



2013 HOSPITALIZATIONS DUE TO DRUG POISONINGS IN TENNESSEE

Tennessee Department of Health, Division of Policy, Planning
and Assessment

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*The mission of the Tennessee Department of Health is to protect, promote
and improve the health and prosperity of people in Tennessee.*

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2013 Hospitalizations due to Drug Poisonings in Tennessee

Executive Summary

This surveillance report summarizes the treatment of all individuals who sought medical care at a licensed Tennessee hospital for a drug-related poisoning episode during the 2013 calendar year. The information provided includes the frequency of emergency department visits and hospitalizations for treatment of drug poisonings, demographic information of the populations with the highest incidence of drug poisonings, the nature of the poisonings and the categories of drugs most frequently responsible for these poisonings, and the distribution of the payer mix for the hospital charges.

Overview

Drug poisonings were involved in 21,298 inpatient and outpatient hospital discharges in 2013. Of these, 93% were residents of Tennessee. Emergency department admissions accounted for 92% of drug poisoning-related discharges. The total number of inpatient admissions and outpatient visits for drug poisoning has remained at over 20,000 during 2009 through 2013.

Populations with the Highest Incidence of Drug Poisonings

Most of the hospitalizations due to drug poisoning were among females (58%). Whites had the highest incidence of drug poisonings and 49% of all cases were among white females. **Drug poisonings were the most common among those aged 20 to 59 years** with the highest incidence, specifically, being among those 40-49 years old.

Nature of the Drug Poisonings

Nearly half (44%) of all drug poisonings were accidental with 36% being self-afflicted or suicide-related. The most common drug category responsible for drug poisonings was psychotropic agents. Approximately one out of five drug poisonings involved more than one drug category.

Billed Charges due to Drug Poisonings

A total of **\$283 million** were billed to patients and/or their payers for inpatient and outpatient hospitalizations due to drug poisonings during 2013. The total charges increased approximately 5% from 2012.

Payer Mix

Medicare was the largest payer, paying for 27% of hospitalizations due to drug poisonings. TennCare paid for 26%, other insurance companies paid for 23%, and 20% were billed to patients.

This report was prepared pursuant to TCA 68-1-108(f).

Hospitalizations due to Drug Poisoning, 2013

Introduction

Drug poisonings are a significant problem in Tennessee. The costs, both monetary and physical, for treating these episodes are high and increasing. Drugs used in these poisonings often involve either prescriptions or over-the-counter medications. These drugs are widely available, used and misused. Therefore, it is important to understand the demographics of the population most at risk for drug poisonings and the intentions that lead to drug poisonings in Tennessee. By increasing knowledge about hospitalizations due to drug poisoning in Tennessee, better policies can be established and planning for future interventions can be conducted to reduce the burden of drug poisonings in the state.

Methods

This surveillance summary was prepared pursuant to a legislative requirement for a report that summarizes the aggregate claims data on all inpatient and outpatient discharges that include an International Classification of Diseases, 9th Edition, Clinical Modification (ICD-9-CM) code for a drug poisoning as reported for the calendar year two (2) years prior to the current year by licensed hospitals.

Hospitalizations from January 1st through December 31st, 2013 due to drug poisonings were obtained from the Tennessee Hospital Discharge Data System, a data system containing both inpatient and outpatient discharge records from all licensed Tennessee hospitals since 1997.

This report gives an overview of hospitalizations due to drug poisoning in Tennessee, which provides insight into a variety of items, from the most likely group to be hospitalized due to a drug poisoning to which drugs caused the poisoning incident to how much is charged on average per stay.

Case Definition

Drug poisonings were identified using International Classification of Diseases, 9th Edition, Clinical Modification (ICD-9-CM) codes 960-979. Unless indicated otherwise in the text, drug poisonings include discharges with an appropriate code in both primary and/or other diagnosis fields (18 fields in total). In the case of multiple diagnosis fields containing different drug poisoning codes, the **first** field with a drug poisoning code is counted.

Poisoning intention was classified based on ICD-9-CM codes in the first listed E-code field. Injury codes, E850-E858, for accidental poisoning; E930-E949 for therapeutic use; E950-E959 for suicide and self-inflicted; E960-E969 for homicide and other; rest of records for other/unknown.

Hospitalizations due to Drug Poisoning, 2013

Discharges and their Demographics

In 2013, hospitals licensed by the Tennessee Department of Health reported a total of 21,298 discharges (both inpatient and outpatient) due to drug poisoning as listed in one of the 18 diagnosis fields on the hospital discharge data reporting form. Drug poisoning was listed as the primary diagnosis on 17,748 (83%) of hospital discharges.

Of the hospital discharges, 39% were inpatient stays, while the other 61% were treated as outpatients. Among the inpatient discharges, 84% were admitted through the emergency department (ED); among outpatient discharges, 97% were ED admissions. Overall, 92% of all hospital discharges due to drug poisoning were admitted through the emergency department.

Race, Sex and Age Groups

Among discharges with valid race data, 85% were of whites, 12% were of blacks and 2% were of other races. In terms of age, the number of drug poisonings was highest in the 40-49 age group with 3,495 (16%) discharges. A majority of the drug poisoning discharges were female (58%), with 49% of all hospitalizations due to drug poisoning being among white females. Even after age-adjusting the rates to reduce the potential confounding effect of age, females in general and white females in particular had higher rates of hospitalizations due to drug poisoning. See Figure 1 on page 5.

Causes and Intentions of Drug Poisonings

Two factors of particular interest when it comes to drug poisonings are: (1) which drug was used and: (2) for what intent. The answers to these questions affect the approaches used in reducing drug poisonings.

Types of Drugs

The most common types of drugs in the hospitalizations due to drug poisonings were psychotropic agents. These agents are primarily medications used to treat the symptoms of mental disorders such as schizophrenia, depression, bipolar disorder, and anxiety disorders. The second most common types of drugs fall under the category of analgesic, antipyretic, and antirheumatic agents. Many of these agents are used to treat pain, either as prescribed by a doctor or as over-the-counter pain medicine. See Table 1 on page 5.

Intentions

The majority (80%) of drug poisonings during 2013 can be categorized as either accidental or intended self-harm. Of the total discharges, 44% of the hospitalizations due to drug poisonings were accidental. The second most common reason was due to suicide or self-harm intention (36%). The approaches to reducing drug poisoning from an intent standpoint then will differ depending on whether the poisoning was intentional or not.

Hospitalizations due to Drug Poisoning, 2013

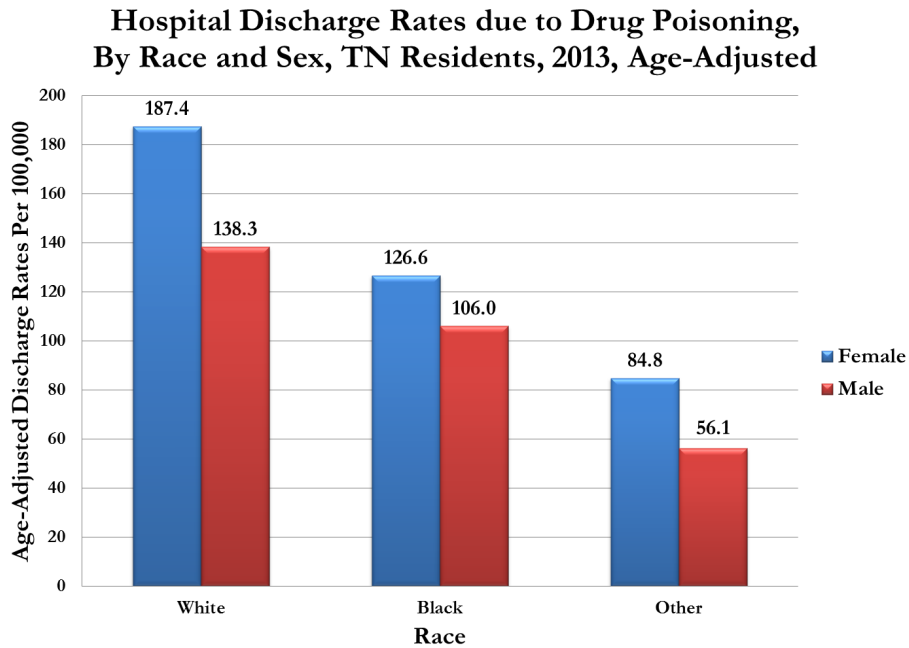


Figure 1: Age-adjusted hospital discharge rates per 100,000 persons by race and gender, with valid race and sex information

Table 1: Ten Most Common Drugs for Discharges due to Drug Poisonings, 2013, Tennessee Residents and Non-Residents

Rank	Type of Drugs	Frequency*	Percent
1	Psychotropic agents**	5,711	26.8%
2	Analgesics, antipyretics, & antirheumatics**	5,258	24.7%
3	Other and unspecified substances	3,265	15.3%
4	Sedatives and hypnotics	1,320	6.2%
5	Cardiovascular agents	885	4.2%
6	Anticonvulsants & Anti-Parkinsonian	825	3.9%
7	Hormones and substitutes	720	3.4%
8	Systemic agents	692	3.1%
9	Muscular and respiratory drugs	651	3.1%
10	Central Nervous System stimulants	457	2.1%

Percent is out of total number of discharges due to drug poisonings (n=21,298)

*In the case of multiple drug poisoning codes within one discharge record, the **first** field with a drug poisoning code indicated which drug type was counted.

**See "Additional Sources" section for examples of the brand name drugs included in these categories

Hospitalizations due to Drug Poisoning, 2013

Drug Poisoning Charges

The charges for discharges due to drug poisonings are billed to patients or to their respective insurance companies. Depending on the type of admission the average charges vary. Out of the total \$283 million charged for hospitalizations due to drug poisonings, \$222 million (79%) were charged to inpatient stays. On average, each inpatient stay resulted in charges of approximately \$26,910 and each outpatient visit averaged charges of \$4,647.

Despite outpatient visits taking the majority (61%) of discharges, inpatient stays took the higher percentage of charges despite only accounting for less than half of the total discharges due to drug poisoning.

Primary Payers

Medicare and TennCare were the most common payers billed for hospital discharges due to drug poisoning, accounting for 53% of the total number of discharges. Another 23% of the drug poisoning discharges were billed to other insurance agencies and 20% were billed directly to the patients.

Limitations of this Report

Due to the nature of the data, this report does have several limitations. First, the drug types were categories that contain several possible drugs. The actual drug involved, whether or not it was prescribed or not, dosage, and whether the drug was illicit or legal were not known. Secondly, the drug poisoning report focused on the number of discharges due to drug poisoning and details of the first diagnosis of a drug poisoning were not provided. Discharges with multiple drug poisoning diagnoses were counted and analyzed according to the first drug poisoning diagnosis in the 18 diagnosis fields. Also, federal hospitals within Tennessee do not report their data to the Tennessee Department of Health. Therefore, data from these hospitals are not included in this report. Finally, the report covers all discharges due to drug poisoning treated in Tennessee, which include non-Tennessee residents treated in licensed Tennessee hospitals. However, as this report is an overview and not meant to be exhaustive, these limitations can be used to encourage further investigation into drug poisonings in Tennessee.

Additional Sources

1. **Psychotropic agent examples by brand name** = Prozac, Valium, Ritalin, Loxitane, and others

Please see the following website for further information on psychotropic agents:

[Names and uses of psychotropic drugs](#)

2. **Analgesic, antipyretic, and antirheumatic agent examples by brand name** = Methadose, Tylenol, Aspirin, Advil, and others

Please see the following link for further information on analgesic, antipyretic, and antirheumatic agents:

[Names and uses of analgesic, antipyretic and antirheumatic drugs](#)

Technical Notes

Prepared by the Tennessee Department of Health (TDH); Division of Policy, Planning and Assessment. Statistics were derived from the TDH Hospital Discharge Data System (HDDS) and are discharge-level data.

Race was classified regardless of ethnicity. Most payments are discounted from the billed charges, therefore, the billed charges are not necessarily the actual amount paid for the services rendered. TennCare insurance included TennCare, Cover TN, Cover Kids, and Access TN.

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