Washington State Annual EMS Opioid Report2022

Opioids, including prescription pain medication, heroin, and synthetic opioids such as fentanyl, are causing a nationwide public health and community crisis. Every day, about two people die of an opioid- related overdose in Washington, and thousands more struggle with addiction. Opioid misuse and addiction can cause serious medical, social, and financial problems. (DOH)

Emergency Medical Services (EMS) play a critical role in responding to the opioid crisis by providing immediate care for overdose patients. Their role also includes supporting prevention efforts, linking patients to addiction treatment, and sharing data with their public safety and public health partners. EMS systems and personnel have a unique perspective on the opioid crisis. Every day, EMS clinicians interact with people who use opioids and patients who suffer from opioid addiction and overdose. For many opioid overdose patients, EMS is their first contact with health care providers. EMS can be a primary resource for information, support, and guidance for patients who refuse transport to a health care facility.

Information collected by EMS responders can be used at local, state, and national levels to address the opioid crisis. Electronic EMS records help public health professionals track where and when overdoses happen.

Executive Summary

This report aims to provide a comprehensive overview of opioid-related EMS responses for Washington residents in 2022. This report presents the most recent and complete information available on opioid- related EMS responses by age, gender, and ethnicity for the whole state and by geographic location.
Data in the report include:

- Naloxone administration documentation and category variation
- EMS responses to repeated opioid overdose patients.
- Opioid-related EMS response time, time on scene, and time at hospital

Key Limitations and Warnings

1) The proportion of all EMS responses captured in the Washington Emergency Medical Services Information System (WEMSIS) varies by county. Not all EMS services in each county report to WEMSIS. As a result, not all opioid-related responses may be reflected.

2) Information provided in this report is subject to change as a result of updated or additional records being added to WEMSIS. Other reports produced from WEMSIS data may yield varying results. Similar reports produced from other sources may differ due to varying data and definitions.

Methodology

The definition of a "probable opioid-related EMS response" was based on the following criteria from electronic patient care records:

1. An opioid-related ICD-10 code in the primary or secondary impressions.
2. Opioid overdose-related information mentioned in the narrative, complaint reported by dispatch, and other complaint stated fields.
3. Respiratory rate of <11 breaths per minute in the vitals field or reduced respiration mentioned in complaint/primary symptom fields.
4. "Narcotics" mentioned in primary symptom field.
5. Glasgow Coma Scale (GCS) score of <15 in the vitals field or "unconscious/unresponsive" mentioned in narrative/complaint fields.
6. Pupil diameter=1mm in patient exam or "pinpoint" mentioned in narrative/primary symptom fields.
7. "Paraphernalia" mentioned in narrative.
8. "Naloxone/Narcan" in medication given field.

A probable opioid overdose-related EMS response is defined when a primary or secondary impression of an opioid overdose is found **or** when five or more of the above criteria were met **including** at least two of the following: opioid overdose impression, free text indicative of opioid overdose, or naloxone administration is documented.

A single opioid overdose incident might provoke multiple EMS responses. For the purpose of this report, we identified individual incidents involving an individual patient as our main indicator. Patients were identified using a combination of name (first and last), date of birth, and gender. Incidents relating to an individual patient were distinguished by having a date/time at least 24 hours apart from one another.

Due to different population sizes in geographical locations, a measure of simple counts might be misleading. Therefore, we chose to use percentages of total incident counts to better reflect the prevalence of opioid overdoses within a specific category.

For tables of opioid overdose incident counts and more information on measure definitions, please refer to the accompanying data appendix.

Results

In 2022, 1,332,583 EMS responses were reported to WEMSIS. Of these responses, 854,978 were individual incidents, and 718,981 individual patients were identified.

- Probable opioid overdose-related responses accounted for about 2 percent (21,938) of the total responses.
- Opioid overdose-related individual incidents were about 1.5 percent (12,561) of total individual incidents.
- Opioid overdose-related individual patients were about 2 percent (16,612) of total individual patients.

Trend over time:

The percentage of the total monthly EMS incidents that were opioid overdose-related did not vary much by month in 2022 (Figure 1).

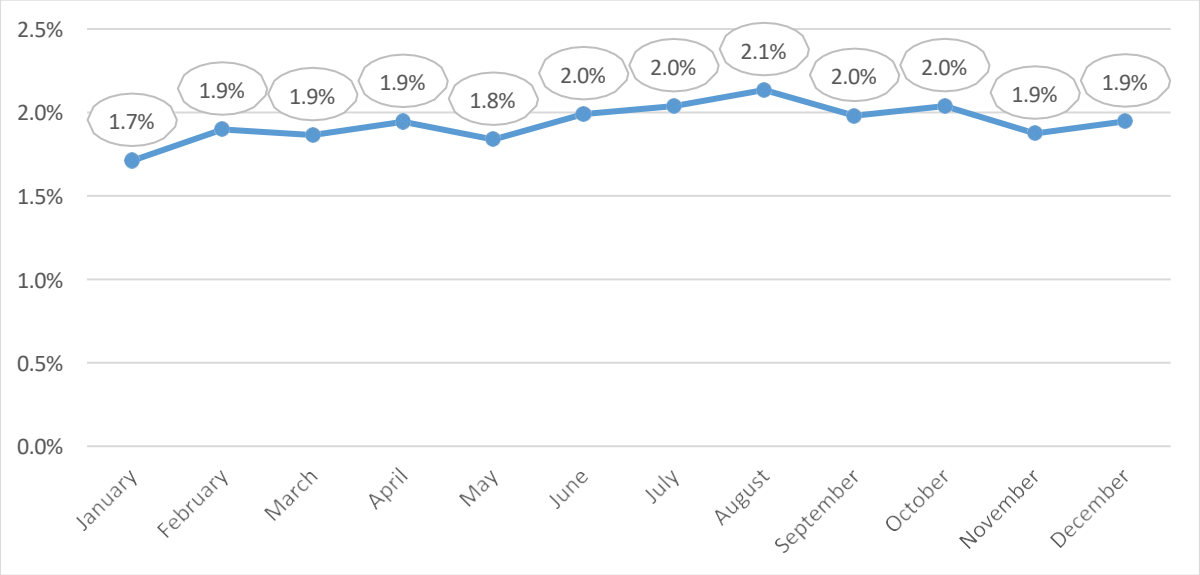

Figure 1: Probable Opioid Overdose-related EMS Incidents (Percent), by Month, Statewide, 2022

Patient Characteristics

The prevalence of opioid overdose EMS incidents was about twice as high in men as it was in women, with the age groups between 20-49 years old being the most affected (Figure 2). The highest prevalence of opioid overdose EMS incidents was among Native American/American Indian patients (6 percent) while Asian patients showed the lowest prevalence (1 percent) (Figure 3). These data are from records where race/ethnicity is documented. Race/Ethnicity data were not documented in 57 percent of opioid overdose incident records.

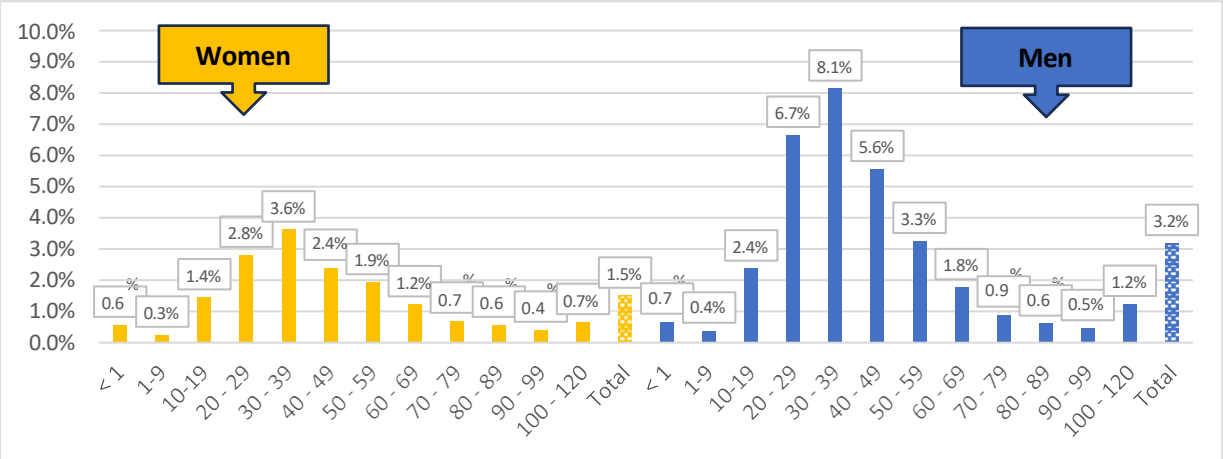

Figure 2: Probable Opioid Overdose-related EMS Incidents (Percent), by Sex & Age-range, 2022

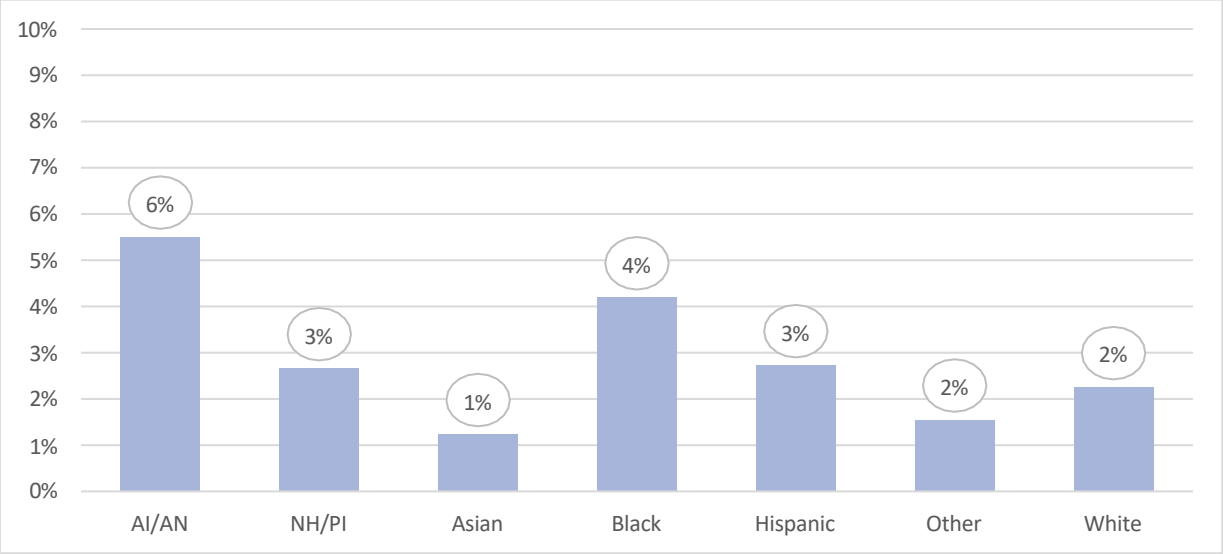

Figure 3: Probable Opioid Overdose-related EMS Incidents (Percent), by Race/Ethnicity, 2022

Patient Disposition

Of all the reported EMS incidents in 2022, patients were found dead on scene in about 2 percent of incidents, and about 7 percent of patients either refused care or were released against medical advice. Both percentages were higher among opioid overdose patients. About 4 percent were found dead on scene and 13 percent either refused care or were released against medical advice. The graph below shows the comparison of the common patient dispositions between opioid overdose incidents and all EMS incidents.

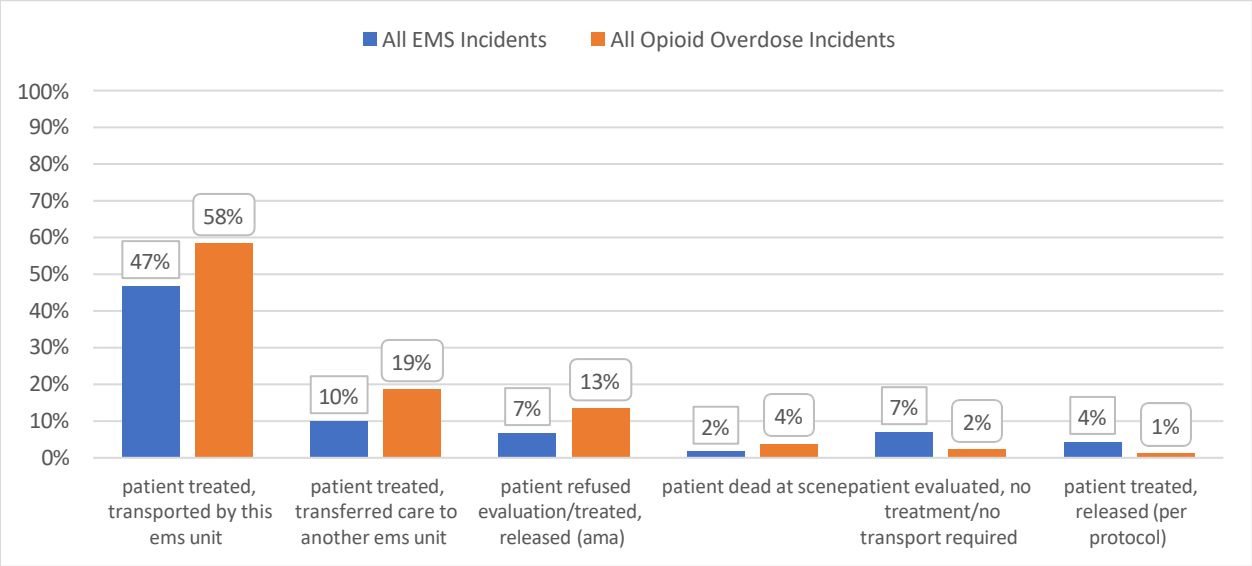

Figure 4: Most Common Patient Dispositions (Percent), All Incidents vs. Opioid Overdose Incidents, 2022

Incident Location

Grays Harbor County had the highest prevalence of probable opioid overdose-related incidents (3 percent), while the lowest prevalence was seen in Garfield County (0 percent) (figure 5).

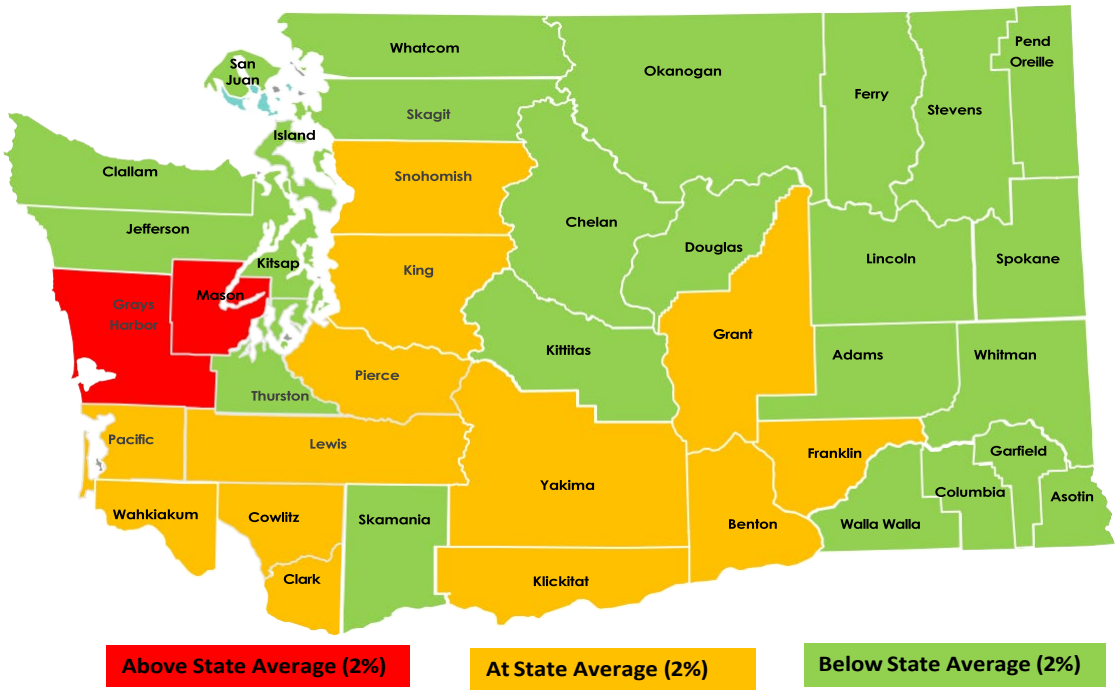

Figure 5: Probable Opioid Overdose-related EMS Incidents (Percent), by County, 2022

The Central and Southwest regions of the state showed the highest prevalence of probable opioid overdose-related incidents (about 2.5% and 2.2% respectively). The lowest prevalence was in the North Central region (1 percent). (Figure 6)

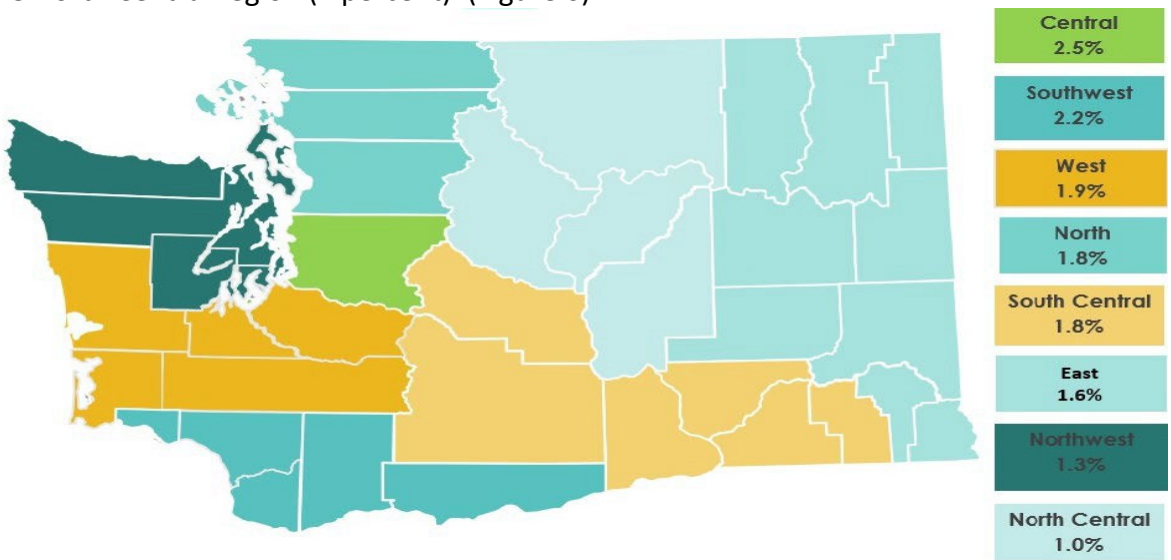

Figure 6: Probable Opioid Overdose-related EMS Incidents (Percent), by EMS Region, 2022

Probable opioid overdose-related incidents were most prevalent in urban areas and least prevalent in rural areas of the state (figure 7).

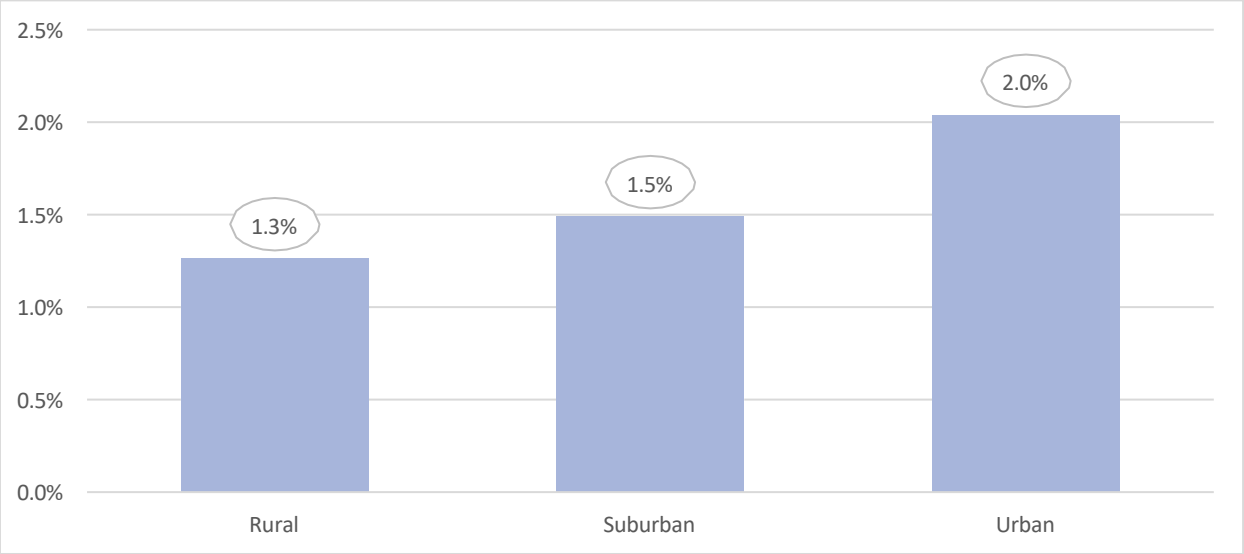

Figure 7: Probable Opioid Overdose-related EMS Incidents (Percentages), by Urban Designation, 2022

The highest prevalence of probable opioid overdose-related incidents was in a jail or prison location (Figure 8). Most of the probable opioid overdose patients in this group were transported to a hospital by the responding EMS unit.

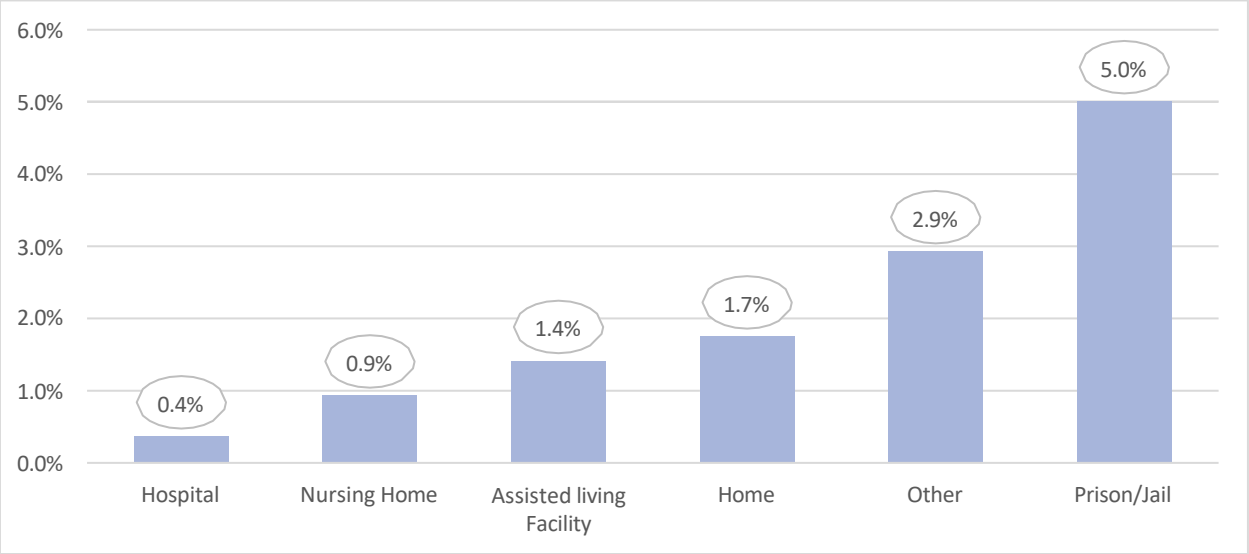

Figure 8: Probable Opioid Overdose-related Incidents (Percentages), by Incident Location Type, 2022

Naloxone

Of all probable opioid overdose-related incidents reported in 2022, naloxone administration was documented in 63 percent of records. When limiting incidents to those where a "reduced level of consciousness" was documented, naloxone administration was documented in 68 percent of all opioid overdose records.

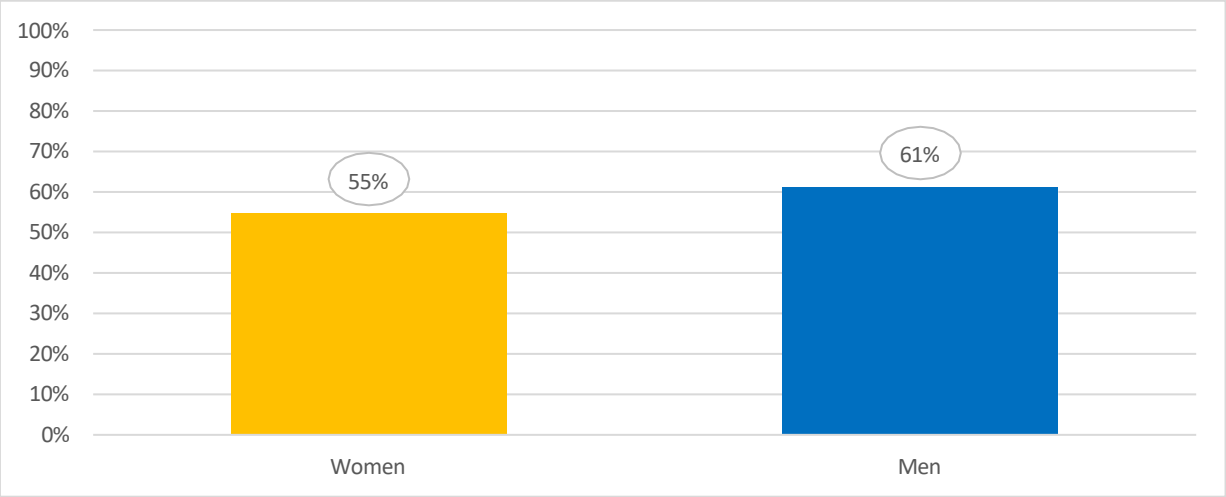

Figure 9: Naloxone Documentation for Probable Opioid Overdose-related EMS Incidents (Percentages), by Sex, 2022

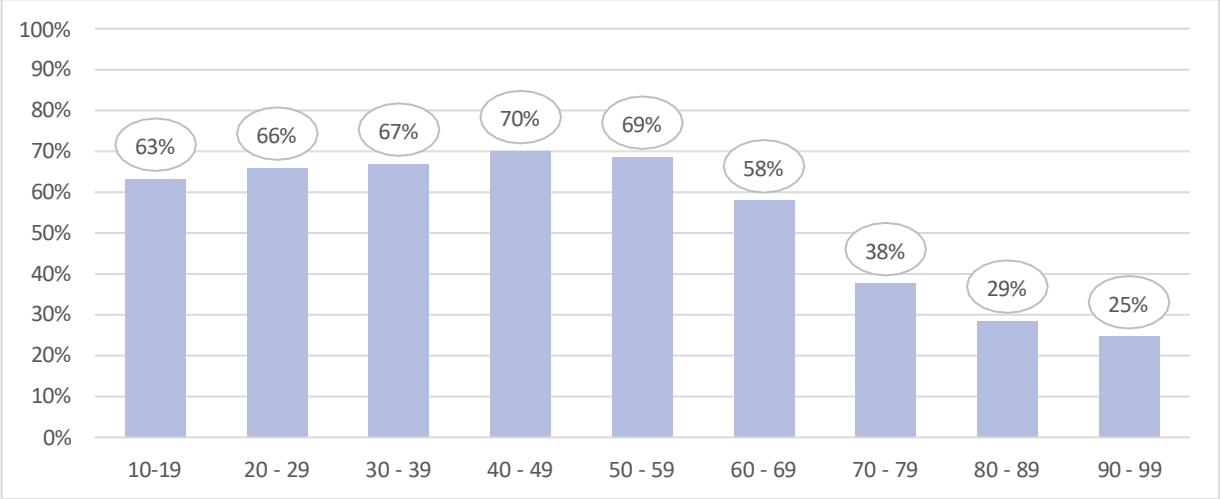

Figure 10: Naloxone Documentation for Probable Opioid Overdose-related EMS Incidents (Percentages), by Age, 2022

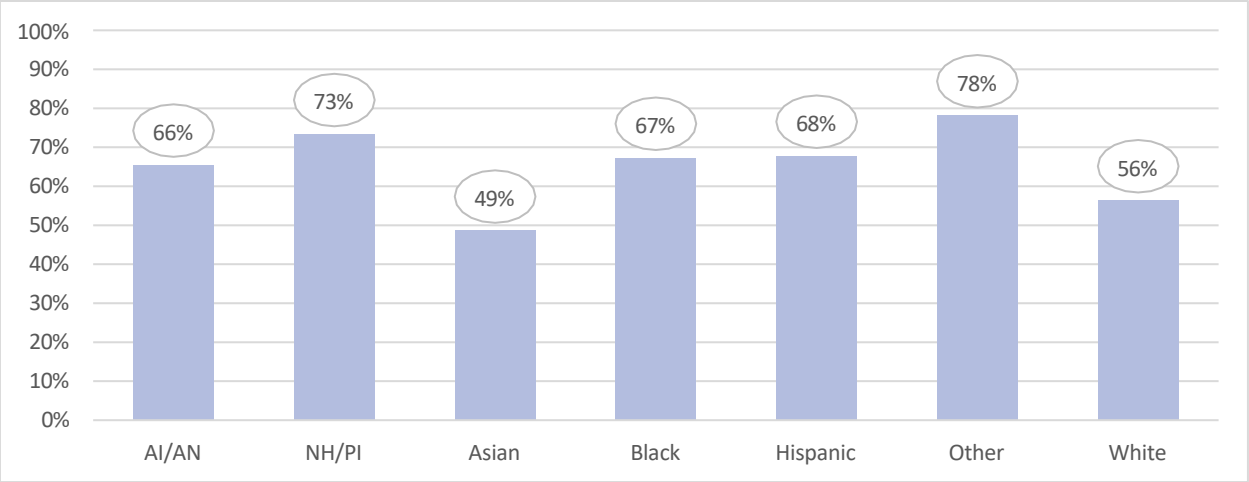

Figure 11: Naloxone Documentation for Probable Opioid Overdose-related EMS Incidents (Percentages), by Race/Ethnicity, 2022

The Northwest region showed the highest percentage of incidents with documented naloxone administration (74 percent), the lowest percentage was in the Southwest region (43 percent). (Figure 12)

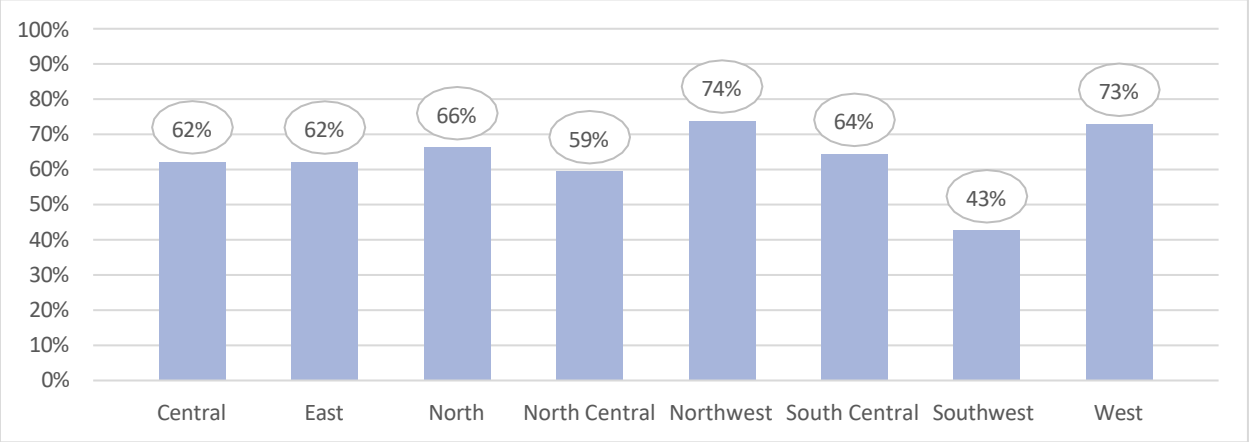

Figure 12: Naloxone Documentation for Probable Opioid Overdose-related EMS Incidents (Percentages), by Region, 2021

Time Measures

Three "time measures" were selected for this report:

1. Response time (time between EMS notification by dispatch and EMS arriving at incident scene)
2. Time on scene (time between EMS arriving at scene and EMS leaving scene)
3. Time at hospital (time between EMS arriving at destination and EMS back in service)

Response times and times on scene did not vary much between regions, however, time at hospital was much longer in the Central region than other regions. (Figure 13)

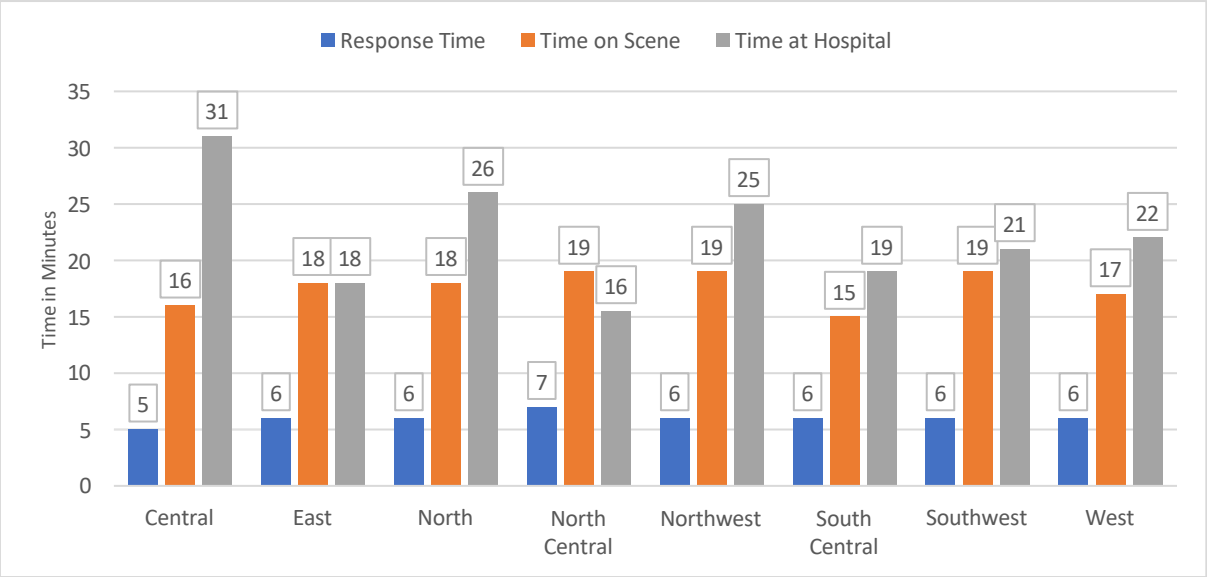

Figure 13: Median Response Time, On Scene Time, and Time at Hospital (Minutes), Opioid Overdose Related EMS Incidents, by Region, 2022

Repeated Overdose

Literature suggests that patients with repeated non-fatal opioid overdoses have a higher risk of a fatal overdose [(1)]. It also suggests that repeated opioid overdose manifests itself through cognitive decline which may contribute to risky drug use behaviors thus establishing a vicious cycle of neuropathological, cognitive, and behavioral sequelae of repeated opioid overdose [(2)].

In 2022, 569 patients (5 percent of all opioid overdose patients) had more than one documented opioid overdose incident, each occurring more than 24 hours apart. The highest number of opioid overdose incidents for an individual patient was six. 17 percent of repeated overdose patients either refuse EMS care or were released against medical advice.

The prevalence of repeated opioid overdoses was higher in men (12 percent) than in women (9 percent). The age ranges with the highest prevalence was 10-19 years old in men (17 percent) and 20-29 years old in women (12 percent). (Figure 14)

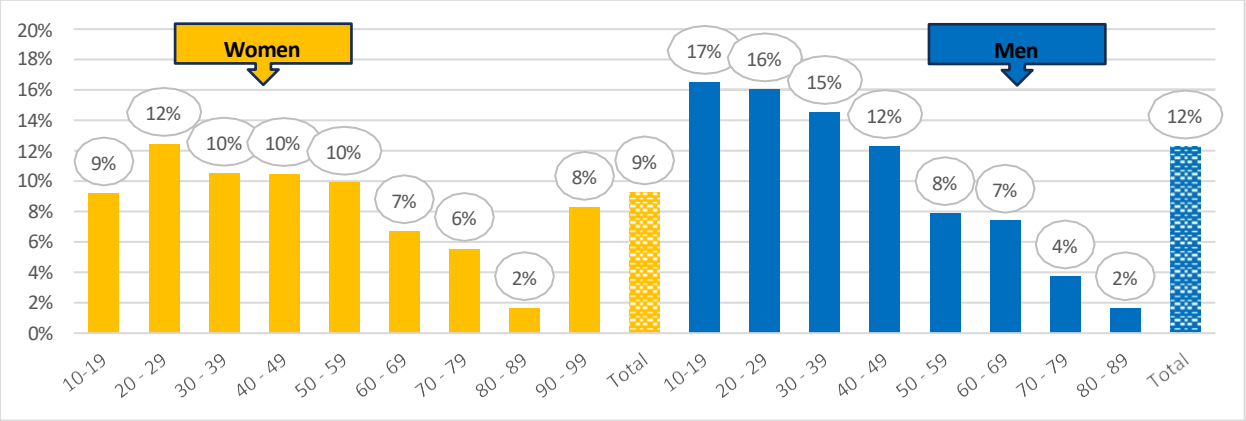

Figure 14: Repeated Opioid Overdose Incidents, by Sex and Age, 2022

Black patients showed the highest prevalence of repeated opioid overdoses (15 percent), whereas the lowest prevalence (9 percent) was in patients with race/ethnicity documented as “Other”, “NH/PI”, and “Hispanic”. (Figure 11)

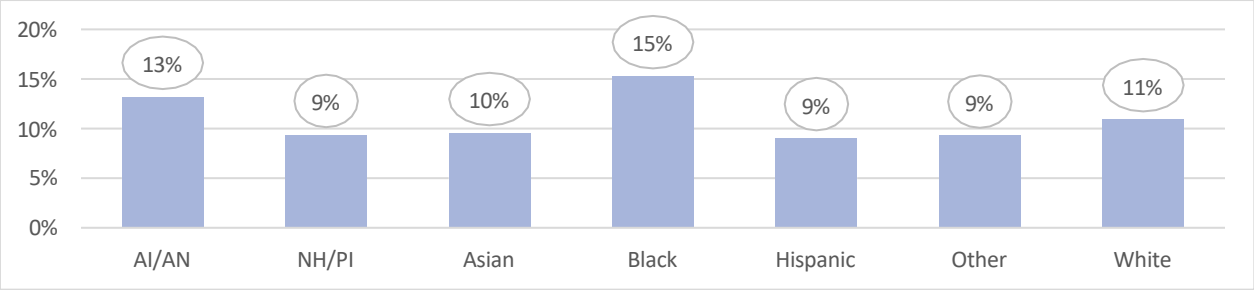

Figure 15: Repeated Opioid Overdose Incidents, by Race/Ethni, 2022

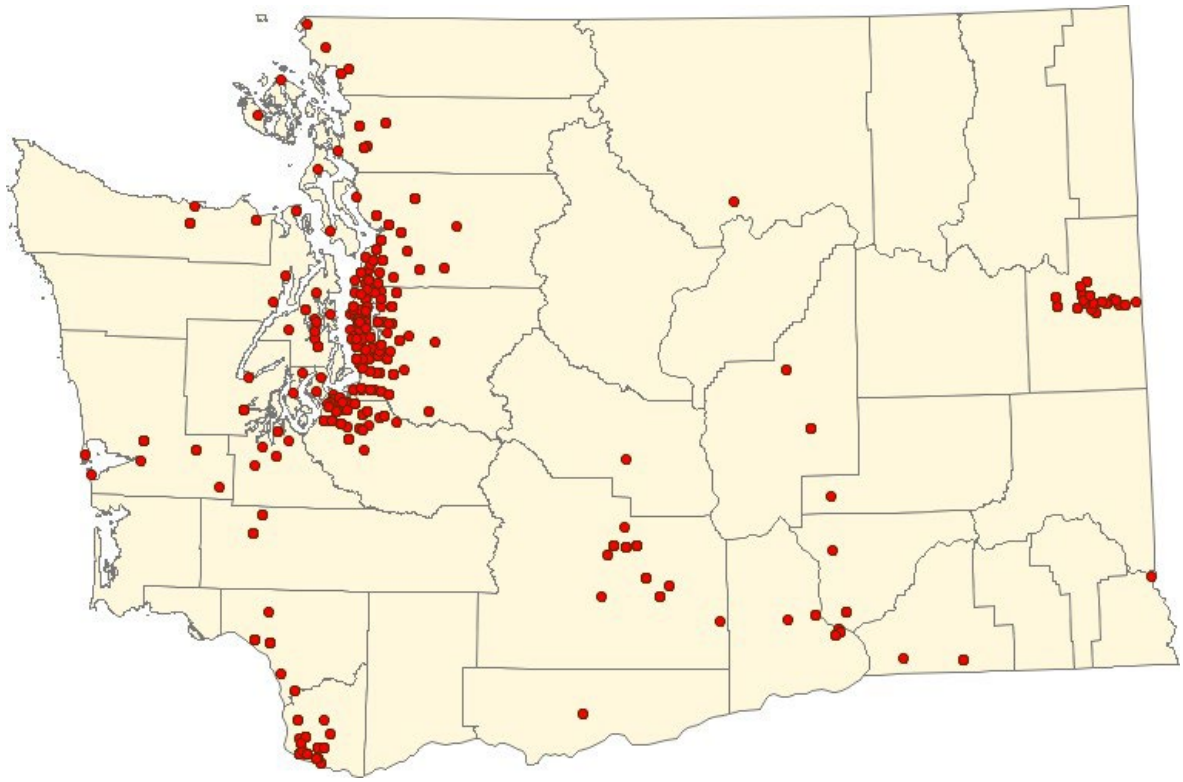

Figure 16: Repeated Opioid Overdose by Incident Location Zip code, Washington State, 2022

References

(1) Olfson, Mark, et al. "Risks of fatal opioid overdose during the first year following nonfatal overdose." Drug and alcohol dependence 190 (2018): 112-119.

(2) Voronkov, Michael, et al. "A vicious cycle of neuropathological, cognitive and behavioural sequelae of repeated opioid overdose." International Journal of Drug Policy 97 (2021): 103362.