

Demographic Risk Factors for Opioid Overdose

Certain demographic characteristics may place an individual at increased risk for opioid overdose and related substance misuse. This resource summarizes findings from research literature on demographic risk factors.

GENDER

- **Male.** Being male is associated with increased overdose risk^{1,2,3,4,5} and risk of opioid abuse or dependence.^{6,7,8}
- **Female.** Overdose rates for women are increasing faster than male rates.^{9,10} Women receiving Medicaid³ and women after prison release¹¹ are at increased risk for overdose.

AGE

- **Ages 45-54.** Increased overdose risk is associated with individuals between the ages of 45 and 54.¹
- **Ages 18-25.** Increased opioid dependence or abuse risk is associated with individuals between the ages of 18 and 25.⁷
- **Ages 18-64.** Increased risk for opioid abuse is associated with individuals between the ages of 18 and 64.¹²
- **Middle Age.** Being “middle age” is associated with increased overdose risk^{2,9,13} and opioid abuse or dependence.⁶
- **Older Age.** Being “older age” is associated with increased overdose risk in some studies^{3,14} and decreased overdose risk in other studies.³ Older adults who are privately insured are associated with decreased overdose risk.³ Older adults who use illicit opioids and injected drugs are associated with increased overdose risk.^{15,16}

RACE

- **Non-Hispanic White.** Being white (non-Hispanic) is associated with increased overdose risk^{1,2,3,4,13} and risk of opioid abuse or dependence⁷. White individuals who use injected drugs are associated with increased overdose risk.¹⁶
- **All Races:** Deaths from heroin overdose have increased in the past decade among non-Hispanic white, black, Hispanic, Native American, and Asian individuals. The most significant

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increases were among non-Hispanic white, Native American and black—rates more than quadrupled between 2010 and 2014 among these four groups^{17 18}.

GEOGRAPHIC LOCATION

- **Rural.** Living in a rural setting is associated with increased overdose risk.^{2,9,13}
- **Urban.** Living in an urban setting is associated with increased overdose risk¹⁹ and risk of opioid abuse or dependence.⁷

SOCIOECONOMIC STATUS

- **Low Income.** Former prison inmates with low incomes are at increased risk for overdose.²⁰ (NOTE: Data is from a qualitative study.)

HOUSING STATUS

- **Lack of Permanent Housing.** Individuals without permanent housing are associated with an increased risk for opioid dependence or abuse.⁷

EDUCATION LEVEL

- **Low Education Level.** Individuals with less education are associated with increased risk for overdose (NOTE: Study looked only at participants from a syringe program in Seattle).²¹

MARITAL STATUS

- **Not Married.** Individuals who are not married are associated with an increased risk of overdose.¹³

VETERAN STATUS

- **Veterans Receiving Opioids and Benzodiazepines.** Veterans who are concurrently prescribed benzodiazepines and opioids are at increased risk for overdose.²²
- **Veterans with Mental Health Disorders.** Veterans with mental health disorders, including PTSD, are more likely to be prescribed opioid pain relievers and are more likely to experience adverse clinical outcomes (including overdose).²³

LGBT STATUS

- **Lesbian, Gay and Bisexual (LGB) Youth and Adults.** LGB youth and adults are at increased risk for substance use, including heroin.²⁴

DRUG USE STATUS

- **Injection Drugs.** Individuals who inject drugs are at increased risk for overdose and other adverse health outcomes.²⁵

REFERENCES

- ¹ Rudd, R., Aleshire, N., Zibbell, J. E., and Gladden, M. (2016). Increases in Drug and Opioid Overdose Deaths — United States, 2000–2014. *CDC Morbidity and Mortality Weekly Report (MMWR)*, January 1, 2016.
- ² Paulozzi, L. Populations at risk for opioid overdose. National Center for Injury Prevention and Control, Center for Disease Control and Prevention, April 12, 2012. Presentation retrieved on January 12, 2017 from: <http://www.fda.gov/downloads/drugs/newsevents/ucm300859.pdf>
- ³ Park, T. W., Lin, L. A., Hosanagar, A., Kogowski, A., Paige, K., & Bohnert, A. S. (2016). Understanding risk factors for opioid overdose in clinical populations to inform treatment and policy. *Journal of Addiction Medicine*, 10(6), 369-381.
- ⁴ Knowlton, A., Weir, B. W., Hazzard, F., Olsen, Y., McWilliams, J., Fields, J., & Gaasch, W. (2013). EMS runs for suspected opioid overdose: implications for surveillance and prevention. *Prehospital Emergency Care*, 17(3), 317-329.
- ⁵ Enhanced surveillance for opioid overdose in Rhode Island. (2014). *Rhode Island Medical Journal* (2013), 97(6), 66.
- ⁶ Cochran, B. N., Flentje, A., Heck, N. C., Van Den Bos, J., Perlman, D., Torres, J., ... & Carter, J. (2014). Factors predicting development of opioid use disorders among individuals who receive an initial opioid prescription: mathematical modeling using a database of commercially-insured individuals. *Drug and Alcohol Dependence*, 138, 202-208.
- ⁷ Centers for Disease Control (2015). Today's heroin epidemic. *Vital Signs*, July 7, 2015. Retrieved on January 12, 2017 from: <https://www.cdc.gov/vitalsigns/heroin/>
- ⁸ Cepeda, M. S., Fife, D., Kihm, M. A., Mastrogiovanni, G., & Yuan, Y. (2014). Comparison of the risks of shopping behavior and opioid abuse between tapentadol and oxycodone and association of shopping behavior and opioid abuse. *The Clinical Journal of Pain*, 30(12), 1051-1056.
- ⁹ Webster, L. R., Cochella, S., Dasgupta, N., Fakata, K. L., Fine, P. G., Fishman, S. M., et al. (2011). An analysis of the root causes for opioid-related overdose deaths in the United States. *Pain Medicine*, 12(s2), S26-S35.
- ¹⁰ Centers for Disease Control and Prevention (CDC). (2013). Vital signs: overdoses of prescription opioid pain relievers and other drugs among women--United States, 1999-2010. *MMWR. Morbidity and mortality weekly report*, 62(26), 537.
- ¹¹ Binswanger, I. A., Blatchford, P. J., Mueller, S. R., & Stern, M. F. (2013). Mortality after prison release: opioid overdose and other causes of death, risk factors, and time trends from 1999 to 2009. *Annals of Internal Medicine*, 159(9), 592-600.
- ¹² Cepeda, M. S., Fife, D., Kihm, M. A., Mastrogiovanni, G., & Yuan, Y. (2014). Comparison of the risks of shopping behavior and opioid abuse between tapentadol and oxycodone and association of shopping behavior and opioid abuse. *The Clinical Journal of Pain*, 30(12), 1051-1056.
- ¹³ Johnson, E. M., Lanier, W. A., Merrill, R. M., Crook, J., Porucznik, C. A., Rolfs, R. T., & Sauer, B. (2013). Unintentional prescription opioid-related overdose deaths: description of decedents by next of kin or best contact, Utah, 2008–2009. *Journal of General Internal Medicine*, 28(4), 522-529.
- ¹⁴ Wichmann, S., Nielsen, S. L., Siersma, V. D., & Rasmussen, L. S. (2012). Risk factors for 48-hours mortality after prehospital treatment of opioid overdose. *Emergency Medicine Journal*, emermed-2012.
- ¹⁵ Rowe, C., Santos, G. M., Behar, E., & Coffin, P. O. (2016). Correlates of overdose risk perception among illicit opioid users. *Drug and Alcohol Dependence*, 159, 234-239.
- ¹⁶ Bonar, E. E., & Bohnert, A. S. (2016). Perceived severity of and susceptibility to overdose among injection drug users: relationships with overdose history. *Substance Use & Misuse*, 1-5.
- ¹⁷ Childress, S. (2016). How the Heroin Epidemic Differs in Communities of Color. *Frontline*, February 23, 2016. Available at: <http://www.pbs.org/wgbh/frontline/article/how-the-heroin-epidemic-differs-in-communities-of-color/>
- ¹⁸ Rudd, R. A., Aleshire, N., Zibbell, J. E., & Gladden, R. M. (2016). Increases in Drug and Opioid Overdose Deaths--United States, 2000-2014. *MMWR: Morbidity & Mortality Weekly Report*, 64(50/51), 1378-1382.
- ¹⁹ Cerdá, M., Gaidus, A., Keyes, K. M., Ponicki, W., Martins, S., Galea, S., & Gruenewald, P. (2017). Prescription opioid poisoning across urban and rural areas: identifying vulnerable groups and geographic areas. *Addiction*, 112(1), 103-112.
- ²⁰ Binswanger, I. A., Nowels, C., Corsi, K. F., Glanz, J., Long, J., Booth, R. E., & Steiner, J. F. (2012). Return to drug use and overdose after release from prison: a qualitative study of risk and protective factors. *Addiction Science & Clinical Practice*, 7(1), 1.
- ²¹ Jenkins, L. M., Banta-Green, C. J., Maynard, C., Kingston, S., Hanrahan, M., Merrill, J. O., & Coffin, P. O. (2011). Risk factors for nonfatal overdose at Seattle-area syringe exchanges. *Journal of Urban Health*, 88(1), 118-128.

²² Park, T. W., Saitz, R., Ganoczy, D., Ilgen, M. A., & Bohnert, A. S. (2015). Benzodiazepine prescribing patterns and deaths from drug overdose among US veterans receiving opioid analgesics: case-cohort study. *British Medical Journal*, 350, h2698.

²³ Seal, K. H., Shi, Y., Cohen, G., Cohen, B. E., Maguen, S., Krebs, E. E., & Neylan, T. C. (2012). Association of mental health disorders with prescription opioids and high-risk opioid use in US veterans of Iraq and Afghanistan. *Journal of the American Medical Association*, 307(9), 940-947.

²⁴ Marshal, M. P., Friedman, M. S., Stall, R., King, K. M., Miles, J., Gold, M. A., & ... Morse, J. Q. (2008). Sexual orientation and adolescent substance use: a meta-analysis and methodological review. *Addiction*, 103(4), 546-556.

²⁵ Mathers, B. M., Degenhardt, L., Bucello, C., Lemon, J., Wiessing, L., & Hickman, M. (2013). Mortality among people who inject drugs: a systematic review and meta-analysis. *Bulletin Of The World Health Organization*, 91(2), 102-123.