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 well-being in an area. While CDC mortality data are available for only 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 are collected from all death certificates filed in the 50 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, residents of Puerto Rico and other territories of the U.S.) are not reported in this measure.
  - o [*Feasibility*] Data are captured for a 10-year period, 2010-2019. This may make it difficult to discern mortality trends over shorter time spans. 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 fewer than 10 deaths are suppressed, and county-level deaths fewer than 20 people are marked as "unreliable."[6]
  - o [*Scientific Soundness*] The smallest geographic level at which these data are 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:

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

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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>:

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