

Abstract Name: Impact of COVID-19 on the Epidemiology of Drug Ingestions in Children Presenting to an Urban Pediatric Hospital

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Introduction:

Toxic drug ingestion deaths among children (aged 0-4) increased from 0.08 per 100,000 in 1999 to 0.19 per 100,000 in 2016¹. Opioids are now contributing to a growing number of pediatric fatalities.² Among the ten largest cities in the United States, Philadelphia has the most severe opioid epidemic, with double the national rate of drug overdose deaths in 2016³. This study seeks to investigate the epidemiology of pediatric drug ingestions at a pediatric trauma center in Philadelphia during the COVID-19 pandemic.

Methods:

A retrospective chart review was conducted on children less than 60 months of age who presented to an urban pediatric hospital's emergency department with concerns for drug ingestion. Demographics, substance ingested, and zip codes were collected between June 2018 and December 2021. The pre-COVID period was defined between June 2018 to March 15, 2020 while the COVID-19 period was defined as March 15, 2020 to December 2021. Mean and standard deviations were reported for continuous variables. Frequencies and percentages were reported for categorical variables. Differences were compared with Chi-squared and Fishers exact tests as applicable. Rates were reported by zip codes on a GIS map raster.

Results:

Mean ages of patients pre-COVID and during COVID-19 were 25.4 and 24.6 months respectively. The number of patients presenting decreased by thirty-one percent (134 patients pre-COVID; 93 patients during COVID-19). However, the number of patients with a positive drug screen increased by 72% (29 patients pre-COVID, 50 during COVID-19). Significant increases (chi-squared) were found in ingestions of benzodiazepines ($p=0.008$), marijuana ($p=0.003$), and opiates ($p=0.003$) during the COVID-19 when compared to the pre-COVID period. Zip code analyses revealed that the highest rates of pediatric drug ingestions were found surrounding Kensington, an area significantly impacted by the opioid epidemic.

Conclusion:

Our study provides insight on the epidemiology of pediatric toxic ingestions between pre-COVID and during COVID-19 in a region of the country significantly impacted by drug use. Although there was an overall decrease in emergency department visits, the number of positive drug screens in children increased. These findings are in accordance with previous literature, but also demonstrates that rates and regional concentrations of drug ingestions in the pediatric population appeared to mirror the regions of adult drug overdoses in Philadelphia during the COVID-19 period. These findings may indicate that children, cared for by adults with substance

use disorder, are at greater risk for toxic ingestions. This may be useful in targeting prevention efforts in communities across the country.

References:

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2. Gaw, Christopher et la. "Characteristics of Fatal Poisonings Among Infants and Young Children in the United States. *Pediatrics*(2023) 151 (4): e2022059016.
3. National Drug Early Warning System. "Philadelphia Sentinel Community Site (SCS) Drug Use Patterns and Trends, 2018." Nov. 2018.