SUICIDE AND COVID-19:

Communities In Need Across The U.S.

Mental Health America

Acknowledgements

Mental Health America (MHA), formerly the National Mental Health Association, was founded in 1909 and is the nation's leading community-based nonprofit dedicated to addressing the needs of those living with mental illness and promoting the overall mental health of all. Our work is driven by our commitment to promote mental health as a critical part of overall wellness, including prevention services for all, early identification and intervention for those at risk, integrated care and treatment for those who need them, with recovery as the goal.

Key Stakeholder Involvement

MHA wants to thank the following key stakeholders for their contributions to this brief.

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As the nation works to mitigate the public health crisis introduced by COVID-19, there is even more responsibility to ensure a fast and coordinated response to address the growing mental health crisis.

The data collected from over 2.6 million users visiting MHA Screening (at www.mhascreening.org) in 2020 is the largest dataset collected from a help-seeking population experiencing mental health conditions during COVID-19. Analysis and dissemination of this data will aid a timely and effective response to the increasing rates of anxiety, depression, psychosis, loneliness, and other mental health concerns in our country.

In 2021, MHA analyzed the data collected from 725,949 individuals who took a depression screen (PHQ-9) in the United States in 2020. Of those individuals, over one-third (38 percent, N=273,680) reported experiencing thoughts of suicide or self-harm more than half or nearly every day of the previous two weeks.

State-Level Suicide Risk

- The three states with the highest number of people reporting frequent suicidal ideation in 2020 were California (N=13,856 reporting thoughts of suicide or self-harm more than half or nearly every day), Texas (N=9,490), and Florida (N=6,130).
- Hawaii had the highest percentage of individuals reporting suicidal ideation of those who took a depression screen (41%, N= 622), followed by Montana (40%, N=405), West Virginia (40%, N=645), Nevada (40%, N=1,227) and New Mexico (40%, N=691).
- Alaska had the highest proportion of individuals reporting frequent thoughts of suicide or self-harm in comparison to the overall state population (0.091%, N=666), followed by Alabama (0.045%, N=2,205), Wyoming (0.045%, N=258), Indiana (0.044%, N=2,976), and Hawaii (0.044%, N=622).
- When weighted to match state demographics for gender and age, Alaska still had the highest proportion of the population experiencing frequent thoughts of suicide or self-harm (N=529*, 0.072%), followed by Wyoming (N=229*, 0.040%), Indiana (N=2,640*, 0.039%), Alabama (N=1,899*, 0.039%), and Utah (N=1,239, 0.039%).

County-Level Suicide Risk

- The three counties in the United States with the highest number of individuals reporting thoughts of suicide or self-harm on more than half or nearly every day of the previous two weeks in 2020 were Los Angeles County, California (N=2,469), Maricopa County, Arizona (N=1,289), and Cook County, Illinois (N=1,226).
- Large County Analysis: Bexar County, Texas had the highest proportion of the population report frequent thoughts of suicide or self-harm of the most populous counties (0.0309%, N=619), followed by Clark County, Nevada (0.0306%, N=694), Riverside County, California (0.0287%, N=710), Maricopa County, Arizona (0.0287%, N=1,289), and San Bernardino County, California (0.0279%, N=608).
- Small- and Mid-Size County Analysis: Carroll County, Kentucky had the highest proportion of the population report frequent thoughts of suicide or self-harm (0.0659%, N=7), followed by Switzerland County, Indiana (0.0651%, N=7), Whitley County, Kentucky (0.0634%, N=23), Greensville County, Virginia (0.0618%, N=7), and Ripley County, Indiana (0.0600%, N=17).

Opportunities for Policy, Programs, and Research

This data will help communities implement the following federal, state, and local strategies to better support individuals at risk of suicide:

- Identify where individuals are currently in need of mental health supports and target interventions within communities;
- Coordinate data and generate a better understanding of mental health need;
- Identify and provide support to resources that already exist in communities;
- Generate new resources to address unmet need;
- Create systemic policy change to prevent future mental health concerns; and
- Move beyond an issues-based approach to create an environment that promotes mental wellness at the population level.

Suicide and COVID-19: Communities in Need Across the U.S

COVID-19 has had a profound negative effect on the mental health of the nation. Throughout the COVID-19 pandemic, Mental Health America (MHA) has witnessed increasing numbers[1] of people experiencing anxiety, depression, psychosis, loneliness, and other mental health concerns. As the nation strives to mitigate the public health crisis introduced by COVID-19, there is even more responsibility to ensure a fast and coordinated response to address these mental health concerns, so we are not left with a mental health crisis long after the virus itself is under control.

Since 2014, Mental Health America has provided online mental health screening to roughly one million users a year. In 2020, that number expanded to over 2.6 million users. MHA has published multiple reports and research studies[2] using the data collected from the MHA Screening Program[3] but has never released this data at a county level. County-level data are difficult to find, leaving public administrators like county board members, local health officials, or school administrators with little insight into their communities' specific problems and how best to invest in services like mental health care.

In 2021, MHA plans to release four briefs publishing data from the MHA Screening Program at a state and county level. The briefs will cover suicide, severe depression, psychosis, and trauma. This brief is the first of our series and summarizes suicide-related data MHA has collected from over 720,000 individuals in the United States. We developed the research, policy, and program opportunities outlined in this brief from a meeting with key stakeholders, including federal partners, researchers, providers and industry partners, mental health advocacy organizations, and school advocates.

At the end of 2021, MHA anticipates the release of a publicly available dashboard where individuals can obtain information about the counts and rates of suicidal ideation, severe depression, psychosis, and trauma in their counties. For those interested in exploring these data in detail, MHA will release a process where administrators and researchers can request access to the fuller set of data to identify and collaborate with MHA on future research, policy, and program opportunities.

The suicide data presented throughout this report represents the minimum imminent risk in any community. For any one person who takes a mental health screen online, there are others who struggle silently before turning to the internet for information and help. Because we know that individuals often turn to the internet to find health-related information, publishing our data in this way is an important step to meeting the goal of providing a public health tool to reduce the consequences of suicide in our communities.

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[1] https://mhanational.org/mental-health-and-covid-19-what-mha-screening-data-tells-us-about-impact-pandemic
[2] https://mhanational.org/about-mha-screening#ScreeningReportsandResearch
[3] http://www.mhascreening.org/

In 2014, Mental Health America (MHA) created the Online Screening Program (www.mhascreening.org), a collection of ten free, anonymous, confidential, and clinically validated screens that are among the most commonly used mental health screening tools in clinical settings. These include the Patient Health Questionnaire 9-item tool (PHQ-9) to screen for depression.[4]

The PHQ-9 depression screening tool consists of nine scored items to assess risk for depression. Question nine of the PHQ-9 assesses suicide risk by asking how often in the previous two weeks individuals have had "thoughts that you would be better off dead, or of hurting yourself." Respondents can select one of four options: Not at all, Several days, More than half the days, or Nearly every day. For these analyses, we considered individuals who answered this question with either "More than half the days" or "Nearly every day" to be experiencing frequent suicidal ideation.

From January to December 2020, nearly one million individuals took the PHQ-9 depression screen to check on their mental health. The data from these screens comprise the largest dataset collected from a help-seeking population experiencing mental health conditions during COVID-19. The screening results also constitute one of the largest datasets collecting and distributing national mental health information in real-time, allowing us to recognize and react to changes in the mental health of the nation as they occur.

The MHA Screening dataset collects information from a help-seeking population, meaning users access the mental health screening tools while searching for mental health resources and supports online. As a result, users are more likely to screen positive or moderate-to-severe for mental health conditions and are more likely to report frequent suicidal ideation than the general population. Thus, the population represented within this dataset differs from other national mental health datasets collected by federal agencies such as the Centers for Disease Control (CDC) and the U.S. Census Bureau Household Pulse Survey, both of which survey a sample of the general U.S. population. This convenience sample allows MHA to understand the experiences of the nearly one million individuals with the highest need who were actively seeking help for depression in 2020, and therefore can be interpreted as a minimum unmet need for immediate resources and supports across the United States.

MHA Screening also captures information about an individual's mental health needs earlier than other datasets. When people first begin experiencing symptoms of a mental health condition, they often look for answers and resources online, long before speaking to a provider. The data from MHA Screening often capture the mental health needs of people who have not received any prior mental health support. As such, MHA Screening data can be an indicator of imminent mental health need, allowing stakeholders to utilize it for earlier intervention and detection of mental health concerns before they become crises.

The following analysis is of the data collected from who took the PHQ-9 depression screen in the United States in 2020. For detailed information on data cleaning and methodology, see the Appendix.

725,949 Organic Users in 2020

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[4] Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9. *Journal of general internal medicine*, 16(9), 606-613.
http://onlinelibrary.wiley.com/doi/10.1046/j.1525-1497.2001.016009606.x/pdf

Demographics of Depression Screening Population

Suicidal Ideation

Of the 725,949 individuals who took a depression screen in 2020, over one-third (38 percent, N=273,680) reported experiencing thoughts of suicide or self-harm more than half or nearly every day of the previous two weeks. Twenty-two percent (N=160,945) reported experiencing suicidal ideation nearly every day of the previous two weeks.

9. Thoughts that you would be better off dead, or of hurting yourself	Count	Percentage
Not at all	275,628	37.97%
Several days	176,641	24.33%
More than half the days	112,735	15.53%
Nearly every day	160,945	22.17%
Grand Total	**725,949**	**100.00%**

Gender

Seventy-one percent (N=417,620) of respondents identified as female, 27 percent identified as male, and two percent identified as another gender. Among the entire sample, three percent (N=19,097) identified as transgender.

Gender	Count	Percentage
Male	162,348	27.44%
Female	417,620	70.58%
Another gender	11,704	1.98%
Grand Total	**591,672**	**100.00%**

Race/Ethnicity

Individuals who took a depression screen in 2020 were more diverse than the general U.S. population. Fifty percent (N=274,909) of respondents identified as White. Consistent with early findings of increased mental health concerns among Asian individuals in 2020,[5] 19 percent of individuals who took a depression screen in 2020 identified as Asian or Pacific Islander, significantly higher than the proportion of the general U.S. population that identifies as Asian or Pacific Islander (six percent).[6] Twelve percent of respondents identified as Hispanic or Latinx, eight percent were Black or African American, and six percent identified their race/ethnicity as "Other."

Race/Ethnicity	Count	Percentage
Asian or Pacific Islander	102,891	18.56%
Black or African American (non-Hispanic)	46,336	8.36%
Hispanic or Latino	67,791	12.23%
More than one of the above	25,388	4.58%
Native American or American Indian	6,266	1.13%
Other	30,795	5.55%
White (non-Hispanic)	274,909	49.59%
Grand Total	**554,376**	**100.00%**

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[5] Abrams, Z. (April 2021). The mental health impact of anti-Asian racism. *Monitor on Psychology,* 52(5). https://www.apa.org/monitor/2021/07/impact-anti-asian-racism
[6] U.S. Census Bureau (2019). Population Estimates 2019. *U.S. Census Bureau QuickFacts*, https://www.census.gov/quickfacts/fact/table/US/PST045219

Age

Most individuals who took a depression screen in 2020 were youth ages 11-17 (41 percent, N=246,725), followed by young adults ages 18-24 (33 percent, N=193,914), and 25-34 (15 percent, N=91,714).

Age	Count	Percentage
"11-17"	246,725	41.39%
"18-24"	193,914	32.53%
"25-34"	91,714	15.38%
"35-44"	34,763	5.83%
"45-54"	16,270	2.73%
"55-64"	9,020	1.51%
"65+"	3,727	0.63%
Grand Total	596,133	100.00%

Household Income

Fifty percent (N=180,821) of respondents to the depression screen reported a household income under $40,000. Individuals who reported lower household incomes were more likely to report frequent thoughts of suicide and self-harm than those who reported higher household incomes. Among individuals who reported a household income of less than $20,000, 43 percent (N=46,726) reported thoughts of suicide or self-harm on more than half or nearly every day of the previous two weeks.

Household Income	Count	Percentage
Less than $20,000	107,745	29.53%
$20,000 - $39,999	73,076	20.03%
$40,000 - $59,999	52,571	14.41%
$60,000 - $79,999	39,171	10.74%
$80,000 - $99,999	27,714	7.60%
$100,000 - $149,999	34,891	9.56%
$150,000+	29,655	8.13%
Grand Total	364,823	100.00%

Mental Health Care

Finally, most individuals who took a depression screen in 2020 and reported experiencing frequent thoughts of suicide or self-harm had never received any prior mental health care. Of those who reported experiencing suicidal ideation more than half or nearly every day, 74 percent (N=168,459) had never been diagnosed with a mental health condition before, and 71 percent (N=167,313) had never received any kind of treatment or supports for their mental health.

Among screeners reporting frequent suicidal ideation: Are you currently, or have you ever been, diagnosed with a mental health condition by a professional?	Count	Percentage
No	168,459	73.93%
Yes	59,408	26.07%
Grand Total	227,867	100.00%

Among screeners reporting frequent suicidal ideation: Have you ever received treatment/support for a mental health problem?	Count	Percentage
No	167,313	70.56%
Yes	69,821	29.44%
Grand Total	237,134	100.00%

State - Level Suicide Risk

The three states with the highest number of people reporting frequent suicidal ideation in 2020 were California (N=13,856 reporting thoughts of suicide or self-harm more than half or nearly every day), Texas (N=9,490), and Florida (N=6,130). Each of the below state counts represents the number of individuals in each state who reported experiencing frequent suicidal ideation through the MHA Online Screening Program in 2020. The goal of suicide prevention and early intervention efforts is to save every life and ensure that every individual experiencing suicidal ideation receives the resources and supports they need. While there are likely many more individuals in each state experiencing suicidal ideation than are captured by the MHA Online Screening Program, these counts below reflect a minimum number of individuals searching for life-saving supports.

The percentage of frequent suicidal ideation is calculated as the proportion of individuals reporting frequent suicidal ideation of those who took a PHQ-9 depression screen in 2020. The percent of state population reporting frequent suicidal ideation is the percentage of the overall state population that reported frequent suicidal ideation on MHA Screening in 2020. Hawaii had the highest percentage of individuals reporting suicidal ideation of those who took a depression screen (41%, N= 622), followed by Montana (40%, N=405), West Virginia (40%, N=645), Nevada (40%, N=1,227) and New Mexico (40%, N=691). Alaska had the highest percentage of individuals reporting frequent thoughts of suicide or self-harm in comparison to the overall state population (0.091%, N=666), followed by Alabama (0.045%, N=2,205), Wyoming (0.045%, N=258), Indiana (0.044%, N=2,976), and Hawaii (0.044%, N=622).

State	Count of Suicidal Ideation: More than half or Nearly every day	Count of Suicidal Ideation: Not at all or Several days	Total Count PHQ-9 Screens	Percentage of Frequent Suicidal Ideation	State Population Count	Percent of State Population Reporting Frequent Suicidal Ideation
Alabama	2,205	3,900	6,105	36.12%	4,903,185	0.0450%
Alaska	666	1,115	1,781	37.39%	731,545	0.0910%
Arizona	3,037	5,258	8,295	36.61%	7,278,717	0.0417%
Arkansas	1,048	1,650	2,698	38.84%	3,017,804	0.0347%
California	13,856	26,329	40,185	34.48%	39,512,223	0.0351%
Colorado	2,256	3,920	6,176	36.53%	5,758,736	0.0392%
Connecticut	1,069	2,228	3,297	32.42%	3,565,287	0.0300%
Delaware	339	671	1,010	33.56%	973,764	0.0348%
District of Columbia	214	618	832	25.72%	705,749	0.0303%
Florida	6,130	11,342	17,472	35.08%	21,477,737	0.0285%
Georgia	3,676	6,337	10,013	36.71%	10,617,423	0.0346%
Hawaii	622	907	1,529	40.68%	1,415,872	0.0439%
Idaho	609	1,068	1,677	36.31%	1,787,065	0.0341%
Illinois	4,069	7,752	11,821	34.42%	12,671,821	0.0321%
Indiana	2,976	4,944	7,920	37.58%	6,732,219	0.0442%
Iowa	1,094	1,819	2,913	37.56%	3,155,070	0.0347%
Kansas	975	1,652	2,627	37.11%	2,913,314	0.0335%
Kentucky	1,504	2,512	4,016	37.45%	4,467,673	0.0337%
Louisiana	1,050	1,902	2,952	35.57%	4,648,794	0.0226%
Maine	455	820	1,275	35.69%	1,344,212	0.0338%
Maryland	1,998	3,853	5,851	34.15%	6,045,680	0.0330%
Massachusetts	2,083	4,509	6,592	31.60%	6,892,503	0.0302%

State	Count of Suicidal Ideation: More than half or Nearly every day	Count of Suicidal Ideation: Not at all or Several days	Total Count PHQ-9 Screens	Percentage of Frequent Suicidal Ideation	State Population Count	Percent of State Population Reporting Frequent Suicidal Ideation
Michigan	3,313	5,957	9,270	35.74%	9,986,857	0.0332%
Minnesota	1,948	3,760	5,708	34.13%	5,639,632	0.0345%
Mississippi	696	1,224	1,920	36.25%	2,976,149	0.0234%
Missouri	1,850	3,485	5,335	34.68%	6,137,428	0.0301%
Montana	405	599	1,004	40.34%	1,068,778	0.0379%
Nebraska	648	1,201	1,849	35.05%	1,934,408	0.0335%
Nevada	1,227	1,864	3,091	39.70%	3,080,156	0.0398%
New Hampshire	426	878	1,304	32.67%	1,359,711	0.0313%
New Jersey	2,853	5,328	8,181	34.87%	8,882,190	0.0321%
New Mexico	691	1,056	1,747	39.55%	2,096,829	0.0330%
New York	5,845	11,424	17,269	33.85%	19,453,561	0.0300%
North Carolina	2,996	5,685	8,681	34.51%	10,488,084	0.0286%
North Dakota	272	465	737	36.91%	762,062	0.0357%
Ohio	3,939	6,742	10,681	36.88%	11,689,100	0.0337%
Oklahoma	1,218	2,134	3,352	36.34%	3,956,971	0.0308%
Oregon	1,395	2,632	4,027	34.64%	4,217,737	0.0331%
Pennsylvania	3,842	7,492	11,334	33.90%	12,801,989	0.0300%
Rhode Island	304	575	879	34.58%	1,059,361	0.0287%
South Carolina	1,477	2,568	4,045	36.51%	5,148,714	0.0287%
South Dakota	258	487	745	34.63%	884,659	0.0292%
Tennessee	2,117	4,385	6,502	32.56%	6,829,174	0.0310%
Texas	9,490	16,518	26,008	36.49%	28,995,881	0.0327%
Utah	1,296	2,828	4,124	31.43%	3,205,958	0.0404%
Vermont	214	366	580	36.90%	623,989	0.0343%
Virginia	2,945	5,446	8,391	35.10%	8,535,519	0.0345%
Washington	2,837	5,312	8,149	34.81%	7,614,893	0.0373%
West Virginia	645	970	1,615	39.94%	1,792,147	0.0360%
Wisconsin	1,959	3,488	5,447	35.96%	5,822,434	0.0336%
Wyoming	258	532	790	32.66%	578,759	0.0446%

As noted in the demographic analysis, the MHA Screening population is more likely to be young (ages 11-17) and to identify as female than the general population. Post-stratification weights were calculated and applied to the dataset for both gender and age to normalize the data to match the demographics of each state population.[7]

The below table shows the states ranked by the percentage of the state population reporting frequent suicidal ideation through the MHA Screening program. Alaska had the highest proportion of the population experiencing frequent thoughts of suicide or self-harm (N=529*, 0.072%), followed by Wyoming (N=229*, 0.040%), Indiana (N=2,640*, 0.039%), Alabama (N=1,899*, 0.039%), and Utah (N=1,239, 0.039%).

[7] U.S. Census Bureau (2019). Population Estimates 2019. *U.S. Census Bureau QuickFacts*, https://www.census.gov/quickfacts/fact/table/US/PST045219
*Weights were determined for both gender and age using 2019 state population demographic data from the U.S. Census. One of the limitations of the U.S. Census demographic dataset is that it only provides "Male" and "Female" as options for individuals to identify their gender. Therefore, applying weights based on that data undercounts the proportion of the Screening population who identify with another gender.

State	Weighted Count* of Suicidal Ideation: More than half or Nearly every day	Weighted Count* of Suicidal Ideation: Not at all or Several days	Weighted Total* Count PHQ-9 Screens	State Population Count	Weighted Percent of State Population Reporting Frequent Suicidal Ideation
Alaska	529.43	1130.35	1659.78	731,545	0.072%
Wyoming	229.50	527.10	756.59	578,759	0.040%
Indiana	2640.55	4985.67	7626.22	6,732,219	0.039%
Alabama	1899.13	3902.35	5801.49	4,903,185	0.039%
Utah	1239.18	2734.27	3973.45	3,205,958	0.039%
Hawaii	520.76	927.81	1448.57	1,415,872	0.037%
Arizona	2636.83	5307.27	7944.10	7,278,717	0.036%
Nevada	1082.34	1887.06	2969.40	3,080,156	0.035%
Colorado	1990.72	3921.38	5912.10	5,758,736	0.035%
West Virginia	595.24	960.90	1556.14	1,792,147	0.033%
North Dakota	251.32	465.11	716.43	762,062	0.033%
Montana	346.75	604.13	950.88	1,068,778	0.032%
Washington	2425.89	5332.14	7758.02	7,614,893	0.032%
Delaware	299.27	662.22	961.49	973,764	0.031%
Kansas	894.04	1621.20	2515.24	2,913,314	0.031%
Arkansas	920.88	1673.22	2594.10	3,017,804	0.031%
Georgia	3237.34	6416.29	9653.63	10,617,423	0.030%
Idaho	541.65	1059.75	1601.40	1,787,065	0.030%
Kentucky	1350.51	2502.12	3852.63	4,467,673	0.030%
Nebraska	581.54	1198.38	1779.92	1,934,408	0.030%
Ohio	3505.63	6757.02	10262.65	11,689,100	0.030%
Virginia	2541.07	5513.60	8054.67	8,535,519	0.030%
Iowa	936.56	1836.43	2773.00	3,155,070	0.030%
California	11699.72	26889.55	38589.28	39,512,223	0.030%
Minnesota	1656.78	3819.79	5476.57	5,639,632	0.029%
Maine	391.20	834.80	1225.99	1,344,212	0.029%
Maryland	1757.82	3851.98	5609.79	6,045,680	0.029%
Tennessee	1980.31	4282.38	6262.68	6,829,174	0.029%
Texas	8371.64	16649.28	25020.93	28,995,881	0.029%
Vermont	179.69	370.00	549.68	623,989	0.029%
Wisconsin	1675.44	3544.10	5219.54	5,822,434	0.029%
Oregon	1212.04	2613.78	3825.82	4,217,737	0.029%
Michigan	2827.23	6046.16	8873.39	9,986,857	0.028%
New Hampshire	381.11	852.73	1233.84	1,359,711	0.028%
New Mexico	582.61	1068.07	1650.68	2,096,829	0.028%
Illinois	3511.39	7818.75	11330.13	12,671,821	0.028%
Oklahoma	1085.23	2105.05	3190.29	3,956,971	0.027%
New Jersey	2430.18	5426.56	7856.73	8,882,190	0.027%
Missouri	1669.16	3434.06	5103.22	6,137,428	0.027%
District of Columbia	190.20	606.74	796.94	705,749	0.027%
Pennsylvania	3362.42	7549.88	10912.30	12,801,989	0.026%
South Dakota	229.12	486.68	715.80	884,659	0.026%

State	Weighted Count* of Suicidal Ideation: More than half or Nearly every day	Weighted Count* of Suicidal Ideation: Not at all or Several days	Weighted Total* Count PHQ-9 Screens	State Population Count	Weighted Percent of State Population Reporting Frequent Suicidal Ideation
Massachusetts	1783.55	4538.46	6322.01	6,892,503	0.026%
New York	5019.34	11548.20	16567.54	19,453,561	0.026%
South Carolina	1311.91	2582.90	3894.82	5,148,714	0.025%
Connecticut	896.62	2267.75	3164.36	3,565,287	0.025%
North Carolina	2635.19	5716.61	8351.80	10,488,084	0.025%
Rhode Island	265.24	579.52	844.76	1,059,361	0.025%
Florida	5114.61	11658.54	16773.15	21,477,737	0.024%
Mississippi	641.12	1205.91	1847.03	2,976,149	0.022%
Louisiana	926.22	1918.30	2844.52	4,648,794	0.020%

*Weighted Counts based on 2019 U.S. Census Gender and Age Demographics for each state.

County – Level Suicide Risk

The three counties in the United States with the highest number of individuals reporting thoughts of suicide or self-harm on more than half or nearly every day of the previous two weeks in 2020 were Los Angeles County, California (N=2,469), Maricopa County, Arizona (N=1,289), and Cook County, Illinois (N=1,226).

Counties were sorted based on the number of individuals reporting frequent suicidal ideation, and the top 20 counties by highest count in the United States were identified. Most of these counties matched up with the 20 largest counties in the United States based on population size. New York County, New York, and Sacramento County, California are the only two counties identified that are not part of the 20 most populous counties in the U.S.

Among this list of large counties, we calculated population percentage as the percentage of individuals who reported frequent suicidal ideation on MHA Screening in 2020 out of the overall county population. Bexar County, Texas had the highest percentage of the population report frequent thoughts of suicide or self-harm of the most populous counties (0.0309%, N=619), followed by Clark County, Nevada (0.0306%, N=694), Riverside County, California (0.0287%, N=710), Maricopa County, Arizona (0.0287%, N=1,289), and San Bernardino County, California (0.0279%, N=608).

County Name	State Name	Count of Suicidal Ideation: More than half or Nearly every day	County Population Count	Percent of County Population Reporting Frequent Suicidal Ideation
Bexar	Texas	619	2,003,554	0.0309%
Clark	Nevada	694	2,266,715	0.0306%
Riverside	California	710	2,470,546	0.0287%
Maricopa	Arizona	1,289	4,485,414	0.0287%
San Bernardino	California	608	2,180,085	0.0279%
Dallas	Texas	716	2,635,516	0.0272%
Sacramento	California	415	1,552,058	0.0267%
New York	New York	434	1,628,706	0.0266%
King	Washington	594	2,252,782	0.0264%
Wayne	Michigan	460	1,749,343	0.0263%
Tarrant	Texas	533	2,102,515	0.0254%
Queens	New York	567	2,253,858	0.0252%
Los Angeles	California	2,469	10,039,107	0.0246%
Harris	Texas	1,159	4,713,325	0.0246%
San Diego	California	801	3,338,330	0.0240%
Cook	Illinois	1,226	5,150,233	0.0238%
Kings	New York	585	2,559,903	0.0229%
Orange	California	725	3,175,692	0.0228%
Santa Clara	California	422	1,927,852	0.0219%
Miami-Dade	Florida	481	2,716,940	0.0177%

In addition to evaluating rates of reported suicidal ideation among more populous counties in the U.S., MHA identified areas with the highest need for suicide prevention and crisis care within small and mid-sized counties. The twenty counties with the highest percentages of their populations reporting frequent suicidal ideation through MHA Screening in 2020 are below. To ensure that the analyses were not biased toward the smallest counties, we excluded all counties with a sample of individuals reporting suicidal ideation lower than the median.*

Carroll County, Kentucky had the highest percentage of the population report frequent thoughts of suicide or self-harm (0.0659%, N=7), followed by Switzerland County, Indiana (0.0651%, N=7), Whitley County, Kentucky (0.0634%, N=23), Greensville County, Virginia (0.0618%, N=7), and Ripley County, Indiana (0.0600%, N=17).

County Name	State Name	Count of Suicidal Ideation: More than half or Nearly every day	Count of Suicidal Ideation: Not at all or Several days	Total Count PHQ-9 Screens	Percentage of Frequent Suicidal Ideation	County Population Count	Percent of County Population Reporting Frequent Suicidal Ideation
Carroll	Kentucky	7	11	18	38.89%	10,631	0.06585%
Switzerland	Indiana	7	5	12	58.33%	10,751	0.06511%
Whitley	Kentucky	23	26	49	46.94%	36,264	0.06342%
Greensville	Virginia	7	4	11	63.64%	11,336	0.06175%
Ripley	Indiana	17	32	49	34.69%	28,324	0.06002%
Big Horn	Wyoming	7	6	13	53.85%	11,790	0.05937%
Ashland	Wisconsin	9	5	14	64.29%	15,562	0.05783%
Klickitat	Washington	12	4	16	75.00%	22,425	0.05351%
Lee	Georgia	16	9	25	64.00%	29,992	0.05335%
Anderson	Kentucky	12	14	26	46.15%	22,747	0.05275%
Moffat	Colorado	7	2	9	77.78%	13,283	0.05270%
Dearborn	Indiana	26	58	84	30.95%	49,458	0.05257%
Hughes	South Dakota	9	11	20	45.00%	17,526	0.05135%
City of Colonial Heights*	Virginia	13	7	20	65.00%	25,612	0.05076%
Haralson	Georgia	15	17	32	46.88%	29,792	0.05035%
Pennington	Minnesota	7	5	12	58.33%	14,119	0.04958%
Oglala Lakota	South Dakota	7	3	10	70.00%	14,177	0.04938%
Jackson	Illinois	28	30	58	48.28%	56,750	0.04934%
Tazewell	Virginia	20	23	43	46.51%	40,595	0.04927%
Saline	Nebraska	7	15	22	31.82%	14,224	0.04921%

*The City of Colonial Heights, Virginia is included in county-level analyses because it is an independent city.

Opportunities for Policy, Programs and Research

The suicide data from MHA Screening represents the minimum imminent risk in any community. For any one person who takes a mental health screen online, there are likely others who struggle silently before turning to the internet for information and help. Because we know that individuals often turn to the internet to find health-related information, publishing our data will meet the goal of providing a public health tool to reduce the consequences of suicide in our communities.

Releasing this report and the publicly available dashboard (at the end of 2021) is just the beginning. The hope is that having this data available will help communities attend to mental health as a regular and important part of a state or local public health strategy.

The sections below explore how stakeholders can use these data to make the following meaningful and systemic changes for individuals struggling with suicidal thoughts:

- Identify where individuals are currently in need of mental health supports and target interventions within communities;
- Coordinate data and generate a better understanding of mental health need;
- Identify and provide support to resources that already exist in communities;
- Generate new resources to address unmet need;
- Create systemic policy change to prevent future mental health concerns; and
- Move beyond an issues-based approach to create an environment that promotes mental wellness at the population level.

Publicly Available Data for Earlier Intervention

While the percentage of each county's overall population reporting frequent suicidal ideation on MHA Screening is lower than 1%, each individual count of suicidal ideation or thoughts of self-harm is representative of a person at risk of suicide who is actively searching for help online. These thoughts occur long before a person reaches a point of intention and planning for suicide. Suicide deaths are preventable, and as such, the goal of every community should be to ensure each individual person reporting frequent thoughts of suicide or self-harm has access to immediate life-saving mental health supports.

In cases where individuals are screened for suicidal ideation, it is often only when they have already connected with clinical care or presented in a hospital. Rather than waiting until a person reaches a point of crisis, identifying communities with a greater need for suicide prevention services can allow for interventions to be scaled to find people struggling with mental health concerns earlier and connect them to services. Capturing data from individuals experiencing thoughts of suicide or self-harm, often long before they would present to a provider, and connecting them to care as early as possible is imperative to save each individual life.

Mapping the real-time data from the MHA Screening Program identifies where the current need is at a pace and scale that was not possible before. National data on suicide rates through the National Vital Statistics System in the Centers for Disease Control (CDC) are often delayed by one to two years, making it difficult to respond to individuals currently in need and significantly weakening prevention efforts.[8] At the county level, data can be even more difficult to obtain, as many counties lack the capacity to consistently collect, analyze, and release data on suicide rates. Even when these data are available, they are an indicator of the number of individuals who have previously died by suicide in a community. Regularly collected county-level data on the prevalence of suicidal ideation and thoughts of self-harm is not generally available. The lack of county-level data along the entire spectrum of suicide-related needs increases the difficulty of funding and investing in meaningful prevention and early intervention response.

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[8] Choi, D. Sumner, S.A., Holland K.M. et al. (2020). Development of a machine learning model using multiple, heterogeneous data sources to estimate weekly U.S. suicide fatalities. *JAMA Network Open,* 3(12): e2030932. doi:10.1001/jamanetworkopen.2020.30932

The MHA Online Screening Program captures real-time, county- and state-level information in a standardized way across the U.S. Along with data on suicidal ideation and self-harm, the screening data also captures prevalence of depression and demographic data, including race/ethnicity, household income, and identifiers of special populations (e.g., LGBTQ+, caregivers, veterans, and perinatal needs). As this data continues to be collected and released, local leaders, policymakers, public health officials, and other stakeholders can have better real-time information on imminent need within their communities that improves targeted treatment, support, and coordinated efforts across communities with diverse needs. Making the data publicly available allows local health providers and advocates to work with health administrators and government agencies to interpret and inform more effective and targeted interventions, programming, and policy change.

Coordinated Intervention and Learning

Aligning the MHA Screening dataset with existing national surveys or healthcare data can also create opportunities for data coordination to generate deeper and more responsive learning and collaboration to prevent suicide throughout the country. For example, studies have shown that including multiple current data sources to estimate trends in suicide is more effective than current modeling based on historical data.[9] Researchers can include data from MHA Screening as an additional measure within models using multiple sources to predict future suicide risk so that health officials, policymakers, and other stakeholders can make decisions based on more accurate and timely predictions of risk in their communities.

Several national surveys, such as SAMHSA's National Survey on Drug Use and Health (NSDUH) and the CDC's Youth Risk Behavior Surveillance System (YRBSS), collect data on rates of suicidal ideation among different samples. Combining the location-based data from MHA Screening with these other existing national datasets can deepen understanding of suicide risk among different populations, for example, between individuals who are searching for mental health resources and supports online and those who are surveyed through a general population sample. The Healthcare Cost and Utilization Project (HCUP) includes longitudinal hospital care data in the United States. Comparing the MHA Screening data on imminent mental health needs with existing hospital care data can better our understanding of how individuals are seeking and utilizing mental health-related treatment. Using this data, researchers can better understand the factors that may lead individuals at highest risk for suicide to seek help and how they may compare to the general population.

The MHA dataset can also provide information on the gap between individuals seeking information and resources online and connection to services and supports. MHA Screening data can be combined with datasets from providers such as the National Suicide Prevention Lifeline (NSPL) and Crisis Text Line, or data that are collected through large health care research networks, like those in the Mental Health Research Network[10] to better understand who is being served, what the gaps are between help-seeking and connection to services, and where we may be missing individuals who are searching for help with initial mental health concerns who may experience crises if their needs are not addressed.

Addressing Unmet Need for Mental Health Supports

Policymakers, advocates, and other stakeholders can also use data on communities with higher numbers of individuals at risk of suicide to identify hotspots in the U.S with the greatest unmet need, for example, where mental health infrastructure does not currently exist or is not sufficient. The data presented in this brief represent individuals with the highest need who were actively seeking help for depression in 2020 and therefore indicate minimum levels of risk. By combining this data on imminent need with information on the availability of mental health providers within communities, we can identify areas in the country with the greatest need and lowest access to mental health care. For example, this data can be combined with the Substance Use and Mental Health Services Administration (SAMHSA) Treatment Locator to uncover areas with the largest gaps in care. Although the presence of mental health providers and facilities are not entirely indicative of access to care, overlaying mental health infrastructure with data on individuals in need can give a baseline view into which areas of the country are in greatest need of immediate resources

[9] Choi, D. Sumner, S., Holland KM et al. (2020). Development of a machine learning model using multiple, heterogeneous data sources to estimate weekly U.S. suicide fatalities. *JAMA Network Open,* 3(12): e2030932. doi:10.1001/jamanetworkopen.2020.30932
[10] http://www.hcsrn.org/en/Collaboration/Consortia/mhrn.html

needed or where opportunities exist for greater collaboration at the federal, state, and local levels to fill gaps in programming or mental health supports.

Although not presented in this brief, population-level demographic information collected through the MHA Screening Program can help identify disparities in access to mental health care across communities in the U.S., especially among traditionally underserved populations, including LGBTQ+ individuals and Black, Indigenous, and People of Color (BIPOC). In 2019, the Congressional Black Caucus released a report to Congress noting that the suicide death rate for Black youth is rising faster than any other racial group, and Black adolescents are significantly less likely to receive care for depression, a risk factor for suicide.[11] Data on race and ethnicity from MHA Screening can help identify areas in the country with greater numbers of Black youth reporting thoughts of suicide or self-harm. This information can then be combined with data on service utilization to direct federal, state, and local investments toward more culturally appropriate, representative, and responsive care and support. Understanding where the greatest needs are in a community, or who is currently being served and who is not, can help community leaders identify where more resources are needed or where to allocate resources more equitably. It can also help leaders identify informal or previously underfunded providers, organizations, or other assets that already exist in their communities and scale them to serve current mental health needs.

SCHOOLS IN CRISIS

Forty-one percent of individuals who took the PHQ-9 depression screen in 2020 were youth ages 11-17, and youth reported frequent thoughts of suicide and self-harm at higher rates than individuals over 18. The data findings are consistent with research on the onset of mental health conditions. Fifty percent of individuals will develop a diagnosable mental health condition in their lifetime. Fifty percent of those with a diagnosable mental health condition will develop symptoms during puberty.[12] Increasing school mental health funding and programs is the best way to catch children where they are and ensure families have the support they need to address mental health concerns before problems exacerbate.

The COVID-19 pandemic is exacerbating the need to respond to student mental health. The amount of stress students face, the reduced face-to-face contact in schools, and risk factors associated with home conflict (especially for LGBTQ+ youth or youth in poverty), are examples of compounding problems that may result in mental health problems for students due to COVID-19 alone.

School districts throughout the U.S. are severely underfunded and lack the resources and capacity to screen their students for mental health conditions or track mental health data over time. The available data will help identify hotspots of minimum risk in school districts throughout the country and disseminate targeted interventions to promote student mental health. There is not sufficient federal funding for local education agencies to meet the mental health needs of students. Stakeholders can use this data to triage care to the communities with the most severe risk. Triaging care in this way is only a first step. To create healthier communities, schools need long-term financial support to build up sustained and sufficient school infrastructure. This infrastructure should include, at minimum, increasing the number of mental health providers in schools, identifying processes and supports for screening and treating students, and reducing the gap in care when students transition from school to college and college to the workforce.

MHA Screening data serves to support more robust targeted funding to implement mental health supports within schools, create and maintain additional partnerships between schools and community organizations, and tailor programming and supports based on the needs indicated by the data.

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[11]U.S. Congressional Black Caucus Emergency Taskforce (2019). Ring the Alarm: The Crisis of Black Youth Suicide in America, A Report to Congress from the Congressional Black Caucus Emergency Task Force. Retrieved from https://watsoncoleman.house.gov/uploadedfiles/full_taskforce_report.pdf
[12] Kessler RC, Angermeyer M, Anthony JC, et al. (2007). Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry*, 6(3): 168–76. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2174588/

Responsibility for Systemic Policy Change

The mental health care infrastructure has been chronically underfunded for centuries. Lack of funding and lack of coordinated responses result in a system that does not meet the needs of individuals and families who have mental illnesses. This sustained scarcity of resources in mental health care leaves families in our system without supports that result in the increased use of crisis services, interaction with the criminal legal system, homelessness, loss of employment, and in the case of suicide, loss of life.

Although one in five individuals struggles with a diagnosable mental health condition, mental health impacts all individuals in their personal lives and in their communities. Data has the power to support early intervention, increase learning in research and practice, and coordinate care in communities and schools. But we cannot accomplish these aims without systemic and material policy change. For our data to be meaningful, it must result in legislation, regulation, and policy implementation that funnels federal, state, and local funding and guidance to increase quality and responsive mental health care for youth, adults, and families.

This policy agenda can be accomplished by arming researchers, advocates, providers, administrators, and policymakers with data for meaningful, targeted policy. Furthermore, additional data on demographics and location provides the opportunity and responsibility to explore the intersectional impact of mental health and poverty, trauma, environmental inequities, community development and connectedness, discrimination, racism, and other social determinants of health. With this greater understanding, stakeholders can better invest in working with communities to eliminate harms, promote wellness, and create environments that allow people to thrive.

Appendix

Methodology

MHA did not ask for any identifiable personal information as part of MHA Screening in 2020. All identifiable information provided by screeners in question responses, including email addresses, phone numbers, home addresses, and names, was immediately removed from the dataset. The dataset only included the first recorded depression screening result from each user IP address. As a result, each count in these analyses represents one individual person who took the depression screen in 2020. While most individuals access MHA Screening organically, MHA has over 200 affiliate organizations and multiple partner organizations who often refer users to the MHA Screening Program. Data referred from affiliates and partners were removed from the dataset to reduce oversampling in areas where these organizations are located. The final dataset included only data referred from search engines (including Google, Bing, and Yahoo, among others), from the MHA National main website, or from national social media platforms (including Instagram, Twitter, Reddit, and YouTube). The final dataset after cleaning contained PHQ-9 depression screening results from 725,949 individuals.

We conducted state-level analyses using results from the state demographic question, in which users select the state they live in, "I live outside the United States," or "I live in a U.S. territory." U.S. Census 2019 state resident population totals[13] were used to calculate the proportion of each state's population reporting frequent suicidal ideation. We conducted county-level analyses using results from the ZIP code demographic question, in which users can type in their ZIP code. ZIP codes were then consolidated into counties on Tableau, using an online U.S. ZIP code database.[14] Where a user's response for state did not match the ZIP code they provided, we verified the user's location at the time of taking a screen with their IP address. U.S. Census 2019 county resident population totals[15] were used to calculate the proportion of each county's population reporting frequent suicidal ideation.

Post-stratification weights

At the state-level, we calculated post-stratification weights to normalize the gender and age demographics based on 2019 state population demographics. Weights were applied to the data using a manual iterative process, beginning with age. Due to limited sample sizes at the county level, we did not apply post-stratification weights to the county-level data.

User Privacy

MHA works to ensure that no one individual is identifiable from information within this dataset. These analyses did not include any demographic or other potentially identifiable information. As noted above, the final dataset only included counties if there were more than seven individuals in the county reporting thoughts of suicide or self-harm.

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[13] U.S. Census Bureau (2019). Annual estimates of the resident population for the United States, regions, states, and Puerto Rico: April 1, 2010, to July 1, 2019. *U.S. Census Bureau.* Retrieved from https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-total.html
*The median count of individuals reporting frequent thoughts of suicide and self-harm of all counties within the U.S. was seven.
[14] SimpleMaps (2021). U.S. zip codes database. Retrieved from https://simplemaps.com/data/us-zips
[15] U.S. Census Bureau (2019). Annual estimates of the resident population for counties: April 1, 2010 to July 1, 2019. *U.S. Census Bureau.* Retrieved from https://www.census.gov/data/datasets/time-series/demo/popest/2010s-counties-total.html#par_textimage_70769902

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Talking Points: Suicide and COVID-19: Communities in Need Across the U.S.

The Data

- The states and counties identified in our analysis represent those with the greatest need for a fast and coordinated response to the mental health crisis brought on by COVID-19.

- MHA is identifying where the current need is at a pace and scale that hasn't been possible in the past. Government data on suicide is often delayed by one to two years, making it difficult to respond and significantly weakening prevention efforts.

- Each individual count of suicidal ideation or thoughts of self-harm is representative of a person at risk of suicide who is actively searching for help online. These thoughts occur long before a person reaches a point of intention and planning for suicide.

- This data represents the *minimum* number of people at risk in any community. For any one person who takes a mental health screen online, there are many others who struggle silently before turning to the internet for information and help.

- MHA Screening captures information about an individual's mental health needs earlier than other datasets, so it can be used for earlier intervention of mental health concerns. When people first begin experiencing symptoms of a mental health condition, they often look for answers online, long before speaking to a provider.

Local Impact

- County-level data are difficult to find, leaving public administrators like county board members, local health officials, or school administrators with little insight into their communities' specific problems and how best to invest in services like mental health care.

- Many counties lack the capacity to consistently collect, analyze, and release data on suicide rates. Even when these data are available, they are an indicator of the number of people who have previously died by suicide. Rather than waiting until a person reaches a point of crisis, identifying communities with a greater need for suicide prevention services allows for interventions to be scaled to find people struggling and connect them to services.

- By combining data on imminent need with information on the availability of mental health providers within communities, we can identify areas in the country with the greatest need and lowest access to mental health care. Even where some mental health infrastructure exists, these data can show where opportunities exist for greater collaboration at the federal, state, and local levels.

The Findings: State-Level

- The three states with the highest number of people reporting frequent suicidal ideation in 2020 were California, Texas, and Florida.

- Hawaii had the highest percentage of individuals reporting suicidal ideation of those who took a depression screen, followed by Montana, West Virginia, Nevada, and New Mexico.

- Alaska had the highest percentage of individuals reporting frequent thoughts of suicide or self-harm in comparison to the overall state population, followed by Alabama, Wyoming, Indiana, and Hawaii.

The Findings: County-Level

- The three counties in the U.S. with the highest number of individuals reporting thoughts of suicide or self-harm on more than half or nearly every day of the previous two weeks were Los Angeles County, CA, Maricopa County, AZ, and Cook County, IL.

- Large County Analysis: Of the most populous counties, Bexar County, TX had the highest percentage of the population report frequent thoughts of suicide or self-harm, followed by Clark County, NV, Riverside County, CA, Maricopa County, AZ, and San Bernardino County, CA.

- Small and Mid-Size County Analysis: Carroll County, Kentucky had the highest percentage of the population report frequent thoughts of suicide or self-harm, followed by Switzerland County, IN, Whitley County, KY, Greensville County, VA, and Ripley County, IN. It is also notable that many of the top 20 counties in this part of the analysis are in rural areas with little access to mental health care supports.

The Future

- The goal of this analysis is to identify communities in need of greater mental health supports, generate a better understanding of mental health concerns in the U.S., direct appropriate allocation of resources, and create an environment that promotes mental wellness at the population level.

- For our data to be meaningful, it must result in legislation, regulation, and policy implementation that funnels federal, state, and local funding and guidance to increase quality and responsive mental health care for youth, adults, and families.