

COVID-19 Does One Size Fit All?

One set of nation-wide rules is heralded by some political leaders as the way to solve the US Covid-19 (CV) crisis. But it really is just another way of saying, One size fits all - and it does, if everyone has the same-sized feet. But we don't. Our 50 states don't have same-sized "Feet". Solutions should be matched to specifics, not generalities...

By Brian Woolf (September 8, 2020)

Different States. Different Shoe Sizes.

Let's compare the CV experience of our least and most populated states through Aug 25.

Table 1 A Comparison of 5 Least vs 5 Most Populated States									
A	B	C	D = B/C	E	F	G	H = G/F	I = F/B	J = G/B
5 States — Lowest Pop.		Area	Den.	Den.	24 w/e Aug 25, 2020		Deaths as	Cases as	Deaths as
STATE	POP	sq.mi.	PPSM	Rank #	CASES	DEATHS	% Cases	% Pop	% Pop
Wyoming	578,758	97,813	6	2	3,603	37	1.03%	0.62%	0.006%
Vermont	623,987	9,616	65	21	1,566	58	3.70%	0.25%	0.009%
Alaska	731,544	665,365	1	1	4,810	32	0.67%	0.66%	0.004%
North Dakota	762,064	70,698	11	4	10,229	138	1.35%	1.34%	0.018%
South Dakota	884,657	77,116	11	5	11,425	161	1.41%	1.29%	0.018%
Avg Small	716,202	184,122	4	2	6,327	85	1.35%	0.88%	0.012%
5 States — Highest Pop.		Area	Den.	Den.	24 w/e Aug 25, 2020		Deaths as	Cases as	Deaths as
STATE	POP	sq.mi.	PPSM	Rank #	CASES	DEATHS	% Cases	% Pop	% Pop
Pennsylvania	12,801,928	46,054	278	42	134,246	7,672	5.71%	1.05%	0.060%
New York	19,453,536	54,555	357	44	460,991	32,972	7.15%	2.37%	0.169%
Florida	21,477,784	65,758	327	43	605,502	10,580	1.75%	2.82%	0.049%
Texas	28,995,831	268,596	108	29	608,817	11,871	1.95%	2.10%	0.041%
California	39,512,287	163,695	241	40	676,300	12,261	1.81%	1.71%	0.031%
Avg Big	24,448,273	119,732	204	39	497,171	15,071	3.03%	2.03%	0.062%

Table 1 covers two major periods in our CV history: the 16-week (Mar 10 - Jun 30) period of unknown territory-surprises, deaths (some high), and a range of responses (including many states with lockdown and some without.) The 8-week period (Jul 1 - Aug 25) that followed was all about readjustment as some early high-death states (eg, NY, NJ) saw their cases and death rates fall significantly while other early low-death states (eg, FL, TX) experienced the opposite. Combining these two periods gives us a balanced 24-week base to look for meaningful metrics.

Which Metrics Stand Out in Table 1?

1. The average **population** of the five most populous states is 24.4 million. That's 34 times the average population of the five least populous states (0.7 million). See Table 1, col B. (Also Table 2, row 1.)
2. Yet despite this huge difference in population the high-population states are, on average, 30% smaller in **size** than the small-population states (~120,000 sq miles vs ~184,000 sq miles.) See col C. (Also row 2.)
3. The **Density difference** (People Per Sq Mile or PPSM) is even greater; the smaller-sized, big-population states have 204 PPSM or 51x that of the 4 PPSM in the small-population states. See col D. (Also row 3.)
4. The Density of the 5 small-population states (as a group) would rank them **2nd lowest density** in the nation; the Density of the 5 big-population states (as a group) would rank them 39th least dense in the nation (or the 11th most dense!) See col E. (Also row 4.)

The above four metrics are included in Table 2 with five key CV health metrics...

Table 2		Big-Small States Comparison Summary				
24 w/e Aug 25 2020		Averages of 5 Smallest Compared to 5 Biggest States				
Ln	Metric		Small	Big	B/S	Comment
1	Avg Pop	mill	0.7	24.4	34 x	
2	Avg Area (sq mi)	000	184	120	0.7 x	Big is >30% smaller
3	Density	ppsm	4	204	51 x	
4	Low Density Rank	#	2	39	NA	Big is 11th highest
5	Cases (ie, CV Infected)	#	6,327	497,171	79 x	
6	Deaths	#	85	15,071	177 x	
7	Deaths as % Cases	%	1.35%	3.03%	2.3 x	
8	Cases as % Pop	%	0.88%	2.03%	2.3 x	
9	Deaths as % Pop	%	0.012%	0.062%	5.2 x	

As the rows 5-6 in Table 2 show, the difference in Cases (ie, CV infections) and Deaths between the Small and Big population states is magnified further. While the Big States' average population is 34x that of Small States (row 1), its number of CV infections is 79x greater and, even worse still, 177x the number of deaths.

Using the data in rows 7-9, another way to express these differences between the Small and Big population states is since CV appeared early this year:

1. Less than 1% of the low population states were infected by the virus (yet over 2% were infected in the high population states). Row 8.
2. Of those infected in the low population states, 1.35% later died (yet over 3% died in the high population states). Row 7.
3. Which means that in the (approx.) first 6 months of the CV crisis, just over one one-hundredth of 1% of the low population states died from CV (yet just over six one-hundredth of 1% in the high population states). Row 9.
4. In other words, citizens of the high-population states died from CV at rate over 5x greater rate than those in the low-population states. Row 9.

Table 3 Big-Small States Relative to all 50 States					
5 States w. Lowest Population			5 States w. Highest Population		
State	Pop	Area (sq m)	State	Pop	Area (sq m)
Wyoming	578,758	97,813	Pennsylvania	12,801,928	46,054
Vermont	623,987	9,616	New York	19,453,536	54,555
Alaska	731,544	665,365	Florida	21,477,784	65,758
North Dakota	762,064	70,698	Texas	28,995,831	268,596
South Dakota	884,657	77,116	California	39,512,287	163,695
Tot. Small	3,581,010	920,608	Tot. Big	122,241,366	598,658
% 50 States	Pop	Area (sq m)			
50-State Tot.	327,533,641	3,796,654			
Small / 50 St	1.1%	24.2%			
Big / 50 St	37.3%	15.8%			
Combined Tot.	38.4%	40.0%			

Significance?

Table 3 highlights the 10 states discussed: although comprising only 20% of the states, these 10 states comprise 40% of the total area of the US and almost 40% (38.4%) of the population. It represents a significant part of the US.

The data (ex Worldometers.info) covers the approx. 6 months since the virus began. It vividly shows the wide range of health impact Covid-19 had on different states. The impact on some states was significant. On others, the opposite.

And just as a doctor prescribes one medicine for patients with a severe flu and another for those with a mild flu, so should our political leaders vary their CV prescriptions according to each state's needs. A one size prescription does not fit all states.

About the author...

Besides a full business life in retailing, and later, loyalty marketing, the other part of Brian Woolf's life has been filled with diverse interests: particularly speaking (including Toastmasters), travel (including all seven continents), and reading (including history). And he has written seven books sharing what he has learned along the journey. Ask him, two favorite trips? Antarctica and the Nile. Ask him, two favorite books? The Lessons of History (Will & Ariel Durant) and Over the Edge of the World (Laurence Bergreen). He loves learning and sharing.

And there's more where this came from...

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