

Years of Life Lost: Understanding Long-Range Impact of Substance Misuse, Suicide, and Firearm Deaths



Randall W. Leite
Dean, College of Health Sciences and Professions
(www.ohio.edu/chsp)

Orman Hall
Executive in Residence, Ohio Alliance for Innovation in Population Health

Rick Hodges
Director, Ohio Alliance for Innovation in Population Health
(www.ohiopopulationhealthalliance.com)



Critical health issues are often explored in the present with a focus on rates of incidence and patterns of association with other factors. Far less attention is given to the long-term population impacts of events that result in loss of life. A lost life represents a loss of potential in terms of community contributions, economic impacts, procreation, and generation of social capital. Working with State of Ohio death certificate data, the Ohio Alliance for Innovation in Population Health, a consortium of 28 university, corporate, and public health partners, has undertaken an exploration of the years of lost life associated with overdose deaths. These analyses include both statewide and community-level assessments.

Years of Lost Life:

The years of life lost (YLL) is a summary measure of premature mortality. YLL estimates the years of potential life lost due to premature deaths. YLL takes into account the age at which deaths occur, giving greater weight to deaths at a younger age and lower weight to deaths at older age.

YLL can be used to calculate the YLL due to a specific cause of death as a proportion of the total YLL lost in the population due to premature mortality. Such indicator can be used in public health planning to compare the relative importance of different causes of premature deaths within a given population, to set priorities for prevention, and to compare the premature mortality experience between populations.

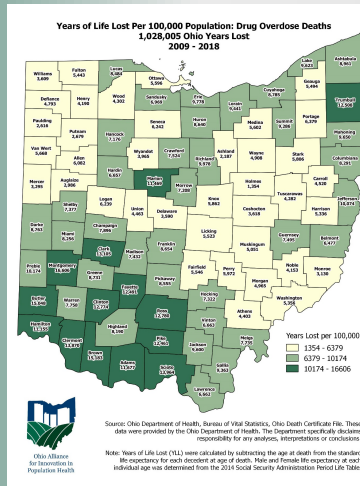
Compendium of Clinical and Health Indicators User Guide Annex 3. National Centre for Health Outcomes Development. Available at: <http://content.digital.nhs.uk/article/1885/Compendium-of-Population-Health-Indicators>

Data & Methods:

- Ohio Department of Health, Bureau of Vital Statistics, Ohio Death Certificate File (2009-2018)
- Years of Life Lost (YLL) were calculated by subtracting the age at death from the standard life expectancy for each decedent at age of death. Male and female life expectancy at each individual age was determined from the 2014 Social Security Administration Period Life Table

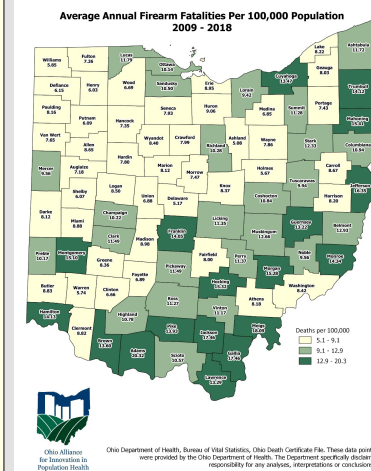
Key Findings: Overdose Deaths

- 1,028,005 years of lost life in Ohio over a ten-year period
- 188,423 years of lost life in 2017 (the peak year for overdoses in Ohio)
- Average lifespan for Ohioans has been lowered by an average of 1.28 years due to overdose deaths
- YLL is highest in urban counties
- Opioid overdoses accounted for 81% of all years of lost life



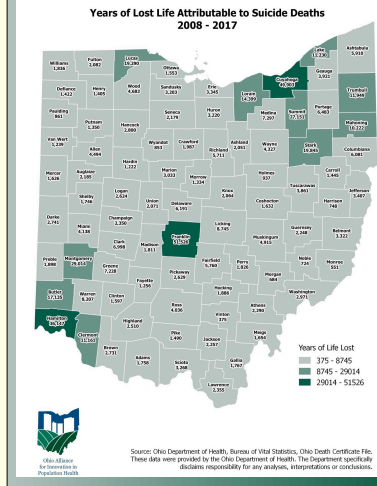
Key Findings: Firearm Deaths

- 484,122 years of lost life in over a ten-year period due to firearm deaths
- 188,423 years of lost life in 2017 (the peak year for overdoses in Ohio)
- Average lifespan for Ohioans has been lowered by an average of 0.44 years due to firearm deaths
- YLL is highest in rural counties
- Suicides accounted for 52% of all lost years of life due to firearm deaths



Key Findings: Suicide Deaths

- 15,246 suicides in Ohio from 2008 to 2017
- Suicides accounted for 526,501 years of lost life
- Suicide rate in Ohio increased by 24% over the 10-year study period
- Suicide rates and years of lost life were highest in Appalachian Ohio counties
- Firearms accounted for 50.9% of all suicides
- Suicides by firearm were highest in rural counties



Questions/Comments may be directed to:
Randy Leite at leite@ohio.edu