



## DATA ANALYSIS

# A Better Way

*A different approach to COVID-19 analysis explores whether the situation is improving*

by Forrest W. Breyfogle III

**There are several reasons that explain why the COVID-19 pandemic analyses of the number of deaths and new cases can deceive.** Reasons for this potential deception include:

- + Data accuracy because of availability of test kits.
- + Measurement system's false positive and false negative test results.
- + Availability of test kits to all sectors of the population.
- + Potential financial bias because more money may be provided to a health-care facility when a case is considered COVID-19.
- + Someone who had COVID-19 at death may have been in the late stages of their life. For example, COVID-19 shortening the life span of someone who had terminal cancer by only a few days or weeks.

In many respects, a COVID-19 death is similar to past pneumonia or influenza deaths, and now even may be a cause of these types of death. Because of this, an

alternative measurement to determine whether the impact from the COVID-19 pandemic is lessening, stable or increasing is to analyze the percentage of pneumonia, influenza or COVID-19 deaths to total deaths.

If this percentage increases, you can presume that the increase is caused by COVID-19 issues. Similarly, if there is a decrease, you can presume that COVID-19 issues are decreasing.

The following COVID-19 data analysis focuses on the percentage of pneumonia, influenza or COVID-19 deaths to total deaths.

### Source of COVID-19 data

Data contained in Online Table 1, which can be found on this column's webpage at [qualityprogress.com](http://qualityprogress.com), and used for analysis in this column was taken from a weekly U.S. Centers for Disease Control and Prevention (CDC) COVID-19 published report.<sup>1</sup>

Described in this column is a time series plot of the percentages

(far-right column in Online Table 1) vs. week-ending dates. Before creating this time series plot, however, you must make sure that there are no issues with the reported data values.

When examining Online Table 1, you see that:

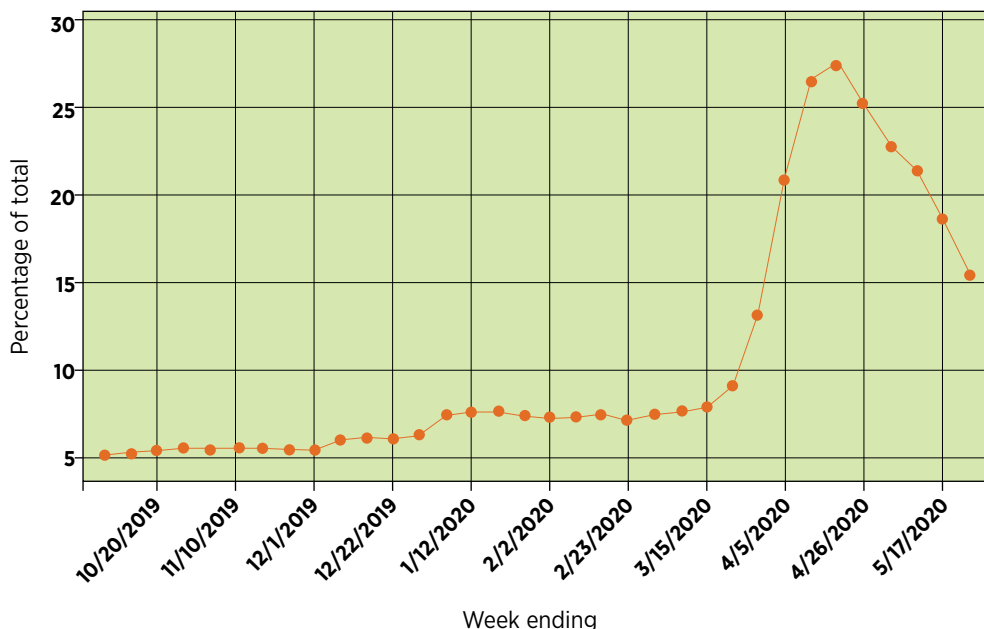
- + The total number of deaths for weeks 22 and 23 was much smaller than previous weeks, which does not seem correct.
- + The percentage value in the far-right column is much less than the previous weekly reported values. This would be good news from a COVID-19 pandemic reduction perspective, but is this table number value a valid percentage estimate?

From these observations, you might wonder whether the CDC improves the accuracy of individual reported values over time. Let's examine this possibility.

Previous CDC weekly reports can, in general, be obtained by subtracting multiples of seven days from the

FIGURE 1

# Percentage of pneumonia, influenza or COVID-19 deaths to total deaths



“06122020 date coding” in the CDC data provided online.<sup>2</sup>

Using this process for obtaining previous CDC reports, Online Table 2 was created, which shows that reported CDC data values *do* change over time.

From Online Table 2, it appears that the values start to approach similarity if the last two weeks from an individual weekly report were ignored. To highlight this observation, the last two weeks of each reporting in Online Table 2 are colored yellow.

Because of this data assessment, the last two weeks from the most recent CDC data are not included in the time series plot in Figure 1.

The plot in Figure 1 indicates that the COVID-19 pandemic impact is lessening, which is good news. However, the time frame for this analysis does not reflect the opening of facilities in early June, which might affect this COVID-19 percentile decrease trend.

To address this question and other COVID-19 information changes, similar analyses when new data become available will be necessary.<sup>3</sup>

It should be noted that this COVID-19 measurement analysis does not address seasonal differences. Historically, pneumonia

and influenza deaths are historically higher in the winter months, which this analysis does not address. The impact from seasonal differences, however, are small when compared to current COVID-19 numbers.

On a personal note, while writing this column, a neighbor and good friend’s husband tested positive for COVID-19. Within a week, he was dead. He had lived in an assisted living facility and had endured many health issues. I’m assuming his death would be reported as a COVID-19 death statistic in my next analysis. **QP**

**NOTES**

1. This column was written in early June 2020 and the data used was taken from the Centers for Disease Control and Prevention (CDC) website on June 12. For more information about data provided for this reporting date, visit the CDC website at <https://tinyurl.com/cdc-nchs-mort-data>.
2. Ibid.
3. For updates to this COVID-19 data analysis and other COVID-19 analyses, see [www.smartertsolutions.com/covid-19-analyses.html](http://www.smartertsolutions.com/covid-19-analyses.html).



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