-ADRENERGIC BLOCKING AGENTS	1.12	0.84	1.49	0.45	65	4444	175	13352
J5D J7C	BETA-ADRENERGIC AGENTS	BETA-ADRENERGIC BLOCKING AGENTS	1.11	0.54	2.30	0.78	10	4499	27	13500
C4G C4L	INSULINS	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	1.10	0.64	1.89	0.72	18	4491	49	13478
H2S H2V	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	1.09	0.35	3.43	0.88	4	4505	11	13516
A4D R1F	HYPOTENSIVES, ACE INHIBITORS	THIAZIDE AND RELATED DIURETICS	1.07	0.76	1.50	0.69	46	4463	129	13398
C4N D4K	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	GASTRIC ACID SECRETION REDUCERS	1.04	0.47	2.33	0.92	8	4501	23	13504
C4N M4E	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	LIPOTROPICS	1.01	0.65	1.57	0.96	27	4482	80	13447
A1A R1H	DIGITALIS GLYCOSIDES	POTASSIUM SPARING DIURETICS	1.00	0.27	3.69	1.00	3	4506	9	13518
A4K D4K	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	GASTRIC ACID SECRETION REDUCERS	1.00	0.20	4.95	1.00	2	4507	6	13521
A4K J7B	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	ALPHA-ADRENERGIC BLOCKING AGENTS	1.00	0.20	4.95	1.00	2	4507	6	13521
A4K R1F	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	THIAZIDE AND RELATED DIURETICS	1.00	0.20	4.95	1.00	2	4507	6	13521
A4K R1L	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	POTASSIUM SPARING DIURETICS IN COMBINATION	1.00	0.10	9.61	1.00	1	4508	3	13524
A4K R1M	ACE INHIBITOR/CALCIUM CHANNEL BLOCKER COMBINATION	LOOP DIURETICS	1.00	0.10	9.61	1.00	1	4508	3	13524
A9A D4E	CALCIUM CHANNEL BLOCKING AGENTS	ANTI-ULCER PREPARATIONS	1.00	0.10	9.61	1.00	1	4508	3	13524
A9A Z2E	CALCIUM CHANNEL BLOCKING AGENTS	IMMUNOSUPPRESSIVES	1.00	0.27	3.69	1.00	3	4506	9	13518
C4G J7A	INSULINS	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	1.00	0.10	9.61	1.00	1	4508	3	13524
C4K H7C	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	1.00	0.10	9.61	1.00	1	4508	3	13524
C4L C4M	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	1.00	0.27	3.69	1.00	3	4506	9	13518
C4L W3B	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ANTIFUNGAL AGENTS	1.00	0.20	4.95	1.00	2	4507	6	13521
C4L W5A	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	ANTIVIRALS, GENERAL	1.00	0.10	9.61	1.00	1	4508	3	13524
C4N H3D	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	ANALGESIC/ANTIPYRETICS, SALICYLATES	1.00	0.10	9.61	1.00	1	4508	3	13524
H2U H3F	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIMIGRAINE PREPARATIONS	1.00	0.43	2.35	1.00	7	4502	21	13506
H2U H6A	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIPARKINSONISM DRUGS,OTHER	1.00	0.10	9.61	1.00	1	4508	3	13524
H3E M9P	ANALGESIC/ANTIPYRETICS,NON-SALICYLATE	PLATELET AGGREGATION INHIBITORS	1.00	0.10	9.61	1.00	1	4508	3	13524
H7T J5D	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	BETA-ADRENERGIC AGENTS	1.00	0.10	9.61	1.00	1	4508	3	13524
J5D Z4B	BETA-ADRENERGIC AGENTS	LEUKOTRIENE RECEPTOR ANTAGONISTS	1.00	0.56	1.77	1.00	16	4493	48	13479
P5A W2F	GLUCOCORTICOIDS	NITROFURAN DERIVATIVES	1.00	0.10	9.61	1.00	1	4508	3	13524
Q6P W1Q	EYE ANTIINFLAMMATORY AGENTS	QUINOLONES	1.00	0.10	9.61	1.00	1	4508	3	13524

APPENDIX VIII. Table 3A Odds Ratios for Drug Interactions

DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
R1F R1L	THIAZIDE AND RELATED DIURETICS	POTASSIUM SPARING DIURETICS IN COMBINATION	1.00	0.10	9.61	1.00	1	4508	3	13524
W5C W5J	ANTIVIRALS, HIV-SPECIFIC, PROTEASE INHIBITORS	ANTIVIRALS, HIV-SPECIFIC, NUCLEOSIDE ANALOG, RTI	1.00	0.10	9.61	1.00	1	4508	3	13524
C4K M4E	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	LIPOTROPICS	0.96	0.71	1.29	0.79	58	4451	181	13346
C4L J7C	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	BETA-ADRENERGIC BLOCKING AGENTS	0.95	0.57	1.59	0.85	19	4490	60	13467
H2F W5A	ANTI-ANXIETY DRUGS	ANTIVIRALS, GENERAL	0.90	0.25	3.27	0.87	3	4506	10	13517
C4K J7C	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	BETA-ADRENERGIC BLOCKING AGENTS	0.88	0.58	1.35	0.56	28	4481	95	13432
A1A A4F	DIGITALIS GLYCOSIDES	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	0.88	0.33	2.39	0.81	5	4504	17	13510
A1A J7C	DIGITALIS GLYCOSIDES	BETA-ADRENERGIC BLOCKING AGENTS	0.86	0.50	1.48	0.60	17	4492	59	13468
A4D R1H	HYPOTENSIVES, ACE INHIBITORS	POTASSIUM SPARING DIURETICS	0.86	0.28	2.60	0.79	4	4505	14	13513
C4N H2U	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	0.86	0.18	4.13	0.85	2	4507	7	13520
R1F R1M	THIAZIDE AND RELATED DIURETICS	LOOP DIURETICS	0.80	0.27	2.41	0.69	4	4505	15	13512
J7B J7C	ALPHA-ADRENERGIC BLOCKING AGENTS	BETA-ADRENERGIC BLOCKING AGENTS	0.79	0.44	1.43	0.44	14	4495	53	13474
M9L P3A	ORAL ANTICOAGULANTS,COUMARIN TYPE	THYROID HORMONES	0.79	0.29	2.11	0.64	5	4504	19	13508
C4M C4N	HYPOGLYCEMICS, ALPHA-GLUCOSIDASE INHIB TYPE (N-S)	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	0.75	0.08	6.71	0.80	1	4508	4	13523
H2S M9P	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	PLATELET AGGREGATION INHIBITORS	0.75	0.16	3.53	0.72	2	4507	8	13519
P5A W3A	GLUCOCORTICOIDS	ANTIFUNGAL ANTIBIOTICS	0.75	0.08	6.71	0.80	1	4508	4	13523
C4K W5A	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ANTIVIRALS, GENERAL	0.60	0.07	5.14	0.64	1	4508	5	13522
J1B J7C	CHOLINESTERASE INHIBITORS	BETA-ADRENERGIC BLOCKING AGENTS	0.60	0.07	5.14	0.64	1	4508	5	13522
M4E W5A	LIPOTROPICS	ANTIVIRALS, GENERAL	0.60	0.17	2.07	0.42	3	4506	15	13512
M9L W2A	ORAL ANTICOAGULANTS,COUMARIN TYPE	ABSORBABLE SULFONAMIDES	0.60	0.07	5.14	0.64	1	4508	5	13522
P5A W3B	GLUCOCORTICOIDS	ANTIFUNGAL AGENTS	0.56	0.16	1.93	0.36	3	4506	16	13511
C4G M9L	INSULINS	ORAL ANTICOAGULANTS,COUMARIN TYPE	0.55	0.12	2.46	0.43	2	4507	11	13516
C4K J7A	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	0.50	0.06	4.15	0.52	1	4508	6	13521
R1L R1M	POTASSIUM SPARING DIURETICS IN COMBINATION	LOOP DIURETICS	0.50	0.06	4.15	0.52	1	4508	6	13521
C4N W1Q	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	QUINOLONES	0.43	0.05	3.48	0.43	1	4508	7	13520
H2U M9P	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	PLATELET AGGREGATION INHIBITORS	0.43	0.05	3.48	0.43	1	4508	7	13520
C4N W1D	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	MACROLIDES	0.38	0.05	3.00	0.36	1	4508	8	13519
A9A J7A	CALCIUM CHANNEL BLOCKING AGENTS	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	0.30	0.04	2.34	0.25	1	4508	10	13517
A2A M4E	ANTIARRHYTHMICS	LIPOTROPICS	0.27	0.04	2.11	0.21	1	4508	11	13516

APPENDIX VIII. Table 3B Significant Odds Ratios for Drug Interactions

	A	B	C	D	E	F	G	H	I	J	K
1	DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
2	H4B W3B	ANTICONVULSANTS	ANTIFUNGAL AGENTS	21.00	2.58	170.69	0.00	7	4502	1	13526
3	H7C W1Q	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	QUINOLONES	21.00	2.58	170.69	0.00	7	4502	1	13526
4	H6H H7T	SKELETAL MUSCLE RELAXANTS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	18.00	2.17	149.52	0.01	6	4503	1	13526
5	C4K W2A	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	ABSORBABLE SULFONAMIDES	15.00	1.75	128.40	0.01	5	4504	1	13526
6	H2S H7B	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ALPHA-2 RECEPTOR ANTAGONIST ANTIDEPRESSANTS	15.00	1.75	128.40	0.01	5	4504	1	13526
7	H4B J2A	ANTICONVULSANTS	BELLADONNA ALKALOIDS	12.00	1.34	107.37	0.03	4	4505	1	13526
8	H2U H7T	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	10.50	2.18	50.55	0.00	7	4502	2	13525
9	H2F W1K	ANTI-ANXIETY DRUGS	LINCOSAMIDES	7.50	1.46	38.66	0.02	5	4504	2	13525
10	H2S H7C	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	7.50	1.46	38.66	0.02	5	4504	2	13525
11	H2D H4B	BARBITURATES	ANTICONVULSANTS	6.00	1.50	23.99	0.01	6	4503	3	13524
12	C4G H7C	INSULINS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	6.00	1.10	32.76	0.04	4	4505	2	13525
13	C4K H2U	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	4.50	2.02	10.02	0.00	15	4494	10	13517
14	H7T Z2A	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	ANTIHISTAMINES	4.20	1.33	13.23	0.01	7	4502	5	13522
15	M9L S2B	ORAL ANTICOAGULANTS,COUMARIN TYPE	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	4.15	2.04	8.48	0.00	18	4491	13	13514
16	H6H W1D	SKELETAL MUSCLE RELAXANTS	MACROLIDES	4.07	2.04	8.12	0.00	19	4490	14	13513
17	H2S W1Q	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	QUINOLONES	4.00	2.17	7.37	0.00	24	4485	18	13509
18	H2E H4B	SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANTICONVULSANTS	3.92	1.91	8.08	0.00	17	4492	13	13514
19	H3A H7T	ANALGESICS,NARCOTICS	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	3.75	1.48	9.50	0.01	10	4499	8	13519
20	B3J W5A	EXPECTORANTS	ANTIVIRALS, GENERAL	3.75	1.01	13.97	0.05	5	4504	4	13523
21	H7T J7C	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	BETA-ADRENERGIC BLOCKING AGENTS	3.75	1.01	13.97	0.05	5	4504	4	13523
22	H4B H7C	ANTICONVULSANTS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	3.67	1.52	8.85	0.00	11	4498	9	13518
23	H2S H3A	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANALGESICS,NARCOTICS	3.64	2.72	4.85	0.00	104	4405	88	13439
24	J5D Z2F	BETA-ADRENERGIC AGENTS	MAST CELL STABILIZERS	3.60	1.10	11.80	0.03	6	4503	5	13522
25	M4E W1K	LIPOTROPICS	LINCOSAMIDES	3.60	1.10	11.80	0.03	6	4503	5	13522
26	M9L W1W	ORAL ANTICOAGULANTS,COUMARIN TYPE	CEPHALOSPORINS - 1ST GENERATION	3.60	1.10	11.80	0.03	6	4503	5	13522
27	H2F H7C	ANTI-ANXIETY DRUGS	SEROTONIN-NOREPINEPHRINE REUPTAKE-INHIB (SNRIS)	3.55	1.59	7.91	0.00	13	4496	11	13516
28	H2F W3B	ANTI-ANXIETY DRUGS	ANTIFUNGAL AGENTS	3.43	1.24	9.45	0.02	8	4501	7	13520
29	H2F H2U	ANTI-ANXIETY DRUGS	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	3.40	2.08	5.56	0.00	34	4475	30	13497
30	H2S H7T	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	3.40	1.70	6.81	0.00	17	4492	15	13512
31	A1A A2A	DIGITALIS GLYCOSIDES	ANTIARRHYTHMICS	3.38	1.30	8.75	0.01	9	4500	8	13519
32	C4N H2S	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	3.30	1.40	7.77	0.01	11	4498	10	13517
33	H6H W1Q	SKELETAL MUSCLE RELAXANTS	QUINOLONES	3.27	1.44	7.42	0.00	12	4497	11	13516
34	H2U W1D	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	MACROLIDES	3.00	1.39	6.47	0.01	13	4496	13	13514
35	M9L M9P	ORAL ANTICOAGULANTS,COUMARIN TYPE	PLATELET AGGREGATION INHIBITORS	3.00	1.05	8.55	0.04	7	4502	7	13520
36	B3J H2S	EXPECTORANTS	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	2.96	1.70	5.17	0.00	25	4484	26	13501
37	H4B M9L	ANTICONVULSANTS	ORAL ANTICOAGULANTS,COUMARIN TYPE	2.93	1.39	6.19	0.00	14	4495	15	13512
38	H4B W1D	ANTICONVULSANTS	MACROLIDES	2.80	1.35	5.80	0.01	14	4495	15	13512
39	H2E H3A	SEDATIVE-HYPNOTICS,NON-BARBITURATE	ANALGESICS,NARCOTICS	2.79	1.85	4.20	0.00	45	4464	49	13478
40	H2F H2S	ANTI-ANXIETY DRUGS	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	2.71	2.02	3.64	0.00	85	4424	94	13433
41	C4L H2S	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	2.68	1.40	5.16	0.00	17	4492	19	13508
42	A1A R1F	DIGITALIS GLYCOSIDES	THIAZIDE AND RELATED DIURETICS	2.67	1.03	6.91	0.04	8	4501	9	13518

APPENDIX VIII. Table 3B Significant Odds Ratios for Drug Interactions

	A	B	C	D	E	F	G	H	I	J	K
1	DRUG_DRUG	DRUG 1	DRUG 2	OR	L_OR	U_OR	P-VALUE	A	B	C	D
43	A9A H7E	CALCIUM CHANNEL BLOCKING AGENTS	SEROTONIN-2 ANTAGONIST/REUPTAKE INHIBITORS (SARIS)	2.63	1.28	5.38	0.01	14	4495	16	13511
44	H2S M9L	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ORAL ANTICOAGULANTS,COUMARIN TYPE	2.57	1.19	5.56	0.02	12	4497	14	13513
45	H2U W1Q	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	QUINOLONES	2.45	1.02	5.92	0.05	9	4500	11	13516
46	C4K H2S	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	2.44	1.39	4.29	0.00	22	4487	27	13500
47	H2F W1D	ANTI-ANXIETY DRUGS	MACROLIDES	2.42	1.36	4.31	0.00	21	4488	26	13501
48	H2F J5D	ANTI-ANXIETY DRUGS	BETA-ADRENERGIC AGENTS	2.36	1.41	3.95	0.00	26	4483	33	13494
49	H2S H3F	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	ANTIMIGRAINE PREPARATIONS	2.35	1.27	4.35	0.01	18	4491	23	13504
50	H2U H3A	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	ANALGESICS,NARCOTICS	2.34	1.62	3.39	0.00	50	4459	64	13463
51	P5A W1D	GLUCOCORTICOIDS	MACROLIDES	2.31	1.51	3.55	0.00	37	4472	48	13479
52	C4L H2U	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	2.29	1.11	4.72	0.02	13	4496	17	13510
53	C4G D4K	INSULINS	GASTRIC ACID SECRETION REDUCERS	2.21	1.32	3.70	0.00	25	4484	34	13493
54	H2F W1Q	ANTI-ANXIETY DRUGS	QUINOLONES	2.20	1.27	3.81	0.00	22	4487	30	13497
55	C7A D4K	HYPERURICEMIA TX - PURINE INHIBITORS	GASTRIC ACID SECRETION REDUCERS	2.12	1.01	4.46	0.05	12	4497	17	13510
56	C4K W1D	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	MACROLIDES	2.05	1.06	3.94	0.03	15	4494	22	13505
57	A9A D4K	CALCIUM CHANNEL BLOCKING AGENTS	GASTRIC ACID SECRETION REDUCERS	1.77	1.35	2.33	0.00	85	4424	145	13382
58	C4K D4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	GASTRIC ACID SECRETION REDUCERS	1.75	1.13	2.73	0.01	31	4478	53	13474
59	H2S M4E	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	LIPOTROPICS	1.75	1.33	2.32	0.00	79	4430	136	13391
60	B3J Z2A	EXPECTORANTS	ANTIHISTAMINES	1.74	1.06	2.86	0.03	25	4484	43	13484
61	M4E W1Q	LIPOTROPICS	QUINOLONES	1.55	1.02	2.34	0.04	34	4475	66	13461
62	C4K C4L	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	1.44	1.13	1.85	0.00	94	4415	196	13331
63	A4D A9A	HYPOTENSIVES, ACE INHIBITORS	CALCIUM CHANNEL BLOCKING AGENTS	1.31	1.03	1.66	0.03	100	4409	230	13297

APPENDIX VIII. Table 4A Odds Ratios for Drug Disease Interactions

DISEASE_DRUG	DRUG	DISEASE	OR	L_OR	U_OR	P-VALUE	A	B	C	D
30000 P5A	GLUCOCORTICOIDS	ANXIETY STATE UNSPEC	15.00	1.75	128.40	0.01	5	4504	1	13526
07054 H3A	ANALGESICS,NARCOTICS	CHR HEPATITIS C WOCOMA	12.00	1.34	107.37	0.03	4	4505	1	13526
4019 H2V	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	UNS HYPERTENSION	12.00	1.34	107.37	0.03	4	4505	1	13526
4160 J5D	BETA-ADRENERGIC AGENTS	PRIMARY PULMONARY HYPERTENSION	9.00	0.94	86.53	0.06	3	4506	1	13526
5715 H3A	ANALGESICS,NARCOTICS	CIRRHOSIS LIVER WO ALCOHOL	9.00	0.94	86.53	0.06	3	4506	1	13526
7802 C4L	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	SYNCOPE/COLLAPSE	9.00	0.94	86.53	0.06	3	4506	1	13526
4254 J7A	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	OTH PRIMARY CARDIOMYOPATHIES	7.50	1.46	38.66	0.02	5	4504	2	13525
7802 A9A	CALCIUM CHANNEL BLOCKING AGENTS	SYNCOPE/COLLAPSE	7.00	1.81	27.07	0.00	7	4502	3	13524
7802 A4D	HYPOTENSIVES, ACE INHIBITORS	SYNCOPE/COLLAPSE	6.75	2.08	21.92	0.00	9	4500	4	13523
07051 R1M	LOOP DIURETICS	AC/UNS HEPATITIS C WOCOMA	6.00	0.54	66.17	0.14	2	4507	1	13526
07054 H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	CHR HEPATITIS C WOCOMA	6.00	0.54	66.17	0.14	2	4507	1	13526
25040 A4D	HYPOTENSIVES, ACE INHIBITORS	DIABETES RENAL MANIF TYPE II	6.00	0.54	66.17	0.14	2	4507	1	13526
25040 C4G	INSULINS	DIABETES RENAL MANIF TYPE II	6.00	0.54	66.17	0.14	2	4507	1	13526
25050 A4F	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES EYE MANIF TYPE II	6.00	0.54	66.17	0.14	2	4507	1	13526
29620 P5A	GLUCOCORTICOIDS	DEPRESSIVE TYPE PSYCHOSIS	6.00	0.54	66.17	0.14	2	4507	1	13526
29622 P5A	GLUCOCORTICOIDS	MAJ DEPRESS DIS SGL EPI MODERATE	6.00	0.54	66.17	0.14	2	4507	1	13526
29690 Z2A	ANTIHISTAMINES	UNS AFFECTIVE PSYCHOSIS	6.00	0.54	66.17	0.14	2	4507	1	13526
3004 P5A	GLUCOCORTICOIDS	NEUROTIC DEPRESSION	6.00	0.54	66.17	0.14	2	4507	1	13526
34510 Z2A	ANTIHISTAMINES	GRAND MALY WO INTRACT EPILEPSY	6.00	0.54	66.17	0.14	2	4507	1	13526
4011 J5G	BETA-ADRENERGICS AND GLUCOCORTICOIDS COMBINATION	BENIGN HYPERTENSION	6.00	0.54	66.17	0.14	2	4507	1	13526
40290 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	HYPERTENSIVE HEART DIS UNSPEC	6.00	0.54	66.17	0.14	2	4507	1	13526
4254 M9L	ORAL ANTICOAGULANTS,COUMARIN TYPE	OTH PRIMARY CARDIOMYOPATHIES	6.00	1.10	32.76	0.04	4	4505	2	13525
4289 J7C	BETA-ADRENERGIC BLOCKING AGENTS	UNS HEART FAILURE	6.00	0.54	66.17	0.14	2	4507	1	13526
49390 H3E	ANALGESIC/ANTIPYRETICS,NON-SALICYLATE	UNS ASTHMA WOSTATUS ASTHMATICUS	6.00	0.54	66.17	0.14	2	4507	1	13526
5715 C4G	INSULINS	CIRRHOSIS LIVER WO ALCOHOL	6.00	0.54	66.17	0.14	2	4507	1	13526
585 H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	CHRONIC RENAL FAILURE	6.00	0.54	66.17	0.14	2	4507	1	13526
25000 A4B	HYPOTENSIVES,SYMPATHOLYTIC	DIABETES UNCOMPL TYPE II	4.50	1.60	12.64	0.00	9	4500	6	13521
25001 J7C	BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE I	3.67	1.52	8.85	0.00	11	4498	9	13518
4011 J5D	BETA-ADRENERGIC AGENTS	BENIGN HYPERTENSION	3.20	1.58	6.47	0.00	16	4493	15	13512
4011 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	BENIGN HYPERTENSION	3.16	2.03	4.92	0.00	40	4469	38	13489
07044 H3A	ANALGESICS,NARCOTICS	CHR HEPATITIS C W COMA	3.00	0.19	47.96	0.44	1	4508	1	13526
07051 R1H	POTASSIUM SPARING DIURETICS	AC/UNS HEPATITIS C WOCOMA	3.00	0.19	47.96	0.44	1	4508	1	13526
07054 H4B	ANTICONVULSANTS	CHR HEPATITIS C WOCOMA	3.00	0.19	47.96	0.44	1	4508	1	13526
25000 A4Y	HYPOTENSIVES,MISCELLANEOUS	DIABETES UNCOMPL TYPE II	3.00	0.42	21.30	0.27	2	4507	2	13525
25002 A4B	HYPOTENSIVES,SYMPATHOLYTIC	DIABETES UNCOMP TYPE II UNCONTRD	3.00	0.19	47.96	0.44	1	4508	1	13526
25040 A4F	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES RENAL MANIF TYPE II	3.00	0.19	47.96	0.44	1	4508	1	13526
25040 J7C	BETA-ADRENERGIC BLOCKING AGENTS	DIABETES RENAL MANIF TYPE II	3.00	0.19	47.96	0.44	1	4508	1	13526
25040 R1M	LOOP DIURETICS	DIABETES RENAL MANIF TYPE II	3.00	0.19	47.96	0.44	1	4508	1	13526
25041 A4D	HYPOTENSIVES, ACE INHIBITORS	DIABETES RENAL MANIF TYPE I	3.00	0.42	21.30	0.27	2	4507	2	13525
25041 R1F	THIAZIDE AND RELATED DIURETICS	DIABETES RENAL MANIF TYPE I	3.00	0.19	47.96	0.44	1	4508	1	13526
25041 W1Q	QUINOLONES	DIABETES RENAL MANIF TYPE I	3.00	0.19	47.96	0.44	1	4508	1	13526
25042 C4G	INSULINS	DIABETES RENAL MANIF TYPE II UNC	3.00	0.19	47.96	0.44	1	4508	1	13526
25062 J7C	BETA-ADRENERGIC BLOCKING AGENTS	DIABETES NEUR MANIF TYPE II UNCN	3.00	0.19	47.96	0.44	1	4508	1	13526
2930 H2F	ANTI-ANXIETY DRUGS	ACUTE DELIRIUM	3.00	0.19	47.96	0.44	1	4508	1	13526
29650 H2M	ANTI-MANIA DRUGS	BIPOLAR AFFECT DIS DEPRESS UNS	3.00	0.19	47.96	0.44	1	4508	1	13526

APPENDIX VIII. Table 4A Odds Ratios for Drug Disease Interactions

DISEASE_DRUG	DRUG	DISEASE	OR	L_OR	U_OR	P-VALUE	A	B	C	D
29680 H2M	ANTI-MANIA DRUGS	UNS MANIC DEPRESSIVE PSYCHOSIS	3.00	0.19	47.96	0.44	1	4508	1	13526
29690 H2E	SEDATIVE-HYPNOTICS,NON-BARBITURATE	UNS AFFECTIVE PSYCHOSIS	3.00	0.19	47.96	0.44	1	4508	1	13526
29690 H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	UNS AFFECTIVE PSYCHOSIS	3.00	0.42	21.30	0.27	2	4507	2	13525
29690 H4B	ANTICONVULSANTS	UNS AFFECTIVE PSYCHOSIS	3.00	0.42	21.30	0.27	2	4507	2	13525
3090 P5A	GLUCOCORTICOIDS	ADJUST REAC BRIEF DEPRESSIVE	3.00	0.19	47.96	0.44	1	4508	1	13526
34500 P5A	GLUCOCORTICOIDS	PETIT MAL WO INTRACT EPILEPSY	3.00	0.19	47.96	0.44	1	4508	1	13526
34500 Z2A	ANTIHISTAMINES	PETIT MAL WO INTRACT EPILEPSY	3.00	0.19	47.96	0.44	1	4508	1	13526
34510 H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	GRAND MALY WO INTRACT EPILEPSY	3.00	0.19	47.96	0.44	1	4508	1	13526
34510 P5A	GLUCOCORTICOIDS	GRAND MALY WO INTRACT EPILEPSY	3.00	0.19	47.96	0.44	1	4508	1	13526
34590 R1M	LOOP DIURETICS	UNS EPILEPSY WO INTRACT EPILEPSY	3.00	0.19	47.96	0.44	1	4508	1	13526
40291 J5D	BETA-ADRENERGIC AGENTS	HYPERTEN HEART DIS W CHF	3.00	0.19	47.96	0.44	1	4508	1	13526
40291 J7C	BETA-ADRENERGIC BLOCKING AGENTS	HYPERTEN HEART DIS W CHF	3.00	0.19	47.96	0.44	1	4508	1	13526
40391 C4G	INSULINS	RENAL HYPERT UNSPEC/FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
40391 H4B	ANTICONVULSANTS	RENAL HYPERT UNSPEC/FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
4280 J7A	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	CONGESTIVE HEART FAILURE	3.00	0.97	9.30	0.06	6	4503	6	13521
4281 A1A	DIGITALIS GLYCOSIDES	LEFT HEART FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
4281 C4G	INSULINS	LEFT HEART FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
4281 M9L	ORAL ANTICOAGULANTS,COUMARIN TYPE	LEFT HEART FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
4293 J5D	BETA-ADRENERGIC AGENTS	CARDIOMEGALY	3.00	0.42	21.30	0.27	2	4507	2	13525
49121 H2E	SEDATIVE-HYPNOTICS,NON-BARBITURATE	OBSTRUCT CHRON BRONCHITIS W EXAC	3.00	0.19	47.96	0.44	1	4508	1	13526
4928 J7C	BETA-ADRENERGIC BLOCKING AGENTS	OTH EMPHYSEMA	3.00	0.19	47.96	0.44	1	4508	1	13526
49390 J7C	BETA-ADRENERGIC BLOCKING AGENTS	UNS ASTHMA WOSTATUS ASTHMATICUS	3.00	0.97	9.30	0.06	6	4503	6	13521
5716 H3A	ANALGESICS,NARCOTICS	BILIARY CIRRHOSIS	3.00	0.19	47.96	0.44	1	4508	1	13526
5716 P5A	GLUCOCORTICOIDS	BILIARY CIRRHOSIS	3.00	0.19	47.96	0.44	1	4508	1	13526
5718 H2F	ANTI-ANXIETY DRUGS	OTH CHRONIC NONALCOHOLIC LIVER DIS	3.00	0.19	47.96	0.44	1	4508	1	13526
5728 H3A	ANALGESICS,NARCOTICS	OTH SEQUELAE CHRONIC LIVER DISEASE	3.00	0.19	47.96	0.44	1	4508	1	13526
5733 M4E	LIPOTROPICS	UNS HEPATITIS	3.00	0.19	47.96	0.44	1	4508	1	13526
5733 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	UNS HEPATITIS	3.00	0.19	47.96	0.44	1	4508	1	13526
5739 J7C	BETA-ADRENERGIC BLOCKING AGENTS	UNS DISORDER LIVER	3.00	0.19	47.96	0.44	1	4508	1	13526
5739 P5A	GLUCOCORTICOIDS	UNS DISORDER LIVER	3.00	0.19	47.96	0.44	1	4508	1	13526
5739 R1M	LOOP DIURETICS	UNS DISORDER LIVER	3.00	0.19	47.96	0.44	1	4508	1	13526
5849 A4D	HYPOTENSIVES, ACE INHIBITORS	UNS ACUTE RENAL FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
5849 R1L	POTASSIUM SPARING DIURETICS IN COMBINATION	UNS ACUTE RENAL FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
585 C4L	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	CHRONIC RENAL FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
585 H4B	ANTICONVULSANTS	CHRONIC RENAL FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
585 W1Q	QUINOLONES	CHRONIC RENAL FAILURE	3.00	0.42	21.30	0.27	2	4507	2	13525
586 A4D	HYPOTENSIVES, ACE INHIBITORS	UNS RENAL FAILURE	3.00	0.19	47.96	0.44	1	4508	1	13526
7802 A1A	DIGITALIS GLYCOSIDES	SYNCOPE/COLLAPSE	3.00	0.19	47.96	0.44	1	4508	1	13526
7802 C4G	INSULINS	SYNCOPE/COLLAPSE	3.00	0.19	47.96	0.44	1	4508	1	13526
7802 H2E	SEDATIVE-HYPNOTICS,NON-BARBITURATE	SYNCOPE/COLLAPSE	3.00	0.19	47.96	0.44	1	4508	1	13526
7802 H7T	ANTIPSYCHOTICS,ATYPICAL,DOPAMINE,& SEROTONIN ANTAG	SYNCOPE/COLLAPSE	3.00	0.19	47.96	0.44	1	4508	1	13526
V420 C4G	INSULINS	KIDNEY REPLACED BY TRANSPLANT	3.00	0.19	47.96	0.44	1	4508	1	13526
V451 C4G	INSULINS	RENAL DIALYSIS STATUS	3.00	0.19	47.96	0.44	1	4508	1	13526
V451 H3A	ANALGESICS,NARCOTICS	RENAL DIALYSIS STATUS	3.00	0.19	47.96	0.44	1	4508	1	13526
4019 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	UNS HYPERTENSION	2.54	1.83	3.53	0.00	66	4443	78	13449
4019 J5D	BETA-ADRENERGIC AGENTS	UNS HYPERTENSION	2.45	1.32	4.58	0.00	18	4491	22	13505
311 P5A	GLUCOCORTICOIDS	DEPRESSIVE DISORDER NEC	2.40	0.64	8.94	0.19	4	4505	5	13522
585 A4D	HYPOTENSIVES, ACE INHIBITORS	CHRONIC RENAL FAILURE	2.40	0.64	8.94	0.19	4	4505	5	13522

APPENDIX VIII. Table 4A Odds Ratios for Drug Disease Interactions

DISEASE_DRUG	DRUG	DISEASE	OR	L_OR	U_OR	P-VALUE	A	B	C	D
5715 R1M	LOOP DIURETICS	CIRRHOSIS LIVER WO ALCOHOL	2.25	0.50	10.05	0.29	3	4506	4	13523
586 H3A	ANALGESICS,NARCOTICS	UNS RENAL FAILURE	2.25	0.50	10.05	0.29	3	4506	4	13523
7802 H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	SYNCOPE/COLLAPSE	2.25	0.50	10.05	0.29	3	4506	4	13523
4011 Z4B	LEUKOTRIENE RECEPTOR ANTAGONISTS	BENIGN HYPERTENSION	2.00	0.56	7.09	0.28	4	4505	6	13521
4280 H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	CONGESTIVE HEART FAILURE	2.00	0.71	5.62	0.19	6	4503	9	13518
25000 A4F	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES UNCOMPL TYPE II	1.91	1.10	3.30	0.02	21	4488	33	13494
25001 A4F	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES UNCOMPL TYPE I	1.91	0.74	4.92	0.18	7	4502	11	13516
25000 J7A	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE II	1.80	0.43	7.53	0.42	3	4506	5	13522
25002 J7C	BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMP TYPE II UNCONTRD	1.80	0.65	4.95	0.26	6	4503	10	13517
4280 C4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	CONGESTIVE HEART FAILURE	1.80	0.65	4.95	0.26	6	4503	10	13517
585 H3A	ANALGESICS,NARCOTICS	CHRONIC RENAL FAILURE	1.80	0.43	7.53	0.42	3	4506	5	13522
4254 A1A	DIGITALIS GLYCOSIDES	OTH PRIMARY CARDIOMYOPATHIES	1.71	0.50	5.86	0.39	4	4505	7	13520
4280 M9L	ORAL ANTICOAGULANTS,COUMARIN TYPE	CONGESTIVE HEART FAILURE	1.69	0.75	3.82	0.21	9	4500	16	13511
4280 J5D	BETA-ADRENERGIC AGENTS	CONGESTIVE HEART FAILURE	1.64	0.61	4.42	0.33	6	4503	11	13516
25001 J7A	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE I	1.50	0.14	16.54	0.74	1	4508	2	13525
25002 A4F	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES UNCOMP TYPE II UNCONTRD	1.50	0.38	6.00	0.57	3	4506	6	13521
25040 C4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	DIABETES RENAL MANIF TYPE II	1.50	0.14	16.54	0.74	1	4508	2	13525
25061 J7C	BETA-ADRENERGIC BLOCKING AGENTS	DIABETES NEURO MANIF TYPE I	1.50	0.14	16.54	0.74	1	4508	2	13525
4019 Z4B	LEUKOTRIENE RECEPTOR ANTAGONISTS	UNS HYPERTENSION	1.50	0.27	8.19	0.64	2	4507	4	13523
40210 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	BENIGN HYPERTEN HEART DIS UNSPEC	1.50	0.14	16.54	0.74	1	4508	2	13525
4280 C4N	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	CONGESTIVE HEART FAILURE	1.50	0.38	6.00	0.57	3	4506	6	13521
4280 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	CONGESTIVE HEART FAILURE	1.50	0.45	4.98	0.51	4	4505	8	13519
4280 Z4B	LEUKOTRIENE RECEPTOR ANTAGONISTS	CONGESTIVE HEART FAILURE	1.50	0.14	16.54	0.74	1	4508	2	13525
4292 H2S	SEROTONIN SPECIFIC REUPTAKE INHIBITOR (SSRIS)	UNS CARDIOVASCULAR DISEASE	1.50	0.14	16.54	0.74	1	4508	2	13525
49121 J7C	BETA-ADRENERGIC BLOCKING AGENTS	OBSTRUCT CHRON BRONCHITIS W EXAC	1.50	0.14	16.54	0.74	1	4508	2	13525
5733 A9A	CALCIUM CHANNEL BLOCKING AGENTS	UNS HEPATITIS	1.50	0.14	16.54	0.74	1	4508	2	13525
5733 H3A	ANALGESICS,NARCOTICS	UNS HEPATITIS	1.50	0.14	16.54	0.74	1	4508	2	13525
5739 H3A	ANALGESICS,NARCOTICS	UNS DISORDER LIVER	1.50	0.14	16.54	0.74	1	4508	2	13525
5849 H3A	ANALGESICS,NARCOTICS	UNS ACUTE RENAL FAILURE	1.50	0.14	16.54	0.74	1	4508	2	13525
585 C4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	CHRONIC RENAL FAILURE	1.50	0.14	16.54	0.74	1	4508	2	13525
585 C4N	HYPOGLYCEMICS, INSULIN-RESPONSE ENHANCER (N-S)	CHRONIC RENAL FAILURE	1.50	0.14	16.54	0.74	1	4508	2	13525
585 R1M	LOOP DIURETICS	CHRONIC RENAL FAILURE	1.50	0.38	6.00	0.57	3	4506	6	13521
586 C4G	INSULINS	UNS RENAL FAILURE	1.50	0.27	8.19	0.64	2	4507	4	13523
586 C4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	UNS RENAL FAILURE	1.50	0.14	16.54	0.74	1	4508	2	13525
V420 J7C	BETA-ADRENERGIC BLOCKING AGENTS	KIDNEY REPLACED BY TRANSPLANT	1.50	0.14	16.54	0.74	1	4508	2	13525
4280 A1A	DIGITALIS GLYCOSIDES	CONGESTIVE HEART FAILURE	1.39	0.72	2.69	0.32	13	4496	28	13499
25000 J7C	BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE II	1.38	0.91	2.08	0.13	33	4476	72	13455
585 C4G	INSULINS	CHRONIC RENAL FAILURE	1.25	0.44	3.55	0.68	5	4504	12	13515
4280 H2U	TRICYCLIC ANTIDEPRESSANTS & REL. NON-SEL. RU-INHIB	CONGESTIVE HEART FAILURE	1.20	0.23	6.19	0.83	2	4507	5	13522
7802 A7B	VASODILATORS,CORONARY	SYNCOPE/COLLAPSE	1.20	0.23	6.19	0.83	2	4507	5	13522
585 J7C	BETA-ADRENERGIC BLOCKING AGENTS	CHRONIC RENAL FAILURE	1.13	0.30	4.24	0.86	3	4506	8	13519
07051 H2E	SEDATIVE-HYPNOTICS,NON-BARBITURATE	AC/UNS HEPATITIS C WOCOMA	1.00	0.10	9.61	1.00	1	4508	3	13524
07051 H3A	ANALGESICS,NARCOTICS	AC/UNS HEPATITIS C WOCOMA	1.00	0.10	9.61	1.00	1	4508	3	13524
25040 C4L	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	DIABETES RENAL MANIF TYPE II	1.00	0.10	9.61	1.00	1	4508	3	13524
25041 C4G	INSULINS	DIABETES RENAL MANIF TYPE I	1.00	0.10	9.61	1.00	1	4508	3	13524
4254 J7C	BETA-ADRENERGIC BLOCKING AGENTS	OTH PRIMARY CARDIOMYOPATHIES	1.00	0.20	4.95	1.00	2	4507	6	13521

APPENDIX VIII. Table 4A Odds Ratios for Drug Disease Interactions

DISEASE_DRUG	DRUG	DISEASE	OR	L_OR	U_OR	P-VALUE	A	B	C	D
4289 A1A	DIGITALIS GLYCOSIDES	UNS HEART FAILURE	1.00	0.10	9.61	1.00	1	4508	3	13524
49390 H3D	ANALGESIC/ANTIPYRETICS, SALICYLATES	UNS ASTHMA WOSTATUS ASTHMATICUS	1.00	0.10	9.61	1.00	1	4508	3	13524
496 J7C	BETA-ADRENERGIC BLOCKING AGENTS	CHRONIC AIRWAY OBSTRUCTION NEC	1.00	0.43	2.35	1.00	7	4502	21	13506
586 R1M	LOOP DIURETICS	UNS RENAL FAILURE	1.00	0.10	9.61	1.00	1	4508	3	13524
7802 J7C	BETA-ADRENERGIC BLOCKING AGENTS	SYNCOPE/COLLAPSE	1.00	0.27	3.69	1.00	3	4506	9	13518
4280 C4L	HYPOGLYCEMICS, BIGUANIDE TYPE (NON-SULFONYLUREAS)	CONGESTIVE HEART FAILURE	0.90	0.25	3.27	0.87	3	4506	10	13517
496 H2E	SEDATIVE-HYPNOTICS,NON-BARBITURATE	CHRONIC AIRWAY OBSTRUCTION NEC	0.86	0.18	4.13	0.85	2	4507	7	13520
4280 C4G	INSULINS	CONGESTIVE HEART FAILURE	0.82	0.23	2.93	0.76	3	4506	11	13516
2765 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	VOLUME DEPLETION DISORDER	0.75	0.08	6.71	0.80	1	4508	4	13523
4254 C4K	HYPOGLYCEMICS, INSULIN-RELEASE STIMULANT TYPE	OTH PRIMARY CARDIOMYOPATHIES	0.75	0.08	6.71	0.80	1	4508	4	13523
4280 M9P	PLATELET AGGREGATION INHIBITORS	CONGESTIVE HEART FAILURE	0.75	0.16	3.53	0.72	2	4507	8	13519
5715 R1H	POTASSIUM SPARING DIURETICS	CIRRHOSIS LIVER WO ALCOHOL	0.75	0.08	6.71	0.80	1	4508	4	13523
4280 J7C	BETA-ADRENERGIC BLOCKING AGENTS	CONGESTIVE HEART FAILURE	0.43	0.10	1.89	0.26	2	4507	14	13513

APPENDIX VIII. Table 4B Odds Ratios for Drug Disease Interactions

	A	B	C	D	E	F	G	H	I	J	K
1	DISEASE_DRUG	DRUG	DISEASE	OR	L_OR	U_OR	P-VALUE	A	B	C	D
2	30000 P5A	GLUCOCORTICOIDS	ANXIETY STATE UNSPEC	15.00	1.75	128.40	0.01	5	4504	1	13526
3	07054 H3A	ANALGESICS,NARCOTICS	CHR HEPATITIS C WOCOMA	12.00	1.34	107.37	0.03	4	4505	1	13526
4	4019 H2V	ANTI-NARCOLEPSY/ANTI-HYPERKINESIS, STIMULANT-TYPE	UNS HYPERTENSION	12.00	1.34	107.37	0.03	4	4505	1	13526
5	4254 J7A	ALPHA/BETA-ADRENERGIC BLOCKING AGENTS	OTH PRIMARY CARDIOMYOPATHIES	7.50	1.46	38.66	0.02	5	4504	2	13525
6	7802 A9A	CALCIUM CHANNEL BLOCKING AGENTS	SYNCOPE/COLLAPSE	7.00	1.81	27.07	0.00	7	4502	3	13524
7	7802 A4D	HYPOTENSIVES, ACE INHIBITORS	SYNCOPE/COLLAPSE	6.75	2.08	21.92	0.00	9	4500	4	13523
8	4254 M9L	ORAL ANTICOAGULANTS,COUMARIN TYPE	OTH PRIMARY CARDIOMYOPATHIES	6.00	1.10	32.76	0.04	4	4505	2	13525
9	25000 A4B	HYPOTENSIVES,SYMPATHOLYTIC	DIABETES UNCOMPL TYPE II	4.50	1.60	12.64	0.00	9	4500	6	13521
10	25001 J7C	BETA-ADRENERGIC BLOCKING AGENTS	DIABETES UNCOMPL TYPE I	3.67	1.52	8.85	0.00	11	4498	9	13518
11	4011 J5D	BETA-ADRENERGIC AGENTS	BENIGN HYPERTENSION	3.20	1.58	6.47	0.00	16	4493	15	13512
12	4011 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	BENIGN HYPERTENSION	3.16	2.03	4.92	0.00	40	4469	38	13489
13	4019 S2B	NSAIDS, CYCLOOXYGENASE INHIBITOR - TYPE	UNS HYPERTENSION	2.54	1.83	3.53	0.00	66	4443	78	13449
14	4019 J5D	BETA-ADRENERGIC AGENTS	UNS HYPERTENSION	2.45	1.32	4.58	0.00	18	4491	22	13505
15	25000 A4F	HYPOTENSIVES,ANGIOTENSIN RECEPTOR ANTAGONIST	DIABETES UNCOMPL TYPE II	1.91	1.10	3.30	0.02	21	4488	33	13494

APPENDIX IX. EXAMPLE PROFILES

Patient ID: 5702AAAAAAACBMGK, Year of Birth: 1935, Gender: Female, Trigger Date: 02/20/2001

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
01/06/2001	DIAG	25000	DIABETES UNCOMPL TYPE II			
01/06/2001	DIAG	27800	OBESITY UNSPEC			
01/06/2001	DIAG	4019	UNS HYPERTENSION			
01/06/2001	DIAG	41090	AMI UNS SITE UNS EOC			
01/06/2001	DIAG	4111	INTERMEDIATE CORONARY SYNDROME			
01/06/2001	DIAG	78650	UNSPEC CHEST PAIN			
01/06/2001	DIAG	78651	PRECORDIAL PAIN			
01/06/2001	DIAG	78701	NAUSEA W VOMITING			
01/22/2001	DRUG	00378020801			FUROSEMIDE	
01/22/2001	DRUG	59762372704			GLYBURIDE	
01/23/2001	DRUG	00005321943			ATENOLOL	
01/29/2001	DRUG	00378034505			DIAZEPAM	
01/29/2001	DRUG	00378104901			DOXEPIN HCL	
01/30/2001	DIAG	25000	DIABETES UNCOMPL TYPE II			
01/30/2001	DIAG	78050	UNS SLEEP DISTURBANCE			
02/01/2001	DRUG	00087607005			METFORMIN HCL	
02/03/2001	DRUG	00069306075			AZITHROMYCIN	
02/03/2001	DRUG	00258365401			BENZONATATE	
02/06/2001	DRUG	00002314460			NIZATIDINE	
02/08/2001	DIAG	4660	ACUTE BRONCHITIS			
02/08/2001	CPT4	99213		OFFICE/OUTPATIENT VISIT, EST		
02/09/2001	DRUG	00026851251			CIPROFLOXACIN HCL	
02/10/2001	DRUG	61570007201			ESTROGENS,ESTERIFIED	
02/17/2001	DRUG	00085045803			LORATADINE	
02/19/2001	DRUG	61570007201			ESTROGENS,ESTERIFIED	

66 YO FEMALE WITH A HX OF DM II, SLEEP DISTURBANCE, CHEST PAIN, HYPERTENSION, IS TAKING GLYBURIDE, DOXEPIN, FUROSEMIDE, ATENOLOL, DIAZEPAM, DOXEPIN, METFORMIN, AND NIZATIDINE. THE DOXEPIN AND FUROSEMIDE AFFECT BLOOD SUGAR CONTROL. THE DIAZEPAM, NIZATIDINE, BENZONATATE, AND DOXEPIN INTERACT TO INCREASE DROWSINESS. THE METFORMIN AND GLYBURIDE MAY CAUSE EXCESSIVE HYPOGLYCEMIA. THE ATENOLOL MAY MASK THE SIGNS OF HYPOGLYCEMIA IN DIABETIC PATIENTS. DOXEPIN HAS BEEN ASSOCIATED WITH SYNCOPE AND FALLS IN OLDER PATIENTS. DIAZEPAM IS A LONG-ACTING BENZODIAZEPINE AND MAY PRODUCE PROLONGED SEDATION AND INCREASE THE RISK OF FALLS.

02/20/2001	DIAG	E8199	MVA UNS INJURING UNS PERSON			
02/20/2001	DIAG	7231	CERVICALGIA			
02/20/2001	DIAG	8470	SPRAIN/STRAIN OF NECK			
02/20/2001	DIAG	8470	SPRAIN/STRAIN OF NECK			
02/20/2001	DRUG	00406035705			HYDROCODONE BIT/ACETAMINOPHEN	
02/20/2001	DRUG	52544080601			METHOCARBAMOL	

APPENDIX IX. EXAMPLE PROFILES

Patient ID: 5401AAAAAAABIYSO, Year of Birth: 1922, Gender: Male, Trigger Date: 11/11/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
09/24/1999	DIAG	4280	CONGESTIVE HEART FAILURE			
09/24/1999	DIAG	78057	OTH/UNS SLEEP APNEA			
09/28/1999	DIAG	25000	DIABETES UNCOMPL TYPE II			
09/29/1999	DRUG	00007414020			CARVEDILOL	
10/04/1999	DRUG	00039022310			GLIMEPIRIDE	
10/05/1999	DRUG	00172423480			BUMETANIDE	
10/07/1999	DIAG	V048	VACCINE FOR INFLUENZA			
10/07/1999	CPT4	90659		FLU VACCINE, WHOLE, IM		
10/08/1999	DRUG	00029315920			ROSIGLITAZONE MALEATE	
10/08/1999	DRUG	00085078701			POTASSIUM CHLORIDE	
10/08/1999	DIAG	4019	UNS HYPERTENSION			
10/08/1999	DIAG	5939	UNS DISORDER KIDNEY/URETER			
10/08/1999	CPT4	99213		OFFICE/OUTPATIENT VISIT, EST		
10/09/1999	DRUG	00006001958			LISINOPRIL	
10/09/1999	DRUG	00781205101			TERAZOSIN HCL	
10/15/1999	DIAG	4280	CONGESTIVE HEART FAILURE			
10/15/1999	DIAG	5939	UNS DISORDER KIDNEY/URETER			
10/18/1999	DRUG	00078023405			FLUVASTATIN SODIUM	
10/18/1999	DRUG	00186045258			FELODIPINE	

77 YO MALE PATIENT WITH A HISTORY OF CONGESTIVE HEART FAILURE, HYPERTENSION, AND DM TYPE II IS TREATED WITH CARVEDILOL, BUMETANIDE, LISINOPRIL FOR CONGESTIVE HEART FAILURE AND HYPERTENSION. GLIMEPIRIDE AND ROSIGLITAZONE FOR DM. FLUVASTATIN FOR HYPERLIPIDEMIA. TERAZOSIN FOR PROSTATIC HYPERTROPHY. FELODIPINE FOR HYPERTENSION. POTASSIUM FOR ELECTROLYTE DEPLETION CAUSED BY THE BUMETANIDE. THE CARVEDILOL MAY POTENTIATE HYPOGLYCEMIA AND MASK ITS SIGNS, IT ALSO CAUSES DIZZINESS. LISINOPRIL MAY CAUSE HYPOTENSION AND DIZZINESS. BUMETANIDE AFFECTS GLUCOSE CONTROL AND CAUSES DIZZINESS. THE HYPOGLYCEMIC DRUGS MAY CAUSE HYPOGLYCEMIA, ESPECIALLY IN COMBINATION WITH CARVEDILOL. ROSIGLITAZONE MAY WORSEN CHF. TERAZOSIN CAN CAUSE DIZZINESS AND HEADACHE AND POSTURAL HYPOTENSION. FELODIPINE SHOULD BE USED WITH CAUTION IN PATIENTS WITH CHF.

11/11/1999	DIAG	E8120	MVA COLLISION UNSP DRIVER			
11/11/1999	DIAG	E8199	MVA UNS INJURING UNS PERSON			
11/11/1999	DIAG	4019	UNS HYPERTENSION			
11/11/1999	DIAG	4280	CONGESTIVE HEART FAILURE			
11/11/1999	DIAG	5939	UNS DISORDER KIDNEY/URETER			
11/11/1999	DIAG	7840	HEADACHE			
11/11/1999	DIAG	81200	FRACTURE UP END HUMERUS UNSP CLOS			
11/11/1999	DIAG	81220	FRACTURE HUMERUS UNSP CLOSED			
11/11/1999	DIAG	8180	FRACTURE ARM MULT/UNSP CLOSED			

APPENDIX IX. EXAMPLE PROFILES

```
11/11/1999 DIAG  87320       OPEN WOUND OF UNSPECE UNSPEC
11/11/1999 DIAG  87342       OPEN WOUND OF FOREHEAD
11/11/1999 DIAG  8738        OPEN WOUND OF HEAD OT
11/11/1999 DIAG  95901       UNS HEAD INJURY
11/11/1999 DIAG  9591        OTH/UNS INJURY TRUNK
```

Patient ID: d510AAAAAAGHBJQL, Year of Birth: 1917, Gender: Female, Trigger Date: 09/13/2000

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
05/09/2000	DIAG	7804	DIZZINESS/GIDDINESS			0
05/26/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			0
05/26/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			0
06/05/2000	DIAG	1101	DERMATOPHYTOSIS NAIL			0
06/05/2000	CPT4	11721		DEBRIDE NAIL, 6 OR MORE		0
07/06/2000	DRUG	00049156066			GLIPIZIDE 30	
07/06/2000	DRUG	00087606005			METFORMIN HCL 30	
07/06/2000	DRUG	00378265010			AMITRIPTYLINE HCL 30	
07/06/2000	DRUG	55953054435			RANITIDINE HCL 90	
08/01/2000	DIAG	53081	ESOPHAGEAL REFLUX			
08/07/2000	DIAG	36616	NUCLEAR SCLEROSIS			
08/07/2000	CPT4	92014		EYE EXAM & TREATMENT		
08/21/2000	DIAG	68111	ONYCHIA/PARONYCHIA TOE			
08/21/2000	CPT4	10060		DRAINAGE OF SKIN ABSCESS		
08/22/2000	DIAG	78650	UNSPEC CHEST PAIN			
08/28/2000	DRUG	00049156066			GLIPIZIDE 30	
08/28/2000	DRUG	00087606005			METFORMIN HCL	
08/28/2000	DRUG	00378265010			AMITRIPTYLINE HCL	

83 YO FEMALE WITH DM II, EOSPHAGEAL REFLUX, AND HAS HAD BOUTS OF DIZZINESS/GIDDINESS AND CHEST PAIN, IS RECEIVING GLIPIZIDE, METFORMIN, AND AMITRIPTYLINE. AMITRIPTYLINE AFFECTS GLUCOSE CONTROL AND ALSO CAUSES DROWSINESS. RANITIDINE AND AMITRIPTYLINE SHOULD BE USED WITH CAUTION IN ELDERLY PTS BECAUSE OF INCREASED CNS REACTIONS.THE GLIPIZIDE AND METFORMIN MAY CAUSE EXCESSIVE HYPOGLYCEMIA.

09/13/2000	DIAG	E8120	MVA COLLISION UNSP DRIVER			
09/13/2000	CPT4	99283		EMERGENCY DEPT VISIT		
09/13/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			
09/13/2000	DIAG	78650	UNSPEC CHEST PAIN			
09/13/2000	DIAG	92411	CONTUSION OF KNEE			
09/13/2000	DIAG	9248	CONTUSION OF MULTIPLE SITES NEC			

APPENDIX IX. EXAMPLE PROFILES

Patient ID: e810AAAAAAAKECPD, Year of Birth: 1931, Gender: Female, Trigger Date: 09/04/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
07/16/1999	DRUG	00002861501			INSULIN ZINC EXTEND HUMAN REC	30
07/16/1999	DRUG	00049156066			GLIPIZIDE	30
07/16/1999	DRUG	00087607005			METFORMIN HCL	30
07/16/1999	DRUG	00378262510			AMITRIPTYLINE HCL	30
07/16/1999	DRUG	59762738002			IBUPROFEN	30
07/16/1999	DIAG	25001	DIABETES UNCOMPL TYPE I			
07/16/1999	DIAG	2810	PERNICIOUS ANEMIA			
07/16/1999	DIAG	3579	UNS INFLAMMATORY/TOXIC NEUROPATHY			
07/16/1999	DIAG	71690	UNS ARTHROPATHY SITE UNS			
07/16/1999	DIAG	7291	UNS MYALGIA/MYOSITIS			
08/31/1999	DIAG	25001	DIABETES UNCOMPL TYPE I			
08/31/1999	DIAG	486	PNEUMONIA ORGANISM UNS			
08/31/1999	DIAG	78650	UNSPEC CHEST PAIN			

68 YO FEMALE WITH A HX OF DM II, PNEUMONIA, ARTHROPATHY, MYALGIA, NEUROPATHY IS BEING TREATED WITH IBUPROFEN FOR PAINFUL CONDITIONS. GLIPIZIDE, METFORMIN, INSULIN IS BEING USED FOR THE DM II. THESE HYPOGLYCEMIC DRUGS MAY CAUSE EXCESSIVE HYPOGLYCEMIA. THE AMITRIPTYLINE AFFECTS BLOOD SUGAR LEVEL CONTROL AND CAUSES DROWSINESS.

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
09/04/1999	DIAG	E8129	MVA COLLIS UNSP PERS UNSPEC			
09/04/1999	DRUG	52544034905			HYDROCODONE BIT/ACETAMINOPHEN	2
09/04/1999	DIAG	8409	SPRAIN/STRAIN SHOULDER/ARM UNSPEC			
09/04/1999	DIAG	8470	SPRAIN/STRAIN OF NECK			
09/04/1999	DIAG	95909	INJURY FACE/NECK			
09/04/1999	DIAG	9592	OTH/UNS INJURY SHOULDER/UPPER ARM			

Patient ID: e810AAAAAACGLKBK, Year of Birth: 1927, Gender: Male, Trigger Date: 08/19/2000

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
06/14/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			
06/19/2000	DIAG	3659	UNS GLAUCOMAS			
06/19/2000	DIAG	36616	NUCLEAR SCLEROSIS			

APPENDIX IX. EXAMPLE PROFILES

06/26/2000	DRUG	50111036603			AMITRIPTYLINE HCL	30
06/30/2000	DIAG	3659	UNS GLAUCOMAS			
06/30/2000	DIAG	3659	UNS GLAUCOMAS			
06/30/2000	CPT4	92083		VISUAL FIELD EXAMINATION(S)		
06/30/2000	CPT4	99212		OFFICE/OUTPATIENT VISIT, EST		
07/11/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			
007/11/2000	DIAG	7038	OTHER DISEASES NAIL			
08/11/2000	DRUG	00078017605			FLUVASTATIN SODIUM	30
08/11/2000	DRUG	55953034480			GLYBURIDE	30

73 YO MALE WITH DM II AND GLAUCOMA IS TREATED FOR THE DM WITH GLYBURIDE AND IS ALSO RECEIVING AMITRIPTYLINE WHICH AFFECTS BLOOD SUGAR LEVELS, WORSENS GLAUCOMA, AND CAUSES DROWSINESS. GLYBURIDE AND AMITRIPTYLINE SHOULD BE USED WITH CAUTION IN ELDERLY PTS.

08/19/2000	DIAG	E8130	MVA OT VEH COLLISION DRIVER			
08/19/2000	DIAG	7242	LUMBAGO			
08/19/2000	DIAG	7245	UNS BACKACHE			
08/19/2000	DIAG	8479	SPRAIN/STRAIN OF BACK UNSPEC			

Patient ID: h702AAAAAAAHCBCG, Year of Birth: 1921, Gender: Male, Trigger Date: 04/17/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
02/10/1999	DIAG	25000	DIABETES UNCOMPL TYPE II			
02/10/1999	DIAG	3569	UNS IDIOPATHIC PERIPH NEUROPATHY			
02/12/1999	DRUG	38245043310			GLYBURIDE	30
02/17/1999	DRUG	00597005801			TAMSULOSIN HCL	30
02/17/1999	DRUG	55953054470			RANITIDINE HCL	30
02/19/1999	DRUG	50924055350			BLOOD SUGAR DIAGNOSTIC	25
02/24/1999	DRUG	00364250801			NORTRIPTYLINE HCL	30
02/25/1999	DRUG	00228271311			ISOSORBIDE MONONITRATE	30
03/05/1999	DRUG	00006007231			FINASTERIDE	30
03/05/1999	DRUG	00088179730			DILTIAZEM HCL	30
03/05/1999	DRUG	00093074101			PROPOXYPHENE HCL	30
03/08/1999	DRUG	38245043310			GLYBURIDE	30
03/15/1999	DRUG	00228205210			DIAZEPAM	30
03/15/1999	DRUG	08881602018			LANCETS	20
03/15/1999	DRUG	55953054470			RANITIDINE HCL	30
03/16/1999	DRUG	00597005801			TAMSULOSIN HCL	30
03/22/1999	DIAG	41401	ATHEROSCLER NATIVE CORONARY ART			
03/22/1999	DIAG	V4581	AORTOCORONARY BYPASS STATUS			
03/22/1999	CPT4	99213		OFFICE/OUTPATIENT VISIT, EST		
03/24/1999	DRUG	00364250801			NORTRIPTYLINE HCL	30
03/30/1999	DRUG	50924055350			BLOOD SUGAR DIAGNOSTIC	25
04/05/1999	DRUG	00006007231			FINASTERIDE	30

APPENDIX IX. EXAMPLE PROFILES

04/05/1999	DRUG	00088179730		DILTIAZEM HCL	30
04/05/1999	DRUG	00378013001		PROPOXYPHENE HCL/ACETAMINOPHEN	30
04/12/1999	DRUG	38245043310		GLYBURIDE	30
04/12/1999	DRUG	55953054470		RANITIDINE HCL	30

78 YO OLD MALE WITH A HISTORY OF CORONARY ATHEROSCLEROSIS, AORTOCORONARY BYPASS, DIABETES TYPE II, PERIPHERAL NEUROPATHY, AND HEARING LOSS WAS BEING TREATED WITH NORTRIPTYLINE AND PROPOXYPHENE (BOTH WITH CNS EFFECTS). PROPOXYPHENE AND NORTRIPTYLINE SHOULD NOT BE USED IN ELDERLY PATIENTS. THE PATIENT IS ALSO RECEIVING GLYBURIDE WHICH LOWERS BLOOD SUGAR AND MAY CAUSE HYPOGLYCEMIA, ESPECIALLY IN THE ELDERLY. RANITIDINE AND DILTIAZEM INTERACT TO INCREASE THE HYPOTENSIVE EFFECTS OF DILTIAZEM.

04/17/1999	DIAG	E8120	MVA COLLISION UNSP DRIVER
04/17/1999	DIAG	E8495	PLACE OCCURRENCE STREET/HIGHWAY
04/17/1999	DIAG	E8495	PLACE OCCURRENCE STREET/HIGHWAY
04/17/1999	DIAG	71941	PAIN IN JOINT SHOULDER
04/17/1999	DIAG	7231	CERVICALGIA
04/17/1999	DIAG	7248	OTH SYMPTOMS REFERABLE TO BACK
04/17/1999	DIAG	8470	SPRAIN/STRAIN OF NECK

Patient ID: h702AAAAAAANXKJG, Year of Birth: 1932, Gender: Female, Trigger Date: 09/21/1998

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
07/23/1998	DRUG	00087607005			METFORMIN HCL	30
07/23/1998	DRUG	00781148801			AMITRIPTYLINE HCL	30
07/23/1998	DIAG	4732	CHRONIC ETHMOIDAL SINUSITIS			
07/23/1998	DIAG	4779	ALLERGIC RHINITIS CAUSE UNS			
08/13/1998	DRUG	00087081941			BUSPIRONE HCL	30
08/13/1998	DRUG	00087607005			METFORMIN HCL	30
08/14/1998	DRUG	00006011754			MONTELUKAST SODIUM	30
08/14/1998	DRUG	00049156066			GLIPIZIDE	30
08/14/1998	DRUG	00085061402			ALBUTEROL	2
08/19/1998	DRUG	00049156066			GLIPIZIDE	30
08/19/1998	DRUG	00781148801			AMITRIPTYLINE HCL	30
08/19/1998	DRUG	49502069703			ALBUTEROL SULFATE	30
08/24/1998	DRUG	00536403644			METHYLPREDNISOLONE	30
09/03/1998	DIAG	4720	CHRONIC RHINITIS			
09/10/1998	DRUG	00085061402			ALBUTEROL	2
09/11/1998	DRUG	00075006037			TRIAMCINOLONE ACETONIDE	20
09/11/1998	DRUG	49502069703			ALBUTEROL SULFATE	30
09/16/1998	DRUG	00049156066			GLIPIZIDE	30
09/16/1998	DRUG	00087607005			METFORMIN HCL	30
09/16/1998	DRUG	00536432510			PREDNISONE	30

APPENDIX IX. EXAMPLE PROFILES

66 YO FEMALE WITH A HX OF DM II, SINUSITIS AND RHINITIS IS BEING TREATED WITH GLIPIZIDE, METFORMIN AND IS ALSO TAKING AMITRIPTYLINE, ALBUTEROL, THEOPHYLLINE, PREDNISONE, AND MONTELUKAST. THE AMITRIPTYLINE, ALBUTEROL, AND STEROIDS AFFECT BLOOD SUGAR CONTROL. THE ALBUTEROL AND THEOPHYLLINE CAUSE JITTERINESS AND NERVOUSNESS. THE AMITRIPTYLINE CAUSES DROWSINESS.

09/21/1998	DIAG	E8190	MVA UNS INJURING MVA DRIVER	
09/21/1998	DIAG	71941	PAIN IN JOINT SHOULDER	
09/21/1998	DIAG	8409	SPRAIN/STRAIN SHOULDER/ARM UNSPEC	
09/21/1998	CPT4	450		
09/21/1998	CPT4	73030		X-RAY EXAM OF SHOULDER
09/21/1998	CPT4	99283		EMERGENCY DEPT VISIT

Patient ID: d510AAAAAAGNKJOQ, Year of Birth: 1922, Gender: Male, Trigger Date: 07/16/1998

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
05/13/1998	DRUG	00074632113			ERYTHROMYCIN BASE	10
05/13/1998	DRUG	59762371704			TRIAZOLAM	60
05/19/1998	DRUG	00378045705			LORAZEPAM	30
05/20/1998	DRUG	00029321120			PAROXETINE HCL	90
05/27/1998	DRUG	00056017270			WARFARIN SODIUM	30
06/02/1998	DIAG	42731	ATRIAL FIBRILLATION			0
06/09/1998	DRUG	00065024615			BETAXOLOL HCL	30
06/15/1998	DRUG	00378045705			LORAZEPAM	30
06/23/1998	DIAG	41401	ATHEROSCLER NATIVE CORONARY ART			0
06/23/1998	DIAG	41401	ATHEROSCLER NATIVE CORONARY ART			0
06/23/1998	DIAG	42731	ATRIAL FIBRILLATION			0
06/24/1998	DRUG	00056017270			WARFARIN SODIUM	90
06/24/1998	DIAG	250				0
06/24/1998	DIAG	V709	UNS GENERAL MEDICAL EXAMINATION			0
07/15/1998	DIAG	42732	ATRIAL FLUTTER			0
07/15/1998	CPT4	85610		PROTHROMBIN TIME		0

APPENDIX IX. EXAMPLE PROFILES

77YO MALE WITH A HX OF CORONARY ATHEROSCLEROSIS AND ATRIAL FIBRILLATION/FLUTTER WAS BEING TREATED WITH THREE CNS AFFECTING DRUGS (TRIAZOLAM, LORAZEPAM, AND PAROXETINE) ALL OF WHICH ARE SEDATING. THE HEART RHYTHM DISORDER MAY ALSO BE DRIVER IMPAIRING. THE BETAXOLOL IS A BETA BLOCKER WHICH CAN CAUSE DIZZINESS.

					0
					0
07/16/1998	CPT4	99284		EMERGENCY DEPT VISIT	0
07/18/1998	DRUG	00781140405			
07/16/1998	DIAG	9221	CONTUSION OF CHEST WALL		
07/16/1998	DIAG	E8120	MVA COLLISION UNSP DRIVER		

Patient ID: d510AAAAAAGOXTVS, Year of Birth: 1931, Gender: Female, Trigger Date: 04/08/1998

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
02/12/1998	DIAG	29632	MAJ DEPRESS DIS RECURR EPI MOD			
02/17/1998	DIAG	36616	NUCLEAR SCLEROSIS			
02/24/1998	DRUG	00046087502				28
02/24/1998	DRUG	61314032810			FLUOROMETHOLONE	7
03/02/1998	DRUG	00049490066			SERTRALINE HCL	60
03/02/1998	DRUG	00087081841			BUSPIRONE HCL	30
03/02/1998	DRUG	51875034501			HYDROXYZINE HCL	12
03/02/1998	DIAG	6929	CONTACT DERMATITIS UNS CAUSE			0
03/02/1998	DIAG	7089	UNSPEC URTICARIA			0
03/06/1998	DIAG	6160	CERVICITIS/ENDOCERVICITIS			0
03/28/1998	DRUG	00046087502				28
03/28/1998	DRUG	59762371804			TRIAZOLAM	30

67 YO FEMALE WITH DEPRESSION AND VISUAL PROBLEMS WAS TREATED WITH FOUR CNS AFFECTING MEDICATIONS – SERTRALINE, BUSPIRONE, HYDROXYZINE, AND TRIAZOLAM.

04/08/1998	DIAG	E8199	MVA UNS INJURING UNS PERSON		0
04/08/1998	CPT4	72070		X-RAY EXAM OF THORACIC SPINE	0
04/08/1998	CPT4	72100		X-RAY EXAM OF LOWER SPINE	0
04/08/1998	CPT4	73560		X-RAY EXAM OF KNEE, 1 OR 2	0

APPENDIX IX. EXAMPLE PROFILES

04/08/1998	CPT4	73620		X-RAY EXAM OF FOOT	0
04/08/1998	CPT4	99283		EMERGENCY DEPT VISIT	0
04/08/1998	CPT4	99283		EMERGENCY DEPT VISIT	
04/08/1998	DIAG	71945	PAIN IN JOINT PELVIS/THIGH		0
04/08/1998	DIAG	71946	PAIN IN JOINT LOWER LEG		0
04/08/1998	DIAG	71947	PAIN IN JOINT ANKLE/FOOT		0
04/08/1998	DIAG	7242	LUMBAGO		0
04/08/1998	DIAG	9599	INJURY UNS SITE		0

Patient ID: e810AAAAAABAOSFG, Year of Birth: 1928, Gender: Female, Trigger Date: 03/08/2001

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
01/09/2001	DIAG	4619	UNS ACUTE SINUSITIS			
01/09/2001	DIAG	7840	HEADACHE			
01/17/2001	DRUG	00603388128			HYDROCODONE BIT/ACETAMINOPHEN	15
01/24/2001	DRUG	00228205950			LORAZEPAM	12
01/25/2001	DRUG	00364233701			CLINDAMYCIN HCL	7
01/30/2001	DRUG	00603388128			HYDROCODONE BIT/ACETAMINOPHEN	5
01/31/2001	DRUG	00456404001			CITALOPRAM HYDROBROMIDE	30
02/13/2001	DRUG	00228205950			LORAZEPAM	12
02/13/2001	DRUG	00378262510			AMITRIPTYLINE HCL	20
02/13/2001	DIAG	29633	MAJ DEPRESS DIS RECUR EPI SEV			
02/13/2001	DIAG	3039				
02/13/2001	DIAG	7245	UNS BACKACHE			
02/13/2001	DIAG	73300	OSTEOPOROSIS UNSPEC			
02/28/2001	DRUG	00069306075			AZITHROMYCIN	5
03/04/2001	DRUG	00228205950			LORAZEPAM	12
03/04/2001	DRUG	00456404001			CITALOPRAM HYDROBROMIDE	30

73 YO FEMALE WITH A HX OF MAJOR DEPRESSION, BACKACHE, OSTEOPOROSIS, HEADACHE, SINUSITIS, IS TREATED WITH FOUR CNS AFFECTING MEDICATIONS –HYDROCODONE, LORAZEPAM, CITALOPRAM, AND AMITRIPTYLINE. LORAZEPAM, HYDROCODONE, AND AMITRIPTYLINE SHOULD BE USED WITH CAUTION IN OLDER PATIENTS BECAUSE THEY CAN CAUSE SOMNOLENCE AND DIZZINESS.

03/08/2001	DIAG	E8130	MVA OT VEH COLLISION DRIVER	
03/08/2001	DIAG	E8130	MVA OT VEH COLLISION DRIVER	
03/08/2001	CPT4	324		
03/08/2001	CPT4	450		
03/08/2001	CPT4	71020		CHEST X-RAY
03/08/2001	CPT4	99283		EMERGENCY DEPT VISIT
03/08/2001	DIAG	7840	HEADACHE	

APPENDIX IX. EXAMPLE PROFILES

```
03/08/2001 DRUG  00603388128                                                    HYDROCODONE BIT/ACETAMINOPHEN  1
03/08/2001 DIAG  78650       UNSPEC CHEST PAIN
03/08/2001 DIAG  78652       PAINFUL RESPIRATION
03/08/2001 DIAG  9221        CONTUSION OF CHEST WALL
03/08/2001 DIAG  9591        OTH/UNS INJURY TRUNK
```

Patient ID: 5401AAAAAAAVJRBF, Year of Birth: 1921, Gender: Female, Trigger Date: 05/24/1999

```
Date       Type  Code        Diagnosis                          Procedure                          Rx                             Days of
Supply
_____________________________________________________________________________________________________________________________________
___

03/23/1999 DRUG  00603107558                                                    GUAIFENESIN/CODEINE PHOS
03/30/1999 CPT4  84702                                  CHORIONIC GONADOTROPIN TEST
03/31/1999 DRUG  00603242621                                                    BENZONATATE
03/31/1999 DRUG  49884056905                                                    AMOXICILLIN TRIHYDRATE
03/31/1999 DIAG  4619        UNS ACUTE SINUSITIS
03/31/1999 DIAG  490         BRONCHITISACUTE/CHRONIC
04/12/1999 DRUG  00182127405                                                    ACETAMINOPHEN/CAFFEINE/BUTALB
04/19/1999 DIAG  70219       OTH SEBORRHEIC KERATOSIS
04/19/1999 DIAG  70909       OTHER DYSCHROMIA
05/03/1999 DRUG  00597008130                                                    IPRATROPIUM BROMIDE
05/03/1999 DRUG  49884056905                                                    AMOXICILLIN TRIHYDRATE
05/03/1999 DIAG  4619        UNS ACUTE SINUSITIS
05/17/1999 DRUG  00048105005                                                    LEVOTHYROXINE SODIUM
05/22/1999 DIAG  42742       VENTRICULAR FLUTTER
```

78 YO FEMALE WITH VENTRICULAR FLUTTER AND ACUTE BRONCHITIS/SINUSITIS IS BEING TREATED WITH AMOXICILLIN AND BENZONATATE AND GUIFENESIN WITH CODEINE FOR COUGH AND ACETAMINOPHEN WITH CAFFEINE AND BUTALBITAL FOR PAIN. THE TWO MEDICINES FOR COUGH AND THE PAIN MEDICINE CAN CAUSE SEDATION, DIZZINESS, AND MENTAL CONFUSION. IPRATROPIUM IS USED FOR BRONCHITIS BUT IT CAN CAUSE PALPITATIONS, NERVOUSNES, AND DIZZINESS. LEVOTHYROXINE, PARTICULARLY IN THE ELDERLY, CAN CAUSE TACHYCARDIA, ARRHYTHMIAS.

```
05/24/1999 DIAG  E8190       MVA UNS INJURING MVA DRIVER
```

Patient ID: 4001AAAAAAAIGEWV, Year of Birth: 1920, Gender: Female, Trigger Date: 09/03/1999

APPENDIX IX. EXAMPLE PROFILES

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
06/28/1999	DRUG	00378003210			METOPROLOL TARTRATE	
06/28/1999	DRUG	38245022520			POTASSIUM CHLORIDE	
06/29/1999	DIAG	42731	ATRIAL FIBRILLATION			
06/29/1999	DIAG	V5861	ENCOUNTER LONG TERM ANTICOAGULANT			
06/29/1999	CPT4	85610		PROTHROMBIN TIME		
07/13/1999	DRUG	00228222296			HYDROCHLOROTHIAZIDE	
07/13/1999	DRUG	00310013034			LISINOPRIL	
07/24/1999	DIAG	42731	ATRIAL FIBRILLATION			
07/24/1999	DIAG	4280	CONGESTIVE HEART FAILURE			
07/24/1999	DIAG	V5861	ENCOUNTER LONG TERM ANTICOAGULANT			
07/24/1999	CPT4	80054				
07/24/1999	CPT4	85610		PROTHROMBIN TIME		
08/13/1999	DRUG	00173024975			DIGOXIN	
08/13/1999	DRUG	00555087402			WARFARIN SODIUM	
08/31/1999	DIAG	42731	ATRIAL FIBRILLATION			
08/31/1999	DIAG	V5861	ENCOUNTER LONG TERM ANTICOAGULANT			
08/31/1999	CPT4	85610		PROTHROMBIN TIME		
08/31/1999	HCPCS	G0001		ROUTINE VENIPUNCT CLCT SPECI		

79 YO FEMALE WITH A HISTORY OF ATRIAL FIBRILLATION, CONGESTIVE HEART FAILURE, AND CATARACT IS BEING TREATED WITH DIGOXIN, WARFARIN, HYDROCHLOROTHIAZIDE, LISINOPRIL, METOPROLOL, AND POTASSIUM. OLDER ADULTS MAY DEVELOP EXAGGERATED SERUM/TISSUE CONCENTRATIONS OF DIGOXIN WHICH CAN CAUSE VISUAL DISTURBANCES, DIZZINESS, AND HEART RHYTHM DISTURBANCES. LISINOPRIL CAN CAUSE HYPOTENSION ESPECIALLY IN DEHYDRATED PTS WITH CONGESTIVE HEART FAILURE AND IT CAN ALSO CAUSE DIZZINESS. HYDROCHLOROTHIAZIDE CAN CAUSE DIZZINESS. METOPROLOL CAN CAUSE DROWSINESS.

09/03/1999	DIAG	E8120	MVA COLLISION UNSP DRIVER			
09/03/1999	DIAG	8500	CONCUSSION WO COMA			
09/03/1999	DIAG	85400	INTRACRANIAL INJURY OT			
09/03/1999	DIAG	8602	TRAUMATIC HEMOTHORAX WO OPEN WD			
09/03/1999	DIAG	86121	LUNG CONTUSION WO OPEN WOUND			

20

APPENDIX IX. EXAMPLE PROFILES

Patient ID: d510AAAAAAFKWQLT, Year of Birth: 1931, Gender: Female, Trigger Date: 01/08/2001

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
12/19/2000	DRUG	00555003302			CHLORDIAZEPOXIDE HCL	30
12/20/2000	DIAG	1121	CANDIDIASIS VULVA/VAGINA			0
12/20/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			0
12/29/2000	DIAG	61610	UNS VAGINITIS/VULVOVAGINITIS			0
01/01/2001	DRUG	00025152531			CELECOXIB	30
01/01/2001	DRUG	00172290880			FUROSEMIDE	30
01/01/2001	DRUG	00186074231			OMEPRAZOLE	30
01/01/2001	DRUG	00245004015			POTASSIUM CHLORIDE	30
01/01/2001	DRUG	00378021001			CHLORPROPAMIDE	30
01/01/2001	DRUG	00406053201			OXYCODONE HCL/ACETAMINOPHEN	20
01/04/2001	DIAG	61610	UNS VAGINITIS/VULVOVAGINITIS			0
01/04/2001	CPT4	99213		OFFICE/OUTPATIENT VISIT, EST		0
01/05/2001	DRUG	00062535001			TERCONAZOLE	7
01/05/2001	DRUG	49158020007			HYDROCORTISONE	7

70 YO FEMALE WITH A HISTORY OF DM TYPE II AND PREVIOUS FRACTURE IS BEING TREATED WITH CELECOXIB AND OXYCODONE FOR PAIN. CHLORPROPAMIDE FOR THE DM. CHLORPROPAMIDE IN OLDER PATIENTS IS PARTICULARLY PRONE TO CAUSING HYPOGLYCEMIA AND DIZZINESS. FUROSEMIDE AFFECTS BLOOD SUGAR CONTROL AND ATENOLOL MAY ALSO AFFECT GLUCOSE CONTROL AND MASK SIGNS OF HYPOGLYCEMIA. OXYCODONE AND CHLORDIAZEPOXIDE SHOULD ALSO BE USED WITH CAUTION IN OLDER PTS AND MAY CAUSE EXCESSIVE SEDATION, DIZZINESS, AND CONFUSION.

01/08/2001	DIAG	E8120	MVA COLLISION UNSP DRIVER	01/08/2001 DRUG	00093310905 AMOXICILLIN TRIHYDRATE	2
01/08/2001	DIAG	25000	DIABETES UNCOMPL TYPE II			0
01/08/2001	DIAG	4019	UNS HYPERTENSION			0
01/08/2001	DIAG	71597	OSTEOARTHROSIS UNSP ANKLE/FOOT			0
01/08/2001	DIAG	71887	OTH JOINT DERANGEMENT OT ANKLE/FOOT			0
01/08/2001	DIAG	71887	OTH JOINT DERANGEMENT OT ANKLE/FOOT			0
01/08/2001	DIAG	92420	CONTUSION OF FOOT			0
01/08/2001	DIAG	92420	CONTUSION OF FOOT			0
01/08/2001	CPT4	73630		X-RAY EXAM OF FOOT		0
01/08/2001	CPT4	99283		EMERGENCY DEPT VISIT		0
01/08/2001	HCPCS	A0390		ALS MILEAGE		0
01/08/2001	HCPCS	A0427		AMB SERV ADV LIFE SUPPORT ER		0
01/17/2001	DRUG	00555003302				

APPENDIX IX. EXAMPLE PROFILES

Patient ID: 5401AAAAAAATBPWG, Year of Birth: 1927, Gender: Male, Trigger Date: 06/20/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
05/12/1999	DRUG	00378021610			FUROSEMIDE	
05/12/1999	DIAG	78650	UNSPEC CHEST PAIN			
05/27/1999	DRUG	00093314505			CEPHALEXIN MONOHYDRATE	
05/27/1999	DRUG	00185072001			INDOMETHACIN	
05/29/1999	CPT4	85610		PROTHROMBIN TIME		
06/03/1999	DIAG	4011	BENIGN HYPERTENSION			
06/03/1999	DIAG	4280	CONGESTIVE HEART FAILURE			
06/08/1999	DRUG	00555083402			WARFARIN SODIUM	
06/10/1999	DRUG	00078017605			FLUVASTATIN SODIUM	

72 YO MALE WITH HYPERTENSION AND CONGESTIVE HEART FAILURE IS TREATED WITH WARFARIN, FLUVASTATIN, INDOMETHACIN, FUROSEMIDE. INDOMETHCAIN AND FLUVASTATIN INTERACT WITH WARFARIN TO CAUSE BLEEDING. INDOMETHACIN CAN ALSO CAUSE HEADACHES AND CONFUSION. INDOMETHCAIN SHOULD BE USED WITH CAUTION IN PTS WITH CHF. FUROSEMIDE CAN CAUSE HYPOTENSION AND DIZZINESS.

06/20/1999	DIAG	E8120	MVA COLLISION UNSP DRIVER			
06/20/1999	DIAG	E8120	MVA COLLISION UNSP DRIVER			
06/20/1999	CPT4	99284		EMERGENCY DEPT VISIT		
06/20/1999	DIAG	8470	SPRAIN/STRAIN OF NECK			
06/20/1999	DIAG	8471	SPRAIN/STRAIN THORACIC REGION			
06/20/1999	DIAG	8479	SPRAIN/STRAIN OF BACK UNSPEC			

6
Patient ID: h702AAAAAAAIOFCJ, Year of Birth: 1922, Gender: Male, Trigger Date: 02/13/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply

APPENDIX IX. EXAMPLE PROFILES

12/02/1998	DRUG	00056017270		WARFARIN SODIUM	30
12/02/1998	DRUG	00088179642		DILTIAZEM HCL	30
12/02/1998	DRUG	00173024975		DIGOXIN	30
01/02/1999	DRUG	00056017270		WARFARIN SODIUM	30
01/02/1999	DRUG	00088179642		DILTIAZEM HCL	30
01/02/1999	DRUG	00173024975		DIGOXIN	30
01/13/1999	DIAG	4280	CONGESTIVE HEART FAILURE		
01/13/1999	DIAG	4280	CONGESTIVE HEART FAILURE		
01/13/1999	DIAG	4280	CONGESTIVE HEART FAILURE		
01/13/1999	CPT4	99232	SUBSEQUENT HOSPITAL CARE		
01/13/1999	CPT4	99233	SUBSEQUENT HOSPITAL CARE		
01/13/1999	CPT4	99254	INITIAL INPATIENT CONSULT		
01/16/1999	DIAG	4280	CONGESTIVE HEART FAILURE		
01/20/1999	DRUG	00093310905		AMOXICILLIN TRIHYDRATE	9
01/20/1999	DRUG	00472001116		GUAIFENESIN/P-EPHED HCL/COD	8
01/20/1999	DIAG	4659	ACUTE UPPER RESP INFECTIONS UNS		
01/20/1999	CPT4	99212	OFFICE/OUTPATIENT VISIT, EST		
02/02/1999	DRUG	00088179642		DILTIAZEM HCL	30
02/02/1999	DRUG	00172290780		FUROSEMIDE	30
02/02/1999	DRUG	00173024975		DIGOXIN	30
02/04/1999	DRUG	00056017270		WARFARIN SODIUM	30

77 YO MALE PT WITH CONGETIVE HEART FAILURE. TREATED FOR CONGESTIVE HEART FAILURE WITH DIGOXIN AND FUROSEMIDE. RECEIVING DILTIAZEM FOR HEART RHYTHM DISORDERS AND WARFARIN FOR ATRIAL FIBRILLATION. RECENT TREATMENT WITH A COUGH MEDICINE WITH CODEINE FOR AN ACUTE URI. OLDER ADULTS MAY DEVELOP EXAGGERATED SERUM/TISSUE CONCENTRATIONS OF DIGOXIN WHICH CAN CAUSE VISUAL DISTURBANCES, DIZZINESS, AND HEART RHYTHM DISTURBANCES. DILTIAZEM AGGRAVATES CHF AND CAUSES DIZZINESS AND HYPOTENSION. THE CODEINE IN THE COUGH MEDICINE MAY CAUSE DROWSINESS. FUROSEMIDE MAY CAUSE DIZZINESS AND HYPOTENSION. THIS PATIENT IS NOT RECEIVING ANY POTASSIUM SUPPLEMENTS.

02/13/1999	DIAG	E8230	OT COLLISION STNDNG OBJ DRIV	
02/13/1999	DIAG	2930	ACUTE DELIRIUM	
02/13/1999	DIAG	3013	EXPLOSIVE PERSONALITY DISORDER	
02/13/1999	DIAG	4590	UNS HEMORRHAGE	
02/13/1999	DIAG	78002	TRANSIENT ALTERATION AWARENESS	
02/13/1999	DIAG	920	CONTUSION FACE/SCALP/NCK	
02/13/1999	CPT4	99221	INITIAL HOSPITAL CARE	

Patient ID: d510AAAAAAHRWDQE, Year of Birth: 1932, Gender: Female, Trigger Date: 06/04/2000

APPENDIX IX. EXAMPLE PROFILES

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
03/28/2000	DIAG	2449	UNS HYPOTHYROIDISM			0
03/28/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			0
03/28/2000	CPT4	85025		AUTOMATED HEMOGRAM		0
03/29/2000	DRUG	00071015523			ATORVASTATIN CALCIUM	30
03/29/2000	DRUG	00087607111			METFORMIN HCL	30
03/29/2000	DRUG	00378265010			AMITRIPTYLINE HCL	30
03/31/2000	DRUG	00013830304			LATANOPROST	30
03/31/2000	DRUG	00023866510			BRIMONIDINE TARTRATE	30
03/31/2000	DRUG	00048113003			LEVOTHYROXINE SODIUM	30
03/31/2000	DRUG	00310013210			LISINOPRIL	30
04/25/2000	DRUG	00071015523			ATORVASTATIN CALCIUM	30
04/25/2000	DRUG	00087607111			METFORMIN HCL	30
04/25/2000	DRUG	00378265010			AMITRIPTYLINE HCL	30
05/08/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			0
05/08/2000	DIAG	2725	LIPOPROTEIN DEFICIENCIES			0
05/08/2000	CPT4	99213		OFFICE/OUTPATIENT VISIT, EST		0
05/17/2000	DRUG	00048113003			LEVOTHYROXINE SODIUM	30
05/17/2000	DRUG	00310013210			LISINOPRIL	30

68 YO FEMALE WITH A HX OF HYPOTHYROIDISM, DM II, TAKES AMITRIPTYLINE WHICH CAUSES DROWSINESS AND AFFECTS BLOOD SUGAR CONTROL.
THE PATIENT IS ALSO BEING TREATED WITH METFORMIN FOR DM, LEVOTHYROXINE FOR HYPOTHYROIDISM, ATORVASATIN FOR HYPERLIPIDEMIA, LISINOPRIL FOR HYPERTENSION.

06/04/2000	DIAG	E8130	MVA OT VEH COLLISION DRIVER			
06/04/2000	DIAG	2449	UNS HYPOTHYROIDISM			0
06/04/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			0
06/04/2000	DIAG	25091	DIABETES W COMPL UNSP TYPE I			0
06/04/2000	DIAG	71949	PAIN IN JOINT MULT SITES			0
06/04/2000	DIAG	72981	SWELLING LIMB			0
06/04/2000	DIAG	78900	ABDOMINAL PAIN UNS SITE			0
06/04/2000	DIAG	9221	CONTUSION OF CHEST WALL			0
06/04/2000	DIAG	9222	CONTUSION OF ABDOMINAL WALL			0
06/04/2000	DIAG	92411	CONTUSION OF KNEE			0

Patient ID: 5401AAAAAAAEOLLJ, Year of Birth: 1931, Gender: Female, Trigger Date: 12/01/1999

APPENDIX IX. EXAMPLE PROFILES

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
10/07/1999	DRUG	00006010658			LISINOPRIL	
10/07/1999	DRUG	00049491066			SERTRALINE HCL	
10/07/1999	DRUG	00078017605			FLUVASTATIN SODIUM	
10/07/1999	DRUG	00085078701			POTASSIUM CHLORIDE	
10/07/1999	DRUG	00093067005			GEMFIBROZIL	
10/07/1999	DRUG	00781148810			AMITRIPTYLINE HCL	
10/07/1999	DRUG	52544048701			ESTRADIOL	
11/05/1999	DRUG	00006010658			LISINOPRIL	
11/05/1999	DRUG	00049491066			SERTRALINE HCL	
11/05/1999	DRUG	00085078701			POTASSIUM CHLORIDE	
11/05/1999	DRUG	00093067005			GEMFIBROZIL	
11/05/1999	DRUG	00781148810			AMITRIPTYLINE HCL	
11/05/1999	DRUG	52544048701			ESTRADIOL	
11/08/1999	CPT4	80061		LIPID PANEL		
11/09/1999	DRUG	00078017605			FLUVASTATIN SODIUM	
11/22/1999	DRUG	00005312931			DIAZEPAM	
11/22/1999	DRUG	00085092402			CLOTRIMAZOLE/BETAMET DIPROP	
11/22/1999	DRUG	00781196610			FUROSEMIDE	
11/22/1999	DIAG	4019	UNS HYPERTENSION			
11/22/1999	CPT4	99213		OFFICE/OUTPATIENT VISIT, EST		
11/24/1999	DIAG	7291	UNS MYALGIA/MYOSITIS			
11/28/1999	DRUG	00006010658			LISINOPRIL	
11/28/1999	DRUG	00049491066			SERTRALINE HCL	
11/28/1999	DRUG	00085078701			POTASSIUM CHLORIDE	
11/28/1999	DRUG	00093067005			GEMFIBROZIL	
11/28/1999	DRUG	00781148810			AMITRIPTYLINE HCL	
11/28/1999	DRUG	52544048701			ESTRADIOL	

68 YO FEMALE HAS A HX OF HYPERTENSION AND MYALGIA/MYOSITIS. INTERESTING TO NOTE THAT GEMFIBROZIL AND FLUVASTATIN INTERACT TO CAUSE MYALGIA AND MYOPATHY. CNS IMPAIRING DRUGS PRESCRIBED ARE SERTRALINE, DIAZEPAM, AND AMITRIPTYLINE. PATIENT HAS ALSO BEEN PRESCRIBED LISINOPRIL AND FUROSEMIDE FOR HYPERTENSION.

12/01/1999	DIAG	E8120	MVA COLLISION UNSP DRIVER			
12/01/1999	DIAG	E8199	MVA UNS INJURING UNS PERSON			

APPENDIX IX. EXAMPLE PROFILES

Patient ID: d510AAAAAACNBMHX, Year of Birth: 1925, Gender: Male, Trigger Date: 08/08/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
06/09/1999	DRUG	00045152550			LEVOFLOXACIN	10
06/09/1999	DRUG	51285029504			GUAIFENESIN/PPA HCL	15
06/16/1999	DRUG	59930150008			ALBUTEROL SULFATE	37
06/30/1999	DRUG	00029321120			PAROXETINE HCL	30
06/30/1999	DRUG	00078017605			FLUVASTATIN SODIUM	30
07/14/1999	DRUG	00007411713			FAMCICLOVIR	7
07/14/1999	DIAG	0539	HERPES ZOSTER WO COMPLICATION			0
07/24/1999	DRUG	59930150008			ALBUTEROL SULFATE	37
07/31/1999	DRUG	00029321120			PAROXETINE HCL	30
07/31/1999	DRUG	00078017605			FLUVASTATIN SODIUM	30

74 YO MALE WITH A HX OF CHRONIC AIRWAY OBSTRUCTION AND HERPES ZOSTER, WAS PRESCRIBED LEVOFLOXACIN AND PAROXETINE WHICH MAY CAUSE CNS EFFECTS. PAROXETINE AND ALBUTEROL BOTH MAY CAUSE JITTERINESS. FLUVASTATIN MAY CAUSE HEADACHE AND DIZZINESS.

0

08/08/1999	DIAG	9591	OTH/UNS INJURY TRUNK			0
08/08/1999	DIAG	E8190	MVA UNS INJURING MVA DRIVER			
08/08/1999	DIAG	71944	PAIN IN JOINT HAND			0
08/08/1999	DIAG	7231	CERVICALGIA			0
08/08/1999	DIAG	7840	HEADACHE			0
08/08/1999	DIAG	9190	ABRASION OT			0
08/08/1999	DIAG	95909	INJURY FACE/NECK			0

Patient ID: e810AAAAAABBWDOA, Year of Birth: 1930, Gender: Female, Trigger Date: 01/17/2002

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
12/10/2001	DRUG	00378077201			VERAPAMIL HCL	30

APPENDIX IX. EXAMPLE PROFILES

12/10/2001	DRUG	00555087702		FLUOXETINE HCL	30
12/10/2001	DRUG	61570007301		ESTROGENS,ESTERIFIED	30
12/11/2001	DRUG	00781140405		LORAZEPAM	30
12/17/2001	DIAG	4359	UNS TRANSIENT CEREBRAL ISCHEMIA		
12/17/2001	CPT4	351			
12/17/2001	CPT4	70450	CT HEAD/BRAIN W/O DYE		
01/01/2002	DRUG	00781140410		LORAZEPAM	30
01/02/2002	DRUG	00071015523		ATORVASTATIN CALCIUM	30
01/02/2002	DIAG	2724	OTH/UNS HYPERLIPIDEMIA		
01/02/2002	DIAG	4019	UNS HYPERTENSION		
01/02/2002	DIAG	4359	UNS TRANSIENT CEREBRAL ISCHEMIA		
01/02/2002	DIAG	70219	OTH SEBORRHEIC KERATOSIS		
01/02/2002	CPT4	99214	OFFICE/OUTPATIENT VISIT, EST		
01/09/2002	DRUG	00378077201		VERAPAMIL HCL	30
01/09/2002	DRUG	00555087702		FLUOXETINE HCL	30
01/09/2002	DRUG	61570007301		ESTROGENS,ESTERIFIED	30
01/11/2002	DIAG	71513	OSTEOARTHROSIS LOCAL PRIM FOREARM		
01/11/2002	DIAG	9593	OTH/UNS INJURY ELBOW FOREARM/WRIST		
01/11/2002	CPT4	73110	X-RAY EXAM OF WRIST		

6

72 YO FEMALE WITH A HX OF HYPERTENSION AND TRANSIENT CEREBRAL ISCHEMIA AND OSTEOARTHROSIS IS PRESCRIBED TWO CNS AFFECTING DRUGS –LORAZEPAM AND FLUOXETINE. SHE IS ALSO PRESCRIBED VERAPAMIL FOR HYPERTENSION AND ATORVASTATIN FOR HYPERLIPIDEMIA. VERAPAMIL INTERACTS WITH ATORVASTATIN TO INCREASE THE BLOOD LEVEL OF ATORVASTATIN.VERAPAMIL ALSO MAY CAUSE DIZZINESS.

01/17/2002	DIAG	E8120	MVA COLLISION UNSP DRIVER		
01/17/2002	DRUG	55370014108		NAPROXEN	30
01/17/2002	DRUG	00591565810		CYCLOBENZAPRINE HCL	30
01/17/2002	DIAG	72190	SPONDYLOSIS UNS SITE WOMYELOPATHY		
01/17/2002	DIAG	7226	DEGENERATION IV DISC SITE UNS		
01/17/2002	DIAG	7231	CERVICALGIA		
01/17/2002	DIAG	7295	PAIN IN LIMB		
01/17/2002	DIAG	9598	INJURY OTHER SITES INC MULT SITES		

Patient ID: a302AAAAAAASOIOZ, Year of Birth: 1929, Gender: Male, Trigger Date: 05/04/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
04/05/1999	DRUG	00007413920			CARVEDILOL	30

APPENDIX IX. EXAMPLE PROFILES

```
04/05/1999 DRUG  00904773240                                                    GEMFIBROZIL                    30
04/07/1999 DRUG  00005356331                                                    METHOCARBAMOL                  12
04/09/1999 DIAG  4280        CONGESTIVE HEART FAILURE
04/09/1999 DIAG  71590       OSTEOARTHROSIS UNSP SITE
04/12/1999 DRUG  00049490066                                                    SERTRALINE HCL                 30
04/14/1999 DRUG  00093089005                                                    PROPOXYPHENE/ACETAMINOPHEN     16
04/19/1999 DRUG  00005356331                                                    METHOCARBAMOL                  12
04/19/1999 DRUG  00310013510                                                    LISINOPRIL                     66
04/20/1999 DRUG  00093310905                                                    AMOXICILLIN TRIHYDRATE         1
04/20/1999 DRUG  00172290970                                                    HYDROXYZINE PAMOATE            30
04/20/1999 DIAG  4280        CONGESTIVE HEART FAILURE
04/20/1999 DIAG  4280        CONGESTIVE HEART FAILURE
04/22/1999 DIAG  71590       OSTEOARTHROSIS UNSP SITE
04/22/1999 HCPCS J1885                                  INJ KETOROLAC TROMETHAMINE P
04/23/1999 DIAG  72400       SPINAL STENOSIS UNS NONCERVICAL
04/23/1999 DIAG  78057       OTH/UNS SLEEP APNEA
04/23/1999 HCPCS E1403
04/28/1999 DIAG  53010       UNS ESOPHAGITIS
04/28/1999 CPT4  99214                                  OFFICE/OUTPATIENT VISIT, EST
05/03/1999 DRUG  00071035323                                                    TROGLITAZONE                   30
05/03/1999 DRUG  00228208550                                                    PROPOXYPHENE/ACETAMINOPHEN     7
```

70 YO MALE WITH CHF, OSTEOARTHROSIS, SPINAL STENOSIS, AND SLEEP APNEA IS TREATED WITH CARVEDILOL, LISINOPRIL, AND GEMFIBROZIL FOR CARDIOVASCULAR DISORDERS. THE PROPOXYPHENE AND METHOCARBAMOL IS FOR THE OSTEOARTHROSIS AND SPINAL STENOSIS. SERTRALINE IS AN SSRI ANTIDEPRESSANT. HYDROXYZINE IS AN ANTIHISTAMINE. HYDROXYZINE, METHOCARBAMOL, AND PROPOXYPHENE HAVE INCREASED CNS EFFECTS IN OLDER PTS. THESE INCLUDE SEDATION, CONFUSION, DIZZINESS. SERTRALINE MAY CAUSE NERVOUSNESS. LISINOPRIL AND CARVEDILOL MAY CAUSE HYPOTENSION. THE SLEEP APNEA MAY HAVE MORE DAYTIME SEDATION ASSOCIATED WITH IT.

```
13
05/04/1999 DIAG  E8120       MVA COLLISION UNSP DRIVER
```

Patient ID: a302AAAAAAAVHGAU, Year of Birth: 1935, Gender: Female, Trigger Date: 05/24/2001

APPENDIX IX. EXAMPLE PROFILES

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
03/04/2001	DRUG	00378075101			CYCLOBENZAPRINE HCL	30
03/24/2001	DRUG	00005321943			ATENOLOL	30
03/24/2001	DRUG	59911581201			LORAZEPAM	30
03/30/2001	DRUG	00378075101			CYCLOBENZAPRINE HCL	30
04/13/2001	DRUG	00300304613			LANSOPRAZOLE	30
04/18/2001	DIAG	4019	UNS HYPERTENSION			
04/18/2001	CPT4	99214		OFFICE/OUTPATIENT VISIT, EST		
04/26/2001	DRUG	00005321943			ATENOLOL	30
04/26/2001	DRUG	00046086781			ESTROGENS,CONJUGATED	90
04/29/2001	DRUG	00378075101			CYCLOBENZAPRINE HCL	30
04/30/2001	DRUG	00071015623			ATORVASTATIN CALCIUM	30
05/04/2001	DRUG	59911581201			LORAZEPAM	30
05/14/2001	DRUG	00300304613			LANSOPRAZOLE	30

66 YO FEMALE HAS HYPERTENSION. SHE IS RECEIVING ATENOLOL TO TREAT THE HYPERTENSION. SHE IS TAKING CONJUGATED ESTROGENS, ATORVASTATIN, AND LANSOPRAZOLE. SHE IS ALSO RECEIVING TWO CNS AFFECTING DRUGS –CYCLOBENZAPRINE AND LORAZEPAM. ATENOLOL MAY CAUSE HYPOTENSION, DIZZINESS, INSOMNIA, AND CONFUSION.

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
05/24/2001	DIAG	E8190	MVA UNS INJURING MVA DRIVER			
05/24/2001	DIAG	E8495	PLACE OCCURRENCE STREET/HIGHWAY			
05/24/2001	DIAG	7809	OTH GENERAL SYMPTOMS			
05/24/2001	DIAG	8470	SPRAIN/STRAIN OF NECK			
05/24/2001	DIAG	9529	SPINAL CORD INJURY UNS SITE			

10
Patient ID: h702AAAAAAAMTNBC, Year of Birth: 1928, Gender: Female, Trigger Date: 06/28/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply

APPENDIX IX. EXAMPLE PROFILES

05/07/1999	DRUG	00083006330		BENAZEPRIL HCL	30
05/11/1999	DRUG	00406036105		HYDROCODONE BIT/ACETAMINOPHEN	30
05/22/1999	DRUG	00049490066		SERTRALINE HCL	30
06/01/1999	DRUG	00364047505		CARISOPRODOL	3
06/01/1999	DIAG	7245	UNS BACKACHE		
06/04/1999	DRUG	00025138131		OXAPROZIN	10
06/11/1999	DRUG	00083006330		BENAZEPRIL HCL	30
06/11/1999	DRUG	00087606010		METFORMIN HCL	30
06/17/1999	DRUG	00406036105		HYDROCODONE BIT/ACETAMINOPHEN	3
06/24/1999	DRUG	00364047505		CARISOPRODOL	3

71 YO FEMALE PT WITH A HX OF BACKACHE. SHE IS TAKING FOUR DRUGS THAT AFFECT THE CNS –HYDROCODONE, SERTRALINE, OXAPROZIN, AND CARISOPRODOL. THEY CAUSE DIZZINESS, DROWSINESS, CONFUSION, BLURRED VISION. BENAZEPRIL CAN ALSO CAUSE DIZZINESS AND HYPOTENSION.

06/28/1999	DIAG	E8139	MVA OT VEH COLLISION PERS UNSP
06/28/1999	DIAG	E8495	PLACE OCCURRENCE STREET/HIGHWAY
06/27/1999	DIAG	4590	UNS HEMORRHAGE
06/27/1999	DIAG	9598	INJURY OTHER SITES INC MULT SITES
06/28/1999	DIAG	8470	SPRAIN/STRAIN OF NECK
06/28/1999	DIAG	95200	C1 C4 INJ W UNS SPINAL CORD INJ
06/28/1999	DIAG	9591	OTH/UNS INJURY TRUNK

11
Patient ID: d510AAAAAAFKWQLT, Year of Birth: 1931, Gender: Female, Trigger Date: 01/08/2001

Date	Type	Code	Diagnosis	Procedure	Rx	Days of Supply
12/19/2000	DRUG	00555003302			CHLORDIAZEPOXIDE HCL	30
12/20/2000	DIAG	1121	CANDIDIASIS VULVA/VAGINA			0
12/20/2000	DIAG	25000	DIABETES UNCOMPL TYPE II			0
12/29/2000	DIAG	61610	UNS VAGINITIS/VULVOVAGINITIS			0
12/29/2000	CPT4	76075		US EXAM, ABDOM, LIMITED		0
12/29/2000	CPT4	99213		OFFICE/OUTPATIENT VISIT, EST		0
01/01/2001	DRUG	00025152531			CELECOXIB	30
01/01/2001	DRUG	00172290880			FUROSEMIDE	30
01/01/2001	DRUG	00186074231			OMEPRAZOLE	30

APPENDIX IX. EXAMPLE PROFILES

01/01/2001	DRUG	00245004015		POTASSIUM CHLORIDE	30
01/01/2001	DRUG	00378021001		CHLORPROPAMIDE	30
01/01/2001	DRUG	00406053201		OXYCODONE HCL/ACETAMINOPHEN	20
01/04/2001	CPT4	99213	OFFICE/OUTPATIENT VISIT, EST		0
01/05/2001	DRUG	00062535001		TERCONAZOLE	7
01/05/2001	DRUG	49158020007		HYDROCORTISONE	7

70 YO FEMALE WITH A HISTORY OF DM TYPE II AND PREVIOUS FRACTURE IS BEING TREATED WITH CELECOXIB AND OXYCODONE FOR PAIN. CHLORPROPAMIDE FOR THE DM. CHLORPROPAMIDE IN OLDER PATIENTS IS PARTICULARLY PRONE TO CAUSING HYPOGLYCEMIA AND DIZZINESS. FUROSEMIDE AFFECTS BLOOD SUGAR CONTROL AND ATENOLOL MAY ALSO AFFECT GLUCOSE CONTROL AND MASK SIGNS OF HYPOGLYCEMIA. OXYCODONE AND CHLORDIAZEPOXIDE SHOULD ALSO BE USED WITH CAUTION IN OLDER PTS AND MAY CAUSE EXCESSIVE SEDATION, DIZZINESS, AND CONFUSION.

01/08/2001	DIAG	92420	CONTUSION OF FOOT		0
01/08/2001	DIAG	E8120	MVA COLLISION UNSP DRIVER		
01/08/2001	DRUG	00093310905		AMOXICILLIN TRIHYDRATE	2
01/08/2001	DIAG	25000	DIABETES UNCOMPL TYPE II		0
01/08/2001	DIAG	4019	UNS HYPERTENSION		0
01/08/2001	DIAG	71597	OSTEOARTHROSIS UNSP ANKLE/FOOT		0
01/08/2001	DIAG	71887	OTH JOINT DERANGEMENT OT ANKLE/FOOT		0
01/08/2001	DIAG	71887	OTH JOINT DERANGEMENT OT ANKLE/FOOT		0
01/08/2001	DIAG	92420	CONTUSION OF FOOT		0

Patient ID: e810AAAAAABUMGYK, Year of Birth: 1932, Gender: Female, Trigger Date: 10/02/2000

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
07/17/2000	DIAG	71941	PAIN IN JOINT SHOULDER			
07/17/2000	DIAG	71941	PAIN IN JOINT SHOULDER			
07/17/2000	CPT4	73030		X-RAY EXAM OF SHOULDER		
07/17/2000	CPT4	99204		OFFICE/OUTPATIENT VISIT, NEW		
07/27/2000	DRUG	00378400301			ALPRAZOLAM	14
08/15/2000	DRUG	00310013234			LISINOPRIL	30
08/15/2000	DRUG	55953034370			GLYBURIDE	30
08/28/2000	DRUG	00378400301			ALPRAZOLAM	14
08/28/2000	DRUG	00456032301			LEVOTHYROXINE SODIUM	30
08/28/2000	DIAG	71591	OSTEOARTHROSIS UNSP SHOULDER			

APPENDIX IX. EXAMPLE PROFILES

08/28/2000	DIAG	71591	OSTEOARTHROSIS UNSP SHOULDER		
08/28/2000	DIAG	71591	OSTEOARTHROSIS UNSP SHOULDER		
08/28/2000	CPT4	20610		DRAIN/INJECT, JOINT/BURSA	
08/28/2000	CPT4	73030		X-RAY EXAM OF SHOULDER	
08/28/2000	HCPCS	J0702		INJ BETAMETHASONE ACETATE &	
09/18/2000	DRUG	00310013234			LISINOPRIL 30
09/18/2000	DRUG	55953034370			GLYBURIDE 30
09/28/2000	DRUG	00378400301			ALPRAZOLAM 14

68 YO FEMALE HAS A HISTORY OF OSTEOARTHROSIS AND DM II. SHE IS BEING PRESCRIBED ALPRAZOLAM, GLYBURIDE, LISINOPRIL, AND LEVOTHYROXINE. SIDE EFFECTS OF GLYBURIDE ARE HEADACHE AND DIZZINESS. LEVOTHYROXINE CAN CAUSE NERVOUSNESS AND PALPITATIONS. LISINOPRIL CAN CAUSE HYPOTENSION. ALPRAZOLAM CAN CAUSE DROWSINESS, ATAXIA, AND LIGHTHEADEDNESS.

10/02/2000	DIAG	E8130	MVA OT VEH COLLISION DRIVER		
10/02/2000	DIAG	71941	PAIN IN JOINT SHOULDER		
10/02/2000	DIAG	7231	CERVICALGIA		
10/02/2000	DIAG	8470	SPRAIN/STRAIN OF NECK		

Patient ID: h702AAAAAAALNJXR, Year of Birth: 1933, Gender: Male, Trigger Date: 12/16/1999

Date	Type	Code	Diagnosis	Procedure	Rx	Days Supply
10/18/1999	DRUG	59772691001			POTASSIUM CHLORIDE	30
10/18/1999	DIAG	25000	DIABETES UNCOMPL TYPE II			
10/18/1999	DIAG	25000	DIABETES UNCOMPL TYPE II			
10/18/1999	CPT4	99212		OFFICE/OUTPATIENT VISIT, EST		
10/18/1999	HCPCS	J1820		INJ INSULIN TO 100 UNITS		
10/21/1999	DRUG	00049276066			DOXAZOSIN MESYLATE	30
10/28/1999	DRUG	00002871501			INSUL NPH HU REC/INS RG HU REC	30
11/03/1999	DRUG	00378020810			FUROSEMIDE	30
11/15/1999	DRUG	52544024001			LORAZEPAM	30
11/16/1999	DIAG	V048	VACCINE FOR INFLUENZA			
11/16/1999	CPT4	90782		INJECTION, SC/IM		
11/16/1999	HCPCS	G0008		ADMIN FLU VIRUS VAC-NO MD FE		
11/19/1999	DRUG	59772691001			POTASSIUM CHLORIDE	30
12/06/1999	DRUG	00378020810			FUROSEMIDE	30
12/07/1999	DRUG	00002871501			INSUL NPH HU REC/INS RG HU REC	30

APPENDIX IX. EXAMPLE PROFILES

12/15/1999 DRUG 52544024001 LORAZEPAM 30

66 YO MALE IS A TYPE II DIABETIC. HE IS TREATED WITH INSULIN. FUROSEMIDE MAY CAUSE HYPERGLYCEMIA AND CAUSE DIZZINESS. DOXAZOSIN CAN CAUSE MARKED HYPOTENSION AND SYNCOPE, AS WELL AS SOMNOLENCE AND FATIGUE. GREATER THAN 10% OF PATIENTS EXPERIENCE SEDATION WITH LORAZEPAM.

12/16/1999	DIAG	E8120	MVA COLLISION UNSP DRIVER
12/16/1999	DIAG	E8495	PLACE OCCURRENCE STREET/HIGHWAY
12/16/1999	DIAG	7231	CERVICALGIA
12/16/1999	DIAG	8470	SPRAIN/STRAIN OF NECK
12/16/1999	DIAG	8472	SPRAIN/STRAIN LUMBAR REGION

DOT HS 810 858

May2008

U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

NHTSA
www.nhtsa.gov