

TENNESSEE DEPARTMENT OF HEALTH

# Non-Fatal Drug Overdose in Tennessee

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2012 -2015

Office of Informatics and Analytics

6/7/2017

## Introduction and purpose

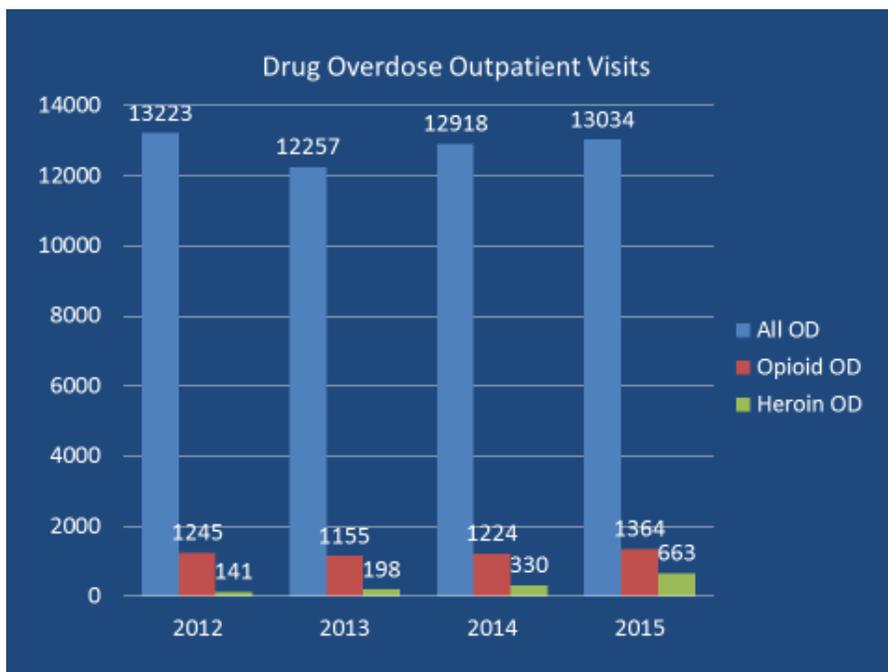
The purpose of this report is to describe nonfatal drug overdoses in the State of Tennessee from 2012 to 2015, with an emphasis on providing useful data to stakeholders of TDH at the regional and county levels. Data presented here derive from the Tennessee Hospital Discharge Data System (HDDS). The HDDS contains billing codes from discharges at hospitals statewide that includes information on inpatient hospitalizations and outpatient visits. These billing codes are based on the International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) and provide a standardized method for identification of drug overdoses.

## Definitions

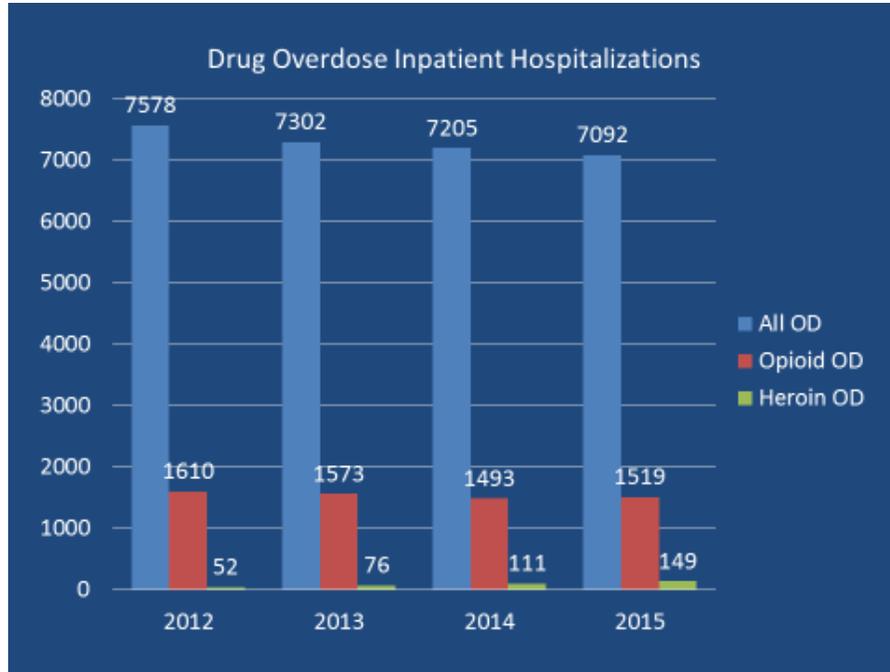
- Drug overdose (fatal and nonfatal)
  - A drug overdose is classified medically as a “drug poisoning.” An overdose may be fatal or nonfatal, and in Tennessee in 2015, approximately 15 nonfatal overdoses occurred for every identified fatal overdose.
- Principal diagnosis
  - To be classified as a drug overdose, the principal diagnosis on a discharge record may be designated as a drug poisoning. The principal diagnosis is defined as the condition responsible for the admission of the patient for care.
- External cause of injury
  - External cause of injury codes (or e-codes) describe the environmental events, circumstances, and conditions as the cause of injury, poisoning, or other adverse effects. When the principal diagnosis does not indicate drug poisoning, but the e-codes suggest a poisoning, a discharge record will be classified as a drug overdose. Note that e-codes are no longer used as of October 1<sup>st</sup>, 2015.
- ICD-9-CM and ICD-10-CM
  - The International Classification of Diseases (ICD) is a widely used method for reporting and classifying and reporting diseases and other health conditions. The National Center for Health Statistics creates a clinical modification for reporting morbidity statistics. From 2012 through the third quarter of 2015, the TN HDDS used the ninth revision of these codes (ICD-9-CM). Beginning October 1, 2015, hospitals began reporting using the tenth revision (ICD-10-CM). Classifying drug poisonings using ICD-9-CM codes requires standard diagnosis codes and external cause of injury codes (e-codes). ICD-10-CM codes no longer require e-codes.
  - It is important to note that ICD codes contain limited information on the particular drug that caused the poisoning. Poisoning by certain drugs like heroin is distinguished by unique codes while poisoning from other drugs like fentanyl cannot be determined. Because of this limitation, drug overdose categories for opioids are typically limited to two categories: overdose involving opioids excluding heroin and overdose involving heroin.
- All drug overdose, opioid overdose, and heroin overdose
  - In this report, all drug overdose or “All OD” refers to all drug poisonings, regardless of type of drug involved. Opioid overdose or “Opioid OD” refers to all poisonings caused by opioid drugs *excluding* heroin. Heroin overdose or “Heroin OD” refers to all poisonings cause by heroin.
- Inpatient Hospitalization and Outpatient Visits
  - Hospital discharge data are often classified according to type of hospital stay, regardless of how the patient was admitted to the hospital. Inpatient hospitalizations make up less than 20% of all discharges and over half of these stays involved a trip to the ER. Among outpatient visits, over 70% involved a trip to the ER.

### State-level overview 2012 – 2015

Outpatient visits resulting from drug overdose caused by all drug types first decreased from 2012 to 2013 and have increased every year since. Opioid overdose outpatient visits followed a similar pattern, rising to the highest point in 2015. Heroin overdose has consistently increased over this period. Opioid overdoses reached their highest point in 2015 at 1,364 outpatient visits. Heroin overdoses similarly reached their highest point in 2015 at 663 outpatient visits.

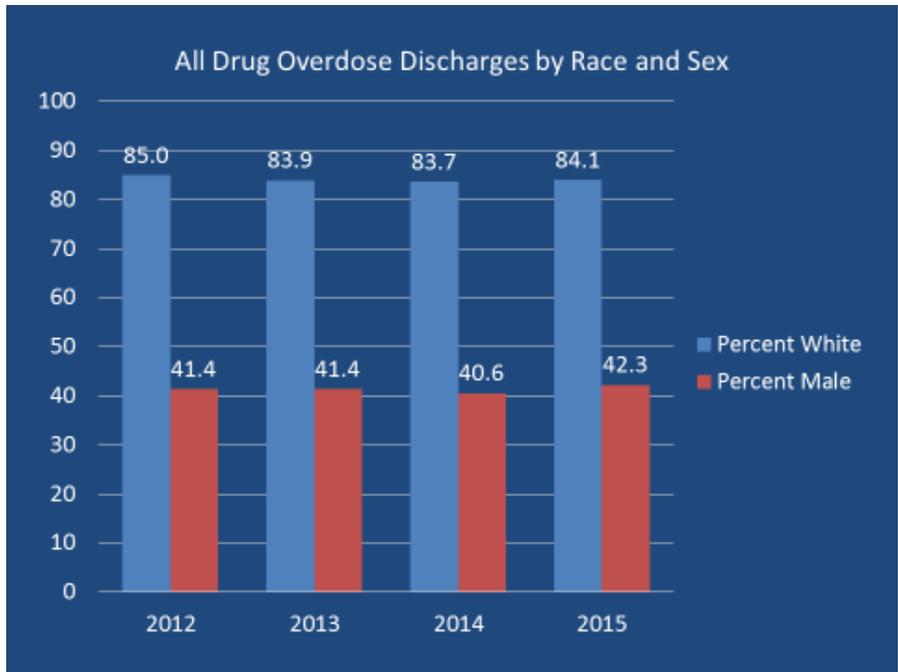


Inpatient hospitalizations resulting from all drug overdoses have generally declined from 2012 to 2015. Hospitalizations caused by opioid overdose has declined slowly as well, but went up slightly in 2015. Alternately, heroin overdoses, have steadily increased during this time period, reaching a height of 149 hospitalizations in 2015.

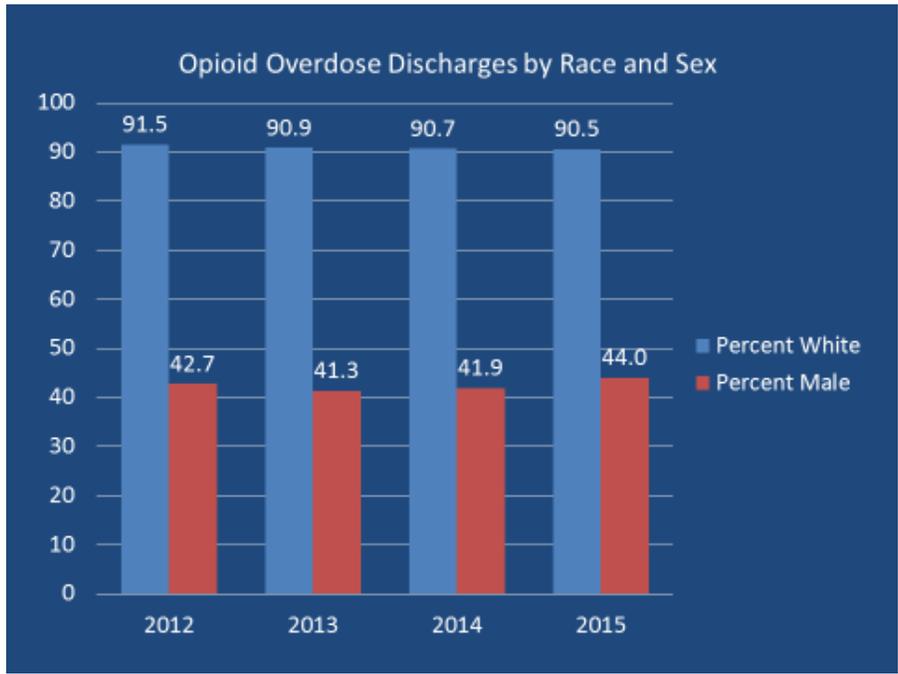


Hospital discharge records for 2016 are not fully available yet. If these trends continue, 2016 may have the highest number of non-fatal opioid and heroin overdoses recorded in the past five years. The rapid increase in heroin overdoses is of particular concern to public health and parallels increases in heroin-related deaths over the same time period.

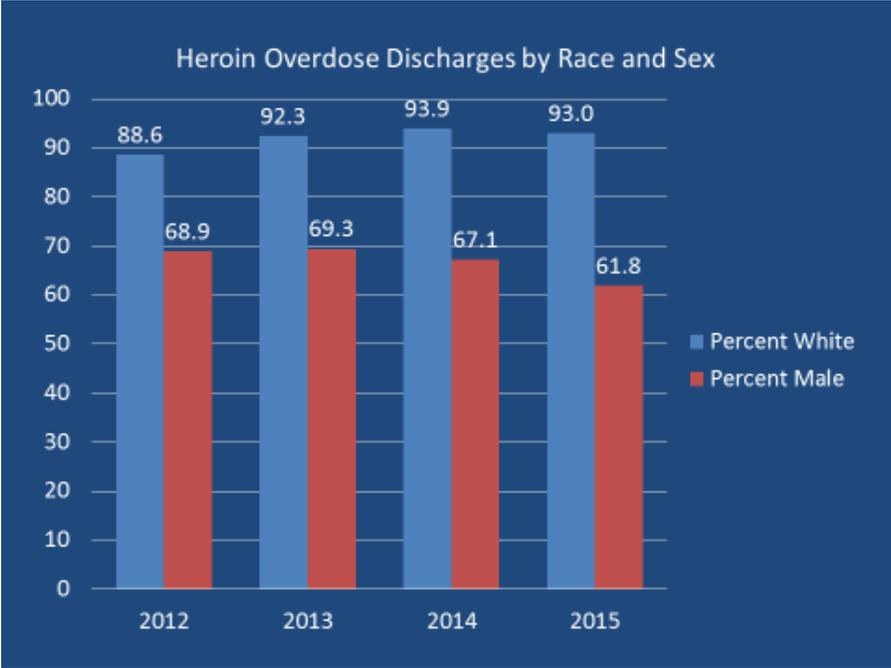
The following three figures provide breakdowns of *all hospital discharges* (inpatient and outpatient) by race and sex for each category of drug overdose. Tennesseans who go to the hospital as a result of any drug overdose are most likely to be white and female.



Tennesseans who go to the hospital as a result of opioid overdoses (excluding heroin) are more likely to be white and female as well.



Tennesseans who go to the hospital as a result of heroin overdose are much more likely to be white and to be male.



## County Level Data 2012 - 2015

The following pages include count data on outpatient visits and inpatient hospitalizations due to drug overdose for the years 2012 to 2015 by a subset of drug types.

Categories of drug overdose are designated by the CDC for the Prevention for States program as follows:

|   | <u>Criteria</u>   |
|---|---|
| Primary Inclusion/Exclusion Criteria:         | <p>Only Tennessee Residents.<br/>                     Excludes patients discharged as dead/deceased.<br/>                     Limited to non-federal acute care-affiliated facilities. Excludes VA and other federal hospitals, rehabilitation centers, and psychiatric hospitals.</p>  |
| Outpatient Visit Inclusion Criteria:          | Flagged as an outpatient record.  |
| Inpatient Hospitalization Inclusion Criteria: | Flagged as an inpatient record.   |
| All Drug Overdose Inclusion Criteria:         | <p><i>2012 - Q3 2015:</i><br/>                     Principal Diagnosis ICD-9-CM code falls in the range 960-979 (Poisoning by drugs, medicinal and biological substances)</p> <p>OR other diagnostic code or e-code fields contain an e-code in the following ranges:<br/>                     E850-E858 (Accidental poisoning by drugs, medicinal substances, and biologicals);<br/>                     E950.0-E950.5 (Suicide and self-inflicted poisoning by solid or liquid substances);<br/>                     E962.0 (Assault by drugs and medicinal substances);<br/>                     E980.0-E980.5 (Poisoning by solid or liquid substances undetermined whether accidentally or purposefully inflicted)</p> <p><i>Q4 2015:</i><br/>                     First 3 characters of Principal Diagnosis ICD-10-CM code falls in the range T36-T50 (Poisoning by drugs, medicaments, and biological substances)</p> <p>AND the intent is accidental/unintentional, intentional self-harm, assault, or undetermined intent, <i>not</i> an adverse effect or underdosing (5<sup>th</sup> or 6<sup>th</sup> character is 1, 2, 3, or 4)</p> <p>AND it is the initial or a subsequent encounter (7<sup>th</sup> character is A, D, or blank)</p> |
| Opioid Overdose Inclusion Criteria:           | <p><i>2012 - Q3 2015:</i><br/>                     Principal Diagnosis ICD-9-CM code is<br/>                     965.00 (Poisoning by opium)<br/>                     or 965.02 (Poisoning by methadone)<br/>                     or 965.09 (Poisoning by other opiates and related narcotics)</p> <p>OR other diagnostic code or e-code fields contain e-code<br/>                     E850.1 (Accidental poisoning by methadone)<br/>                     or E850.2 (Accidental poisoning by other opiates and related narcotics)</p>   |

|   | <u>Criteria</u>   |
|---|---|
| Opioid Overdose Inclusion Criteria (cont.): | <p><b>Q4 2015:</b><br/>           First 5 characters of Principal Diagnosis ICD-10-CM code are either:<br/>           T40.0X (Poisoning by opium),<br/>           T40.2X (Poisoning by other opioids),<br/>           T40.3X (Poisoning by methadone),<br/>           T40.4X (Poisoning by synthetic narcotics),<br/>           T40.60 (Poisoning by unspecified narcotics),<br/>           or T40.69 (Poisoning by other narcotics)</p> <p>AND the intent is accidental/unintentional, intentional self-harm, assault, or undetermined intent, <i>not</i> an adverse effect or underdosing (6<sup>th</sup> character is 1, 2, 3, or 4)</p> <p>AND it is the initial or a subsequent encounter (7<sup>th</sup> character is A, D, or blank)</p> |
| Heroin Overdose Inclusion Criteria:         | <p><b>2012 - Q3 2015:</b><br/>           Principal Diagnosis ICD-9-CM code is 965.01 (Poisoning by heroin)</p> <p>OR other diagnostic code or e-code fields contain e-code E850.0 (Accidental poisoning by heroin)</p> <p><b>Q4 2015:</b><br/>           First 5 characters of Principal Diagnosis ICD-10-CM code is T40.1X (Poisoning by heroin)</p> <p>AND the intent is accidental/unintentional, intentional self-harm, assault, or undetermined intent, <i>not</i> an adverse effect or underdosing (6<sup>th</sup> character is 1, 2, 3, or 4)</p> <p>AND it is the initial or a subsequent encounter (7<sup>th</sup> character is A, D, or blank)</p>  |

## 2012 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Anderson   | 103  | 25  | 0  | 163                                 | 11   | 0   |
| Bedford    | 63   | 4   | 0  | 77                                  | 9  | 0   |
| Benton     | 22   | 11  | 0  | 58                                  | 6  | 0   |
| Bledsoe    | 9  | 0   | 0  | 25                                  | 6  | 0   |
| Blount     | 119  | 33  | 0  | 228                                 | 31   | 1   |
| Bradley    | 173  | 33  | 0  | 278                                 | 33   | 0   |
| Campbell   | 76   | 32  | 0  | 108                                 | 7  | 1   |
| Cannon     | 30   | 6   | 0  | 47                                  | 10   | 1   |
| Carroll    | 30   | 8   | 0  | 82                                  | 6  | 0   |
| Carter     | 100  | 18  | 0  | 130                                 | 8  | 0   |
| Cheatham   | 55   | 11  | 1  | 91                                  | 10   | 3   |
| Chester    | 17   | 2   | 0  | 21                                  | 2  | 0   |
| Claiborne  | 47   | 18  | 0  | 103                                 | 20   | 1   |
| Clay       | 18   | 7   | 0  | 11                                  | 1  | 0   |
| Cocke      | 60   | 20  | 0  | 107                                 | 17   | 0   |
| Coffee     | 94   | 21  | 0  | 171                                 | 23   | 0   |
| Crockett   | 10   | 1   | 0  | 26                                  | 1  | 0   |
| Cumberland | 63   | 17  | 0  | 152                                 | 17   | 0   |
| Davidson   | 811  | 161   | 13   | 1149                                | 96   | 31  |
| Decatur    | 16   | 2   | 0  | 38                                  | 3  | 0   |
| DeKalb     | 45   | 8   | 0  | 77                                  | 9  | 2   |
| Dickson    | 67   | 12  | 0  | 118                                 | 12   | 1   |
| Dyer       | 68   | 9   | 0  | 104                                 | 8  | 1   |
| Fayette    | 38   | 9   | 0  | 54                                  | 3  | 0   |
| Fentress   | 45   | 17  | 0  | 77                                  | 8  | 0   |
| Franklin   | 63   | 13  | 0  | 81                                  | 11   | 0   |
| Gibson     | 39   | 9   | 0  | 127                                 | 12   | 0   |
| Giles      | 62   | 15  | 0  | 88                                  | 12   | 0   |
| Grainger   | 31   | 10  | 0  | 41                                  | 5  | 0   |
| Greene     | 107  | 38  | 0  | 143                                 | 14   | 0   |
| Grundy     | 34   | 8   | 0  | 34                                  | 15   | 0   |
| Hamblen    | 103  | 29  | 0  | 161                                 | 25   | 1   |
| Hamilton   | 400  | 75  | 0  | 516                                 | 35   | 1   |
| Hancock    | 15   | 3   | 0  | 22                                  | 4  | 0   |
| Hardeman   | 23   | 4   | 1  | 57                                  | 4  | 1   |
| Hardin     | 33   | 9   | 0  | 87                                  | 9  | 0   |

## 2012 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Hawkins    | 110  | 26  | 0  | 146                                 | 13   | 0   |
| Haywood    | 15   | 2   | 0  | 42                                  | 0  | 0   |
| Henderson  | 29   | 6   | 0  | 86                                  | 7  | 0   |
| Henry      | 33   | 10  | 0  | 77                                  | 4  | 0   |
| Hickman    | 50   | 13  | 0  | 81                                  | 14   | 1   |
| Houston    | 10   | 2   | 0  | 28                                  | 1  | 0   |
| Humphreys  | 20   | 2   | 0  | 41                                  | 2  | 0   |
| Jackson    | 33   | 13  | 0  | 35                                  | 6  | 0   |
| Jefferson  | 77   | 21  | 0  | 85                                  | 11   | 0   |
| Johnson    | 17   | 3   | 0  | 42                                  | 4  | 0   |
| Knox       | 474  | 121   | 2  | 918                                 | 97   | 14  |
| Lake       | 1  | 0   | 0  | 10                                  | 0  | 1   |
| Lauderdale | 17   | 4   | 1  | 96                                  | 7  | 1   |
| Lawrence   | 60   | 16  | 0  | 131                                 | 15   | 0   |
| Lewis      | 14   | 4   | 0  | 33                                  | 3  | 0   |
| Lincoln    | 15   | 2   | 0  | 74                                  | 6  | 0   |
| Loudon     | 50   | 14  | 0  | 95                                  | 13   | 0   |
| McMinn     | 55   | 10  | 0  | 184                                 | 18   | 0   |
| McNairy    | 33   | 9   | 1  | 102                                 | 15   | 0   |
| Macon      | 46   | 14  | 0  | 71                                  | 5  | 0   |
| Madison    | 119  | 29  | 1  | 182                                 | 19   | 3   |
| Marion     | 41   | 8   | 0  | 57                                  | 7  | 0   |
| Marshall   | 30   | 4   | 0  | 80                                  | 7  | 0   |
| Maury      | 81   | 10  | 0  | 227                                 | 16   | 2   |
| Meigs      | 16   | 6   | 0  | 32                                  | 2  | 0   |
| Monroe     | 45   | 11  | 1  | 129                                 | 13   | 0   |
| Montgomery | 172  | 23  | 0  | 360                                 | 29   | 1   |
| Moore      | 5  | 0   | 0  | 6                                   | 0  | 0   |
| Morgan     | 37   | 8   | 0  | 70                                  | 10   | 0   |
| Obion      | 24   | 4   | 0  | 58                                  | 8  | 0   |
| Overton    | 50   | 19  | 0  | 67                                  | 8  | 0   |
| Perry      | 14   | 3   | 0  | 26                                  | 0  | 0   |
| Pickett    | 5  | 3   | 0  | 7                                   | 1  | 0   |
| Polk       | 28   | 11  | 0  | 41                                  | 3  | 0   |
| Putnam     | 101  | 29  | 0  | 178                                 | 15   | 0   |
| Rhea       | 23   | 5   | 0  | 70                                  | 5  | 2   |

## 2012 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Roane      | 125  | 40  | 0  | 163                                 | 25   | 3   |
| Robertson  | 62   | 21  | 0  | 182                                 | 22   | 1   |
| Rutherford | 245  | 42  | 1  | 553                                 | 38   | 1   |
| Scott      | 33   | 10  | 0  | 44                                  | 4  | 0   |
| Sequatchie | 18   | 8   | 0  | 32                                  | 3  | 0   |
| Sevier     | 119  | 25  | 0  | 211                                 | 21   | 0   |
| Shelby     | 685  | 65  | 22   | 1191                                | 76   | 47  |
| Smith      | 25   | 6   | 0  | 40                                  | 2  | 0   |
| Stewart    | 18   | 1   | 1  | 22                                  | 3  | 1   |
| Sullivan   | 250  | 37  | 1  | 390                                 | 30   | 1   |
| Sumner     | 246  | 51  | 2  | 345                                 | 28   | 6   |
| Tipton     | 50   | 8   | 0  | 151                                 | 17   | 2   |
| Trousdale  | 7  | 1   | 0  | 23                                  | 2  | 0   |
| Unicoi     | 35   | 5   | 0  | 45                                  | 2  | 0   |
| Union      | 22   | 6   | 0  | 52                                  | 12   | 0   |
| Van Buren  | 8  | 1   | 0  | 18                                  | 1  | 0   |
| Warren     | 78   | 17  | 0  | 114                                 | 10   | 0   |
| Washington | 179  | 36  | 0  | 171                                 | 10   | 2   |
| Wayne      | 16   | 3   | 0  | 55                                  | 7  | 0   |
| Weakley    | 32   | 5   | 0  | 62                                  | 4  | 0   |
| White      | 33   | 9   | 0  | 51                                  | 5  | 0   |
| Williamson | 111  | 21  | 3  | 304                                 | 22   | 5   |
| Wilson     | 142  | 29  | 1  | 182                                 | 14   | 2   |
| Unknown    | 0  | 0   | 0  | 3                                   | 0  | 0   |
| Tennessee  | 7578   | 1610  | 52   | 13223                               | 1245   | 141   |

## 2013 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Anderson   | 108  | 33  | 0  | 172                                 | 18   | 0   |
| Bedford    | 68   | 11  | 1  | 111                                 | 6  | 0   |
| Benton     | 28   | 8   | 0  | 56                                  | 10   | 0   |
| Bledsoe    | 14   | 6   | 0  | 42                                  | 1  | 0   |
| Blount     | 115  | 31  | 0  | 235                                 | 20   | 1   |
| Bradley    | 159  | 30  | 1  | 235                                 | 21   | 0   |
| Campbell   | 68   | 19  | 0  | 90                                  | 11   | 0   |
| Cannon     | 16   | 6   | 0  | 41                                  | 9  | 0   |
| Carroll    | 21   | 4   | 0  | 80                                  | 7  | 0   |
| Carter     | 101  | 12  | 0  | 138                                 | 8  | 0   |
| Cheatham   | 64   | 15  | 0  | 117                                 | 19   | 5   |
| Chester    | 16   | 5   | 0  | 29                                  | 2  | 0   |
| Claiborne  | 60   | 28  | 0  | 97                                  | 20   | 0   |
| Clay       | 17   | 5   | 0  | 5                                   | 1  | 0   |
| Cocke      | 57   | 20  | 0  | 85                                  | 14   | 0   |
| Coffee     | 95   | 17  | 0  | 138                                 | 19   | 0   |
| Crockett   | 15   | 3   | 0  | 34                                  | 2  | 0   |
| Cumberland | 63   | 15  | 0  | 104                                 | 19   | 0   |
| Davidson   | 809  | 139   | 16   | 1121                                | 114  | 36  |
| Decatur    | 9  | 3   | 0  | 25                                  | 2  | 0   |
| DeKalb     | 45   | 10  | 0  | 63                                  | 7  | 0   |
| Dickson    | 87   | 26  | 0  | 116                                 | 13   | 0   |
| Dyer       | 54   | 9   | 0  | 101                                 | 7  | 0   |
| Fayette    | 31   | 6   | 1  | 49                                  | 1  | 3   |
| Fentress   | 48   | 18  | 0  | 49                                  | 7  | 0   |
| Franklin   | 66   | 16  | 0  | 92                                  | 12   | 0   |
| Gibson     | 34   | 8   | 0  | 111                                 | 8  | 0   |
| Giles      | 50   | 23  | 0  | 59                                  | 10   | 0   |
| Grainger   | 34   | 9   | 0  | 27                                  | 5  | 0   |
| Greene     | 113  | 26  | 1  | 158                                 | 14   | 0   |
| Grundy     | 35   | 12  | 0  | 35                                  | 5  | 0   |
| Hamblen    | 78   | 34  | 1  | 132                                 | 16   | 0   |
| Hamilton   | 375  | 73  | 6  | 500                                 | 39   | 3   |
| Hancock    | 10   | 2   | 1  | 23                                  | 3  | 1   |
| Hardeman   | 19   | 4   | 0  | 74                                  | 8  | 1   |
| Hardin     | 19   | 6   | 0  | 76                                  | 11   | 0   |

## 2013 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Hawkins    | 99   | 25  | 0  | 125                                 | 20   | 0   |
| Haywood    | 14   | 1   | 0  | 32                                  | 2  | 0   |
| Henderson  | 23   | 8   | 0  | 85                                  | 16   | 0   |
| Henry      | 36   | 8   | 0  | 77                                  | 6  | 0   |
| Hickman    | 28   | 2   | 0  | 63                                  | 8  | 1   |
| Houston    | 12   | 3   | 0  | 20                                  | 0  | 0   |
| Humphreys  | 14   | 7   | 0  | 21                                  | 6  | 0   |
| Jackson    | 26   | 15  | 0  | 40                                  | 6  | 0   |
| Jefferson  | 71   | 23  | 0  | 89                                  | 11   | 0   |
| Johnson    | 14   | 1   | 0  | 34                                  | 3  | 0   |
| Knox       | 430  | 107   | 3  | 856                                 | 66   | 15  |
| Lake       | 12   | 2   | 0  | 8                                   | 0  | 0   |
| Lauderdale | 19   | 8   | 1  | 56                                  | 9  | 0   |
| Lawrence   | 36   | 7   | 0  | 120                                 | 14   | 0   |
| Lewis      | 19   | 2   | 0  | 25                                  | 4  | 0   |
| Lincoln    | 18   | 4   | 0  | 56                                  | 4  | 0   |
| Loudon     | 46   | 8   | 0  | 74                                  | 6  | 0   |
| McMinn     | 61   | 13  | 0  | 143                                 | 11   | 0   |
| McNairy    | 19   | 7   | 0  | 69                                  | 2  | 0   |
| Macon      | 43   | 13  | 0  | 52                                  | 7  | 0   |
| Madison    | 89   | 9   | 0  | 169                                 | 15   | 1   |
| Marion     | 37   | 7   | 0  | 47                                  | 8  | 0   |
| Marshall   | 35   | 5   | 0  | 104                                 | 11   | 0   |
| Maury      | 79   | 16  | 0  | 179                                 | 11   | 2   |
| Meigs      | 15   | 6   | 0  | 23                                  | 3  | 0   |
| Monroe     | 47   | 10  | 0  | 111                                 | 4  | 0   |
| Montgomery | 168  | 32  | 0  | 311                                 | 19   | 3   |
| Moore      | 4  | 0   | 0  | 7                                   | 0  | 0   |
| Morgan     | 45   | 12  | 0  | 52                                  | 8  | 0   |
| Obion      | 18   | 7   | 0  | 61                                  | 6  | 0   |
| Overton    | 44   | 12  | 0  | 55                                  | 10   | 0   |
| Perry      | 22   | 7   | 0  | 23                                  | 1  | 0   |
| Pickett    | 2  | 0   | 0  | 11                                  | 2  | 0   |
| Polk       | 24   | 3   | 0  | 38                                  | 6  | 0   |
| Putnam     | 95   | 23  | 0  | 175                                 | 24   | 0   |
| Rhea       | 40   | 15  | 0  | 70                                  | 5  | 1   |

### 2013 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Roane      | 99   | 33  | 0  | 140                                 | 22   | 0   |
| Robertson  | 68   | 12  | 0  | 154                                 | 16   | 3   |
| Rutherford | 230  | 37  | 0  | 506                                 | 31   | 5   |
| Scott      | 31   | 13  | 0  | 45                                  | 5  | 0   |
| Sequatchie | 30   | 10  | 0  | 24                                  | 4  | 0   |
| Sevier     | 79   | 15  | 0  | 167                                 | 18   | 0   |
| Shelby     | 765  | 90  | 33   | 1287                                | 75   | 92  |
| Smith      | 23   | 5   | 0  | 58                                  | 7  | 1   |
| Stewart    | 15   | 2   | 0  | 27                                  | 3  | 0   |
| Sullivan   | 220  | 36  | 1  | 330                                 | 19   | 0   |
| Sumner     | 231  | 56  | 1  | 303                                 | 23   | 7   |
| Tipton     | 74   | 13  | 2  | 121                                 | 6  | 4   |
| Trousdale  | 23   | 5   | 0  | 20                                  | 1  | 0   |
| Unicoi     | 15   | 4   | 0  | 33                                  | 5  | 0   |
| Union      | 19   | 7   | 0  | 39                                  | 4  | 0   |
| Van Buren  | 13   | 2   | 0  | 16                                  | 1  | 0   |
| Warren     | 75   | 21  | 0  | 74                                  | 8  | 0   |
| Washington | 177  | 33  | 1  | 184                                 | 16   | 1   |
| Wayne      | 18   | 3   | 0  | 52                                  | 7  | 0   |
| Weakley    | 35   | 7   | 0  | 70                                  | 12   | 0   |
| White      | 31   | 8   | 0  | 56                                  | 12   | 0   |
| Williamson | 102  | 20  | 4  | 263                                 | 14   | 7   |
| Wilson     | 121  | 20  | 2  | 185                                 | 23   | 4   |
| Unknown    | 3  | 1   | 0  | 2                                   | 0  | 1   |
| Tennessee  | 7302   | 1573  | 76   | 12257                               | 1155   | 198   |

## 2014 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Anderson   | 121  | 28  | 2  | 190                                 | 20   | 3   |
| Bedford    | 61   | 10  | 0  | 102                                 | 17   | 0   |
| Benton     | 32   | 13  | 0  | 79                                  | 5  | 0   |
| Bledsoe    | 9  | 1   | 0  | 25                                  | 1  | 0   |
| Blount     | 133  | 39  | 1  | 233                                 | 19   | 2   |
| Bradley    | 134  | 32  | 0  | 240                                 | 29   | 3   |
| Campbell   | 84   | 22  | 0  | 91                                  | 12   | 0   |
| Cannon     | 27   | 7   | 0  | 32                                  | 4  | 0   |
| Carroll    | 26   | 3   | 0  | 78                                  | 6  | 0   |
| Carter     | 100  | 23  | 0  | 111                                 | 11   | 0   |
| Cheatham   | 55   | 12  | 0  | 90                                  | 12   | 5   |
| Chester    | 7  | 3   | 0  | 29                                  | 4  | 0   |
| Claiborne  | 48   | 15  | 0  | 79                                  | 16   | 0   |
| Clay       | 15   | 1   | 0  | 18                                  | 4  | 0   |
| Cocke      | 55   | 24  | 0  | 101                                 | 15   | 0   |
| Coffee     | 98   | 18  | 0  | 146                                 | 9  | 0   |
| Crockett   | 10   | 2   | 0  | 44                                  | 5  | 0   |
| Cumberland | 90   | 16  | 0  | 133                                 | 15   | 0   |
| Davidson   | 802  | 140   | 30   | 1283                                | 117  | 97  |
| Decatur    | 16   | 6   | 0  | 29                                  | 7  | 0   |
| DeKalb     | 32   | 7   | 1  | 65                                  | 7  | 0   |
| Dickson    | 91   | 17  | 2  | 111                                 | 8  | 5   |
| Dyer       | 53   | 7   | 0  | 139                                 | 11   | 0   |
| Fayette    | 30   | 6   | 5  | 54                                  | 3  | 3   |
| Fentress   | 32   | 10  | 0  | 51                                  | 4  | 0   |
| Franklin   | 69   | 8   | 0  | 72                                  | 6  | 0   |
| Gibson     | 40   | 7   | 0  | 117                                 | 11   | 0   |
| Giles      | 48   | 21  | 0  | 53                                  | 9  | 1   |
| Grainger   | 36   | 9   | 0  | 50                                  | 1  | 0   |
| Greene     | 91   | 23  | 1  | 188                                 | 20   | 1   |
| Grundy     | 25   | 7   | 0  | 41                                  | 5  | 0   |
| Hamblen    | 84   | 22  | 0  | 118                                 | 15   | 0   |
| Hamilton   | 368  | 87  | 9  | 538                                 | 44   | 29  |
| Hancock    | 13   | 3   | 0  | 24                                  | 6  | 0   |
| Hardeman   | 14   | 1   | 0  | 59                                  | 8  | 1   |
| Hardin     | 16   | 5   | 0  | 86                                  | 12   | 0   |

## 2014 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Hawkins    | 68   | 20  | 0  | 127                                 | 10   | 0   |
| Haywood    | 8  | 1   | 0  | 24                                  | 2  | 0   |
| Henderson  | 31   | 5   | 0  | 81                                  | 6  | 0   |
| Henry      | 39   | 8   | 0  | 75                                  | 8  | 0   |
| Hickman    | 47   | 16  | 0  | 85                                  | 11   | 1   |
| Houston    | 3  | 0   | 0  | 23                                  | 3  | 0   |
| Humphreys  | 20   | 4   | 0  | 36                                  | 3  | 0   |
| Jackson    | 27   | 3   | 0  | 29                                  | 2  | 0   |
| Jefferson  | 79   | 18  | 0  | 94                                  | 7  | 1   |
| Johnson    | 22   | 4   | 0  | 37                                  | 0  | 0   |
| Knox       | 424  | 110   | 6  | 912                                 | 78   | 20  |
| Lake       | 7  | 4   | 0  | 21                                  | 4  | 0   |
| Lauderdale | 17   | 2   | 0  | 72                                  | 11   | 0   |
| Lawrence   | 68   | 12  | 0  | 113                                 | 7  | 0   |
| Lewis      | 22   | 4   | 0  | 31                                  | 2  | 0   |
| Lincoln    | 13   | 2   | 0  | 61                                  | 9  | 0   |
| Loudon     | 55   | 15  | 0  | 95                                  | 16   | 1   |
| McMinn     | 49   | 8   | 0  | 183                                 | 18   | 1   |
| McNairy    | 10   | 3   | 0  | 76                                  | 6  | 0   |
| Macon      | 29   | 5   | 0  | 66                                  | 8  | 1   |
| Madison    | 81   | 12  | 6  | 178                                 | 11   | 5   |
| Marion     | 29   | 6   | 0  | 70                                  | 8  | 0   |
| Marshall   | 34   | 6   | 0  | 78                                  | 9  | 0   |
| Maury      | 110  | 18  | 1  | 202                                 | 12   | 3   |
| Meigs      | 11   | 2   | 0  | 29                                  | 4  | 0   |
| Monroe     | 51   | 13  | 1  | 88                                  | 11   | 0   |
| Montgomery | 179  | 25  | 2  | 357                                 | 30   | 0   |
| Moore      | 4  | 2   | 0  | 9                                   | 0  | 0   |
| Morgan     | 41   | 12  | 0  | 39                                  | 7  | 0   |
| Obion      | 17   | 4   | 0  | 82                                  | 9  | 0   |
| Overton    | 37   | 10  | 0  | 36                                  | 6  | 0   |
| Perry      | 20   | 4   | 0  | 34                                  | 0  | 0   |
| Pickett    | 1  | 0   | 0  | 6                                   | 1  | 0   |
| Polk       | 26   | 6   | 0  | 39                                  | 5  | 0   |
| Putnam     | 92   | 16  | 0  | 167                                 | 24   | 0   |
| Rhea       | 33   | 15  | 0  | 60                                  | 9  | 0   |

## 2014 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Roane      | 81   | 31  | 1  | 132                                 | 13   | 2   |
| Robertson  | 55   | 18  | 1  | 151                                 | 12   | 3   |
| Rutherford | 318  | 61  | 4  | 541                                 | 60   | 10  |
| Scott      | 32   | 5   | 0  | 96                                  | 6  | 0   |
| Sequatchie | 28   | 3   | 0  | 23                                  | 2  | 0   |
| Sevier     | 105  | 21  | 1  | 163                                 | 12   | 4   |
| Shelby     | 737  | 88  | 26   | 1314                                | 89   | 96  |
| Smith      | 27   | 7   | 0  | 39                                  | 8  | 1   |
| Stewart    | 7  | 3   | 0  | 34                                  | 5  | 1   |
| Sullivan   | 212  | 46  | 0  | 312                                 | 33   | 0   |
| Sumner     | 209  | 43  | 4  | 333                                 | 26   | 9   |
| Tipton     | 45   | 12  | 4  | 136                                 | 12   | 7   |
| Trousdale  | 10   | 4   | 0  | 21                                  | 0  | 0   |
| Unicoi     | 29   | 9   | 0  | 24                                  | 1  | 0   |
| Union      | 15   | 3   | 0  | 30                                  | 3  | 0   |
| Van Buren  | 9  | 1   | 0  | 11                                  | 5  | 0   |
| Warren     | 57   | 14  | 1  | 97                                  | 11   | 0   |
| Washington | 172  | 23  | 0  | 161                                 | 15   | 0   |
| Wayne      | 17   | 5   | 0  | 59                                  | 4  | 0   |
| Weakley    | 35   | 8   | 0  | 86                                  | 11   | 0   |
| White      | 26   | 5   | 0  | 67                                  | 6  | 0   |
| Williamson | 109  | 10  | 1  | 270                                 | 21   | 7   |
| Wilson     | 96   | 21  | 1  | 200                                 | 14   | 7   |
| Unknown    | 5  | 2   | 0  | 4                                   | 0  | 0   |
| Tennessee  | 7205   | 1493  | 111  | 12918                               | 1224   | 330   |

## 2015 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Anderson   | 99   | 30  | 3  | 190                                 | 28   | 20  |
| Bedford    | 58   | 11  | 2  | 100                                 | 8  | 0   |
| Benton     | 27   | 4   | 0  | 63                                  | 7  | 0   |
| Bledsoe    | 18   | 3   | 0  | 13                                  | 1  | 0   |
| Blount     | 139  | 37  | 2  | 264                                 | 21   | 18  |
| Bradley    | 140  | 21  | 0  | 211                                 | 25   | 4   |
| Campbell   | 71   | 24  | 0  | 79                                  | 7  | 0   |
| Cannon     | 24   | 6   | 0  | 42                                  | 14   | 2   |
| Carroll    | 33   | 7   | 1  | 88                                  | 6  | 0   |
| Carter     | 77   | 16  | 0  | 124                                 | 12   | 0   |
| Cheatham   | 53   | 8   | 2  | 120                                 | 25   | 11  |
| Chester    | 14   | 2   | 0  | 31                                  | 1  | 0   |
| Claiborne  | 38   | 14  | 0  | 74                                  | 14   | 0   |
| Clay       | 7  | 0   | 0  | 10                                  | 0  | 0   |
| Cocke      | 52   | 21  | 1  | 91                                  | 10   | 0   |
| Coffee     | 86   | 25  | 1  | 147                                 | 10   | 3   |
| Crockett   | 15   | 3   | 0  | 28                                  | 3  | 0   |
| Cumberland | 79   | 16  | 0  | 101                                 | 16   | 0   |
| Davidson   | 764  | 133   | 34   | 1258                                | 138  | 137   |
| Decatur    | 12   | 2   | 0  | 33                                  | 0  | 0   |
| DeKalb     | 41   | 13  | 0  | 62                                  | 14   | 1   |
| Dickson    | 84   | 28  | 1  | 133                                 | 14   | 8   |
| Dyer       | 54   | 10  | 0  | 92                                  | 6  | 0   |
| Fayette    | 30   | 4   | 2  | 55                                  | 4  | 3   |
| Fentress   | 20   | 6   | 0  | 37                                  | 4  | 0   |
| Franklin   | 88   | 16  | 0  | 76                                  | 8  | 2   |
| Gibson     | 47   | 10  | 0  | 129                                 | 7  | 2   |
| Giles      | 40   | 10  | 0  | 66                                  | 6  | 1   |
| Grainger   | 20   | 3   | 0  | 33                                  | 6  | 0   |
| Greene     | 109  | 25  | 0  | 147                                 | 17   | 0   |
| Grundy     | 51   | 18  | 0  | 45                                  | 15   | 0   |
| Hamblen    | 77   | 17  | 0  | 118                                 | 19   | 0   |
| Hamilton   | 361  | 82  | 5  | 522                                 | 51   | 39  |
| Hancock    | 15   | 4   | 0  | 20                                  | 4  | 0   |
| Hardeman   | 21   | 5   | 0  | 45                                  | 4  | 1   |
| Hardin     | 20   | 6   | 0  | 83                                  | 9  | 1   |

## 2015 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Hawkins    | 69   | 20  | 0  | 130                                 | 16   | 1   |
| Haywood    | 4  | 4   | 0  | 17                                  | 2  | 0   |
| Henderson  | 24   | 8   | 0  | 89                                  | 16   | 0   |
| Henry      | 33   | 4   | 0  | 89                                  | 15   | 0   |
| Hickman    | 51   | 15  | 0  | 59                                  | 4  | 2   |
| Houston    | 8  | 4   | 0  | 19                                  | 3  | 0   |
| Humphreys  | 21   | 6   | 0  | 57                                  | 8  | 0   |
| Jackson    | 18   | 8   | 0  | 32                                  | 5  | 0   |
| Jefferson  | 58   | 9   | 1  | 97                                  | 11   | 3   |
| Johnson    | 18   | 1   | 1  | 22                                  | 1  | 0   |
| Knox       | 447  | 115   | 11   | 961                                 | 104  | 87  |
| Lake       | 9  | 4   | 0  | 20                                  | 4  | 1   |
| Lauderdale | 22   | 4   | 1  | 69                                  | 9  | 0   |
| Lawrence   | 28   | 12  | 0  | 116                                 | 8  | 0   |
| Lewis      | 8  | 1   | 0  | 14                                  | 2  | 0   |
| Lincoln    | 21   | 3   | 0  | 40                                  | 5  | 0   |
| Loudon     | 53   | 13  | 1  | 95                                  | 17   | 5   |
| McMinn     | 46   | 7   | 0  | 122                                 | 7  | 0   |
| McNairy    | 23   | 5   | 0  | 72                                  | 10   | 0   |
| Macon      | 44   | 7   | 0  | 54                                  | 6  | 1   |
| Madison    | 86   | 16  | 1  | 188                                 | 19   | 3   |
| Marion     | 37   | 7   | 1  | 45                                  | 7  | 0   |
| Marshall   | 37   | 8   | 0  | 80                                  | 9  | 1   |
| Maury      | 99   | 25  | 4  | 188                                 | 15   | 6   |
| Meigs      | 20   | 2   | 0  | 20                                  | 1  | 0   |
| Monroe     | 39   | 11  | 1  | 114                                 | 12   | 2   |
| Montgomery | 176  | 31  | 2  | 294                                 | 24   | 5   |
| Moore      | 6  | 2   | 0  | 9                                   | 0  | 0   |
| Morgan     | 35   | 12  | 0  | 45                                  | 10   | 0   |
| Obion      | 33   | 5   | 0  | 79                                  | 5  | 0   |
| Overton    | 32   | 9   | 0  | 54                                  | 8  | 0   |
| Perry      | 14   | 3   | 0  | 29                                  | 0  | 1   |
| Pickett    | 2  | 1   | 0  | 8                                   | 0  | 0   |
| Polk       | 22   | 5   | 0  | 27                                  | 3  | 0   |
| Putnam     | 98   | 22  | 1  | 164                                 | 16   | 0   |
| Rhea       | 29   | 5   | 0  | 63                                  | 9  | 0   |

## 2015 Drug Overdose Hospital Discharges by County

|            | All drug overdose inpatient hospitalizations | Inpatient hospitalizations involving all opioid overdose excluding heroin | Inpatient hospitalizations involving heroin overdose | All drug overdose outpatient visits | Outpatient visits involving all opioid overdose excluding heroin | Outpatient visits involving heroin overdose |
|------------|--|---|--|-------------------------------------|--|---|
| Roane      | 100  | 25  | 2  | 133                                 | 12   | 2   |
| Robertson  | 55   | 9   | 0  | 166                                 | 20   | 8   |
| Rutherford | 322  | 72  | 9  | 621                                 | 66   | 20  |
| Scott      | 25   | 6   | 0  | 75                                  | 3  | 1   |
| Sequatchie | 23   | 6   | 0  | 15                                  | 1  | 0   |
| Sevier     | 99   | 24  | 1  | 187                                 | 21   | 8   |
| Shelby     | 653  | 85  | 42   | 1477                                | 112  | 174   |
| Smith      | 15   | 7   | 0  | 47                                  | 9  | 0   |
| Stewart    | 18   | 7   | 0  | 35                                  | 5  | 0   |
| Sullivan   | 187  | 27  | 1  | 370                                 | 31   | 3   |
| Sumner     | 247  | 55  | 6  | 376                                 | 36   | 29  |
| Tipton     | 54   | 9   | 5  | 187                                 | 23   | 19  |
| Trousdale  | 16   | 4   | 0  | 20                                  | 1  | 0   |
| Unicoi     | 31   | 9   | 0  | 33                                  | 4  | 0   |
| Union      | 19   | 9   | 0  | 41                                  | 7  | 0   |
| Van Buren  | 13   | 5   | 0  | 10                                  | 1  | 0   |
| Warren     | 67   | 20  | 0  | 80                                  | 12   | 0   |
| Washington | 185  | 27  | 0  | 163                                 | 14   | 2   |
| Wayne      | 19   | 5   | 0  | 52                                  | 11   | 1   |
| Weakley    | 21   | 3   | 0  | 60                                  | 4  | 0   |
| White      | 30   | 8   | 0  | 54                                  | 8  | 0   |
| Williamson | 116  | 16  | 3  | 265                                 | 11   | 10  |
| Wilson     | 121  | 27  | 1  | 253                                 | 27   | 15  |
| Unknown    | 2  | 0   | 0  | 3                                   | 0  | 0   |
| Tennessee  | 7092   | 1519  | 149  | 13034                               | 1364   | 663   |