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The Catastrophic Cost of Uninsurance: COVID-19 Cases and Deaths Closely Tied to America's Health Coverage Gaps

Results in Brief

For decades, experts in contagious disease have warned that health insurance gaps accelerate the spread of epidemics. When people without health insurance begin to feel sick, they often delay seeking medical care or forgo care altogether because of cost concerns. Not only does this place the individual patient in danger, it lets disease spread undetected and unchecked to family members, neighbors, co-workers, and others. Transmission rates rise and deaths become more common throughout the community, endangering people who are insured and uninsured alike.

These warnings have become reality during the coronavirus pandemic, our worst public-health crisis in more than a century. According to recent groundbreaking research that controlled for a broad range of factors, from the start of the pandemic through August 31, 2020, **each 10% increase in the proportion of a county's residents who lacked health insurance was associated with a 70% increase in COVID-19 cases and a 48% increase in COVID-19 deaths. In other words, people living in communities with very high rates of uninsurance were much more likely to contract the virus and to die than were people living in communities with relatively few uninsured.**

This report uses that research to address one fundamental question: **If everyone in America had health insurance, how many people who contracted COVID-19 could have been spared, and how many who died might still be with us today?**

Applying these research findings to every county in the United States yields staggering results:

- **Nationally, roughly 1 out of every 3 COVID-19 deaths are linked to health insurance gaps.**
- **More than 40% of all COVID-19 infections are associated with health insurance gaps.**
- **During the period covered by the study on which we base our analysis — between the start of the pandemic and August 31, 2020 — health insurance gaps were linked to an estimated 2.6 million COVID-19 cases and 58,000 COVID-19 deaths.**
- **If the same relationships between health insurance and COVID-19 continued unchanged after the period covered by the study, then by February 1, 2021, health insurance gaps would be associated with an estimated total of 10.9 million COVID-19 infections and 143,000 deaths from COVID-19.**

If everyone in America had health insurance, how many people who contracted COVID-19 could have been spared, and how many who died might still be with us today?

The United States recently surpassed the painful and sobering milestone of 500,000 deaths due to COVID-19. To limit the pandemic's ongoing toll, especially in communities of color, Congress and the Biden administration must take bold action to address persistent health coverage gaps and extend comprehensive health insurance to as many people as possible.

As one step in that direction, the House-passed American Rescue Plan is now before the Senate. This bill would help people with limited financial resources obtain affordable health insurance in the midst of a public health and economic crisis, including those who lost employment – and their health insurance – due to COVID-19.

The American Recovery Plan, though vital, is not enough. The pandemic has made it painfully clear that we all have a stake in our leaders making sure that everyone in America has reliable access to comprehensive, affordable health coverage.

Introduction

In this report, we take results from recent groundbreaking research and apply them at the national, state, and county levels. We find that because tens of millions of people lack health insurance and are more likely to delay or forgo care even when feeling sick, the worst pandemic in more than a century has spread more widely, infected more people, and taken more lives. In addition to increasing the pandemic's toll on American health and survival, leaving tens of millions of people without health coverage damages the economy by delaying the pandemic's defeat, thus holding back economic recovery, while denying revenue to the health care industry, one of our country's leading employers.[1]

As federal policymakers consider solutions to provide pandemic relief, making sure everyone in America has affordable health insurance needs to be a top priority. The coronavirus crisis provided a painful reminder that we cannot afford to have millions of people in this country living without any health coverage. Now more than ever, our leaders must step up and make sure that everyone in our nation can get the health care they need.

Background: The Ongoing Uninsurance Crisis Has Left the United States Uniquely Vulnerable to the Deadly Pandemic

Nineteen years ago, two of the country's leading experts in infectious disease warned that gaps in American health coverage created enormous public health risks. A highly contagious virus "left undetected" can "spread to family, neighbors, and other contacts," they explained. Detection does not occur until an infected person seeks care and obtains a diagnosis. However, "...[t]here are many potential reasons why an infected patient might not present for evaluation by the medical-care system." One key reason is that millions of U.S. residents "have no health insurance, a problem not faced by any other advanced industrialized nation. Their lack of insurance is a known risk to their own health, but it must now also be recognized as a risk to the nation's health."[2]

In 2019, before the pandemic began, nearly 30 million people in America were uninsured — more than 1 in 10 U.S. residents under age 65.[3] One year into the coronavirus pandemic, the number of people without any health coverage has grown, largely due to major layoffs and resulting losses of employer-sponsored coverage. According to a national survey that explored the pandemic's effects, 6% of all adults reported that someone in their household lost health insurance between the start of the pandemic and the first week of August 2020.[4] Based on Census Bureau population data, that translates into 15.3 million adults who had one or more family members lose coverage — far more than the largest annual drop in employer-sponsored insurance ever recorded.[5]

While comprehensive, national survey data for 2020 health coverage have not yet been released, it already seems clear that the number of people without health insurance rose significantly in 2020.

The same survey of the pandemic's effects found that coverage losses were nearly twice as steep for African Americans, Indigenous people, and Asian Americans/Native Hawaiians/Pacific Islanders as they were for non-Hispanic Whites. Losses were three times as great for Latinx adults as for non-Hispanic Whites.[6] Put simply, the very communities that the pandemic hit hardest also have the largest and fastest-growing health insurance gaps, further increasing their vulnerability to the virus.

These enormous health insurance gaps leave America exposed to potential epidemics in a way not experienced by any other advanced country. It should thus come as no surprise that when the worst pandemic in more than a century struck, Americans paid a terrible price for their leaders' longstanding failure to ensure that we all have health coverage.

Millions of U.S. residents "have no health insurance, a problem not faced by any other advanced industrialized nation..."

Analysis and Findings: New Research Confirms the Dramatic Impact of Health Insurance Gaps on COVID-19 Infections and Deaths

In late 2020, John M. McLaughlin and colleagues published a comprehensive, multivariate analysis of the factors associated with COVID-19 cases and deaths from the start of the pandemic[7] through August 31, 2020.[8] Using data from every U.S. county, they analyzed the impact not just of health insurance, but also of population density, urbanization, housing overcrowding, air pollution, gender, age, race, ethnicity, residential housing segregation, education, unemployment, income, income inequality, diabetes, obesity, smoking, sexually transmitted disease rates (as a proxy for in-person interactions), travel outside the home, county population size, and state. After controlling for all of these factors, they found that **each 10% increase in the proportion of county residents without health insurance was associated with a 70% increase in the county's COVID-19 cases and a 48% increase in COVID-19 deaths.** Put another way, people living in counties with higher proportions of uninsured individuals were significantly more likely to fall ill and to die from COVID-19.

We applied these findings to estimate the impact of health insurance gaps on COVID-19 at the national and state levels.*

Nationally, health insurance gaps are associated with a staggeringly high percentage of COVID-19 cases and deaths

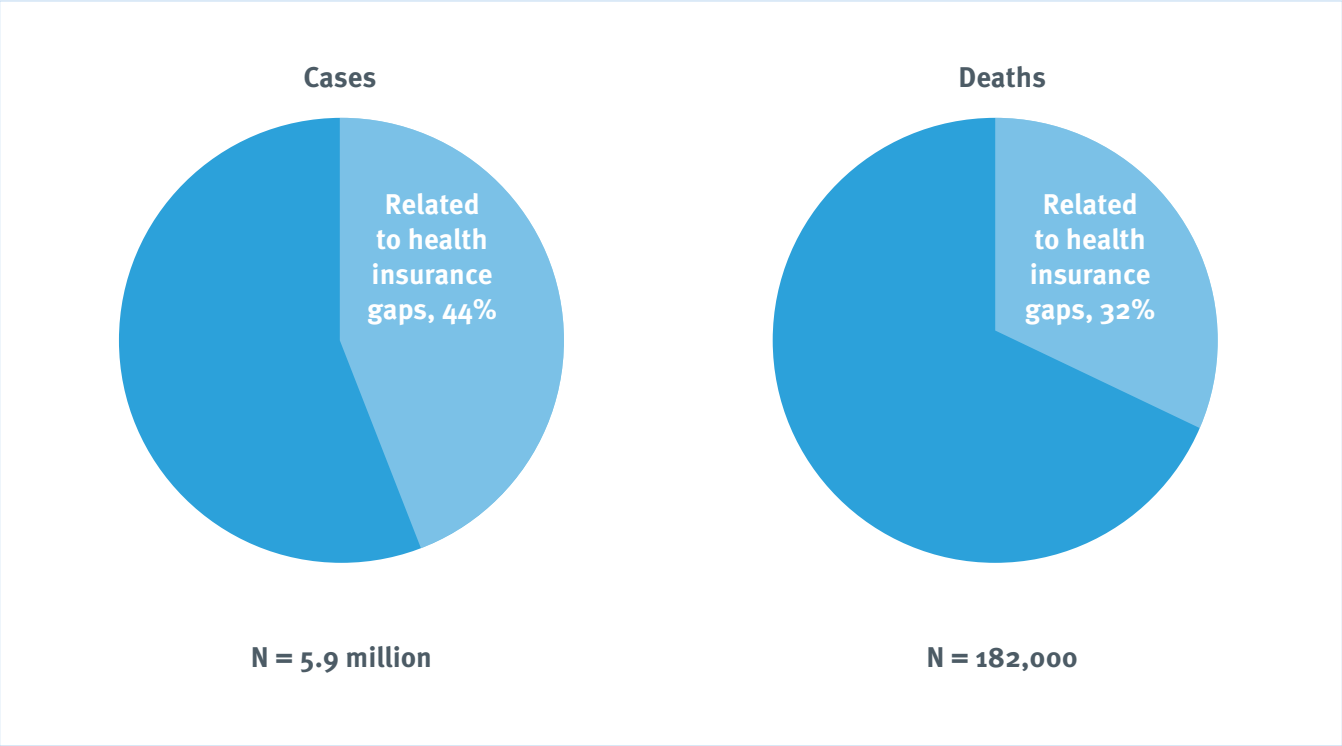
The research conducted by McLaughlin and colleagues makes it possible, using straightforward calculations, to estimate the number of COVID-19 cases and deaths that would have occurred in each county from the January 22, 2020, start of pandemic case reporting through August 31, 2020, if the proportion of uninsured fell to 0%.[9] Summing all county-level results, we found the following (Figure 1, Table 1):

- Health insurance gaps were associated with an estimated 2.6 million of the 5.9 million COVID-19 cases diagnosed by the end of August 2020. Put differently, **health insurance gaps were linked to 44% of America's COVID-19 infections.**
- Out of 182,000 COVID-19 deaths recorded by the end of August, approximately 58,000 were associated with health insurance gaps. Roughly **1 out of every 3 COVID-19 deaths were thus linked to health insurance gaps** (32%).

People living in counties with higher proportions of uninsured individuals were significantly more likely to fall ill and to die from COVID-19.

* Tables showing results by county are available upon request.

Figure 1. Impact of health insurance gaps on COVID-19 cases and deaths, from the start of the pandemic through August 31, 2020

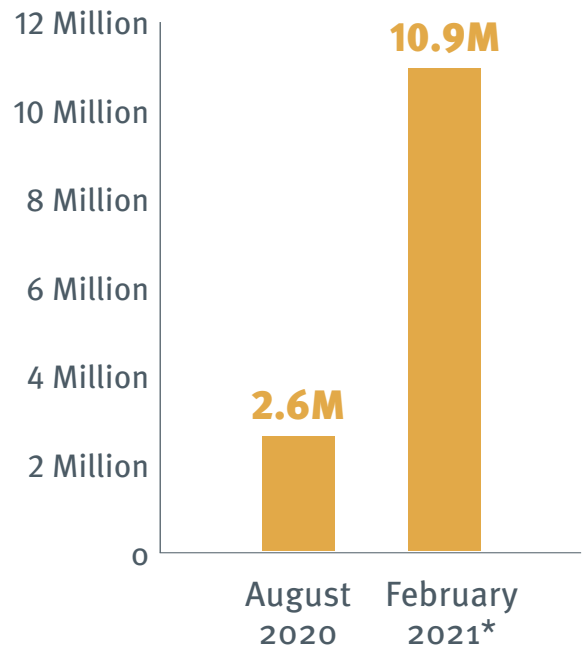


Source: Analysis of COVID-19 data from Johns Hopkins University, 2021, and Small Area Health Insurance Estimates, 2018.

The majority of COVID-19 cases and deaths took place *after* the period analyzed by McLaughlin and colleagues. If the pandemic continued to fit the patterns uncovered by these researchers, then **from the pandemic's start through February 1, 2021, health insurance gaps were associated with an estimated 10.9 million of 25.9 million COVID-19 infections and 143,000 of 437,000 COVID-19 deaths** (Figures 2 and 3).[i]

[i] Tables estimating the potential impact of health insurance gaps on COVID-19 cases and deaths from January 22, 2020, the start of COVID-19 case reporting in the U.S., through February 1, 2021, are available upon request. They show how that impact would have unfolded if, after the period analyzed by McLaughlin and colleagues, the relationships the researchers found between community characteristics and COVID-19 prevalence and mortality continued to apply.

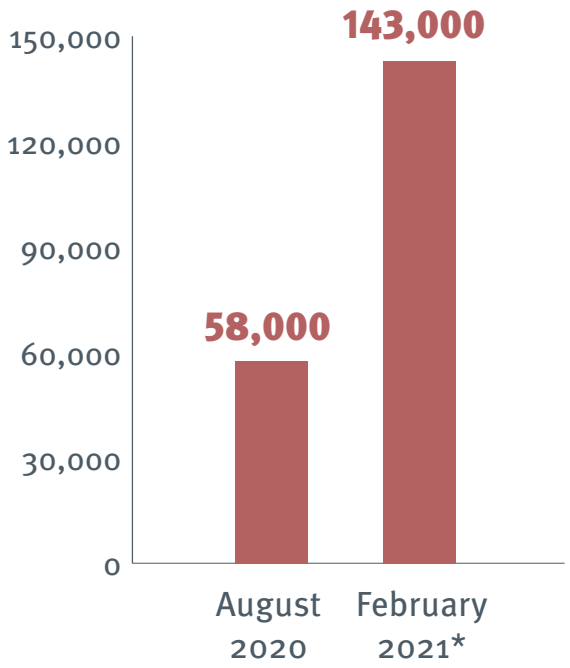
Figure 2. Number of Covid-19 Cases Associated with Lack of Health Insurance, in Millions, from the Start of the Pandemic through August 31, 2020, and through February 1, 2021



Source: Analysis of COVID-19 data from Johns Hopkins University, 2021, and Small Area Health Insurance Estimates, 2018.

*Projected impact of insurance gaps on cumulative cases if trends observed from January 22, 2020, through August 31, 2020, continued through February 1, 2021.

Figure 3. Number of Covid-19 Deaths Associated with Lack of Health Insurance from the Start of the Pandemic through August 31, 2020, and through February 1, 2021



Source: Analysis of COVID-19 data from Johns Hopkins University, 2021, and Small Area Health Insurance Estimates, 2018.

*Projected impact of insurance gaps on cumulative deaths if trends observed from January 22, 2020, through August 31, 2020, continued through February 1, 2021.

Health insurance gaps had a particularly powerful impact on COVID-19 illnesses and deaths in certain states

Number of Illnesses and Deaths

From the January 22, 2020, start of COVID-19 case reporting through August 31, 2020, 10 states had two-thirds of all 2.6 million COVID-19 infections that were linked to health insurance gaps (Table 2)

1. Texas: 419,996
2. Florida: 364,919
3. California: 264,914
4. Georgia: 144,727
5. New York: 130,764
6. Arizona: 99,954
7. North Carolina: 85,933
8. Illinois: 85,801
9. New Jersey: 75,578
10. Tennessee: 70,996

The estimated 58,000 COVID-19 deaths associated with health insurance gaps were also concentrated geographically. From January 22, 2020, through August 31, 2020, almost 7 out of every 10 of these deaths (69%) occurred in 10 states (Table 2, Figure 4)

1. New York: 8,218
2. Texas: 7,457
3. Florida: 5,395
4. New Jersey: 4,806
5. California: 3,869
6. Georgia: 2,574
7. Illinois: 2,371
8. Arizona: 2,013
9. Pennsylvania: 1,819
10. Michigan: 1,501

Percentage of all COVD-19 Illnesses and Deaths

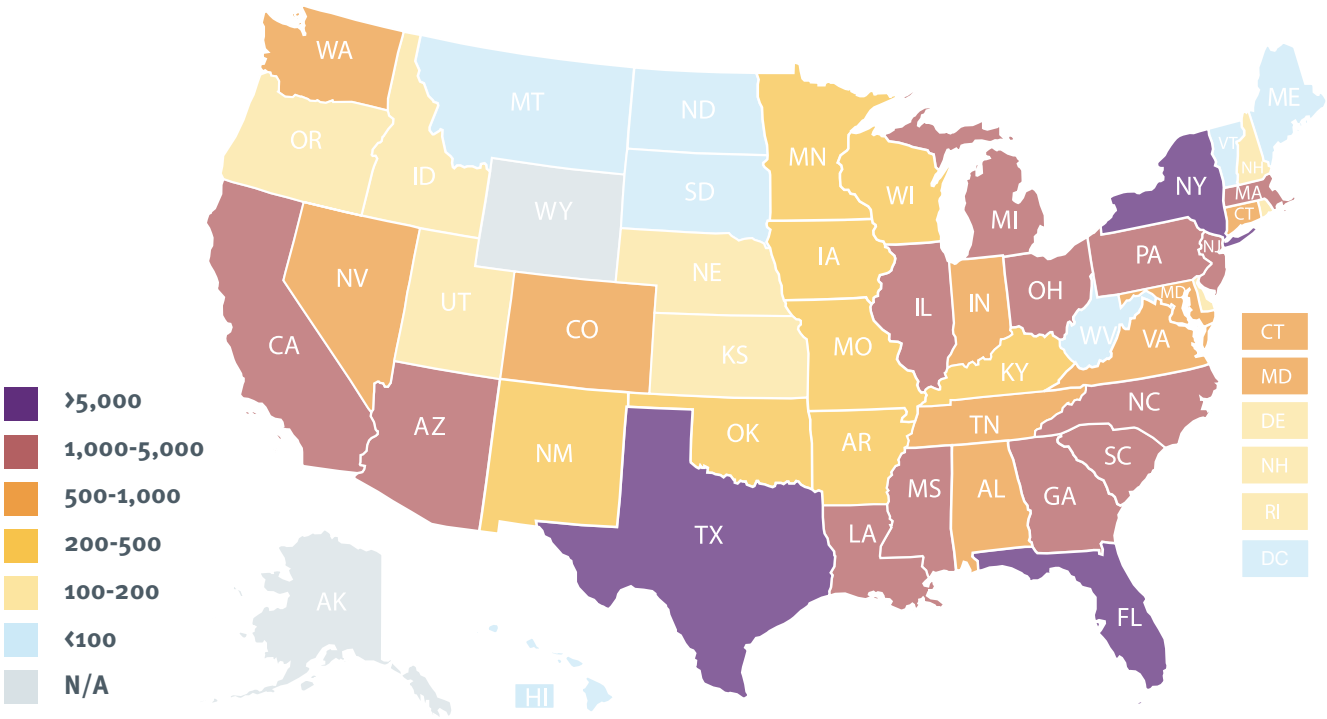
In 11 states, illnesses linked to health insurance gaps comprised at least 50% of the state's total COVID-19 **illnesses** from January 22, 2020, through August 31, 2020 (Table 3):

1. Texas: 66%
2. Florida: 59%
3. Oklahoma: 59%
4. Georgia: 57%
5. Mississippi: 54%
6. Alaska: 51%
7. Idaho: 50%
8. North Carolina: 50%
9. Nevada: 50%
10. Wyoming: 50%
11. Arizona: 50%

In 10 states, health insurance gaps were linked to at least 40% of the state's total COVID-19 **deaths** from January 22, 2020, through August 31, 2020 (Table 3, Figure 5):

1. Texas: 57%
2. Florida: 48%
3. Oklahoma: 48%
4. Georgia: 47%
5. Mississippi: 44%
6. New Mexico: 40%
7. Idaho: 40%
8. North Carolina: 40%
9. Arizona: 40%
10. Nevada: 40%

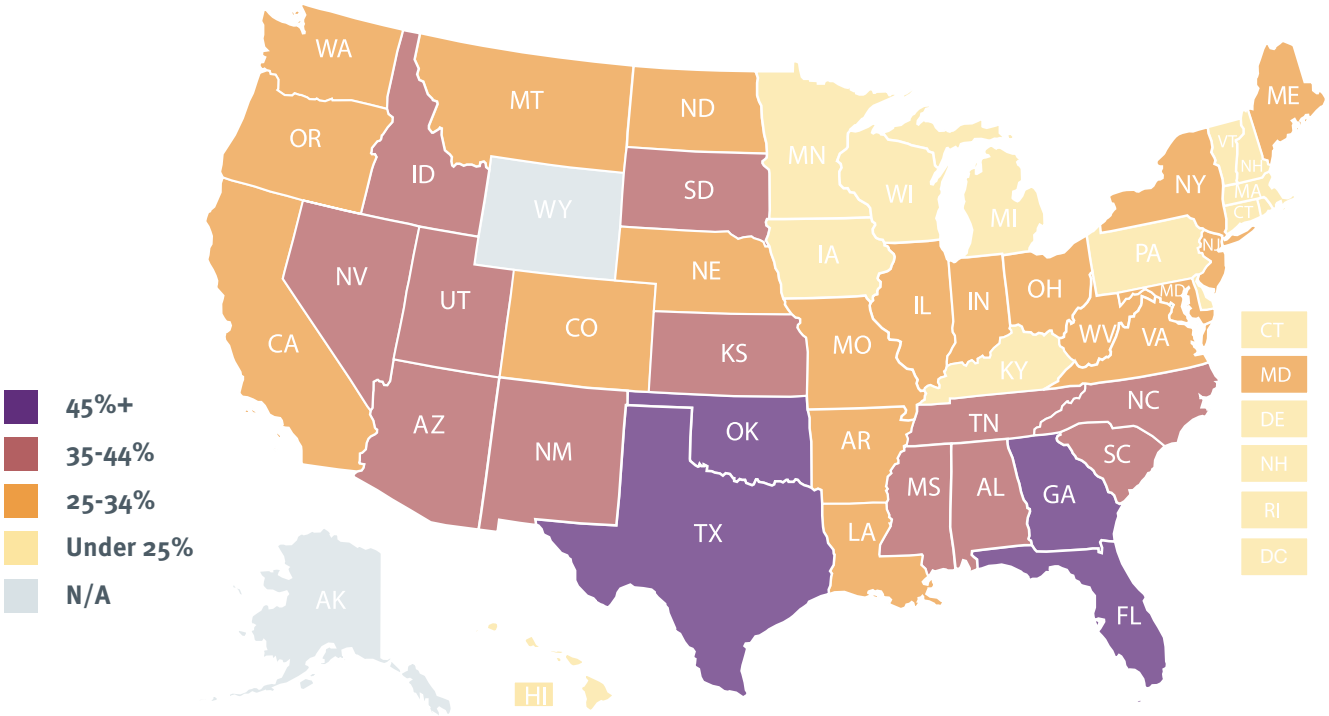
Figure 4. Number of Covid-19 Deaths Associated with Health Insurance Gaps, by State, January 22, 2020, through August 31, 2020



Source: Analysis of COVID-19 data from Johns Hopkins University, 2021, and Small Area Health Insurance Estimates, 2018.

N/A = states where fewer than 50 COVID-19 deaths were recorded from January 22, 2020, through August 31, 2020. In places with such small numbers, we did not estimate the effects of health insurance gaps on COVID-19 deaths.

Figure 5. Percentage of Covid-19 Deaths Associated with Health Insurance Gaps, by State, from January 22, 2020, through August 31, 2020



Source: Analysis of COVID-19 data from Johns Hopkins University, 2021, and Small Area Health Insurance Estimates, 2018.

N/A = states where fewer than 50 COVID-19 deaths were recorded from January 22, 2020, through August 31, 2020. In places with such small numbers, we did not estimate the effects of health insurance gaps on COVID-19 deaths.

Implications: Bold Federal Action to Extend Health Coverage Must Be an Essential Part of America's Response to the Coronavirus Pandemic

Thankfully, the pandemic's growth has slowed in recent weeks. Nevertheless, tens of thousands of people are infected daily with COVID-19, and more than 1,000 people die from the disease every day.[10] To limit the toll that health insurance gaps continue to take in COVID-19 infections and deaths, the Senate is now considering the health insurance provisions passed by the U.S. House of Representatives as part of President Biden's American Rescue Plan. This critical COVID-19 relief legislation would let millions of people seek health care when they get sick without risking insurmountable medical debt to obtain essential medical services during a global pandemic.

After the current legislative debate concludes, lawmakers cannot turn away from America's enormous health coverage gaps. **Among the many lessons taught by the pandemic, at terrible cost, is this: Leaving millions of people without health insurance can endanger our nation's overall health and economic security.** It is time, finally, to guarantee necessary health care for everyone who lives in the United States.

Key features of the House-Passed American Rescue Plan that would provide health coverage to millions of people who are uninsured today

- Increasing federal financial assistance to make private insurance substantially more affordable for families who do not get health care on the job.
- Providing financial assistance to help laid-off workers obtain health coverage, either by staying on their former employer's health plan through the COBRA health insurance program or by purchasing individual-market plans.
- Giving states powerful new incentives to extend Medicaid to low-income working adults, many of whom are essential or front-line workers who are disproportionately harmed by the pandemic.
- Authorizing states to provide 12 months of guaranteed Medicaid coverage to women who have just given birth.
- Increasing federal support for state Medicaid programs to cover home- and community-based services for people with disabilities and seniors, helping them avoid institutionalization and the associated risk of contracting COVID-19.
- Offering state Medicaid programs 100% federal funding to provide uninsured residents with testing, treatment, and vaccines for COVID-19.

The Congressional Budget Office (CBO) projects that the private insurance provisions in this legislation will cover between 1.9 million and 2.4 million uninsured people.[11] CBO did not estimate the number of uninsured who would receive coverage under the legislation's Medicaid sections.

Methodological Considerations

Several constraints are important to keep in mind while assessing our findings. Despite the extraordinarily broad range of factors that McLaughlin and colleagues considered, no multivariate analysis, no matter how comprehensive, can definitively establish causality. Unobserved variables can always play a role. Regression can never fully replace the level of certainty that a solid randomized controlled trial can provide.

In this particular case, there are additional limitations. The study by McLaughlin and colleagues focused on county- rather than individual-level variables. Moreover, their estimated percentages of uninsured county residents come from Small-Area Health Insurance Estimates (SAHIE) published by the U.S. Census Bureau for 2017. Relative to one another, county insurance gaps are likely to be generally similar now to what they were then, but some counties surely experienced significant changes. Such changes seem especially likely in states that expanded Medicaid after 2017 and in areas that experienced particularly large increases in unemployment during the pandemic, with consequent loss of insurance. Our analysis modestly lessens this limitation by using SAHIE estimates from 2018 rather than 2017, but the basic constraint remains.[12]

Regardless of these limitations, a causal relationship between health insurance gaps and the spread of COVID-19 is consistent with many past research findings. Wynia and Gostin, the infectious disease experts whose warnings about the impact of health insurance gaps on community-wide vulnerability to infectious disease we quote in the Introduction, explained the causal mechanism as follows: "Public health surveillance relies largely on reports from health care professionals.... For this system to work, therefore, patients must first have access to the health care system.... [M]any of the uninsured and underinsured avoid the health care system for as long as possible.... [U]ninsured patients discriminate poorly between appropriate and inappropriate care and tend to avoid both equally. Numerous studies demonstrate that the uninsured are more likely to present in an advanced stage of illness, and many die without ever being evaluated."[13]

Pre-pandemic evidence links insurance status to likelihood of contracting contagious illness, with significant effects on such things as adult immunization rates for influenza[14] and other communicable diseases,[15] hepatitis C infections,[16] congenital cytomegalovirus (CMV) infections,[17] and receipt of care and favorable outcomes for people with HIV-AIDS.[18] A large and growing body of evidence finds a strong relationship between insurance gaps and mortality, mostly for individuals but also for statewide populations.[19] Most directly relevant, substantial research shows that, compared to people with insurance, people who lack health insurance are many times more likely to delay necessary care because of cost or to go entirely without care.[20]

"Insurance status and the high costs of covid-19 interventions are leaving many Americans hesitant to be tested, scared to go to the emergency room, and suffering long after the illness has disappeared."

During the course of the pandemic, further evidence emerged that was consistent with this analysis. In April 2020, 14% of respondents polled by Gallup/West Health said cost would deter them from seeking care for symptoms like coughing and fever. Precisely such symptoms frequently mark infection with COVID-19. That proportion rose to 22% among low-income respondents, young adults, and people of color — groups particularly likely to lack health coverage.[21] *The British Medical Journal* reported as follows: "Insurance status and the high costs of covid-19 interventions are leaving many Americans hesitant to be tested, scared to go to the emergency room, and suffering long after the illness has disappeared." The article finished with these words: "...in the past when people avoided tests and treatments because of cost they endangered only themselves. Now, they risk everyone else's health as well."[22]

Conclusion

During the worst bout of deadly, highly infectious disease our nation has experienced in more than a century, Congress must finally pass COVID-19 relief legislation that lets people obtain medical care when they begin to feel sick. That requires protecting health coverage for people with limited financial resources, including those who have lost jobs and health insurance during the pandemic. President Biden's American Rescue Plan, approved by the House and now before the Senate, would make all of us safer by substantially reducing the number of uninsured.

That essential step is only a beginning. America's leaders must deliver on building a health care system that gives everyone in our nation access to affordable health insurance. The coronavirus pandemic demonstrates with painful clarity that our nation cannot afford continuing the status quo, which leaves so many people out of health care, out of luck, and vulnerable to illness and death. Both human life and the vibrancy of our economy hang in the balance.

Table 1. Impact of Health Insurance Gaps on Total COVID-19 Cases and Deaths, Between January 22, 2020, and August 31, 2020

	Cases			Deaths		
	Total Cases	Cases Associated with Coverage Gaps	Percentage of Total Cases Associated with Coverage Gaps	Total Deaths	Deaths Associated with Coverage Gaps	Percentage of Total Deaths Associated with Coverage Gaps
United States	5,945,381	2,617,230	44%	182,340	57,718	32%
Alabama	126,500	59,394	47%	2,083	781	37%
Alaska	6,142	3,113	51%	37	n/a	n/a
Arizona	201,835	99,954	50%	5,028	2,013	40%
Arkansas	60,320	24,426	40%	797	250	31%
California	714,572	264,914	37%	13,022	3,869	30%
Colorado	57,404	22,120	39%	1,945	577	30%
Connecticut	52,769	15,399	29%	4,465	987	22%
District of Columbia	13,992	2,433	17%	607	80	13%
Delaware	17,144	5,440	32%	605	147	24%
Florida	622,471	364,919	59%	11,187	5,395	48%
Georgia	251,768	144,727	57%	5,502	2,574	47%
Hawaii	8,447	1,741	21%	69	11	16%
Idaho	32,078	16,041	50%	361	145	40%
Illinois	234,960	85,801	37%	8,026	2,371	30%
Indiana	94,196	38,735	41%	3,077	980	32%
Iowa	65,130	17,455	27%	1,120	228	20%
Kansas	42,579	18,882	44%	451	160	36%
Kentucky	48,396	14,580	30%	933	217	23%
Louisiana	148,003	57,678	39%	4,787	1,464	31%
Maine	4,526	1,737	38%	132	40	30%
Maryland	108,249	35,291	33%	3,747	938	25%
Massachusetts	118,954	19,611	16%	9,054	1,094	12%
Michigan	107,413	31,239	29%	6,677	1,501	22%
Minnesota	75,705	18,589	25%	1,817	345	19%
Mississippi	82,950	44,594	54%	2,473	1,089	44%
Missouri	76,578	33,642	44%	1,477	477	32%
Montana	7,421	3,110	42%	104	35	33%
Nebraska	34,155	14,183	42%	396	136	34%

	Cases			Deaths		
	Total Cases	Cases Associated with Coverage Gaps	Percentage of Total Cases Associated with Coverage Gaps	Total Deaths	Deaths Associated with Coverage Gaps	Percentage of Total Deaths Associated with Coverage Gaps
Nevada	69,228	34,380	50%	1,305	520	40%
New Hampshire	7,273	2,228	31%	432	102	24%
New Jersey	195,132	75,578	39%	15,945	4,806	30%
New Mexico	24,032	11,565	48%	779	313	40%
New York	437,154	130,764	30%	32,936	8,218	25%
North Carolina	172,879	85,933	50%	2,702	1,084	40%
North Dakota	11,816	3,975	34%	143	38	26%
Ohio	123,155	41,374	34%	4,139	1,094	26%
Oklahoma	58,651	34,343	59%	800	384	48%
Oregon	26,713	10,032	38%	459	133	29%
Pennsylvania	138,795	42,703	31%	7,659	1,819	24%
Rhode Island	19,809	4,860	25%	1,064	197	19%
South Carolina	118,992	58,244	49%	2,720	1,074	39%
South Dakota	13,509	5,870	43%	167	60	36%
Tennessee	148,555	70,996	48%	1,720	661	38%
Texas	636,201	419,996	66%	13,105	7,457	57%
Utah	41,725	17,745	43%	335	120	36%
Vermont	1,616	354	22%	58	9	16%
Virginia	120,594	50,661	42%	2,580	843	33%
Washington	75,266	27,922	37%	1,911	522	27%
West Virginia	10,249	3,464	34%	215	58	27%
Wisconsin	75,603	22,623	30%	1,186	287	24%
Wyoming	3,777	1,874	50%	1	n/a	n/a

Sources: National Center for Coverage Innovation at Families USA (NCCI) analysis of COVID-19 cumulative case and death rates, by county, Johns Hopkins University, https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_covid19_confirmed_US.csv, https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_covid19_deaths_US.csv
U.S. Census Bureau, Small Area Health Insurance Estimates using the American Community Survey, 2018, https://www2.census.gov/programs-surveys/sahie/datasets/time-series/estimates-acs/sahie-2018-csv.zip

Notes: (1) We excluded Alaska and Wyoming from the panel showing deaths because these states had fewer than 50 COVID-19 deaths from January 22, 2020, through August 31, 2021. Because of those small numbers, our estimated impact of coverage gaps on deaths in these states may not be reliable. (2) January 22, 2020, is the first date for which COVID-19 information for U.S. cases and deaths is available from Johns Hopkins University.

Table 2. Impact of Health Insurance Gaps on Total COVID-19 Cases and Deaths, Between January 22, 2020, and August 31, 2020, by State, Ranked from Highest to Lowest

Cases			Deaths		
Order	State	Cases Associated with Coverage Gaps	Order	State	Deaths Associated with Coverage Gaps
1	Texas	419,996	1	New York	8,218
2	Florida	364,919	2	Texas	7,457
3	California	264,914	3	Florida	5,395
4	Georgia	144,727	4	New Jersey	4,806
5	New York	130,764	5	California	3,869
6	Arizona	99,954	6	Georgia	2,574
7	North Carolina	85,933	7	Illinois	2,371
8	Illinois	85,801	8	Arizona	2,013
9	New Jersey	75,578	9	Pennsylvania	1,819
10	Tennessee	70,996	10	Michigan	1,501
11	Alabama	59,394	11	Louisiana	1,464
12	South Carolina	58,244	12	Massachusetts	1,094
13	Louisiana	57,678	13	Ohio	1,094
14	Virginia	50,661	14	Mississippi	1,089
15	Mississippi	44,594	15	North Carolina	1,084
16	Pennsylvania	42,703	16	South Carolina	1,074
17	Ohio	41,374	17	Connecticut	987
18	Indiana	38,735	18	Indiana	980
19	Maryland	35,291	19	Maryland	938
20	Nevada	34,380	20	Virginia	843
21	Oklahoma	34,343	21	Alabama	781
22	Missouri	33,642	22	Tennessee	661
23	Michigan	31,239	23	Colorado	577
24	Washington	27,922	24	Washington	522
25	Arkansas	24,426	25	Nevada	520

Cases			Deaths		
Order	State	Cases Associated with Coverage Gaps	Order	State	Deaths Associated with Coverage Gaps
26	Wisconsin	22,623	26	Missouri	477
27	Colorado	22,120	27	Oklahoma	384
28	Massachusetts	19,611	28	Minnesota	345
29	Kansas	18,882	29	New Mexico	313
30	Minnesota	18,589	30	Wisconsin	287
31	Utah	17,745	31	Arkansas	250
32	Iowa	17,455	32	Iowa	228
33	Idaho	16,041	33	Kentucky	217
34	Connecticut	15,399	34	Rhode Island	197
35	Kentucky	14,580	35	Kansas	160
36	Nebraska	14,183	36	Delaware	147
37	New Mexico	11,565	37	Idaho	145
38	Oregon	10,032	38	Nebraska	136
39	South Dakota	5,870	39	Oregon	133
40	Delaware	5,440	40	Utah	120
41	Rhode Island	4,860	41	New Hampshire	102
42	North Dakota	3,975	42	District of Columbia	80
43	West Virginia	3,464	43	South Dakota	60
44	Alaska	3,113	44	West Virginia	58
45	Montana	3,110	45	Maine	40
46	District of Columbia	2,433	46	North Dakota	38
47	New Hampshire	2,228	47	Montana	35
48	Wyoming	1,874	48	Hawaii	11
49	Hawaii	1,741	49	Vermont	9
50	Maine	1,737		Alaska	n/a
51	Vermont	354		Wyoming	n/a

Sources and notes: See Table 1.

Table 3. Percentage of COVID-19 Cases and Deaths Associated with Insurance Gaps from January 22, 2020, through August 31, 2020, by State, Ranked from Highest to Lowest Percentage

Cases					Deaths				
Order	State	Total Cases	Cases Associated with Coverage Gaps	Percentage of Total Cases Associated with Coverage Gaps	Order	State	Total Deaths	Deaths Associated with Coverage Gaps	Percentage of Total Deaths Associated with Coverage Gaps
1	Texas	636,201	419,996	66%	1	Texas	13,105	7,457	57%
2	Florida	622,471	364,919	59%	2	Florida	11,187	5,395	48%
3	Oklahoma	58,651	34,343	59%	3	Oklahoma	800	384	48%
4	Georgia	251,768	144,727	57%	4	Georgia	5,502	2,574	47%
5	Mississippi	82,950	44,594	54%	5	Mississippi	2,473	1,089	44%
6	Alaska	6,142	3,113	51%	6	New Mexico	779	313	40%
7	Idaho	32,078	16,041	50%	7	Idaho	361	145	40%
8	North Carolina	172,879	85,933	50%	8	North Carolina	2,702	1,084	40%
9	Nevada	69,228	34,380	50%	9	Arizona	5,028	2,013	40%
10	Wyoming	3,777	1,874	50%	10	Nevada	1,305	520	40%
11	Arizona	201,835	99,954	50%	11	South Carolina	2,720	1,074	39%
12	South Carolina	118,992	58,244	49%	12	Tennessee	1,720	661	38%
13	New Mexico	24,032	11,565	48%	13	Alabama	2,083	781	37%
14	Tennessee	148,555	70,996	48%	14	South Dakota	167	60	36%
15	Alabama	126,500	59,394	47%	15	Utah	335	120	36%
16	Kansas	42,579	18,882	44%	16	Kansas	451	160	36%
17	Missouri	76,578	33,642	44%	17	Nebraska	396	136	34%
18	South Dakota	13,509	5,870	43%	18	Montana	104	35	33%
19	Utah	41,725	17,745	43%	19	Virginia	2,580	843	33%
20	Virginia	120,594	50,661	42%	20	Missouri	1,477	477	32%
21	Montana	7,421	3,110	42%	21	Indiana	3,077	980	32%
22	Nebraska	34,155	14,183	42%	22	Arkansas	797	250	31%
23	Indiana	94,196	38,735	41%	23	Louisiana	4,787	1,464	31%
24	Arkansas	60,320	24,426	40%	24	Maine	132	40	30%
25	Louisiana	148,003	57,678	39%	25	New Jersey	15,945	4,806	30%
26	New Jersey	195,132	75,578	39%	26	California	13,022	3,869	30%

Cases					Deaths				
Order	State	Total Cases	Cases Associated with Coverage Gaps	Percentage of Total Cases Associated with Coverage Gaps	Order	State	Total Deaths	Deaths Associated with Coverage Gaps	Percentage of Total Deaths Associated with Coverage Gaps
27	Colorado	57,404	22,120	39%	27	Colorado	1,945	577	30%
28	Maine	4,526	1,737	38%	28	Illinois	8,026	2,371	30%
29	Oregon	26,713	10,032	38%	29	Oregon	459	133	29%
30	Washington	75,266	27,922	37%	30	Washington	1,911	522	27%
31	California	714,572	264,914	37%	31	West Virginia	215	58	27%
32	Illinois	234,960	85,801	37%	32	Ohio	4,139	1,094	26%
33	West Virginia	10,249	3,464	34%	33	North Dakota	143	38	26%
34	North Dakota	11,816	3,975	34%	34	Maryland	3,747	938	25%
35	Ohio	123,155	41,374	34%	35	New York	32,936	8,218	25%
36	Maryland	108,249	35,291	33%	36	Delaware	605	147	24%
37	Delaware	17,144	5,440	32%	37	Wisconsin	1,186	287	24%
38	Pennsylvania	138,795	42,703	31%	38	Pennsylvania	7,659	1,819	24%
39	New Hampshire	7,273	2,228	31%	39	New Hampshire	432	102	24%
40	Kentucky	48,396	14,580	30%	40	Kentucky	933	217	23%
41	Wisconsin	75,603	22,623	30%	41	Michigan	6,677	1,501	22%
42	New York	437,154	130,764	30%	42	Connecticut	4,465	987	22%
43	Connecticut	52,769	15,399	29%	43	Iowa	1,120	228	20%
44	Michigan	107,413	31,239	29%	44	Minnesota	1,817	345	19%
45	Iowa	65,130	17,455	27%	45	Rhode Island	1,064	197	19%
46	Minnesota	75,705	18,589	25%	46	Vermont	58	9	16%
47	Rhode Island	19,809	4,860	25%	47	Hawaii	69	11	16%
48	Vermont	1,616	354	22%	48	District of Columbia	607	80	13%
49	Hawaii	8,447	1,741	21%	49	Massachusetts	9,054	1,094	12%
50	District of Columbia	13,992	2,433	17%	50	Alaska	n/a		
51	Massachusetts	118,954	19,611	16%	51	Wyoming	n/a		

Sources and notes: See Table 1.

Endnotes

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[8] Researchers used a form of statistical analysis that stated dependent variables logarithmically. With the independent variable defined as a 10% increase in the proportion of county residents under age 65 without health insurance, the 95% confidence intervals for incident rate ratios (IRRs) were 1.49 to 1.94 for COVID-19 cases and 1.22 to 1.78 for COVID-19 deaths. J. M. McLaughlin, F. Khan, S. Pugh, F. J. Angulo, H. J. Schmidt, R. E. Isturiz, L. Jodar, and D. L. Swerdlow, "County-Level Predictors of COVID-19 Cases and Deaths in the United States: What Happened, and Where Do We Go from Here?" *Clin Infect Dis* (November 19, 2020:1729, doi: 10.1093/cid/ciaa1729. Epub ahead of print.

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