Name: Smoking Status

Short Description: Percent of adults that currently smoke cigarettes (calculated as a crude prevalence).

Data Source(s):

- Name: The Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS), accessed via the PLACES Project Data Portal
  Link to Source:
  https://chronicdata.cdc.gov/browse?category=500+Cities+%26+Places&sortBy=newest&utf8

Year(s): 2018

Source Geographic Level: Zip Code Tabulation Area (ZCTA)

Stratification: Not available

Selection Rationale: Smoking (tobacco use disorder)[1] is the most common form of substance use so measuring cigarette smoking prevalence in a population is essential to understanding substance use prevalence. There is also a strong relationship between smoking and common mental disorders, as smoking is a frequent coping mechanism for distress.[2] Smoking is therefore both a direct and indirect measure of mental wellness in a community.

Strengths and Limitations:
- **Strengths**:
  - [*Importance*] Smoking is the most common form of substance use disorder, and is linked to several common mental disorders, making smoking essential to understanding the mental wellness of a population.
  - [*Equity*] This measure captures disparities experienced between population groups. While Black populations on the whole smoke fewer cigarettes than

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[1] American Academy of Addiction Psychiatry. (2015). *Nicotine Dependence*. https://www.aaap.org/wp-content/uploads/2015/06/AAAP-nicotine-dependence-FINAL.pdf

[2] Lawrence, D., Mitrou, F., & Zubrick, S. R. (2011). Non-specific psychological distress, smoking status and smoking cessation: United States National Health Interview Survey 2005. *BMC Public Health*, *11*(1). https://doi.org/10.1186/1471-2458-11-256

Hispanic and White populations, they are more likely to die of a smoking-related disease[3] and are specifically targeted by tobacco companies.[4]

- o [*Relevance & Usability*] By understanding the prevalence of cigarette smoking, users of the tool will be able to best target substance use interventions in a community.
- o [*Feasibility*] The data are easily downloadable from PLACES and maintained by the CDC Division of Population Health, Epidemiology and Surveillance Branch.
- o [*Scientific Soundness*] The methods used by the CDC to generate these small area estimates accounts for the associations between individual health outcomes, individual characteristics, and spatial contexts. CDC's internal and external validation studies confirm strong consistency between small area estimates and direct BRFSS survey estimates at state and county levels. [5]

- **Limitations**:
  - o [*Relevance and Usability*] This measure only reports data for cigarette smoking, not for other types of smoking, such as e-cigarettes, marijuana, or cigars.
  - o [*Relevance and Usability*] This measure is a model-based estimate[6], so it may be difficult to interpret on its own.
  - o [*Scientific Soundness*] This measure is self-reported and depends on the accuracy of the person surveyed.
  - o [*Scientific Soundness*] Age adjusted prevalence is not available at the census tract level, so this data is reported as a crude prevalence.
  - o [*Scientific Soundness*] These data only reflect "current" smoking, rather than lifetime prevalence (though "current smokers" are required to have smoked at least 100 cigarettes in their lifetime to be counted in this measure).[4]

Calculation:

$$Smoking \ = \ \frac{Respondents \ aged \ \geq 18 \ years \ who \ report \ that \ they \ are \ current \ cigarette \ smokers^*}{Respondents \ aged \ \geq 18 \ years \ who \ report \ information \ about \ cigarette \ smoking^{**}} \ x \ 100\%$$

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[3] Centers for Disease Control and Prevention. (2019a, March 26). *African Americans and Tobacco Use.* https://www.cdc.gov/tobacco/disparities/african-americans/index.htm

[4] Truth Initiative. (2015, December 8). *Achieving health equity in tobacco control.* https://truthinitiative.org/research-resources/targeted-communities/achieving-health-equity-tobacco-control

[5] Centers for Disease Control and Prevention. (2020a, December 8). *PLACES Methodology*. https://www.cdc.gov/places/methodology/

[6] Ibid

*Where current cigarette smokers are defined as having smoked ≥100 cigarettes in their lifetime and currently smoke every day or some days. This does not include e-cigarette smokers.[7]

** Denominator excludes those who refused to answer, had a missing answer, or answered "don't know/not sure".[8]

Note - BRFSS estimates the crude prevalence based on self-reports using small area estimation (SAE) and multilevel regression and poststratification (MRP) which links geocoded health surveys and high spatial resolution population demographic and socioeconomic data.[9]

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[7] Centers for Disease Control and Prevention (2019b). *2019 BRFSS Questionnaire*.
https://www.cdc.gov/brfss/questionnaires/pdf-ques/2019-BRFSS-Questionnaire-508.pdf
[8] Centers for Disease Control and Prevention. (2020b, December 8). *PLACES Measure Definitions*.
https://www.cdc.gov/places/measure-definitions
[9] Centers for Disease Control and Prevention. (2020a, December 8). *PLACES Methodology*.
https://www.cdc.gov/places/methodology/