

## Central Nervous System Injury (CNSI) Surveillance System



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<b>State Web Site:</b>	<a href="http://www.mc.uky.edu/kiprc/programs/tbi-surveillance.html">http://www.mc.uky.edu/kiprc/programs/tbi-surveillance.html</a>
<b>National Web Site:</b>	<a href="http://www.cdc.gov/ncipc/tbi/TBI.htm">http://www.cdc.gov/ncipc/tbi/TBI.htm</a>

### **Sources of Information for the Database**

The Central Nervous System Injury (CNSI) Surveillance Project is funded by the Kentucky Traumatic Brain Injury Trust Fund Board under the Cabinet for Health and Family Services' Department of Aging and Independent Living. The purpose is to track cases of traumatic brain injury, spinal cord injury, acquired brain injury, and stroke as defined by the Centers for Disease Control and Prevention (CDC) and the Kentucky Revised Statutes (KRS 211.470). Cases are taken from two sources: inpatient hospital records and emergency department visits for CNSI are ascertained using the Kentucky Hospital Discharge Database (HDD). Fatalities are obtained from the National Center for Health Statistics' annual Multiple Cause of Death (MCO) files. When reported on jointly, these sources are linked to resolve duplication of cases across databases, using a probabilistic methodology based upon research by Fellegi and Sunter (1969) and Jaro (1985, 1995).

### **Description of the Data Collected**

Data are collected on the injured person's demographics (age, gender, county of residence), cause of injury (mechanism, manner, and external cause of injury code) injury severity (fatality indicator, injury severity score, length of stay in hospital, and discharge), and diagnoses, as well as the hospital name, payers billed, and total charges billed for those who were hospitalized.

### **Strengths of the Data**

The MCODE and HDD files are population-based rather than relying on a sampling strategy. The CDC's Central Nervous System Injury Data Submission Standards – 2002 are followed. This is a widely accepted standard, meaning that Kentucky's results are comparable to those of many other states who conduct CNSI surveillance.

### **Data Limitations**

There are two main limitations to the CNSI data:

- **Incompleteness of residence data:** Because the MCODE files are based on cases collected under Kentucky's Vital Statistics Surveillance System, data collected on fatal CNSI cases can sometimes be incomplete. Also, the HDD does not capture Kentucky residents who are treated in out-of-state hospitals, including those treated for CNSI.
- **Lack of identifying information:** Without being able to identify individuals within the HDD database, it is impossible to ascertain whether the visit is for a new, first time brain or spinal cord injury or a repeat visit with a new injury or complication of an old injury.

### **Specific Uses of Information**

- Annual CNSI surveillance report
- Ad-hoc data requests and reporting

### **System Evaluation**

The MCODE files are based on death certificate files provided to the National Center for Health Statistics (NCHS) by the Kentucky Vital Statistics Surveillance System (KVSSS). Therefore, evaluation measures described under the KVSSS entry apply to this system as well. Computerized edit checks are also in place by the collecting source for the HDD as well.

### **Data Set Availability**

The Kentucky Injury Prevention and Research Center's (KIPRC's) data use agreements for the hospital discharge and MCODE databases do not permit the release of case-level data from the CNSI database. Aggregated (tabular) data may be requested by contacting Shannon Beaven at KIPRC.

### **Data Release Policy**

The Central Nervous System Injury Surveillance database is not made generally available. Ad-hoc data requests are filled by way of summary data, with suppression of counts less than 5 in areas where confidentiality may be threatened.

### **Data Publications**

Since 1998, KIPRC has published an annual report of the Traumatic Brain Injury and Spinal Cord Injury Project. The fiscal year 2017 report describes injuries that occurred in 2016 (calendar year) and will be available on the website:

<http://www.mc.uky.edu/kiprc/programs/tbi-surveillance/reports.html>, once finalized.

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**Suggested Data Citation**

Kentucky Injury Prevention and Research Center (KIPRC). *Central Nervous System Injury Surveillance Project*. Lexington, Kentucky: University of Kentucky [data year].

**References**

- Fellegi IP, Sunter AB. A theory for record linkage. *Journal of the American Statistical Association*, 1969; 64(328):1183-1210.
- Jaro M. Advances in record linkage methodology as applied to matching the 1985 census of Tampa, Florida. *Journal of the American Statistical Association*, 1989; 84(406):16-21.
- Jaro M. Probabilistic linkage of large public health data files. *Statistics in Medicine*, 1995; 14:491-498.

**Contributing Author**

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