

Appendix 1. High-level Characteristics of Data Systems Commonly Used in Nonfatal Injury Analyses, United States — 2018^a

Data System	Access/Format	Data Source	Sampling Method	More Information
National Electronic Injury Surveillance System (NEISS)	Free online query tool: NEISS Highlights, Data, and Query Builder (https://www.cpsc.gov/cgibin/NEISSQuery/home.aspx)	Emergency department (ED) visits from 100 hospitals involving product-related injuries; ~360,000 unweighted, ~14 million weighted	Stratified probability sampling of 5,000 United States (US) participating hospitals (categorized as small, medium, large, and very large)	https://www.cpsc.gov/Research--Statistics/NEISS-Injury-Data
	NEISS is an injury surveillance system that monitors consumer product-related injuries treated in selected EDs nationally.			
National Electronic Injury Surveillance System-All Injury Program (NEISS-AIP)	Free online query tool: Web-based Injury Statistics Query and Reporting System (WISQARS) (https://webappa.cdc.gov/sasweb/ncipc/nfirates.html)	ED visits from 66 of 100 NEISS hospitals; ~500,000 unweighted, ~28 million weighted	Voluntary participation of hospitals within NEISS hospital sample (see NEISS sampling method)	https://www.cdc.gov/injury/wisqars/nonfatal.html
	NEISS-AIP is an expansion of NEISS to include all non-fatal injuries, regardless of consumer product involvement. It is utilized to produce and analyze national estimates for injury-related ED visits.			
National Health Interview Survey (NHIS)	Data files available: Family, Household, Injury Episode, Person, Sample Child, and Sample Adult files in ASCII, CSV, SAS, Stata, and SPSS formats	Health information from non-institutionalized population of select households in all 50 US states and the District of Columbia (DC)	Cross-sectional household interview survey. Sampling and interviews occur on a continuous basis. Designed to permit representative sampling of households and non-institutional group quarters (e.g., dorms). Sampling method redesigned after every decennial census	https://www.cdc.gov/nchs/nhis/about_nhis.htm
	NHIS is a comprehensive survey of the civilian non-institutionalized population residing in the United States at the time of interview. The survey results provide data to track health status, health care access, and progress towards achieving national health goals.			
National Hospital Ambulatory Medical Care Survey (NHAMCS)	Data files available: Public use files available (limited data); Outpatient Department Visits, Emergency Department Visits (full data) in SAS, SPSS, and Stata format	Ambulatory visits to ED departments	National probability sample of visits to outpatient and emergency departments of noninstitutionalized general and short stay community hospitals. Three stage sampling design includes: Geographic segments (PSUs), hospitals within PSUs, emergency service areas within hospitals	https://www.cdc.gov/nchs/ahcd/about_ahcd.htm
	NHAMCS collects data on utilization and provision of ambulatory care services in hospital emergency and outpatient departments and ambulatory surgery locations.			

Data System	Access/Format	Data Source	Sampling Method	More Information
National Ambulatory Medical Care Survey (NAMCS)	Data files available: Public use files available (limited); NAMCS full data in SAS, SPSS, and Stata formats	Patient visits to physician offices (physician-reported data)	Multistage probability design involving probability samples of geographic segments (primary sampling units (PSUs)), physician practices within the PSUs, and patient visits within practices	https://www.cdc.gov/nchs/ahcd/about_ahcd.htm
	NAMCS collects data on health care provided by office-based physicians.			
State Inpatient Databases (SID)	-Free online query tool (2018 data year not yet available): HCUPnet query system (https://hcupnet.ahrq.gov/#setup) -Data files available: Core, Charge, and AHA linkage files available in ASCII format	Includes all discharges from participating community hospitals	Census	https://www.hcup-us.ahrq.gov/db/state/siddbdocumentation.jsp
	SID is a set of state-level databases that capture discharge-level inpatient data in participating states. These data can be used to assess health care utilization, access, charges and costs, quality, and outcomes.			
State Emergency Department Databases (SEDD)	-Free online query tool (2018 data year not yet available): (https://hcupnet.ahrq.gov/#setup) -Data files available: Core, Charge, AHA linkage files available in ASCII format	Includes all ED visits from participating community hospitals	Census	https://www.hcup-us.ahrq.gov/db/state/sedddbdocumentation.jsp
	SEDD is a set of state-level databases that capture encounter-level information for all emergency department visits that do not result in an admission to that hospital. SEDD can be used for analyzing trends in ED use, access, charges, and outcomes.			
State Ambulatory Surgery and Services Databases (SASD)	Data files available: Core, Charge, and AHA linkage files available in ASCII format	All reported data from hospital-owned ambulatory surgery facilities at participating hospitals (some states include non-hospital owned facilities)	Census	https://www.hcup-us.ahrq.gov/db/state/sasddbdocumentation.jsp
	SASD is a set of state-level databases that capture encounter-level data for ambulatory services from hospital-owned facilities. Some states provide ambulatory surgery and outpatient services from nonhospital-owned facilities. It allows for studying of many topics related to outpatient surgeries.			

Data System	Access/Format	Data Source	Sampling Method	More Information
Kids' Inpatient Database (KID)^a	-Free online query tool: (https://hcupnet.ahrq.gov/#setup) -Data files available: Inpatient Core, Diagnosis and Procedure Groups, Disease Severity Measure, and Hospital Weights files available in ASCII format	Pediatric discharges (younger than 21 years old) in 47 states from 4,200 hospitals, taken from all community, non-rehabilitation hospitals; ~3 million unweighted, ~6 million weighted	Stratified sample of pediatric discharges from State Inpatient Databases (SID): 10% stratified sample of uncomplicated births; 80% stratified sample of other pediatric discharges (complicated births, pediatric non-births)	https://www.hcup-us.ahrq.gov/db/nation/kid/kiddbdocumentation.jsp
	KID is a database of hospital inpatient stays for children. It allows researchers to study a broad range of conditions and procedures related to child health issues.			
Nationwide Emergency Department Sample (NEDS)	-Free online query tool: (https://hcupnet.ahrq.gov/#setup) -Data files available: Core, Supplemental ED, Supplemental Inpatient, Hospital Weights files available in ASCII format	ED visits from 953 hospitals in 37 states; ~33 million unweighted, ~144 million weighted	20% stratified, random-sampling design taken from a sample of hospital-based EDs from US states participating in both the SID and the SEDD. 100% of the ED visits are used from the sampled hospitals. Stratification variables: <i>geographic region</i> (Northeast, Midwest, West, or South), <i>teaching status</i> (teaching/non-teaching), <i>control</i> (public, voluntary, proprietary), <i>Trauma Center Designation</i>	https://www.hcup-us.ahrq.gov/db/nation/neds/nedsdbdocumentation.jsp
	NEDS is all-payer encounter-level longitudinal hospital care billing data, obtained through federal-state-industry partnership. NEDS produces national estimates for ED visits, regardless if the visit results in admission. It is commonly used to analyze ED utilization patterns.			
National (Nationwide) Inpatient Sample (NIS)	-Free online query tool: (https://hcupnet.ahrq.gov/#setup) -Data files available: Inpatient Core, Diagnosis and Procedure Groups, Disease Severity Measure, and Hospital Weights files available in ASCII format	Hospital discharges from 4,550 hospitals in 48 states: ~7 million unweighted, ~35 million weighted	20% stratified systematic sample of discharges sampled from SID; stratification variables include: <i>census division</i> (New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific), <i>location</i> (urban/rural), <i>teaching status</i> (teaching/non-teaching), <i>control</i> (public, voluntary, proprietary), <i>bed size</i> (small, medium, large)	https://www.hcup-us.ahrq.gov/db/nation/nis/nisdbdocumentation.jsp

Data System	Access/Format	Data Source	Sampling Method	More Information
	NIS is the largest all-payer inpatient care database in the United States. Its uses include to identify, track, and analyze national trends in health care utilization, access, charges and costs, quality and outcomes.			
Nationwide Readmissions Database (NRD)	-Free online query: (https://hcupnet.ahrq.gov/#setup) -Data files available: Core, Diagnosis and Procedure Group, Hospital, and Severity files available through HCUP Central Distributor in ASCII format	Readmissions from SID community hospitals, excluding rehabilitation or long-term acute care hospitals: ~17 million unweighted, ~36 million weighted	Derived from SID with verified patient linkage numbers. Discharges are post-stratified by <i>census region</i> (Northeast, Midwest, South, West), <i>location</i> (urban/rural), <i>teaching status</i> (teaching/non-teaching), <i>control</i> (public, voluntary, proprietary), <i>bed size</i> (small, medium, large), <i>patient sex</i> , <i>patient age</i> (0, 1-17, 18-44, 45-64, 65+)	https://www.hcup-us.ahrq.gov/db/nation/nrd/nrddbdocumentation.jsp
	NRD is a database of hospital inpatient stays. NRD is designed to permit researchers to estimate national rates of readmissions for all payers and the uninsured, to explore reasons for returning to the hospital for care, and to estimate hospital costs for discharges with and without readmission.			
Nationwide Ambulatory Surgery Sample (NASS)	Data files available: Hospital, Encounter, and Supplemental files via HCUP Central Distributor in ASCII format	Ambulatory surgery encounters from 2,699 hospitals in 32 states: 7.7 million unweighted, 10.7 million weighted	Stratified cluster sample from SASD using community non-rehabilitation hospitals with general acute care and children's service types performing in-scope major ambulatory surgeries	https://www.hcup-us.ahrq.gov/db/nation/nass/nassdbdocumentation.jsp
	NASS is the largest United States all-payer ambulatory surgery database which captures major ambulatory surgery encounters in hospital-owned facilities and can be used to produce national estimates.			
National Trauma Data Bank (NTDB)	Data files available: ASCII, CSV, and SAS formats	Admissions data from trauma centers in the United States (pay to submit data), with a mix of university centers and community or non-teaching hospitals	Admission records sent yearly by centers to NTDB voluntarily	https://www.facs.org/quality-programs/trauma/tqp/center-programs/ntdb
	NTDB is the largest aggregation of United States trauma registry data and can be used to analyze trends in trauma center admissions.			

Data System	Access/Format	Data Source	Sampling Method	More Information
National Emergency Medical Services Information System (NEMSIS)	-Free online query tool: V3 EMS Data Cube (https://nemsis.org/view-reports/public-reports/ems-data-cube/) -Data files available: ASCII, CSV, SAS, and STATA formats	~30 million EMS activations from National EMS registry	Survey of hospitals which voluntarily participate	https://nemsis.org/
	NEMSIS is a national database of standardized emergency medical services data from US states and territories. NEMSIS can be used to analyze EMS responses, response times, and patient outcomes.			
MarketScan	Data files available: Multiple datasets (e.g., Inpatient Admissions, Outpatient Services, Outpatient Pharmaceutical Claims, Medicaid, Medicare Supplemental) in SAS format	Commercial insurance data from medical claims of 50-60 million IBM Watson Truven Health clients annually	Convenience sample	https://www.ibm.com/products/marketscan-research-databases
	MarketScan contains a large number of de-identified healthcare claims information from employers, health plans, and hospitals for commercially insured individuals as well as some Medicare and Medicaid beneficiaries. MarketScan provides additional information for some enrollees helpful for analyses, such as details about insurance plan benefits, laboratory results, health risk assessments, and discharge data.			
Medicare Provider Analysis Review (MedPAR) Limited Data Sets	Data files available: no information on format	Inpatient Hospital or Skilled Nursing Facility (SNF) claims data from the National Claims History (NCH) files as stay-level records (captures 98% of final claims in Standard Analytic Files)	SNF and inpatient hospital SAFs produced by CMS are utilized to produce the MedPAR file	https://resdac.org/cms-data/files/medpar
	MedPAR consolidates inpatient hospital or Skilled Nursing Facility (SNF) claims data from the National Claims History (NCH) files into stay-level records. MedPAR can be used to analyze length of hospital stay.			
Outcome and Assessment Information Set (OASIS)	Data files available: no information on format	Medicare-certified home health agency records	Encounter-level Medicare-certified home health agency records, collected from Medicare and Medicaid reimbursed patients (excluding pre-/post-natal care)	https://resdac.org/cms-data/files/oasis

Data System	Access/Format	Data Source	Sampling Method	More Information
				OASIS is a data collection tool that collects data through Medicare's home health care industry and is used to measure and evaluate home health care outcomes in nonmaternity adult patients. Certain data on health service use are collected; information on demographics, health status, and functional status of home care patients is collected as well.

^a2016 documentation was used to compile characteristics for KID, since this was the most recent data available at the time of the study.

Appendix 2. Additional Data Systems and Data Resources Considered for Nonfatal Injury Surveillance and Research^a

Data System/Resource	Link
Alcohol-Related Disease Impact (ARDI)	https://nccd.cdc.gov/DPH_ARDI/default/default.aspx
American Hospital Association (AHA) Annual Survey	https://www.ahadata.com/aha-annual-survey-database
Behavioral Risk Factor Survey System (BRFSS)	http://www.cdc.gov/brfss/
Census of Agriculture (COA)	http://www.nass.usda.gov/Census_of_Agriculture/index.aspx <small>external icon</small>
Census of Fatal Occupational Injuries (CFOI)	https://www.bls.gov/iif/oshcfoi1.htm
Census of Juveniles in Residential Placement (CJRP)	https://www.census.gov/econ/overview/go3100.html
Department of Transportation (DOT) Federal Railroad Administration (FRA)	http://safetydata.fra.dot.gov/OfficeofSafety/Default.aspx <small>external icon</small>
Drug Abuse Warning Network (DAWN)	https://www.datafiles.samhsa.gov/study-series/drug-abuse-warning-network-dawn-nid13516
Fatality Analysis Reporting System (FARS)	http://www.nhtsa.gov/FARSEXTERNAL <small>external icon</small>
Health Behavior in School-Aged Children (HBSC) Series	http://hbcs-nesstar.nsd.no/webview/
Indian Health Service-Ambulatory Care & Inpatient Care Systems	http://www.ihs.gov/nonmedicalprograms/ihs_stats/external <small>external icon</small>
Injury Control and Risk of Injury Survey (ICARIS I, II, II½)	https://www.cdc.gov/Injury/wisqars/pdf/ICARIS2-PublicUse-DataSet-Documentation.pdf
International Collaborative Effort (ICE) on Injury Statistics	https://www.cdc.gov/nchs/injury/advice.htm
MarketScan Health Risk Assessment (HRA)	https://www.ibm.com/products/marketscan-research-databases/databases
Medical Expenditure Panel Survey (MEPS)	http://www.meps.ahrq.gov/mepsweb/index.jsp <small>external icon</small>
Medicare Current Beneficiary Survey (MCBS)	https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS
Minimum Data Set for Nursing Home Resident Assessment and Care Screening (MDS-Nursing Homes)	https://healthcaredelivery.cancer.gov/seermedicare/medicare/mds.html
Monitoring the Future Survey (MTFS)	http://www.monitoringthefuture.org/
Motor Vehicle Occupant Safety Survey (MVOSS)	https://nasemso.org/wp-content/uploads/NHTSA-2016-Motor-Vehicle-Occupant-Safety-Survey.pdf
National Automotive Sampling System-Crashworthiness Data System (NASS-CDS)	https://www.nhtsa.gov/national-automotive-sampling-system/crashworthiness-data-system
National Automotive Sampling System-General Estimates System (NASS-GES)	https://www.nhtsa.gov/national-automotive-sampling-system/nass-general-estimates-system
National Child Abuse and Neglect Data System (NCANDS)	https://www.acf.hhs.gov/cb/data-research/ncands
National Electronic Injury Statistics Query System – Work RISQS	https://www.cdc.gov/Wisards/workrisqs/default.aspx
National Emergency Department Inventory - USA	https://www.emnet-usa.org/research/studies/medi/
National Fire Incident Reporting System (NFIRS)	https://www.usfa.fema.gov/nfirs/
National Highway Traffic Safety Administration (NHTSA) Special Crash Investigation (SCI)	https://www.nhtsa.gov/research-data/special-crash-investigations-sci
National Hospital Discharge Survey (NHDS)	https://www.cdc.gov/nchs/nhds/index.htm
National Incidence Study of Child Abuse and Neglect (NIS)	https://www.childwelfare.gov/topics/systemwide/statistics/nis/

Data System/Resource	Link
National Incident Based Reporting System (NIBRS)	https://www.fbi.gov/services/cjis/ucr/nibrs
National Longitudinal Survey of Youth (NLSY97)	https://www.nlsinfo.org/content/getting-started
National Mortality Followback Survey	http://www.cdc.gov/nchs/nvss/nmfs.htm
National Occupant Protection Use Survey (NOPUS)	https://crashstats.nhtsa.dot.gov/#!/PublicationList/18
National Poison Data System (NPDS)	https://aapcc.org/national-poison-data-system
National Survey of (Drinking and Driving)/(Distracted and Drowsy Driving)/(Speeding and Unsafe Driving) Attitudes and Behaviors	https://icsw.nhtsa.gov/people/injury/research/
National Survey on Drug Use and Health (NSDUH)	https://nsduhweb.rti.org/respweb/homepage.cfm
National Syndromic Surveillance Program (NSSP)	https://www.cdc.gov/nssp/index.html
National Traumatic Occupational Fatality Surveillance System (NTOF)	https://cfpub.epa.gov/si/si_public_record_Report.cfm?Lab=OEI&dirEntryID=132462
National Violence Against Women Survey (NVAW)	https://www.ojp.gov/pdffiles1/nij/183781.pdf
National Violent Death Reporting System (CDC-NVDRS)	https://www.cdc.gov/violenceprevention/datasources/nvdrs/index.html
National Vital Statistics System (NVSS)	http://www.cdc.gov/nchs/nvss.htm
National Youth Survey (NYS) Series	https://www.icpsr.umich.edu/web/facts/series/88/studies
School Survey on Crime and Safety	https://nces.ed.gov/surveys/ssocs/
Survey of Occupational Injuries and Illnesses (SOII)	http://www.bls.gov/iif/home.htmexternal icon
Toxic Exposure Surveillance System (TESS)	https://pubmed.ncbi.nlm.nih.gov/9466085/
TransStats: The Intermodal Transportation Database	https://www.transtats.bts.gov/
Uniform Crime Reports-Supplemental Homicide Reports (UCR-SHR)	https://www.icpsr.umich.edu/web/NACJD/studies/37064
United States Eye Injury Registry – American Society of Ocular Trauma	https://useir.org/
Youth Risk Behavior Survey (YRBSS)	https://www.cdc.gov/healthyyouth/data/yrbs/index.htm

^aThese data systems/resources were not within the study scope; however, many may assist in answering injury research questions investigating injury risk factors, specific injury mechanisms/intents, fatal injuries, and occupational injuries.