



## CENTRAL NERVOUS SYSTEM INJURY (CNSI) SURVEILLANCE PROJECT

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**State Web Site:  
National Web Site:**

<http://www.mc.uky.edu/kiprc/projects/tbi/index.html>  
<http://www.cdc.gov/ncipc/tbi/TBI.htm>

### 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. Its purpose is to track cases of traumatic brain injury, spinal cord injury, and acquired brain injury 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 hospitalizations as well as 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 (MCOB) 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 disposition at 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. We have followed, to the extent possible, the CDC's *Central Nervous System Injury Data Submission Standards – 2002*. This is a widely accepted standard, meaning that Kentucky's results are comparable to those of many other states who conduct CNSI surveillance.

## 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 (KVSS), so evaluation measures described under that system's 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 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.

## Data Publications

KIPRC has published a report of the *Traumatic Brain Injury and Spinal Cord Injury Project* annually since 1998. The fiscal year 2012 report describes injuries that occurred in 2011 and will be available on the website (<http://www.mc.uky.edu/kiprc/projects/tbi/index.html>) once finalized.

## 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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