

## Covid-19: A Small Table Explains NY's Turnaround

*Are we making progress or falling behind? Probably the first question a State's Governor asks his Covid-19 (CV) team. Simple question-but do they provide a simple table to support their answer?*

*By Brian Woolf (September 20, 2020)*

As excellence is a comparative measure, progress requires two measures: against oneself and against one's peers. Below is a table that works for both. However, to keep this paper simple, only the first comparison will be discussed. The second comparison, against peers, will be discussed in the following paper.

Let's begin with a brief discussion of numbers and reporting.

### **What Numbers are Critical?**

The most important number is the state's weekly number of CV-related **deaths**. Is it increasing or decreasing?

The second most-important number is the number of **cases**, ie, those people we know who have contracted the virus. Cases are the seed-crop of CV deaths. The Governor's task is to minimize the number of cases turning into deaths.

Cases and deaths are similar to, but the opposite of, sales and profits in a business. A business strives to increase sales thereby increasing profits; a state seeks to reduce CV cases thereby reducing its CV-related deaths.

Cases and deaths, and sales and profits, are, relatively, hard numbers. ("Relatively" because, from time to time, we see all four fiddled for financial or ego reasons.)

The number of tests is the third part of CV's measurement trifecta although, as you'll read later, it has limitations that currently make it a less important measure than cases and deaths.

### **Some Comments on CV Numbers**

**An Imperfect Deck.** With CV, understand that we are playing with an imperfect deck of information. The two primary CV global data sources, Johns Hopkins University and Worldometers.info, update their openly-available tables daily with data feeds from governments, states, and organizations. Unfortunately, not every data-supplying organization within each state provides their data diligently each day. Sometimes it comes in blobs. Further, there does not appear to be complete consistency in classifying CV deaths given that, according to a recent report from the CDC, only 6% of US CV deaths are due to CV alone; 94% have comorbidities. With comorbidities, there's often the question, *what's the true cause of each death?* What happens in practice—are all Covid-related deaths generally described as (primarily) Covid? Recently, a case was reported of a motor cyclist who was killed on the freeway. He had earlier been tested positive for CV. You can imagine how an eager-to-please medical associate wanted to file as the cause of death. Covid-related rather than Covid seems a more comfortable descriptor to be using.

**Tests** can be a helpful measure within a state, provided they are conducted in the same manner over time; but they are not so helpful between states because of the big variance in standards and practices. For example, what share of the tests are from walk-ins versus a proactive, scientifically random selection of citizens each and every month? Without a good share of the latter, results don't describe what's really going on throughout the whole state.

**Terminology.** In addition, actively pushing for more tests often produce more asymptomatic CV "cases" which are unlikely to end in serious sickness or death which raises another challenge—the definition of what is a case? As Scottish Dr Malcolm Kendrick, recently pointed out: *Previously, in the world of infectious diseases, it has been accepted that a 'case' represents someone with symptoms, usually severe symptoms, usually severe enough to be admitted to hospital.* (His mind-prodding paper is at <https://drmalcolmkendrick.org/2020/09/04/covid-why-terminology-really-matters/>)

In our current environment both "infections" and "cases" are classified under one heading, "cases." This increases the number of cases reported (magnifying our fear factor?) while, at the same time, reduces the percentage of deaths as a percentage of cases (magnifying our health-healing ability?)

**Contributory Metrics.** Between Cases and Deaths there are other helpful metrics that contribute to our cases and deaths totals: the number of currently active cases, the number of people hospitalized and, separately, the number of people in ICU. These numbers, and their final determination, indicate the effectiveness of a state's medical response system. In addition, some states provide the number of people quarantined.

**Periods.** For motivational, managerial, analytical, and governmental purposes, the biggest disappointment in the current reporting system is that only the year-to-date (YTD) numbers are published daily. Now imagine if the reporting companies provided, in addition, a data report at the end of every week or 4-weeks. That would let us quickly see the progress made in the past week(s) and allow us to compare the latest 4 weeks versus the past 12 weeks to see how we are trending. Such comparisons are a great motivation and managerial tool in business; they would be in our national health, too. Our current YTD reporting system unfortunately just keeps growing the number of cases and deaths which is demotivating rather than motivating.

**Bottom Line.** The bottom line of the above is that without a clearly stated set of (ideally) global standards validated, as in the corporate world, by the Audit profession, the reported numbers we have are better described as sensibly approximate or indicative rather than absolutely accurate. Even so, what we do have is a valuable tool that helps us understand where we've been, where we are, and where we're going.

### **Creating a Top-Level State CV Overview Report**

The essence of a good management report is seeing key numbers presented in a simple and comparable format supported by explanatory ratios and percentages.

New York was chosen to be this example because of the dramatic recent change in its reported CV results.

Tests, cases, and deaths are central. Population is included so that ratios can be created for inter-state comparisons.

Table 0		New York		CV Results for 24 w/e Aug 25 2020							
A	B	C	D	E	F	G	H				
STATE	POP	Wks in Per.	STATE TOTALS			PERIOD RESULTS					
			TESTS	CASES	DEATHS	Cases/ Tests	Deaths/ Cases				
NY		24	7,683,190	460,991	32,972	6.0%	7.15%				
	Avg Per Week	24	320,133	19,208	1,374	6.0%	7.15%				
	Annualized Results	24	16,646,912	998,814	71,439	6.0%	7.15%				
										Data: worldometers.info	

Table 1		New York		CV Results for 16 w/e Jun 30, and 8 & 24 w/e Aug 25 2020						
A	B	C	D	E	F	G = E/D	H = F/E	I = 52*D/B	J = 52*E/B	K = 52*F/B
STATE	POP	Wks in Per.	STATE AVGS PER WEEK			PERIOD RESULTS		PER. RESULTS ANNUALIZED		
Den Rank	Area Den (ppsm)		TESTS	CASES	DEATHS	Cases/ Tests	Deaths/ Cases	Tests/ Pop	Cases/ Pop	Deaths/ Pop
NY	19,453,536	16	244,684	26,111	1,969	10.7%	7.54%	65.4%	7.0%	0.5262%
44	54,555	8	471,032	5,402	184	1.1%	3.41%	125.9%	1.4%	0.0492%
	357	24	320,133	19,208	1,374	6.0%	7.15%	85.6%	5.1%	0.3672%
	Avg 8wk vs Avg 16wk		1.93	0.21	0.09	0.11	0.45	1.93	0.21	0.09
	brianwoolf.com		+93%	(79.0)%	(91.0)%	(89.0)%	(55.0)%	+93%	(79.0)%	(91.0)%

**Table 1** is drawn from two YTD sets of data: for 16 w/e Jun 30 and for 24 w/e Aug 25. From these, three performance periods were created: the two periods mentioned (Periods 1 & 3) and a third period being the difference between those two YTD totals, ie, 8 w/e Aug 25 (Period 2).

As it's hard to compare periods with different numbers of days (16 weeks, 8 weeks, 24 weeks) you'll note two helpful aspects in **Table 1**: (1) the tests, cases, and deaths are expressed as **averages per week** which makes visualizing what's really happening in each of the three periods easy [large numbers tend to glaze over one's eyes], and (2) each period's average weekly results are then multiplied by 52 to find out what the **annual results** would have been if the period's performance was typical of the whole year. Even though each period's results differ, such annualized results provide an equally-constructed base for a fair inter-period comparison.

The top row in introductory & informational **Table 0** shows the actual results and two accompanying percentages of New York's first 24 weeks, as seen in worldometers.info.

The second row is row 1's numbers divided by 24 to get the average results per week in the period. The third row is row 2's numbers multiplied by 52 to show NY's annualized numbers based on the 24-week period ending Aug 25.

The three annualized totals are divided by NY's population. This gives the annualized percentage of the population that would be counted as tests, cases, and deaths if that period's performance lasted for 52 weeks. Annualizing data is easy to do and is an effective tool when comparing your state with others.

You will note that Table 0's row 2 appears in Table 1's third row.

## So What Does Table 1 Tell Us?

### Highlights

- **Cases dropped 79% per week in the 8 weeks after Jun 30 from the 16 weeks before.**
- **NY's CV deaths dropped 91% per week in same periods.**

### Details

Background: NY has **19.4 mill people**, in an area of 54,555 sq. miles, meaning its density (people per sq. mile, or ppsm) is 357 people (col B). This ranks NY as the **44th** least dense state, or 6th most-densely populated state. (col. A)

In Period 1 (16 w/e Jun 30), NY tested an average of approx **245k** (k = 000) people each week for CV; that jumped an average of 93% to **471k** per week in Period 2 (8 weeks to Aug 25). (col. D).

A diametrically different story appears in Cases (col. E) and Deaths (col. F). While avg weekly Tests in 8-week Period 2 jumped 93% over the avg of the prior 16 weeks, recorded Cases (avg per wk) fell 79%, and avg weekly Deaths fell even further, by 91%-plunging from 1,969 to 184 (from weeks 1-16 to weeks 17-24). The 8-week period was a surprising situation of many more tests, yet fewer cases and ever fewer deaths.

*An aside: to approximate (and easily remember), one could say NY fell from approx 2,000 to 200 deaths per week, a 90% dramatic weekly drop in consecutive periods.*

In Period 1 (16 w/e Jun 30), 11 out of every 100 Tests became Cases (col. G) whereas in Period 2 (8 w/e Aug 25), only 1 out of every 100 Tests turned into Cases. This dramatic drop may partly be attributed to the almost doubling of Tests (col. D). On the other hand, however, the huge increase in Tests yielding dramatically fewer Cases may suggest citizens infected with the CV virus in NY were just not there to be found! In other words, it suggests that the State's anti-CV program is finally taking hold.

Another positive reading from Table 1 is that even though the number of reported Cases per week fell 79% (col. E) from Period 1 to Period 2, the percentage of people dying after contracting the virus (ie, Cases) fell approx in half, from 7.5% Deaths/ Cases to 3.4% Deaths/ Cases.(col. H) This may be because the severity of CV in the state has diminished, and/or people have built up a better immunity against the virus, and/or there is now better pre-hospital healthcare of those contracting the virus and better hospital care of those who require extreme attention.

## **Closing Comments**

To achieve such a dramatic improvement in CV results in such a short period of time is remarkable. The challenge now is to hold and even improve these results. Improving comes from comparing one's performance standards to the top and bottom five states whose death rates dropped or increased the most in the two consecutive periods.

This comparison is seen in the following article.

In addition, the results of the 4 weeks following Aug 25, to be released shortly, will tell us if NY is holding steady with its new, highly-improved performance. Stay tuned!

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## 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.

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