COVID-19 Community Explorer:

The Best- and Worst-Performing Counties in the US

Key Findings for December 2021

1) Community Profile Perspective

Counties in Community Profile One remain the best performing on average (Table 1). The average vaccination rate is the highest (65.91 percent, about 12 percentage points higher than the next profile at 53.87 percent), and average case rate is the lowest (14,346 cases per 100,000) as is the death rate (192 deaths per 100,000).

Counties in Community Profiles Three, Six, and Seven tend to be the worst performing when it comes to fatalities (see Table 1). Profile Three has averaged the highest number of deaths per 100,000 people at 381, and while its case rate of 17,950 cases per 100,000 is only fourth highest among the profiles, it has the second highest fatality rate, with deaths representing 2.14 percent of cases. Profile Six has the second highest death rate at 375 deaths per 100,000 people, and the second highest case rate at 18,761 cases per 100,000 people. It has the third highest fatality rate, with deaths averaging 2.07 percent of confirmed cases. Profile Seven averages the third highest number of deaths per 100,000 people (363) despite ranking fifth among community profiles by case rate at 16,742 cases per 100,000. Deaths average 2.20 percent of confirmed cases, giving this profile the highest average fatality percentage.

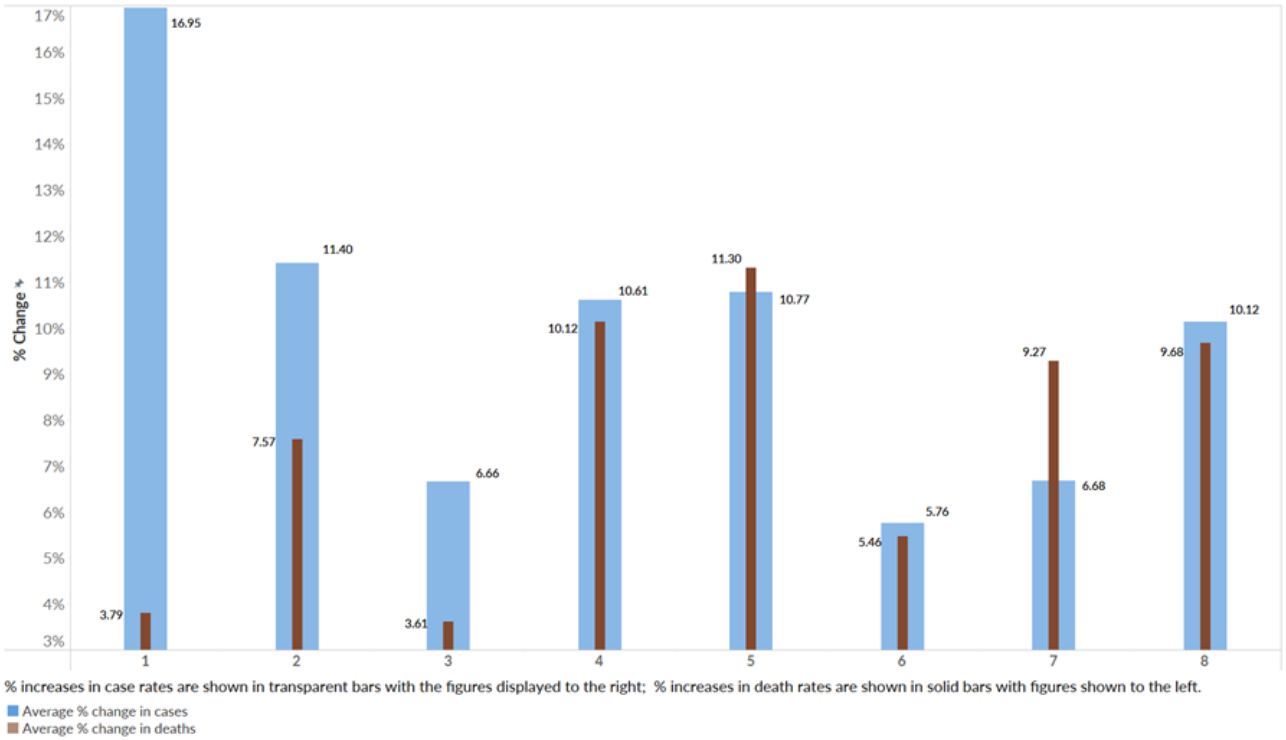
In the previous analysis period (October to November), the increase in death rates exceeded the percent increase in case rates for all community profiles except Profile Eight, and in the current analysis (November to December), death rate increases exceeded case rate increases for two of eight community profiles. Community Profiles Five and Seven are the only two community profiles whose average death rate grew faster than the average case rate in the last month (Figure 1). The large growth in case rates relative to death rates in the past month is attributable to the omicron variant (Figure 2).

Table 1. Average Vaccination Rate, Booster Rate, Cases per 100,000, Deaths per 100,000, and Fatality Rate by Community Profile (December 2021)

Community Profile	Vaccination Rate (%)	Booster Rate (%)	Cases per 100,000	Deaths per 100,000	Fatality Rate (%)
Profile 1	65.91	22.46	14,346	192	1.33
Profile 2	53.87	19.10	16,254	215	1.33
Profile 3	46.85	12.79	17,950	381	2.14
Profile 4	44.40	15.52	18,437	341	1.88
Profile 5	46.42	17.86	18,850	315	1.69
Profile 6	49.23	15.06	18,761	375	2.07
Profile 7	48.25	16.95	16,742	363	2.20
Profile 8	48.63	20.41	16,634	267	1.57
All Counties	48.85	17.29	17,487	308	1.77

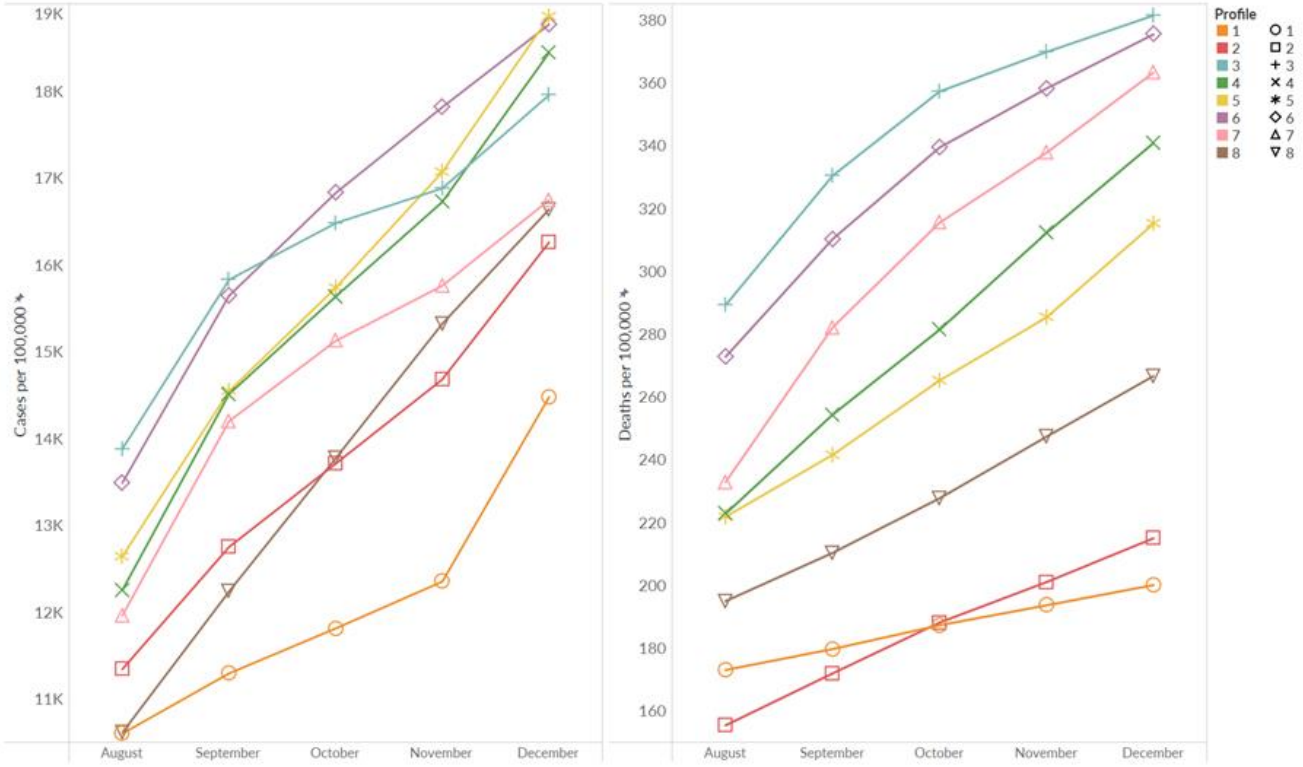
Source: Milken Institute (2022)

Figure 1. Increases in Cases versus Deaths per 100,000 (November to December 2021), by Community Profile



Source: Milken Institute (2022)

Figure 2. Five-Month Trends by Community Profile (August to December 2021)
2A. Five-Month Trends in Cases per 100,000 **2B. Five-Month Trends in Deaths per 100,000**



Source: Milken Institute (2022) *Source: Milken Institute (2022)*

2) State- and County-Specific Perspective

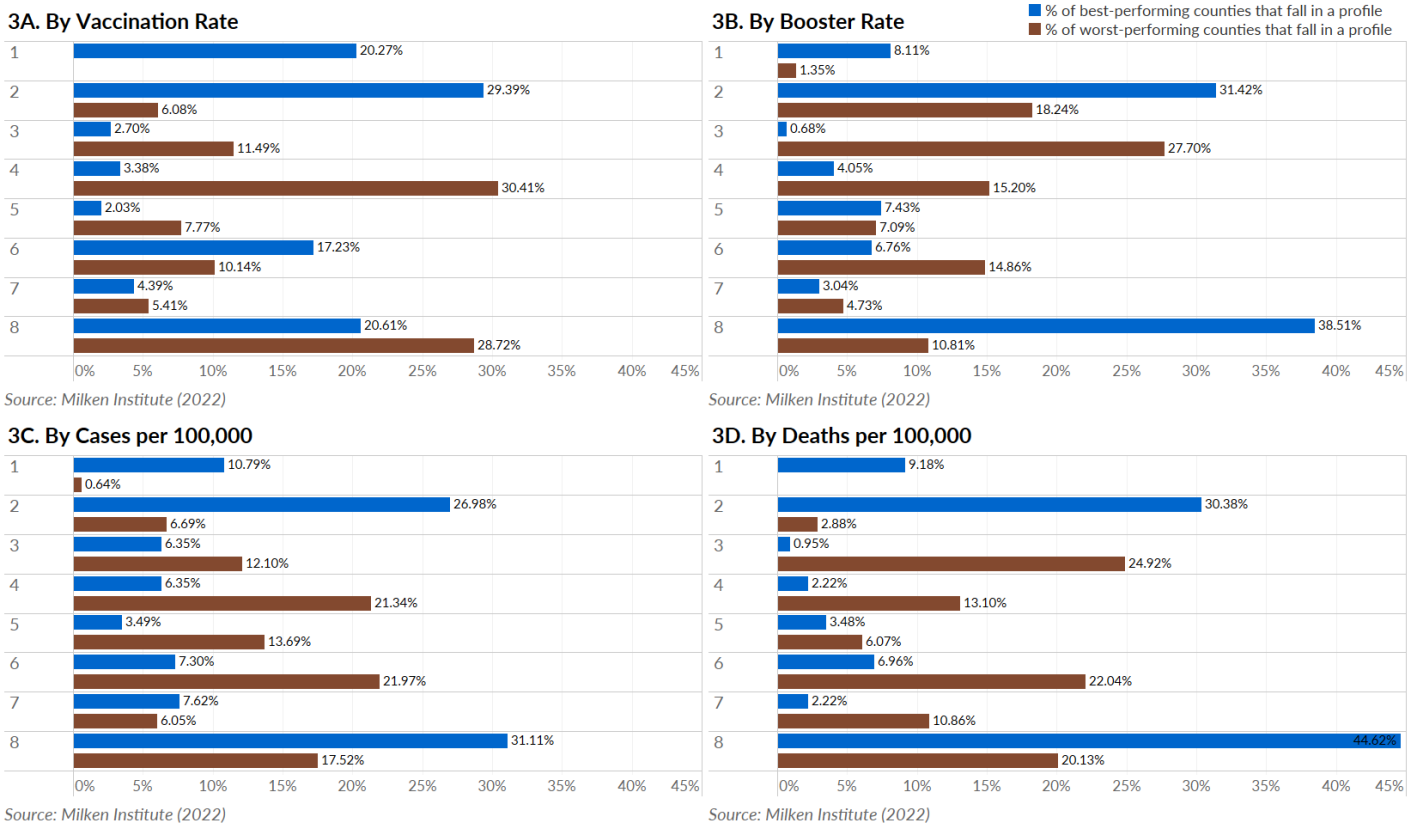
Best-Performing Counties: Top 10 Percent (see Figure 3)

- **Vaccination rate**: Four community profiles (One, Two, Six, and Eight) make up 87.5 percent of the best-performing tenth of US counties.
    - In Community Profile One, over 60 percent of counties fall in the top tenth.
    - Massachusetts has the highest percentage of its counties falling in the top tenth nationwide (12 of 14 counties, or 86 percent). The average vaccination rate for those 12 counties is 71.06 percent, while a typical county in Massachusetts would have a vaccination rate of approximately 69.68 percent. Statewide, the vaccination rate is 73.20 percent.
    - In both Hawaii[1] and Rhode Island, every county falls in the "most-vaccinated" tenth of US counties.
- **Number of cases per 100,000**: Counties in Profile Eight (31 percent) and Two (27 percent) comprise almost 60 percent of the 315 counties with the fewest number of cases per 100,000.
    - Vermont is the state with the highest percentage of its counties falling in the best-performing tenth nationwide (11 of 14, or 79 percent). Within those 11 counties, the average case is 8,956 per 100,000, while a typical Vermont county would have a case rate of approximately 10,154 per 100,000. Statewide, the total case rate is 10,022 per 100,000.
    - Hawaii has the lowest statewide case rate, with 7,530 cases per 100,000 statewide; a typical county in Hawaii would have a case rate of 5,716 per 100,000.
- **Number of deaths per 100,000**[2]
    - Nebraska contains eight of the counties with no reported deaths (35 of its 93 counties also fall in the best-performing tenth of counties). It is followed by Utah and Colorado, with 3 counties each with no deaths.
    - Of the 316 counties with low death rates, three-quarters fall within Profile Two (30 percent) and Profile Eight (45 percent).
    - Vermont has the lowest state death rate at 73 deaths per 100,000; all its counties fall within the best-performing tenth of counties.
    - After Vermont, Alaska has the highest percentage of best-performing counties, 22 out of 29[3]. The average death rate is 71 per 100,000 in the well-performing county-equivalents, and a typical county-equivalent in Alaska would have a death rate of 96 per 100,000. The total death rate statewide is 130 per 100,000
- **Vaccination, case, and death rates**
    - Six hundred forty counties fall in the best-performing decile for at least one of the three COVID-19 metrics (see Figure 4).
    - All four counties in Hawaii[1] are among the best-performing 10 percent of counties by all three COVID-19 metrics, as are 10 of California's 58 counties; this makes California the state with the highest number of high performing counties and Hawaii the state with the highest percentage of its counties being considered among the best performing.
    - Eighty-six percent of the best-performing 64 counties on all three COVID-19 metrics are split between Profiles Eight (31 percent), Two (22 percent), and One (33 percent) (see Figure 5).
    - States in New England perform especially well – the top five states by statewide vaccination rate are (in order): Vermont, Maine, Rhode Island, Connecticut, Massachusetts. Vermont and Maine are third and fourth from the bottom by statewide case rate, and first and third from the bottom by statewide death rate, respectively. Sixty-one of 67 counties in New England are considered well performing by at least one of the three metrics; these counties are mostly split between Profiles Two (38 percent) and Eight (44 percent).

Worst-Performing Counties: Bottom 10 Percent (see Figure 3):

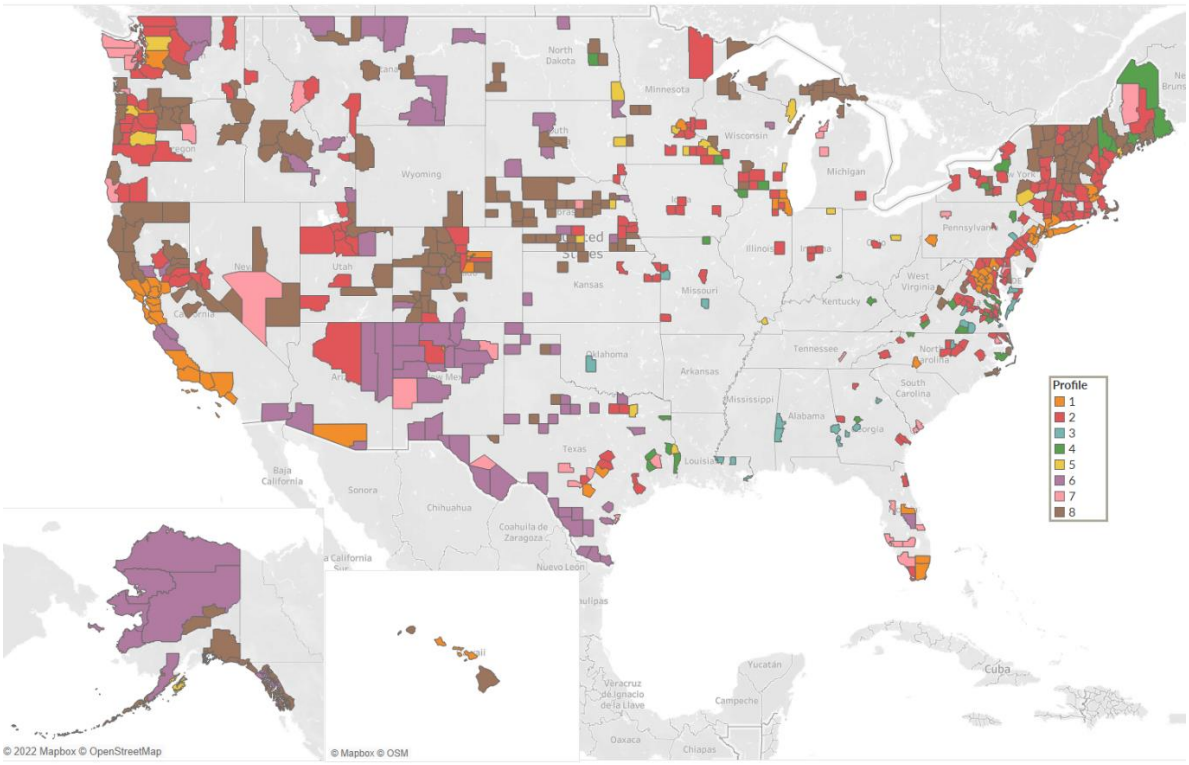
- **Vaccination rate**: Almost 60 percent of the worst-performing 296 counties falls in Profiles Four (30 percent) and Eight (29 percent), largely rural counties with a large White and Black population with the lowest income level of all the profiles.
    - Nebraska is the state with the highest proportion of poorly performing counties at 35 percent (33 of its 93 counties). The average vaccination rate is 30.09 percent within those 33 counties. A typical county in Nebraska would have a vaccination rate of 39.91 percent, but the statewide vaccination rate is much higher at 59.03 percent.
- **Number of cases per 100,000**: Over 40 percent of the 314 worst-performing counties in terms of cases per 100,00 falls in Profiles Four (21.34 percent) or Six (21.97 percent).
    - Arizona has the highest proportion of counties with case rates in the top tenth, six out of 15 counties. In those six counties, the average case rate is 23,356 per 100,000 people, while a typical Arizona county would have a rate of 20,260 cases per 100,000. Statewide, Arizona's case rate is 19,317 per 100,000.
    - Only two of the worst-performing counties by case rate fall in Profile One, both in Florida. Broward County has a case rate of 22,628 per 100,000 and Miami-Dade has a rate of 31,377. Miami-Dade County has the ninth-worst case rate of all US counties nationwide.
- **Number of deaths per 100,000**: Sixty-seven percent of the worst-performing counties in terms of deaths per 100,000 are in Profiles Three (25 percent), Six (22 percent), and Eight (20 percent).
    - Thirty-seven percent of the worst-performing counties by death rate fall in just two states: Texas (21 percent or 66 counties) and Georgia (16 percent or 50 counties).
    - Arizona is state with the highest percentage of its counties falling in the worst tenth by death rate with one-third of its 15 counties among the worst performing. In these five counties, the death rate is 661 per 100,000 people, and a typical county in Arizona would have a rate of 459 per 100,000. Statewide, the rate is 339 deaths per 100,000 people, second only to Mississippi (353 deaths per 100,000).
- **Vaccination, case, and death rates**
    - Seven hundred eighty-three counties fall within the worst-performing decile for at least one of the three COVID-19 metrics (see Figure 6).
    - Only six counties can be considered among the worst performing by vaccination, case, *and* death rates: two each in Profiles Three and Six, and one each in Profiles Seven and Eight (see Figure 7).

Figure 3. Distribution of Best- and Worst-Performing Counties by Community Profile (December 2021)



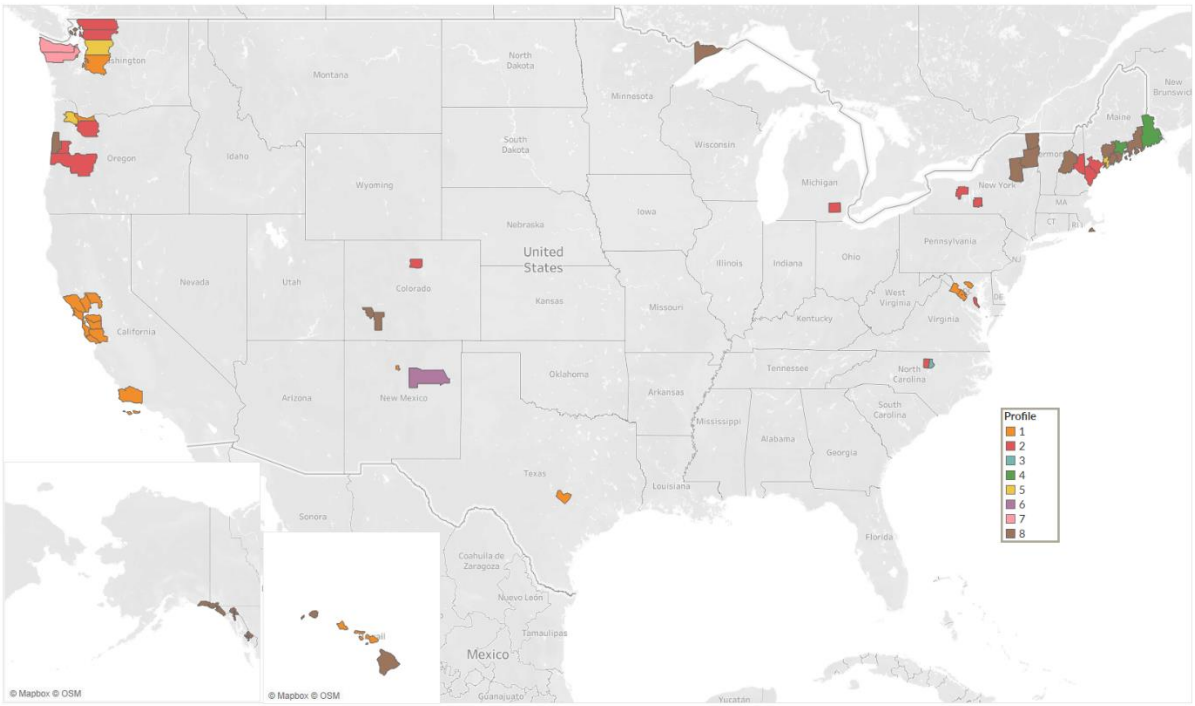
3) Where are the Best-Performing Counties?

Figure 4. The Best-Performing Tenth of Counties Based on At Least One of the Three COVID-19 Metrics (December 2021)[4]



Source: Milken Institute (2022)

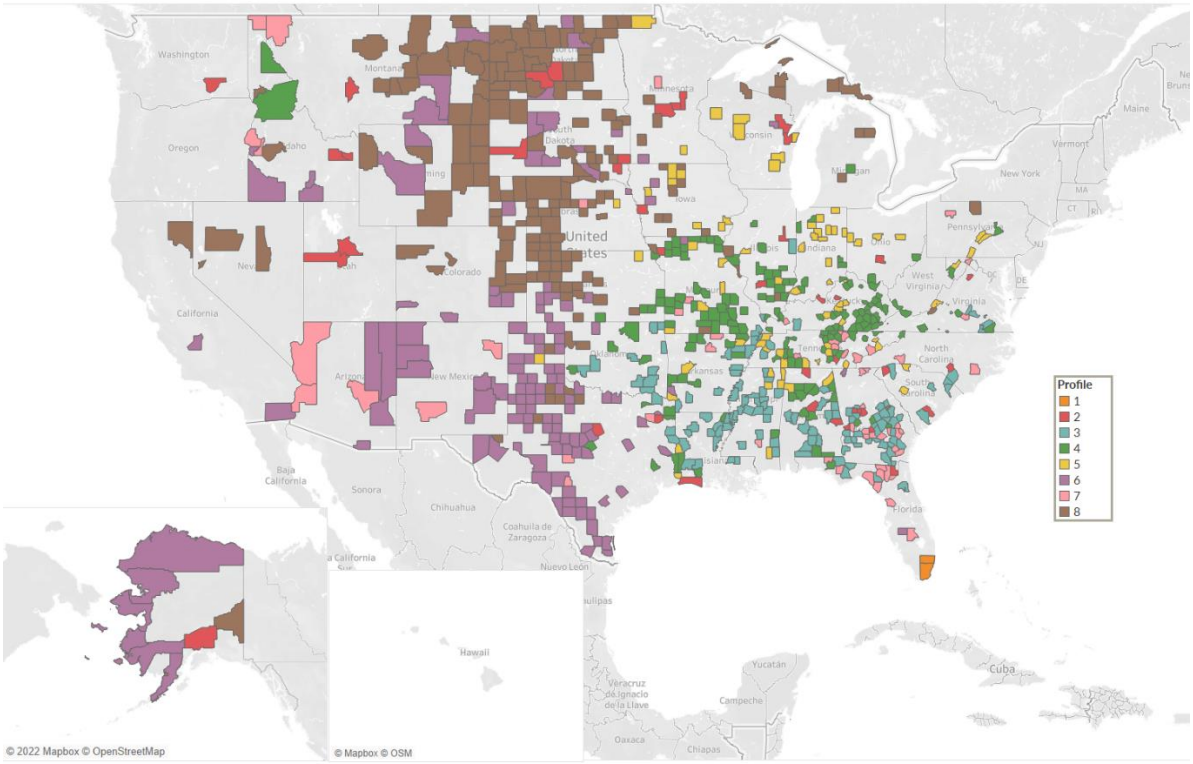
Figure 5. The Best-Performing Tenth of Counties Based on All Three COVID-19 Metrics (December 2021)



Source: Milken Institute (2022)

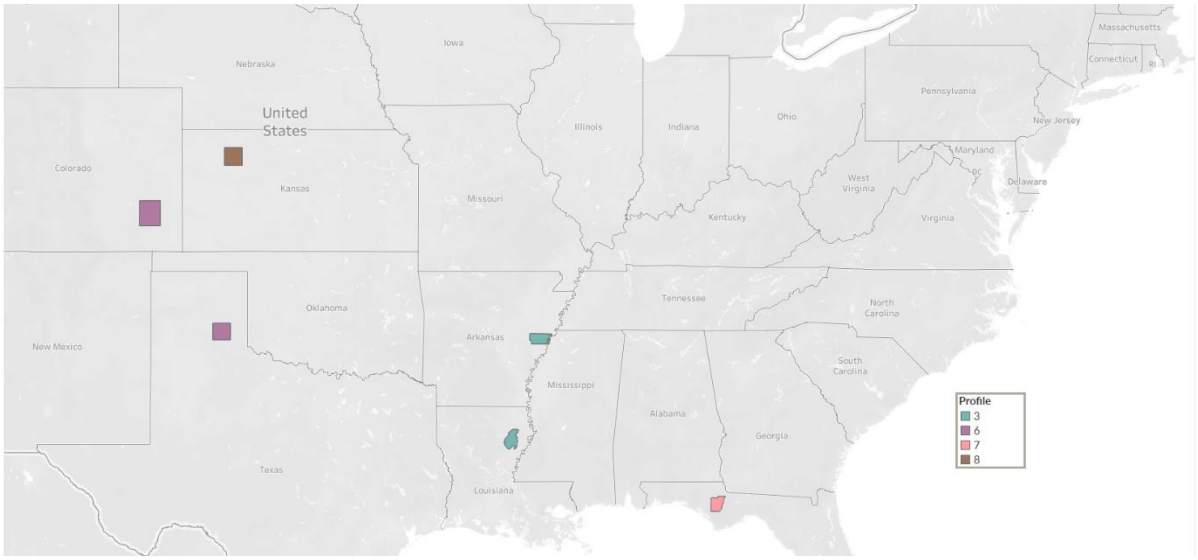
4) Where Are the Worst-Performing Counties?

Figure 6. The Worst-Performing Tenth of Counties Based on At Least One of the Three COVID-19 Metrics (December 2021)



Source: Milken Institute (2022)

Figure 7. The Worst-Performing Tenth of Counties Based on All Three COVID-19 Metrics (December 2021)



Source: Milken Institute (2022)

Table 2. Cutoff Points for Best- and Worst-Performing Deciles (December 2021)

		Vaccination Rate (%)	Booster Rate (%)	Cases per 100,000	Deaths per 100,000	Fatality Rate (%)
Best-Performing Decile	Maximum	N/A[5]	45.03	1,220	0	0
	Minimum	63.68	26.32	12,749	129	0.89
	Average	**70.51**	**30.46**	**10,382**	**85**	**0.59**
Worst-Performing Decile	Maximum	35.89	9.83	65,938	1,333	7.81
	Minimum	11.33	0.20	21,775	490	2.79
	Average	**31.72**	**7.26**	**24,214**	**597**	**3.43**

Source: Milken Institute (2022)

Table 3. Best- and Worst-Performing Counties and States in the United States (December 2021)

		Vaccination Rate	Booster Rate	Cases per 100,000	Deaths per 100,000	Fatality Rate
Counties	Best	N/A[6]	San Juan County, WA	Kalawao County, HI	N/A[2]	N/A[2]
	Profile		8	7		
	Worst	Slope County, ND	Prince George County, VA	Chattahoochee County, GA[7]	McMullen County, TX	Sabine County, TX
	Profile	8	2	2	6	5
States	Best	Vermont[8]	Vermont[8]	Hawaii	Vermont	Utah
	Value	75.20%	37.00%	7,530	73	0.59%
	Worst	Idaho	New Hampshire	North Dakota	Mississippi	Mississippi
	Value	44.95%	9.58%	22,362	353	1.92%

Source: Milken Institute (2022)

[1] Vaccination data is not available for Kalawao County, which is the smallest of HI's counties, but its case rate and death rate are within the best-performing 10% of counties nationwide.

[2] 26 counties have no recorded deaths from COVID-19; most of them (23) fall within Profile Eight.

[3] County death information for Bristol Bay and Lake and Peninsula Boroughs are reported together; deaths for Hoonah-Angoon Census Area and Yakutat City and Borough are reported together. 20 of 27 reporting entities in AK fall in the best-performing tenth of counties.
[4] Booster rates are not included among these metrics because it is such a recent development.

[5] The Centers for Disease Control and Prevention (CDC) caps its own estimates of county vaccination rates at 95 percent; five counties are estimated at the 95 percent threshold, and eight counties have vaccination rates higher than 95 percent when estimated using Census 2020 figures.

[6] Five of the eight counties with vaccination rates above 95 percent fall in Community Profile Six, two in Profile Eight, and one in Profile Two.

[7] Chattahoochee County population has not been adjusted for Ft. Benning, meaning this figure is likely incorrect.

[8] While Vermont is not included in county vaccination data due to the relative incompleteness of its records, statewide totals for vaccinations are reliable.

Notes on Terminology and Community Profiles

Throughout this report, counties are divided by deciles. If a county is referred to as "highly vaccinated" or having a low case or death rate, it is considered "well performing" or among the "best performers" nationwide. This means it has a vaccination rate that puts it in the top 10 percent of US counties (the highest decile) or a case or death rate that puts it in the bottom 10 percent of US counties (the lowest decile). Counties referred to as having a low vaccination rate or a high case or death rate, those deemed "poorly performing" or the "worst performers," are those within the 10 percent of US counties with the lowest vaccination rates (lowest decile) or the highest case or death rates (highest deciles). Current figures for the 90th and 10th percentiles, along each of these metrics, are available in Table 2.

State-level analyses provide metrics for a "typical" county in a given state: This metric represents the "numerical average" of that metric by the number of counties in the state. Statewide metrics, by contrast, do not represent an average but instead are calculated using every recorded instance of that metric in the state as a fraction of the entire state population (for incidence rates, this is then multiplied by 100,000). For states with a heavy population concentration in a few counties, the statewide metrics will likely differ from the value for a "typical" county; statewide rates in these instances will be much closer to the rate in highly populous counties than to the mean county rate.

Community Profile One represents 38 percent of the US population and is the most ethnically diverse community with the highest income level. It is a highly educated cohort that resides in large metro areas.

Community Profile Two represents 25 percent of the US population and consists of highly educated, economically prosperous, mostly White counties in metro areas.

Community Profile Three represents 12 percent of the US population and has the largest Black population. It is the lowest Black population income across all the profiles. These counties are primarily concentrated in the Southeast.

Community Profile Four represents 7 percent of the US population and has the largest White population. This population reports the lowest income of all the profiles. It encompasses mostly rural counties in the East North Central and Northeast regions.

Community Profile Five represents 6 percent of the US population and consists of predominantly White counties whose economies depend mostly on manufacturing and are located around the Midwest region.

Community Profile Six represents 5 percent of the US population. It captures the youngest cohort of the profiles, with the largest Hispanic population and the lowest education level, access to healthy food, and health insurance. The counties are concentrated in the West and South-Central regions.

Community Profile Seven represents 4 percent of the US population. Its cohort is the oldest of the profiles and consists of mostly White, elderly retirement communities.

Community Profile Eight represents 3 percent of the US population and is the most rural cohort, consisting of an older White population with the most limited access to healthy food. The counties are mostly in the north part of the West, Midwest, and Northeast regions.

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