**SOURCE ONE**

<https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2020.305708>

**Insightful excerpts:**

Thus, even if the test is perfect, case count comparisons and their trends across populations and places should be replaced by rate comparisons when deciding which countries are “in the lead,” if and when we should lockdown, what to do when the lockdown is over, and whether waiting for herd immunity is an option.

Counts can be useful to show when incidence is starting to recede as public health measures take effect in a particular population. The shape of the portrayed trends in case counts enables us to see that the United Kingdom, France, Italy, and Spain are currently on similar trajectories, whereas Korea and other Asian countries have been “flattening the curve.” Still, graphs of case numbers cannot be used to say that one country is ahead of another. For example, the headline “The United States Is Now the Epicenter” (i.e., of cases) does not reflect that, the US population is over five times that of Italy and is spread over a much larger area, with large differences between various American states.

Accurate estimation of the AR and the IFR depends on the testing strategy, the prevalence of infection, and the test sensitivity and specificity. Differences between countries or over time may merely reflect differences in selection for testing and in test performance.

-Grant’s commentary/summary: Case counts can tell us about a single region’s trends but it’s no good for comparison, while rates can do a better job at that.

**SOURCE 2**

<https://onlinelibrary.wiley.com/doi/full/10.1111/puar.13255>

**Insightful excerpts:**

“Though these initiatives are aimed at ensuring that policy and management decisions concerning COVID-19 are grounded in available evidence, several issues emerge. First, there have been—so far—limited attempts to integrate data sources into one overarching model. This is problematic as it inhibits a thorough holistic understanding of the causes and consequences underlying the COVID-19 crisis. Second, data have been found to sometimes lack reliability and, especially, comparability between governments, making it challenging to compare performance across governments in a meaningful manner even on the same continent. Third, different data sources have popped up, sometimes measuring the same concepts but differently.”

-Grant’s commentary/summary:

Essentially, it's hard to just have data from a country (case count for example, because it’s hard to compare across other countries because there is a lack of standardization and understanding. Having categorical measures will help this issue.

“​​Acknowledge the *temporal* and *spatial* perspective underlying COVID-19 performance data. This implies attention to how indicators evolve over time (and why), differences in performance that might be the result of regional characteristics as opposed to typical country boundaries (and why), and using the most recent data that are (or soon become) available.”

-Grant’s commentary/summary:

It’s simpler to comprehend spacial effects in a visual that uses categorical rankings rather than continuous data. Could help to better see some of these “regional characteristics.”

**SOURCE 3**

<https://fivethirtyeight.com/features/coronavirus-case-counts-are-meaningless/>

**Insightful excerpts:**

“There is also a lot of uncertainty about the true numbers of infections *within* a given country. According to [an expert survey published by FiveThirtyEight](https://fivethirtyeight.com/features/best-case-and-worst-case-coronavirus-forecasts-are-very-far-apart/), the number of detected cases in the United States could underestimate the true number of infected people by anywhere from a multiple of two times to 100 times.”

“The number of reported COVID-19 *cases* is not a very useful indicator of anything unless you also know something about how *tests* are being conducted.”

–Grant’s commentary/summary:

Not a scholarly source but this article gives a couple of different examples that show why numbers can be so hard to compare across countries or states (in our case, we’re looking at counties within the same state, which should help, but having ordinal models helps deal with some of the variability in testing).