Name: Suicide Mortality

Short Description: Number of deaths attributed to suicide per 100,000 people.

Data Source(s):
- Name: The Centers for Disease Control and Prevention (CDC) Wide-ranging Online Data for Epidemiologic Research (WONDER)
- Link to Source: https://wonder.cdc.gov/Deaths-by-Underlying-Cause.html

Year(s): 2010-2019

Source Geographic Level: County

Stratification: Black populations

Selection Rationale: An estimate of suicide mortality contributes to an overall understanding of mental wellbeing in an area. While CDC mortality data is only available for fatal suicide attempts, those who attempt suicide (non-fatal suicides) have been found to experience a range of long-term outcomes such as additional suicide attempts, depression, substance use disorders, legal charges, and imprisonment. [1] Suicide mortality provides additional depth of information alongside a suicidal ideation measure for understanding suicide risk and mental wellness.

Strengths and Limitations:
- **Strengths**:
  - [*Importance*] Suicide mortality is linked to occurrence of various mental health conditions, including schizophrenia spectrum disorder, bipolar disorder, depressive disorders, anxiety disorders, and ADHD.[2]
  - [*Relevance and Usability*] This measure is easy to understand and can provide information on geographic areas with a high prevalence of fatal suicides.
  - [*Equity*] This measure captures disparities experienced between population groups. Suicide attempts among Black populations have increased in recent years, so this measure can help delineate where they are occurring.[3] The

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[1] Beautrais, A., Joyce, P., & Mulder, R. (2000). Unmet need following serious suicide attempt: follow-up of 302 individuals for 30 months. In G. Andrews & S. Henderson (Eds.), *Unmet Need in Psychiatry: Problems, Resources, Responses* (pp. 245–255). Cambridge University Press. https://doi.org/10.1017/cbo9780511543562.019

[2] Yeh, H. H., Westphal, J., Hu, Y., Peterson, E. L., Williams, L. K., Prabhakar, D., Frank, C., Autio, K., Elsiss, F., Simon, G. E., Beck, A., Lynch, F. L., Rossom, R. C., Lu, C. Y., Owen-Smith, A. A., Waitzfelder, B. E., & Ahmedani, B. K. (2019). Diagnosed Mental Health Conditions and Risk of Suicide Mortality. *Psychiatric Services*, *70*(9), 750–757. https://doi.org/10.1176/appi.ps.201800346

[3] National Institute of Mental Health. (n.d.). *NIMH Suicide Statistics*. https://www.nimh.nih.gov/health/statistics/suicide

Emergency Task Force on Black Youth Suicide & Mental Health spearheaded by the Congressional Black Caucus cites an uptick in suicide rates among black youth over the past decade.[4]

- o [*Scientific Soundness*] Mortality data is collected from all death certificates filed in the fifty states and the District of Columbia. [5]
- o [*Feasibility*] Data are easily downloadable and accessible through CDC WONDER and are updated annually.

- **Limitations**:
  - o [*Equity*] Fatal suicides of nonresidents (nonresident aliens, nationals living abroad, Puerto Rico residents, and other territories of the U.S.) are not reported in this measure.
  - o [*Feasibility*] Data are captured for a 10-year period from 2010-2019. This may make it difficult to discern mortality trends over shorter timespans. A 10-year period was selected because when this measure is stratified by race for Black populations alone, using a shorter time period would result in significant suppression of data.
  - o [*Scientific Soundness*] CDC WONDER uses mortality data that are provided to the National Vital Statistics System by state registries. State registries collect mortality data from death certificates that contain a single underlying cause of death. Suicide rates may be undercounted if a coroner lists a more proximate cause as "cause of death" instead of suicide itself.
  - o [*Scientific Soundness*] Data representing less than 10 deaths are suppressed, and county-level deaths less than 20 people are marked as "unreliable".[6]
  - o [*Scientific Soundness*] The smallest geographic level at which this data is available is the county level, so each Zip Code Tabulation Area (ZCTA) in a given county will have the same value. As a result, ZCTA-level values may be less accurate because it is not possible to differentiate which ZCTAs have higher or lower rates within a county.
  - o [*Relevance and Usability*] Measuring suicide mortality deaths does not reflect the prevalence of non-lethal suicide attempts.

Calculation:

Overall Population:

$$Suicide\ mortality_{Overall} = \frac{total\ number\ of\ deaths\ attributed\ to\ suicide}{total\ number\ of\ individuals} x\ 100{,}000\ people$$

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[4] The Congressional Black Caucus Emergency Taskforce on Black Youth Suicide and Mental Health. (2020). *Ring the Alarm: The Crisis of Black Youth Suicide in America*. https://watsoncoleman.house.gov/uploadedfiles/full_taskforce_report.pdf

[5] Centers for Disease Control and Prevention. (2021, March 11). *Underlying Cause of Death 1999-2019*. CDC Wonder. https://wonder.cdc.gov/wonder/help/ucd.html#

[6] Ibid

<u>*Black Populations*</u>:

$$Suicide\ mortality_{Black} = \frac{number\ of\ deaths\ attributed\ to\ suicide\ among\ Black\ populations}{total\ number\ of\ Black\ individuals}\ x\ 100,000\ people$$