At his August 20th press conference, Governor Inslee explained why he wasn’t reducing the costly economic restrictions designed to fight the spread of COVID. He cited the reproductive number, which measures the spread of the disease by indicating how many people are infected by each person with the illness. If the number is more than one, it means the disease is spreading. Less than one, the number of people infected is declining.

The governor explained, “The only way that we can resume normal activities [is that] it has to be significantly lower than one.” Unfortunately, the reproductive number, known as $R_e$, isn’t very useful for making health policy decisions and, as the experience with COVID and the George Floyd protests demonstrates, it can be counterproductive.

In late August, I argued that calculations from the Institute for Disease Modeling (IDM), which is used by the Washington State Department of Health (DOH) to measure the spread of the disease, showed a significant increase in the transmission rate of COVID – the $R_e$ number – immediately after the protests began in late May and early June. Several factors, including the age of those who contracted COVID, point to the protests as a likely contributor.

DOH, however, continues to say there is no evidence the protests caused the increase. They argue that COVID tests of those who said they attended a protest were overwhelmingly negative. Of people who tested positive, very few reported being at a protest.

A representative of DOH noted, “It will be very difficult to know exactly the possible impact [of the protests] and how big it may have been,” however, “From the data we have around case investigations…[the testers] just were not finding a lot of people [who tested positive] had” attended the protests.

So, what if I am wrong? What if very few of those who protested got COVID? That is good and bad news.

The bad news is that we don’t know what caused the spike. Neither DOH nor IDM have offered an explanation. IDM did say they don’t think it was caused by an increase in mobility because, as they note, “People gradually started to leave their homes and spend more time outside the home starting in April, and the amount of time spent outside the home may have increased when Phase 2 started in each county. In June, these trends started flattening.” Phase 2 began in King County on June 19,
more than two weeks after the increase in the rate of transmission began, so that probably was not the cause of the spike in rates.

If the protests weren’t the cause, then we really don’t have a good idea of what increased the spread.

The good news is that if the protests didn’t cause the increase in COVID transmission, it creates the opportunity to open the economy and allow more activities, especially outside.

Here is the protest crowd at Seattle City Hall on June 3, just as transmission rates begin to increase (photo by SounderBruce - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=90933631). People are shoulder-to-shoulder. There were also other marches later, including one on June 12 that was even larger. It is hard to say how many people are wearing masks, but let’s assume a high percentage.

If this many people can be sitting this close together for long periods of time, it suggests that as long as people wear masks, social distancing is not that important. The crowds are outside, so that may play a role. But, if someone with COVID is unlikely to transmit it to those sitting near after a few hours, why can’t people congregate for other events, especially outdoors?

Agritourism, for example, should be allowed. So too should funerals. With this size crowd, and the even larger ones a week after this, even Mariners games would be low risk with masks.

The response from those who want to maintain the restrictions is likely to be that a protest is important, but agritourism and baseball games are luxuries.

But, according to whom?
We constantly hear the “science” is driving the decisions, but if the experience shows that large, outdoor crowds aren’t a significant source of transmission – as DOH says about the protests – then distinguishing between one crowd and another is a matter of personal preference, not science.

Without an objective metric, determining what risks are acceptable and which are not is made from the top and imposed. My willingness to take a risk to practice my religion – be that Christianity or baseball – is irrelevant. That decision gets made for me, based not on science, but on one politician’s assessment of what matters and what doesn’t.

The problem facing those who say the protests didn’t spread COVID is that they don’t want to live up to the implications of that conclusion. Saying the protests didn’t spread the disease but that picking pumpkins outside would, betrays that this isn’t about science. So does saying, “We don’t know what caused the spike.” Worse, it calls into question the data and metrics being used to make decisions, leaving – again – the personal comfort of politicians to decide what is acceptable and what isn’t. In other words, the decision is, to a significant extent, arbitrary.

There is another, more serious problem, which is that the reproductive number isn’t very useful for making decisions.

Rₚ is calculated based on data that are more than a week old. For example, the IDM Situation Report for June 19 – the day King County began Phase 2 – shows only the beginning of an increase in Rₑ with an extremely large margin of error. The reproduction number could be anywhere from 0.54 and 1.86. The bottom end would be great news. The top end would be pretty bad. How is that useful?

By the time the data caught up to the policy, Rₑ went from 1.1 on June 3 up to 1.7 on June 15. It was still at that peak on June 19, just as King County was opening up. Elected officials in King County, however, didn’t know that. If they were looking at Rₑ to make their decision, they only saw a slight uptick with a large error margin that was two weeks old.
Even if politicians wanted to follow the science and use $R_e$, they couldn’t because it isn’t timely nor reliable enough to make good decisions.

Ironically, on June 20th $R_e$ began to fall from the peak of 1.7, and fell steadily over the next two weeks, exactly when the county was opening up. If decisionmakers had known the $R_e$ on June 19th, they probably would have decided to keep the county in Phase 1, which would have been wrong.

This was the situation on June 19th: Decisionmakers didn’t know the current $R_e$ number and couldn’t use it to address the spike that was occurring. If they had known, however, they would have closed the county down, which, in hindsight, would have been wrong, since the transmission rate immediately began to fall. In neither scenario was $R_e$ useful.

Additionally, despite the resources put toward testing and modeling, we still have no idea what caused the largest spike in the reproduction rate since the beginning of the pandemic in Washington state.

Despite those shortcomings, the governor continues to cite it as a justification for keeping the economy closed. As a result, we are at the mercy of a statistic that isn’t very useful at best, and actually probably misleading.

Containing COVID without destroying the economy or stunting the education of students is a difficult problem. It presents a challenge to know what the risks are and what counts as acceptable risk. Rather than admit the difficulty and allow people to assume some of that risk for themselves, politicians have claimed they are making decisions based on “science.”

The undiagnosed spike in transmission rates in June and severe shortcomings of $R_e$ demonstrate that isn’t true.