

CENTRAL NERVOUS SYSTEM INJURY IN KENTUCKY

Emergency Department Visits and Hospitalizations 2022

Prepared by: the Kentucky Injury Prevention and Research Center, University of Kentucky

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FOR MORE INFORMATION

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This report presents basic data about emergency department (ED) visits, hospitalizations, and hospital deaths for the calendar year 2022 for central nervous system injuries (CNSI) that include traumatic brain injuries (TBI), non-traumatic brain injuries (NTBI), spinal cord injuries (SCI) and cerebrovascular disease (stroke). **The numbers found in this report should only be used in comparison with reports after 2015 due to the transition from the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) to the most recent Tenth Revision (ICD-10-CM).** ED visits represent approximately three out of four of all TBIs. This report will illustrate the leading causes of central nervous system injuries in Kentucky, what age groups are affected, and who pays for care received. The report is intended as a reference for policy makers, service providers, educators, researchers, advocates, and others interested in knowing more about the impact of central nervous system injuries with a focus on TBI.

Introduction

Awareness of traumatic brain injury (TBI) is fairly limited in the general public because the complications and issues related to TBI are often not visible to others. Symptoms of brain injury cover a wide range of issues and can include:

Mild TBI

- Fatigue
- Headaches
- Seizures
- Emotional disturbances
- Balance issues
- Memory loss
- Impulsive Behavior

Severe TBI

- Amnesia
- Paralysis
- Loss of limb, bladder and/or bowel control
- Aggressiveness
- Speech, language and/or vision problems
- Respiratory issues
- Mood, personality, or behavioral changes

These issues very often are not physically visible yet can have a devastating impact on day to day life of the injured person as well as their family, friends and colleagues. Even minor TBI may have serious, long term consequences.

Understanding how and who brain and spinal cord injuries affect is crucial to understanding the resources need to educate, prevent, and respond as a society to those with brain and spinal cord injuries.

Major sections of this report include:

- Non-Fatal TBI, NTBI, SCI and stroke case demographics, causes and outcomes
- TBI, NTBI and stroke case frequencies and rates at the county level
- SCI demographics, causes and outcomes

Later reports will include trends.

Also, this report does not include TBIs from federal, military, or Veterans' Administration hospitals. Data regarding deaths due to TBI, NTBI, SCI and stroke only include deaths treated or seen in an ED or admitted as an inpatient to an acute care hospital. Deaths that occur due to BI, SCI or stroke outside of the hospital environment are not included in this analysis due to unavailable data. Deaths that occur in the hospital setting will be noted when included in analysis in this report.

Purpose of the Report

This report answers a wide range of important questions about how many CNSIs occur each year in the Commonwealth, who is affected, and how these CNSIs occur. This report is intended as a reference for policy makers, service providers, educators, researchers, advocates, and others interested in knowing more about the impact of CNSI in Kentucky. This information can be used to document the need for prevention, to identify priorities for research, and to support the need for services among those living with CNSI-related impairment and disability.

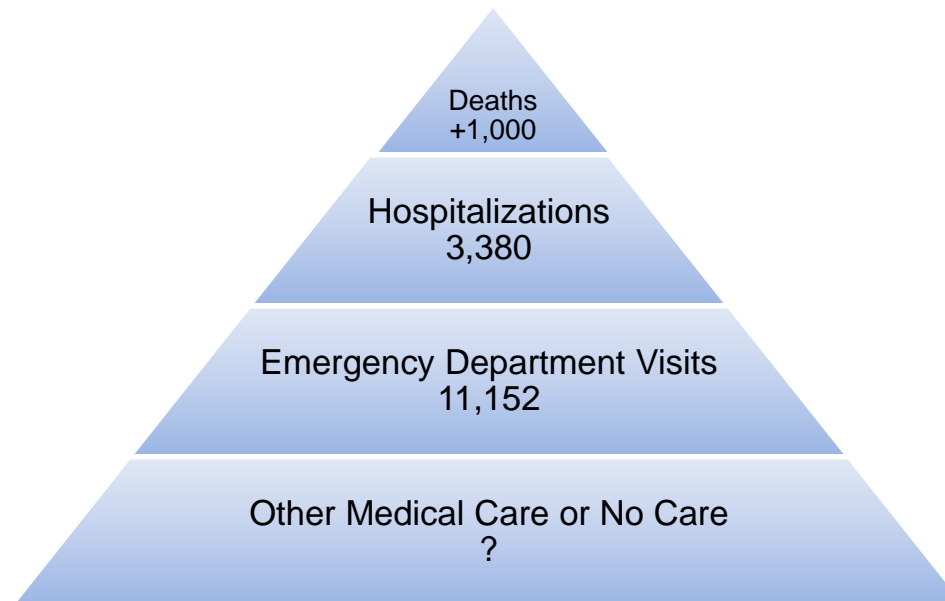
Contents and Organization

This report describes CNSI-related ED visits and hospitalizations in Kentucky for the calendar year 2022. The numbers show the magnitude of the problem, but the rates are also important. Rates show how a certain group is affected by CNSI by relating the number of CNSIs to the size of the population. For example, a relatively small number of TBIs occurring in a small population (e.g., persons ages 65 years or older) would result in a higher TBI rate than if the same number of TBIs occurred in a larger population (e.g., persons ages 25 to 44 years). The report findings are organized into two main sections. The Overview summarizes and interprets some key findings. The Appendices present more detailed data tables, along with a description of the methods and limitations.

Overview of TBI in Kentucky

In Kentucky, it is estimated that over 14,000 traumatic brain injuries and deaths occur each year. In 2022, 11,152 (76.7%) ED discharges and 3,380 (23.3%) hospitalization discharges (non-fatal) were recorded in Kentucky hospitals. In addition to these non-fatal incidents, there were over one thousand Kentucky residents who died from a TBI related injury. The following figure is a pyramid depicting the estimated average annual number of TBI-related ED visits, hospitalizations, and deaths in Kentucky for 2022. The number of individuals with a TBI that treat themselves at home (estimated to be close to 25% of all mild to moderate TBIs) or by seeking other means of medical care are unknown and will not be included in this report.

Figure 1: Number of Traumatic Brain Injury-Related Emergency Department Visits, Hospitalizations, and Estimated Deaths*, Kentucky, 2022



TBI in Kentucky, 2022:

- Over 14,000 people visited Kentucky hospitals with a TBI related injury. Of those, 11,152 were treated and released from an ED and 3,380 were hospitalized.
- 2,118 TBIs occurred among children ages 0 to 14 years; ED visits accounted over 90% of the TBIs in this age group.
- Falls were the leading cause of TBI for both ED visits as well as hospitalizations. Fall rates were highest for adults 65 years or older in both ED visits as well as hospitalizations.
- Falls resulted in the greatest number of TBI-related hospitalizations with a rate 2.6 times motor vehicle traffic crashes.
- Adults ages 65 years or older had the highest rates of TBI-related hospitalization with a rate higher than all other ages combined.
- Falls accounted for over twice as many TBI injuries as motor vehicle traffic crashes (MVTC).
- Data indicates that TBIs led to 40 state residents per day being treated in Kentucky hospitals (ED and hospitalization).

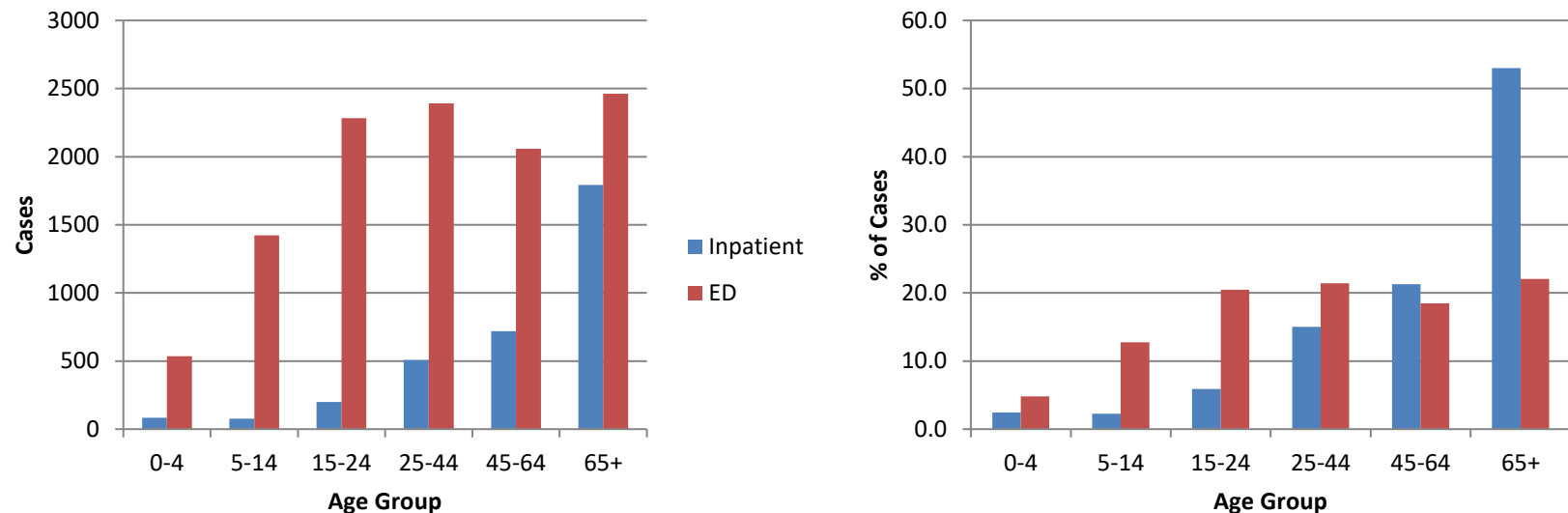
Our results indicate a need to focus prevention efforts on the following causes and target populations:

- Motor vehicle traffic crashes, especially among ages 15-24
- Falls, especially among ages 0-14 and 65 and older
- Anoxia (NTBI), especially among ages 45 and older
- Exposure to toxic substances (NTBI), especially among ages 45 and older

TBI by Age: Comparing the Numbers

Figure 2: Numbers of Non-Fatal Traumatic Brain Injury-Related Emergency Department Visits, and Hospitalizations, by Age Group, Kentucky, 2022

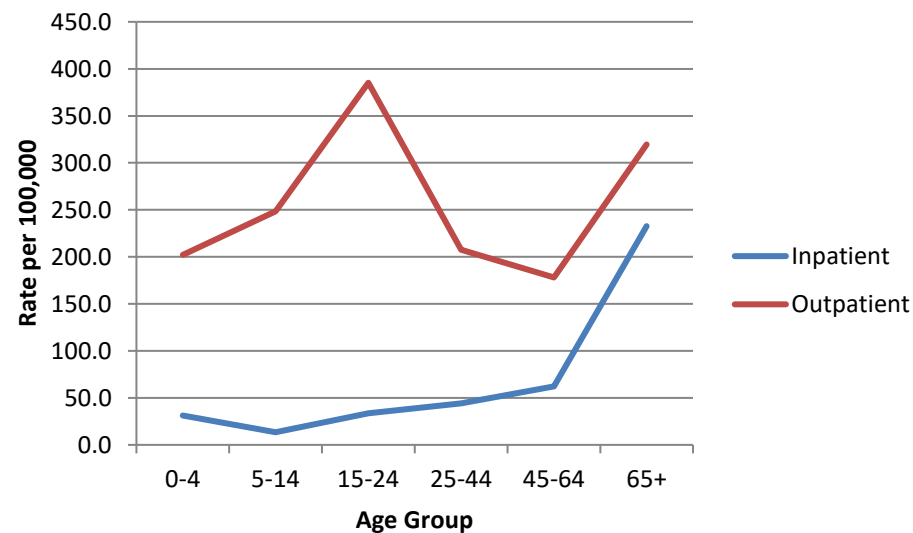
A non-fatal TBI related injury treated at a Kentucky hospital results in an *inpatient* admission for almost half of older adults (65 and older) TBI related injuries while almost 9 out of 10 TBI related injuries in children (under the age of 15) are treated and released in the ED.



TBI by Age: Comparing the Rates

The following figure, **Figure 3**, is a graph depicting the annual rate of TBI-related ED visits and hospitalizations by age groups in Kentucky for 2022. The y axis represents the rate per 100,000 population. During 2022, young adults, ages 15 to 24 years had the highest rate of non-fatal TBI-related ED visits, 391 per 100,000 population. From age 25 to age 64 the rates for ED visits decline, then begin to rise again for those ages 65 and over. The highest rates of non-fatal TBI-related hospitalization occurred among adults age 65 years or older (233 per 100,000).

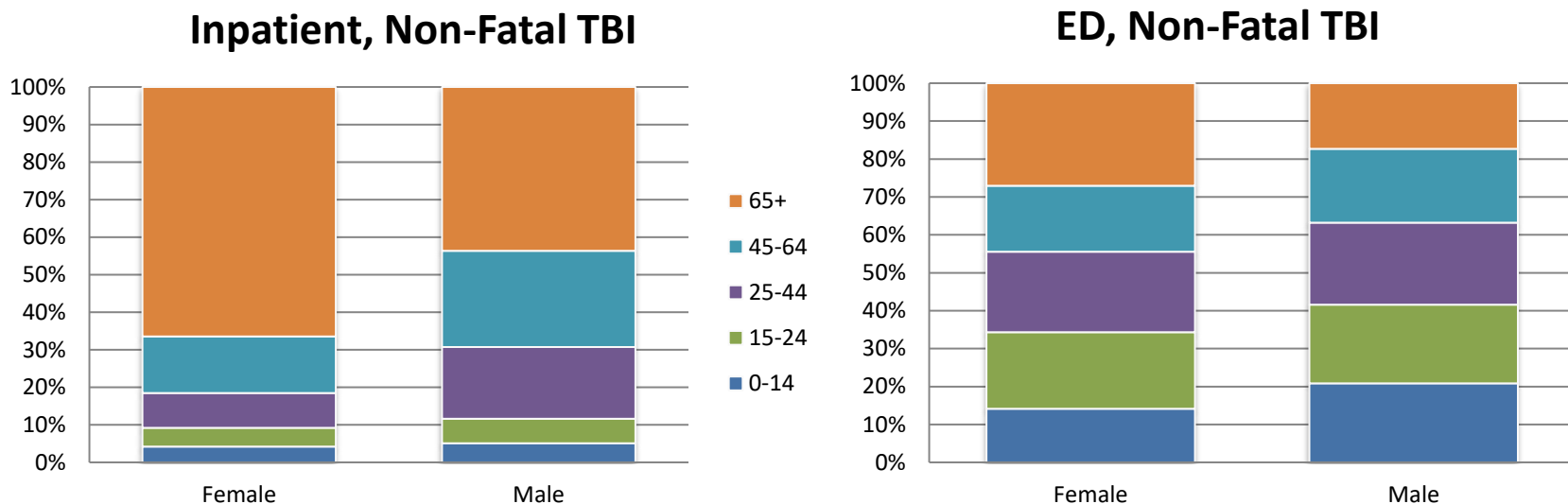
Figure 3: Rates of Traumatic Brain Injury-Related Emergency Department Visits and Hospitalizations, by Age Group, Kentucky, 2022



TBI by Gender: Comparing the Numbers

The following figure represents the estimated average annual numbers of TBI-related ED visits and hospitalizations, by gender and age, in the Commonwealth for 2022. Overall 7,689 non-fatal TBIs occurred among males compared with 6,840 among females.

Figure 4: Traumatic Brain Injury-Related Emergency Department Visits and Hospitalizations, by Age Group and Gender, Kentucky, 2022



Over two thirds of female, non-fatal TBI related inpatient admissions were over the age of 64 while almost 4 out of 10 men admitted for non-fatal hospitalization for TBI were over the age of 64.

TBI by Gender: Comparing the Rates

The following figure, **Figure 5**, is a graph depicting the rates of TBI-related ED visits and hospitalizations by gender. The y axis represents the rate per 100,000 population. Males from 15 to 24 years of age had the highest rates for TBI-related ED visits, 388 per 100,000. Rates were also high for female ED visits from 15 to 24 years of age, 383 per 100,000. Both males and females had high rates for ages 65 and older inpatient visits, 251 per 100,000 for males and 218 per 100,000 for females.

Figure 5: Rates of Non-Fatal Traumatic Brain Injury-Related Emergency Department Visits and Hospitalizations, by Gender, Kentucky, 2022

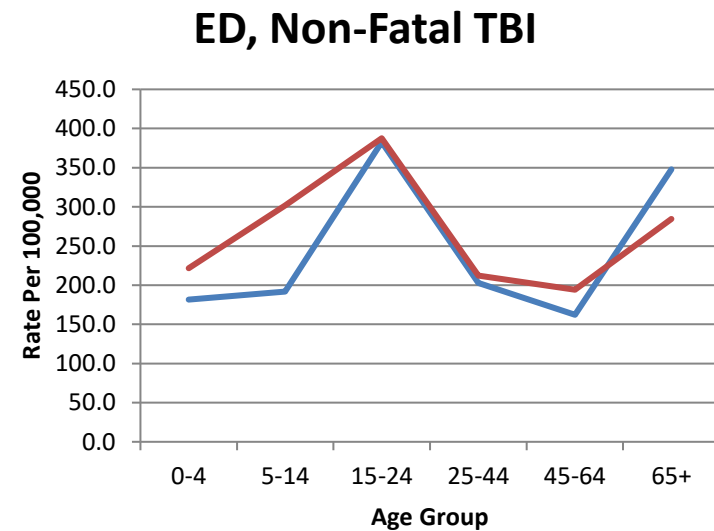
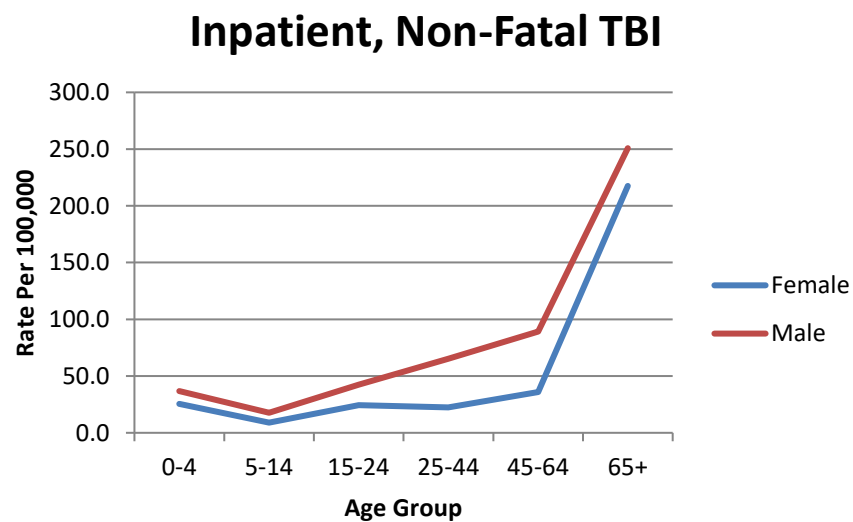
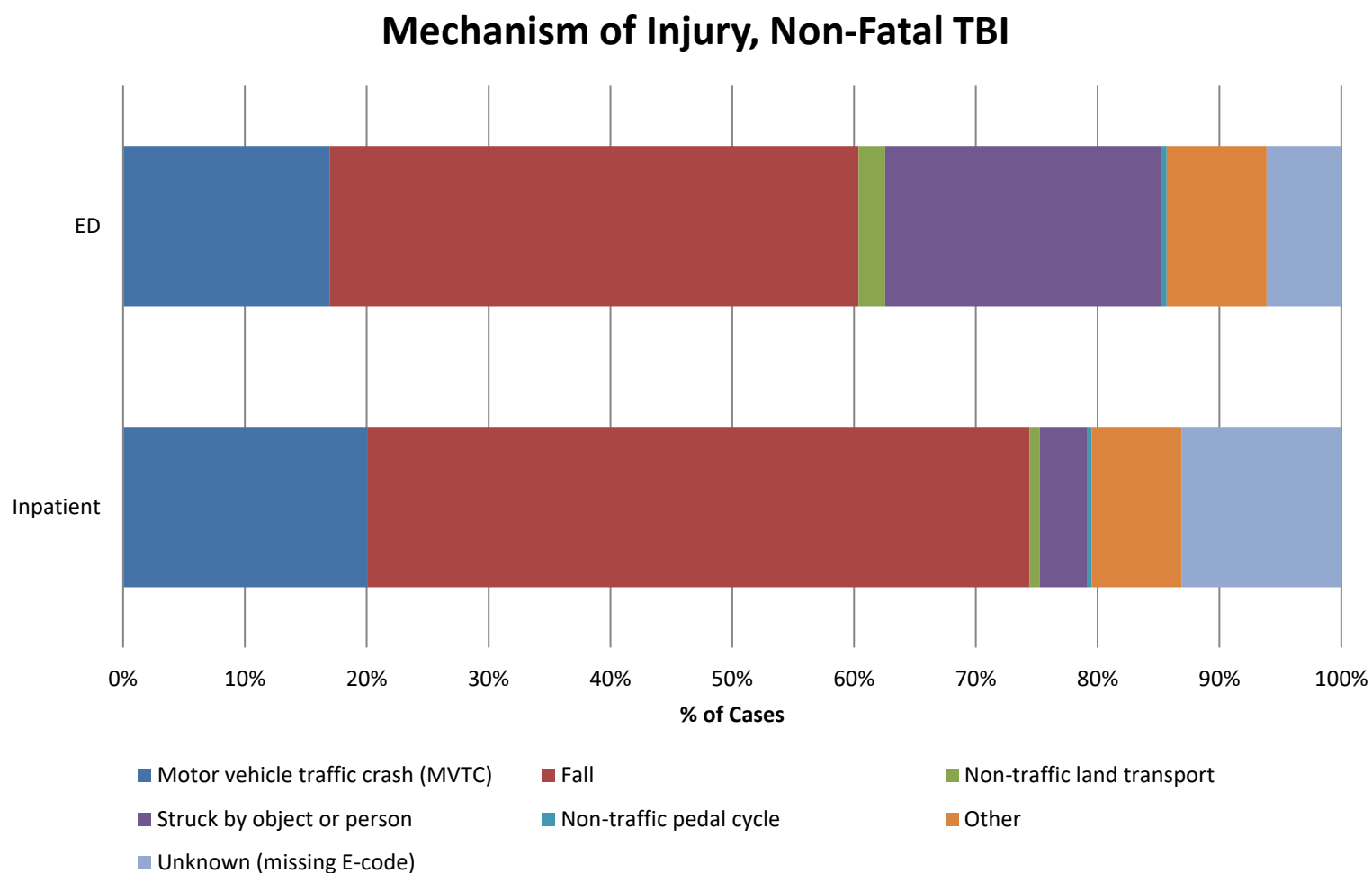


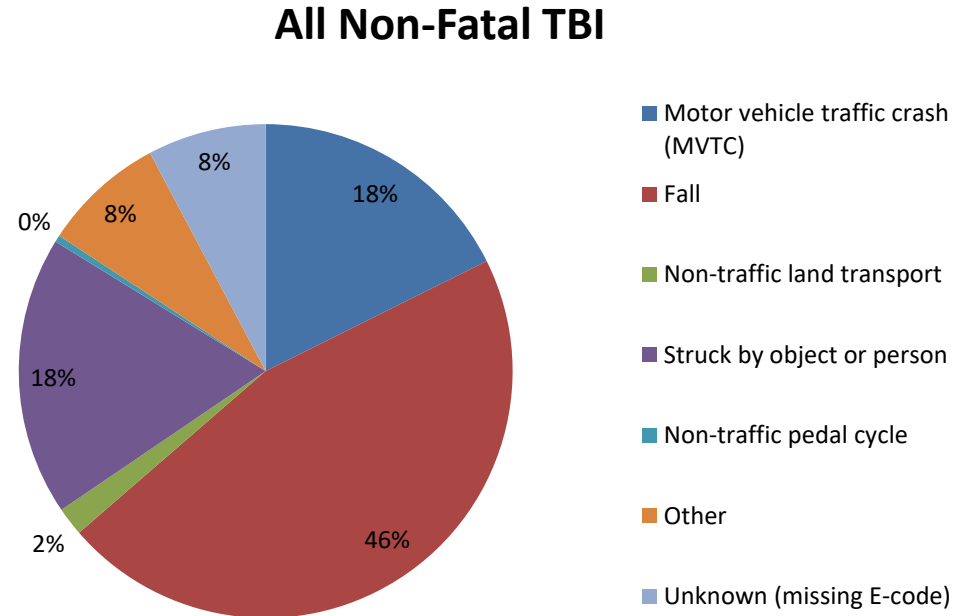
Figure 6: Non-Fatal Traumatic Brain Injury-Related Emergency Department Visits and Hospitalizations, Kentucky, 2022



TBI by External Cause: Comparing the Percentages

Following is a pie chart depicting the percentage of TBI-related ED visits and hospitalizations, combined, by external cause of injury. Falls were the leading known cause of TBI covering 46% of all non-fatal TBI in Kentucky in 2022. The second leading known cause was motor vehicle traffic crashes (MVTC) which contributed 18% of all non-fatal TBI.

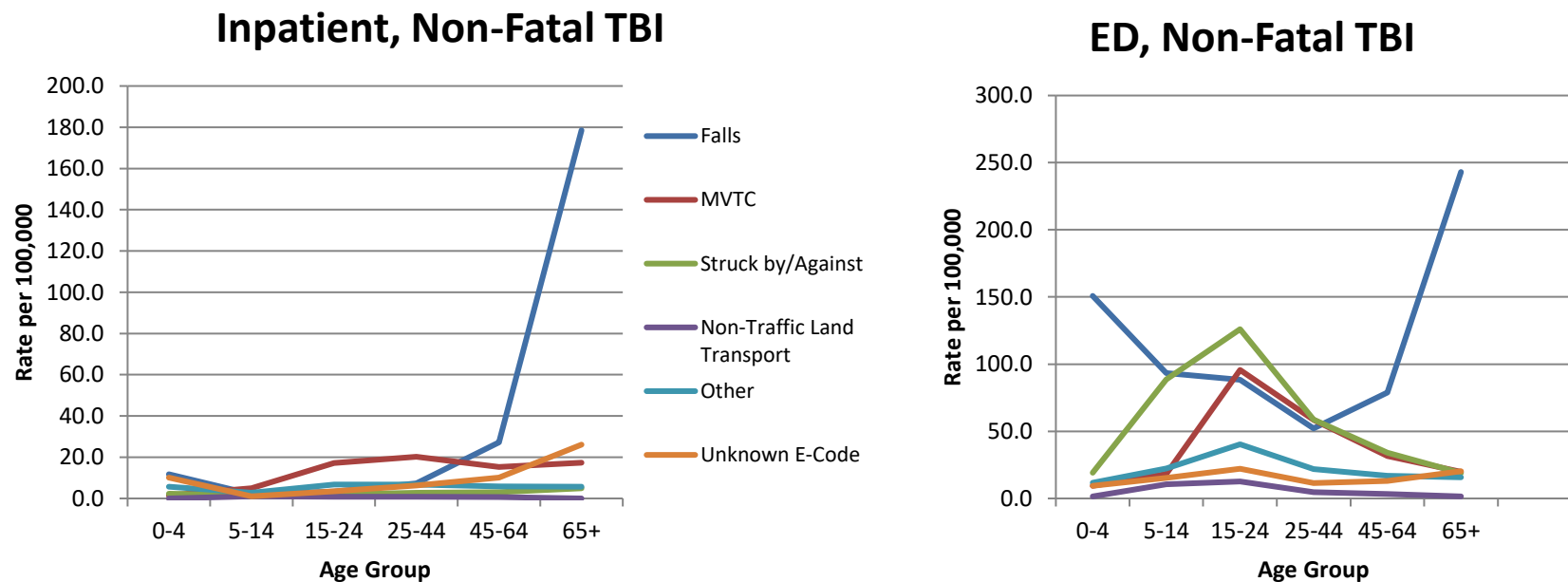
Figure 7: Percentage of Traumatic Brain Injury-Combined Emergency Department Visits and Hospitalizations, by External Cause, Kentucky, 2022



The following figure, **Figure 8**, is a graph depicting the rates of TBI-related ED visits and hospitalizations by external cause. The y axis represents the rate per 100,000 population.

The data indicate that Falls were the leading cause of TBI in Kentucky. Rates were highest among ages 0-4 years (ED) and 65 years and older (both, hospitalizations and ED). The rates for motor vehicle crash related TBI were highest among young adults ages 15 to 24 years.

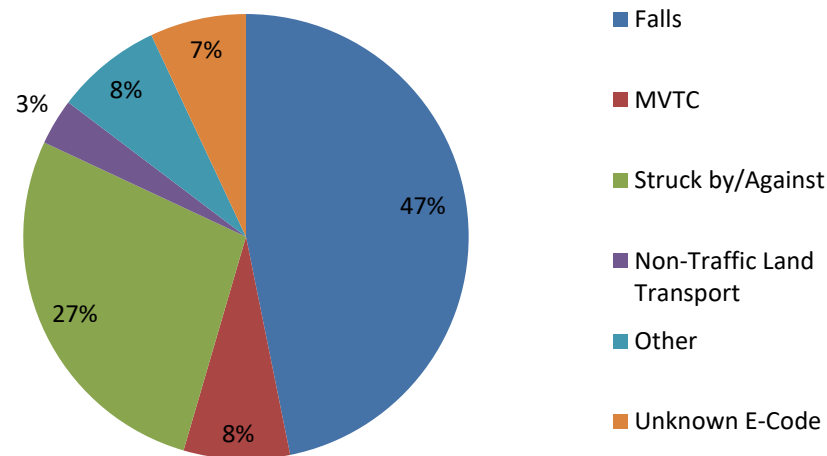
Figure 8: Rates of Non-Fatal Traumatic Brain Injury-Related Emergency Department Visits and Hospitalizations, by External Cause, Kentucky, 2022



TBI by External Cause: Comparing the Percentages by Age Groups

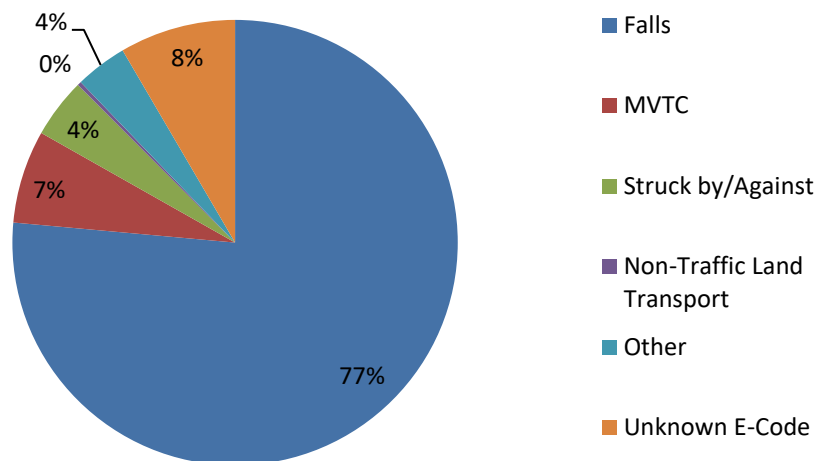
The following two figures depict the percentage of non-fatal TBI-related ED visits and hospitalizations by external cause for specific age groups. Figure 9 presents data for children ages 0 to 14 years. Figure 10 presents data for adults age 65 or older.

Figure 9: Percentage of Traumatic Brain Injury-Combined Emergency Department Visits and Hospitalizations Among Children 0 to 14 Years, by External Cause, Kentucky, 2022



For children ages 0 to 14 years, falls were the leading known external cause of non-fatal TBI, contributing to almost half of all TBIs in this age group. The second leading known external cause was struck by or against events which accounted for 27% of injuries.

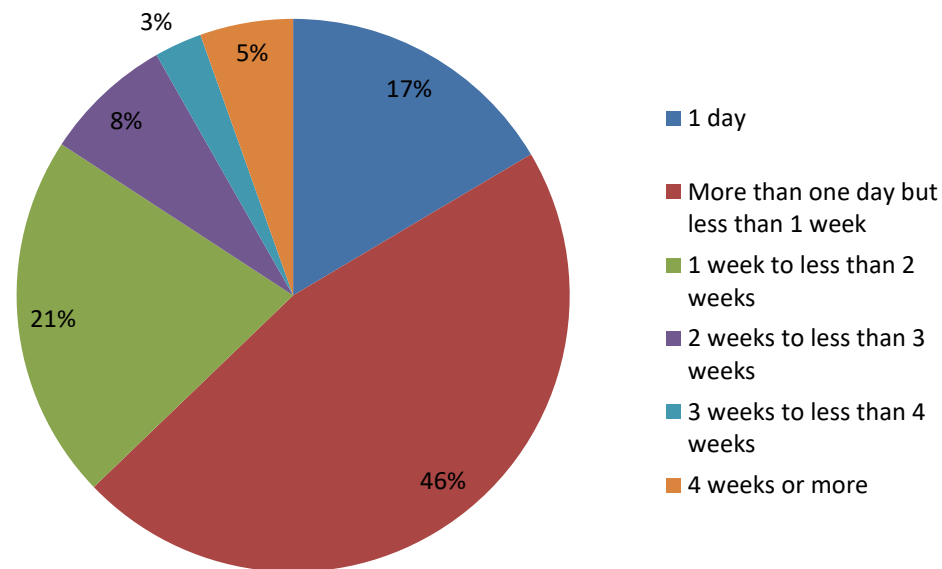
Figure 10: Percentage of Non-Fatal Traumatic Brain Injury-Combined Emergency Department Visits and Hospitalizations Among Older Adults 65 Years or Older, by External Cause, Kentucky, 2022



Falls were also the leading cause of non-fatal TBI for adults age 65 years or older and contributed to over three quarters of non-fatal TBI injuries.

The length of stay (LOS) for hospitalized, non-fatal TBI (n=3,466) ranged from 1 day to 358 days. The mean LOS was 8.4 days with a median LOS of 4.5 days. Figure 11 shows the distribution of stays for those hospitalized with a TBI. Just under two thirds of admitted TBI injuries stayed for less than 1 week.

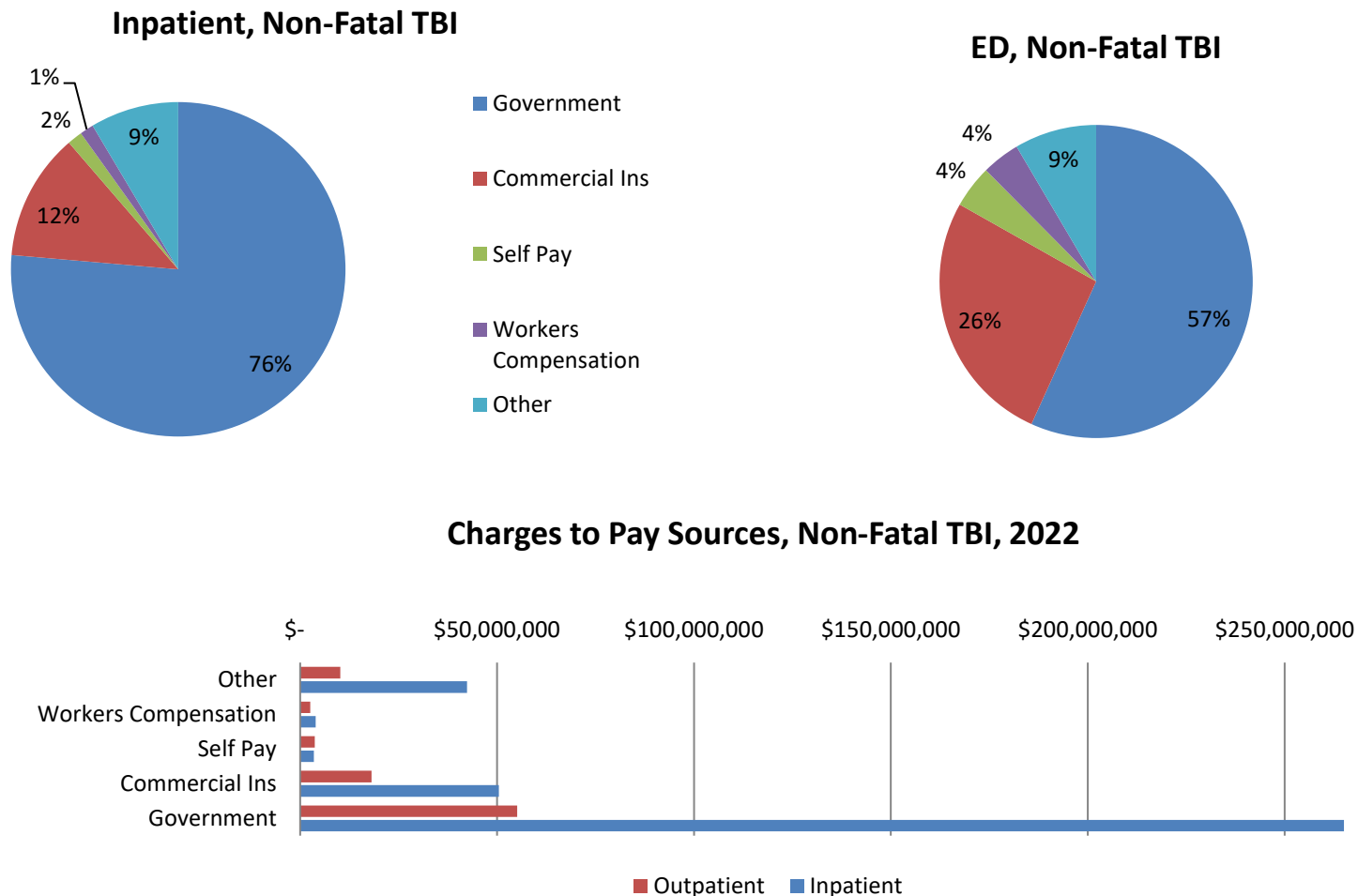
Figure 11: Non-Fatal Traumatic Brain Injury-Hospitalization Length of Stay, Kentucky, 2022



For non-fatal inpatient TBIs, 1,768 (52.3%) had a disposition other than “routine”. The three most frequent non-routine discharges were “skilled nursing facility”, “home health”, and “rehabilitation”. A total of 1,344 inpatient discharges had one of these three dispositions. ED discharges were nearly always (83.3%) to home or self care (routine) with “inpatient – other short term hospital” being the most frequent non-routine discharge.

Government sources were the primary payers billed for inpatient care charges in three quarters (76.4%) of non-fatal TBI as well as over half ED care charges (56.8%). Please note that the amount billed by the hospital will generally be larger than the amount actually paid after adjudication of the claim.

Figure 12: Non-Fatal Traumatic Brain Injury-Emergency Department and Hospitalizations, Payer Source and Charges, Kentucky, 2022

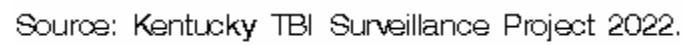


As one would expect, the incidence of TBI was highest in the larger counties. The top three in overall (inpatient and ED combined) TBI incidence (Jefferson, Fayette, and Hardin) are among the top most populous counties in Kentucky. Both Scott and Franklin County make the top 10 in incidence while only being 16th and 19th (respectively) in population rank in the state. Another notable exception was Whitley County, which was 13th in TBI incidence but 29th in population. Harrison, Grayson, Ohio and Clay also stood out by being the counties with the top 4 age-adjusted rates while ranking 63th, 41st, 49th, and 58th in population size. Clay County, which has consistently been one of the highest rated counties in Kentucky since 2001, remains in the top 15 again this year. In the past when data was available, it was noted that several southern border counties have significant numbers of residents treated in Tennessee hospitals. Prominent examples include Christian, Whitley, Warren, Bell, Harlan, Graves, Logan, and McCracken. This illustrates an important point: *if this report shows a county to have a high rate of TBI, we can be confident that this is a county in need. Conversely, however, if a county is shown to have a low rate we cannot conclude that there is not a significant problem in that county, particularly if it is located on or near the state border.*

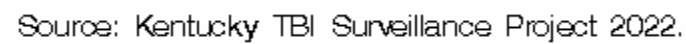
The following illustrations map both the frequency of TBI in Kentucky counties (Figures 13 and 14) as well as the age adjusted rate of TBI in each county (Figures 15 and 16) for inpatient and outpatient TBIs. It should be noted that these mappings include ALL inpatient TBI cases (Figures 13 and 15) as well as ALL ED TBI cases (Figures 14 and 16) – including those that died at the hospital. Fatalities are not included in other analysis in this report unless noted but are included here to capture a visual representation of the magnitude of the problem of TBI in each county. These numbers DO NOT include those that died before admission to an acute care hospital.

Multiple tables can be found in the Appendix detailing specific rates and frequencies by county, frequency, and age adjusted rates for both inpatient and ED TBIs.

TBI Hospitalization Cases by County, Kentucky 2022



TBI ED Cases by County, Kentucky 2022



Age-Adjusted TBI Hospitalization Rates by County, Kentucky 2022

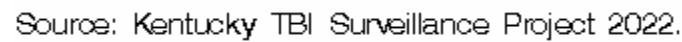
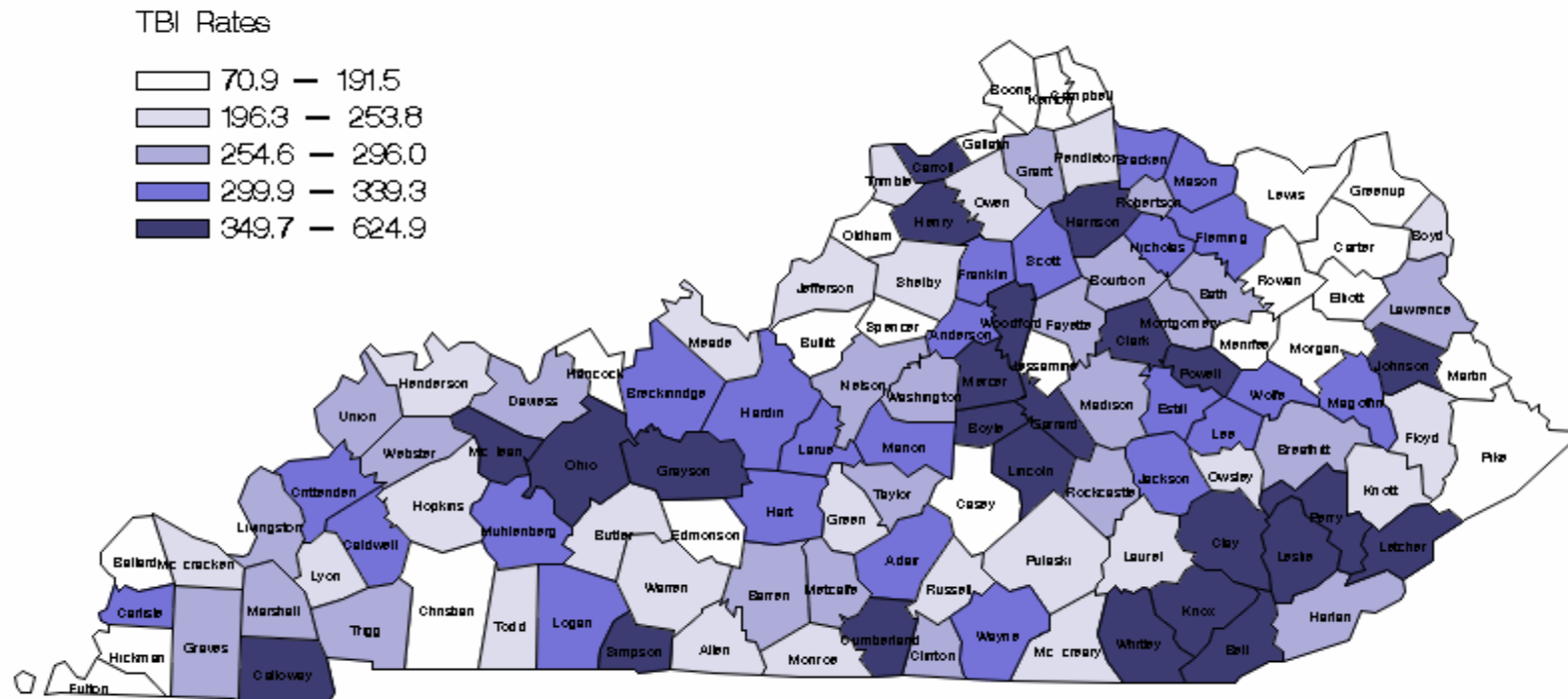


Figure 16:

Age—Adjusted TBI ED Rates by County, Kentucky 2022



Source: Kentucky TBI Surveillance Project 2022.

Non-Traumatic Brain Injury in Kentucky

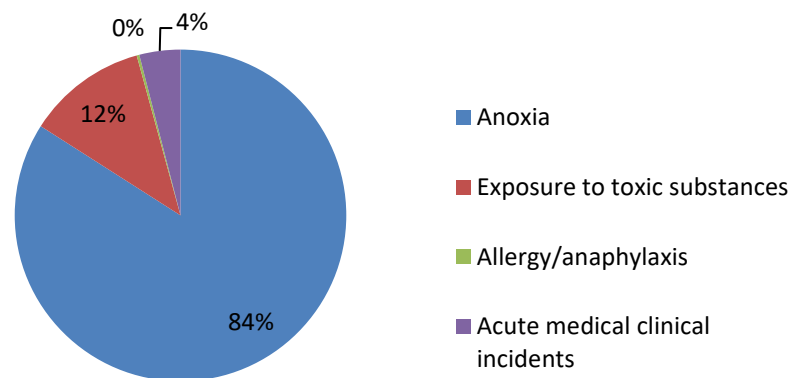
In addition to CDC-defined TBI, there are many brain injuries that have non-traumatic etiologies. These we have classified as NTBI (Non-Traumatic Brain Injuries). (See Appendix for diagnosis codes.) Because these diagnoses are not included in the CDC definition of TBI, they have been analyzed separately. We have broken NTBI into 4 different categories.

These categories of brain injuries caused by non-traumatic incidents and include:

- anoxia/hypoxia
- allergy/anaphylaxis
- acute medical clinical incidents
- toxic substances

This represents a significant widening of our definition from previous years (previously labeled Acquired Brain Injury or ABI). In 2022, there were 126,507 Kentucky residents identified in Kentucky hospitals with non-fatal, non-traumatic incidences of brain injury. This includes both inpatient (97,300) and ED (29,207) cases. The crude incidence rate for 2022 was 2,805 per 100,000 population.

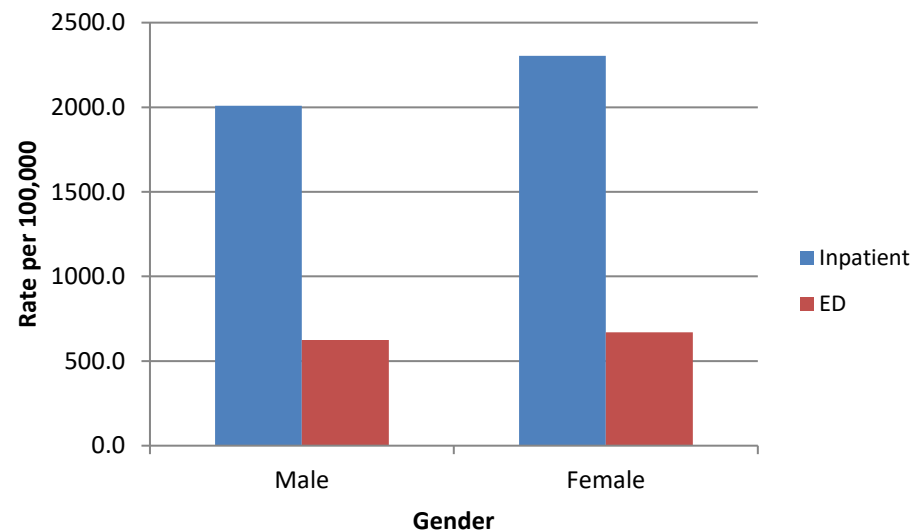
Figure 17: Non-Fatal, Non-Traumatic Brain Injury (NTBI) by Type, Kentucky, 2022



NTBI by Gender: Comparing the Rates

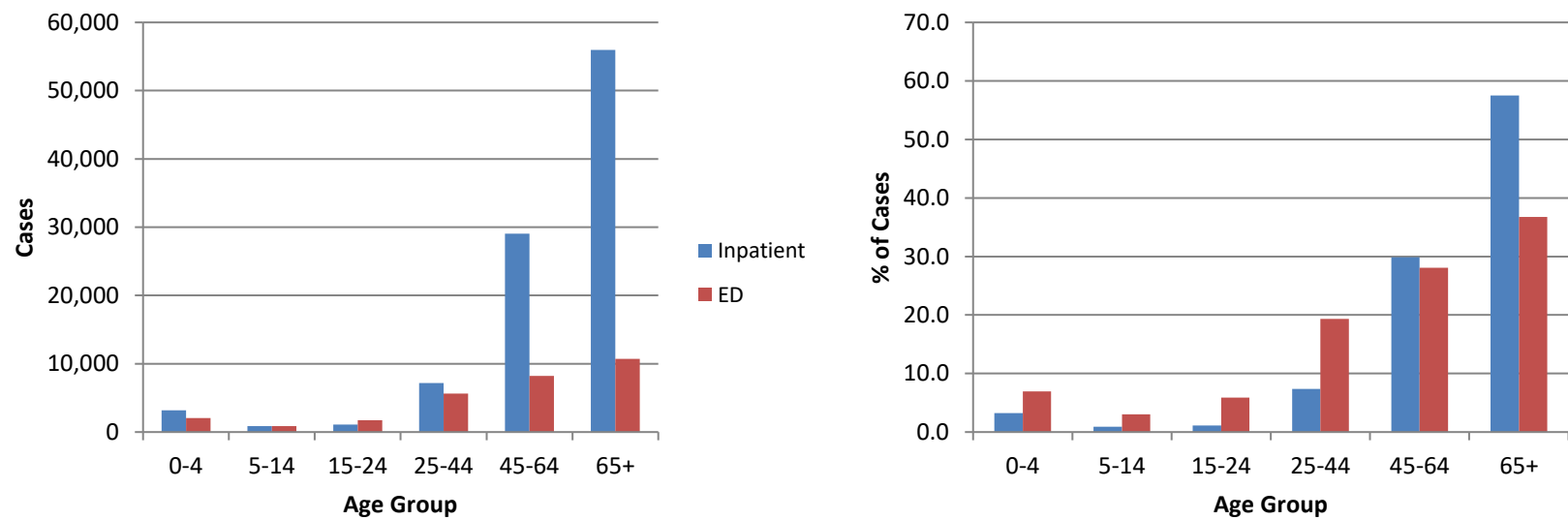
The following figure, **Figure 18**, is a graph depicting the rates of non-fatal NTBI-related ED visits and hospitalizations by gender. The y axis represents the rate per 100,000 population. Rates were slightly higher for males in ED NTBI cases with females having the higher overall rate between inpatient and ED.

Figure 18: Rates of Non-Fatal Non-Traumatic Brain Injury-Related Emergency Department Visits and Hospitalizations, by Gender, Kentucky, 2022



NTBI by Age: Comparing the Numbers

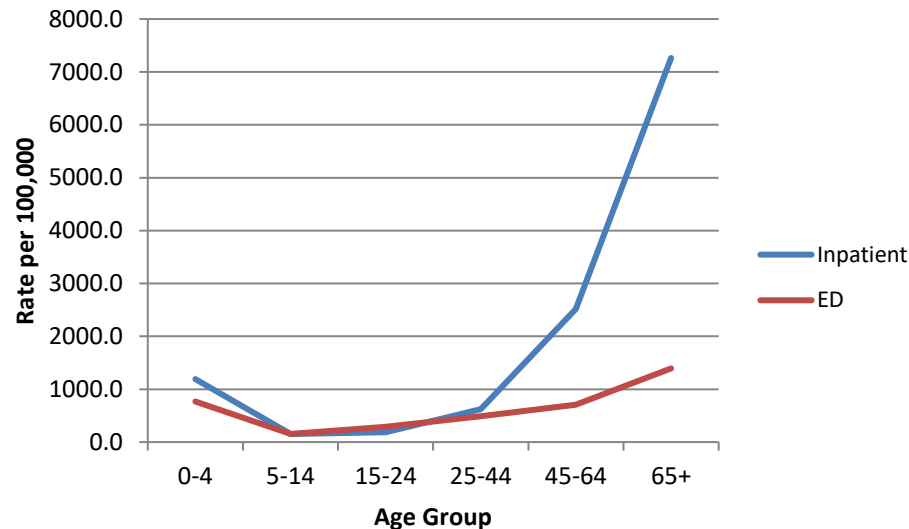
Figure 19: Numbers of Non-Fatal Non-Traumatic Brain Injury-Related Emergency Department Visits, and Hospitalizations, by Age Group, Kentucky, 2022



NTBI by Age: Comparing the Rates

The following figure, **Figure 20**, is a graph depicting the annual rate of NTBI-related ED visits and hospitalizations by age groups in Kentucky for 2022. The y axis represents the rate per 100,000 population. During 2022, the highest rate of non-fatal NTBI-related ED visits at 1393 per 100,000 population were those in the 65+ age group. The highest rates of non-fatal NTBI-related hospitalization also occurred among adults age 65 years or older (7,263 per 100,000).

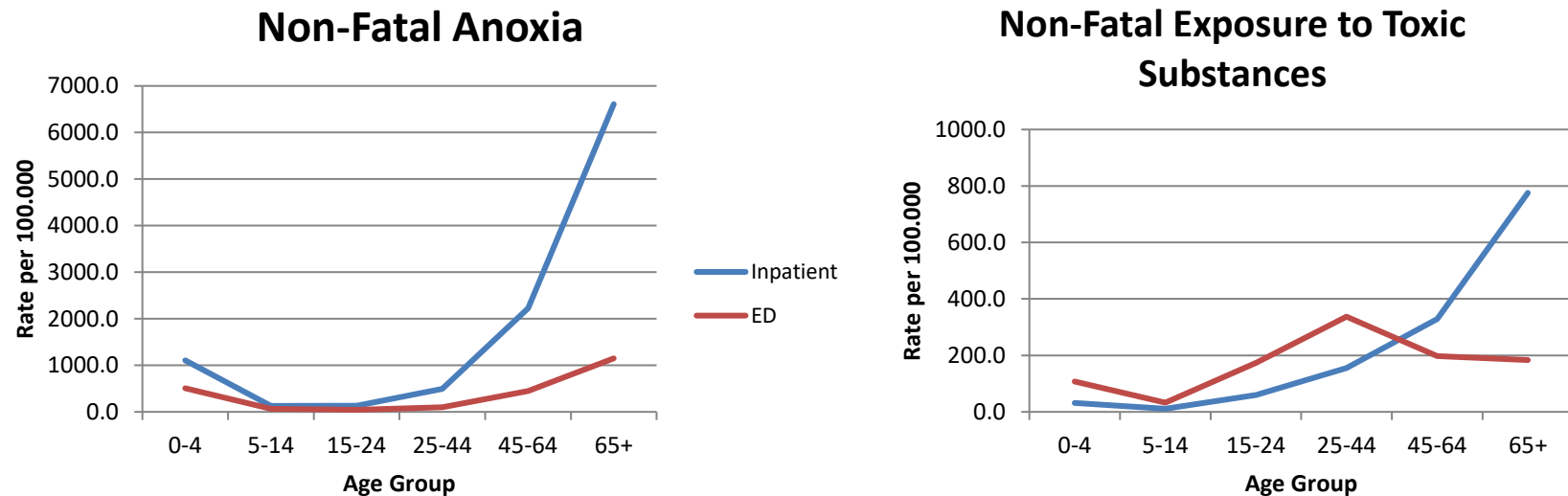
Figure 20: Rates of Non-Fatal Non-Traumatic Brain Injury-Related Emergency Department Visits and Hospitalizations, by Age Group, Kentucky, 2022



NTBI by Age and Type: Comparing the Rates

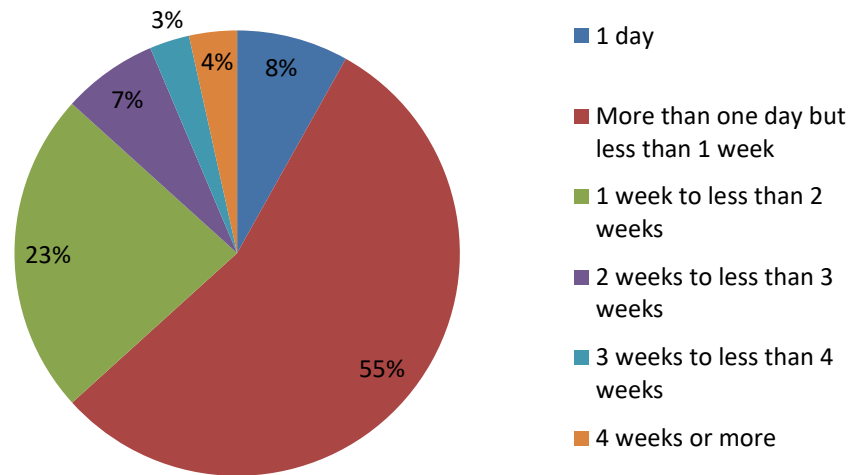
Nearly all inpatient NTBI (84.0%) were a result of anoxia/hypoxia. Anoxia/hypoxia was also the leading cause of NTBI in ED (57.8%) with exposure to toxic substances (ETS) following (30.6%). Almost half of all ETS cases included poisoning by narcotics, hallucinogens, sedatives, hypnotics, central nervous system depressants/anesthetics and toxic effects of alcohol. Over 86% of all anoxia cases were due to respiratory failure with hypoxia or hypercapnia. In non-fatal NTBI inpatient visits, anoxia tends to affect older people (ages 45 and over) considerably more often than younger people, whereas ETS also affects persons 25 and older.

Figure 21: Rates of Non-Fatal Non-Traumatic Brain Injury-Related Emergency Department Visits, and Hospitalizations, by Age Group and Type, Kentucky, 2022



The length of stay (LOS) for hospitalized, non-fatal NTBI (n=97,300) ranged from 1 day to 358 days. The mean LOS was 7.7 days with a median LOS of 5 days. Figure 22 shows the distribution of stays for those hospitalized with NTBI. Over one in three admitted (inpatient) NTBI injuries stayed for 1 week or longer.

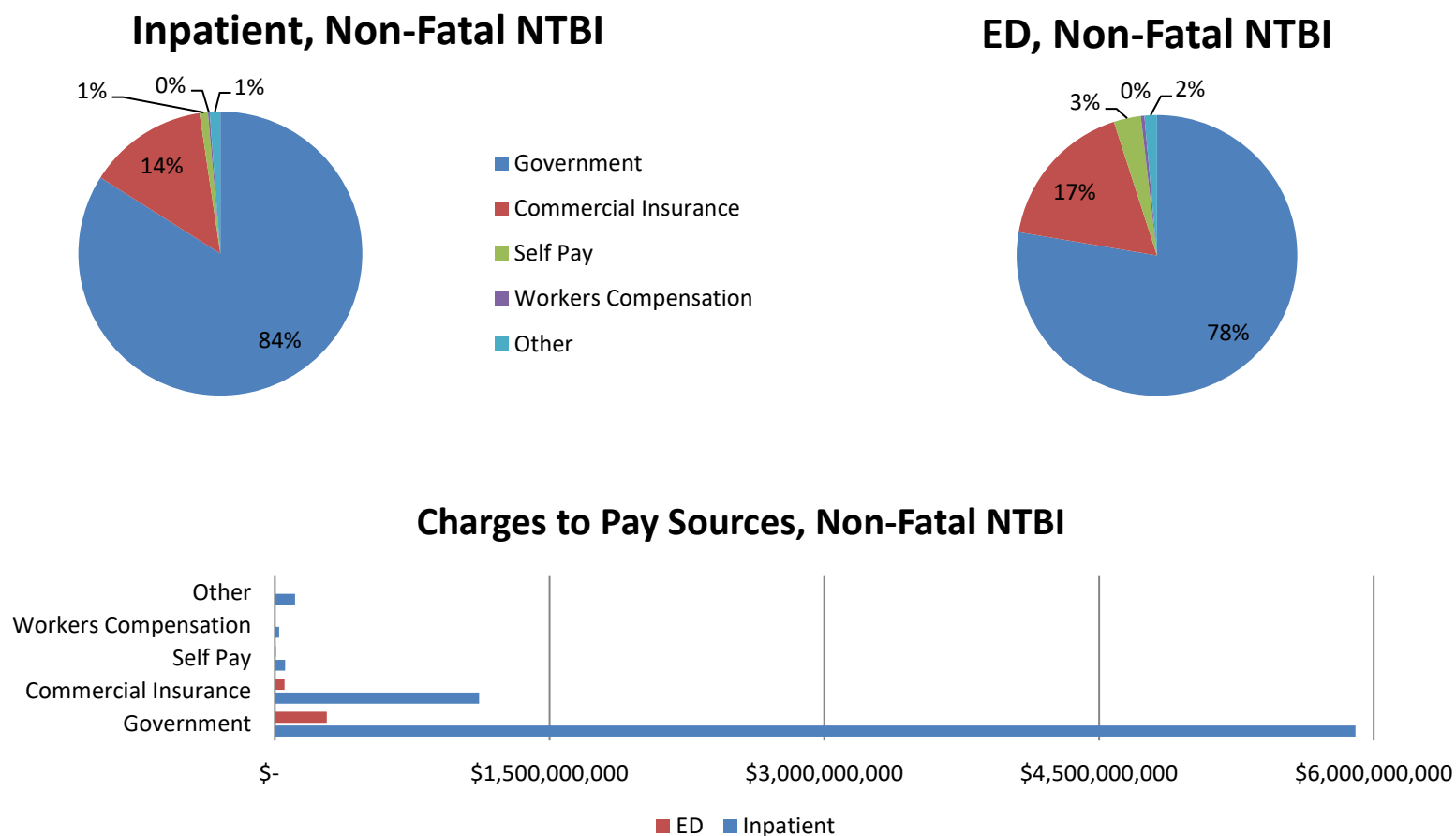
Figure 22: Non-Fatal Non-Traumatic Brain Injury-Hospitalization Length of Stay, Kentucky, 2022



For non-fatal inpatient NTBIs, 47,852 (49.2%) had a disposition other than “routine”. The three most frequent non-routine discharges were “skilled nursing facility”, “home health”, and “rehabilitation”. A total of 33,832 inpatient discharges had one of these three dispositions. ED discharges were most likely (69.7%) routinely discharged to home or self care (routine) with “inpatient – other short term hospital” being the most frequent non-routine discharge.

Government sources were the most often primary payers billed for both inpatient (84.0%) and ED (77.7%) cases for non-fatal NTBI. Please note that the amount billed by the hospital will generally be larger than the amount actually paid after adjudication of the claim.

Figure 23: Non-Fatal Non-Traumatic Brain Injury-Emergency Department and Hospitalizations, Payer Source and Charges, Kentucky, 2022



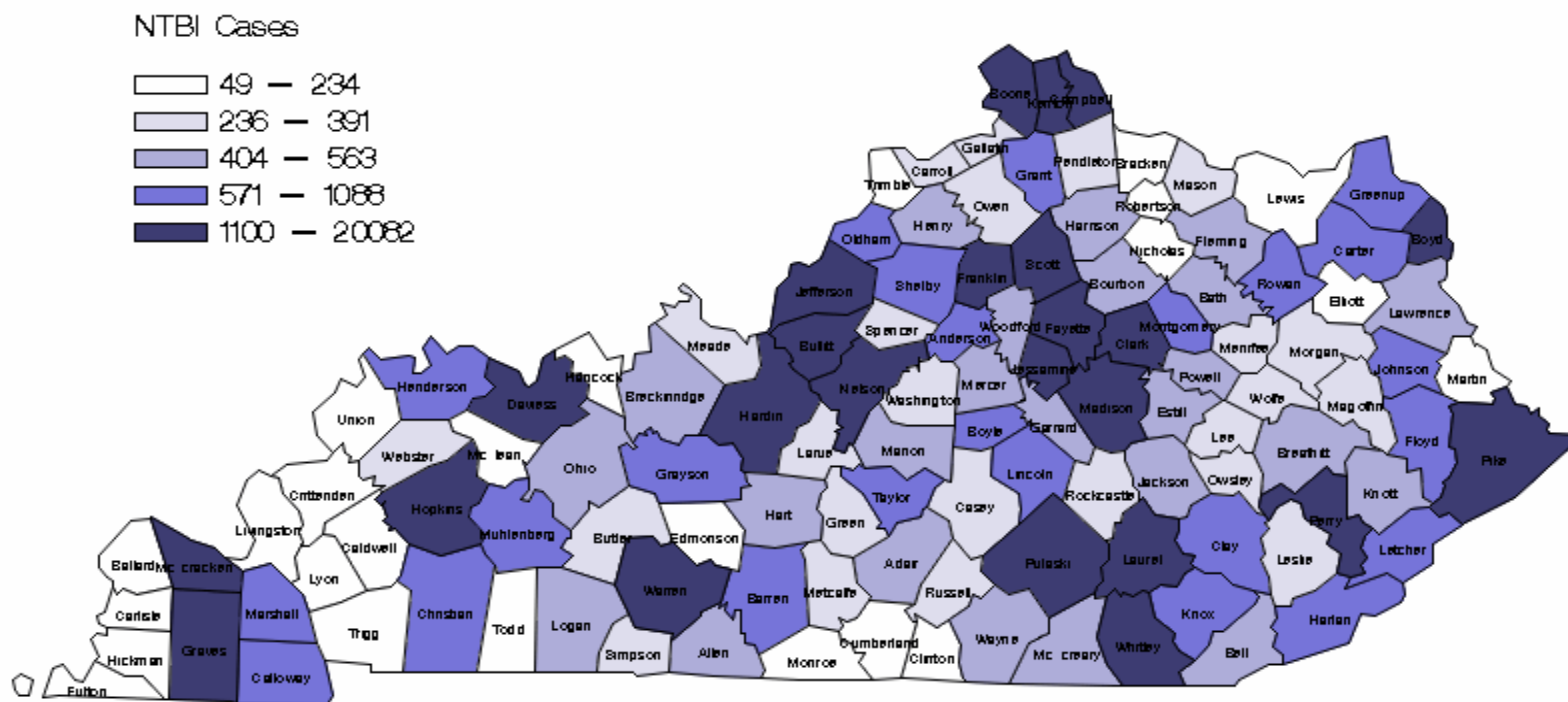
In general, as with TBI, the more populous counties had high numbers of NTBI. However, only two of the 25 most populous counties appeared in the top 25 counties when ranked by age-adjusted rate for hospitalized cases. Perry, which ranks 45th with respect to county population, had the highest age adjusted rate of inpatient NTBI in the state. Leading the state for age adjusted rate for ED cases was Leslie County, the 100th (most populated) county when ranked by population size, followed by Taylor, Carroll and Grant counties, which are ranked 42nd, 96th, and 46th in population. The counties with the highest inpatient rates were concentrated in eastern Kentucky (Figure 26).

The following figures map both the frequency of NTBI in Kentucky counties (Figures 24 and 25) as well as the age adjusted rate of NTBI in each county (Figures 26 and 27) for inpatient and outpatient NTBIs. It should be noted that these mappings include ALL inpatient NTBI cases (Figures 24 and 26) as well as ALL ED NTBI cases (Figures 25 and 27) – including those that died at the hospital. Fatalities are not included in other analysis in this report unless noted but are included here to capture a visual representation of the magnitude of the problem of NTBI in each county. These numbers DO NOT include those that died before admission to an acute care hospital.

Multiple tables can be found in the Appendix detailing specific rates and frequencies by county, frequency, and age adjusted rates for both inpatient and ED NTBIs.

Figure 24.

NTBI Hospitalization Cases by County, Kentucky 2022



Source: Kentucky TBI Surveillance Project 2022.

NTBI ED Cases by County, Kentucky 2022

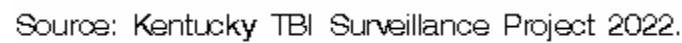
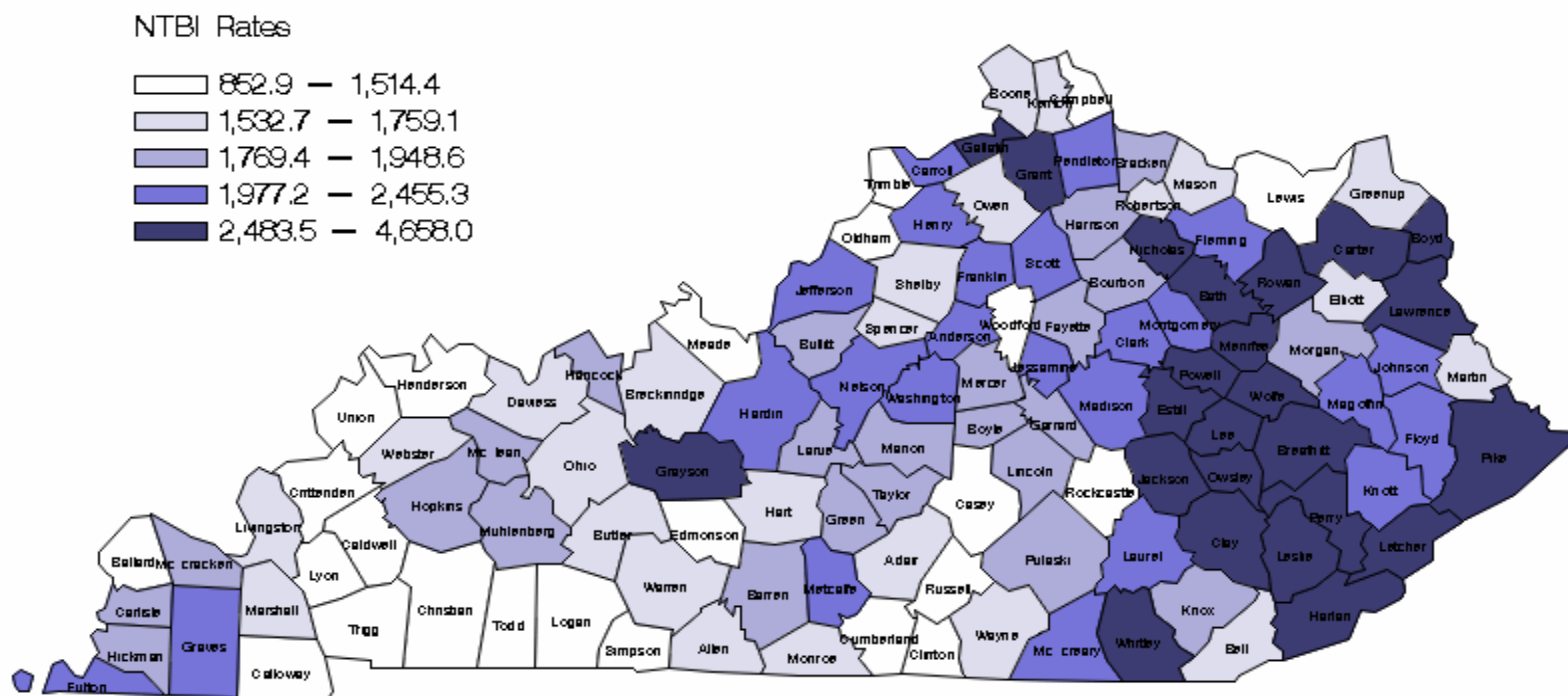


Figure 26.

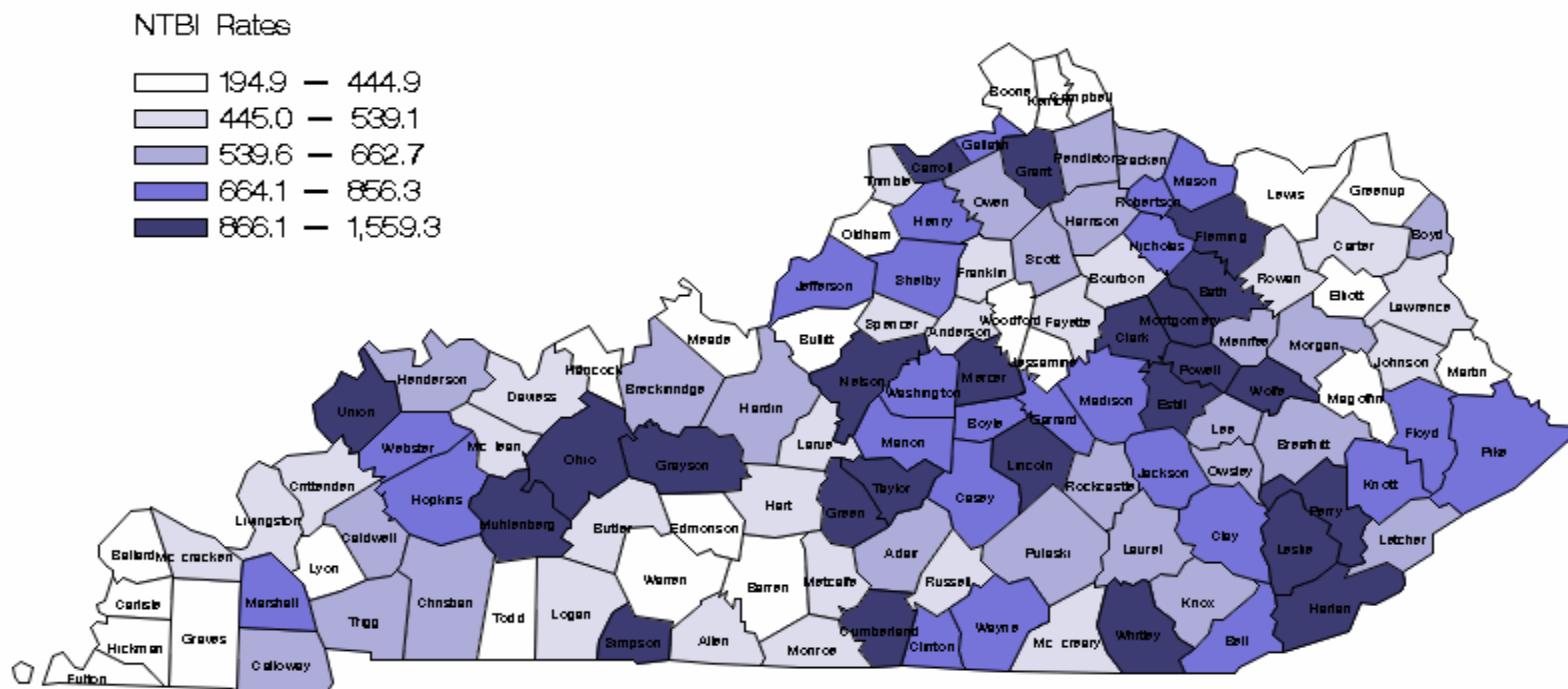
Age—Adjusted NTBI Hospitalization Rates by County, Kentucky 2022



Source: Kentucky TBI Surveillance Project 2022.

Figure 27.

Age—Adjusted NTBI ED Rates by County, Kentucky 2022



Source: Kentucky TBI Surveillance Project 2022.

Spinal Cord Injury in Kentucky

Spinal cord injury (SCI) patients often are readmitted for problems stemming from the original injury. In an effort to avoid double counting in such cases, for SCI we looked only at the first three listed diagnosis codes. There were 224 non-fatal inpatient SCI cases for Kentucky residents identified in 2022 as well as 87 non-fatal ED cases. The crude incidence rate of any non-fatal SCI was 6.9 per 100,000 population.

SCI by Gender: Comparing the Rates

Figure 28: Rates of Non-Fatal Spinal Cord Injury-Related Emergency Department Visits and Hospitalizations, by Gender, Kentucky, 2022

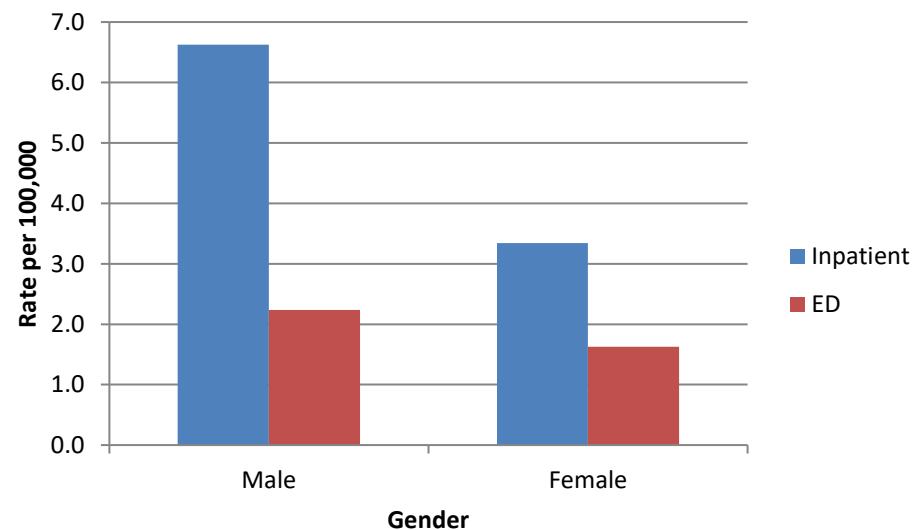
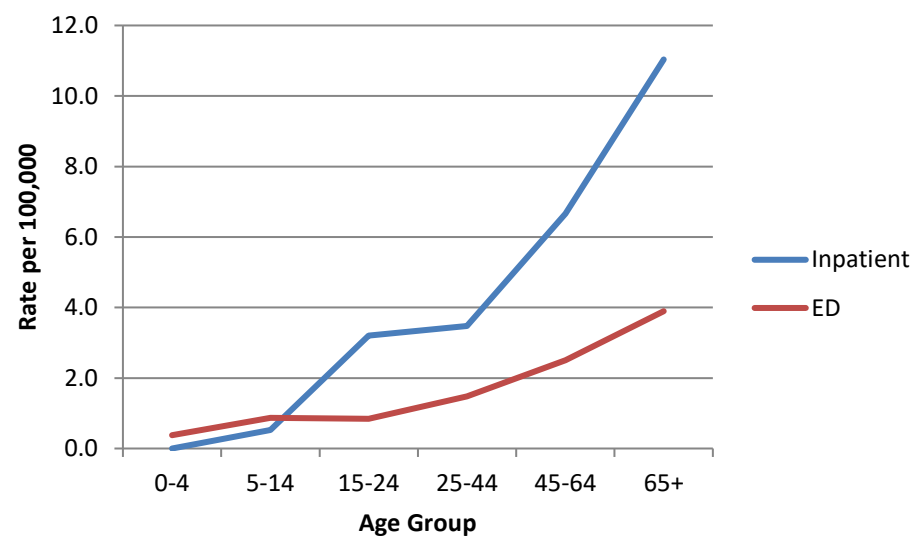
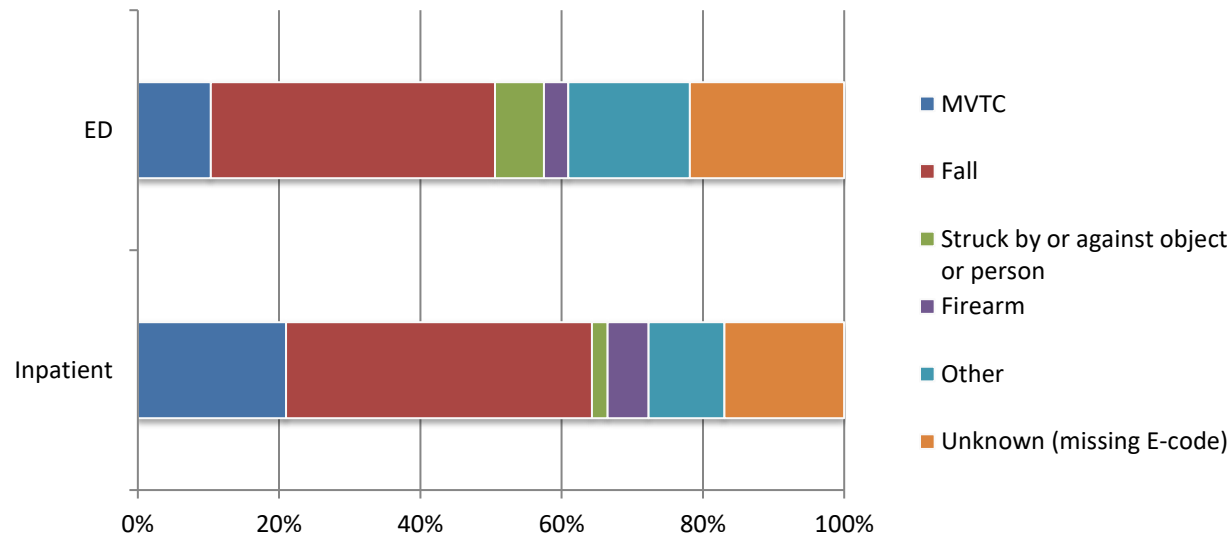


Figure 29: Rates of Spinal Cord Injury-Related Emergency Department Visits and Hospitalizations, by Age Group, Kentucky, 2022



The highest age-specific rates were found in 65+ age group for both ED and inpatient admissions.

Figure 30: Non-Fatal Spinal Cord Injury-Related Emergency Department Visits and Hospitalizations by External Cause, Kentucky, 2022

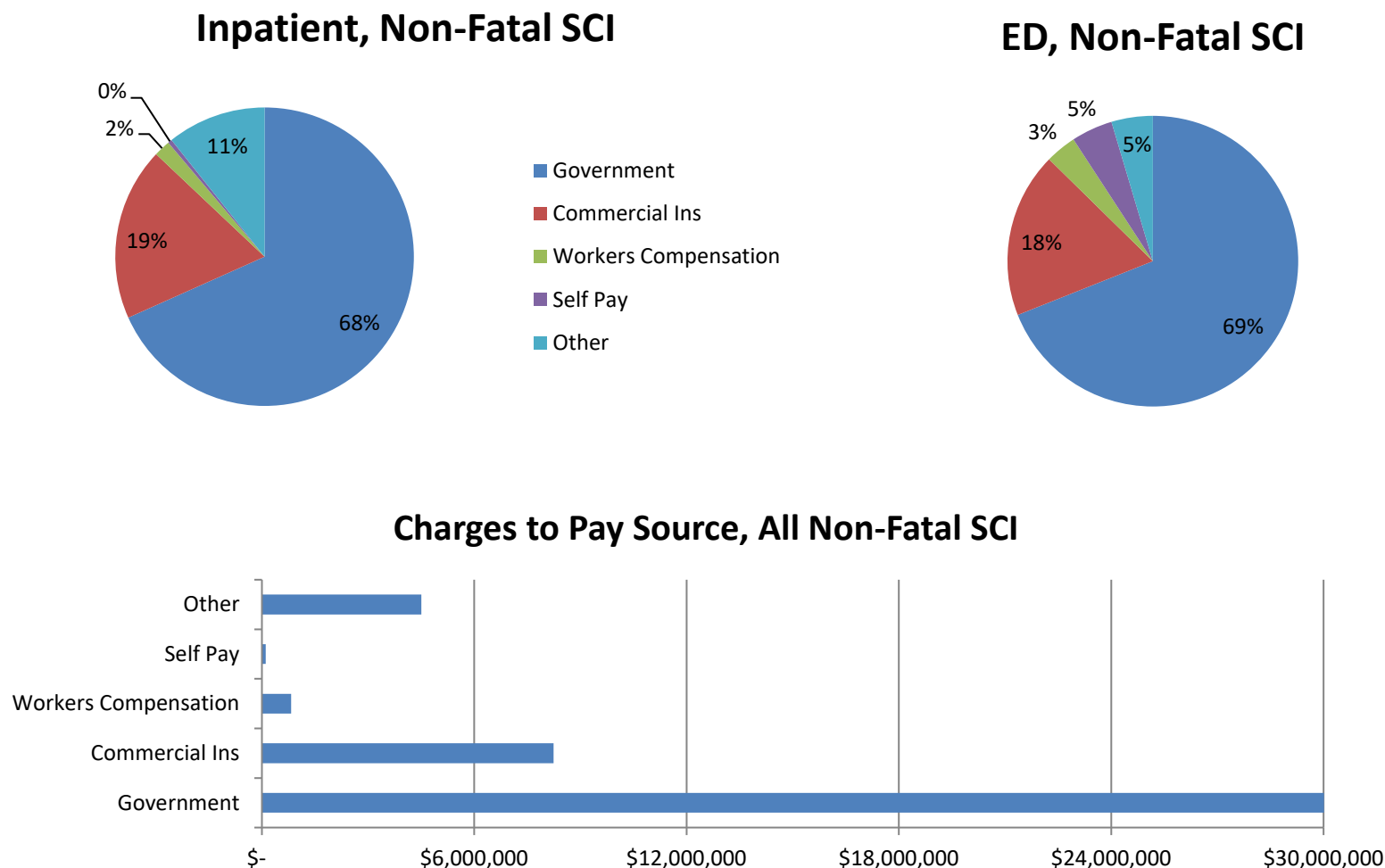


Among non-fatal SCI's for which an E-code was reported, falls were the leading mechanisms of injury for both inpatient and ED SCI visits. Motor vehicle crashes were the second leading cause of SCI in both hospitalizations and ED visits.

Hospitalized SCI patients had a length of stay (LOS) varying from 1 day to 72 days. The mean LOS was 11.2 days with a median of 8 days. Just over two thirds (69.2%) of the non-fatal inpatient SCI discharges had dispositions other than “routine”, while 40.2% of ED discharges were non-routine. In total, over 6 out of 10 of all SCI non-fatal discharges went on to receive further care. In comparison, non-fatal TBI inpatient visits were routinely discharged 47.7% of the time and TBI visits to the ED were routinely discharged about 83.3% of the time. Overall, 3 out of 4 non-fatal TBI discharges were discharged to home or self care (routine).

Government sources were the primary payer billed for acute care charges in over two thirds of all non-fatal SCI. Government payers were billed over \$30 million in 2022, and commercial payers over \$8.2 million.

Figure 31: Non-Fatal Spinal Cord Injury-Emergency Department and Hospitalizations, Payer Source and Charges, Kentucky, 2022



Cerebrovascular Disease in Kentucky

The highest death rates for cerebrovascular disease (stroke) occur in the southeastern US which has been dubbed the “stroke belt”. This region consists of a group of 11 southeastern states that have an age-adjusted stroke mortality rate more than 10% above the national average. Kentucky is included in this region. In 2022, almost 20,000 non-fatal hospital visits by Kentucky residents were coded with stroke related ICD-10-CM codes in one or more diagnosis fields. 75.1% inpatient admissions coded for stroke listed stroke as the principal diagnosis. There were 12,355 non-fatal inpatient stroke cases for Kentucky residents identified in 2022 as well as 7,428 non-fatal ED cases. The crude incidence rate was 439 per 100,000 population.

Stroke by Gender: Comparing the Rates

Figure 32: Rates of Non-Fatal Stroke Related Emergency Department Visits and Hospitalizations, by Gender, Kentucky, 2022

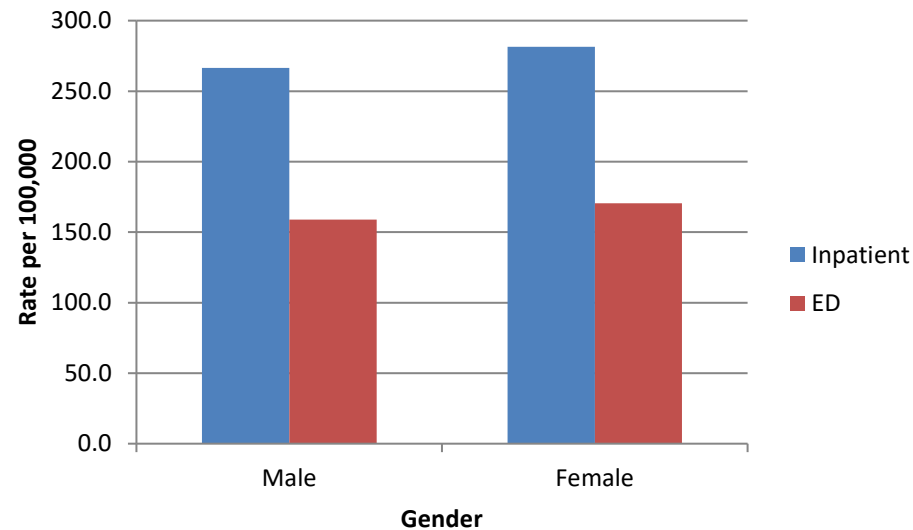
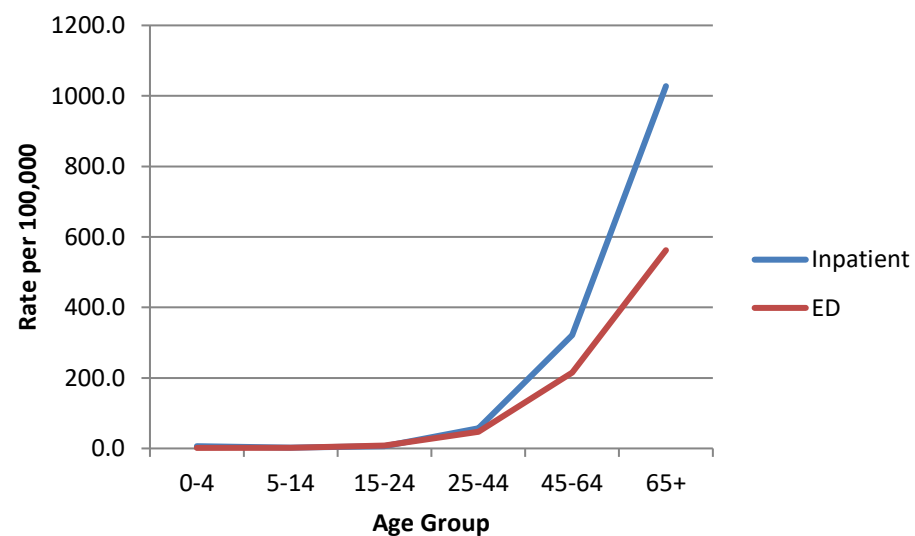


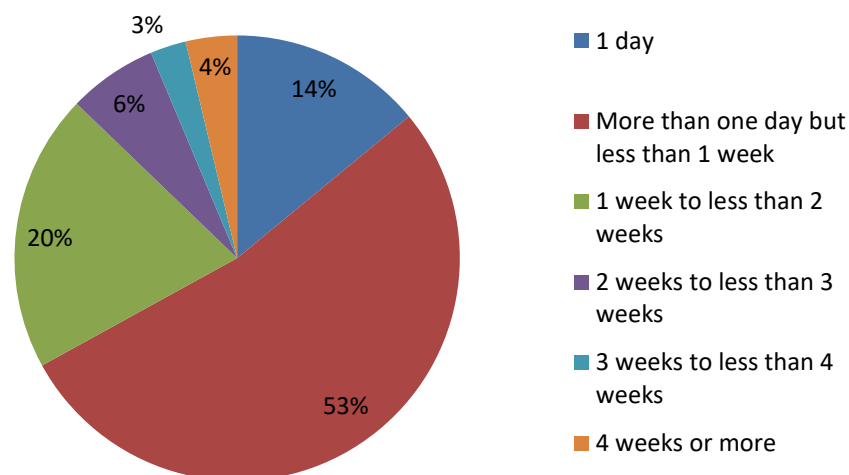
Figure 33: Rates of Stroke Related Emergency Department Visits and Hospitalizations, by Age Group, Kentucky, 2022



The highest age-specific rates were found in the 65 or older age group for both non-fatal inpatient and ED stroke cases.

The length of stay (LOS) for non-fatal stroke related hospitalizations (n=12,355) ranged from 1 day to 316 days. The mean LOS was 7.3 days with a median LOS of 4 days. Figure 34 shows the distribution of stays for those hospitalized with a stroke diagnosis. Almost one out of three admitted (inpatient) stroke related hospitalizations stayed for 1 week or longer.

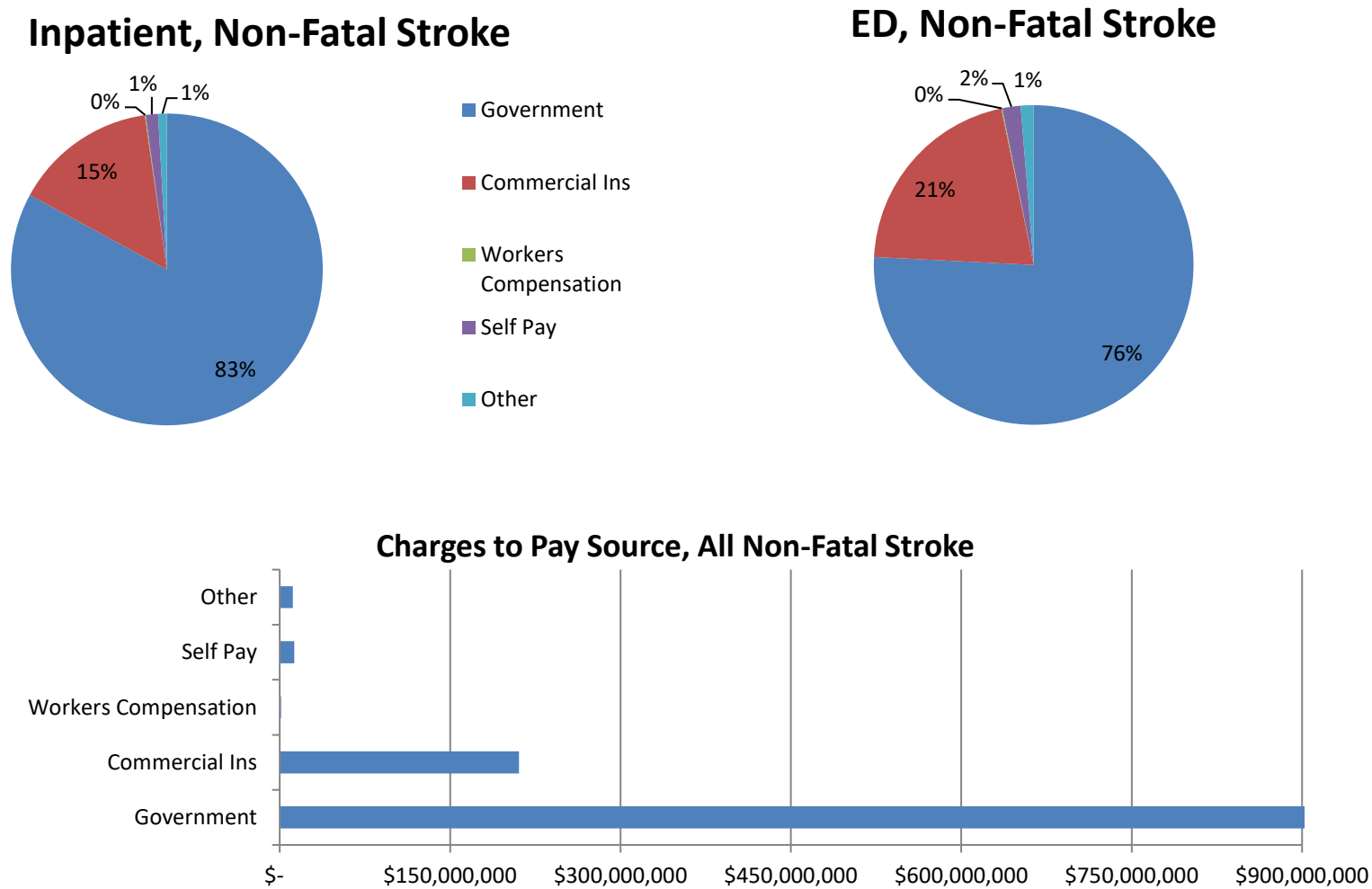
Figure 34: Non-Fatal Stroke Related Hospitalization Length of Stay, Kentucky, 2022



For non-fatal stroke related hospitalizations, 7,423 (60.1%) had a disposition other than “routine”. The three most frequent non-routine discharges were “skilled nursing facility”, “home health”, and “rehabilitation”. A total of 5,661 inpatient discharges had one of these three dispositions. ED discharges were routinely discharged to home or self care (routine) just over half the time (55.6%) with “inpatient – other” being the most frequent non-routine discharge (38.3%).

Government sources were the primary payer billed for acute care charges in almost 8 out of 10 of all non-fatal stroke related hospital visits. Government payers were billed almost \$1 billion in 2022, and commercial payers almost \$211 million.

Figure 35: Non-Fatal Stroke Related Emergency Department Visits and Hospitalizations, Payer Source and Charges, Kentucky, 2022



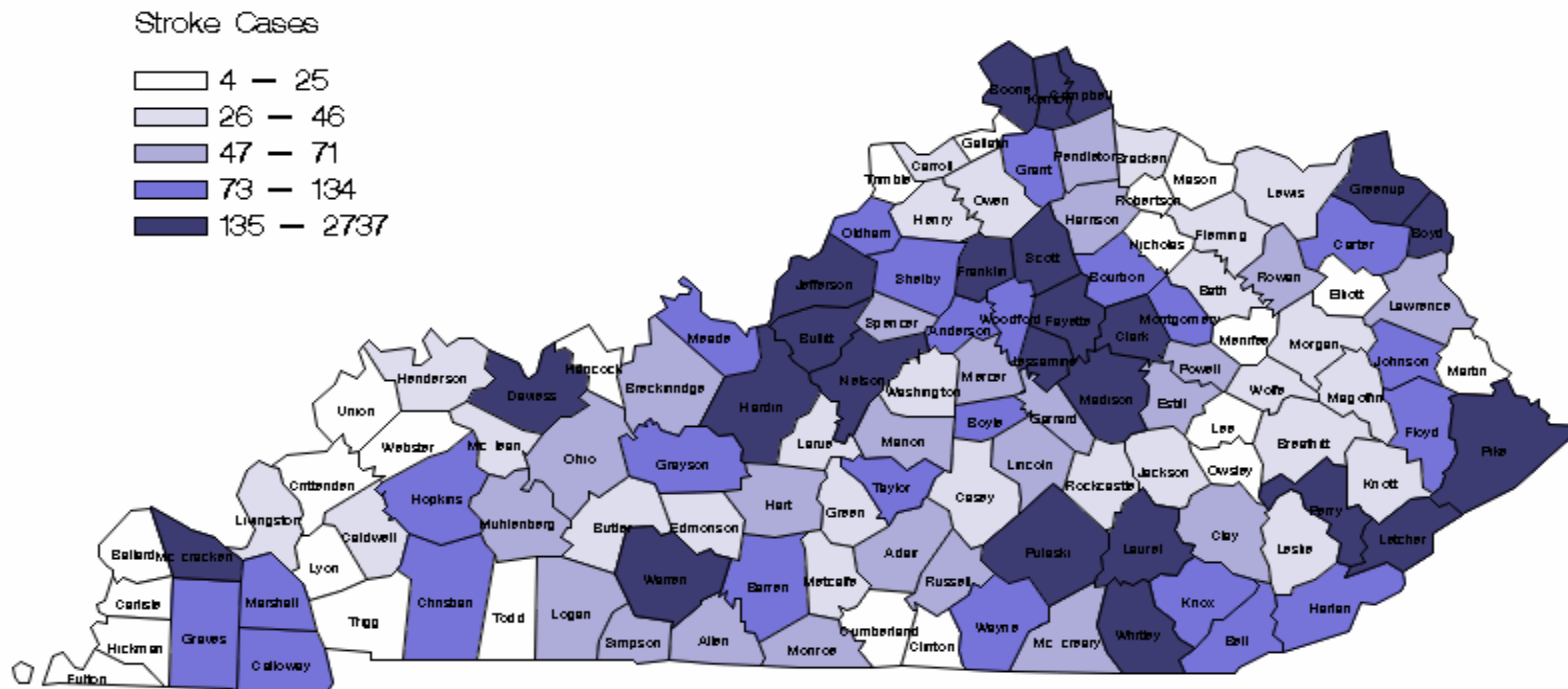
As one would expect, the incidence of stroke was highest in the larger counties. The top four in overall (inpatient and ED combined) stroke incidence (Jefferson, Fayette, Hardin and Kenton) are the four of the six most populous counties in Kentucky. Notable exceptions include Perry, Whitley, Letcher, and Leslie Counties, which were ranked 1st, 2nd, 3rd, and 4th in age adjusted rate for stroke but were 45th, 29th, 54th, and 100th in population (respectively). Wolfe (113th) and Monroe (97th) were also in the top ten counties with highest age adjusted rates despite it's smaller population. Several southern border counties may have significant numbers of residents treated in Tennessee hospitals. Prominent examples include Christian, Whitley, Warren, Bell, Harlan, Graves, Logan, and McCracken. This illustrates an important point: *if this report shows a county to have a high rate of stroke, we can be confident that this is a county in need. Conversely, however, if a county is shown to have a low rate we cannot conclude that there is not a significant problem in that county, particularly if it is located on or near the state border.*

The following illustrations map both the frequency of stroke hospital visits in Kentucky counties (Figures 36 and 37) as well as the age adjusted rate of stroke in each county (Figures 38 and 39) for inpatient and outpatient stroke records. It should be noted that these mappings include ALL inpatient stroke cases (Figures 36 and 38) as well as ALL ED stroke cases (Figures 37 and 39) – including those that died at the hospital. Fatalities are not included in other analysis in this report unless noted but are included here to capture a visual representation of the magnitude of the problem of stroke in each county. These numbers DO NOT include those that died before admission to an acute care hospital.

Multiple tables can be found in the Appendix detailing specific rates and frequencies by county, frequency, and age adjusted rates for both inpatient and ED stroke records

■

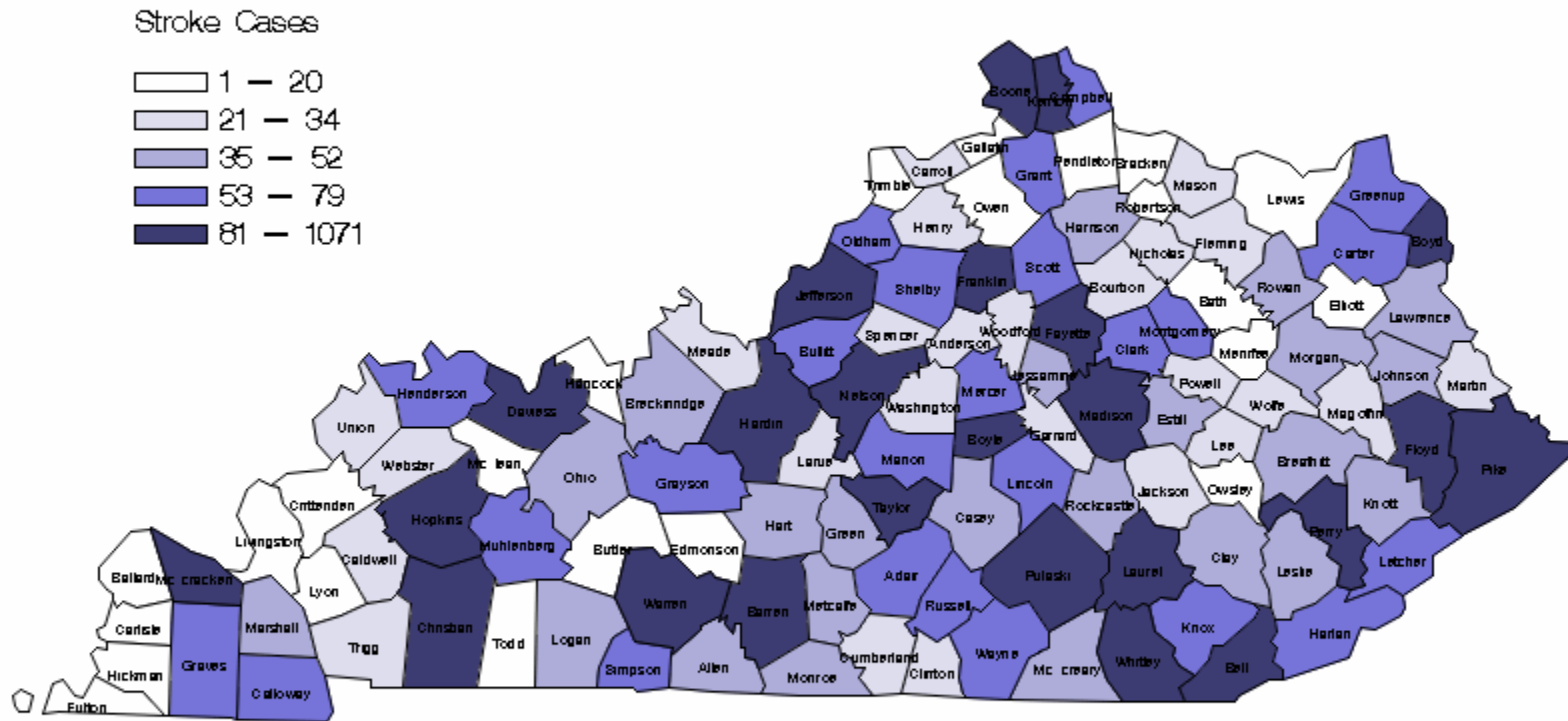
Stroke Hospitalization Cases by County, Kentucky 2022



Source: Kentucky TBI Surveillance Project 2022.

Figure 37.

Stroke ED Cases by County, Kentucky 2022



Source: Kentucky TBI Surveillance Project 2022.

Age-Adjusted Stroke Hospitalization Rates by County, Kentucky 2022

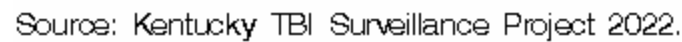
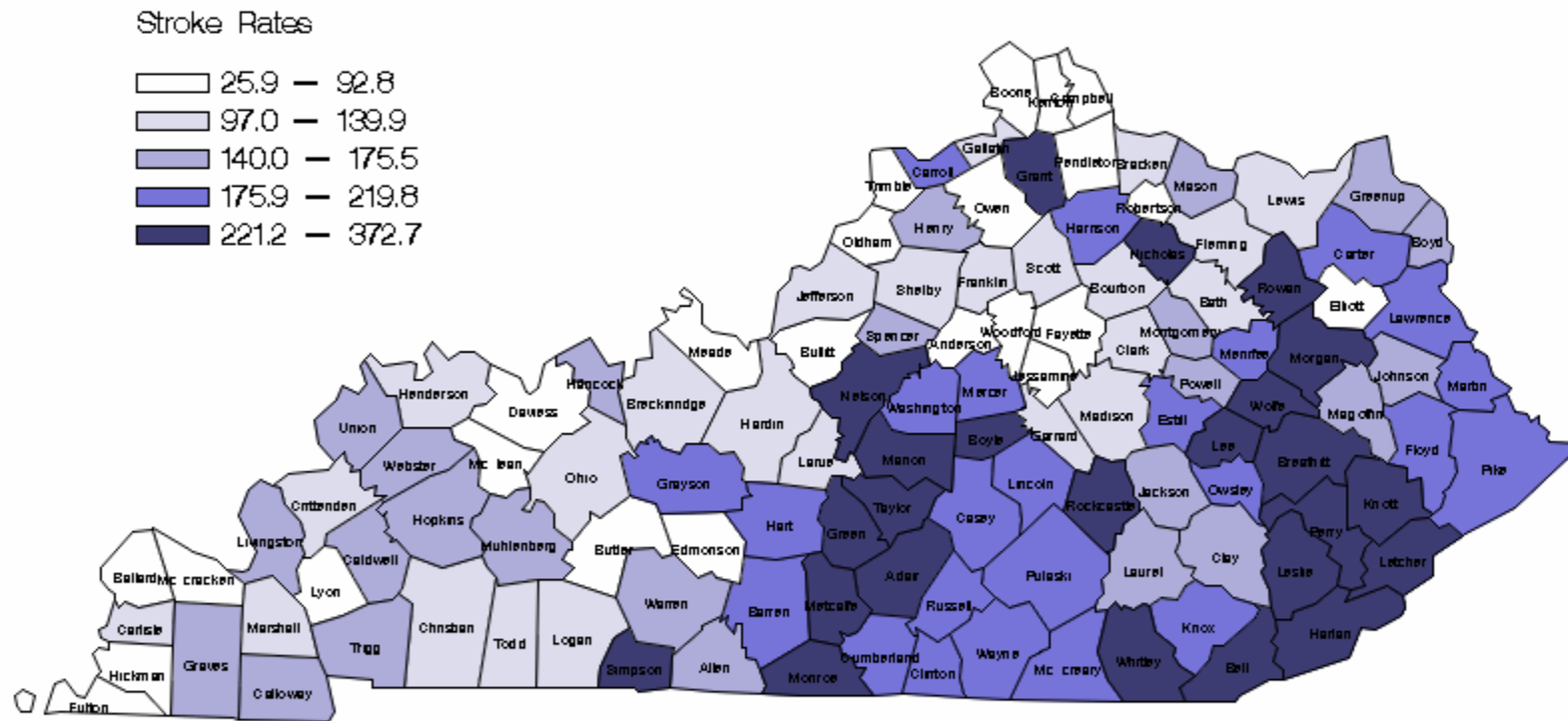


Figure 39.

Age—Adjusted Stroke ED Rates by County, Kentucky 2022



Source: Kentucky TBI Surveillance Project 2022.

Conclusion

Over 160k non-fatal central nervous system injury-related ED visits and hospitalizations occurred in Kentucky in 2022. The findings show the importance of including ED visits because of the large number of TBIs seen only in that setting, especially among children. Although this report provides data on a wide range of CNSI occurring in Kentucky, it still does not capture all of them. It does not include those treated by emergency medical services that refused transport to a hospital, or those hospitalized outside of Kentucky nor does it include those seen by non-hospital medical services or who sought no care at all. While the 2022 data is not recommended for use in comparisons with pre-2016 reports due to coding changes made in the third quarter of 2015, the data is still important when discussing the larger issue of brain injury in Kentucky. Many people recover from their injuries, but in 2022 alone, almost 442 Kentuckians per day received either inpatient or ED care for a CNSI, many of which will result in some long term disability. Thus, brain and spinal cord injury prevention, improved acute care and rehabilitation to reduce the likelihood of injury-related disability, and also increased access to services for those who do not fully recover are critical to improving quality of life of persons following a CNSI.

Appendix A: Tables and Figures

For the following tables: Unless otherwise noted, persons who were hospitalized or died were excluded from the data for ED Visits. For Hospitalizations, in-hospital deaths were excluded. The average annual rate is per 100,000 population. Rates calculated using the most recent available Kentucky population estimates (2021) and are per 100,000.

Table 1: Non-Fatal TBI ED Visits and Hospitalizations by Age Group, Kentucky, 2022

Age	Inpatient			Outpatient			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
0-4	83	13.4	31.3	536	86.6	202.2	619	100.0	233.5
5-14	77	5.1	13.4	1422	94.9	248.3	1,499	100.0	261.7
15-24	200	8.1	33.7	2283	91.9	385.2	2,483	100.0	418.9
25-44	508	17.5	44.1	2391	82.5	207.5	2,899	100.0	251.6
45-64	720	25.9	62.3	2059	74.1	178.1	2,779	100.0	240.3
65+	1,792	42.1	232.6	2461	57.9	319.5	4,253	100.0	552.2
Total	3,380	23.3	75.0	11,152	76.7	247.3	14,532	100.0	322.3

Table 2: Non-Fatal TBI ED Visits and Hospitalizations by Gender, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Male	1,990	25.9	89.1	5,699	74.1	255.1	7,689	100.0	344.2
Female	1,388	20.3	61.0	5,452	79.7	239.6	6,840	100.0	300.6
Total	3,378	23.3	74.9	11,151	76.7	247.3	14,529	100.0	322.2

Table 3: Non-Fatal TBI ED Visits and Hospitalizations by External Cause of Injury, Kentucky, 2022

Mechanism of Injury	Inpatient			ED			Total		
	Number	Pct.	Rate	Number	Pct.	Rate	Number	Pct.	Rate
Motor vehicle traffic crash	677	26.4	15.0	1,888	73.6	41.9	2,565	100.0	56.9
Fall	1,838	27.5	40.8	4,845	72.5	107.4	6,683	100.0	148.2
Firearm	46	79.3	1.0	12	20.7	0.3	58	100.0	1.3
Non-traffic land transport	28	10.3	0.6	243	89.7	5.4	271	100.0	6.0
Struck by object or person	133	5.0	2.9	2,524	95.0	56.0	2,657	100.0	58.9
Non-traffic pedal cycle	11	16.9	0.2	54	83.1	1.2	65	100.0	1.4
Machinery	6	24.0	0.1	19	76.0	0.4	25	100.0	0.6
Other	197	18.2	4.4	883	81.8	19.6	1,080	100.0	24.0
Unknown (missing E-code)	444	39.4	9.8	684	60.6	15.2	1,128	100.0	25.0
Total	3,380	23.3	75.0	11,152	76.7	247.3	14,532	100.0	322.3

Table 4: Leading Causes of Non-Fatal TBI ED Visits and Hospitalizations for Ages 00-04, Kentucky, 2022

Mechanism of Injury	Inpatient		ED		Total	
	Number	Percent	Number	Percent	Number	Percent
Fall	31	37.3	400	74.6	431	69.6
Motor vehicle traffic crash	4	4.8	25	4.7	29	4.7
Struck by or against object or person	6	7.2	51	9.5	57	9.2
Non-traffic land transportation	0	0.0	4	0.7	4	0.6
Other (including non-specific codes)	15	18.1	31	5.8	46	7.4
Unknown (missing E-code)	27	32.5	25	4.7	52	8.4
Total	83	100.0	536	100.0	619	100.0

Table 5: Leading Causes of Non-Fatal TBI ED Visits and Hospitalizations for Ages 05-14, Kentucky, 2022

Mechanism of Injury	Inpatient		ED		Total	
	Number	Percent	Number	Percent	Number	Percent
Motor vehicle traffic crash	28	36.4	104	7.3	132	8.8
Fall	12	15.6	535	37.6	547	36.5
Non-traffic land transportation	6	7.8	60	4.2	66	4.4
Other pedal cycle	3	3.9	26	1.8	29	1.9
Struck by or against object or person	9	11.7	507	35.7	516	34.4
Other (including non-specific codes)	13	16.9	102	7.2	115	7.7
Unknown (missing E-code)	6	7.8	88	6.2	94	6.3
Total	77	100.0	1,422	100.0	1,499	100.0

Table 6: Leading Causes of Non-Fatal TBI ED Visits and Hospitalizations for Ages 15-24, Kentucky, 2022

Mechanism of Injury	Inpatient		ED		Total	
	Number	Percent	Number	Percent	Number	Percent
Motor vehicle traffic crash	102	51.0	567	24.8	669	26.9
Firearm	15	7.5	1	0.0	16	0.6
Non-traffic land transportation	5	2.5	75	3.3	80	3.2
Fall	20	10.0	524	23.0	544	21.9
Struck by or against object or person	12	6.0	747	32.7	759	30.6
Other (including non-specific codes)	25	12.5	238	10.4	263	10.6
Unknown (missing E-code)	21	10.5	131	5.7	152	6.1
Total	200	100.0	2,283	100.0	2,483	100.0

Table 7: Leading Causes of Non-Fatal TBI ED Visits and Hospitalizations for Ages 25-44, Kentucky, 2022

Mechanism of Injury	Inpatient		ED		Total	
	Number	Percent	Number	Percent	Number	Percent
Motor vehicle traffic crash	233	45.9	673	28.1	906	31.3
Firearm	18	3.5	4	0.2	22	0.8
Fall	85	16.7	601	25.1	686	23.7
Struck by or against object or person	32	6.3	678	28.4	710	24.5
Non-traffic land transportation	9	1.8	54	2.3	63	2.2
Machinery	1	0.2	8	0.3	9	0.3
Other (including non-specific codes)	58	11.4	241	10.1	299	10.3
Unknown (missing E-code)	72	14.2	132	5.5	204	7.0
Total	508	100.0	2,391	100.0	2,899	100.0

Table 8: Leading Causes of Non-Fatal TBI ED Visits and Hospitalizations for Ages 45-64, Kentucky, 2022

Mechanism of Injury	Inpatient		ED		Total	
	Number	Percent	Number	Percent	Number	Percent
Fall	315	43.8	913	44.3	1,228	44.2
Motor vehicle traffic crash	176	24.4	366	17.8	542	19.5
Firearm	5	0.7	2	0.1	7	0.3
Struck by or against object or person	36	5.0	395	19.2	431	15.5
Non-traffic land transportation	8	1.1	38	1.8	46	1.7
Other (including non-specific codes)	63	8.8	194	9.4	257	9.2
Unknown (missing E-code)	117	16.3	151	7.3	268	9.6
Total	720	100.0	2,059	100.0	2,779	100.0

Table 9: Leading Causes of Non-Fatal TBI ED Visits and Hospitalizations for Ages 65 or Over, Kentucky, 2022

Mechanism of Injury	Inpatient		ED		Total	
	Number	Percent	Number	Percent	Number	Percent
Fall	1,375	76.7	1,872	76.1	3,247	76.3
Motor vehicle traffic crash	134	7.5	153	6.2	287	6.7
Firearm	2	0.1	3	0.1	5	0.1
Struck by or against object or person	38	2.1	146	5.9	184	4.3
Non-traffic land transportation	0	0.0	12	0.5	12	0.3
Other (including non-specific codes)	42	2.3	118	4.8	160	3.8
Unknown (missing E-code)	201	11.2	157	6.4	358	8.4
Total	1,792	100.0	2,461	100.0	4,253	100.0

Table 10: Hospital Discharges by Disposition for Non-Fatal TBI ED Visits and Hospitalizations, Kentucky, 2022

Discharge Disposition	Inpatient		ED	
	Number	Percent	Number	Percent
Routine discharge (home/self care)	1,612	47.7	9,294	83.3
Skilled nursing facility (SNF)	424	12.5	136	1.2
Home health	303	9.0	41	0.4
Inpatient-other short-term hospital	57	1.7	1,192	10.7
Intermediate care facility (ICF)	27	0.8	15	0.1
Rehab	617	18.3	28	0.3
Other	340	10.1	446	4.0
Total	3,380	100.0	11,152	100.0

Table 11: Incidence of All Inpatient TBI* by County, Sorted by County, Kentucky, 2022

*Includes inpatient deaths as well as non-fatal inpatient cases

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude
Adair	21	0.6	91.9	107.4	Grant	29	0.8	119.7	114.2	McLean	15	0.4	132.9	165.3
Allen	6	0.2	23.6	28.2	Graves	25	0.7	54.5	67.9	Meade	19	0.5	61.5	66.4
Anderson	13	0.3	52.9	56.9	Grayson	28	0.7	98.1	105.7	Menifee	7	0.2	114.9	107.7
Ballard	*	-	-	-	Green	5	0.1	42.9	45.5	Mercer	23	0.6	95.3	105.1
Barren	20	0.5	44.0	45.1	Greenup	19	0.5	39.8	54.5	Metcalfe	*	-	-	-
Bath	8	0.2	57.9	64.1	Hancock	8	0.2	85.8	91.5	Monroe	*	-	-	-
Bell	10	0.3	30.3	39.2	Hardin	79	2.1	66.4	71.0	Montgomery	24	0.6	77.4	85.1
Boone	95	2.5	69.9	70.2	Harlan	17	0.5	52.0	66.5	Morgan	9	0.2	58.2	68.5
Bourbon	14	0.4	60.4	70.3	Harrison	17	0.5	83.9	89.9	Muhlenberg	23	0.6	64.9	75.5
Boyd	14	0.4	22.7	30.1	Hart	14	0.4	54.8	73.6	Nelson	45	1.2	89.8	96.9
Boyle	42	1.1	125.1	138.3	Henderson	*	-	-	-	Nicholas	9	0.2	106.7	124.4
Bracken	5	0.1	58.4	60.3	Henry	20	0.5	115.5	124.5	Ohio	22	0.6	75.5	92.1
Breathitt	11	0.3	77.5	87.6	Hickman	*	-	-	-	Oldham	52	1.4	77.8	77.6
Breckinridge	13	0.3	61.1	63.3	Hopkins	9	0.2	19.2	20.2	Owen	8	0.2	78.2	72.6
Bullitt	59	1.6	64.0	71.8	Jackson	16	0.4	115.7	119.9	Owsley	10	0.3	162.2	230.9
Butler	*	-	-	-	Jefferson	918	24.6	107.2	119.6	Pendleton	10	0.3	62.8	68.6
Caldwell	7	0.2	37.7	55.2	Jessamine	63	1.7	101.3	116.5	Perry	37	1.0	129.9	145.3
Calloway	17	0.5	34.7	43.3	Johnson	19	0.5	78.7	86.4	Pike	69	1.8	106.4	120.9
Campbell	53	1.4	47.7	56.4	Kenton	118	3.2	66.2	70.3	Powell	15	0.4	123.9	122.8
Carlisle	5	0.1	82.7	106.6	Knott	14	0.4	79.1	96.5	Pulaski	74	2.0	97.2	112.9
Carroll	13	0.3	112.5	121.2	Knox	13	0.3	39.3	41.9	Robertson	*	-	-	-
Carter	13	0.3	42.8	49.0	Larue	13	0.3	76.4	90.1	Rockcastle	16	0.4	97.0	95.5
Casey	9	0.2	52.5	56.0	Laurel	43	1.2	61.0	70.2	Rowan	15	0.4	68.6	60.8
Christian	6	0.2	8.8	8.4	Lawrence	10	0.3	58.3	64.8	Russell	20	0.5	90.4	111.1
Clark	38	1.0	86.4	104.2	Lee	9	0.2	110.1	123.8	Scott	40	1.1	74.4	68.4
Clay	18	0.5	95.1	91.7	Leslie	6	0.2	46.5	62.3	Shelby	27	0.7	53.5	54.4
Clinton	11	0.3	84.5	108.8	Letcher	34	0.9	116.3	160.3	Simpson	5	0.1	19.1	26.8
Crittenden	*	-	-	-	Lewis	*	-	-	-	Spencer	11	0.3	57.6	56.2
Cumberland	5	0.1	56.0	76.7	Lincoln	29	0.8	115.8	118.5	Taylor	27	0.7	91.2	105.0
Daviess	112	3.0	88.4	109.8	Livingston	*	-	-	-	Todd	*	-	-	-
Edmonson	5	0.1	25.8	40.9	Logan	7	0.2	17.1	25.5	Trigg	9	0.2	41.4	60.9
Elliott	*	-	-	-	Lyon	*	-	-	-	Trimble	7	0.2	85.3	82.5
Estill	20	0.5	130.5	141.8	Madison	61	1.6	64.7	64.7	Union	*	-	-	-
Fayette	297	7.9	86.3	91.5	Magoffin	13	0.3	103.0	108.2	Warren	46	1.2	36.1	34.2
Fleming	11	0.3	63.1	75.3	Marion	16	0.4	71.6	82.8	Washington	7	0.2	50.1	57.6
Floyd	42	1.1	113.0	120.1	Marshall	20	0.5	49.3	64.2	Wayne	16	0.4	60.6	79.2
Franklin	53	1.4	95.1	103.7	Martin	10	0.3	90.8	90.7	Webster	*	-	-	-
Fulton	*	-	-	-	Mason	15	0.4	69.5	88.1	Whitley	58	1.6	151.7	159.1
Gallatin	*	-	-	-	McCracken	70	1.9	78.5	106.6	Wolfe	9	0.2	113.4	126.7
Garrard	19	0.5	102.5	107.2	McCreary	12	0.3	64.9	70.3	Woodford	22	0.6	72.1	82.2

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 12: Incidence of All ED TBI* by County, Sorted by County, Kentucky, 2022

***Includes ED deaths as well as non-fatal ED cases**

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude
Adair	66	0.6	326.4	337.5	Grant	65	0.6	261.3	256.0	McLean	35	0.3	407.6	385.7
Allen	44	0.4	214.0	206.5	Graves	91	0.8	254.6	247.2	Meade	55	0.5	201.5	192.2
Anderson	69	0.6	314.9	302.2	Grayson	135	1.2	522.0	509.8	Menifee	13	0.1	176.7	199.9
Ballard	15	0.1	175.6	193.1	Green	28	0.2	249.8	254.7	Mercer	76	0.7	351.1	347.2
Barren	138	1.2	294.5	311.5	Greenup	44	0.4	127.8	126.2	Metcalfe	33	0.3	280.5	328.1
Bath	34	0.3	281.3	272.4	Hancock	15	0.1	186.8	171.6	Monroe	25	0.2	253.8	237.0
Bell	130	1.2	517.6	510.2	Hardin	355	3.2	325.0	318.9	Montgomery	73	0.7	267.3	259.0
Boone	187	1.7	139.8	138.1	Harlan	75	0.7	295.1	293.4	Morgan	19	0.2	141.2	144.6
Bourbon	53	0.5	277.6	266.3	Harrison	121	1.1	624.9	639.5	Muhlenberg	85	0.8	299.9	279.1
Boyd	102	0.9	205.7	219.3	Hart	61	0.5	327.5	320.8	Nelson	128	1.1	286.5	275.6
Boyle	125	1.1	396.6	411.6	Henderson	103	0.9	241.3	230.2	Nicholas	23	0.2	329.1	317.9
Bracken	25	0.2	308.4	301.7	Henry	61	0.5	411.1	379.7	Ohio	129	1.2	538.1	539.8
Breathitt	35	0.3	284.7	278.9	Hickman	5	0.0	109.8	114.6	Oldham	113	1.0	170.5	168.7
Breckinridge	63	0.6	312.1	306.8	Hopkins	98	0.9	218.0	219.4	Owen	20	0.2	203.8	181.5
Bullitt	114	1.0	143.5	138.7	Jackson	41	0.4	339.3	307.3	Owsley	10	0.1	242.7	230.9
Butler	26	0.2	219.3	204.7	Jefferson	1639	14.6	213.3	213.6	Pendleton	27	0.2	196.3	185.1
Caldwell	43	0.4	317.7	338.9	Jessamine	88	0.8	167.2	162.8	Perry	83	0.7	354.1	326.1
Calloway	155	1.4	368.7	394.4	Johnson	100	0.9	433.8	454.5	Pike	105	0.9	191.5	184.0
Campbell	129	1.2	136.9	137.2	Kenton	178	1.6	110.4	106.0	Powell	52	0.5	447.8	425.6
Carlisle	14	0.1	314.2	298.4	Knott	31	0.3	211.1	213.6	Pulaski	141	1.3	227.0	215.2
Carroll	44	0.4	436.9	410.1	Knox	111	1.0	362.7	357.8	Robertson	7	0.1	278.9	327.7
Carter	47	0.4	178.4	177.1	Larue	45	0.4	319.9	311.8	Rockcastle	44	0.4	282.6	262.7
Casey	28	0.2	183.4	174.3	Laurel	123	1.1	198.4	200.9	Rowan	44	0.4	178.3	178.3
Christian	118	1.1	162.8	165.1	Lawrence	46	0.4	284.8	298.0	Russell	44	0.4	247.1	244.5
Clark	134	1.2	350.6	367.5	Lee	25	0.2	309.2	344.0	Scott	191	1.7	339.1	326.7
Clay	88	0.8	481.9	448.3	Leslie	33	0.3	349.7	342.4	Shelby	111	1.0	234.2	223.7
Clinton	25	0.2	257.0	247.3	Letcher	76	0.7	373.7	358.3	Simpson	90	0.8	500.7	483.0
Crittenden	27	0.2	328.6	305.2	Lewis	23	0.2	174.2	173.4	Spencer	25	0.2	142.8	127.6
Cumberland	27	0.2	420.6	413.9	Lincoln	104	0.9	450.6	425.1	Taylor	77	0.7	291.9	299.5
Daviess	270	2.4	273.5	264.8	Livingston	26	0.2	287.6	287.6	Todd	27	0.2	219.9	216.9
Edmonson	20	0.2	156.4	163.5	Logan	86	0.8	318.0	313.7	Trigg	41	0.4	264.5	277.5
Elliott	10	0.1	150.5	135.6	Lyon	19	0.2	249.4	233.6	Trimble	19	0.2	220.5	224.0
Estill	42	0.4	317.4	297.7	Madison	250	2.2	256.3	265.2	Union	41	0.4	294.5	283.9
Fayette	930	8.3	283.7	286.4	Magoffin	37	0.3	333.7	307.9	Warren	331	3.0	246.1	246.1
Fleming	43	0.4	305.8	294.5	Marion	64	0.6	315.4	331.4	Washington	35	0.3	296.0	288.1
Floyd	81	0.7	219.1	231.6	Marshall	83	0.7	276.6	266.3	Wayne	59	0.5	303.1	291.9
Franklin	169	1.5	337.0	330.6	Martin	12	0.1	104.3	108.8	Webster	39	0.3	290.7	301.8
Fulton	*	-	-	-	Mason	58	0.5	337.7	340.5	Whitley	140	1.2	374.7	384.1
Gallatin	13	0.1	145.6	148.1	McCracken	131	1.2	202.1	199.6	Wolfe	24	0.2	306.7	337.7
Garrard	63	0.6	399.0	355.6	McCreary	32	0.3	196.9	187.5	Woodford	103	0.9	395.4	384.8

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 13: Incidence of All Inpatient TBI* by County, Sorted by Frequency, Kentucky, 2022

*Includes inpatient deaths as well as non-fatal inpatient cases

County	Age-Adjusted Crude				County	Age-Adjusted Crude				County	Age-Adjusted Crude			
	Freq	Percent	Rate	Rate		Freq	Percent	Rate	Rate		Freq	Percent	Rate	Rate
Jefferson	918	24.6	107.2	119.6	Marshall	20	0.5	49.3	64.2	Hopkins	9	0.2	19.2	20.2
Fayette	297	7.9	86.3	91.5	Russell	20	0.5	90.4	111.1	Lee	9	0.2	110.1	123.8
Kenton	118	3.2	66.2	70.3	Garrard	19	0.5	102.5	107.2	Morgan	9	0.2	58.2	68.5
Daviess	112	3.0	88.4	109.8	Greenup	19	0.5	39.8	54.5	Nicholas	9	0.2	106.7	124.4
Boone	95	2.5	69.9	70.2	Johnson	19	0.5	78.7	86.4	Trigg	9	0.2	41.4	60.9
Hardin	79	2.1	66.4	71.0	Meade	19	0.5	61.5	66.4	Wolfe	9	0.2	113.4	126.7
Pulaski	74	2.0	97.2	112.9	Clay	18	0.5	95.1	91.7	Bath	8	0.2	57.9	64.1
McCracken	70	1.9	78.5	106.6	Calloway	17	0.5	34.7	43.3	Hancock	8	0.2	85.8	91.5
Pike	69	1.8	106.4	120.9	Harlan	17	0.5	52.0	66.5	Owen	8	0.2	78.2	72.6
Jessamine	63	1.7	101.3	116.5	Harrison	17	0.5	83.9	89.9	Caldwell	7	0.2	37.7	55.2
Madison	61	1.6	64.7	64.7	Jackson	16	0.4	115.7	119.9	Logan	7	0.2	17.1	25.5
Bullitt	59	1.6	64.0	71.8	Marion	16	0.4	71.6	82.8	Menifee	7	0.2	114.9	107.7
Whitley	58	1.6	151.7	159.1	Rockcastle	16	0.4	97.0	95.5	Trimble	7	0.2	85.3	82.5
Campbell	53	1.4	47.7	56.4	Wayne	16	0.4	60.6	79.2	Washington	7	0.2	50.1	57.6
Franklin	53	1.4	95.1	103.7	Mason	15	0.4	69.5	88.1	Allen	6	0.2	23.6	28.2
Oldham	52	1.4	77.8	77.6	McLean	15	0.4	132.9	165.3	Christian	6	0.2	8.8	8.4
Warren	46	1.2	36.1	34.2	Powell	15	0.4	123.9	122.8	Leslie	6	0.2	46.5	62.3
Nelson	45	1.2	89.8	96.9	Rowan	15	0.4	68.6	60.8	Bracken	5	0.1	58.4	60.3
Laurel	43	1.2	61.0	70.2	Bourbon	14	0.4	60.4	70.3	Carlisle	5	0.1	82.7	106.6
Boyle	42	1.1	125.1	138.3	Boyd	14	0.4	22.7	30.1	Cumberland	5	0.1	56.0	76.7
Floyd	42	1.1	113.0	120.1	Hart	14	0.4	54.8	73.6	Edmonson	5	0.1	25.8	40.9
Scott	40	1.1	74.4	68.4	Knott	14	0.4	79.1	96.5	Green	5	0.1	42.9	45.5
Clark	38	1.0	86.4	104.2	Anderson	13	0.3	52.9	56.9	Simpson	5	0.1	19.1	26.8
Perry	37	1.0	129.9	145.3	Breckinridge	13	0.3	61.1	63.3	Butler	*	-	-	-
Letcher	34	0.9	116.3	160.3	Carroll	13	0.3	112.5	121.2	Fulton	*	-	-	-
Grant	29	0.8	119.7	114.2	Carter	13	0.3	42.8	49.0	Henderson	*	-	-	-
Lincoln	29	0.8	115.8	118.5	Knox	13	0.3	39.3	41.9	Hickman	*	-	-	-
Grayson	28	0.7	98.1	105.7	Larue	13	0.3	76.4	90.1	Lyon	*	-	-	-
Shelby	27	0.7	53.5	54.4	Magoffin	13	0.3	103.0	108.2	Metcalfe	*	-	-	-
Taylor	27	0.7	91.2	105.0	McCreary	12	0.3	64.9	70.3	Monroe	*	-	-	-
Graves	25	0.7	54.5	67.9	Breathitt	11	0.3	77.5	87.6	Ballard	*	-	-	-
Montgomery	24	0.6	77.4	85.1	Clinton	11	0.3	84.5	108.8	Elliott	*	-	-	-
Mercer	23	0.6	95.3	105.1	Fleming	11	0.3	63.1	75.3	Gallatin	*	-	-	-
Muhlenberg	23	0.6	64.9	75.5	Spencer	11	0.3	57.6	56.2	Lewis	*	-	-	-
Ohio	22	0.6	75.5	92.1	Bell	10	0.3	30.3	39.2	Crittenden	*	-	-	-
Woodford	22	0.6	72.1	82.2	Lawrence	10	0.3	58.3	64.8	Livingston	*	-	-	-
Adair	21	0.6	91.9	107.4	Martin	10	0.3	90.8	90.7	Union	*	-	-	-
Barren	20	0.5	44.0	45.1	Owsley	10	0.3	162.2	230.9	Robertson	*	-	-	-
Estill	20	0.5	130.5	141.8	Pendleton	10	0.3	62.8	68.6	Todd	*	-	-	-
Henry	20	0.5	115.5	124.5	Casey	9	0.2	52.5	56.0	Webster	*	-	-	-

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 14: Incidence of All ED TBI* by County, Sorted by Frequency, Kentucky, 2022

*Includes ED deaths as well as non-fatal ED cases

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate
Jefferson	1639	14.6	213.3	213.6	Logan	86	0.8	318.0	313.7	Breathitt	35	0.3	284.7	278.9
Fayette	930	8.3	283.7	286.4	Muhlenberg	85	0.8	299.9	279.1	McLean	35	0.3	407.6	385.7
Hardin	355	3.2	325.0	318.9	Marshall	83	0.7	276.6	266.3	Washington	35	0.3	296.0	288.1
Warren	331	3.0	246.1	246.1	Perry	83	0.7	354.1	326.1	Bath	34	0.3	281.3	272.4
Daviess	270	2.4	273.5	264.8	Floyd	81	0.7	219.1	231.6	Leslie	33	0.3	349.7	342.4
Madison	250	2.2	256.3	265.2	Taylor	77	0.7	291.9	299.5	Metcalf	33	0.3	280.5	328.1
Scott	191	1.7	339.1	326.7	Letcher	76	0.7	373.7	358.3	McCreary	32	0.3	196.9	187.5
Boone	187	1.7	139.8	138.1	Mercer	76	0.7	351.1	347.2	Knott	31	0.3	211.1	213.6
Kenton	178	1.6	110.4	106.0	Harlan	75	0.7	295.1	293.4	Casey	28	0.2	183.4	174.3
Franklin	169	1.5	337.0	330.6	Montgomery	73	0.7	267.3	259.0	Green	28	0.2	249.8	254.7
Calloway	155	1.4	368.7	394.4	Anderson	69	0.6	314.9	302.2	Crittenden	27	0.2	328.6	305.2
Pulaski	141	1.3	227.0	215.2	Adair	66	0.6	326.4	337.5	Cumberland	27	0.2	420.6	413.9
Whitley	140	1.2	374.7	384.1	Grant	65	0.6	261.3	256.0	Pendleton	27	0.2	196.3	185.1
Barren	138	1.2	294.5	311.5	Marion	64	0.6	315.4	331.4	Todd	27	0.2	219.9	216.9
Grayson	135	1.2	522.0	509.8	Breckinridge	63	0.6	312.1	306.8	Butler	26	0.2	219.3	204.7
Clark	134	1.2	350.6	367.5	Garrard	63	0.6	399.0	355.6	Livingston	26	0.2	287.6	287.6
McCracken	131	1.2	202.1	199.6	Hart	61	0.5	327.5	320.8	Bracken	25	0.2	308.4	301.7
Bell	130	1.2	517.6	510.2	Henry	61	0.5	411.1	379.7	Clinton	25	0.2	257.0	247.3
Campbell	129	1.2	136.9	137.2	Wayne	59	0.5	303.1	291.9	Lee	25	0.2	309.2	344.0
Ohio	129	1.2	538.1	539.8	Mason	58	0.5	337.7	340.5	Monroe	25	0.2	253.8	237.0
Nelson	128	1.1	286.5	275.6	Meade	55	0.5	201.5	192.2	Spencer	25	0.2	142.8	127.6
Boyle	125	1.1	396.6	411.6	Bourbon	53	0.5	277.6	266.3	Wolfe	24	0.2	306.7	337.7
Laurel	123	1.1	198.4	200.9	Powell	52	0.5	447.8	425.6	Lewis	23	0.2	174.2	173.4
Harrison	121	1.1	624.9	639.5	Carter	47	0.4	178.4	177.1	Nicholas	23	0.2	329.1	317.9
Christian	118	1.1	162.8	165.1	Lawrence	46	0.4	284.8	298.0	Edmonson	20	0.2	156.4	163.5
Bullitt	114	1.0	143.5	138.7	Larue	45	0.4	319.9	311.8	Owen	20	0.2	203.8	181.5
Oldham	113	1.0	170.5	168.7	Allen	44	0.4	214.0	206.5	Lyon	19	0.2	249.4	233.6
Knox	111	1.0	362.7	357.8	Carroll	44	0.4	436.9	410.1	Morgan	19	0.2	141.2	144.6
Shelby	111	1.0	234.2	223.7	Greenup	44	0.4	127.8	126.2	Trimble	19	0.2	220.5	224.0
Pike	105	0.9	191.5	184.0	Rockcastle	44	0.4	282.6	262.7	Ballard	15	0.1	175.6	193.1
Lincoln	104	0.9	450.6	425.1	Rowan	44	0.4	178.3	178.3	Hancock	15	0.1	186.8	171.6
Henderson	103	0.9	241.3	230.2	Russell	44	0.4	247.1	244.5	Carlisle	14	0.1	314.2	298.4
Woodford	103	0.9	395.4	384.8	Caldwell	43	0.4	317.7	338.9	Gallatin	13	0.1	145.6	148.1
Boyd	102	0.9	205.7	219.3	Fleming	43	0.4	305.8	294.5	Menifee	13	0.1	176.7	199.9
Johnson	100	0.9	433.8	454.5	Estill	42	0.4	317.4	297.7	Martin	12	0.1	104.3	108.8
Hopkins	98	0.9	218.0	219.4	Jackson	41	0.4	339.3	307.3	Elliott	10	0.1	150.5	135.6
Graves	91	0.8	254.6	247.2	Trigg	41	0.4	264.5	277.5	Owsley	10	0.1	242.7	230.9
Simpson	90	0.8	500.7	483.0	Union	41	0.4	294.5	283.9	Robertson	7	0.1	278.9	327.7
Clay	88	0.8	481.9	448.3	Webster	39	0.3	290.7	301.8	Hickman	5	0.0	109.8	114.6
Jessamine	88	0.8	167.2	162.8	Magoffin	37	0.3	333.7	307.9	Fulton	*	-	-	-

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 15: Incidence of All Inpatient TBI* by County, Sorted by Age Adjusted Rate, Kentucky, 2022

***Includes inpatient deaths as well as non-fatal inpatient cases**

County			Age-Adjusted		County			Age-Adjusted		County			Age-Adjusted	
	Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate
Owsley	10	0.3	162.2	230.9	Harrison	17	0.5	83.9	89.9	Shelby	27	0.7	53.5	54.4
Whitley	58	1.6	151.7	159.1	Carlisle	5	0.1	82.7	106.6	Anderson	13	0.3477	52.9	56.9
McLean	15	0.4	132.9	165.3	Knott	14	0.4	79.1	96.5	Casey	9	0.2	52.5	56.0
Estill	20	0.5	130.5	141.8	Johnson	19	0.5	78.7	86.4	Harlan	17	0.5	52.0	66.5
Perry	37	1.0	129.9	145.3	McCracken	70	1.9	78.5	106.6	Washington	7	0.2	50.1	57.6
Boyle	42	1.1	125.1	138.3	Owen	8	0.2	78.2	72.6	Marshall	20	0.5	49.3	64.2
Powell	15	0.4	123.9	122.8	Oldham	52	1.4	77.8	77.6	Campbell	53	1.4	47.7	56.4
Grant	29	0.8	119.7	114.2	Breathitt	11	0.3	77.5	87.6	Leslie	6	0.2	46.5	62.3
Letcher	34	0.9	116.3	160.3	Montgomery	24	0.6	77.4	85.1	Barren	20	0.5	44.0	45.1
Lincoln	29	0.8	115.8	118.5	Larue	13	0.3	76.4	90.1	Green	5	0.1	42.9	45.5
Jackson	16	0.4	115.7	119.9	Ohio	22	0.6	75.5	92.1	Carter	13	0.3	42.8	49.0
Henry	20	0.5	115.5	124.5	Hickman	*	-	-	-	Trigg	9	0.2	41.4	60.9
Menifee	7	0.2	114.9	107.7	Scott	40	1.1	74.4	68.4	Greenup	19	0.5	39.8	54.5
Wolfe	9	0.2	113.4	126.7	Woodford	22	0.6	72.1	82.2	Knox	13	0.3	39.3	41.9
Floyd	42	1.1	113.0	120.1	Marion	16	0.4	71.6	82.8	Lyon	*	-	-	-
Carroll	13	0.3	112.5	121.2	Boone	95	2.5	69.9	70.2	Caldwell	7	0.2	37.7	55.2
Lee	9	0.2	110.1	123.8	Mason	15	0.4	69.5	88.1	Warren	46	1.2	36.1	34.2
Jefferson	918	24.6	107.2	119.6	Rowan	15	0.4	68.6	60.8	Calloway	17	0.5	34.7	43.3
Nicholas	9	0.2	106.7	124.4	Hardin	79	2.1	66.4	71.0	Gallatin	*	-	-	-
Pike	69	1.8	106.4	120.9	Kenton	118	3.2	66.2	70.3	Metcalf	*	-	-	-
Magoffin	13	0.3	103.0	108.2	Muhlenberg	23	0.6	64.9	75.5	Bell	10	0.3	30.3	39.2
Garrard	19	0.5	102.5	107.2	McCreary	12	0.3	64.9	70.3	Butler	*	-	-	-
Jessamine	63	1.7	101.3	116.5	Madison	61	1.6	64.7	64.7	Robertson	*	-	-	-
Grayson	28	0.7	98.1	105.7	Bullitt	59	1.6	64.0	71.8	Edmonson	5	0.1	25.8	40.9
Pulaski	74	2.0	97.2	112.9	Fleming	11	0.3	63.1	75.3	Monroe	*	-	-	-
Rockcastle	16	0.4	97.0	95.5	Pendleton	10	0.3	62.8	68.6	Ballard	*	-	-	-
Mercer	23	0.6	95.3	105.1	Meade	19	0.5	61.5	66.4	Lewis	*	-	-	-
Clay	18	0.5	95.1	91.7	Breckinridge	13	0.3	61.1	63.3	Elliott	*	-	-	-
Franklin	53	1.4	95.1	103.7	Laurel	43	1.2	61.0	70.2	Allen	6	0.2	23.6	28.2
Adair	21	0.6	91.9	107.4	Wayne	16	0.4	60.6	79.2	Boyd	14	0.4	22.7	30.1
Taylor	27	0.7	91.2	105.0	Bourbon	14	0.4	60.4	70.3	Crittenden	2	0.1	20.0	22.6
Martin	10	0.3	90.8	90.7	Bracken	5	0.1	58.4	60.3	Hopkins	9	0.2	19.2	20.2
Russell	20	0.5	90.4	111.1	Lawrence	10	0.3	58.3	64.8	Simpson	5	0.1	19.1	26.8
Nelson	45	1.2	89.8	96.9	Morgan	9	0.2	58.2	68.5	Union	*	-	-	-
Daviess	112	3.0	88.4	109.8	Bath	8	0.2	57.9	64.1	Logan	7	0.2	17.1	25.5
Clark	38	1.0	86.4	104.2	Fulton	*	-	-	-	Livingston	*	-	-	-
Fayette	297	7.9	86.3	91.5	Spencer	11	0.3	57.6	56.2	Christian	6	0.2	8.8	8.4
Hancock	8	0.2	85.8	91.5	Cumberland	5	0.1	56.0	76.7	Webster	*	-	-	-
Trimble	7	0.2	85.3	82.5	Hart	14	0.4	54.8	73.6	Henderson	*	-	-	-
Clinton	11	0.3	84.5	108.8	Graves	25	0.7	54.5	67.9	Todd	*	-	-	-

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 16: Incidence of All ED TBI* by County, Sorted by Age Adjusted Rate, Kentucky, 2022

*Includes ED deaths as well as non-fatal ED cases

Age-Adjusted Crude					Age-Adjusted Crude					Age-Adjusted Crude				
County	Freq	Percent	Rate	Rate	County	Freq	Percent	Rate	Rate	County	Freq	Percent	Rate	Rate
Harrison	121	1.1	624.9	639.5	Carlisle	14	0.1	314.2	298.4	Pulaski	141	1.3	227.0	215.2
Ohio	129	1.2	538.1	539.8	Breckinridge	63	0.6	312.1	306.8	Trimble	19	0.2	220.5	224.0
Grayson	135	1.2	522.0	509.8	Lee	25	0.2	309.2	344.0	Todd	27	0.2	219.9	216.9
Bell	130	1.2	517.6	510.2	Bracken	25	0.2	308.4	301.7	Butler	26	0.2	219.3	204.7
Simpson	90	0.8	500.7	483.0	Wolfe	24	0.2	306.7	337.7	Floyd	81	0.7	219.1	231.6
Clay	88	0.8	481.9	448.3	Fleming	43	0.4	305.8	294.5	Hopkins	98	0.9	218.0	219.4
Lincoln	104	0.9	450.6	425.1	Wayne	59	0.5	303.1	291.9	Allen	44	0.4	214.0	206.5
Powell	52	0.5	447.8	425.6	Muhlenberg	85	0.8	299.9	279.1	Jefferson	1639	14.6	213.3	213.6
Carroll	44	0.4	436.9	410.1	Washington	35	0.3	296.0	288.1	Knott	31	0.3	211.1	213.6
Johnson	100	0.9	433.8	454.5	Harlan	75	0.7	295.1	293.4	Boyd	102	0.9	205.7	219.3
Cumberland	27	0.2	420.6	413.9	Union	41	0.4	294.5	283.9	Owen	20	0.2	203.8	181.5
Henry	61	0.5	411.1	379.7	Barren	138	1.2	294.5	311.5	McCracken	131	1.2	202.1	199.6
McLean	35	0.3	407.6	385.7	Taylor	77	0.7	291.9	299.5	Meade	55	0.5	201.5	192.2
Garrard	63	0.6	399.0	355.6	Webster	39	0.3	290.7	301.8	Laurel	123	1.1	198.4	200.9
Boyle	125	1.1	396.6	411.6	Livingston	26	0.2	287.6	287.6	McCreary	32	0.3	196.9	187.5
Woodford	103	0.9	395.4	384.8	Nelson	128	1.1	286.5	275.6	Pendleton	27	0.2	196.3	185.1
Whitley	140	1.2	374.7	384.1	Larrence	46	0.4	284.8	298.0	Pike	105	0.9	191.5	184.0
Letcher	76	0.7	373.7	358.3	Breathitt	35	0.3	284.7	278.9	Hancock	15	0.1	186.8	171.6
Calloway	155	1.4	368.7	394.4	Fayette	930	8.3	283.7	286.4	Casey	28	0.2	183.4	174.3
Knox	111	1.0	362.7	357.8	Rockcastle	44	0.4	282.6	262.7	Carter	47	0.4	178.4	177.1
Perry	83	0.7	354.1	326.1	Bath	34	0.3	281.3	272.4	Rowan	44	0.4	178.3	178.3
Mercer	76	0.7	351.1	347.2	Metcalf	33	0.3	280.5	328.1	Menifee	13	0.1	176.7	199.9
Clark	134	1.2	350.6	367.5	Robertson	7	0.1	278.9	327.7	Ballard	15	0.1	175.6	193.1
Leslie	33	0.3	349.7	342.4	Bourbon	53	0.5	277.6	266.3	Lewis	23	0.2	174.2	173.4
Jackson	41	0.4	339.3	307.3	Marshall	83	0.7	276.6	266.3	Oldham	113	1.0	170.5	168.7
Scott	191	1.7	339.1	326.7	Daviess	270	2.4	273.5	264.8	Jessamine	88	0.8	167.2	162.8
Mason	58	0.5	337.7	340.5	Montgomery	73	0.7	267.3	259.0	Christian	118	1.1	162.8	165.1
Franklin	169	1.5	337.0	330.6	Trigg	41	0.4	264.5	277.5	Edmonson	20	0.2	156.4	163.5
Magoffin	37	0.3	333.7	307.9	Grant	65	0.6	261.3	256.0	Elliott	10	0.1	150.5	135.6
Nicholas	23	0.2	329.1	317.9	Clinton	25	0.2	257.0	247.3	Gallatin	13	0.1	145.6	148.1
Crittenden	27	0.2	328.6	305.2	Madison	250	2.2	256.3	265.2	Bullitt	114	1.0	143.5	138.7
Hart	61	0.5	327.5	320.8	Graves	91	0.8	254.6	247.2	Spencer	25	0.2	142.8	127.6
Adair	66	0.6	326.4	337.5	Monroe	25	0.2	253.8	237.0	Morgan	19	0.2	141.2	144.6
Hardin	355	3.2	325.0	318.9	Green	28	0.2	249.8	254.7	Boone	187	1.7	139.8	138.1
Larue	45	0.4	319.9	311.8	Lyon	19	0.2	249.4	233.6	Campbell	129	1.2	136.9	137.2
Logan	86	0.8	318.0	313.7	Russell	44	0.4	247.1	244.5	Greenup	44	0.4	127.8	126.2
Caldwell	43	0.4	317.7	338.9	Warren	331	3.0	246.1	246.1	Kenton	178	1.6	110.4	106.0
Estill	42	0.4	317.4	297.7	Owsley	10	0.1	242.7	230.9	Hickman	5	0.0	109.8	114.6
Marion	64	0.6	315.4	331.4	Henderson	103	0.9	241.3	230.2	Martin	12	0.1	104.3	108.8
Anderson	69	0.6	314.9	302.2	Shelby	111	1.0	234.2	223.7	Fulton	*	-	-	-

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 17: Length of Stay for Non-Fatal Inpatient TBI, Kentucky, 2022

Length of Stay	Number	Percent*
1 day	557	16.5
More than one day but less than 1 week	1566	46.3
1 week to less than 2 weeks	723	21.4
2 weeks to less than 3 weeks	256	7.6
3 weeks to less than 4 weeks	94	2.8
4 weeks or more	184	5.4
Total	3380	100.0

*Percent of hospitalized TBI

Table 18: Work Related Non-Fatal TBI, Kentucky 2022

Inpatient Work TBI (n=45)	LOS Days	Cost
Mean	5.8	\$87,812
Median	3	\$47,508
Min, Max	1-43	\$221,\$648,271
Sum of Charges		\$3,951,540

ED Work TBI (n=439)	Cost
Mean	\$2,917
Median	\$4,389
Min, Max	\$2,\$81,719
Sum of Charges	\$2,597,469

Table 19: Primary Payer and Charges for Non-Fatal Inpatient TBI, Kentucky, 2022

Payer	Number of Discharges	Percent of Discharges	Total Hospital Charges
Government	2,581	76.4	\$ 265,060,215
Commercial Ins	416	12.3	\$ 50,476,990
Self Pay	49	1.4	\$ 3,478,761
Workers Compensation	45	1.3	\$ 3,951,540
Other	289	8.6	\$ 42,383,067
Total	3,380	100.0	\$ 365,350,573

Table 20: Primary Payer and Charges for Non-Fatal ED TBI, Kentucky, 2022

Payer	Number of Discharges	Percent of Discharges	Total Hospital Charges
Government	6,332	56.8	\$ 55,118,001
Commercial Ins	2,944	26.4	\$ 18,128,992
Self Pay	491	4.4	\$ 3,705,649
Workers Compensation	439	3.9	\$ 2,597,469
Other	946	8.5	\$ 10,188,889
Total	11,152	100.0	\$ 89,739,000

Table 21: Non-Fatal NTBI by Age Group, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
0-4	3,162	60.9	1192.7	2,029	39.1	765.3	5,191	100.0	1958.0
5-14	874	49.8	152.6	881	50.2	153.8	1,755	100.0	306.4
15-24	1,100	39.0	185.6	1,721	61.0	290.4	2,821	100.0	475.9
25-44	7,160	55.9	621.4	5,647	44.1	490.1	12,807	100.0	1111.4
45-64	29,059	78.0	2513.2	8,200	22.0	709.2	37,259	100.0	3222.4
65+	55,945	83.9	7263.1	10,729	16.1	1392.9	66,674	100.0	8656.0
Total	97,300	76.9	2157.7	29,207	23.1	647.7	126,507	100.0	2805.4

Table 22: Non-Fatal NTBI by Gender, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Male	44,854	76.3	2007.9	13,970	23.7	625.4	58,824	100.0	2633.3
Female	52,439	77.5	2304.5	15,235	22.5	669.5	67,674	100.0	2974.0
Total	97,293	76.9	2157.6	29,205	23.1	647.6	126,498	100.0	2805.2

Table 23: Incidence of All Inpatient NTBI* by County, Sorted by County, Kentucky, 2022

***Includes inpatient deaths as well as non-fatal inpatient cases**

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude
Adair	404	0.4	1554.4	2066.0	Grant	763	0.7	2716.1	3005.5	McLean	234	0.2	1837.9	2578.5
Allen	440	0.4	1556.4	2065.4	Graves	1100	1.0	2224.0	2987.7	Meade	382	0.4	1163.7	1334.9
Anderson	617	0.6	2270.2	2702.2	Grayson	917	0.8	2743.5	3463.0	Menifee	236	0.2	2590.0	3629.7
Ballard	142	0.1	1280.6	1827.8	Green	260	0.2	1779.6	2364.7	Mercer	563	0.5	1918.3	2572.1
Barren	1026	0.9	1787.4	2316.0	Greenup	895	0.8	1757.9	2567.0	Metcalfe	275	0.3	2009.3	2734.1
Bath	459	0.4	2919.4	3677.6	Hancock	212	0.2	1943.8	2425.1	Monroe	211	0.2	1550.8	2000.2
Bell	553	0.5	1578.7	2170.2	Hardin	2483	2.3	1977.2	2230.7	Montgomery	835	0.8	2455.3	2962.5
Boone	2525	2.3	1698.9	1864.9	Harlan	1088	1.0	3197.9	4255.7	Morgan	305	0.3	1929.0	2320.8
Bourbon	482	0.4	1826.5	2422.0	Harrison	442	0.4	1833.7	2336.2	Muhlenberg	779	0.7	1895.9	2557.7
Boyd	1755	1.6	2686.3	3772.9	Hart	405	0.4	1718.9	2130.1	Nelson	1307	1.2	2395.4	2813.8
Boyle	761	0.7	1919.8	2506.0	Henderson	796	0.7	1360.7	1779.2	Nicholas	225	0.2	2589.5	3110.3
Bracken	205	0.2	1947.6	2474.1	Henry	471	0.4	2366.5	2931.5	Ohio	531	0.5	1723.2	2221.9
Breathitt	559	0.5	3549.1	4454.2	Hickman	128	0.1	1769.4	2933.1	Oldham	994	0.9	1440.9	1483.6
Breckinridge	441	0.4	1610.2	2147.3	Hopkins	1127	1.0	1864.9	2523.4	Owen	256	0.2	1703.0	2323.7
Bullitt	1835	1.7	1865.1	2232.9	Jackson	465	0.4	2729.4	3485.8	Owsley	248	0.2	4137.8	5726.2
Butler	266	0.2	1556.2	2094.0	Jefferson	20082	18.5	2208.2	2616.7	Pendleton	388	0.4	2017.2	2660.1
Caldwell	226	0.2	1267.4	1781.4	Jessamine	1368	1.3	2164.6	2530.7	Perry	1510	1.4	4658.0	5931.8
Calloway	597	0.5	1244.4	1519.1	Johnson	571	0.5	2025.6	2595.2	Pike	1976	1.8	2648.7	3463.2
Campbell	1724	1.6	1507.2	1833.7	Kenton	3296	3.0	1733.5	1962.5	Powell	474	0.4	3285.8	3879.5
Carlisle	122	0.1	1944.7	2600.2	Knott	475	0.4	2388.2	3273.2	Pulaski	1698	1.6	1933.3	2591.2
Carroll	292	0.3	2317.9	2721.3	Knox	718	0.7	1883.3	2314.5	Robertson	49	0.0	1660.8	2294.0
Carter	895	0.8	2544.0	3372.0	Larue	359	0.3	1883.6	2487.7	Rockcastle	283	0.3	1300.5	1689.6
Casey	265	0.2	1183.3	1649.5	Laurel	1678	1.5	2268.5	2740.1	Rowan	834	0.8	3221.1	3379.0
Christian	976	0.9	1477.7	1365.5	Lawrence	507	0.5	2483.5	3284.5	Russell	364	0.3	1501.5	2022.5
Clark	1152	1.1	2427.8	3159.4	Lee	325	0.3	3576.4	4471.7	Scott	1146	1.1	2020.1	1960.0
Clay	828	0.8	3451.8	4217.8	Leslie	391	0.4	3080.9	4057.3	Shelby	991	0.9	1706.0	1997.5
Clinton	182	0.2	1234.7	1800.2	Letcher	1063	1.0	3656.3	5011.1	Simpson	343	0.3	1483.0	1840.6
Crittenden	138	0.1	1053.7	1559.9	Lewis	175	0.2	960.0	1319.6	Spencer	383	0.4	1759.1	1955.6
Cumberland	146	0.1	1474.0	2238.2	Lincoln	605	0.6	1883.6	2472.8	Taylor	621	0.6	1943.2	2415.7
Daviess	2075	1.9	1672.3	2034.8	Livingston	199	0.2	1532.7	2201.1	Todd	144	0.1	968.6	1156.8
Edmonson	191	0.2	1067.8	1561.1	Logan	507	0.5	1350.4	1849.3	Trigg	206	0.2	852.9	1394.2
Elliott	164	0.2	1652.0	2224.6	Lyon	162	0.1	1153.8	1991.9	Trimble	154	0.1	1344.8	1815.8
Estill	530	0.5	2824.6	3756.5	Madison	2023	1.9	2053.3	2146.1	Union	175	0.2	1003.4	1211.7
Fayette	6661	6.1	1948.6	2051.2	Magoffin	296	0.3	2000.7	2463.2	Warren	2272	2.1	1640.6	1689.1
Fleming	430	0.4	2296.4	2944.6	Marion	460	0.4	1929.6	2381.7	Washington	309	0.3	1981.4	2543.8
Floyd	915	0.8	2046.2	2616.2	Marshall	716	0.7	1549.0	2297.6	Wayne	481	0.4	1700.9	2380.1
Franklin	1398	1.3	2146.7	2734.9	Martin	227	0.2	1668.9	2057.8	Webster	281	0.3	1684.6	2174.4
Fulton	158	0.1	2001.9	2654.6	Mason	374	0.3	1675.6	2195.5	Whitley	1793	1.7	4174.3	4918.9
Gallatin	265	0.2	2756.9	3018.6	McCracken	1625	1.5	1782.4	2475.5	Wolfe	330	0.3	3647.5	4644.0
Garrard	444	0.4	1944.6	2505.8	McCreary	506	0.5	2442.6	2964.1	Woodford	516	0.5	1514.4	1927.9

Table 24: Incidence of All ED NTBI* by County, Sorted by County, Kentucky, 2022

*Includes ED deaths as well as non-fatal ED cases

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude
Adair	118	0.4	539.9	603.4	Grant	310	1.0	1161.2	1221.1	McLean	52	0.2	493.1	573.0
Allen	129	0.4	519.2	605.6	Graves	176	0.6	432.0	478.0	Meade	78	0.3	255.6	272.6
Anderson	114	0.4	482.6	499.3	Grayson	265	0.9	866.1	1000.8	Menifee	44	0.1	635.7	676.7
Ballard	22	0.1	234.4	283.2	Green	133	0.4	1036.5	1209.6	Mercer	218	0.7	888.4	995.9
Barren	212	0.7	425.4	478.6	Greenup	122	0.4	296.1	349.9	Metcalfe	53	0.2	451.7	526.9
Bath	122	0.4	876.1	977.5	Hancock	38	0.1	382.0	434.7	Monroe	62	0.2	493.8	587.7
Bell	219	0.7	690.1	859.4	Hardin	621	2.1	544.2	557.9	Montgomery	307	1.0	1016.8	1089.2
Boone	433	1.5	313.2	319.8	Harlan	361	1.2	1130.2	1412.0	Morgan	98	0.3	644.2	745.7
Bourbon	118	0.4	538.9	592.9	Harrison	137	0.5	630.6	724.1	Muhlenberg	321	1.1	906.9	1053.9
Boyd	314	1.1	620.5	675.0	Hart	98	0.3	457.7	515.4	Nelson	446	1.5	871.7	960.2
Boyle	256	0.9	758.1	843.0	Henderson	346	1.2	649.9	773.4	Nicholas	63	0.2	758.7	870.9
Bracken	57	0.2	627.3	687.9	Henry	155	0.5	856.3	964.7	Ohio	273	0.9	931.4	1142.3
Breathitt	97	0.3	662.7	772.9	Hickman	26	0.1	370.2	595.8	Oldham	245	0.8	361.4	365.7
Breckinridge	143	0.5	632.5	696.3	Hopkins	422	1.4	831.3	944.9	Owen	74	0.2	547.0	671.7
Bullitt	335	1.1	368.6	407.6	Jackson	114	0.4	736.2	854.6	Owsley	33	0.1	590.5	762.0
Butler	75	0.3	526.1	590.4	Jefferson	5851	19.7	721.1	762.4	Pendleton	99	0.3	605.9	678.7
Caldwell	90	0.3	565.7	709.4	Jessamine	232	0.8	395.0	429.2	Perry	309	1.0	1030.7	1213.9
Calloway	242	0.8	573.8	615.8	Johnson	139	0.5	532.8	631.8	Pike	568	1.9	835.1	995.5
Campbell	346	1.2	354.6	368.0	Kenton	566	1.9	324.1	337.0	Powell	142	0.5	1046.2	1162.2
Carlisle	10	0.0	215.1	213.1	Knott	126	0.4	693.5	868.3	Pulaski	412	1.4	539.6	628.7
Carroll	143	0.5	1203.4	1332.7	Knox	199	0.7	571.3	641.5	Robertson	19	0.1	832.6	889.5
Carter	131	0.4	445.0	493.6	Larue	73	0.2	472.0	505.9	Rockcastle	120	0.4	626.1	716.4
Casey	137	0.5	678.5	852.7	Laurel	394	1.3	590.2	643.4	Rowan	102	0.3	459.7	413.3
Christian	389	1.3	573.0	544.2	Lawrence	87	0.3	508.5	563.6	Russell	98	0.3	467.5	544.5
Clark	364	1.2	912.4	998.3	Lee	54	0.2	638.1	743.0	Scott	375	1.3	648.2	641.4
Clay	168	0.6	776.7	855.8	Leslie	196	0.7	1559.3	2033.8	Shelby	362	1.2	664.6	729.7
Clinton	89	0.3	711.7	880.3	Letcher	157	0.5	645.9	740.1	Simpson	179	0.6	871.2	960.6
Crittenden	53	0.2	485.0	599.1	Lewis	46	0.2	294.1	346.9	Spencer	115	0.4	539.1	587.2
Cumberland	82	0.3	982.4	1257.1	Lincoln	268	0.9	938.1	1095.4	Taylor	325	1.1	1265.4	1264.3
Daviess	507	1.7	448.9	497.2	Livingston	55	0.2	503.2	608.3	Todd	53	0.2	374.5	425.8
Edmonson	40	0.1	304.2	326.9	Logan	172	0.6	537.7	627.4	Trigg	122	0.4	630.9	825.7
Elliott	18	0.1	194.9	244.2	Lyon	41	0.1	431.0	504.1	Trimble	53	0.2	503.3	624.9
Estill	185	0.6	1132.6	1311.2	Madison	705	2.4	750.9	747.9	Union	160	0.5	947.4	1107.8
Fayette	1634	5.5	503.5	503.2	Magoffin	49	0.2	359.5	407.8	Warren	607	2.0	444.9	451.3
Fleming	168	0.6	911.8	1150.5	Marion	152	0.5	726.5	787.0	Washington	102	0.3	788.5	839.7
Floyd	358	1.2	855.4	1023.6	Marshall	258	0.9	671.8	827.9	Wayne	206	0.7	810.8	1019.4
Franklin	252	0.8	464.7	493.0	Martin	37	0.1	291.9	335.4	Webster	108	0.4	686.9	835.7
Fulton	22	0.1	336.6	369.6	Mason	129	0.4	670.4	757.3	Whitley	398	1.3	1006.5	1091.9
Gallatin	66	0.2	727.4	751.8	McCracken	339	1.1	461.9	516.4	Wolfe	85	0.3	941.5	1196.2
Garrard	134	0.5	664.1	756.3	McCreary	103	0.3	523.2	603.4	Woodford	128	0.4	439.8	478.2

Table 25: Incidence of All Inpatient NTBI* by County, Sorted by Frequency, Kentucky, 2022

*Includes inpatient deaths as well as non-fatal inpatient cases

County	Freq	Percent	Age-Adjusted		County	Freq	Percent	Age-Adjusted		County	Freq	Percent	Age-Adjusted	
			Rate	Crude				Rate	Crude				Rate	Crude
Jefferson	20082	18.5	2208.2	2616.7	Boyle	761	0.7	1919.8	2506.0	Wolfe	330	0.3	3647.5	4644.0
Fayette	6661	6.1	1948.6	2051.2	Knox	718	0.7	1883.3	2314.5	Lee	325	0.3	3576.4	4471.7
Kenton	3296	3.0	1733.5	1962.5	Marshall	716	0.7	1549.0	2297.6	Washington	309	0.3	1981.4	2543.8
Boone	2525	2.3	1698.9	1864.9	Taylor	621	0.6	1943.2	2415.7	Morgan	305	0.3	1929.0	2320.8
Hardin	2483	2.3	1977.2	2230.7	Anderson	617	0.6	2270.2	2702.2	Magoffin	296	0.3	2000.7	2463.2
Warren	2272	2.1	1640.6	1689.1	Lincoln	605	0.6	1883.6	2472.8	Carroll	292	0.3	2317.9	2721.3
Daviess	2075	1.9	1672.3	2034.8	Calloway	597	0.5	1244.4	1519.1	Rockcastle	283	0.3	1300.5	1689.6
Madison	2023	1.9	2053.3	2146.1	Johnson	571	0.5	2025.6	2595.2	Webster	281	0.3	1684.6	2174.4
Pike	1976	1.8	2648.7	3463.2	Mercer	563	0.5	1918.3	2572.1	Metcalfe	275	0.3	2009.3	2734.1
Bullitt	1835	1.7	1865.1	2232.9	Breathitt	559	0.5	3549.1	4454.2	Butler	266	0.2	1556.2	2094.0
Whitley	1793	1.7	4174.3	4918.9	Bell	553	0.5	1578.7	2170.2	Casey	265	0.2	1183.3	1649.5
Boyd	1755	1.6	2686.3	3772.9	Ohio	531	0.5	1723.2	2221.9	Gallatin	265	0.2	2756.9	3018.6
Campbell	1724	1.6	1507.2	1833.7	Estill	530	0.5	2824.6	3756.5	Green	260	0.2	1779.6	2364.7
Pulaski	1698	1.6	1933.3	2591.2	Woodford	516	0.5	1514.4	1927.9	Owen	256	0.2	1703.0	2323.7
Laurel	1678	1.5	2268.5	2740.1	Lawrence	507	0.5	2483.5	3284.5	Owsley	248	0.2	4137.8	5726.2
McCracken	1625	1.5	1782.4	2475.5	Logan	507	0.5	1350.4	1849.3	Menifee	236	0.2	2590.0	3629.7
Perry	1510	1.4	4658.0	5931.8	McCreary	506	0.5	2442.6	2964.1	McLean	234	0.2	1837.9	2578.5
Franklin	1398	1.3	2146.7	2734.9	Bourbon	482	0.4	1826.5	2422.0	Martin	227	0.2	1668.9	2057.8
Jessamine	1368	1.3	2164.6	2530.7	Wayne	481	0.4	1700.9	2380.1	Caldwell	226	0.2	1267.4	1781.4
Nelson	1307	1.2	2395.4	2813.8	Knott	475	0.4	2388.2	3273.2	Nicholas	225	0.2	2589.5	3110.3
Clark	1152	1.1	2427.8	3159.4	Powell	474	0.4	3285.8	3879.5	Hancock	212	0.2	1943.8	2425.1
Scott	1146	1.1	2020.1	1960.0	Henry	471	0.4	2366.5	2931.5	Monroe	211	0.2	1550.8	2000.2
Hopkins	1127	1.0	1864.9	2523.4	Jackson	465	0.4	2729.4	3485.8	Trigg	206	0.2	852.9	1394.2
Graves	1100	1.0	2224.0	2987.7	Marion	460	0.4	1929.6	2381.7	Bracken	205	0.2	1947.6	2474.1
Harlan	1088	1.0	3197.9	4255.7	Bath	459	0.4	2919.4	3677.6	Livingston	199	0.2	1532.7	2201.1
Letcher	1063	1.0	3656.3	5011.1	Garrard	444	0.4	1944.6	2505.8	Edmonson	191	0.2	1067.8	1561.1
Barren	1026	0.9	1787.4	2316.0	Harrison	442	0.4	1833.7	2336.2	Clinton	182	0.2	1234.7	1800.2
Oldham	994	0.9	1440.9	1483.6	Breckinridge	441	0.4	1610.2	2147.3	Lewis	175	0.2	960.0	1319.6
Shelby	991	0.9	1706.0	1997.5	Allen	440	0.4	1556.4	2065.4	Union	175	0.2	1003.4	1211.7
Christian	976	0.9	1477.7	1365.5	Fleming	430	0.4	2296.4	2944.6	Elliott	164	0.2	1652.0	2224.6
Grayson	917	0.8	2743.5	3463.0	Hart	405	0.4	1718.9	2130.1	Lyon	162	0.1	1153.8	1991.9
Floyd	915	0.8	2046.2	2616.2	Adair	404	0.4	1554.4	2066.0	Fulton	158	0.1	2001.9	2654.6
Carter	895	0.8	2544.0	3372.0	Leslie	391	0.4	3080.9	4057.3	Trimble	154	0.1	1344.8	1815.8
Greenup	895	0.8	1757.9	2567.0	Pendleton	388	0.4	2017.2	2660.1	Cumberland	146	0.1	1474.0	2238.2
Montgomery	835	0.8	2455.3	2962.5	Spencer	383	0.4	1759.1	1955.6	Todd	144	0.1	968.6	1156.8
Rowan	834	0.8	3221.1	3379.0	Meade	382	0.4	1163.7	1334.9	Ballard	142	0.1	1280.6	1827.8
Clay	828	0.8	3451.8	4217.8	Mason	374	0.3	1675.6	2195.5	Crittenden	138	0.1	1053.7	1559.9
Henderson	796	0.7	1360.7	1779.2	Russell	364	0.3	1501.5	2022.5	Hickman	128	0.1	1769.4	2933.1
Muhlenberg	779	0.7	1895.9	2557.7	Larue	359	0.3	1883.6	2487.7	Carlisle	122	0.1	1944.7	2600.2
Grant	763	0.7	2716.1	3005.5	Simpson	343	0.3	1483.0	1840.6	Robertson	49	0.0	1660.8	2294.0

Table 26: Incidence of All ED NTBI* by County, Sorted by Frequency, Kentucky, 2022

*Includes ED deaths as well as non-fatal ED cases

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude
Jefferson	5851	19.7	721.1	762.4	Mercer	218	0.7	888.4	995.9	Washington	102	0.3	788.5	839.7
Fayette	1634	5.5	503.5	503.2	Barren	212	0.7	425.4	478.6	Pendleton	99	0.3	605.9	678.7
Madison	705	2.4	750.9	747.9	Wayne	206	0.7	810.8	1019.4	Hart	98	0.3	457.7	515.4
Hardin	621	2.1	544.2	557.9	Knox	199	0.7	571.3	641.5	Morgan	98	0.3	644.2	745.7
Warren	607	2.0	444.9	451.3	Leslie	196	0.7	1559.3	2033.8	Russell	98	0.3	467.5	544.5
Pike	568	1.9	835.1	995.5	Estill	185	0.6	1132.6	1311.2	Breathitt	97	0.3	662.7	772.9
Kenton	566	1.9	324.1	337.0	Simpson	179	0.6	871.2	960.6	Caldwell	90	0.3	565.7	709.4
Daviess	507	1.7	448.9	497.2	Graves	176	0.6	432.0	478.0	Clinton	89	0.3	711.7	880.3
Nelson	446	1.5	871.7	960.2	Logan	172	0.6	537.7	627.4	Lawrence	87	0.3	508.5	563.6
Boone	433	1.5	313.2	319.8	Clay	168	0.6	776.7	855.8	Wolfe	85	0.3	941.5	1196.2
Hopkins	422	1.4	831.3	944.9	Fleming	168	0.6	911.8	1150.5	Cumberland	82	0.3	982.4	1257.1
Pulaski	412	1.4	539.6	628.7	Union	160	0.5	947.4	1107.8	Meade	78	0.3	255.6	272.6
Whitley	398	1.3	1006.5	1091.9	Letcher	157	0.5	645.9	740.1	Butler	75	0.3	526.1	590.4
Laurel	394	1.3	590.2	643.4	Henry	155	0.5	856.3	964.7	Owen	74	0.2	547.0	671.7
Christian	389	1.3	573.0	544.2	Marion	152	0.5	726.5	787.0	Larue	73	0.2	472.0	505.9
Scott	375	1.3	648.2	641.4	Breckinridge	143	0.5	632.5	696.3	Gallatin	66	0.2	727.4	751.8
Clark	364	1.2	912.4	998.3	Carroll	143	0.5	1203.4	1332.7	Nicholas	63	0.2	758.7	870.9
Shelby	362	1.2	664.6	729.7	Powell	142	0.5	1046.2	1162.2	Monroe	62	0.2	493.8	587.7
Harlan	361	1.2	1130.2	1412.0	Johnson	139	0.5	532.8	631.8	Bracken	57	0.2	627.3	687.9
Floyd	358	1.2	855.4	1023.6	Casey	137	0.5	678.5	852.7	Livingston	55	0.2	503.2	608.3
Campbell	346	1.2	354.6	368.0	Harrison	137	0.5	630.6	724.1	Lee	54	0.2	638.1	743.0
Henderson	346	1.2	649.9	773.4	Garrard	134	0.5	664.1	756.3	Crittenden	53	0.2	485.0	599.1
McCracken	339	1.1	461.9	516.4	Green	133	0.4	1036.5	1209.6	Metcalf	53	0.2	451.7	526.9
Bullitt	335	1.1	368.6	407.6	Carter	131	0.4	445.0	493.6	Todd	53	0.2	374.5	425.8
Taylor	325	1.1	1265.4	1264.3	Allen	129	0.4	519.2	605.6	Trimble	53	0.2	503.3	624.9
Muhlenberg	321	1.1	906.9	1053.9	Mason	129	0.4	670.4	757.3	McLean	52	0.2	493.1	573.0
Boyd	314	1.1	620.5	675.0	Woodford	128	0.4	439.8	478.2	Magoffin	49	0.2	359.5	407.8
Grant	310	1.0	1161.2	1221.1	Knott	126	0.4	693.5	868.3	Lewis	46	0.2	294.1	346.9
Perry	309	1.0	1030.7	1213.9	Bath	122	0.4	876.1	977.5	Menifee	44	0.1	635.7	676.7
Montgomery	307	1.0	1016.8	1089.2	Greenup	122	0.4	296.1	349.9	Lyon	41	0.1	431.0	504.1
Ohio	273	0.9	931.4	1142.3	Trigg	122	0.4	630.9	825.7	Edmonson	40	0.1	304.2	326.9
Lincoln	268	0.9	938.1	1095.4	Rockcastle	120	0.4	626.1	716.4	Hancock	38	0.1	382.0	434.7
Grayson	265	0.9	866.1	1000.8	Adair	118	0.4	539.9	603.4	Martin	37	0.1	291.9	335.4
Marshall	258	0.9	671.8	827.9	Bourbon	118	0.4	538.9	592.9	Owsley	33	0.1	590.5	762.0
Boyle	256	0.9	758.1	843.0	Spencer	115	0.4	539.1	587.2	Hickman	26	0.1	370.2	595.8
Franklin	252	0.8	464.7	493.0	Anderson	114	0.4	482.6	499.3	Ballard	22	0.1	234.4	283.2
Oldham	245	0.8	361.4	365.7	Jackson	114	0.4	736.2	854.6	Fulton	22	0.1	336.6	369.6
Calloway	242	0.8	573.8	615.8	Webster	108	0.4	686.9	835.7	Robertson	19	0.1	832.6	889.5
Jessamine	232	0.8	395.0	429.2	McCreary	103	0.3	523.2	603.4	Elliott	18	0.1	194.9	244.2
Bell	219	0.7	690.1	859.4	Rowan	102	0.3	459.7	413.3	Carlisle	10	0.0	215.1	213.1

Table 27: Incidence of All Inpatient NTBI* by County, Sorted by Age Adjusted Rate, Kentucky, 2022

*Includes inpatient deaths as well as non-fatal inpatient cases

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate
Perry	1510	1.4	4658.0	5931.8	Johnson	571	0.5	2025.6	2595.2	Boone	2525	2.3	1698.9	1864.9
Whitley	1793	1.7	4174.3	4918.9	Scott	1146	1.1	2020.1	1960.0	Webster	281	0.3	1684.6	2174.4
Owsley	248	0.2	4137.8	5726.2	Pendleton	388	0.4	2017.2	2660.1	Mason	374	0.3	1675.6	2195.5
Letcher	1063	1.0	3656.3	5011.1	Metcalfe	275	0.3	2009.3	2734.1	Daviess	2075	1.9	1672.3	2034.8
Wolfe	330	0.3	3647.5	4644.0	Fulton	158	0.1	2001.9	2654.6	Martin	227	0.2	1668.9	2057.8
Lee	325	0.3	3576.4	4471.7	Magoffin	296	0.3	2000.7	2463.2	Robertson	49	0.0	1660.8	2294.0
Breathitt	559	0.5	3549.1	4454.2	Washington	309	0.3	1981.4	2543.8	Elliott	164	0.2	1652.0	2224.6
Clay	828	0.8	3451.8	4217.8	Hardin	2483	2.3	1977.2	2230.7	Warren	2272	2.1	1640.6	1689.1
Powell	474	0.4	3285.8	3879.5	Fayette	6661	6.1	1948.6	2051.2	Breckinridge	441	0.4	1610.2	2147.3
Rowan	834	0.8	3221.1	3379.0	Bracken	205	0.2	1947.6	2474.1	Bell	553	0.5	1578.7	2170.2
Harlan	1088	1.0	3197.9	4255.7	Carlisle	122	0.1	1944.7	2600.2	Allen	440	0.4	1556.4	2065.4
Leslie	391	0.4	3080.9	4057.3	Garrard	444	0.4	1944.6	2505.8	Butler	266	0.2	1556.2	2094.0
Bath	459	0.4	2919.4	3677.6	Hancock	212	0.2	1943.8	2425.1	Adair	404	0.4	1554.4	2066.0
Estill	530	0.5	2824.6	3756.5	Taylor	621	0.6	1943.2	2415.7	Monroe	211	0.2	1550.8	2000.2
Gallatin	265	0.2	2756.9	3018.6	Pulaski	1698	1.6	1933.3	2591.2	Marshall	716	0.7	1549.0	2297.6
Grayson	917	0.8	2743.5	3463.0	Marion	460	0.4	1929.6	2381.7	Livingston	199	0.2	1532.7	2201.1
Jackson	465	0.4	2729.4	3485.8	Morgan	305	0.3	1929.0	2320.8	Woodford	516	0.5	1514.4	1927.9
Grant	763	0.7	2716.1	3005.5	Boyle	761	0.7	1919.8	2506.0	Campbell	1724	1.6	1507.2	1833.7
Boyd	1755	1.6	2686.3	3772.9	Mercer	563	0.5	1918.3	2572.1	Russell	364	0.3	1501.5	2022.5
Pike	1976	1.8	2648.7	3463.2	Muhlenberg	779	0.7	1895.9	2557.7	Simpson	343	0.3	1483.0	1840.6
Menifee	236	0.2	2590.0	3629.7	Lincoln	605	0.6	1883.6	2472.8	Christian	976	0.9	1477.7	1365.5
Nicholas	225	0.2	2589.5	3110.3	Larue	359	0.3	1883.6	2487.7	Cumberland	146	0.1	1474.0	2238.2
Carter	895	0.8	2544.0	3372.0	Knox	718	0.7	1883.3	2314.5	Oldham	994	0.9	1440.9	1483.6
Lawrence	507	0.5	2483.5	3284.5	Bullitt	1835	1.7	1865.1	2232.9	Henderson	796	0.7	1360.7	1779.2
Montgomery	835	0.8	2455.3	2962.5	Hopkins	1127	1.0	1864.9	2523.4	Logan	507	0.5	1350.4	1849.3
McCreary	506	0.5	2442.6	2964.1	McLean	234	0.2	1837.9	2578.5	Trimble	154	0.1	1344.8	1815.8
Clark	1152	1.1	2427.8	3159.4	Harrison	442	0.4	1833.7	2336.2	Rockcastle	283	0.3	1300.5	1689.6
Nelson	1307	1.2	2395.4	2813.8	Bourbon	482	0.4	1826.5	2422.0	Ballard	142	0.1	1280.6	1827.8
Knott	475	0.4	2388.2	3273.2	Barren	1026	0.9	1787.4	2316.0	Caldwell	226	0.2	1267.4	1781.4
Henry	471	0.4	2366.5	2931.5	McCracken	1625	1.5	1782.4	2475.5	Calloway	597	0.5	1244.4	1519.1
Carroll	292	0.3	2317.9	2721.3	Green	260	0.2	1779.6	2364.7	Clinton	182	0.2	1234.7	1800.2
Fleming	430	0.4	2296.4	2944.6	Hickman	128	0.1	1769.4	2933.1	Casey	265	0.2	1183.3	1649.5
Anderson	617	0.6	2270.2	2702.2	Spencer	383	0.4	1759.1	1955.6	Meade	382	0.4	1163.7	1334.9
Laurel	1678	1.5	2268.5	2740.1	Greenup	895	0.8	1757.9	2567.0	Lyon	162	0.1	1153.8	1991.9
Graves	1100	1.0	2224.0	2987.7	Kenton	3296	3.0	1733.5	1962.5	Edmonson	191	0.2	1067.8	1561.1
Jefferson	20082	18.5	2208.2	2616.7	Ohio	531	0.5	1723.2	2221.9	Crittenden	138	0.1	1053.7	1559.9
Jessamine	1368	1.3	2164.6	2530.7	Hart	405	0.4	1718.9	2130.1	Union	175	0.2	1003.4	1211.7
Franklin	1398	1.3	2146.7	2734.9	Shelby	991	0.9	1706.0	1997.5	Todd	144	0.1	968.6	1156.8
Madison	2023	1.9	2053.3	2146.1	Owen	256	0.2	1703.0	2323.7	Lewis	175	0.2	960.0	1319.6
Floyd	915	0.8	2046.2	2616.2	Wayne	481	0.4	1700.9	2380.1	Trigg	206	0.2	852.9	1394.2

Table 28: Incidence of All ED NTBI* by County, Sorted by Age Adjusted Rate, Kentucky, 2022

***Includes inpatient deaths as well as non-fatal inpatient cases**

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude
Leslie	196	0.7	1559.3	2033.8	Knott	126	0.4	693.5	868.3	Fayette	1634	5.5	503.5	503.2
Taylor	325	1.1	1265.4	1264.3	Bell	219	0.7	690.1	859.4	Trimble	53	0.2	503.3	624.9
Carroll	143	0.5	1203.4	1332.7	Webster	108	0.4	686.9	835.7	Livingston	55	0.2	503.2	608.3
Grant	310	1.0	1161.2	1221.1	Casey	137	0.5	678.5	852.7	Monroe	62	0.2	493.8	587.7
Estill	185	0.6	1132.6	1311.2	Marshall	258	0.9	671.8	827.9	McLean	52	0.2	493.1	573.0
Harlan	361	1.2	1130.2	1412.0	Mason	129	0.4	670.4	757.3	Crittenden	53	0.2	485.0	599.1
Powell	142	0.5	1046.2	1162.2	Shelby	362	1.2	664.6	729.7	Anderson	114	0.4	482.6	499.3
Green	133	0.4	1036.5	1209.6	Garrard	134	0.5	664.1	756.3	Larue	73	0.2	472.0	505.9
Perry	309	1.0	1030.7	1213.9	Breathitt	97	0.3	662.7	772.9	Russell	98	0.3	467.5	544.5
Montgomery	307	1.0	1016.8	1089.2	Henderson	346	1.2	649.9	773.4	Franklin	252	0.8	464.7	493.0
Whitley	398	1.3	1006.5	1091.9	Scott	375	1.3	648.2	641.4	McCracken	339	1.1	461.9	516.4
Cumberland	82	0.3	982.4	1257.1	Letcher	157	0.5	645.9	740.1	Rowan	102	0.3	459.7	413.3
Union	160	0.5	947.4	1107.8	Morgan	98	0.3	644.2	745.7	Hart	98	0.3	457.7	515.4
Wolfe	85	0.3	941.5	1196.2	Lee	54	0.2	638.1	743.0	Metcalfe	53	0.2	451.7	526.9
Lincoln	268	0.9	938.1	1095.4	Menifee	44	0.1	635.7	676.7	Daviess	507	1.7	448.9	497.2
Ohio	273	0.9	931.4	1142.3	Breckinridge	143	0.5	632.5	696.3	Carter	131	0.4	445.0	493.6
Clark	364	1.2	912.4	998.3	Trigg	122	0.4	630.9	825.7	Warren	607	2.0	444.9	451.3
Fleming	168	0.6	911.8	1150.5	Harrison	137	0.5	630.6	724.1	Woodford	128	0.4	439.8	478.2
Muhlenberg	321	1.1	906.9	1053.9	Bracken	57	0.2	627.3	687.9	Graves	176	0.6	432.0	478.0
Mercer	218	0.7	888.4	995.9	Rockcastle	120	0.4	626.1	716.4	Lyon	41	0.1	431.0	504.1
Bath	122	0.4	876.1	977.5	Boyd	314	1.1	620.5	675.0	Barren	212	0.7	425.4	478.6
Nelson	446	1.5	871.7	960.2	Pendleton	99	0.3	605.9	678.7	Jessamine	232	0.8	395.0	429.2
Simpson	179	0.6	871.2	960.6	Owsley	33	0.1	590.5	762.0	Hancock	38	0.1	382.0	434.7
Grayson	265	0.9	866.1	1000.8	Laurel	394	1.3	590.2	643.4	Todd	53	0.2	374.5	425.8
Henry	155	0.5	856.3	964.7	Calloway	242	0.8	573.8	615.8	Hickman	26	0.1	370.2	595.8
Floyd	358	1.2	855.4	1023.6	Christian	389	1.3	573.0	544.2	Bullitt	335	1.1	368.6	407.6
Pike	568	1.9	835.1	995.5	Knox	199	0.7	571.3	641.5	Oldham	245	0.8	361.4	365.7
Robertson	19	0.1	832.6	889.5	Caldwell	90	0.3	565.7	709.4	Magoffin	49	0.2	359.5	407.8
Hopkins	422	1.4	831.3	944.9	Owen	74	0.2	547.0	671.7	Campbell	346	1.2	354.6	368.0
Wayne	206	0.7	810.8	1019.4	Hardin	621	2.1	544.2	557.9	Fulton	22	0.1	336.6	369.6
Washington	102	0.3	788.5	839.7	Adair	118	0.4	539.9	603.4	Kenton	566	1.9	324.1	337.0
Clay	168	0.6	776.7	855.8	Pulaski	412	1.4	539.6	628.7	Boone	433	1.5	313.2	319.8
Nicholas	63	0.2	758.7	870.9	Spencer	115	0.4	539.1	587.2	Edmonson	40	0.1	304.2	326.9
Boyle	256	0.9	758.1	843.0	Bourbon	118	0.4	538.9	592.9	Greenup	122	0.4	296.1	349.9
Madison	705	2.4	750.9	747.9	Logan	172	0.6	537.7	627.4	Lewis	46	0.2	294.1	346.9
Jackson	114	0.4	736.2	854.6	Johnson	139	0.5	532.8	631.8	Martin	37	0.1	291.9	335.4
Gallatin	66	0.2	727.4	751.8	Butler	75	0.3	526.1	590.4	Meade	78	0.3	255.6	272.6
Marion	152	0.5	726.5	787.0	McCreary	103	0.3	523.2	603.4	Ballard	22	0.1	234.4	283.2
Jefferson	5851	19.7	721.1	762.4	Allen	129	0.4	519.2	605.6	Carlisle	10	0.0	215.1	213.1
Clinton	89	0.3	711.7	880.3	Lawrence	87	0.3	508.5	563.6	Elliott	18	0.1	194.9	244.2

Table 29: Causes of Non-Fatal NTBI, Kentucky, 2022

ABI Category	Inpatient		ED	
	Number	Percent	Number	Percent
Anoxia	86,721	84.0	17,141	57.8
Exposure to toxic substances	12,077	11.7	9,087	30.6
Allergy/anaphylaxis	267	0.3	2,162	7.3
Acute medical clinical incidents	4,129	4.0	1,264	4.3

* Because there are multiple diagnoses and/or causes of death listed for each individual, it is possible for the same case to fall into more than one ABI category. Therefore, the column sums in this table are slightly higher than the total number of ABI cases shown in previous tables.

Table 30: Non-Fatal Anoxia by Age Group, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
0-4	2,936	68.6	1107.4	1,345	31.4	507.3	4,281	100.0	1614.7
5-14	739	67.1	129.0	362	32.9	63.2	1,101	100.0	192.2
15-24	772	74.6	130.2	263	25.4	44.4	1,035	100.0	174.6
25-44	5,685	83.1	493.3	1,157	16.9	100.4	6,842	100.0	593.8
45-64	25,697	83.3	2222.5	5,167	16.7	446.9	30,864	100.0	2669.3
65+	50,892	85.2	6607.1	8,847	14.8	1148.6	59,739	100.0	7755.7
Total	86,721	83.5	1923.1	17,141	16.5	380.1	103,862	100.0	2303.2

Table 31: Diagnosis Distribution for Non-Fatal Anoxia, Kentucky, 2022

Diagnosis	Description	Inpatient		ED	
		Number	Percent	Number	Percent
G91(.0-.2)	Communicating hydrocephalus	677	0.78	162	0.95
G931	Anoxic brain damage, NEC	192	0.22	164	0.96
J96	Respiratory failure, NEC w/hypoxia or hypercapnia	78,515	90.54	11,670	68.08
R090	Asphyxia and hypoxemia	7,291	8.41	4,833	28.20
T71	Asphyxiation	35	0.04	229	1.34
T751	Unspec effects of drowning and non-fatal submersion	11	0.01	83	0.48
Total		86,721	100.00	17,141	100.00

Table 32: Non-Fatal Exposure to Toxic Substances by Age Group, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
0-4	83	22.6	31.3	284	77.4	107.1	367	100.0	138.4
5-14	63	25.2	11.0	187	74.8	32.7	250	100.0	43.7
15-24	357	25.7	60.2	1,030	74.3	173.8	1,387	100.0	234.0
25-44	1,793	31.6	155.6	3,886	68.4	337.2	5,679	100.0	492.8
45-64	3,807	62.4	329.3	2,290	37.6	198.1	6,097	100.0	527.3
65+	5,974	80.9	775.6	1,410	19.1	183.1	7,384	100.0	958.6
Total	12,077	57.1	267.8	9,087	42.9	201.5	21,164	100.0	469.3

Table 33: Diagnosis Distribution for Non-Fatal Exposure to Toxic Substances, Kentucky, 2022

Diagnosis	Description	Inpatient		ED	
		Number	Percent	Number	Percent
G92	Toxic encephalopathy	6505	53.9	656	7.2
T40	Poisoning by narcotics and hallucinogens	2597	21.5	5267	58.0
T41	Poisoning by anesthetics and therapeutic gases	150	1.2	69	0.8
T42(.3-.7)	Poisoning by antiepileptic and sedative hypnotic drugs	929	7.7	1104	12.1
T45.5	Poisoning by anticoagulants and antithrombotic drugs	1383	11.5	597	6.6
T51	Toxic effect of alcohol	106	0.9	138	1.5
T56	Toxic effect of metals	17	0.1	36	0.4
T57	Toxic effect of other inorganic substances	1	0.0	4	0.0
T58	Toxic effect of carbon monoxide	33	0.3	153	1.7
T60	Toxic effect of pesticides	10	0.1	52	0.6
T61	Toxic effect of noxious substances eaten as seafood	0	0.0	18	0.2
T62	Toxic effect of other noxious substances eaten as food	4	0.0	47	0.5
T65	Toxic effect of other unspecified substances	91	0.8	905	10.0
T81.1	Postprocedural shock	215	1.8	4	0.0
T88.2	Shock due to anesthesia	6	0.0	0	0.0
T88.5	Other complications of anesthesia	30	0.2	37	0.4
Total		12077	100.0	9087	100.0

Table 34: Length of Stay for Non-Fatal Inpatient NTBI, Kentucky, 2022

Length of Stay	Number	Percent*
1 day	7896	8.1
More than one day but less than 1 week	53676	55.2
1 week to less than 2 weeks	22787	23.4
2 weeks to less than 3 weeks	6736	6.9
3 weeks to less than 4 weeks	2823	2.9
4 weeks or more	3382	3.5
Total	97300	100.0

*Percent of hospitalized NTBI

Table 35: Discharge Disposition for Non-Fatal NTBI, Kentucky, 2022

Discharge Disposition	Inpatient		ED	
	Number	Percent	Number	Percent
Routine discharge (home/self care)	49,448	50.8	20,359	69.7
Skilled nursing facility (SNF)	13,627	14.0	1,023	3.5
Home health	15,305	15.7	893	3.1
Inpatient-other type facility	65	0.1	284	1.0
Inpatient-other short-term hospital	2,864	2.9	3,550	12.2
Intermediate care facility (ICF)	994	1.0	90	0.3
Rehab	4,900	5.0	161	0.6
Other	10,097	10.4	2,847	9.7
Total	97,300	100.0	29,207	100.0

Table 36: Primary Payer and Charges for Non-Fatal Inpatient NTBI, Kentucky, 2022

Payer	Number of Discharges	Percent of Discharges	Total Hospital Charges
Government	81,722	84.0	\$ 5,900,708,350
Commercial Insurance	13,296	13.7	\$ 1,115,630,794
Self Pay	923	0.9	\$ 56,299,421
Workers Compensation	194	0.2	\$ 23,513,015
Other	1165	1.2	\$ 109,483,953
Total	97,300	100.0	\$ 7,205,635,533

Table 37: Primary Payer and Charges for Non-Fatal ED NTBI, Kentucky, 2022

Payer	Number of Discharges	Percent of Discharges	Total Hospital Charges
Government	22,682	77.7	\$ 284,389,773
Commercial Insurance	5,073	17.4	\$ 52,340,520
Self Pay	914	3.1	\$ 5,122,865
Workers Compensation	119	0.4	\$ 947,721
Other	419	1.4	\$ 4,453,009
Total	29,207	100.0	\$ 347,253,888

Table 38: Non-Fatal SCI by Age Group, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
0-4	0	0.0	0.0	1	0.0	0.4	1	100.0	0.4
5-14	3	60.0	0.5	5	62.5	0.9	8	100.0	1.4
15-24	19	79.2	3.2	5	20.8	0.8	24	100.0	4.0
25-44	40	70.2	3.5	17	29.8	1.5	57	100.0	4.9
45-64	77	72.6	6.7	29	27.4	2.5	106	100.0	9.2
65+	85	73.9	11.0	30	26.1	3.9	115	100.0	14.9
Total	224	72.0	5.0	87	28.0	1.9	311	100.0	6.9

Table 39: Non-Fatal SCI by Gender, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Male	148	74.7	6.6	50	25.3	2.2	198	100.0	8.9
Female	76	67.3	3.3	37	32.7	1.6	113	100.0	5.0
Total	224	72.0	5.0	87	28.0	1.9	311	100.0	6.9

Table 40: Leading Causes of Non-Fatal SCI, Kentucky, 2022

Mechanism of Injury	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Motor vehicle traffic crash	47	83.9	1.0	9	16.1	0.2	56	100.0	1.2
Fall	97	73.5	2.2	35	26.5	0.8	132	100.0	2.9
Non-traffic land transportation	5	71.4	0.1	2	28.6	0.0	7	100.0	0.2
Struck by or against object or person	5	45.5	0.1	6	54.5	0.1	11	100.0	0.2
Firearm	13	81.3	0.3	3	18.8	0.1	16	100.0	0.4
Other	19	59.4	0.4	13	40.6	0.3	32	100.0	0.7
Unknown (missing E-code)	38	66.7	0.8	19	33.3	0.4	57	100.0	1.3
Total	224	72.0	5.0	87	28.0	1.9	311	100.0	6.9

Table 41: Length of Stay for Non-Fatal Inpatient SCI, Kentucky, 2022

Length of Stay	Number	Percent*
1 day	8	3.6
More than one day but less than 1 week	79	35.3
1 week to less than 2 weeks	77	34.4
2 weeks to less than 3 weeks	35	15.6
3 weeks to less than 4 weeks	10	4.5
4 weeks or more	15	6.7
Total	224	100.0

*Percent of hospitalized SCI

Mean 11.2
Median 8
Min, Max 1-72

Table 42: Discharge Disposition for Non-Fatal SCI, Kentucky, 2022

Discharge Disposition	Inpatient		ED	
	Number	Percent	Number	Percent
Routine discharge (home/self care)	69	30.8	52	59.8
Home health	9	4.0	1	1.1
Skilled nursing facility (SNF)	22	9.8	1	1.1
Inpatient-other	5	2.2	28	32.2
Rehab	104	46.4	0	0.0
Other	15	6.7	5	5.7
Total	224	100.0	87	100.0

Table 43: Primary Payer and Charges for Non-Fatal Inpatient SCI, Kentucky, 2022

Payer	Number of Discharges	Percent of Discharges	Total Hospital Discharges
Government	153	68.3	\$ 29,408,115
Commercial Ins	42	18.8	\$ 8,038,897
Workers Compensation	4	1.8	\$ 810,710
Self Pay	1	0.4	\$ 61,208
Other	24	10.7	\$ 4,438,194
Total	224	100.0	\$42,757,124

Table 44: Primary Payer and Charges for Non-Fatal ED SCI, Kentucky, 2022

Payer	Number of Discharges	Percent of Discharges	Total Hospital Discharges
Government	60	69.0	\$ 603,650
Commercial Ins	16	18.4	\$ 203,098
Workers Compensation	3	3.4	\$ 16,817
Self Pay	4	4.6	\$ 42,536
Other	4	4.6	\$ 68,624
Total	87	100.0	\$934,725

Table 45: Non-Fatal Stroke by Age Group, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
0-4	18	0.0	6.8	4	0.0	1.5	22	100.0	8.3
5-14	13	130.0	2.3	10	43.5	1.7	23	100.0	4.0
15-24	38	43.2	6.4	50	56.8	8.4	88	100.0	14.8
25-44	657	54.8	57.0	542	45.2	47.0	1,199	100.0	104.1
45-64	3,714	59.9	321.2	2,491	40.1	215.4	6,205	100.0	536.7
65+	7,915	64.6	1027.6	4,331	35.4	562.3	12,246	100.0	1589.9
Total	12,355	62.5	274.0	7,428	37.5	164.7	19,783	100.0	438.7

Table 46: Non-Fatal Stroke by Gender, Kentucky, 2022

Age	Inpatient			ED			Total		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Male	5,950	62.6	266.4	3,549	37.4	158.9	9,499	100.0	425.2
Female	6,404	62.3	281.4	3,879	37.7	170.5	10,283	100.0	451.9
Total	12,354	62.5	274.0	7,428	37.5	164.7	19,782	100.0	438.7

Table 47: Length of Stay for Non-Fatal Inpatient Stroke, Kentucky, 2022

Length of Stay	Number	Percent*
1 day	1,733	14.0
More than one day but less than 1 week	6,544	53.0
1 week to less than 2 weeks	2,496	20.2
2 weeks to less than 3 weeks	801	6.5
3 weeks to less than 4 weeks	321	2.6
4 weeks or more	460	3.7
Total	12,355	100.0

*Percent of hospitalized Stroke

Table 48: Discharge Disposition for Non-Fatal Stroke, Kentucky, 2022

Discharge Disposition	Inpatient		ED	
	Number	Percent	Number	Percent
Routine discharge (home/self care)	4,932	39.9	4,554	55.6
Home health	1,548	12.5	212	0.0
Skilled nursing facility (SNF)	1,865	15.1	179	0.0
Inpatient-other	389	3.1	1,826	38.3
Intermediate Care Facility	100	0.8	28	2.5
Rehab	2,248	18.2	42	0.6
Other	1,273	10.3	587	3.7
Total	12,355	100.0	7428	100.0

Table 49: Primary Payer and Charges for Non-Fatal Inpatient Stroke, Kentucky, 2022

Payer	Number of Discharges	Percent of Discharges	Total Hospital Discharges
Government	10,245	82.9	891,324,522
Commercial Ins	1,831	14.8	181,138,427
Workers Compensation	10	0.1	1,135,442
Self Pay	158	1.3	10,601,064
Other	111	0.9	9,921,332
Total	12,355	100.0	\$1,094,120,787

Table 50: Primary Payer and Charges for Non-Fatal ED Stroke, Kentucky, 2022

Payer	Number of Discharges	Percent of Discharges	Total Hospital Discharges
Government	5,630	75.8	\$ 105,207,894
Commercial Ins	1,557	21.0	\$ 29,403,929
Workers Compensation	7	0.1	\$ 91,565
Self Pay	137	1.8	\$ 2,156,611
Other	97	1.3	\$ 1,558,656
Total	7,428	100.0	\$138,418,655

Table 51: Incidence of All Inpatient Stroke* by County, Sorted by County, Kentucky, 2022

***Includes inpatient deaths as well as non-fatal inpatient cases**

Age-Adjusted					Age-Adjusted					Age-Adjusted				
County	Freq	Percent	Rate	Crude Rate	County	Freq	Percent	Rate	Crude Rate	County	Freq	Percent	Rate	Crude Rate
Adair	57	0.4	216.0	291.5	Grant	105	0.8	371.9	413.6	McLean	37	0.3	291.5	407.7
Allen	65	0.5	233.0	305.1	Graves	132	1.0	254.9	358.5	Meade	74	0.5	222.7	258.6
Anderson	79	0.6	273.9	346.0	Grayson	116	0.8	340.7	438.1	Menifee	20	0.1	227.5	307.6
Ballard	19	0.1	169.7	244.6	Green	45	0.3	284.0	409.3	Mercer	64	0.5	221.1	292.4
Barren	134	1.0	230.9	302.5	Greenup	151	1.1	287.5	433.1	Metcalfe	39	0.3	270.0	387.8
Bath	45	0.3	289.6	360.5	Hancock	20	0.1	170.4	228.8	Monroe	52	0.4	343.5	492.9
Bell	87	0.6	243.8	341.4	Hardin	338	2.4	272.8	303.7	Montgomery	90	0.6	261.0	319.3
Boone	335	2.4	225.0	247.4	Harlan	94	0.7	290.3	367.7	Morgan	36	0.3	211.9	273.9
Bourbon	75	0.5	271.9	376.9	Harrison	67	0.5	289.1	354.1	Muhlenberg	70	0.5	164.8	229.8
Boyd	235	1.7	353.4	505.2	Hart	52	0.4	225.8	273.5	Nelson	172	1.2	311.5	370.3
Boyle	84	0.6	202.8	276.6	Henderson	26	0.2	41.0	58.1	Nicholas	24	0.2	251.5	331.8
Bracken	26	0.2	254.1	313.8	Henry	46	0.3	219.0	286.3	Ohio	59	0.4	184.8	246.9
Breathitt	40	0.3	260.3	318.7	Hickman	17	0.1	223.5	389.6	Oldham	121	0.9	175.0	180.6
Breckinridge	70	0.5	228.9	340.8	Hopkins	104	0.8	167.8	232.9	Owen	41	0.3	268.5	372.2
Bullitt	205	1.5	199.9	249.4	Jackson	34	0.2	187.1	254.9	Owsley	18	0.1	328.1	415.6
Butler	46	0.3	255.7	362.1	Jefferson	2737	19.7	294.5	356.6	Pendleton	47	0.3	252.1	322.2
Caldwell	33	0.2	172.3	260.1	Jessamine	170	1.2	255.3	314.5	Perry	136	1.0	421.9	534.3
Calloway	78	0.6	157.5	198.5	Johnson	82	0.6	284.4	372.7	Pike	240	1.7	314.9	420.6
Campbell	220	1.6	196.5	234.0	Kenton	388	2.8	204.4	231.0	Powell	53	0.4	386.9	433.8
Carlisle	16	0.1	221.0	341.0	Knott	43	0.3	225.2	296.3	Pulaski	228	1.6	255.0	347.9
Carroll	39	0.3	298.0	363.5	Knox	117	0.8	307.8	377.2	Robertson	*	-	-	-
Carter	132	1.0	361.4	497.3	Larue	46	0.3	230.9	318.8	Rockcastle	42	0.3	174.8	250.7
Casey	46	0.3	219.6	286.3	Laurel	200	1.4	266.7	326.6	Rowan	71	0.5	271.3	287.7
Christian	104	0.8	150.2	145.5	Lawrence	56	0.4	279.7	362.8	Russell	65	0.5	285.6	361.2
Clark	135	1.0	284.4	370.2	Lee	24	0.2	248.2	330.2	Scott	172	1.2	314.0	294.2
Clay	59	0.4	258.1	300.5	Leslie	45	0.3	326.9	467.0	Shelby	123	0.9	207.7	247.9
Clinton	18	0.1	117.9	178.0	Letcher	135	1.0	446.9	636.4	Simpson	61	0.4	266.4	327.3
Crittenden	24	0.2	175.6	271.3	Lewis	26	0.2	138.0	196.0	Spencer	64	0.5	283.9	326.8
Cumberland	21	0.2	189.4	321.9	Lincoln	67	0.5	197.2	273.8	Taylor	90	0.6	260.5	350.1
Daviess	286	2.1	221.3	280.5	Livingston	33	0.2	226.9	365.0	Todd	15	0.1	90.1	120.5
Edmonson	34	0.2	183.3	277.9	Logan	71	0.5	186.0	259.0	Trigg	18	0.1	85.7	121.8
Elliott	7	0.1	66.5	95.0	Lyon	22	0.2	144.2	270.5	Trimble	15	0.1	142.7	176.9
Estill	56	0.4	278.4	396.9	Madison	250	1.8	241.1	265.2	Union	9	0.1	52.9	62.3
Fayette	848	6.1	247.1	261.1	Magoffin	32	0.2	216.6	266.3	Warren	432	3.1	314.5	321.2
Fleming	45	0.3	240.0	308.2	Marion	71	0.5	278.8	367.6	Washington	40	0.3	259.4	329.3
Floyd	114	0.8	256.4	326.0	Marshall	86	0.6	182.3	276.0	Wayne	73	0.5	235.3	361.2
Franklin	178	1.3	274.0	348.2	Martin	25	0.2	182.6	226.6	Webster	24	0.2	144.2	185.7
Fulton	22	0.2	266.1	369.6	Mason	25	0.2	111.0	146.8	Whitley	205	1.5	479.1	562.4
Gallatin	22	0.2	223.4	250.6	McCracken	242	1.7	251.4	368.7	Wolfe	40	0.3	415.8	562.9
Garrard	58	0.4	236.0	327.3	McCreary	55	0.4	262.9	322.2	Woodford	87	0.6	235.3	325.1

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 52: Incidence of All ED Stroke* by County, Sorted by County, Kentucky, 2022

*Includes ED deaths as well as non-fatal ED cases

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate
Adair	64	0.9	229.9	327.3	Grant	64	0.9	237.2	252.1	McLean	10	0.1	77.4	110.2
Allen	49	0.7	172.7	230.0	Graves	76	1.0	152.3	206.4	Meade	25	0.3	67.8	87.4
Anderson	27	0.4	92.8	118.3	Grayson	61	0.8	175.9	230.4	Menifee	19	0.3	206.3	292.2
Ballard	6	0.1	58.0	77.2	Green	40	0.5	239.1	363.8	Mercer	59	0.8	214.7	269.5
Barren	96	1.3	182.7	216.7	Greenup	68	0.9	144.7	195.0	Metcalfe	36	0.5	253.5	357.9
Bath	20	0.3	136.7	160.2	Hancock	20	0.3	168.9	228.8	Monroe	35	0.5	244.5	331.8
Bell	81	1.1	231.7	317.9	Hardin	156	2.1	124.7	140.2	Montgomery	58	0.8	164.7	205.8
Boone	114	1.5	74.7	84.2	Harlan	70	0.9	229.0	273.8	Morgan	42	0.6	276.2	319.6
Bourbon	34	0.5	134.2	170.8	Harrison	49	0.7	211.0	259.0	Muhlenberg	61	0.8	156.7	200.3
Boyd	108	1.4	173.1	232.2	Hart	45	0.6	182.2	236.7	Nelson	131	1.8	242.3	282.0
Boyle	92	1.2	222.7	303.0	Henderson	66	0.9	114.4	147.5	Nicholas	21	0.3	223.3	290.3
Bracken	13	0.2	116.5	156.9	Henry	31	0.4	152.7	192.9	Ohio	43	0.6	136.2	179.9
Breathitt	38	0.5	258.3	302.8	Hickman	5	0.1	54.3	114.6	Oldham	60	0.8	82.9	89.6
Breckinridge	37	0.5	127.0	180.2	Hopkins	93	1.2	158.0	208.2	Owen	15	0.2	88.0	136.2
Bullitt	66	0.9	65.0	80.3	Jackson	28	0.4	157.1	209.9	Owsley	11	0.1	206.6	254.0
Butler	17	0.2	92.3	133.8	Jefferson	1071	14.4	115.9	139.6	Pendleton	16	0.2	72.6	109.7
Caldwell	31	0.4	163.1	244.3	Jessamine	40	0.5	65.2	74.0	Perry	115	1.5	372.7	451.8
Calloway	69	0.9	140.0	175.6	Johnson	51	0.7	174.6	231.8	Pike	162	2.2	219.8	283.9
Campbell	70	0.9	65.5	74.5	Kenton	124	1.7	65.9	73.8	Powell	24	0.3	165.5	196.4
Carlisle	7	0.1	101.4	149.2	Knott	45	0.6	246.4	310.1	Pulaski	173	2.3	201.6	264.0
Carroll	25	0.3	201.8	233.0	Knox	73	1.0	190.8	235.3	Robertson	*	-	-	-
Carter	66	0.9	194.7	248.7	Larue	25	0.3	136.5	173.2	Rockcastle	51	0.7	222.8	304.5
Casey	40	0.5	203.7	249.0	Laurel	121	1.6	162.2	197.6	Rowan	52	0.7	221.2	210.7
Christian	87	1.2	135.3	121.7	Lawrence	42	0.6	217.4	272.1	Russell	53	0.7	218.6	294.5
Clark	58	0.8	116.1	159.1	Lee	24	0.3	293.2	330.2	Scott	79	1.1	139.9	135.1
Clay	39	0.5	166.2	198.7	Leslie	49	0.7	360.0	508.5	Shelby	77	1.0	128.2	155.2
Clinton	26	0.3	178.6	257.2	Letcher	78	1.0	281.5	367.7	Simpson	59	0.8	266.6	316.6
Crittenden	14	0.2	114.7	158.2	Lewis	18	0.2	103.0	135.7	Spencer	33	0.4	141.2	168.5
Cumberland	21	0.3	185.5	321.9	Lincoln	63	0.8	191.5	257.5	Taylor	86	1.2	256.6	334.5
Daviess	107	1.4	82.9	104.9	Livingston	19	0.3	150.3	210.2	Todd	14	0.2	97.0	112.5
Edmonson	16	0.2	83.6	130.8	Logan	50	0.7	136.1	182.4	Trigg	29	0.4	142.0	196.3
Elliott	6	0.1	57.3	81.4	Lyon	9	0.1	65.6	110.7	Trimble	10	0.1	92.2	117.9
Estill	35	0.5	193.5	248.1	Madison	136	1.8	134.6	144.3	Union	30	0.4	175.5	207.7
Fayette	247	3.3	73.2	76.1	Magoffin	25	0.3	169.2	208.0	Warren	202	2.7	149.9	150.2
Fleming	24	0.3	128.4	164.4	Marion	55	0.7	223.1	284.8	Washington	27	0.4	178.9	222.3
Floyd	95	1.3	218.7	271.6	Marshall	52	0.7	103.1	166.9	Wayne	53	0.7	186.2	262.3
Franklin	86	1.2	129.5	168.2	Martin	27	0.4	195.4	244.8	Webster	29	0.4	171.2	224.4
Fulton	5	0.1	53.3	84.0	Mason	33	0.4	142.5	193.7	Whitley	106	1.4	253.5	290.8
Gallatin	10	0.1	109.1	113.9	McCracken	86	1.2	91.7	131.0	Wolfe	22	0.3	240.9	309.6
Garrard	34	0.5	136.3	191.9	McCreary	43	0.6	204.0	251.9	Woodford	22	0.3	59.9	82.2

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 53: Incidence of All Inpatient Stroke* by County, Sorted by Frequency, Kentucky, 2022

***Includes inpatient deaths as well as non-fatal inpatient cases**

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate		Freq	Percent	Rate	Crude Rate
Jefferson	2737	19.7	294.5	356.6	Marshall	86	0.6	182.3	276.0	Rockcastle	42	0.3	174.8	250.7
Fayette	848	6.1	247.1	261.1	Boyle	84	0.6	202.8	276.6	Owen	41	0.3	268.5	372.2
Warren	432	3.1	314.5	321.2	Johnson	82	0.6	284.4	372.7	Breathitt	40	0.3	260.3	318.7
Kenton	388	2.8	204.4	231.0	Anderson	79	0.6	273.9	346.0	Washington	40	0.3	259.4	329.3
Hardin	338	2.4	272.8	303.7	Calloway	78	0.6	157.5	198.5	Wolfe	40	0.3	415.8	562.9
Boone	335	2.4	225.0	247.4	Bourbon	75	0.5	271.9	376.9	Carroll	39	0.3	298.0	363.5
Daviess	286	2.1	221.3	280.5	Meade	74	0.5	222.7	258.6	Metcalfe	39	0.3	270.0	387.8
Madison	250	1.8	241.1	265.2	Wayne	73	0.5	235.3	361.2	McLean	37	0.3	291.5	407.7
McCracken	242	1.7	251.4	368.7	Logan	71	0.5	186.0	259.0	Morgan	36	0.3	211.9	273.9
Pike	240	1.7	314.9	420.6	Marion	71	0.5	278.8	367.6	Edmonson	34	0.2	183.3	277.9
Boyd	235	1.7	353.4	505.2	Rowan	71	0.5	271.3	287.7	Jackson	34	0.2	187.1	254.9
Pulaski	228	1.6	255.0	347.9	Breckinridge	70	0.5	228.9	340.8	Caldwell	33	0.2	172.3	260.1
Campbell	220	1.6	196.5	234.0	Muhlenberg	70	0.5	164.8	229.8	Livingston	33	0.2	226.9	365.0
Bullitt	205	1.5	199.9	249.4	Harrison	67	0.5	289.1	354.1	Magoffin	32	0.2	216.6	266.3
Whitley	205	1.5	479.1	562.4	Lincoln	67	0.5	197.2	273.8	Bracken	26	0.2	254.1	313.8
Laurel	200	1.4	266.7	326.6	Allen	65	0.5	233.0	305.1	Henderson	26	0.2	41.0	58.1
Franklin	178	1.3	274.0	348.2	Russell	65	0.5	285.6	361.2	Lewis	26	0.2	138.0	196.0
Nelson	172	1.2	311.5	370.3	Mercer	64	0.5	221.1	292.4	Martin	25	0.2	182.6	226.6
Scott	172	1.2	314.0	294.2	Spencer	64	0.5	283.9	326.8	Mason	25	0.2	111.0	146.8
Jessamine	170	1.2	255.3	314.5	Simpson	61	0.4	266.4	327.3	Crittenden	24	0.2	175.6	271.3
Greenup	151	1.1	287.5	433.1	Clay	59	0.4	258.1	300.5	Lee	24	0.2	248.2	330.2
Perry	136	1.0	421.9	534.3	Ohio	59	0.4	184.8	246.9	Nicholas	24	0.2	251.5	331.8
Clark	135	1.0	284.4	370.2	Garrard	58	0.4	236.0	327.3	Webster	24	0.2	144.2	185.7
Letcher	135	1.0	446.9	636.4	Adair	57	0.4	216.0	291.5	Fulton	22	0.2	266.1	369.6
Barren	134	1.0	230.9	302.5	Estill	56	0.4	278.4	396.9	Gallatin	22	0.2	223.4	250.6
Carter	132	1.0	361.4	497.3	Lawrence	56	0.4	279.7	362.8	Lyon	22	0.2	144.2	270.5
Graves	132	1.0	254.9	358.5	McCreary	55	0.4	262.9	322.2	Cumberland	21	0.2	189.4	321.9
Shelby	123	0.9	207.7	247.9	Powell	53	0.4	386.9	433.8	Hancock	20	0.1	170.4	228.8
Oldham	121	0.9	175.0	180.6	Hart	52	0.4	225.8	273.5	Menifee	20	0.1	227.5	307.6
Knox	117	0.8	307.8	377.2	Monroe	52	0.4	343.5	492.9	Ballard	19	0.1	169.7	244.6
Grayson	116	0.8	340.7	438.1	Pendleton	47	0.3	252.1	322.2	Clinton	18	0.1	117.9	178.0
Floyd	114	0.8	256.4	326.0	Butler	46	0.3	255.7	362.1	Owsley	18	0.1	328.1	415.6
Grant	105	0.8	371.9	413.6	Casey	46	0.3	219.6	286.3	Trigg	18	0.1	85.7	121.8
Christian	104	0.8	150.2	145.5	Henry	46	0.3	219.0	286.3	Hickman	17	0.1	223.5	389.6
Hopkins	104	0.8	167.8	232.9	Larue	46	0.3	230.9	318.8	Carlisle	16	0.1	221.0	341.0
Harlan	94	0.7	290.3	367.7	Bath	45	0.3	289.6	360.5	Todd	15	0.1	90.1	120.5
Montgomery	90	0.6	261.0	319.3	Fleming	45	0.3	240.0	308.2	Trimble	15	0.1	142.7	176.9
Taylor	90	0.6	260.5	350.1	Green	45	0.3	284.0	409.3	Union	9	0.1	52.9	62.3
Bell	87	0.6	243.8	341.4	Leslie	45	0.3	326.9	467.0	Elliott	7	0.1	66.5	95.0
Woodford	87	0.6	235.3	325.1	Knott	43	0.3	225.2	296.3	Robertson	*	-	-	-

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Table 54: Incidence of All ED Stroke* by County, Sorted by Frequency, Kentucky, 2022

*Includes ED deaths as well as non-fatal ED cases

County	Age-Adjusted				County	Age-Adjusted				County	Age-Adjusted			
	Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude		Freq	Percent	Rate	Crude
Jefferson	1071	14.4	115.9	139.6	Muhlenberg	61	0.8	156.7	200.3	Webster	29	0.4	171.2	224.4
Fayette	247	3.3	73.2	76.1	Oldham	60	0.8	82.9	89.6	Jackson	28	0.4	157.1	209.9
Warren	202	2.7	149.9	150.2	Mercer	59	0.8	214.7	269.5	Anderson	27	0.4	92.8	118.3
Pulaski	173	2.3	201.6	264.0	Simpson	59	0.8	266.6	316.6	Martin	27	0.4	195.4	244.8
Pike	162	2.2	219.8	283.9	Clark	58	0.8	116.1	159.1	Washington	27	0.4	178.9	222.3
Hardin	156	2.1	124.7	140.2	Montgomery	58	0.8	164.7	205.8	Clinton	26	0.3	178.6	257.2
Madison	136	1.8	134.6	144.3	Marion	55	0.7	223.1	284.8	Carroll	25	0.3	201.8	233.0
Nelson	131	1.8	242.3	282.0	Russell	53	0.7	218.6	294.5	Larue	25	0.3	136.5	173.2
Kenton	124	1.7	65.9	73.8	Wayne	53	0.7	186.2	262.3	Magoffin	25	0.3	169.2	208.0
Laurel	121	1.6	162.2	197.6	Marshall	52	0.7	103.1	166.9	Meade	25	0.3	67.8	87.4
Perry	115	1.5	372.7	451.8	Rowan	52	0.7	221.2	210.7	Fleming	24	0.3	128.4	164.4
Boone	114	1.5	74.7	84.2	Johnson	51	0.7	174.6	231.8	Lee	24	0.3	293.2	330.2
Boyd	108	1.4	173.1	232.2	Rockcastle	51	0.7	222.8	304.5	Powell	24	0.3	165.5	196.4
Daviess	107	1.4	82.9	104.9	Logan	50	0.7	136.1	182.4	Wolfe	22	0.3	240.9	309.6
Whitley	106	1.4	253.5	290.8	Allen	49	0.7	172.7	230.0	Woodford	22	0.3	59.9	82.2
Barren	96	1.3	182.7	216.7	Harrison	49	0.7	211.0	259.0	Cumberland	21	0.3	185.5	321.9
Floyd	95	1.3	218.7	271.6	Leslie	49	0.7	360.0	508.5	Nicholas	21	0.3	223.3	290.3
Hopkins	93	1.2	158.0	208.2	Hart	45	0.6	182.2	236.7	Bath	20	0.3	136.7	160.2
Boyle	92	1.2	222.7	303.0	Knott	45	0.6	246.4	310.1	Hancock	20	0.3	168.9	228.8
Christian	87	1.2	135.3	121.7	McCreary	43	0.6	204.0	251.9	Livingston	19	0.3	150.3	210.2
Franklin	86	1.2	129.5	168.2	Ohio	43	0.6	136.2	179.9	Menifee	19	0.3	206.3	292.2
McCracken	86	1.2	91.7	131.0	Lawrence	42	0.6	217.4	272.1	Lewis	18	0.2	103.0	135.7
Taylor	86	1.2	256.6	334.5	Morgan	42	0.6	276.2	319.6	Butler	17	0.2	92.3	133.8
Bell	81	1.1	231.7	317.9	Casey	40	0.5	203.7	249.0	Edmonson	16	0.2	83.6	130.8
Scott	79	1.1	139.9	135.1	Green	40	0.5	239.1	363.8	Pendleton	16	0.2	72.6	109.7
Letcher	78	1.0	281.5	367.7	Jessamine	40	0.5	65.2	74.0	Owen	15	0.2	88.0	136.2
Shelby	77	1.0	128.2	155.2	Clay	39	0.5	166.2	198.7	Crittenden	14	0.2	114.7	158.2
Graves	76	1.0	152.3	206.4	Breathitt	38	0.5	258.3	302.8	Todd	14	0.2	97.0	112.5
Knox	73	1.0	190.8	235.3	Breckinridge	37	0.5	127.0	180.2	Bracken	13	0.2	116.5	156.9
Campbell	70	0.9	65.5	74.5	Metcalfe	36	0.5	253.5	357.9	Owsley	11	0.1	206.6	254.0
Harlan	70	0.9	229.0	273.8	Estill	35	0.5	193.5	248.1	Gallatin	10	0.1	109.1	113.9
Calloway	69	0.9	140.0	175.6	Monroe	35	0.5	244.5	331.8	McLean	10	0.1	77.4	110.2
Greenup	68	0.9	144.7	195.0	Bourbon	34	0.5	134.2	170.8	Trimble	10	0.1	92.2	117.9
Bullitt	66	0.9	65.0	80.3	Garrard	34	0.5	136.3	191.9	Lyon	9	0.1	65.6	110.7
Carter	66	0.9	194.7	248.7	Mason	33	0.4	142.5	193.7	Carlisle	7	0.1	101.4	149.2
Henderson	66	0.9	114.4	147.5	Spencer	33	0.4	141.2	168.5	Ballard	6	0.1	58.0	77.2
Adair	64	0.9	229.9	327.3	Caldwell	31	0.4	163.1	244.3	Elliott	6	0.1	57.3	81.4
Grant	64	0.9	237.2	252.1	Henry	31	0.4	152.7	192.9	Fulton	5	0.1	53.3	84.0
Lincoln	63	0.8	191.5	257.5	Union	30	0.4	175.5	207.7	Hickman	5	0.1	54.3	114.6
Grayson	61	0.8	175.9	230.4	Trigg	29	0.4	142.0	196.3	Robertson	*	-	-	-

* At least one but fewer than five

- Percentage or rate suppressed to prevent disclosure of the value on which it was based

Appendix B: Methods, Abbreviations, Definitions and Data

Methods

Data used for surveillance were received electronically. Hospital Discharge Data (HDD) files from the Kentucky Office of Health Policy are routinely received by the Kentucky Injury Prevention and Research Center (KIPRC) for surveillance purposes. These files now include both emergency department billing data as well as inpatient hospitalization billing data. The calendar year of 2015 marks the initial use of new ICD-10-CM coding on hospital medical records. This new coding began 10/2015, leaving the year with three quarters of the old coding and a final quarter with the new coding. General equivalency mappings (GEMs) have been used to translate ICD-9 coding to ICD-10 coding but further discussion and exploration is needed to ascertain the coding going forward.

Crude incidence rates were calculated for each injury type by dividing the number of injuries by 4,509,394, the most recent estimated population of Kentucky according to the Kentucky State Data Center, and then multiplying by 100,000. This figure represents the number of TBI, NTBI, SCI or stroke that occurred per 100,000 residents of Kentucky. Age-adjusted rates were calculated using the Year 2000 Standard Population. Data analysis, including mapping, was performed using SAS Version 9.4.

Abbreviations

- TBI – Traumatic Brain Injury
- NTBI – Non-traumatic Brain Injury
- SCI – Spinal Cord Injury
- CNSI – Central Nervous System Injury
- MVTC – Motor Vehicle Traffic Crash
- ETS – Exposure to Toxic Substances
- KIPRC – Kentucky Injury Prevention and Research Center

Identification of Cases

Traumatic brain injury case definition

The Centers for Disease Control and Prevention (CDC) have established standards for TBI case identification (CDC, 1995). Hospitals are currently using ICD-10 codes for injury coding. Definitions are being developed using the new ICD-10 coding. The following ICD-10 codes were used to identify TBI records:

- Fracture of vault or base of skull: S02.0 - S02.1
- Fractures of other specified skull and facial bones or unspecified fracture of skull: S02.8, S02.91
- Intracranial injury, including concussion, cerebral edema, diffuse and focal traumatic brain injury, epidural/subdural/subarachnoid hemorrhage and unspecified intracranial injury: S06.0-S06.9
- Crushing injury of skull: S07.1
- Shaken infant syndrome: T74.4

If one or more of these codes was found in any of the diagnosis code fields in the HDD, the record was determined to be a TBI.

Non-traumatic brain injury case definition

In addition to CDC-defined TBI, there are many brain injuries that have non-traumatic etiologies. These we have classified as NTBI. Because these diagnoses are not included in the CDC definition of TBI, they have been linked and analyzed separately. These conditions were also identified by ICD-10 diagnosis codes, as follows:

- Anoxia: G91(.0-.2), G93.1, J96, R09.0, T71, T751
- Allergy/Anaphylaxis: T78.0, T78.2, T80.5, T80.6, T88.1, T88.6
- Acute Medical Clinical Incidents: G00, G01, G02, G03, G04(.0,2,3,8,9), G05, G06.0, G07, A39.0, A39.81, A85, A86, A87, A88.8, A89, C70.0, C71, C79.3, D32.0, D33(.0-.2), D42.0, D43(.0-.2), D49.6, G37.4, A83, B00.4, B01(.0,1), B02(.0,1), B37.5
- Toxic Substances: G92, T40, T41, T42(.3-.7), T45.5, T51, T56, T57, T58, T60, T61, T62, T64, T65, T81.1, T88.2, T88.5

Anoxia includes but is not limited to:

- brain damage related to hereditary and degenerative diseases of the central nervous system
- nervous system complications (related to medical care)
- drowning and nonfatal submersion
- asphyxia

If one or more of these codes was found in any of the diagnosis code fields in the HDD, the record was classified as an NTBI.

Spinal cord injury case definition

SCI was defined by the following ICD-10 diagnosis codes:

- Concussion and edema of cervical/thoracic/lumbar and sacral spinal cord or other and unspecified injuries: S14.0, S14.1, S24.0, S24.1, S34.0, S34.1
- Injury of cauda equina: S34.3

For this report, SCI records had to contain one of these codes in one of the first three diagnosis code fields in the HDD.

Stroke case definition

The following ICD-10 diagnosis codes (n-codes) were used for identifying stroke cases in HDD:

- Hemorrhages (subarachnoid, intracerebral): I60, I61
- Cerebral infarction: I63
- Occlusion and stenosis of precerebral arteries (not resulting in cerebral infarction): I65
- Transient cerebral ischemic attacks: G45

If one or more of these codes was found in any of the diagnosis code fields in the HDD, the record was determined to be a stroke related hospital visit. It is anticipated that this definition will be fine tuned in future reports.