

# KENTUCKY INJURY PREVENTION AND RESEARCH CENTER

## 2021 Annual Report

June 28, 2022



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from the director

Terry L. Bunn



Welcome to the [Kentucky Injury Prevention and Research Center](#)'s (KIPRC's) 2021 Annual Report on collaborative research, surveillance, interventions, and community practice. KIPRC produced research studies on multiple injury topics, including 16 peer-reviewed and 16 non-peer-reviewed publications as well as 22 research and surveillance presentations. Dr. Ashley Bush received the 2021 Rising Star Award in injury and violence prevention at the 2021 Safe States Alliance Annual Conference.

The Kentucky Violence and Injury Prevention Program's (KVIPP's) Checkpoints™ was implemented in 15 Kentucky high schools in collaboration with the Kentucky Office of Highway Safety, the Traf-

fic Safety Education Foundation, the Kentucky Department for Public Health, local health departments, local organizations, and Safe Communities. KVIPP supports the Purple Star Program, a state-sponsored recognition for individual schools' dedication and support of military-connected youth. KIPRC staff participated in the Council of State and Territorial Epidemiologists' Child Abuse and Neglect Exploratory Indicator Workgroup that produced the "Nonfatal Child Abuse and Neglect Hospitalizations Exploratory Indicator Guidance". KVIPP supports Question, Persuade, Refer train-the-trainer trainings in partnership with the Kentucky Department for Behavioral Health, Developmental, and Intellectual Disabilities and the

Kentucky Suicide Prevention Group to strengthen suicide prevention across the state. The Overdose Data to Action Program's FindHelpNowKY.org partnered with the Deaf and Hard of Hearing Services program at the Kentucky Division for Behavioral Health, Developmental and Intellectual Disabilities, to produce a video explaining the substance use disorder treatment locator website in American Sign Language and additional resources.

KIPRC would like to thank the agencies and organizations with which we collaborate on injury prevention, and we would like to thank the Kentucky Department for Public Health for continuing to entrust KIPRC with bona fide agent status to serve the residents of the Commonwealth of Kentucky.

Keep safe and healthy,

Dr. Terry L. Bunn, Director  
Kentucky Injury Prevention and Research Center





## Kentucky Surveillance Quality Improvement

### project overview

The Kentucky Surveillance Quality Improvement (SQI) program was funded by a competitive award from the Centers for Disease Control and Prevention (CDC) that ended in November 2021. While active, the SQI program:

- conducted scientifically sound injury data investigations to inform and advance the consensus process for developing, implementing, and updating standardized injury surveillance definitions and reporting methodologies;
- recommended and implemented assurance and quality control processes to improve the injury surveillance quality of hospital discharge and emergency department visit data;
- developed continuing education training for medical coders on improved injury coding and for physicians and medical certifiers on improved injury documentation; and
- produced programming tools, presentations on investigation results, and peer-reviewed publications to advance injury surveillance epidemiological capacity in state and local health departments.

### presentations

Costich JF, Quesinberry DB, Daniels L, Bush A. Emerging threats to injury surveillance data quality. Academy-Health Annual Research Meeting, June 2022.

Costich JF, Slavova S, Quesinberry D. Improving the quality of injury surveillance: Report on a five-year multi-state initiative. AcademyHealth Annual Research Meeting, June 2021.

### reports and publications

Costich JF, Daniels L, Quesinberry DB. Trends in ICD-10-CM-Coded administrative data sets for injury surveillance and research. *Southern Medical Journal*. Forthcoming.

Costich JF, Vos SC, Quesinberry DB. (2022). Practitioners assess achievements and challenges of nonfatal injury surveillance. *Journal of Public Health Management & Practice*. 2022 May-Jun 01;28(3):258-263.

### key personnel

Svetla Slavova, PhD

Julia Costich, PhD, JD

Anna Hansen, MS

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### funding

Centers for Disease Control and Prevention

## Kentucky Violence and Injury Prevention Program

### project overview

The Kentucky Violence and Injury Prevention Program (KVIPP) supports the implementation and evaluation of multiple injury prevention programs focusing on adverse childhood experiences, traumatic brain injury (TBI), older adult falls, transportation safety, and military-connected children. These focus areas are addressed through robust data surveillance, informed strategic collaborations and partnerships, and assessment and evaluation. Under KVIPP, Kentucky's statewide injury and violence prevention network—the Kentucky Safety and Prevention Alignment Network (KSPAN)—identifies, supports, and evaluates program and policy interventions within priority focus areas and collaborates with partners to inform policies and practices. Under KSPAN, KIPRC serves as the internationally recognized Safe Communities Accrediting Center for the United States and as a National Institute for Occupational Safety and Health Total Worker Health® Affiliate Support Center.

### accomplishments and service

Checkpoints™ was implemented in 15 Kentucky high schools in collaboration with the Kentucky Office of Highway Safety, the Traffic Safety Education Foundation, the Kentucky Department for Public Health (KDPH), local health departments, local organizations, and Safe Communities. KVIPP worked with the Traffic Safety Education Foundation to include topic-specific videos to support the Checkpoints curriculum.

A KVIPP staff member serves as the treasurer for the Southeastern and Southwestern Injury Preven-

tion Network, which represents 13 states that have high injury and violence burden.

KVIPP staff participate on the Safe States Alliance Policy Committee.

KVIPP staff, in partnership with Face It Bluegrass, hosted a panel discussion and webinars during the COVID-19 pandemic on adverse childhood experiences.

KVIPP staff serve on the Advisory Board of the Purple Star Program, a state-sponsored recognition for individual schools' dedication and support of military-connected youth. The Purple Star Award designation lets military parents know, whether they are on active duty or in the National Guard or Reserves, that the school is dedicated to helping their child gain the education necessary to succeed.

KVIPP staff participate in the Council for State and Territorial Epidemiologists (CSTE) Injury Surveillance Workgroup and other CSTE workgroups that focus on informing and developing special emphasis reports on TBI, motor vehicle traffic injury, and suicide. KVIPP co-chaired a CSTE Child Abuse and Neglect Exploratory Indicator Workgroup, which led to the development of the "Nonfatal Child Abuse and Neglect Hospitalizations Exploratory Indicator Guidance" document. KVIPP participated in the CSTE Data Science Competencies workgroup, which led to the CSTE Injury Data Science Competencies for applied injury epidemiology programs. KSPAN hosted a Question, Persuade, Refer (QPR) train the trainer session on August 17, 2021, and



virtual QPR trainings were held in September and October 2021.

The Kentucky Safe Aging Coalition's annual Falls and Osteoporosis Summit highlighted fall prevention and osteoporosis and was held in collaboration with KDPH, the Kentucky Department for Aging and Independent Living, and KSPAN.

Keeping Infants Safe—a curriculum that was developed and implemented in partnership with Northern Kentucky District Health Department, Prevent Child Abuse Kentucky (PCAK), and KDPH Maternal Child Health—was modified for delivery to pregnant and expecting mothers at substance use disorder treatment centers.

KVIPP held a virtual Summer High School Green Dot Training Institute where Green Dot educators from the 13 Kentucky Rape Crisis Centers provided training to high school teachers and staff.

KVIPP staff collaborated with PCAK to offer resources, infant sleep sacks, and educational opportunities to expecting families and service providers

statewide. More than 40 organizations requested 1,685 prevention packs and additional materials on child abuse and neglect. KSPAN, in partnership with PCAK, hosted a learning session on abusive head trauma for staff.

KSPAN was recognized by PCAK as a longstanding partner that has gone above and beyond in service to families and children across the state.

KSPAN hosted webinars on a variety of topics, including the Kentucky Violent Death Reporting System; Kentucky child fatality and prevention; Purple Star Program; suicide prevention for those with disabilities; preventing child poisonings; and lethal means safety for veteran suicide prevention.

KVIPP staff and the KSPAN Child Home Safety Committee secured funding through CDC, Department of Justice, PCAK, and Kentucky Agency for Substance Abuse and Policy for firearm locks and medication storage boxes to reduce unintentional drug ingestions and firearm injuries among children. Mason County is working to become the state's fifth accredited Safe Community.

## presentations

Mangus L. Older adult falls and osteoporosis. Poster presented at the 2022 Virtual Optimal Aging Conference, April 25, 2022.

## reports and publications

Bush AM, Bunn TL, Liford M. (2021). Identification of work-related injury emergency department visits using International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes. *Injury Prevention*. 2021 Mar;27(S1):i3-i8. doi: 10.1136/injuryprev-2019-043507. PMID: 33674326; PMCID: PMC7948185.

Daniels, L., Bush A., Mirzaian, M. (2022). [Kentucky Resident Behavioral Health Indicators Report, 2016–2021](#). Kentucky Injury Prevention and Research Center.

Kentucky Violence and Injury Prevention Program. (2022). [Special Emphasis Report: Traumatic Brain Injury](#). Kentucky Injury Prevention and Research Center.

Kentucky Violence and Injury Prevention Program. (2022). [Kentucky Injury Indicators, 2020](#). Kentucky Injury Prevention and Research Center.

Kentucky Violence and Injury Prevention Program. (2021). [Kentucky Injury Indicators, 2019](#). Kentucky Injury Prevention and Research Center.



## key personnel

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## funding

Centers for Disease Control and Prevention  
Kentucky Department for Public Health, Chronic  
Disease Branch  
Kentucky Office of Highway Safety

## Pediatric and Adolescent Injury Prevention

### project overview

The Pediatric and Adolescent Injury Prevention Program (PAIPP) has two major goals: (1) prevent injury and injury-related death to Kentucky children by improving the safety of the environments in which they live, play, learn, and travel; and (2) improve the quality of Kentucky's child death and injury data through support for the child death review process at the local county level. PAIPP accomplishes this by using epidemiological data to develop education, public outreach, and support strategies for state and local agencies, health professionals, and other related professionals that address the prevention of childhood injuries at different ages and development stages. PAIPP's technical assistance and services cover the entire spectrum of pediatric intentional and unintentional injuries from birth to 18 years of age, addressing topics such as safe sleep, suicide, child maltreatment, fire, hyperthermia, and firearm death or injury.

### presentations

Howard, C. State Technical Assistance Webinar, Children's Safety Network. July 13-15, 2021.

### key personnel

Christina Howard, MD, FAAP  
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### contact

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### accomplishments and service

PAIPP collaborated with Department of Public Health Maternal and Child Health and Child Fatality Review coordinators to participate in child fatality review efforts of coroners, local teams, and pediatricians through assistance in the death review process. Teams are established in more than 100 Kentucky counties.

PAIPP provides educational opportunities on prevention of child maltreatment, including pediatric abusive head trauma.

PAIPP produced and disseminated the infographic [Injury Prevention: Unintentional Foreign Body Ingestions among Kentucky Youth 10 and Under.](#)

### funding

Kentucky Department for Public Health Division  
of Maternal and Child Health (through federal  
Maternal and Child Health Bureau block grant)  
University of Kentucky Department of Pediatrics  
Kosair Charities

## Residential Fire Injury Prevention

### project overview

The Residential Fire Injury Prevention program, through Federal Emergency Management Agency (FEMA) funding, trains local agency personnel and supplies smoke alarms, educational materials, and supporting documentation to local partners.

Local partner agencies identify low-income and at-risk households that lack working smoke alarms, then install smoke alarms in those homes and provide fire safety education to the resident(s). A home safety check, focusing on fire safety, fall prevention, emergency preparedness, and general safety, is completed at the time the alarms are installed. The results of the check are provided to the residents to make them aware of any safety hazards that were

identified in their home. These services are provided at no cost to the residents.

The current project supported the acquisition of 6,000 lithium battery-powered, long-life smoke alarms and related materials. The alarms installed through the project have a projected service life of 10 years.

### accomplishments and service

Since late 2019, 4,532 smoke alarms have been delivered to local partners across the Commonwealth.

### key personnel

Robert McCool, MS

### contact

Robert McCool, [rmccool@safekentucky.org](mailto:rmccool@safekentucky.org)

### funding

Federal Emergency Management Agency, U.S.  
Department of Homeland Security



## Kentucky Fatality Assessment and Control Evaluation

### project overview

The Kentucky Fatality Assessment and Control Evaluation (KY FACE) program conducts multi-source surveillance of occupational fatalities in Kentucky and studies worker fatalities to make recommendations to prevent similar incidents, particularly those involving the truck transportation and construction industries. Detailed reports, hazard alerts, and other prevention materials are produced and disseminated. KY FACE does not seek to determine fault or place blame on companies or individual workers.

### accomplishments and service

In the past year, two occupational fatality investigation reports were developed and disseminated to the KY FACE listserv and Kentucky Occupational Safety and Health Surveillance social media accounts: Twitter, Facebook, and Instagram:

- 20KY075: Manufacturing Worker Dies by Suicide
- 21KY002: Machinist Dies after Being Pulled into Manual Lathe

(All KY FACE case reports can be found on the [KY FACE website](#).)



KY FACE Case 21KY002 was featured in the September 2021 edition of the National Safety Council's Safety+Health magazine.

The 2021 September edition of the CDC Total Worker Health® in Action! eNewsletter featured

#### key personnel

Terry Bunn, PhD  
Ashley Bush, PhD  
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several FACE outputs, including:

- Hazard Alert: Intentional Self-Harm in the Workplace,
- Hazard Alert: Pedestrian Fatalities, and
- 2020 FACE Annual Report.

#### contact

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#### funding

Competitive funding received from the National Institute for Occupational Safety and Health

# Kentucky Occupational Safety and Health Surveillance

## project overview

The Kentucky Occupational Safety and Health Surveillance (KOSHS) program partners with agencies and organizations to identify Kentucky workers' safety and health concerns and develop, implement, and evaluate targeted interventions. The KOSHS program conducts comprehensive multi-source population-based surveillance of occupational injuries and illnesses occurring in Kentucky, using 30 occupational health indicators.

## accomplishments and service

KOSHS developed the following hazard alerts and disseminated them via the FACE general listserv and KOSHS social media accounts: Twitter, Facebook, and Instagram:

- Fatal Drug Overdose in the Workplace, March 2022, and
- Severe Weather Response and Recovery, March 2022.

The hazard alerts are accessible at [the KIPRC website](#).

The KOSHS Worker Injury County Profiles dashboard was updated to include data from years 2016–2020. Injury counts now include work-related records identified by either a payer of workers' compensation or an ICD-10-CM work-related external cause of injury code. The updated county profile dashboard was disseminated to occupational stakeholders and policy makers, was featured on KOSHS social media pages, and was published on [the KIPRC website](#). A factsheet of KIPRC data

resources, including the KOSHS Worker Injury County Profiles, was created for distribution to ad hoc data requesters and public health stakeholders working with KIPRC.

The Preparedness Coordinator for the City of Lexington, KY, requested data regarding heat-related illness and injury. KOSHS provided Worker Injury County Profiles and a prepared report on heat-related emergency department visits among Fayette County residents occurring 2017–2021. The data were used to inform heat-related illness mitigation planning by the city's Division of Emergency Management.

The KOSHS program completed several infographics concerning Total Worker that were published on the KOSHS website: [The Need for Worksite Wellness Programs in KY](#); [Prevalence of Health Determinants and Workplace Safety Conditions, Kentucky vs. USA, 2019](#); [Kentucky Employment Demographics, 2017–2020](#).

KOSHS-produced videos on semi-trailer safety continue to be featured by the Vertical Alliance Group and hosted on the KIPRC YouTube channel. The videos have been viewed more than 135,000 times. The four videos focus on injury prevention while 1) cranking trailer landing gear, 2) entering and exiting the trailer, 3) getting into and out of a truck cab, and 4) opening and closing swing-type trailer doors.

## presentations

- Bunn TL, Liford M, Turner M, Bush A. Driver injuries in heavy vs. light and medium truck local crashes, 2010–2019. National Occupational Injury Research Symposium (virtual), May 12, 2022.
- Bunn TL, Robertson M, Liford M, Thompson RT. Informing the development of a recovery-friendly workplace toolkit for small businesses. Society of the Advancement of Violence and Injury Research meeting, Washington DC, March 31, 2022.
- Bunn TL, Jennings T, Hines C, Coulter D, Kizewski A. Finding substance use disorder treatment facilities with openings: Expanding Kentucky's treatment locator to other states. Ex4OSHJ International Conference (virtual), December 9, 2021.

## reports and publications

- Mirzaian M, Sanderson W, Browning S, Bunn T. (2022.) Workers' compensation reported injuries among distillery industry workers, 2010–2019. *American Journal of Industrial Medicine*. 65(6):483–491. doi: 10.1002/ajim.23350. Epub 2022 Mar 25. PMID: 35338513
- Thompson RA, Sanderson WT, Westneat S, Bunn T, Lavender A, Tran A, Holsinger C, Flammia D, Zhang L, He Y. (2021). Perceptions of opioid and other illicit drug exposure reported among first responders in the southeast, 2017 to 2018. *Health Science Reports*. 4(3):e335. doi: 10.1002/hsr2.335. eCollection 2021 Sep. PMID: 34401522
- Bush AM, Bunn TL, Liford M. (2021). Identification of work-related injury emergency department visits using International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes. *Injury Prevention*. 27(S1):i3–i8. doi: 10.1136/injuryprev-2019-043507. PMID: 33674326; PMCID: PMC7948185
- AAA Foundation for Traffic Safety. December 2021. Research Brief: Improving Roadside Responder Crash Data: Outcomes from an Expert Roundtable Discussion. Bunn TL contributor.

## key personnel

Terry Bunn, PhD  
Nikiforos Stamatiadis, PhD  
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## contact

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## funding

Competitive funding received from National Institute for Occupational Safety and Health

# Occupational Motor Vehicle Injury Surveillance

## project overview

The Occupational Motor Vehicle Injury Surveillance (OMVIS) program received a competitive award from the CDC to develop a surveillance system to:

- identify, collect, and describe current and potential comprehensive multisource surveillance data on all occupational motor vehicle injury crashes (fatal and nonfatal injuries) in Kentucky;
- perform quality control of OMVIS surveillance data through a system quality assessment of timeliness, accuracy, completeness, uniformity, integration potential, and accessibility following the National Highway Traffic Safety Administration approach;
- conduct epidemiological analyses of OMVIS data to address occupational motor vehicle crashes and identify specific industry populations at risk; inform intervention, prevention, and surveillance improvement activities; and stimulate future research; and
- prepare and disseminate OMV injury research findings using National Institute for Occupational Safety and Health publications and communications, peer-reviewed publications, and presentations to trade associations.

## presentations

Pope C, Stamatiadis N, Bunn T, Souleyrette R, Fields T, and Liford M. Kentucky occupational motor vehicle injury surveillance. 11th Annual Southeast Regional Research Symposium with Southeastern Occupational Network, March 21, 2022.

Souleyrette R, Fields T, Pope C, and Stamatiadis N. Developing Kentucky's occupational motor vehicle injury surveillance program. Midwest Commercial Vehicle Safety Summit, June 1, 2022.

## key personnel

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Caitlin Pope, PhD  
Reginald Souleyrette, PhD, PE  
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## funding

National Institute for Occupational Safety and Health



## COVID-19 Vaccination Hesitancy in Long-Term Care Employees

### project overview

The Kentucky Occupational Safety and Health Surveillance Vaccine Taskforce Supplement (VTF) program identifies vaccine rates and hesitancy among employees in long-term care facilities within Kentucky. Mid-2021, the Center for Medicare and Medicaid Services announced that all nursing home

staff must be vaccinated against COVID-19, effective Jan. 1, 2022. The KOSHS VTF project developed a survey on COVID-19 vaccination attitudes that launched in mid-November. In the three weeks that the survey was available for respondents, the project received 24 responses.

### presentations

Arnett P. COVID-19 Vaccine Hesitancy in Long-Term Care. Southeast Regional Research Symposium, Southeastern States Occupational Network; 2022.

### key personnel

Paula Arnett, DrPH, MBA

### funding

National Institute for Occupational Safety and Health

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## COVID-19 Surveillance of Work-Related Cases

### project overview

The Kentucky Occupational Safety and Health Surveillance Worker Safety and Health Supplement program expands KOSHS surveillance to identify work-related COVID-19 cases within Kentucky. Kentucky syndromic surveillance data from March 2020 through June 2021 revealed 361 work-related COVID-19 cases. Four geographical areas in Kentucky have been identified as hot spots for this period.

Additionally, the National Institute for Occupational Safety and Health Industry and Occupational Computerized Coding System (NIOCCS) was used to code Kentucky COVID death certificates for industry and occupation. Of the more than 9,000 work-related COVID death certificates, 2,003 cases had insufficient information or were non-paid positions, leaving 7,036 cases to be analyzed. Occupational Safety and Health Administration Fatality/Catastrophe Report Forms are being transcribed into database format for analysis. Additional analysis is ongoing.

### presentations

Arnett P. COVID-19 Surveillance of work-related COVID cases. Southeast Regional Research Symposium, Southeastern States Occupational Network; 2022.

### key personnel

Paula Arnett, DrPH, MBA

### funding

National Institute for Occupational Safety and Health

### contact

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## Kentucky Trauma Registry

### project overview

The Kentucky Trauma Registry (KTR) was established by state law (Kentucky Revised Statute [KRS] 211.490 et seq.; 902 Kentucky Administrative Regulation [KAR] 28:040) to be the statewide repository for trauma data. It is housed administratively in the Kentucky Department for Public Health and managed by KIPRC.

Trauma system leadership is provided by the state Trauma Advisory Committee, the membership of which is set out in the governing statute. All trauma centers designated by the Commissioner of Public Health in the Kentucky Trauma Care System maintain trauma registries that are compatible with

National Trauma Data Bank standards established in the National Trauma Data Standard Data Dictionary. The trauma centers upload trauma data electronically every quarter to the KTR. With support from the National Highway Traffic Safety Administration through the Kentucky Transportation Cabinet, KIPRC analyzes the statewide trauma registry data and provides a detailed profile of the traumatic injuries treated in the state's trauma facilities.

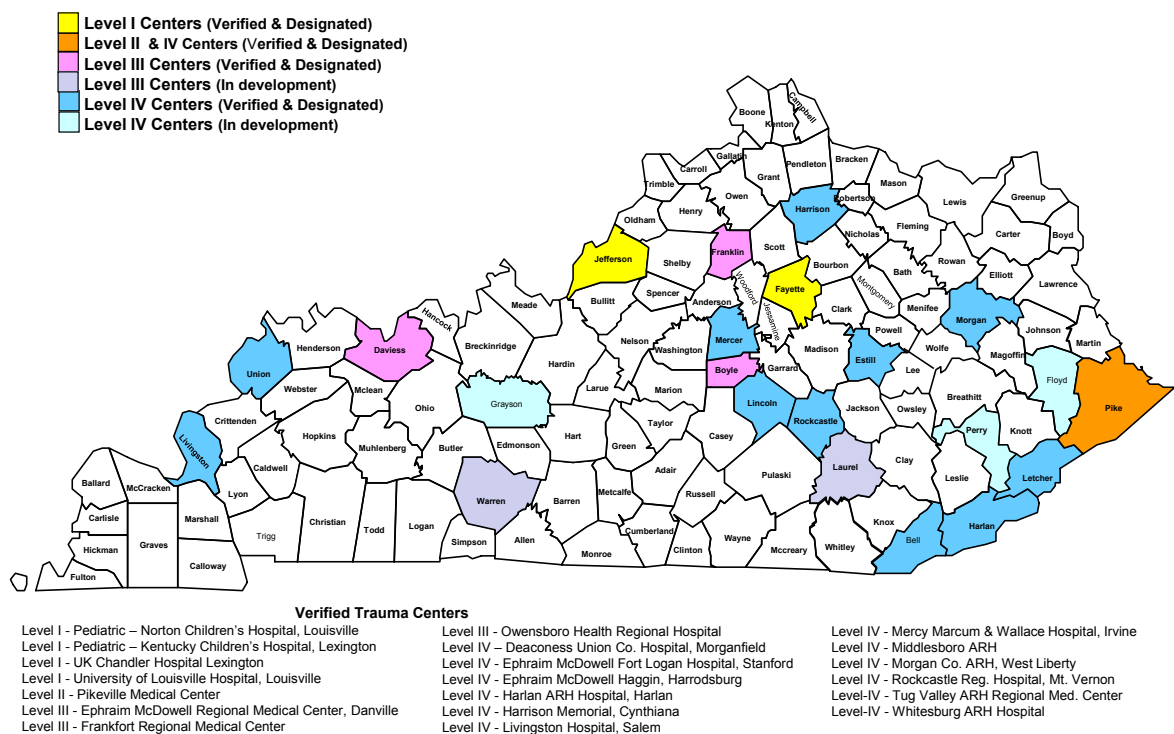
### accomplishments and service

Kentucky trauma systems are classified according to the level of care they are equipped to provide, using standards established by the American College of

Surgeons Committee on Trauma (ACS COT). As ACS COT does not have guidelines suitable for smaller rural facilities, those standards are set out in state law. Because participation in Kentucky's trauma system is voluntary, the number of hospitals reporting to the trauma registry varies from year to year. There were 28 actively reporting facilities in 2020, and KTR anticipates that the total number of cases reported for that year will exceed 14,000 once all reports are completed. The map below shows the location of the reporting facilities by county.

In addition to preparing and disseminating annual trauma data analyses, trauma registry staff participate in quality improvement initiatives addressing data integrity and timeliness as part of the National Highway Traffic Safety Administration's (NHTSA) five-year assessment of Kentucky-based NHTSA-funded projects.

## Hospitals in the Kentucky Trauma System (March 2022)



## publications

Costich JF, Daniels L. (2021). Kentucky Trauma Registry Report 2020. Kentucky Injury Prevention and Research Center. <https://kiprc.uky.edu/programs/kentucky-trauma-registry>.

## key personnel

Julia F. Costich, PhD, JD  
Lara Daniels, MPH

## funding

National Highway Traffic Safety Administration  
through Kentucky Transportation Cabinet

## contact

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## Central Nervous System Injury Surveillance

### project overview

The Central Nervous System Injury Surveillance project tracks cases of traumatic brain injury, spinal cord injury, nontraumatic brain injury, and stroke as defined by the CDC and KRS 211.470. Cases are selected from the Kentucky Hospital Discharge

Database and include both emergency department visits as well as inpatient admissions. An annual report is generated using these data, with 2010 being the first year that included emergency department cases.

### reports and publications

Beaven S. (2021). Central nervous system injury in Kentucky: Emergency department visits and hospitalizations, 2020. Kentucky Injury Prevention and Research Center.

### key personnel

Shannon Beaven, BS

### funding

Traumatic Brain Injury Trust Fund Board, Department of Aging and Independent Living

### contact

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## Action Research To Reduce Opioid Supply and Demand

### project overview

The Action Research to Reduce Opioid Supply and Demand project links electronic health records for University of Kentucky (UK) HealthCare patients with prescription drug monitoring data. The linked data are then de-identified and a set of high-risk opioid prescribing and co-prescribing measures are calculated for each patient and stored, along with the patient's discharge diagnoses and comorbidity data, in an analytical data set.

The analytical data set currently includes data for patients treated within UK HealthCare from January 2017 to present and is used by researchers from UK and UK HealthCare to inform the development of prescriber- and patient-targeted opioid safety interventions as well as to evaluate such interventions implemented by UK HealthCare in the last three years. Several evaluation studies are underway and manuscripts are under development.

## publications and reports

Oyler DR, Slade E, Slavova S, Matuszewski P, Lei F, Herndon B, Johnson S, Moghadamian E. (2022). The effect of a multimodal analgesic protocol on short- and long-term opioid use after orthopaedic trauma. *Journal of Orthopaedic Trauma*. 2022 Jan 6. doi: 10.1097/BOT.0000000000002346. Epub ahead of print. PMID: 34999625

## key personnel

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## funding

U.S. Department of Justice, Bureau of Justice Assistance

## other organizations or institutions represented

University of Kentucky HealthCare  
Kentucky All Schedule Prescription Electronic Reporting

# Data-Driven Responses to Prescription Drug Misuse in Kentucky

## project overview

The Data-Driven Responses to Prescription Drug Misuse in Kentucky project:

- analyzes gabapentin prescribing in Kentucky, where gabapentin became a Schedule V controlled substance [902 KAR 55:035 §1(e)] in July of 2017, by identifying populations and regions with elevated rates of dispensed prescriptions/doses and by describing patterns of concurrently prescribed controlled substances and other medications;
- tracks changes in gabapentin prescribing and associated health outcomes; and
- documents implementation of Kentucky's 2017 SB32, which amended KRS 218A.202 to

require the Administrative Office of the Courts to forward drug conviction data to Cabinet for Health and Family Services for inclusion in Kentucky All Schedule Prescription Electronic Reporting (KASPER), by (a) identifying appropriate data sources and measures for future evaluation of the law's impact on prescriber/dispenser behaviors; (b) surveying Kentucky prescribers and dispensers on awareness and understanding of the law; and (c) developing and providing continuing education for prescribers/dispensers on the content and interpretation of conviction data in collaboration with stakeholder agencies.

## reports and publications

Siddiqi K, Freeman PR, Fanucchi LC, Slavova S. (2021). Rural-urban differences in hospitalizations for opioid use-associated infective endocarditis in Kentucky, 2016-2019. *Journal of Rural Health*. June 2021:1– 8. <https://doi.org/10.1111/jrh.12605>

Hansen AC, Slavova S, O'Brien JM. (2021). Rural residency as a risk factor for severe maternal morbidity. *Journal of Rural Health*. Mar 8, 2021.

## continuing education

[Continuing education](#) is provided for pharmacists, physicians, nurse practitioners, and dentists on how to interpret drug conviction data in KASPER in the context of clinical care:

*Drug Conviction Data in KASPER: What Is a Pharmacist To Do?*

Target Audience: Pharmacists

CE Credit: 1.5 hours ACPE credit

*Drug Conviction Data in KASPER: What Is a Prescriber To Do?*

Target Audience: Physicians, nurse practitioners, and dentists

CE Credit: 1.5 hours ACCME, CDE, AANP, and HB1 credit



## key personnel

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GYeon Oh, PhD  
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## funding

U.S. Department of Justice, Bureau of Justice Assistance

## other organizations or institutions represented

KASPER

## Rural Center of Excellence with Focus on Recovery Housing

### project overview

The Rural Center of Excellence with Focus on Recovery Housing (RCOE-RH) focuses on increasing the quality and availability of and access to recovery housing in rural areas across more than 100 counties within the service area of Georgia, Idaho, Kentucky, Mississippi, Montana, Ohio, Oregon, Tennessee, Washington, and West Virginia.

The goals of the RCOE-RH are to:

- assist public health entities with evidence-based and evidence-informed strategies for the prevention of substance use disorder through promotion of recovery housing,
- provide technical assistance to rural communities for the establishment of affordable and sustainable recovery housing and the development of recovery housing quality standards,
- assist rural communities in the establishment of recovery housing options for low-income and high-risk populations, and
- utilize information technology to track, analyze, evaluate, promote, and manage recovery housing options and related resources.

The RCOE-RH works closely with state and local governments, national certification bodies, community organizations, and criminal justice institutions to achieve the mission of increasing high-quality, evidence-based, and available recovery housing options.

KIPRC is creating a recovery housing portal website that will include three core components: a dynamic near-real-time registry of recovery housing options and availability; a technical assistance, training, and resource directory for RCOE-developed train-

ing modules and resources as well as high-quality third-party training and resources; and a resident outcomes management system, called the Recovery Management System, to track and assess the outcomes of individuals before, during, and after a stay in a recovery house.

### accomplishments and service

During the reporting period, the RCOE-RH

- developed, conducted, and analyzed qualitative and quantitative business and technical needs assessments of recovery house owners and operators;
- developed a landscape assessment tool for identifying and cataloguing existing recovery housing across all 10 targeted states;
- designed and developed technical assistance satisfaction surveys and automated delivery and receipt processes;
- disseminated and analyzed data from assessment of physician knowledge, sentiments, and practices regarding medication-assisted treatment drugs; and
- established a learning management system with UMU to develop, store, and deliver a consistently increasing number of training and educational content.

To develop the website and recovery housing portal, The Fletcher Group, Inc. established a contract with Get Help, Inc. to leverage existing technology for recovery housing portal and to further develop the system according to website wireframes. A memorandum of understanding with Stop the Addiction Fatality Epidemic Project was established to collab-

orate on portal website development and educational/informational content.

The phase 1 beta versions of the national recovery housing locator and the Recovery Management System, both using the Get Help platform, were launched.

### presentations

Bunn TL, Jennings T. Recovery Ready Communities Advisory Council Meeting, December 7, 2021.

Bunn TL, Jennings, T. SJR59 Advisory Committee Meeting, October 25, 2021.

Bunn TL, Fletcher E. Upstream solutions for stimulant use disorder recovery. 2021 Cocaine, Meth, and Stimulant Summit (virtual), October 15, 2021.

### reports and publications

Miles J, Bunn T, Kizewski A, et al. (2021). Assessing technical assistance needs among recovery residence operators in the United States. [published online ahead of print, 2021 Jul 16]. *Journal of Psychoactive Drugs*. 2021;1-8. doi:10.1080/02791072.2021.1941442

Thompson RA, Johnson D, Kizewski A, Baier L, Coburn K, White J, Bunn T, & Fletcher E. (2022). Assessing waived and non-waived physician barriers to treating patients with substance use disorders: A cross-sectional Kentucky pilot. *Journal of Addictive Diseases*. March 2022. doi: 10.1080/10550887.2022.2035167

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Health Resource and Services Administration, Rural Communities Opioid Response Program, awarded to The Fletcher Group, Inc., through which KIPRC has received a subaward.

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### other organizations or institutions represented

The Fletcher Group, Inc.

# Methodological Advances in Evaluating Abuse-Deterrent Opioid Analgesics

## project overview

P1: Surveys of Clinical and Pharmacy Practice Involving Abuse-Deterrent Formulations

Lead: Dr. Patricia Freeman, University of Kentucky (project years 1, 2, and 3)

This study provides information on key factors that influence abuse-deterrent formulation (ADF) prescribing and dispensing behaviors in Kentucky to better understand the context of ADF utilization in clinical practice. The study will elucidate Kentucky pharmacists' derivation of days' supply and determine the validity of days' supply calculations to assist in the interpretation of prescription drug monitoring program data.

P3: Establishment of ADF-Related Opioid Mortality Surveillance System

Lead: Dr. Svetla Slavova, University of Kentucky (project years 1, 2, and 3)

This study establishes a novel state-specific near-real-time ADF-related opioid mortality surveillance system (AOMSS) based on multiple linked data sources to supplement studies on ADF prescribing, misclassification, abuse, and health outcomes. Monthly AOMSS data will provide timely observations and identify potential trends associated with overall ADF prescribing, dispensing, opioid abuse, and clinical condition- and outcome-related effects. Using AOMSS data, the study will examine opioid misuse progression and the role of ADFs in its prevention among the Kentucky Medicaid beneficiary population.

## accomplishments and service

- [Pharmacist survey](#) completed and manuscript under development.
- [REDCap AOMSS](#) established for continuous monitoring and research.

## publications and reports

- Slavova S, Freeman PR, Rock P, et al. (2022). Changing trends in drug overdose mortality in Kentucky: An examination of race and ethnicity, age, and contributing drugs, 2016-2020. *Public Health Reports*. 2022 Feb 21;333549221074390. doi: 10.1177/00333549221074390
- Slavova S, Quesinberry D, Hargrove S, et al. (2021). Trends in drug overdose mortality rates in Kentucky, 2019-2020. *JAMA Network Open*. 2021;4(7):e2116391-e2116391.
- Lei F, Lofwall M, Freeman P, Slade E, Vickers Smith R, Slavova S. (2022). Changes in transmucosal buprenorphine utilization for opioid use disorder treatment during the COVID-19 pandemic in Kentucky. *Journal of Rural Health*. 2022;00:1-11.
- Brown JR, Oh G, Wang Y, Slavova S, Delcher C, Dasgupta N, et al. (2021). Variation in abuse-deterrent formulation opioid prescribing in California, Florida, and Kentucky in 2018. *The Journal of Rural Health*. 2021;37(1):23-28.
- Dasgupta N, Brown JR, Nocera M, Lazard A, Slavova S, Freeman PR. (2022). Abuse-deterrent opioids: A survey of physician beliefs, behaviors, and psychology. *Pain Therapy*. 2022 Mar;11(1):133-151. doi: 10.1007/s40122-021-00343-z. Epub 2021 Dec 6. PMID: 34870790; PMCID: PMC8861217

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University of North Carolina  
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Office of the State Medical Examiner  
KASPER



# STIMuLINK

## project overview

Made possible by a grant from the CDC, STIMuLINK will identify risk/protective factors for stimulant-involved deaths that are actionable, for the development or adaptation of current prevention and intervention efforts. STIMuLINK will link records from fatal stimulant-involved overdoses found in Kentucky's drug overdose fatality surveillance system to electronic medical records (EMR) from the state's largest primary and safety net health care system, UK HealthCare, for the period 2017–2024. This innovative data linkage reduces the surveillance bias associated with medical information obtained only from coroner reports, makes EMR “gold standard” medical information available for research, improves data completeness needed for risk/protective factor ascertainment using the concept of “computable phenotypes,” and enables a comparative cohort of patients found in the EMR (i.e., those with evidence of harmful stimulant use). Using traditional and novel statistical approaches to analyze these cohorts, STIMuLINK will examine risk/protective factors predictive of fatal stimulant overdose using the social ecological model as the principal framework.

In parallel with these aims, STIMuLINK tests the use of existing biomedical natural language processing (NLP) tools to extract additional factors from the “literal text” notes found in DOFSS and compares findings from notes written by coroners to those written by medical examiners in neighboring states. The guidance and open-source software developed from this aim will advance the science of NLP for automating the workflow for injury surveillance.

STIMuLINK's multidisciplinary team includes epidemiologists, computer scientists, lawyers, statisticians, and behavioral scientists with experience working directly with communities affected by the current polydrug overdose epidemic. The project specifically includes ongoing communication points with vulnerable communities and clinical populations to increase the translational impact of the research.

## key personnel

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## funding

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## Overdose Data to Action

### project overview

The CDC-funded Kentucky Overdose Data to Action (OD2A) program uses a 10-strategy approach that supports state and local data-driven drug overdose prevention interventions. The OD2A program aims to:

- collect/disseminate timely emergency department drug-related data;
- collect/disseminate descriptions of drug overdose death circumstances with medical examiners;
- integrate drug overdose surveillance data and conduct drug overdose confirmatory drug testing to track illicit opioid and other drug supply changes;
- integrate KASPER data into patient electronic health records to inform clinical opioid prescribing;
- integrate state and local prevention activities through harm reduction, academic detailing, technical assistance, jail education programs, innovative intervention projects, and the opioid call center;
- expand FindHelpNowKY.org participation to medication-assisted treatment providers and establish a recovery housing availability website;
- enhance substance use disorder-related care through a perinatal quality collaborative;
- conduct Kentucky Substance Use Research and Enforcement (K-SURE) data analysis and support the Kentucky State Police Angel Initiative;
- develop, implement, and evaluate substance use disorder bystander training; and
- create a FindHelpNow peer-to-peer learning network on establishing substance use disorder (SUD) treatment locators.

### accomplishments and service

As of May 2022, [FindHelpNowKY.org](https://findhelpnowky.org) includes 745 treatment facilities; 48% offer medication-assisted treatment services.

FindHelpNowKY.org partnered with the Deaf and Hard of Hearing Services program at the Kentucky Division for Behavioral Health, Developmental and Intellectual Disabilities, to produce a video explaining the SUD treatment locator website in American Sign Language. Additionally, resources for the diverse linguistic community have been included on the [FindHelpNowKY.org website](https://findhelpnowky.org).

The state of Tennessee, Palm Beach County, Florida, and two counties in California are in the process of joining FindHelpNow.org.

The [Kentucky Resident Drug Overdose-Related Morbidity and Mortality Dashboard](#) for 2021 is now available.

The Kentucky Opioid Assistance and Resource Hotline received more than 1,100 calls related to opioid exposure concerns; more than 50% of these calls came from health care facilities.

Fifty-two ad hoc data requests for local and state stakeholders and media outlets were completed.

The [Drug Overdose Prevention Tackle Box](#), which contains information on developing community drug overdose prevention capacity, data sources, and evidence-based, evidence-informed, and promising programs on prevention, harm reduction, and treatment strategies, was disseminated to local health departments, county Agency for Substance Abuse

Policy Boards, and coalitions.

To date, KASPER has been integrated into more than 100 health care facilities in Kentucky.

A free online continuing education product, “Drug Screening Basics,” was created for pharmacists.

Naloxone education was provided at virtual and in-person events; 466 units of Narcan were distributed to attendees.

The third annual Kentucky Perinatal Quality Collaborative (KyPQC) meeting was held online in October 2021. The KyPQC’s first two initiatives with Kentucky birthing hospitals were launched. They focus on: 1) identifying women with substance use disorder, connecting them to treatment, and creating plans for action for care and 2) increasing reporting and identification of infants with neonatal abstinence syndrome to improve health outcomes for Kentucky’s mothers and babies. Nine birthing hospitals have participated in the initiatives, with eight participating in both.

A [K-SURE Pictodictionary](#), which provides images and information about six major overdose-related substances in Kentucky as well as treatment and recovery resources, was produced.

## reports and publications

Kentucky Injury Prevention and Research Center. [Kentucky Resident Drug Overdose-Related Morbidity and Mortality Dashboard](#); May 2022.

Kentucky Substance Use Research and Enforcement. (2022). [Pictodictionary: Six Major Overdose-Related Substances in Kentucky and Resources](#).

Kentucky Injury Prevention and Research Center. (2022). [Community Data Summit: Kentucky Resident Non-fatal Drug Overdoses and Substance Use-Related Morbidities](#).

Kentucky Injury Prevention and Research Center. (2022). [Kentucky Resident Drug Overdose Deaths, 2016–2020](#); January 2022.

Kentucky Substance Use Research and Enforcement. [K-SURE Brief No. 16: Six Major Overdose-Related Substances in Kentucky, Jan. 1, 2017–June 30, 2021](#); December 2021.

Kentucky Injury Prevention and Research Center. (2021). [Drug Overdose Deaths among Kentucky Veterans and Active Duty Military, 2016–2020](#); December 2021.

The Angel Initiative placed 26 individuals into substance use disorder treatment.

Thirty-four Kentucky State Police troopers completed crisis intervention team training.

The third annual Harm Reduction Summit was held virtually in August 2021 and was attended by 937 professionals from 30 states.

A substance use disorder bystander curriculum, Advisors 2 Action, was finalized. The curriculum is targeted toward academic advisers at the University of Kentucky and is available online via the Canvas platform. The curriculum consists of six modules and provides information on: definition of substance use disorder, the epidemiology of substance use, the importance of perceptions, becoming an ally for your community, resources in the community, and drug overdose education.

The surveillance team held a data summit webinar in January 2022 attended by 79 participants.

Kentucky Drug Overdose and Related Comorbidity County Profiles, 2016 to 2020, is now available on [the KIPRC website](#).

Kentucky Substance Use Research and Enforcement. (2021). [K-SURE Brief No. 15: Six Major Overdose-Related Substances in Kentucky, Jan. 1, 2017–March 31, 2021](#); December 2021.

Kentucky Injury Prevention and Research Center. (2021). [Kentucky Drug Overdose and Related Comorbidity County Profiles, 2016 to 2020](#), Dashboard.

Kentucky Substance Use Research and Enforcement. (2021). [K-SURE Brief No. 14: Four-Year Review of Substance Use and Distribution in Kentucky, 2017–2020](#); September 2021.

Kentucky Injury Prevention and Research Center. (2021). [Annual Report: Kentucky Resident Inpatient Hospitalizations for Nonfatal Drug Overdoses, 2016–2020](#).

Kentucky Injury Prevention and Research Center. (2021). [Annual Report: Kentucky Resident Emergency Department Admissions for Nonfatal Drug Overdoses, 2016–2020](#).

Kentucky Substance Use Research and Enforcement. (2021). [K-SURE Brief No. 13: Five Major Overdose-Related Substances in Kentucky, Jan. 1, 2017–Dec. 31, 2020](#).

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## Kentucky Violent Death Reporting System

### project overview

To better understand why violent deaths occur and to reduce the number of these deaths, the CDC developed the National Violent Death Reporting System (NVDRS), a nationwide state-based surveillance system designed to track trends and characteristics of violent death. In 2004, Kentucky became one of 17 CDC-funded states participating in the NVDRS; today, all 50 states, Puerto Rico, and Washington, DC, are funded. All participating states are required to collect information about violent deaths from death certificates, coroner/medical examiner reports, police reports, and toxicology reports.

All personal identifying information is removed before data are uploaded to the national system. Together, this information provides a more comprehensive picture of violent death. By integrating multiple data sources to form a violent death surveillance system, formerly disparate pieces of information can be compiled and analyzed.

Given the importance of death scene information for public health prevention efforts and criminal prosecution, innovative approaches are needed to help gather death scene information and forensic



evidence in resource-constrained settings. The Kentucky Violent Death Reporting System (KYVDRS), to improve timeliness of the data, has been awarded a Data Science Demonstration Project grant through the American Public Health Association. The overall goal of this project is to further develop, pilot test, and evaluate a mobile tool (Death Scene Investigation [DSI] Mobile Technology) intended to improve written scene documentation to correlate with photo evidence and recreate the scene for police, forensic(s), agencies with a legitimate interest, and documentation of decedent information to determine terminal episode history and medical, mental, and social history. The DSI-Mobile Tech is

proposed to be used as a nonlinear checklist guiding the investigator(s) to best practices and giving prompts based on probabilities from previous forensic investigations, results from CDC focus groups and National Institute of Justice guidelines.

This technology will help death scene investigators gather and record information on precipitating circumstances of deaths using a standardized guiding format to gain greater detail from survivors and witnesses (i.e., pre-death information) as well as to process forensic evidence, uniformly, for post-death examination.

### reports and publications

Brown S, Schuman DL. Suicide in the time of COVID-19: A perfect storm. *The Journal of Rural Health*. 2020. doi: 10.1111/jrh.12458.

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