

one hundred sleep related deaths in infants in 2021. In this study, we seek to identify demographics of infants with a cause of death identified as SUID at a large tertiary children's hospital.

Methods: Patients less than 12 months of age who presented to a level one pediatric trauma center were identified using an established National Trauma Database. A retrospective chart review was conducted, identifying patients with ICD codes including suffocation, asphyxiation, and unsafe sleep environment. Events surrounding the death of the included patients were identified by autopsy report, or if unavailable, by chart documentation at time of presentation. Patients with an underlying medical etiology for their death were excluded. Charts were reviewed for documented parental ages, circumstances regarding event, autopsy report, previous encounters in the medical system, and documented safe sleep conversations. Deprivation index (DI) was assigned by home zip code based on a principal components analysis of six American Community Survey measures by the US census.

Results: A total of 69 patients were identified from 2013– 2022, of which 55 met the inclusion criteria. Of the included patients, 60% had autopsy findings consistent with suffocation or an unsafe sleep event. Of those patients without autopsies or those with inconclusive autopsy findings, all had documentation in the chart regarding unsafe sleep. The average DI of the included patients was .489, a statically significant difference ($p < .0001$) than the national mean. On our review, 44% of patients had a documented encounter in the Electronic Medical Record (EMR) prior to their death and only 33% had documentation regarding safe sleep-in previous visits in the EMR.

Conclusions: Unsafe sleep, a preventable death, still account for numerous infant deaths. The difference in DI index between our patients and the national average highlight that social determinants of health continue to play a role in preventable death and injury. Our data suggests that only approximately one third of patients had a conversation documented regarding safe sleep before their death. Based on these findings, a targeted injury prevention intervention around safe sleep and documentation is planned.

Objectives:

1. Attendees will learn of the continuing high rates of sleep-related deaths, especially in Missouri and that social determinants of health continue to play a role in preventable death and injury.
2. Attendees will learn the importance of documentation around safe sleep.
3. Attendees will be able to explain the importance of a targeted injury prevention intervention aimed at decreasing the number of sleep-related deaths.

Connecting Data to “Close the Loop” with Birth Hospitals to Prevent SUID



Gina Lowell, MD, MPH
Associate Professor, Department of Pediatrics
Director of Community Health for Pediatrics
Rush University Children's Hospital
gina_lowell@rush.edu



Kyran Quinlan, MD, MPH
Pediatric Medical Advisor to the Director
Illinois Department of Public Health
kyran.p.quinlan@illinois.gov

Authors: Gina Lowell, MD, MPH; Rojin Ahadi, MPH; Meredith Reynolds, MD; Christie Lawrence, DNP, RNC-NIC; Kyran Quinlan, MD, MPH

Background: Each year in the US, about 3,400 infants die from Sudden Unexpected Infant Death (SUID). In Cook County IL, SUID occurs on average nearly once a week. Education and prevention opportunities exist for hospitals who birth these infants, yet birth hospitals rarely hear when an infant they discharged dies from SUID. We leveraged access to available data sources to calculate SUID rates of Cook County birth hospitals and their geographical proximity with those communities most impacted by SUID.

Methods: Data from the Cook County Medical Examiner's Office for SUIDs that occurred between 1/1/2019 and 12/31/2021 were analyzed for hospital of birth. The Illinois Department of Public Health (IDPH) provided resident live birth data by Cook County birth hospital for the 11 birth hospitals with the greatest number of infants discharged who subsequently died from SUID during this time frame. SUID rates (cases/1,000 resident live births) were calculated for each birth hospital. SUIDs in Cook County during this time period were mapped using RStudio and compared with Chicago Health Atlas data visualizing community areas of high economic hardship and with mapping of Cook County birth hospitals.

Results: From 2019-2021, the eleven hospitals included in this analysis delivered between less than 1,000 to over 35,000 infants per birth hospital. SUID rates for birth hospitals ranged from 0.34 to 6.8 cases per 1,000 resident live births. Geographical distribution of SUIDs showed high concentration in areas geographically associated with those birth hospitals with the highest SUID rates, and with those community areas experiencing high economic hardship. The birth hospital with the highest SUID rate was 3 times that of the birth hospital with the second highest SUID rate, and 20 times that of the birth hospital with the lowest SUID rate. The birth hospital with the highest SUID rate experienced a pandemic-related closure of its labor and delivery unit, as did the birth hospital with the 7th highest SUID rate.

Conclusions: Birth hospitals in community areas most impacted by SUID experience variably and disproportionately high SUID rates. SUID occurs in areas of high economic hardship where closures of labor and delivery units reflect disinvestment and deepen inequitable access to trusted care. No system currently exists for birth hospitals to learn of SUIDs that happened to babies they discharged. Describing this data is the first step towards “closing the loop” with birth hospitals. Leveraging different public health data sources to describe