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Opioid Overdose in Nevada Presentation

Department of Health and Human Services
Division of Public and Behavioral Health

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Introduction to Opioids



- Opioids are a substance from the opium poppy, or a synthetic form (e.g. morphine or heroin), and opioids have the potential to cause substance dependence, abuse, or poisoning (WHO, 2014).
- Opioids can be split into several different categories, which include natural opioid analgesics (e.g. morphine and codeine), semisynthetic opioid analgesics (e.g. oxycodone, hydrocodone, hydromorphone, and oxymorphone), synthetic opioid analgesics (e.g. tramadol and fentanyl), methadone, and heroin (illegal) (CDC, 2016).
- There were approximately 19,000 deaths attributed to prescription opioids in 2014, which is about 52 deaths daily in the United States (CDC, 2016).



Mortality

- This section of the report will focus on deaths in Nevada as they relate to drug overdose involving opioids.
- Between 2010 and 2015, there were a total of 2,752 resident deaths attributed to drug overdose deaths involving opioids in Nevada.



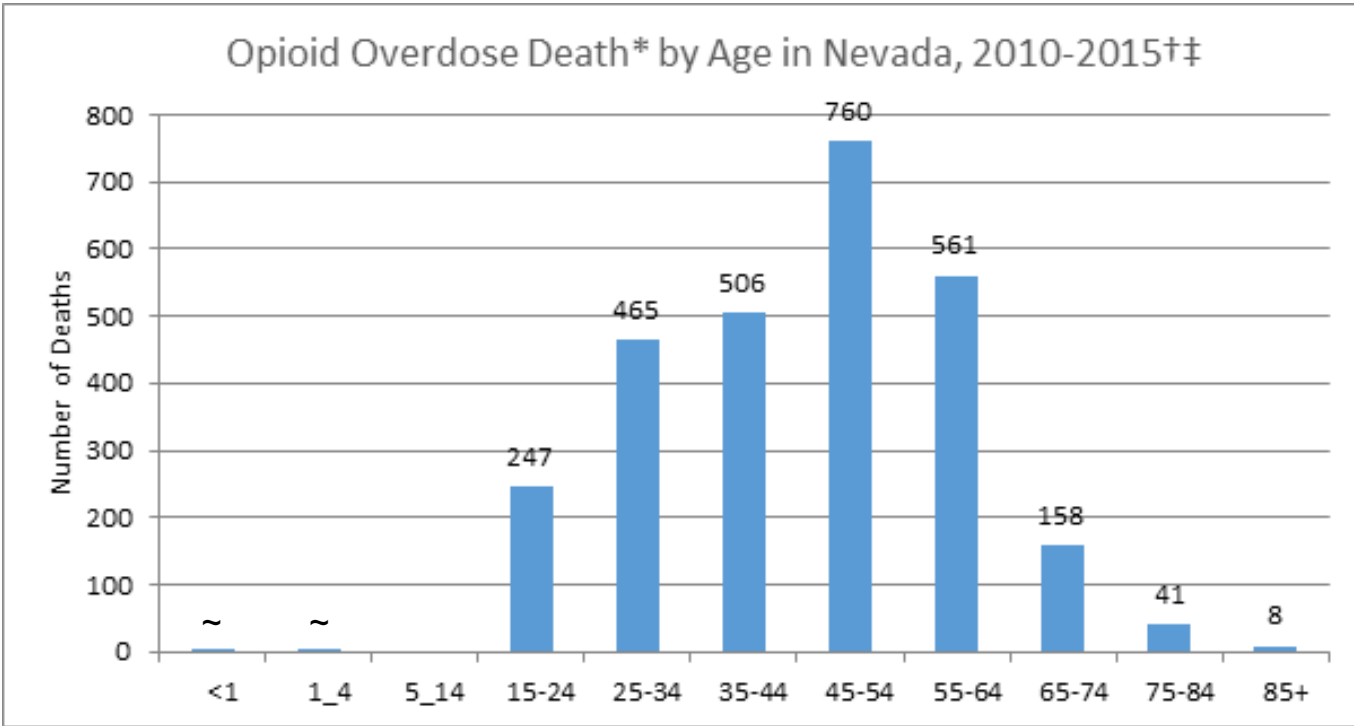


Opioid Overdose Death* in Nevada by Gender, 2010-2015†



*Diagnosis codes used (ICD-10): T40.0 (Opium), T40.1 (Heroin), T40.2 (Natural and semi-synthetic opioids), T40.3 (Methadone), T40.4 (Synthetic Opioids, other than methadone), T40.6 (Other and unspecified narcotics)

† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.



*Diagnosis codes used (ICD-10): T40.0 (Opium), T40.1 (Heroin), T40.2 (Natural and semi-synthetic opioids), T40.3 (Methadone), T40.4 (Synthetic Opioids, other than methadone), T40.6 (Other and unspecified narcotics)

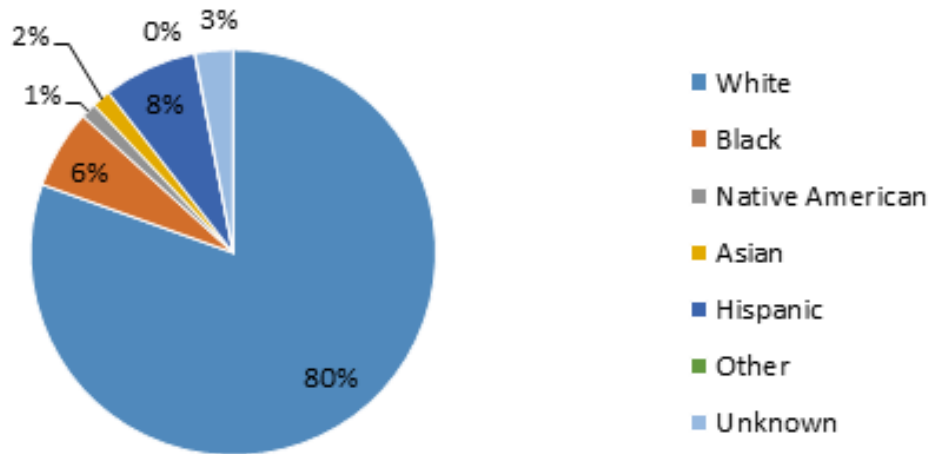
† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.

‡ Counts that are low may be from a small population, or underrepresented group, and should be interpreted with caution to avoid misunderstandings.

~ Counts not shown because of low frequency.



Opioid Overdose Death* by Race in Nevada, 2010-2015†‡



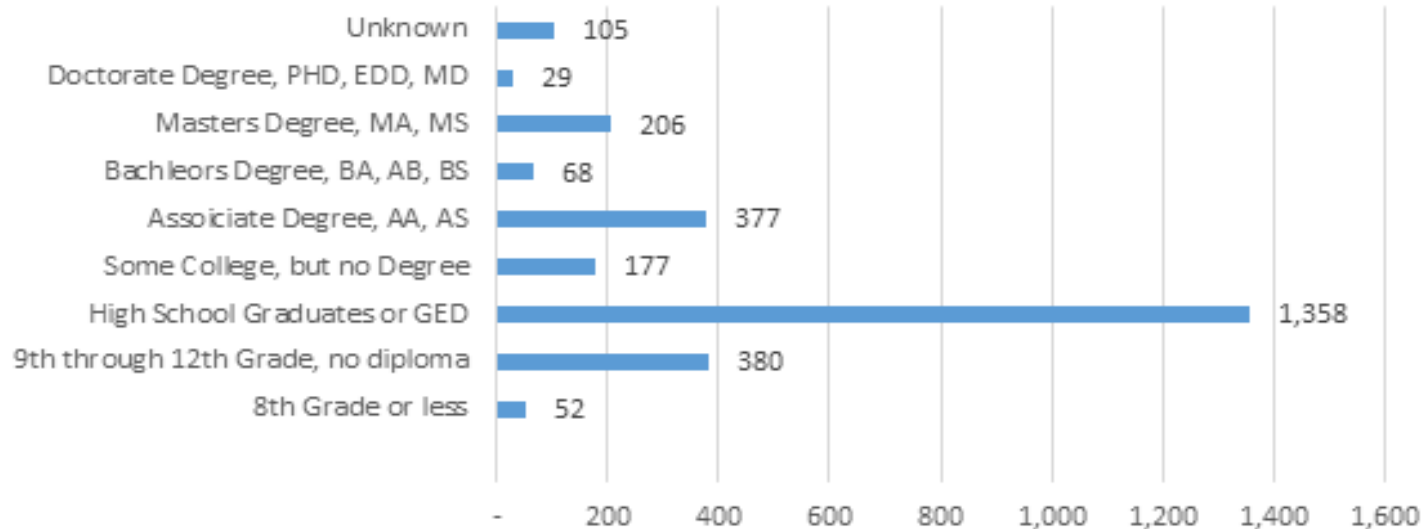
*Diagnosis codes used (ICD-10): T40.0 (Opium), T40.1 (Heroin), T40.2 (Natural and semi-synthetic opioids), T40.3 (Methadone), T40.4 (Synthetic Opioids, other than methadone), T40.6 (Other and unspecified narcotics)

† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.

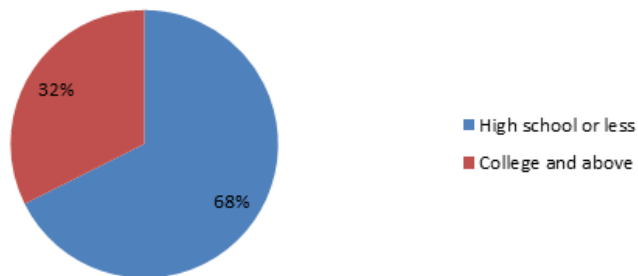
‡ Counts that are low may be from a small population, or underrepresented group, and should be presented with caution to avoid misunderstandings.



Opioid Overdose Death* by Education Level in Nevada, 2010-2015†‡



Opioid Overdose Death* by Education Level in Nevada, 2010-2015†



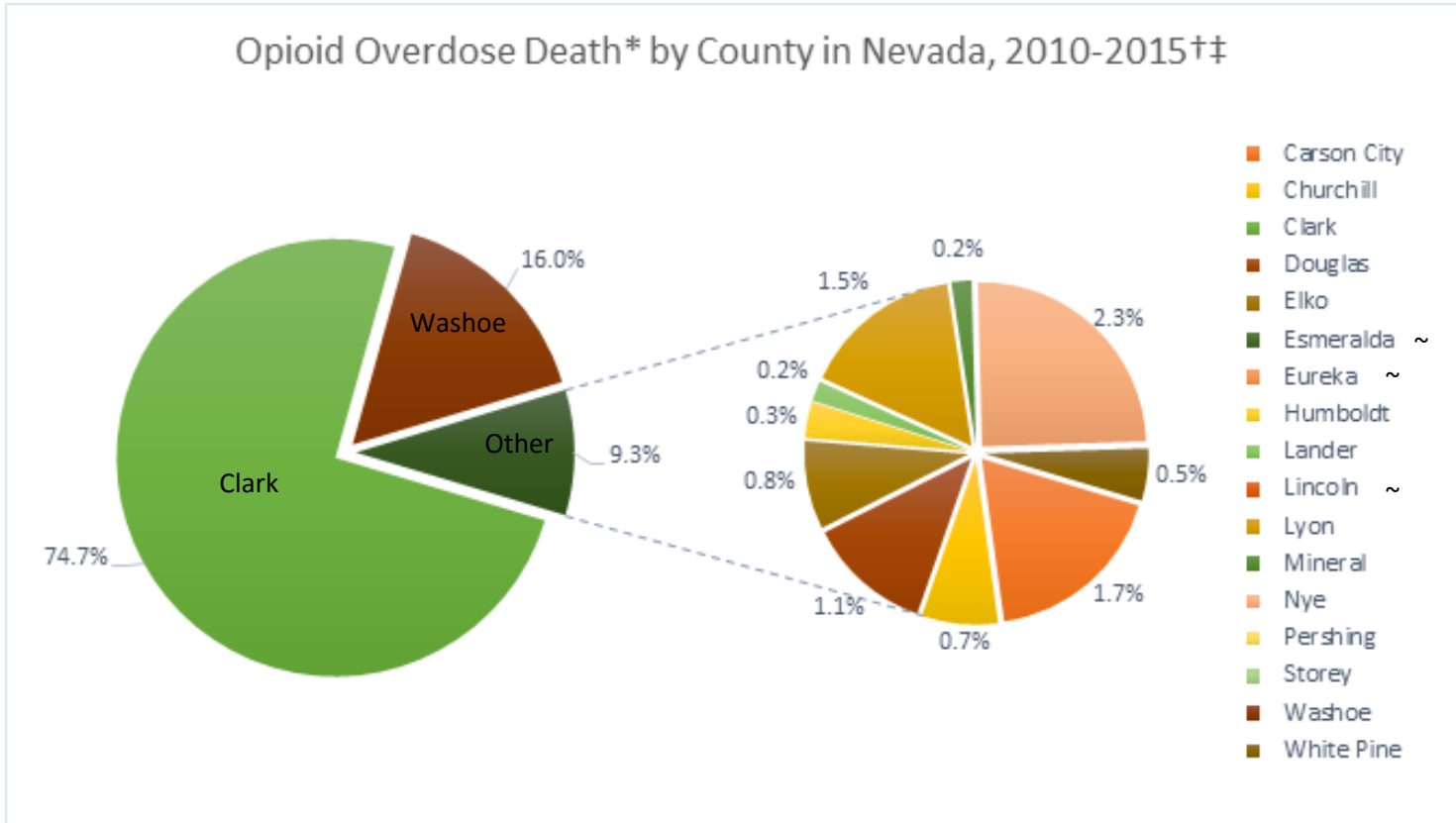
*Diagnosis codes used (ICD-10): T40.0 (Opium), T40.1 (Heroin), T40.2 (Natural and semi-synthetic opioids), T40.3 (Methadone), T40.4 (Synthetic Opioids, other than methadone), T40.6 (Other and unspecified narcotics)

† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.

‡ Counts that are low may be from a small population, or underrepresented group, and should be presented with caution to avoid misunderstandings.



Opioid Overdose Death* by County in Nevada, 2010-2015†‡



*Diagnosis codes used (ICD-10): T40.0 (Opium), T40.1 (Heroin), T40.2 (Natural and semi-synthetic opioids), T40.3 (Methadone), T40.4 (Synthetic Opioids, other than methadone), and T40.6 (Other and unspecified narcotics).

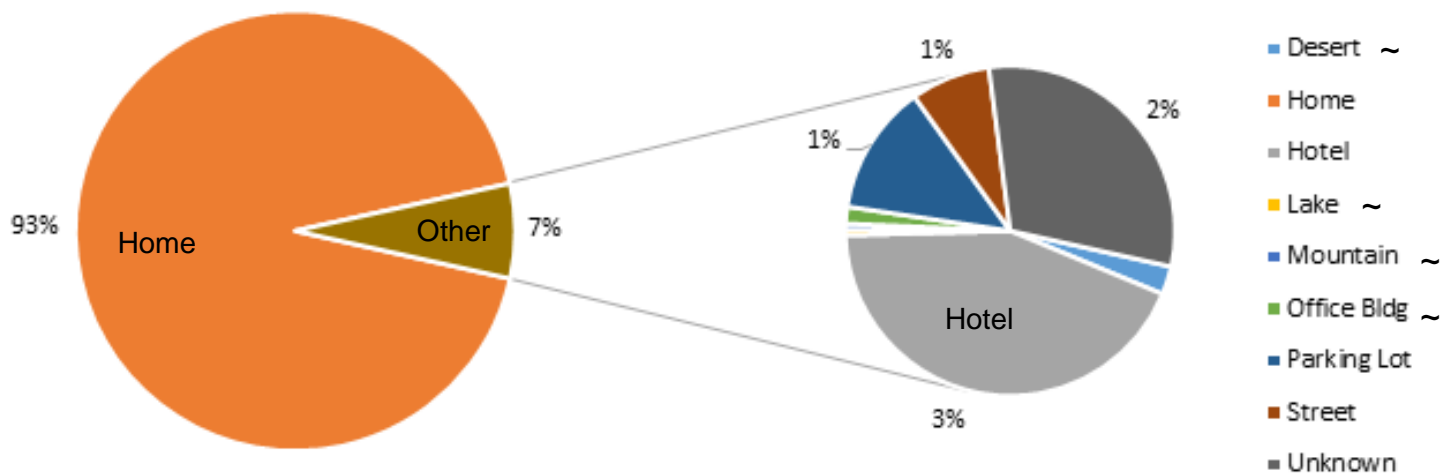
† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.

‡ Counts that are low may be from a small population, or underrepresented group, and should be interpreted with caution to avoid misunderstandings.

~ Percent may not be shown because of low frequency



Opioid Overdose Death* by Place of Injury in Nevada, 2010-2015†‡



*Diagnosis codes used (ICD-10): T40.0 (Opium), T40.1 (Heroin), T40.2 (Natural and semi-synthetic opioids), T40.3 (Methadone), T40.4 (Synthetic Opioids, other than methadone), and T40.6 (Other and unspecified narcotics).

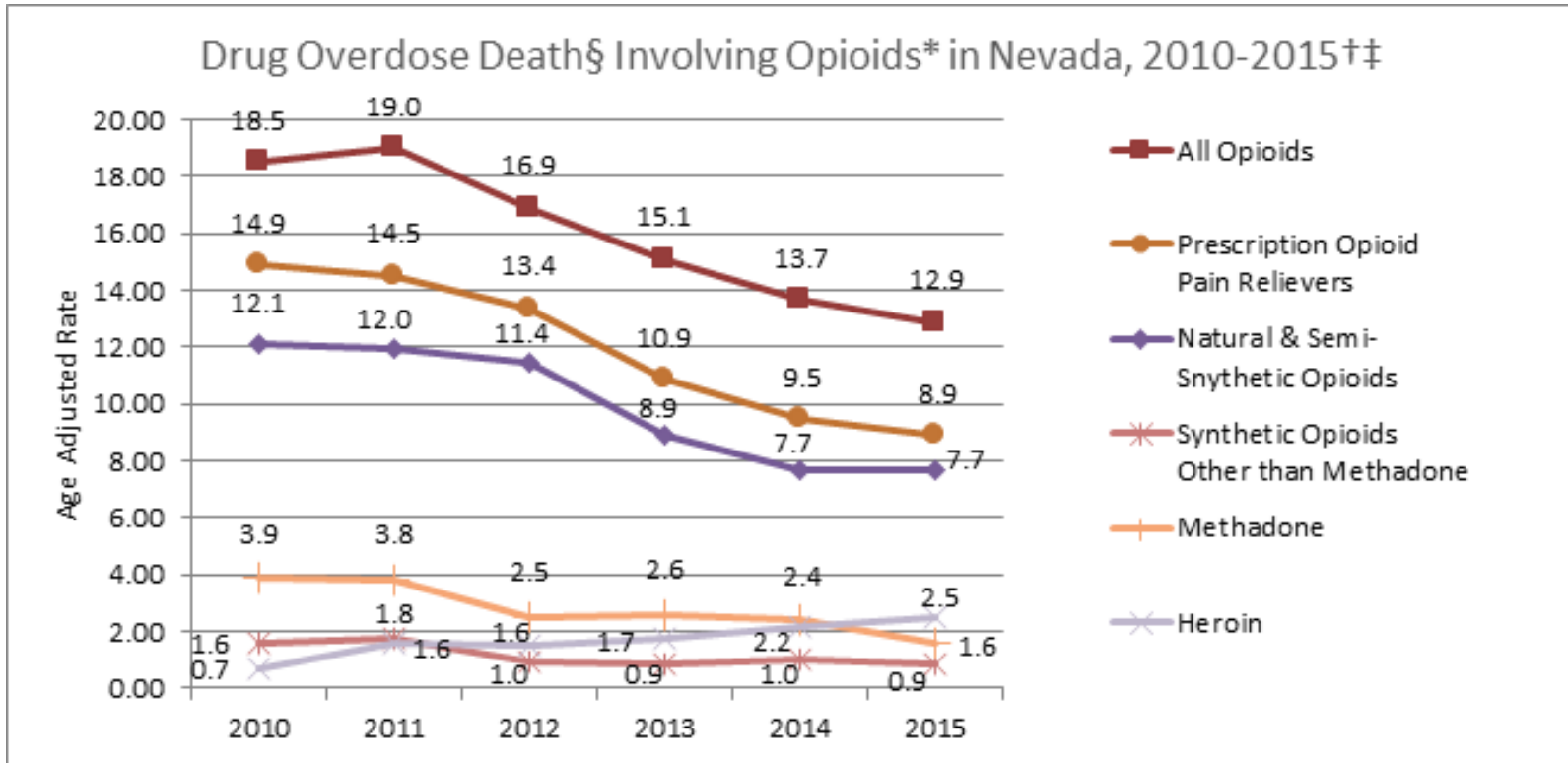
† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.

‡ Counts that are low may be from a small population, or underrepresented group, and should be interpreted with caution to avoid misunderstandings.

~ Percent may not be shown because of low frequency



Mortality- by Drug Indicators, 2010-2015



*Diagnosis used (ICD-10): T40.0 (Opium), T40.1 (Heroin), T40.2 (Natural and semi-synthetic opioids), T40.3 (Methadone), T40.4 (Synthetic Opioids, other than methadone), T40.6 (Other and unspecified narcotics)

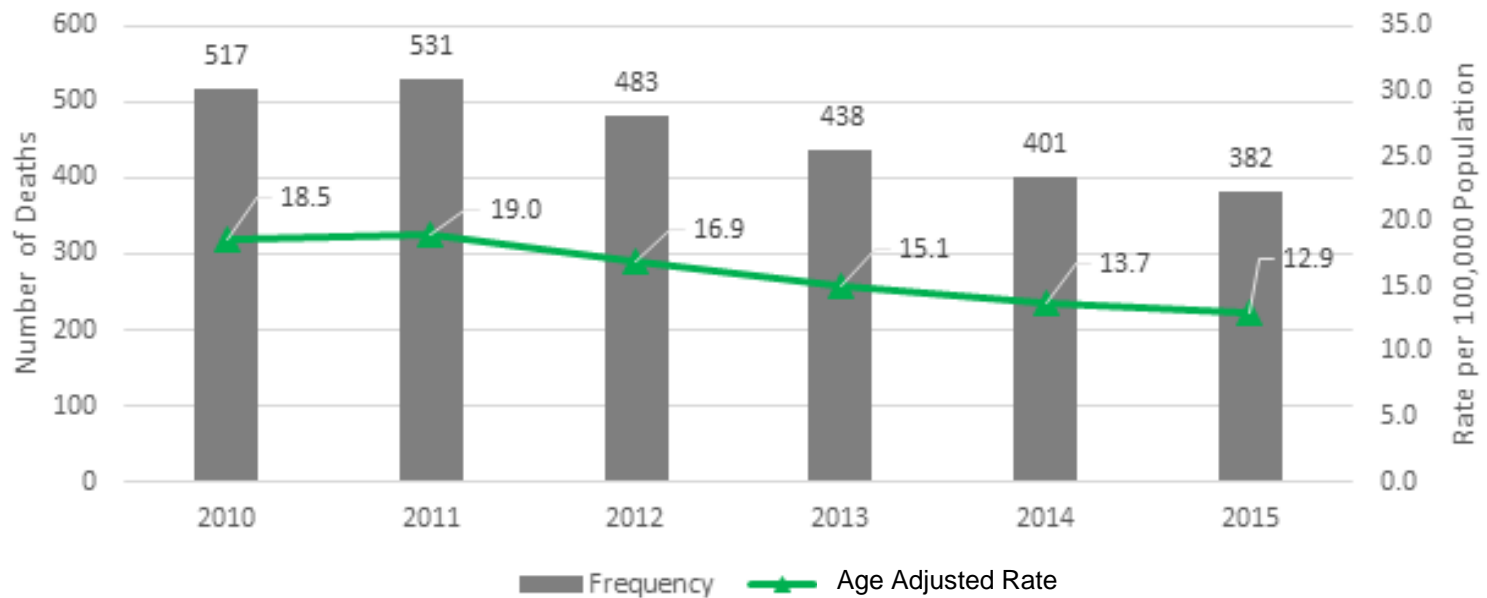
† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.

‡ Rates that are low may be from a small population, or underrepresented group, and should be interpreted with caution to avoid misunderstandings.

§ Per 100,000 Population, and Age-Adjusted Rates are calculated using the 2000 US Standard Population



All Drug Overdose Deaths Involving Opioids* in Nevada, 2010-2015†



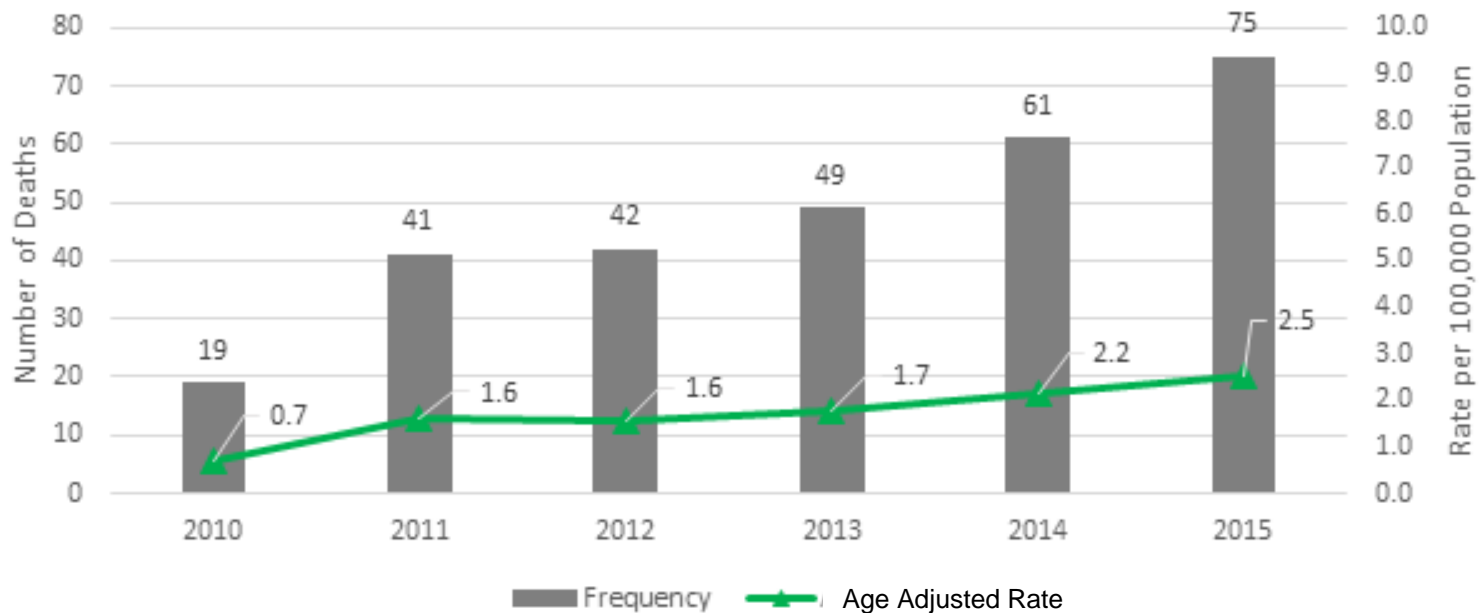
*Diagnosis codes used (ICD-10): T40.0 (Opium), T40.1 (Heroin), T40.2 (Natural and semi-synthetic opioids), T40.3 (Methadone), T40.4 (Synthetic Opioids, other than methadone), T40.6 (Other and unspecified narcotics)

† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.

§ Per 100,000 Population, and Age-Adjusted Rates are calculated using the 2000 US Standard Population



Drug Overdose Death§ Involving Heroin* in Nevada, 2010-2015†‡



*Diagnosis codes used (ICD-10): T40.1 (Heroin)

† Data Source: Division of Public and Behavioral Health, Electronic Death Registry System.

‡ Counts that are low may be from a small population, or underrepresented group, and should be interpreted with caution to avoid misunderstandings.

§ Per 100,000 Population, and Age-adjusted rates are calculated using the 2000 US Standard Population

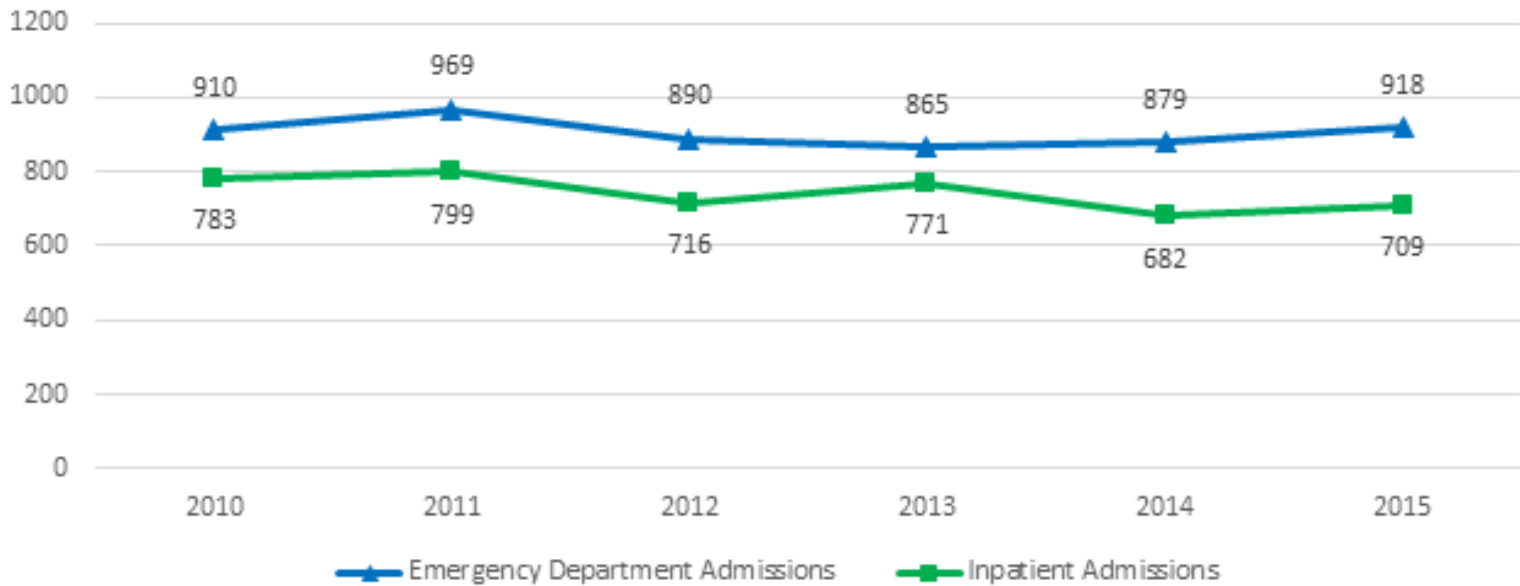


Emergency Department and Inpatient Hospital Admissions

- This section of the report will focus on emergency department visits and inpatient hospital admissions in Nevada as they relate to drug overdose involving opioid poisoning.
- Between 2010 and 2015, there were a total of 10,061 emergency department visits and inpatient hospital admissions related to opioid poisoning in Nevada.



Emergency Department Visits and Inpatient Hospital Admissions Related to Opioid Poisoning¶ in Nevada, 2010-2015†

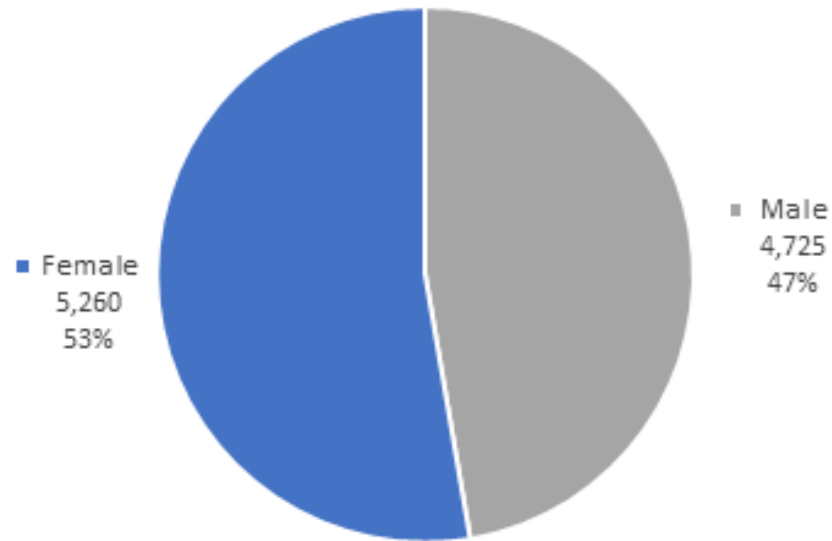


¶Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

† Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.



Emergency Department Visits and Inpatient Hospital Admissions Related to Opioid Poisoning[¶] in Nevada by Gender, 2010-2015^{†‡}

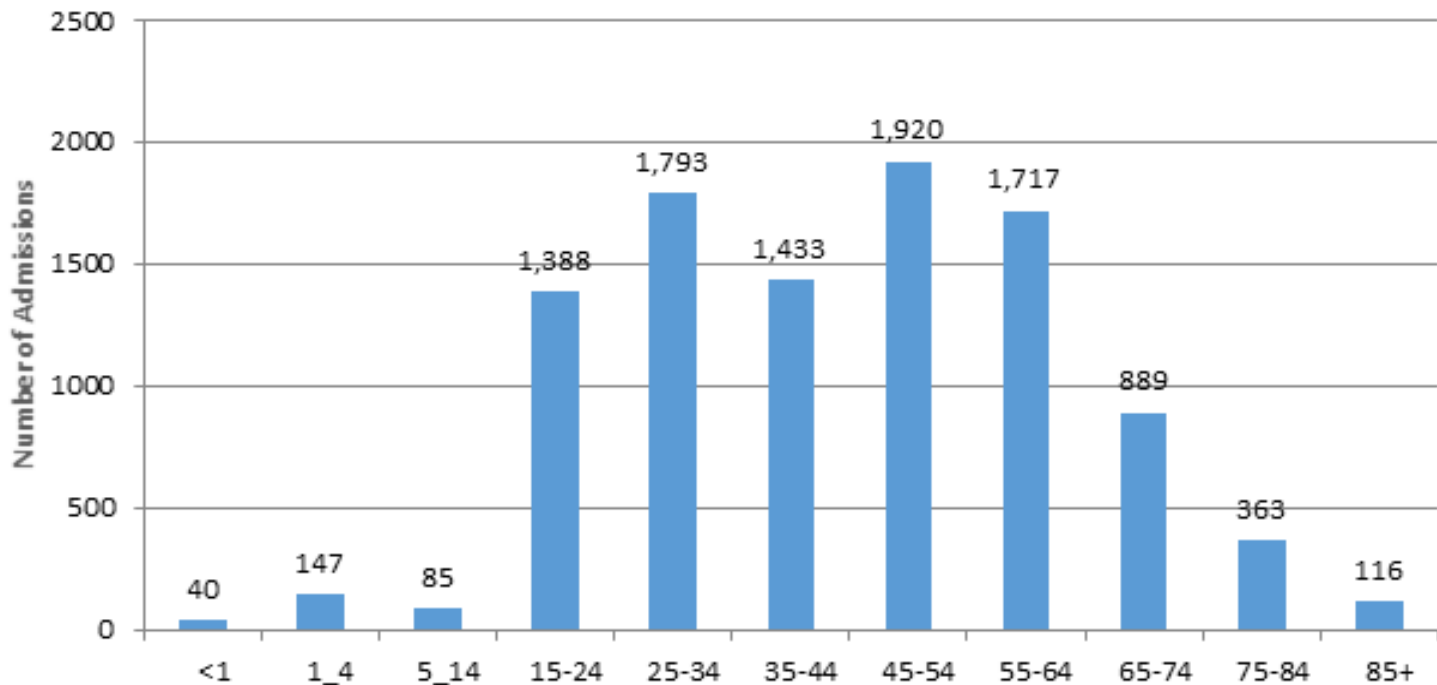


[¶]Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

[†] Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.



Emergency Department Visits and Inpatient Hospital Admissions Related to Opioid Poisoning in Nevada by Age, 2010-2015†‡

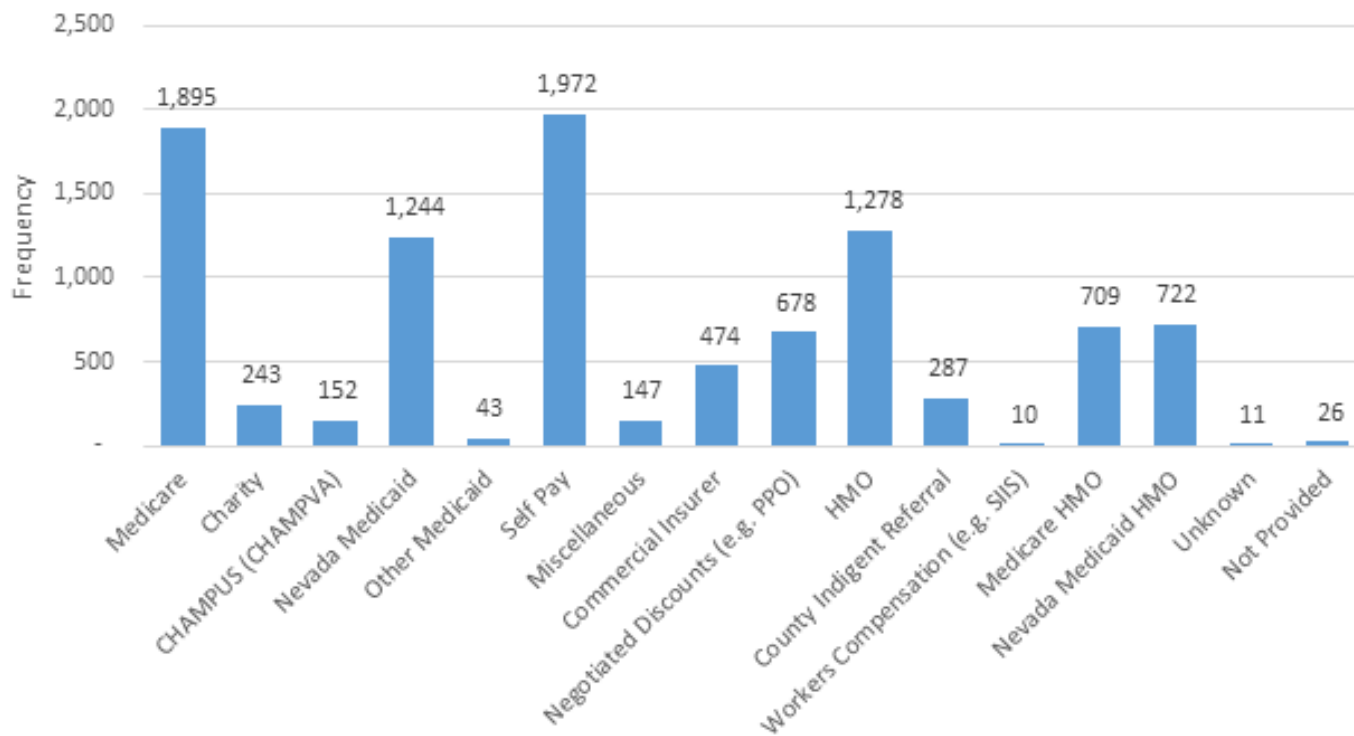


¶ Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

† Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.



Emergency Department Visits and Inpatient Hospital Admissions Related to Opioid Poisoning in Nevada by Payer, 2010-2015†

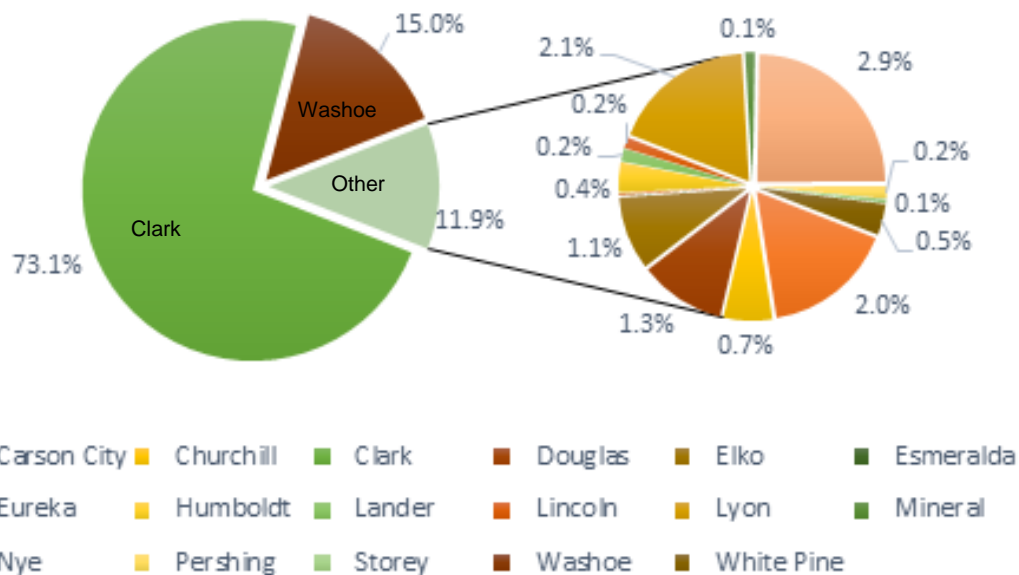


¶Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

† Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.



Emergency Department Visits and Inpatient Hospital Admissions Related to Opioid Poisoning[¶] in Nevada by County, 2010-2015^{†‡}



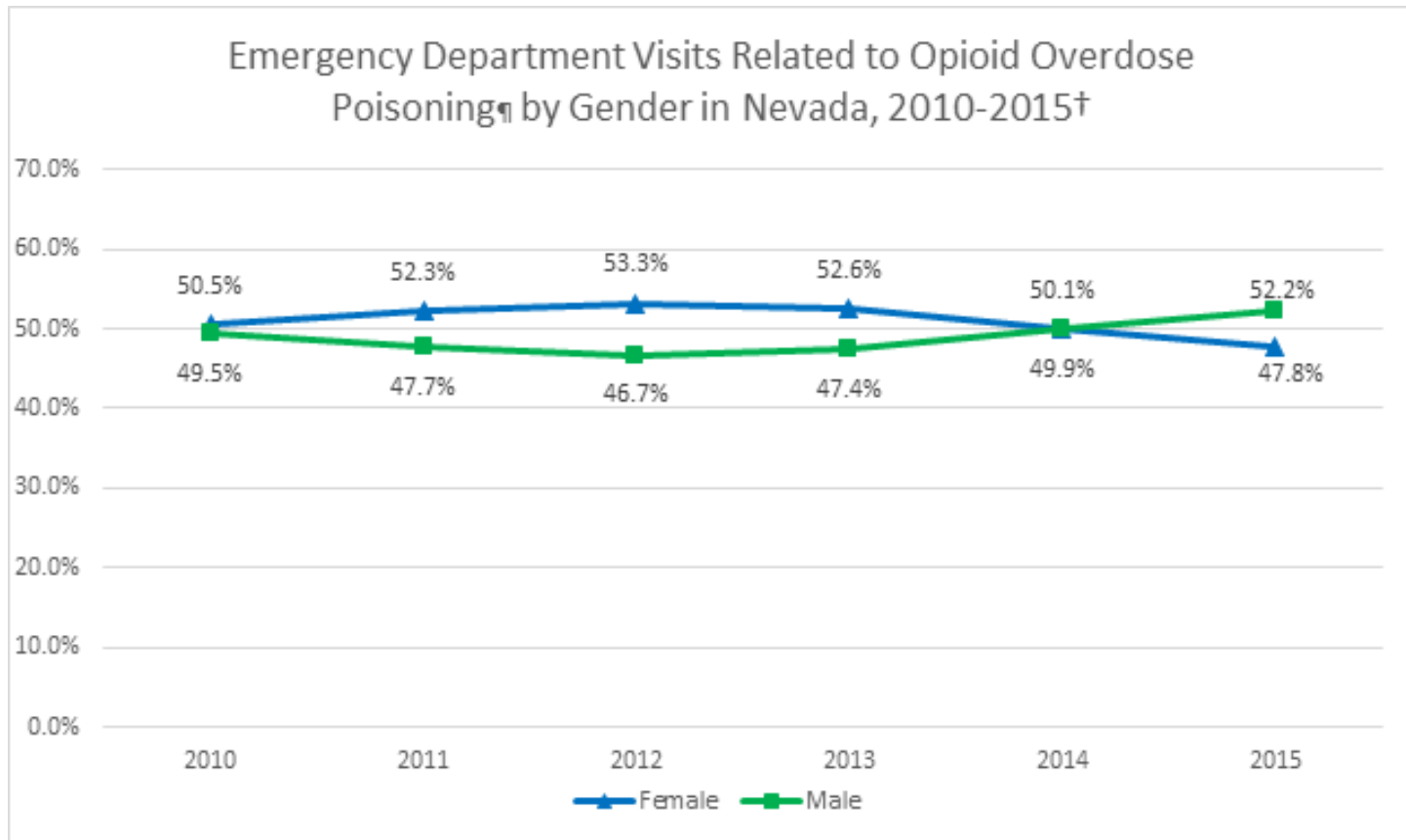
[¶]Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

[†] Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.

[‡] Percentages that are low may be from a small population, or underrepresented group, and should be interpreted with caution to avoid misunderstandings.



Emergency Department Admissions

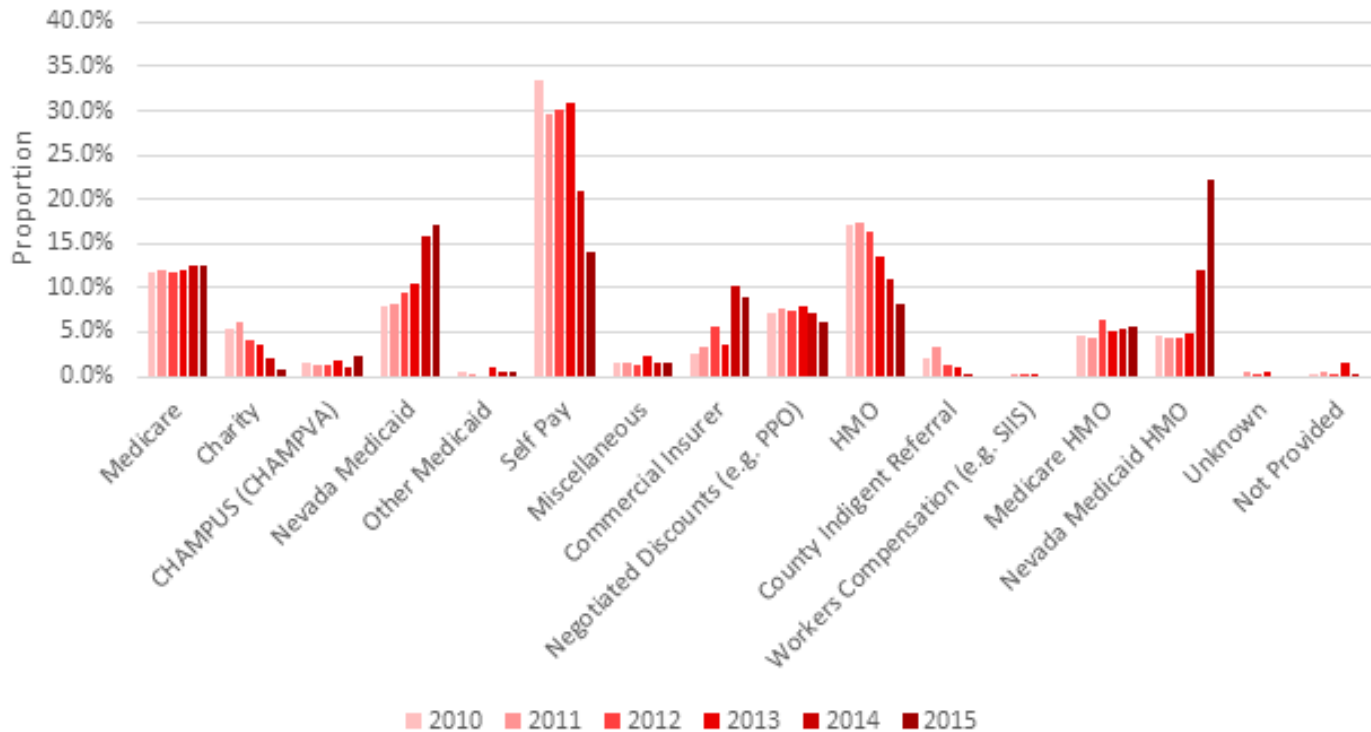


¶Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

† Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.



Emergency Department Visits Related to Opioid Overdose Poisoning† by Payer in Nevada, 2010-2015†

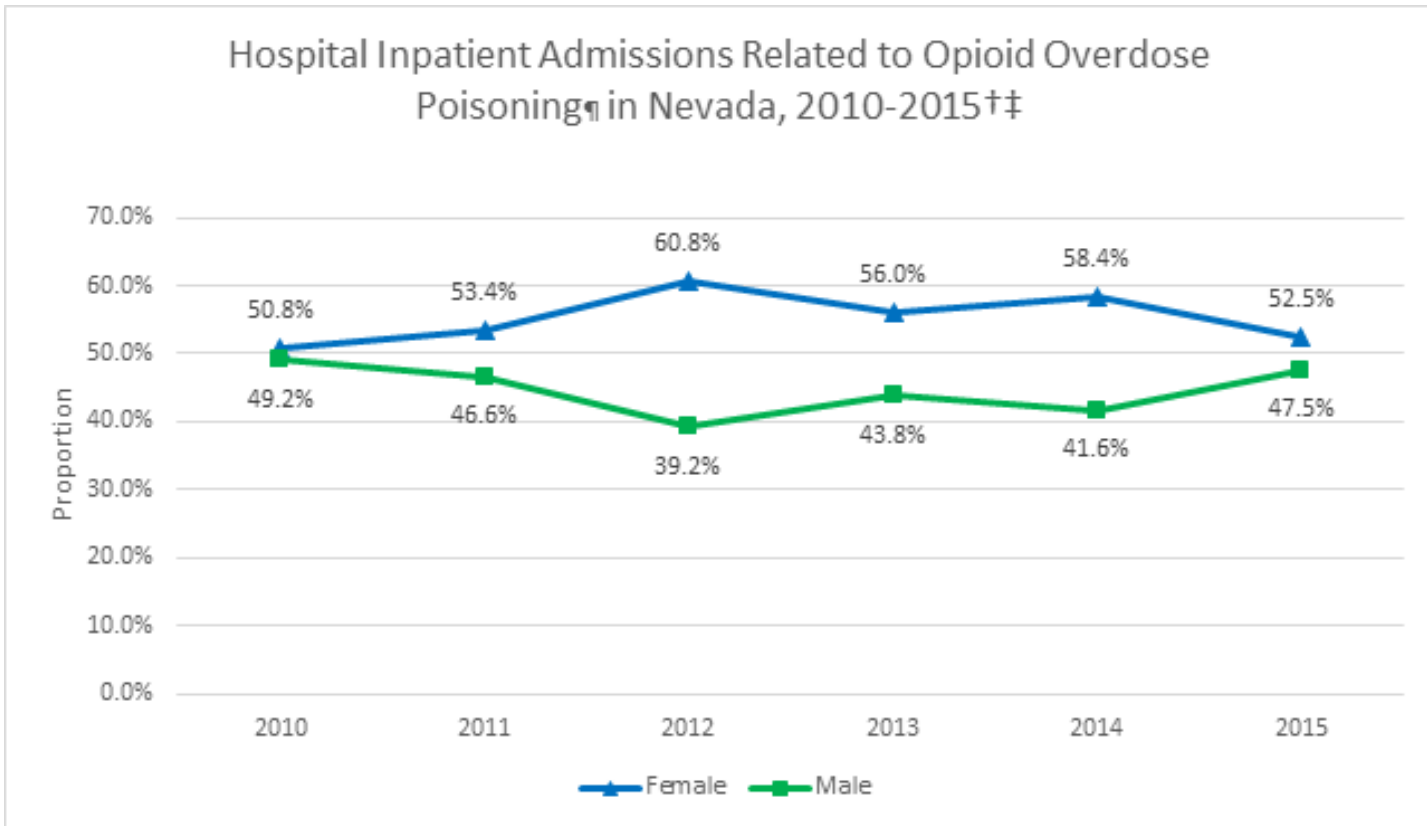


¶Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

† Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.



Hospital Inpatient Admissions

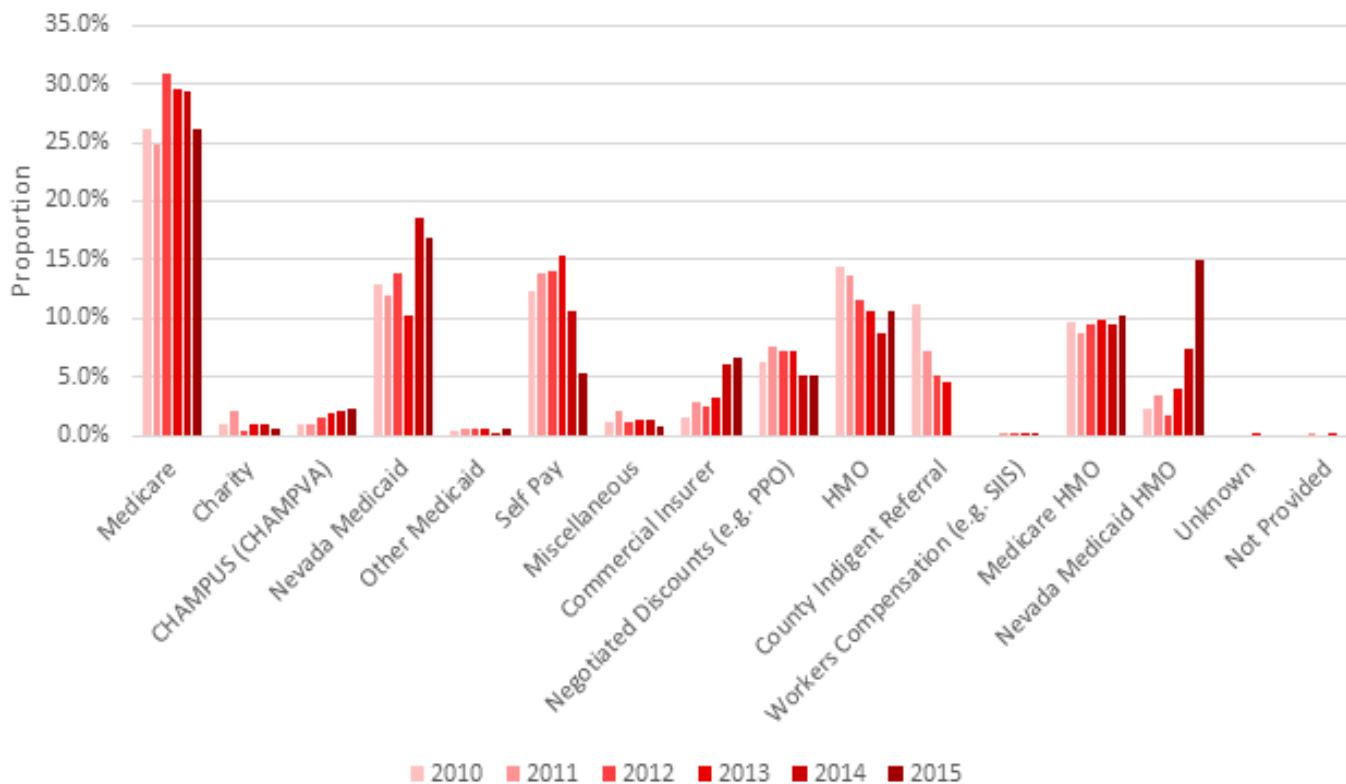


¶|Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

† Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.



Hospital Inpatient Admissions Related to Opioid Overdose Poisoning† by Payer in Nevada, 2010-2015†



¶Diagnosis codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic)

† Data Source: Division of Public and Behavioral Health, Hospital Inpatient and Emergency Department Billing Data.

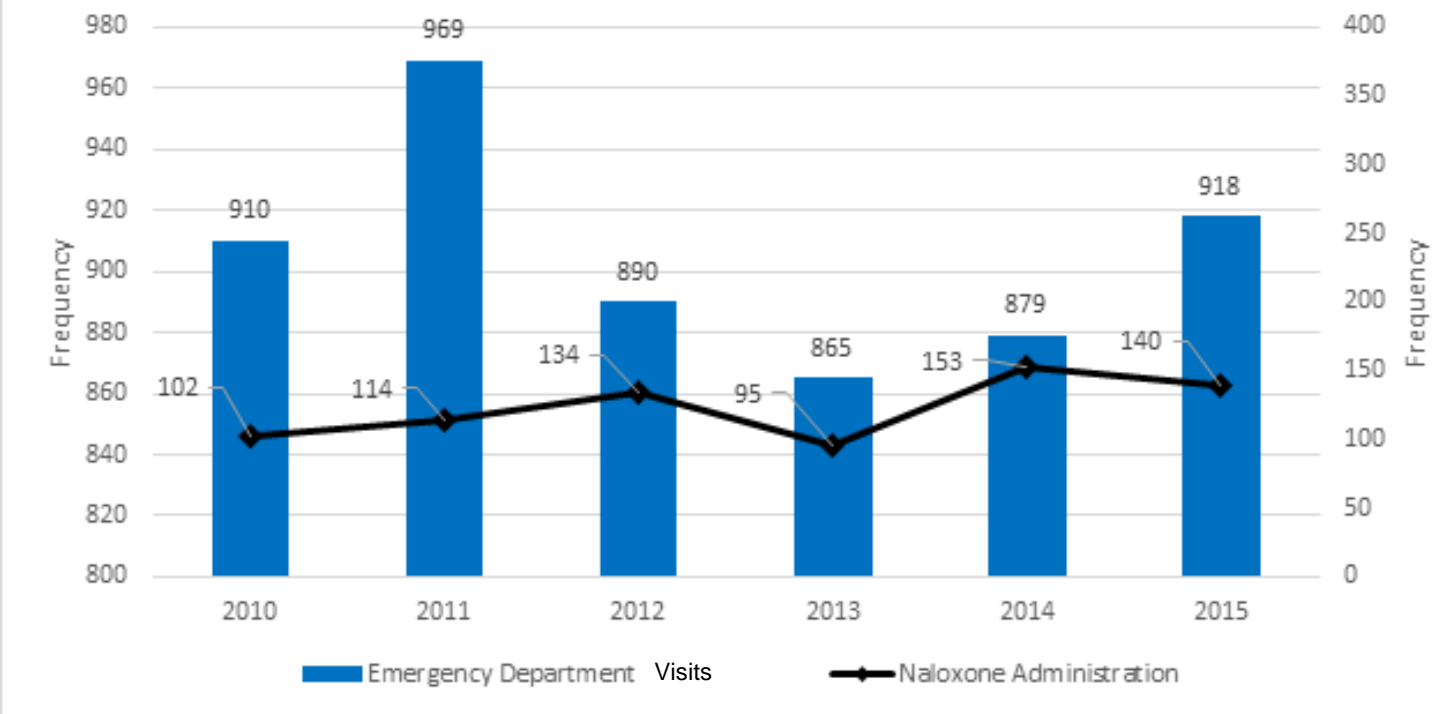


Naloxone Administration in Emergency Department Admissions

- This section of the report will focus on Naloxone administration in emergency department visits in Nevada related to drug overdose involving opioids.
- Between 2010 and 2015, there were 738 Naloxone injections in the emergency department related to opioid poisoning in Nevada.



Naloxone Administration in Emergency Department Visits Related to Opioid Overdose Poisoning¶ in Nevada, 2010-2015†‡

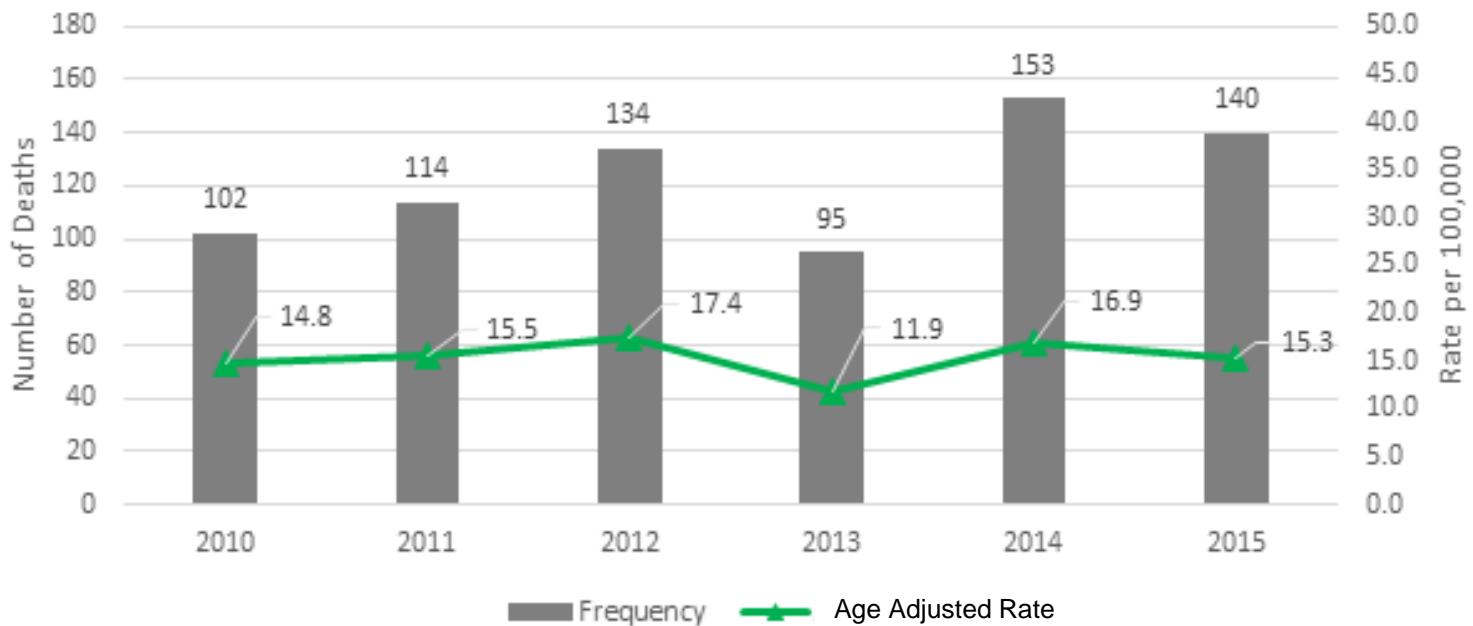


¶Diagnosis and procedure codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic), J2310 (Injection, Naloxone Hydrochloride, per 1 mg)

† Data Source: Division of Public and Behavioral Health, Emergency Department Billing Data.



Naloxone Administration in Emergency Department Visits Related to Opioid Overdose Poisoning¶ in Nevada, 2010-2015†§



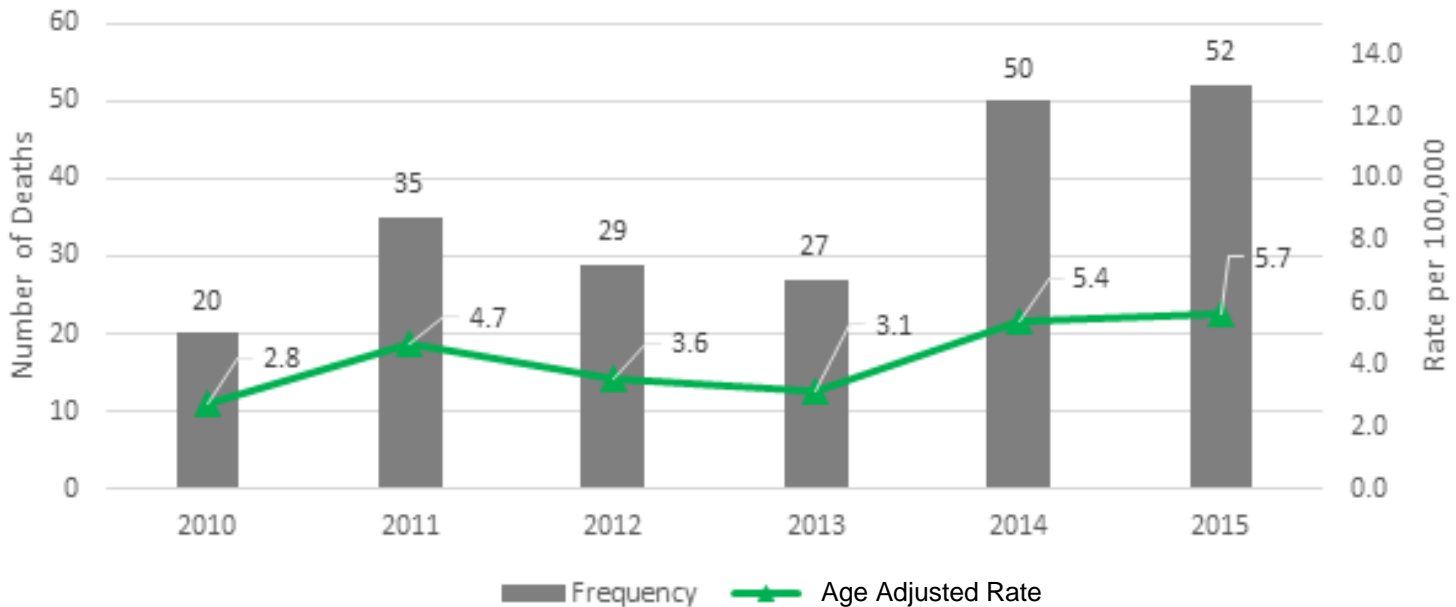
¶ Diagnosis and procedure codes used (ICD-9 & ICD-10): 965.00 (Poisoning by Opium), 965.01 (Poisoning by Heroin), 965.02 (Poisoning by Methadone), 965.09 (Poisoning by Other Opiates and Related Narcotics), T40.0* (Opium), T40.1* (Heroin), T40.2* (Other Opioids), T40.3* (Methadone), T40.4* (Synthetic), J2310 (Injection, Naloxone Hydrochloride, per 1 mg)

† Data Source: Division of Public and Behavioral Health, Emergency Department Billing Data.

§ Per 100,000 Population, and Age-adjusted rates are calculated using the 2000 US Standard Population



Naloxone Administration in Emergency Department Visits Related to Heroin Overdose Poisoning† in Nevada, 2010-2015†§



¶ Diagnosis and procedure codes used (ICD-9 & ICD-10): 965.01 (Poisoning by Heroin), T40.1* (Heroin), J2310 (Injection, Naloxone Hydrochloride, per 1 mg)

† Data Source: Division of Public and Behavioral Health, Emergency Department Billing Data.

§ Per 100,000 Population, and Age-adjusted rates are calculated using the 2000 US Standard Population



Conclusion

- Characteristics of Population at risk:
 - 45-54 years of age
 - White
 - Lower education level
- Many of the drug indicators related to opioid overdose death have been decreasing over the years, except heroin, which has been steadily increasing. This could be a possible indication that the population taking opioids are switching to heroin, since there is an increased tolerance of the effects of opioids, so this population would, in theory, switch to heroin for increased effects (Ho, Cheung, & Stadlin, 2011, pp. 1363–1364).
- This presentation demonstrates the need for continued monitoring of opioid overdose and continued efforts of prevention and education in Nevada.



References

- CDC. (2016, March 16). Opioid overdose. Retrieved July 7, 2016, from <https://www.cdc.gov/drugoverdose/index.html>
- Ho, A. C., Cheung, B. L., & Stadlin, A. (2011). Pain response in heroin users: Personality, abstinence, and modulation by benzodiazepines. *Addictive Behaviors*, 36(12), 1361-1364. doi:10.1016/j.addbeh.2011.07.047
- Nevada Division of Public and Behavioral Health, Office of Public Health Informatics and Epidemiology, Electronic Death Registry System (EDRS), Data as of December 2015
- Nevada Division of Public and Behavioral Health, Office of Public Health Informatics and Epidemiology, Hospital Emergency Department Billing (HEDB), Data as of December 2015
- Nevada Division of Public and Behavioral Health, Office of Public Health Informatics and Epidemiology, Hospital Inpatient Billing (HIB), Data as of December 2015
- WHO. (2014, November 4). Information sheet on opioid overdose. Retrieved July 7, 2016, from World Health Organization, http://www.who.int/substance_abuse/information-sheet/en/



Questions?





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