

Risk Factors Associated with a Major Medical Outcome Among Illicit Fentanyl Exposures Reported to Regional Poison Centers



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BACKGROUND

- Exposures to illicit fentanyl reported to regional Poison Centers (PCs) have increased.
- Use of illicit fentanyl can result in significant morbidity and mortality.
- The objective of this study is to determine risk factors related to major medical outcomes (MMOs).

METHODS

- Data was collected from the 51 PCs that are part of the Researched Abuse, Diversion and Addiction Related Surveillance (RADARS®) System PC Program.
- Surveillance period was 18 August 2019 through 31 December 2023.
- MMO was defined as an outcome of either “death” or “major effect”.
- Risk factors were selected a priori:
 - Gender
 - Age
 - Number of Concomitant Substances (ranging from 1 to 16 substances)
- Univariate logistic regression models were utilized to determine the risk factors associated with a MMO.

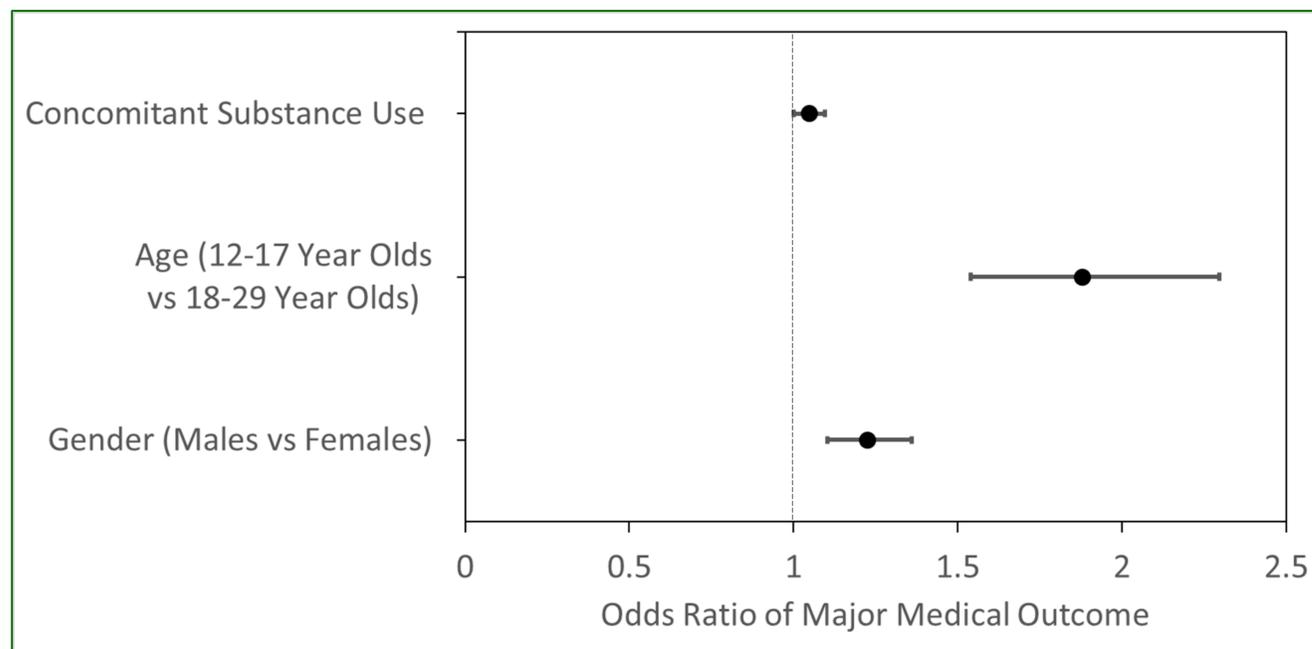
Table 1: Exposures to illicit Fentanyl

Major Medical Outcome	Frequency	Percent
Yes	2,308	31.5%
No	5,014	68.5%

Table 2: Odds ratio of a major medical outcome by risk factors

Risk Factor	Odds Ratio (95% CI)	P-value
Gender (Males vs. Females)	1.23 (1.10, 1.36)	0.0001
Age (12-17-Year-Olds vs. 18-29-Year-Olds)	1.88 (1.54, 2.30)	<0.0001
Concomitant Substance Use	1.05 (1.00, 1.10)	0.0439

Figure 1: Odds ratio of a major medical outcome by risk factors



RESULTS

- There were 7,322 exposures to illicit fentanyl during the study period.
 - 31.5% resulted in a MMO (Table 1)
- Among illicit fentanyl users, the following risk factors had a higher odds of a MMO:
 - Gender
 - Age
 - Concomitant substance use (Table 2)

CONCLUSIONS

- Odds of MMO was statistical increased for males, 12-17 year olds, and when concomitant exposures were involved.
- Characteristics reported to PCs can be used to assess risk of MMO.
- Ongoing efforts to identify risk factors to appropriately triage cases are important.

LIMITATIONS

- PC data depends on spontaneous reporting, which may result in underreporting of exposures.
- Analysis does not take into consideration product sales or availability.
- Exposures not followed to a known medical outcome were not included in the analysis.
- Misclassification may occur when identifying illicit fentanyl verses other forms of fentanyl.
- Other risk factors not included in the data set have not been analyzed.

Disclaimer: This research was conducted by the Researched Abuse, Diversion and Addiction-Related Surveillance (RADARS®) System. RADARS System is supported by pharmaceutical manufacturers, government, and non-government agencies for surveillance, research and reporting services. RADARS System is the property of nonprofit Denver Health and Hospital Authority (DHHA), a political subdivision of the State of Colorado. No subscriber participated in the conception, analysis, drafting, or review of this project.