

ONE PILL CAN KILL

ANALYZING INDIANA POISON CONTROL CENTER CALLS IN CHILDREN UNDER THIRTEEN

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STATEMENT OF THE PROBLEM

- The Indiana Poison control center receives **23,151 calls each year** involving children twelve or under
- Unintentional substances exposures can be **dangerous to early development and child wellbeing**
- Agents that fall under the grouping of **"One Pill Can Kill"** (OPCK) because of their potentially fatal effects

Research Question: What patterns exist in exposures to deadly single-dose agents among children in Indiana?



OBJECTIVES

- Analyze a Poison Control Dataset that contained calls from all Indiana Counties ranging from 2015-2021
 - Find areas with higher rates of exposure by county
 - Analyze substance exposures in children 12 & under
- Observe trends in:
 - County exposure statistics
 - Exposure site
 - Call time, date, and year
 - Substances

METHODOLOGY

Through visual and descriptive analysis of Indiana Poison Control Center calls, we discovered that most of the OPCK exposures occur in the evening at home involving children aged one to five resulting in minimal clinical effects. Despite relatively low mortality, there were various trends present in the OPCK data that we will continue to explore to inform the CDC PROTECT initiative in the prevention of accidental pediatric overdoses in Indiana.



FINDINGS

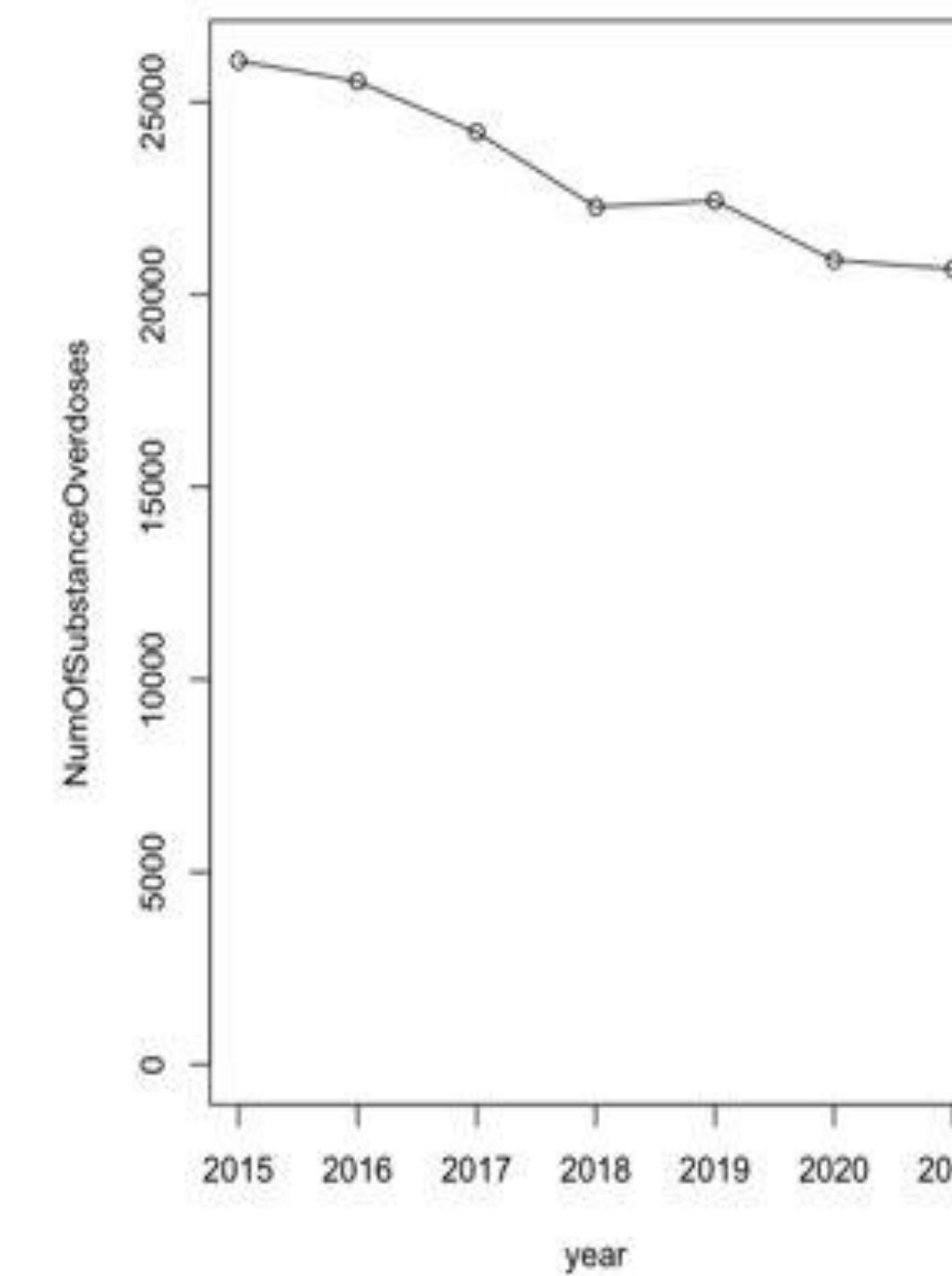
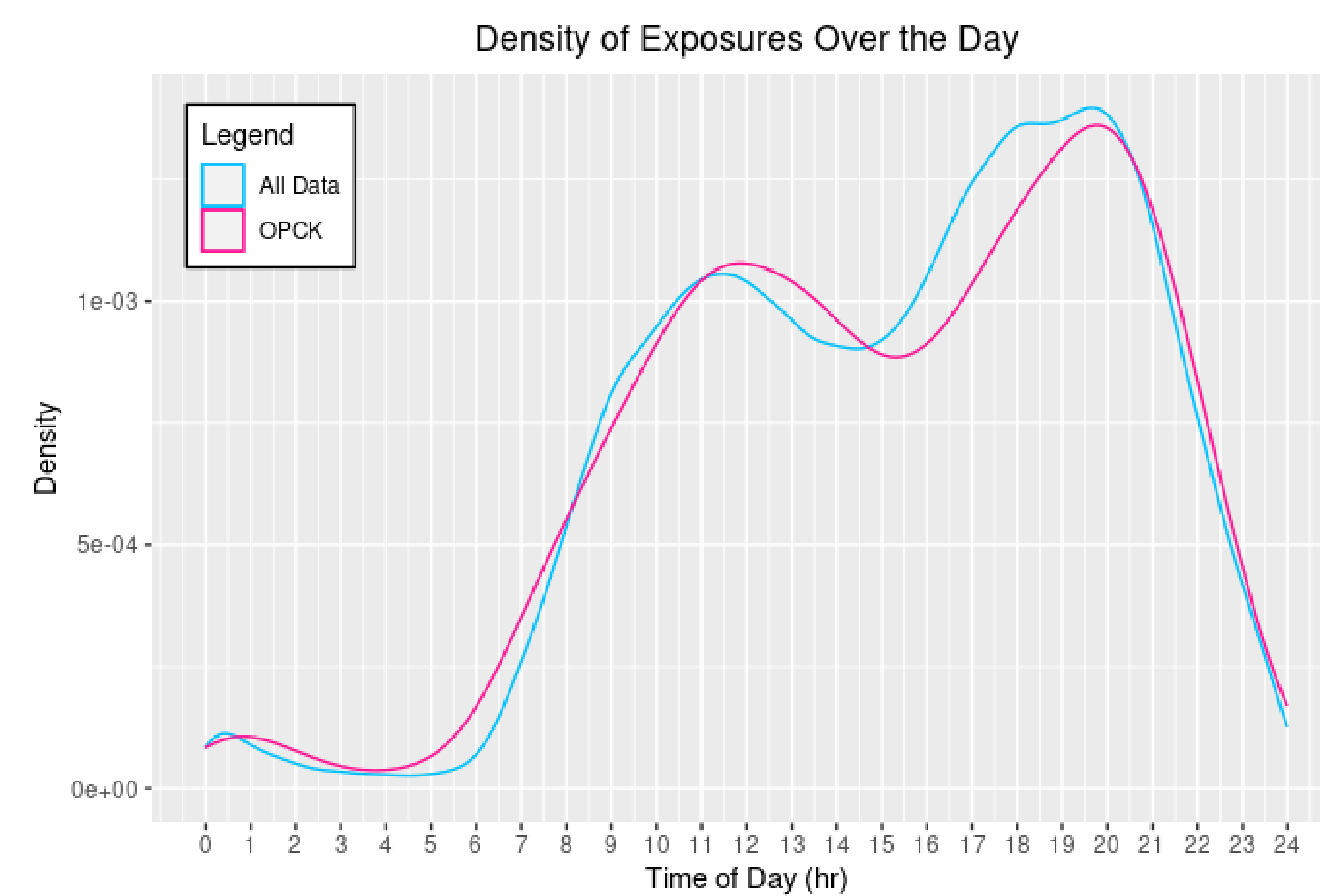
The numbers of calls tied to poisoning decreased per year

OPCK trends are mostly shifted right: Rise after about 5-6 am, and peaks at 8 pm and then sharp decline

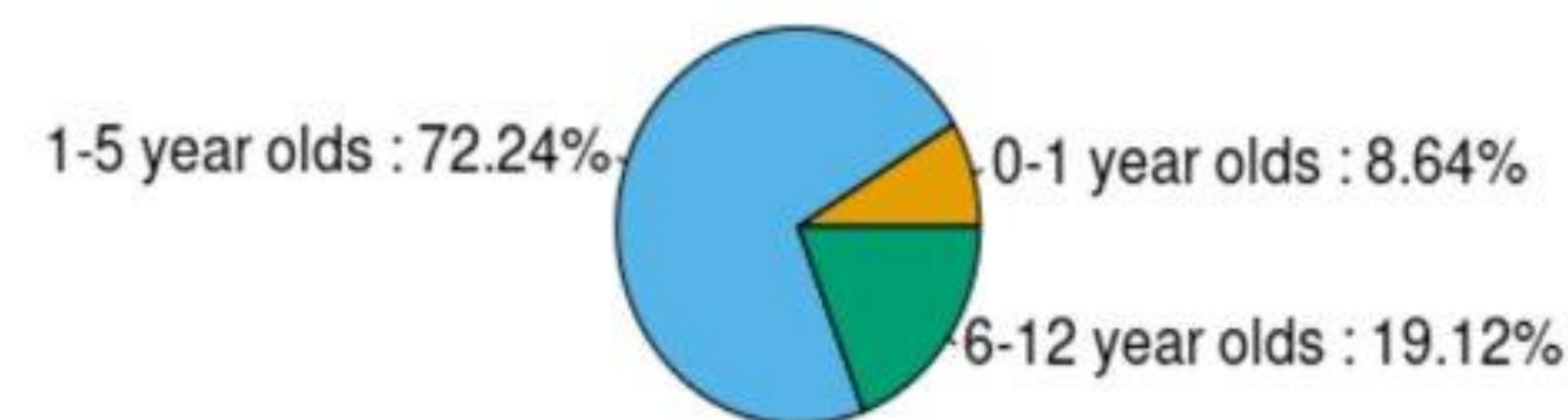
Exposure decreases from November to December during weekends

The group most impacted by OPCK poisoning is 1-5-year-olds, which accounts for the 1/3 of the total cases

An overwhelming majority of exposures occurred at home with most others occurring at other residences or at school



Age Group Summary



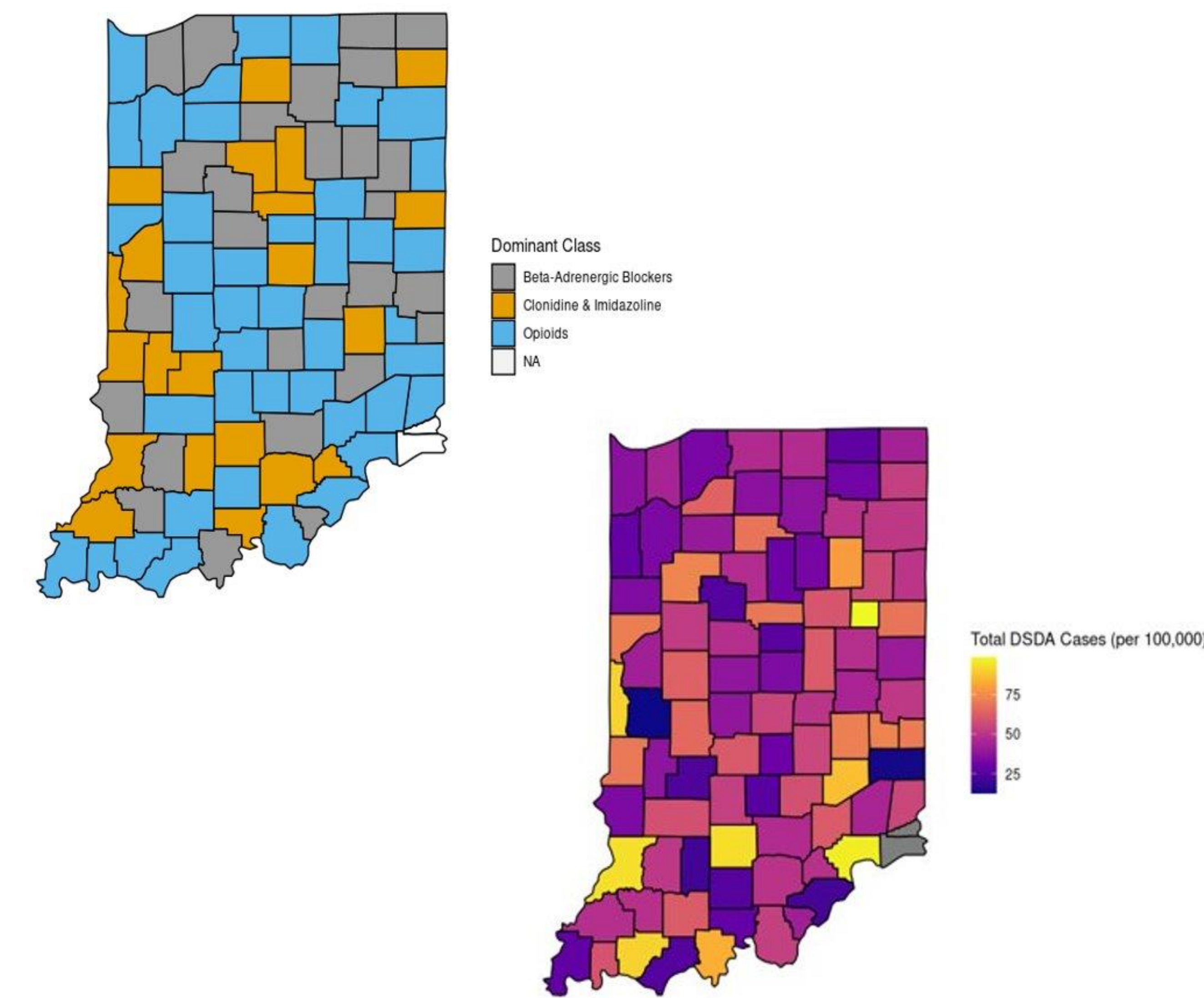
The above figures are a result of our visual analysis of OPCK cases. The left figure shows the density of cases per county, and the right figure concerns the dominant class of OPCK substance in each county.

ACKNOWLEDGEMENTS

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 Purdue Data Mine

IMPACTS

The research and statistical analysis we performed allowed the group to present our findings and graphics at the CDC PROTECT emporium in December, 2022. Beyond that additional interest from other CDC Poison Control centers led to discussion and offers of additional data from these other Poison Control centers across the US. This interest and conversation may lead to additional research, funding, analysis, and solutions to the issues displayed in this poster.



REFLECTION & CONCLUSION

Over the course of the project, we encountered some challenges. Since we received the dataset a bit late, we were left with limited time to make more insightful analysis of the dataset. We also faced challenges in handling datasets related to a field that we don't know much about, such as classifying cases or producing concise outputs. The project served as a learning experience for us in terms of the technical skills for data analysis, and in soft skills such as presenting at a professional conference. In the coming months, we will continue to work on this project in the form of a data dashboard.



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