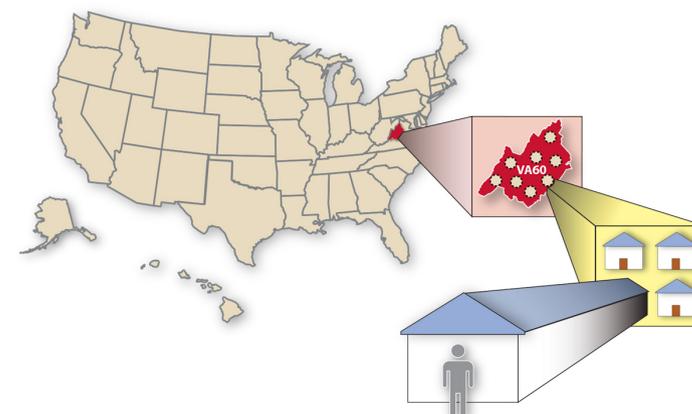


The CBHSQ Report

Short Report

March 14, 2018

SUICIDAL THOUGHTS AND BEHAVIOR IN 33 METROPOLITAN STATISTICAL AREAS UPDATE: 2013 TO 2015



AUTHORS

Eunice Park-Lee, Ph.D., Sarrah L. Hedden, Ph.D., and Rachel N. Lipari, Ph.D.

INTRODUCTION

Suicide is a major public health problem in the United States and a tragedy for all involved: family, friends, neighbors, colleagues, and communities. In 2015, suicide was identified as the 10th leading cause of death in the United States, responsible for 44,193 deaths; the age-adjusted rates increased by 2.4 percent between 2014 and 2015.¹ Individuals who die from suicide, however, represent a fraction of those who consider or attempt suicide. Out of every 31 adults in 2008 to 2011 in the United States who attempted suicide in the past 12 months, there was 1 death by suicide.²

Suicide is also a public health concern that transcends state and regional borders. Research has shown that reported prevalence of serious suicidal thought, suicide planning, and suicide attempts vary across states and across areas within states.^{3,4} Data on metropolitan areas provide additional insight into the distribution of adults with suicidal thoughts and behaviors that may help state and local public health authorities to better understand and effectively serve their communities.

The National Survey on Drug Use and Health (NSDUH) can help address the need for more localized information on suicidal thoughts and behaviors. NSDUH is the primary source for statistical information on illicit drug use, alcohol use, substance use disorders, and mental health issues for the U.S. civilian, noninstitutionalized population aged 12 or older.

A strength of the NSDUH is the stability in the sample and survey design, which allows multiple years of data to be combined to examine both national and metropolitan area estimates of serious suicidal thought, suicide planning, and suicide attempts among adults. In NSDUH, respondents aged 18 or older were asked whether they had thought seriously about trying to kill themselves at any time during the past 12 months; those who reported having had serious thoughts of suicide were then asked whether, in the past 12 months, they had made any plans to kill themselves and whether they had tried to kill themselves.

In Brief

- Based on combined 2013 to 2015 NSDUH data, an annual average of 9.5 million adults aged 18 or older had serious thoughts of suicide in the past year, 2.7 million made a suicide plan, and 1.3 million attempted suicide.
- The percentage of adults aged 18 or older who had serious thoughts of suicide in the past year ranged from 2.5 percent in the Miami metropolitan statistical area (MSA) to 6.6 percent in the New Orleans MSA.
- The percentage of adults aged 18 or older who planned suicide in the past year included 0.4 percent in the Atlanta MSA and 2.1 percent in the New Orleans MSA.
- The percentage of adults aged 18 or older who attempted suicide in the past year ranged from 0.2 percent in the Albuquerque MSA to 1.0 percent in the Honolulu MSA.

This issue of *The CBHSQ Report* uses combined 2013 to 2015 NSDUH data to present estimates of past year serious suicidal thought, suicide planning, and suicide attempts among those aged 18 or older who were residing in 33 metropolitan statistical areas (MSAs⁵), and is an update to an earlier report using 2008 to 2010 data.⁶ Table S1 provides a complete list of the MSAs analyzed in this report and the abbreviations used to identify each MSA in the maps and tables presented in this report. The MSAs included in this report were selected based on a combination of the MSAs with sufficient sample size to produce reliable estimates and the intent to get representation from the different Department of Health and Human Services regions of the country.⁷

All estimates of past year serious suicidal thought, suicide planning, and suicide attempts in this report are annual averages based on the combined 2013 to 2015 NSDUH data. Comparisons are made between each MSA and the nation as a whole. Only differences in estimates that are statistically significant at the .05 level are discussed in the text.⁸ When describing the lowest and the highest prevalence estimates, the term “range” is used if the lowest and the highest estimates are significantly different at the .05 level. Otherwise, the term “include” is used to describe some of the estimates.

PAST YEAR SERIOUS THOUGHTS OF SUICIDE

Based on combined 2013 to 2015 NSDUH data, about 9.5 million adults aged 18 or older had serious thoughts of suicide in the past 12 months. This corresponds to a national estimate of about 1 in 25 (4.0 percent) adults having serious thoughts of suicide (Table 1). Percentages of adults who had suicidal thoughts ranged⁹ from 2.5 percent in the Miami MSA to 6.6 percent in the New Orleans MSA (Figure 1). Among the 33 MSAs, the percentages of adults who had suicidal thoughts were lower than the national average in Miami (2.5 percent), Chicago (2.9 percent), and Dallas (3.0 percent). No MSAs had percentages of adults with suicidal thoughts that were significantly higher than the percentage in the nation as a whole.

Table 1. Suicidal thoughts and behavior in past year among adults aged 18 or older, by Metropolitan Statistical Area (MSA): Annual averages, 2013 to 2015

Metropolitan Area	Serious thoughts of suicide: Percent (CI)	Made any suicide plans: Percent (CI)	Attempted Suicide: Percent (CI)
Total U.S.	4.0 (3.8-4.1)	1.1 (1.1-1.2)	0.5 (0.5-0.6)
Albuquerque, NM	4.2 (3.0-5.8)	1.1 (0.6-2.1)	0.2 (0.1-0.5)*
Atlanta-Sandy Springs-Marietta, GA	3.4 (2.4-4.8)	0.4 (0.2-0.7)*	0.3 (0.1-0.7)
Baltimore-Towson, MD	3.9 (2.7-5.6)	1.0 (0.5-1.7)	0.5 (0.2-1.1)
Boston-Cambridge-Quincy, MA-NH	4.4 (3.3-5.8)	1.0 (0.7-1.6)	0.5 (0.3-1.0)
Chicago-Joliet-Naperville, IL-IN-WI	2.9 (2.4-3.6)*	0.9 (0.6-1.2)	0.4 (0.2-0.7)
Cleveland-Elyria-Mentor, OH	4.7 (3.3-6.5)	1.4 (0.8-2.6)	0.5 (0.2-0.9)
Dallas-Fort Worth-Arlington, TX	3.0 (2.2-4.0)*	0.8 (0.5-1.3)	0.6 (0.3-1.2)
Denver-Aurora-Broomfield, CO	4.4 (3.0-6.5)	1.1 (0.5-2.3)	0.4 (0.1-1.4)
Detroit-Warren-Livonia, MI	4.0 (3.2-5.0)	1.2 (0.8-1.8)	0.4 (0.2-0.8)
Honolulu, HI	3.4 (2.4-4.7)	1.3 (0.8-2.1)	1.0 (0.5-2.1)
Houston-Sugar Land-Baytown, TX	3.5 (2.6-4.8)	0.7 (0.4-1.1)*	0.3 (0.2-0.6)*
Kansas City, MO-KS	3.7 (2.3-5.9)	0.8 (0.4-1.5)	0.5 (0.2-1.0)
Las Vegas-Paradise, NV	4.1 (3.0-5.5)	1.4 (0.8-2.2)	0.4 (0.2-0.9)
Los Angeles-Long Beach-Santa Ana, CA	3.7 (2.9-4.7)	0.7 (0.5-1.1)*	0.5 (0.3-0.8)
Manchester-Nashua, NH	4.7 (2.9-7.3)	1.9 (0.8-4.6)	0.5 (0.3-0.8)
Miami-Fort Lauderdale-Pompano Beach, FL	2.5 (1.8-3.4)*	0.7 (0.4-1.3)	0.4 (0.2-0.9)
Minneapolis-St. Paul-Bloomington, MN-WI	4.8 (3.5-6.5)	1.8 (1.0-3.1)	0.5 (0.2-1.0)
Nashville-Davidson--Murfreesboro--Franklin, TN	6.2 (4.0-9.5)	1.6 (0.7-3.7)	0.8 (0.2-2.9)
New Orleans-Metairie-Kenner, LA	6.6 (3.6-11.7)	2.1 (0.9-4.9)	0.9 (0.3-2.8)
New York-Northern New Jersey-Long Island, NY-NJ-PA	3.4 (2.9-4.1)	0.8 (0.6-1.2)*	0.5 (0.3-0.8)
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	4.0 (3.0-5.4)	0.8 (0.5-1.2)	0.3 (0.2-0.5)*
Phoenix-Mesa-Glendale, AZ	4.5 (3.2-6.4)	1.7 (1.2-2.6)	0.9 (0.6-1.4)
Pittsburgh, PA	3.7 (2.6-5.2)	0.8 (0.4-1.4)	0.4 (0.2-1.0)
Portland-Vancouver-Hillsboro, OR-WA	5.2 (3.8-7.1)	1.8 (0.9-3.5)	0.3 (0.1-0.6)*
Raleigh-Durham-Cary, NC	3.9 (2.4-6.2)	1.5 (0.7-3.5)	0.6 (0.1-2.1)
Salt Lake City, UT	5.6 (3.9-8.1)	1.4 (0.8-2.5)	0.6 (0.2-1.6)
San Diego-Carlsbad-San Marcos, CA	4.4 (2.6-7.5)	1.5 (0.7-3.3)	0.3 (0.1-0.8)
San Francisco-Oakland-Fremont, CA	3.7 (2.6-5.2)	1.0 (0.6-1.7)	0.7 (0.3-1.5)
Seattle-Tacoma-Bellevue, WA	4.5 (3.3-6.1)	1.2 (0.6-2.4)	0.6 (0.2-1.7)
St. Louis, MO-IL	3.4 (2.3-5.1)	1.0 (0.5-1.7)	0.7 (0.3-1.4)
Tampa-St. Petersburg-Clearwater, FL	3.4 (2.5-4.7)	1.1 (0.6-2.3)	0.4 (0.2-1.0)
Tulsa, OK	3.0 (1.7-5.5)	0.6 (0.2-2.3)	0.5 (0.1-2.0)
Washington-Arlington-Alexandria, DC-VA-MD-WV	3.1 (2.3-4.2)	1.0 (0.6-1.7)	0.5 (0.3-1.0)

CI = confidence interval

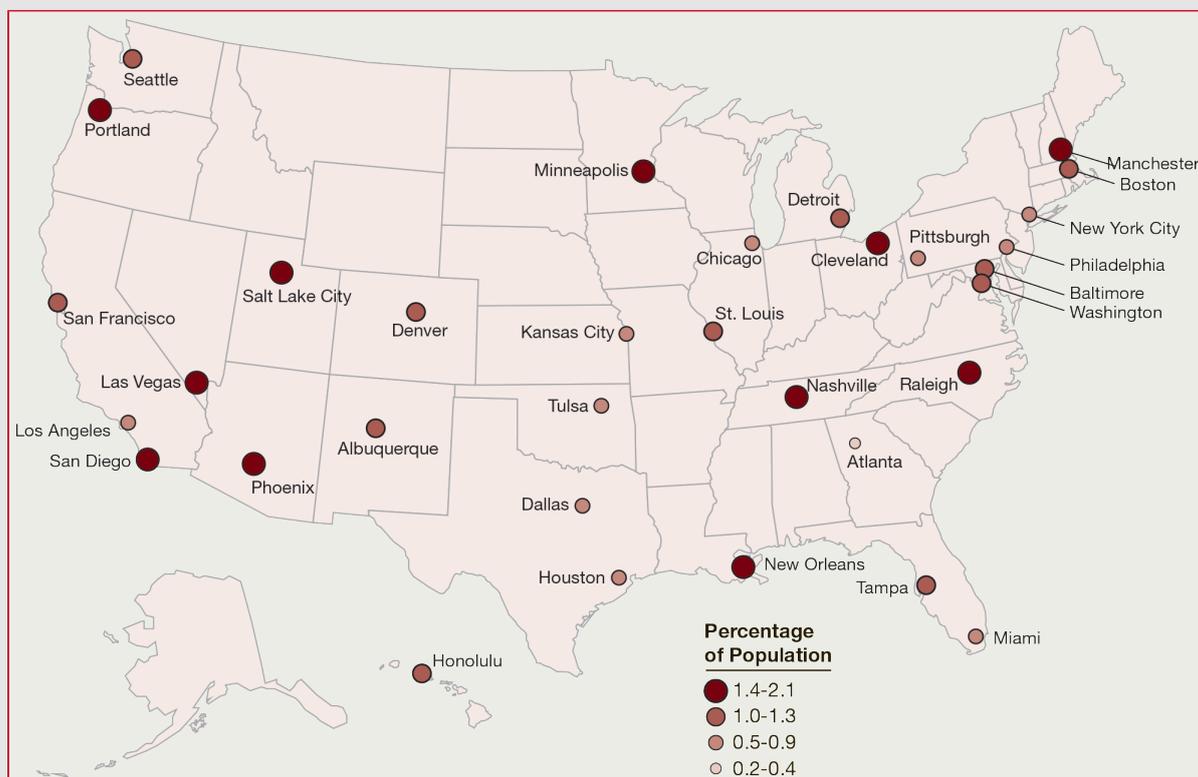
* Difference between the MSA and the nation as a whole is statistically significant at the .05 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2013 to 2015.

PAST YEAR SUICIDE PLANNING

Adults who had serious thoughts of suicide in the past 12 months were asked whether they made a plan to kill themselves in that period. Adults who had not had serious thoughts of suicide were considered to not have made a suicide plan. Nationwide, about 2.7 million adults aged 18 or older made any plans to commit suicide in the past 12 months. This corresponds to a national estimate of 1.1 percent of adults aged 18 or older (Table 1). In Figure 2, the MSA estimates of past year suicide planning among adults are presented. As previously noted, an MSA having a higher or lower estimate does not imply that the estimate is significantly higher or lower than the next highest or lowest estimate.¹⁰ Percentages of adults living in an MSA who had made suicide plans in the past year included⁹ 0.4 percent in the Atlanta MSA and 2.1 percent in the New Orleans MSA (Figure 2). Among the 33 MSAs, the percentages of adults living in MSAs who made a suicide plan were lower than the national average in Atlanta (0.4 percent), Houston (0.7 percent), Los Angeles (0.7 percent), and New York (0.8 percent). Again, no MSAs had percentages of adults with suicide plans that were significantly higher than the rate in the nation as a whole.

Figure 2. Suicide plans in the past year among adults aged 18 or older, by Metropolitan Statistical Area (MSA): 2013 to 2015

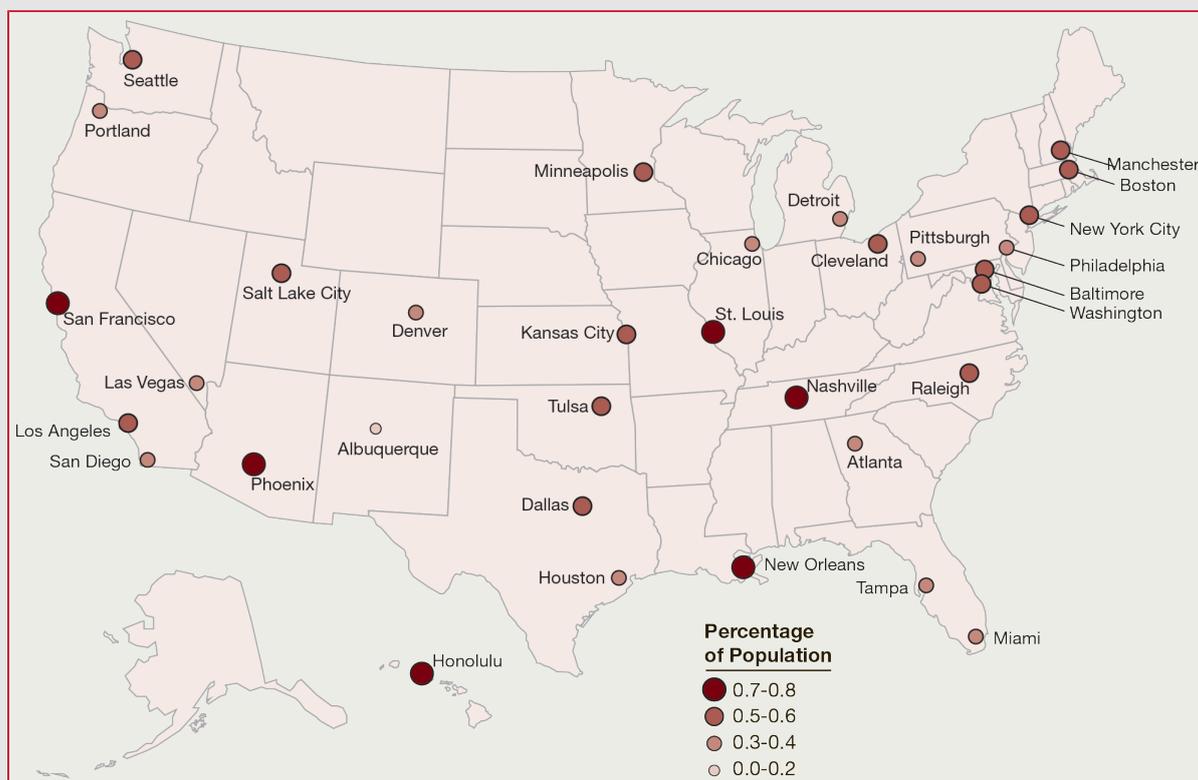


Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2013 to 2015.

PAST YEAR SUICIDE ATTEMPTS

Adults who had serious thoughts of suicide in the past 12 months were asked whether they attempted to kill themselves in that period. Adults who had not had serious thoughts of suicide were considered to not have attempted suicide. Based on combined 2013 to 2015 data, about 1.3 million adults aged 18 or older made a suicide attempt in the past 12 months. This corresponds to a national estimate of about 1 in 200 (0.5 percent) adults attempting suicide in the past year (Table 1). In Figure 3, the MSA estimates of having had a past year suicide attempt among adults are presented. As previously noted, an MSA having a higher or lower estimate does not imply that the estimate is significantly higher or lower than the next highest or lowest estimate.¹⁰ Percentages of adults living in an MSA who had attempted suicide in the past year included⁹ 0.2 percent in the Albuquerque MSA and 1.0 percent in the Honolulu MSA (Figure 3). Among the 33 MSAs, Albuquerque (0.2 percent), Houston (0.3 percent), Philadelphia (0.3 percent), and Portland (0.3 percent) had lower percentages of adults who made suicide attempts than the nation as a whole. No MSAs had percentages of adults attempting suicide in the past year that were significantly higher than the rate in the nation as a whole.

Figure 3. Suicide attempts in the past year among adults aged 18 or older, by Metropolitan Statistical Area (MSA): 2013 to 2015



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2013 to 2015.

DISCUSSION

Suicide is a public health problem that transcends geographical boundaries. Behind the statistics on completed suicides are the troubling large numbers of Americans who think about, plan for, and attempt suicide every year.² Although the prevalence of adults with serious thoughts of suicide, suicide plans, and suicide attempts among the MSA varies, it is important to note that there are many people with suicide ideation in every MSA; this is expected because suicide occurs throughout the United States.¹ The presence of suicide ideation in every MSA reinforces that suicide is a major public health concern.

Preventing suicide and addressing the health care needs of persons at risk for suicidal behavior require public health information-sharing efforts that raise awareness and explain that effective preventive interventions exist. Suicide touches all ages and backgrounds in all parts of the country. Highlighting the prevalence of suicidal thoughts, plans, and attempts in metropolitan areas may provide policymakers information to help inform their assessments of suicide ideation and other suicide behaviors in their communities. Further research on additional factors associated with geographic variations in the prevalence of suicidal behaviors is needed to help guide the development of screening tools and prevention and treatment programs.

SAMHSA uses a multifaceted approach to addressing suicide as a public health concern. SAMHSA works with its federal partners to address suicide prevention. For example, this report was developed in collaboration with and included funding from the Center for Disease Control.

SAMHSA also provide states, territories, tribal entities, communities, and the public with suicide prevention resources:

- [National Suicide Prevention Lifeline](#) 1-800-273-TALK (8255)
- [Suicide Prevention Resource Center](#)

ENDNOTES

1. Centers for Disease Control and Prevention (CDC). (2005). *Web-based Injury Statistics Query and Reporting System (WISQARS)* [Web page]. Retrieved August 7, 2017, from <https://www.cdc.gov/injury/wisqars>
2. Han, B., Kott, P.S., Hughes, A., McKeon, R., Blanco, C., & Compton, W.M. (2016). Estimating the rates of deaths by suicide among adults who attempted suicide in the United States. *Journal of Psychiatric Research*, 77, 125-133.
3. Lipari, R. N., Hughes, A., & Williams, M. (2016, June). *State estimates of past year serious thoughts of suicide among young adults: 2013 and 2014*. The CBHSQ Report. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>
4. Centers for Disease Control and Prevention. (2016). Youth risk behavior surveillance—United States, 2015. *Morbidity and Mortality Weekly Report*, 65(SS-6), 1-174. Retrieved from <http://www.cdc.gov/mmwr/pdf/ss/ss6104.pdf>.
5. MSAs are geographical entities used by federal agencies to collect, analyze, and publish statistical data. These areas are defined and updated periodically by the Office of Management and Budget (OMB). MSAs defined in this report are based on updates made by OMB on February 28, 2013, to reflect Census Bureau population estimates for July 1, 2011, and July 1, 2012.
6. Center for Behavioral Health Statistics and Quality. (2012, October). *Suicidal thoughts and behavior in 33 metropolitan statistical areas: 2008 to 2010*. The NSDUH Report. Rockville, MD: Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>
7. More information on the Department of Health and Human Services regional designations is available at U.S. Department of Health and Human Services. (2012). *HHS region map*. Retrieved from <http://www.hhs.gov/about/agencies/iea/regional-offices/index.html#regionmap.html>.
8. For some MSAs, the difference from the national estimate may appear larger than some of those noted in the text and figures; however, because of the larger variances in the MSAs, the differences are not statistically significant.
9. When describing the lowest and the highest prevalence estimates, the term “range” is used if the lowest and the highest estimates are significantly different at the .05 level. Otherwise, the term “include” is used to describe some of the estimates.
10. In this report, MSA estimates are discussed in terms of their observed rankings because they provide useful context. However, an MSA having a highest or lowest rate does not imply that the given MSA's rate is significantly higher or lower than the rate of the next highest or lowest MSA. Similarly, the four categories were not selected to represent statistical differences across the categories or to correspond to proximity to a target public health threshold for a particular measure. When comparing two MSA prevalence rates, the method of overlapping confidence intervals is more conservative (i.e., it rejects the null hypothesis of no difference less often) than the standard method based on Z statistics when the null hypothesis is true. Even if confidence intervals for two MSAs overlap, the two estimates may be declared significantly different by the test based on Z statistics. Hence, the method of overlapping confidence intervals is not recommended to test the difference of two state estimates. A detailed description of the method of overlapping confidence intervals and its comparison with the standard methods for testing of a hypothesis is given in the following articles: (a) Schenker, N., & Gentleman, J. F. (2001). On judging the significance of differences by examining the overlap between confidence intervals. *American Statistician*, 55(3), 182-186. (b) Payton, M. E., Greenstone, M. H., & Schenker, N. (2003). Overlapping confidence intervals or standard error intervals: What do they mean in terms of statistical significance? *Journal of Insect Science*, 3, 34. For details on a more accurate test to compare state prevalence estimates, please see Section B.12 in Appendix B of *2011-2012 National Survey on Drug Use and Health: Guide to state tables and summary of small area estimation methodology*, located at <http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx>.

SUGGESTED CITATION

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Table S1. National Survey on Drug Use and Health (NSDUH) Metropolitan Statistical Areas (MSAs)

Metropolitan Statistical Areas	Report Abbreviation
Albuquerque, NM	Albuquerque
Atlanta-Sandy Springs-Marietta, GA	Atlanta
Baltimore-Towson, MD	Baltimore
Boston-Cambridge-Quincy, MA-NH	Boston
Chicago-Joliet-Naperville, IL-IN-WI	Chicago
Cleveland-Elyria-Mentor, OH	Cleveland
Dallas-Fort Worth-Arlington, TX	Dallas
Denver-Aurora-Broomfield, CO	Denver
Detroit-Warren-Livonia, MI	Detroit
Honolulu, HI	Honolulu
Houston-Sugar Land-Baytown, TX	Houston
Kansas City, MO-KS	Kansas City
Las Vegas-Paradise, NV	Las Vegas
Los Angeles-Long Beach-Santa Ana, CA	Los Angeles
Manchester-Nashua, NH	Manchester
Miami-Fort Lauderdale-Pompano Beach, FL	Miami
Minneapolis-St. Paul-Bloomington, MN-WI	Minneapolis
Nashville-Davidson-Murfreesboro-Franklin, TN	Nashville
New Orleans-Metairie-Kenner, LA	New Orleans
New York-Northern New Jersey-Long Island, NY-NJ-PA	New York City
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	Philadelphia
Phoenix-Mesa-Glendale, AZ	Phoenix
Pittsburgh, PA	Pittsburgh
Portland-Vancouver-Hillsboro, OR-WA	Portland
Raleigh-Durham-Cary, NC	Raleigh
Salt Lake City, UT	Salt Lake City
San Diego-Carlsbad-San Marcos, CA	San Diego
San Francisco-Oakland-Fremont, CA	San Francisco
Seattle-Tacoma-Bellevue, WA	Seattle
St. Louis, MO-IL	St. Louis
Tampa-St. Petersburg-Clearwater, FL	Tampa
Tulsa, OK	Tulsa
Washington-Arlington-Alexandria, DC-VA-MD-WV	Washington

MSAs are used by federal agencies to collect, analyze, and publish statistical data. These MSAs are based on updates made by the Office of Management and Budget (OMB) on February 28, 2013, to reflect Census Bureau population estimates for July 1, 2011, and July 1, 2012.

SUMMARY

Background: Suicide is the 10th leading cause of death in 2015 and is a major public health problem in the United States. In addition to information on the prevalence of suicidal thoughts, suicide plans and attempts for states and areas within states, data on metropolitan statistical areas provide additional insights state and local public health authorities better understand and effectively serve their communities. **Method:** This report uses data combined from the 2013 to 2015 National Survey on Drug Use and Health (NSDUH) to estimate past year serious suicidal thoughts, suicide plans and suicide attempts among adults aged 18 or older. **Results:** About 9.5 million adults aged 18 or older seriously thought about trying to kill themselves in the past year, representing 4.0 percent of the adult population. About 2.7 million adults made any suicide plans in the past year, corresponding to 1.1 percent of the adult population. About 1.3 million or 0.5 percent of adults reported trying to kill themselves in the past year. Compared to the national averages, no metropolitan statistical areas had significantly higher percentages of adults who had serious thoughts about suicide, made any suicide plans, or attempted suicide in the past year. **Conclusion:** This report provides updated estimates for suicidal thoughts, plans and attempts among adults aged 18 or older in 33 metropolitan statistical areas. Highlighting the prevalence of suicidal thoughts, plans and attempts in metropolitan areas may provide policymakers information to help inform their assessments of suicide ideation and other suicide behaviors in their communities.

Keywords: National Survey on Drug Use and Health, NSDUH, suicidal thoughts, suicide plans, suicide attempts, metropolitan statistical area

AUTHOR INFORMATION

cbhsrequest@samhsa.hhs.gov

KEYWORDS

Albuquerque NM, Atlanta - Sandy Springs - Marietta GA, Baltimore - Towson MD, Boston - Cambridge - Quincy MA - NH, Chicago - Naperville - Joliet IL - IN - WI, Cleveland - Elyria - Mentor OH, Dallas - Ft. Worth - Arlington TX, Denver - Aurora CO, Detroit - Warren - Livonia MI, Houston - Baytown - Sugar Land TX, Kansas City MO - KS, Los Angeles - Long Beach - Santa Ana CA, Manchester - Nashua NH, Minneapolis - St. Paul - Bloomington MN - WI, New Orleans - Metairie - Kenner LA, Philadelphia - Camden - Wilmington PA - NJ - DE - MD, Phoenix - Mesa - Scottsdale AZ, Pittsburgh PA, Portland - Vancouver - Beaverton OR - WA, Salt Lake City UT, San Diego - Carlsbad - San Marcos CA, San Francisco - Oakland - Fremont CA, Seattle - Tacoma - Bellevue WA, St. Louis MO - IL, Washington - Arlington - Alexandria DC - VA - MD - WV, Short Report, Population Data, 2013, 2014, Researchers, Suicide, People with Mental Health Problems as Population Group, Honolulu HI, Las Vegas-Paradise NV, Miami-Fort Lauderdale-Pompano Beach FL, Nashville-Davidson-Murfreesboro-Frankl

The Substance Abuse and Mental Health Services Administration (SAMHSA) is the agency within the U.S. Department of Health and Human Services that leads public health efforts to advance the behavioral health of the nation. SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities.

The National Survey on Drug Use and Health (NSDUH) is an annual survey sponsored by The Substance Abuse and Mental Health Services Administration (SAMHSA). The data used in this report are based on information obtained from 147,400 adults aged 18 or older in 2013 to 2015. The Survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

The NSDUH Report is prepared by The Center for Behavioral Health Statistics and Quality (CBHSQ), SAMHSA, and by RTI International in Research Triangle Park, North Carolina. (RTI International is a trade name of Research Triangle Institute.)

Information on the most recent NSDUH is available in the following publication:

Substance Abuse and Mental Health Services Administration. (2017). *Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health* (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration.

Also available online: <http://www.samhsa.gov/data/population-data-nsduh>.



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