

Characteristics of Fentanyl Exposure among U.S. Children under 6 Years Old Reported to Poison Centers 2012 - 2021

College of Population Health

Keisuke Abe, MD¹., Lynne Fullerton, PhD¹., Samuel Swift, PhD²., Kristine Tollestrup, PhD²., Caitlin Bonney, MD¹.

1. University of New Mexico, Department of Emergency Medicine. 2. University of New Mexico, College of Public Health

Background

Poisoning, including drug overdose, is now the 3rd leading cause of death in children from 1 to 19 years of age in the U.S. after firearm injury and motor vehicle crashes.

Toxic exposure to young children can be fatal, particularly when the substance is fentanyl.

Researchers must characterize the risk factors that contribute to fentanyl exposure in young children to plan and implement prevention.

Objectives

Our study aims to improve knowledge of fentanyl exposure in young children and characterize the factors contributing to these exposures.

Method

This is a descriptive observational study of all fentanyl exposure cases under 6 years old reported to the National Poison Data System (NPDS) from 2012 to 2021.

Conclusion

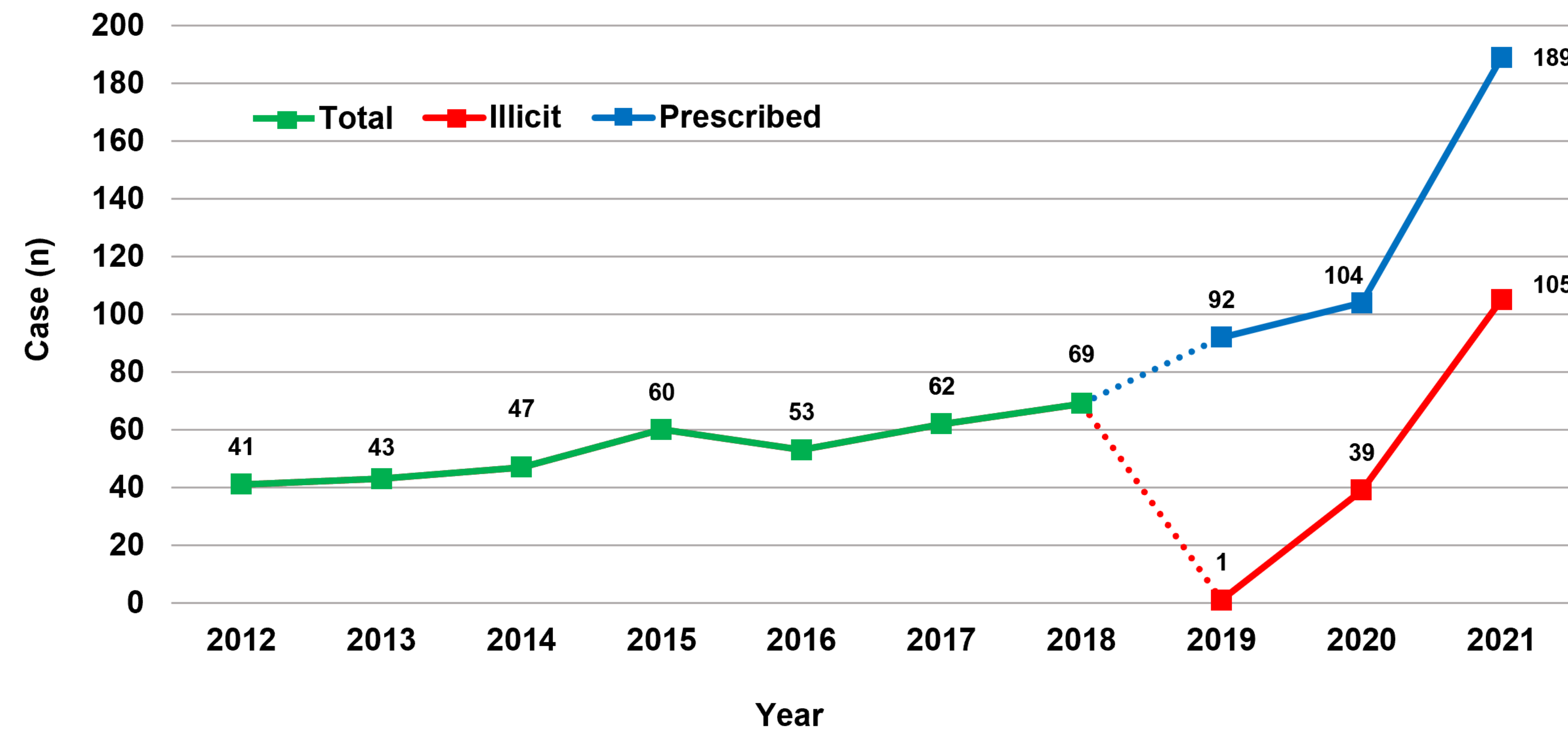
Since 2019, fentanyl exposure among children under 6 years old has significantly increased.

The public health system needs to take steps to prevent fentanyl exposure, especially among younger children.

Prevention by caregivers is critical. Education by healthcare providers should help prevent fentanyl exposure in young children.

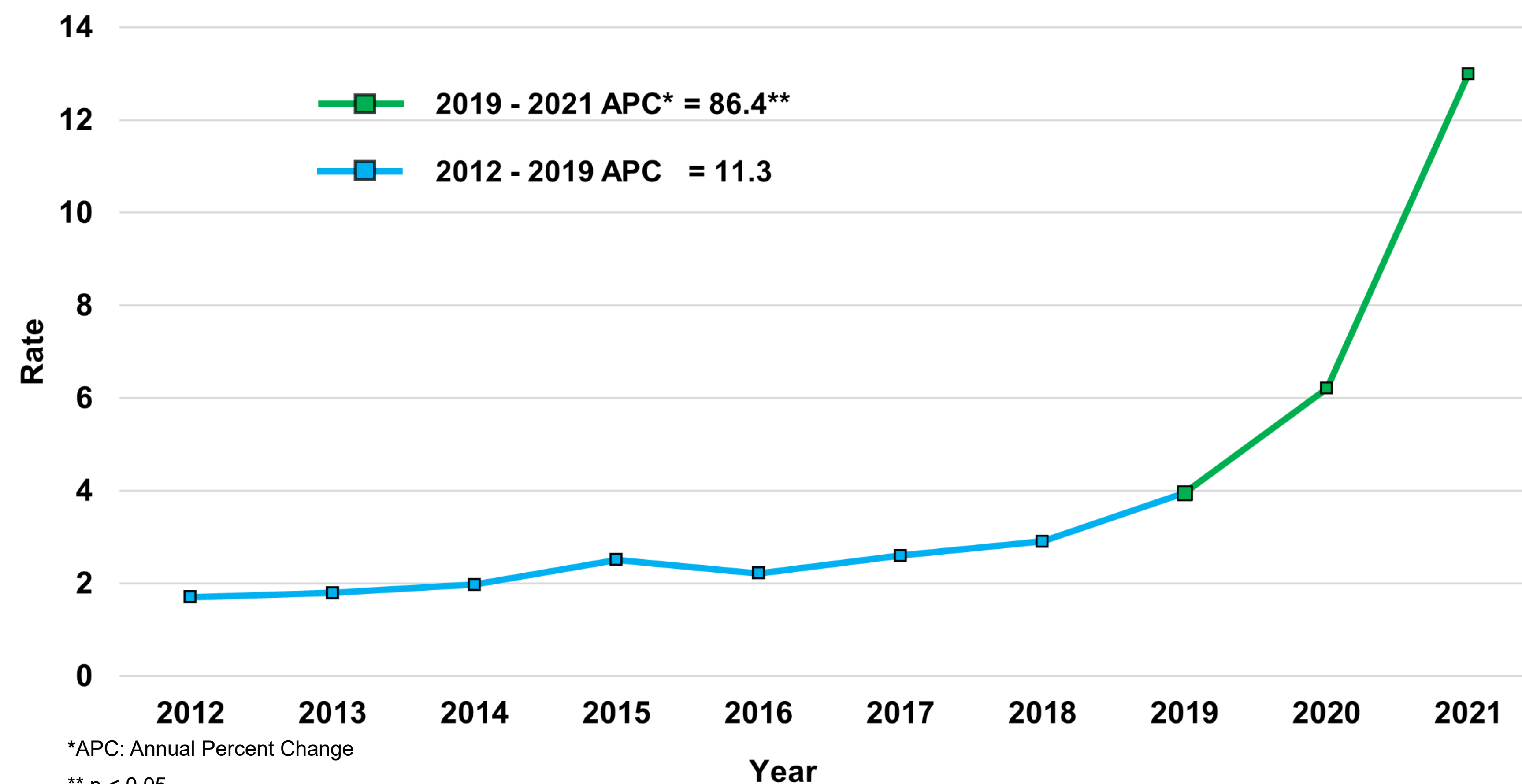
Results

Illicit and Prescribed* Fentanyl Exposure Cases in the U.S. Children under 6 years old, Reported to Poison Centers 2012 - 2021



* Prior to November 2019, NPDS did not distinguish between illicit and prescribed exposures.

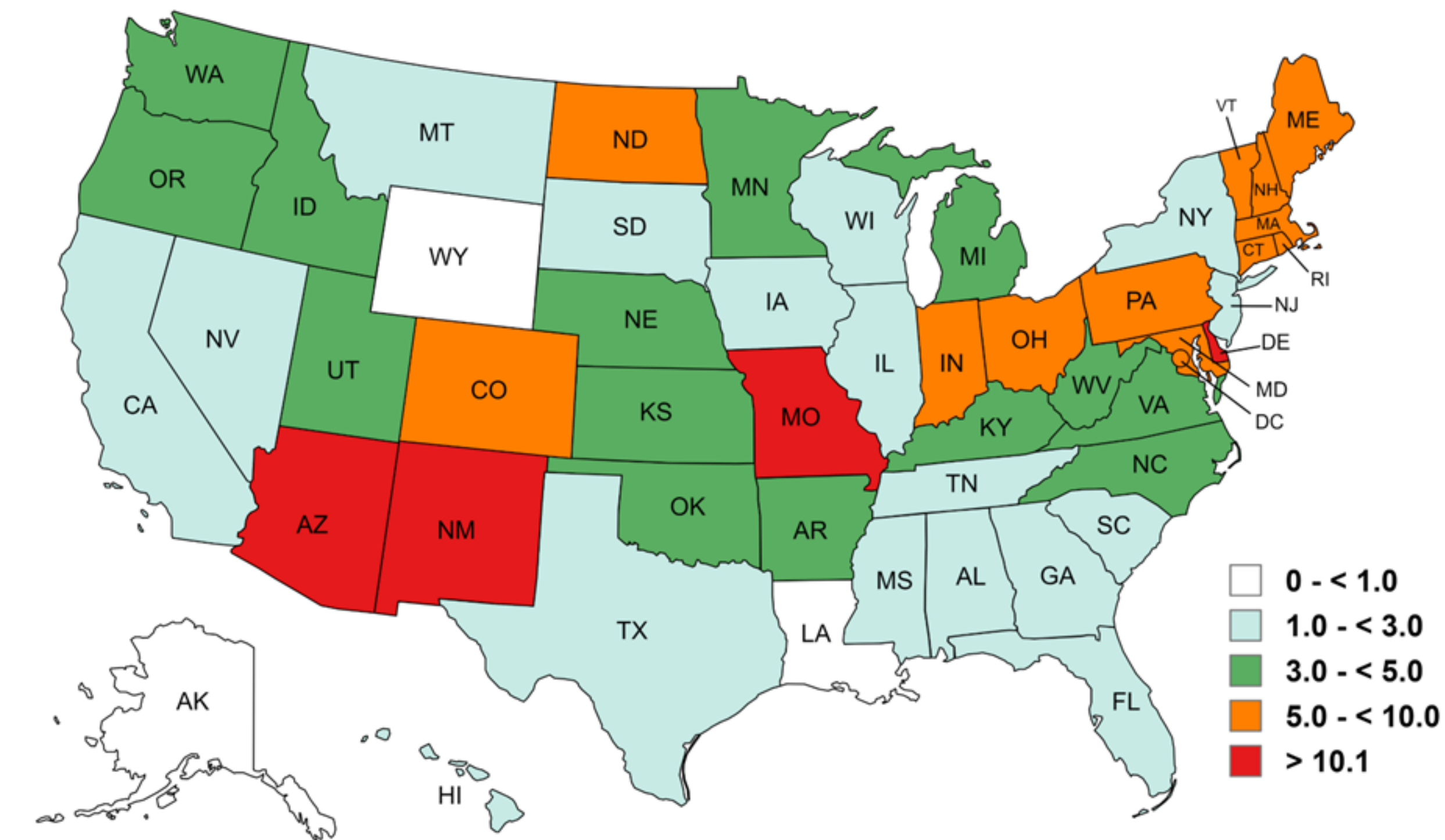
Fentanyl Exposure Rate in the U.S. Children under 6 Years Old per 1,000,000 Population, Reported to Poison Centers 2012 - 2021



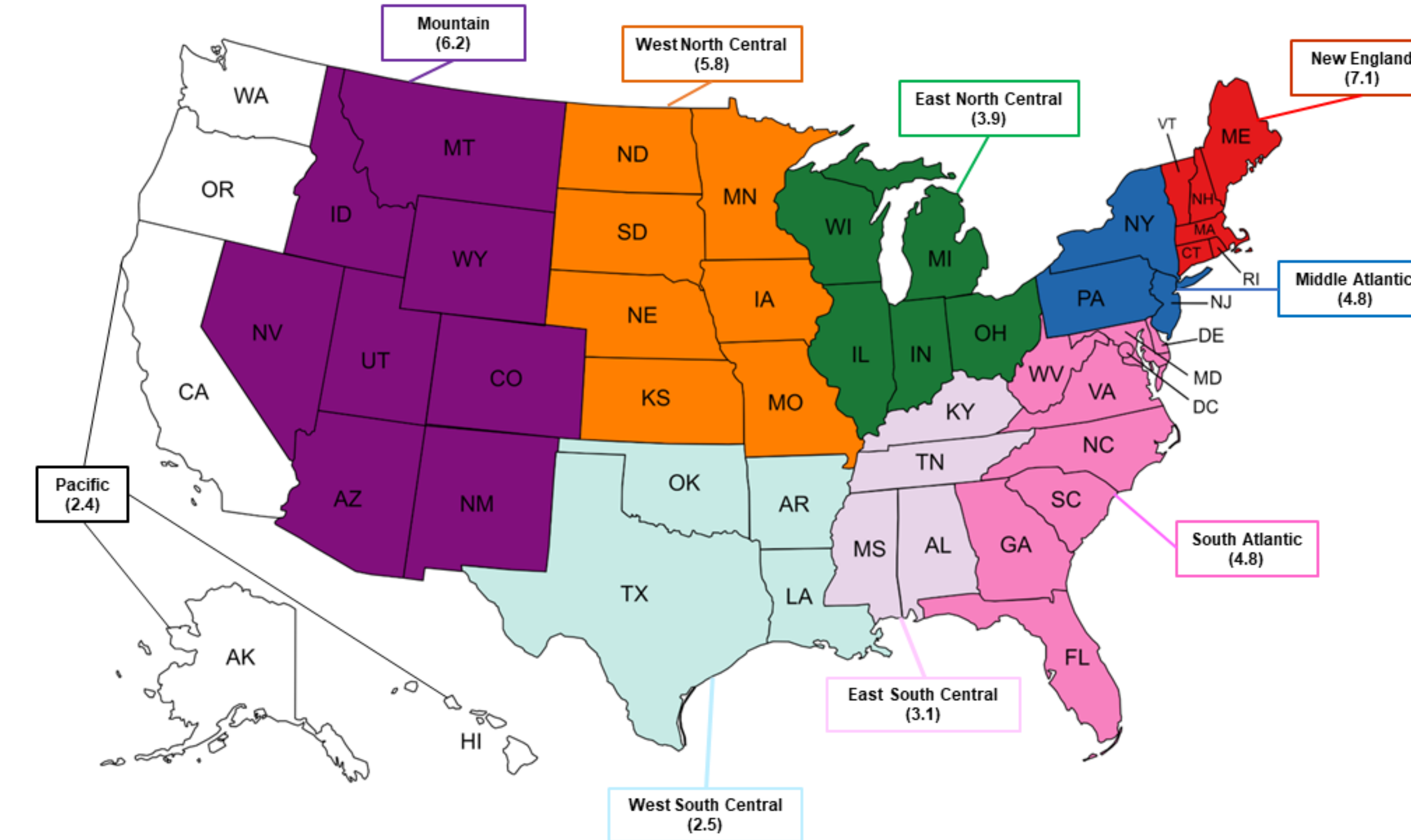
*APC: Annual Percent Change

** p < 0.05

Fentanyl Exposure Rate in the U.S. Children under 6 Years Old by State per 1,000,000 Population, Reported to Poison Centers 2012 - 2021



Fentanyl Exposure Rate in the U.S. Children under 6 Years Old by Census Region per 1,000,000 Population Reported to Poison Centers 2012 - 2021



Summary of Data

Characteristic (905 cases)	n (%)
Sex	
Male	423 (46.8%)
Female	471 (52.0%)
Unknown	11 (1.2%)
Age, Years	
0	293 (32.4%)
1	309 (34.1%)
2	163 (18.0%)
3	66 (7.3%)
4	43 (4.8%)
5	27 (3.0%)
Unknown	4 (0.4%)
Reason	
Unintentional	826 (91.3%)
*Intentional	8 (0.9%)
Medical use	20 (2.2%)
Unknown	51 (5.6%)
Product type	
Prescribed	760 (84.0%)
Non-prescribed	145 (16.0%)
Medical outcome	
No effect	274 (30.2%)
Minor effect	199 (22.0%)
Moderate effect	176 (19.5%)
Major effect	231 (25.5%)
Death	25 (2.8%)
Route of exposure	
Dermal	185 (20.4%)
Ingestion	547 (60.4%)
Others/Unknown	173 (19.2%)
Formulation	
Patch	211 (23.3%)
Solid (Tablet/Capsule)	191 (21.1%)
Liquid	42 (4.6%)
Cream/Lotion/Gel	16 (1.8%)
Powder/Granule	70 (7.7%)
Others/Unknown	375 (41.5%)

*Coded as "Malicious"

Medical Outcome vs Illicit / Prescribed

Major effect or Death	Illicit	Prescribed	p Value
Yes (n)	88	126	p<0.01
No (n)	56	167	