



Episcopal Diocese of Pittsburgh

Emergency Preparedness and Response Committee

Metrics to Watch When Evaluating the Risk of In-Person Worship

Background

In deciding when and how to reopen their churches, some clergy and lay leaders in the Diocese have asked for advice about metrics they might use as the basis for their conversations. This document offers some advice.

As always, the internet provides a massive amount of data. These can be overwhelming and many will not have the time, expertise or inclination to draw sound conclusions from the available information, perhaps even succumbing to “data paralysis.” We therefore offer below a straightforward way to “cut to the chase.” At the same time, we recognize that some will want to track multiple sites, researching each organization’s methodology and exploring the complex differences between the available measures; for these individuals, we provide at the end of this document a short list of other sites together with an outline of some of their limitations.

Our Committee recommends that clergy and lay leaders in this position consider relying on a single source of information: <https://covidactnow.org>. Co-sponsored by Georgetown and Stanford Universities, this site captures much of the information that one could glean from studying other internet resources but delivers it in a way that boasts several important advantages:

- it is updated daily;
- it asks the user to consider only a limited number of carefully chosen metrics;
- it presents the data in readily accessible ways, including change over time and confidence intervals; and
- it relies on conservative criteria to offer evaluative judgments of what the data show.

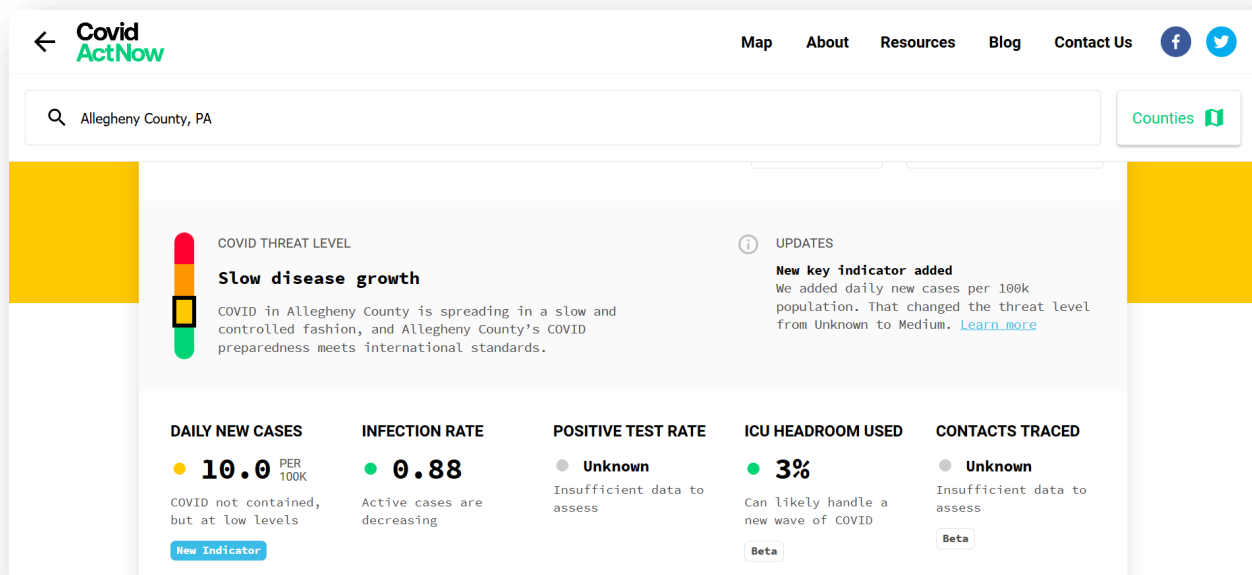
In the next section, we explain how to approach the data provided by CovidActNow.

How to Use Data Provided by CovidActNow

On the CovidActNow landing page, you are invited to enter your county in a search box to the left of the **Risk Levels** key.



Entering your county will bring you to a 5-item dashboard for your county. (You may of course want to check neighboring counties as well.)

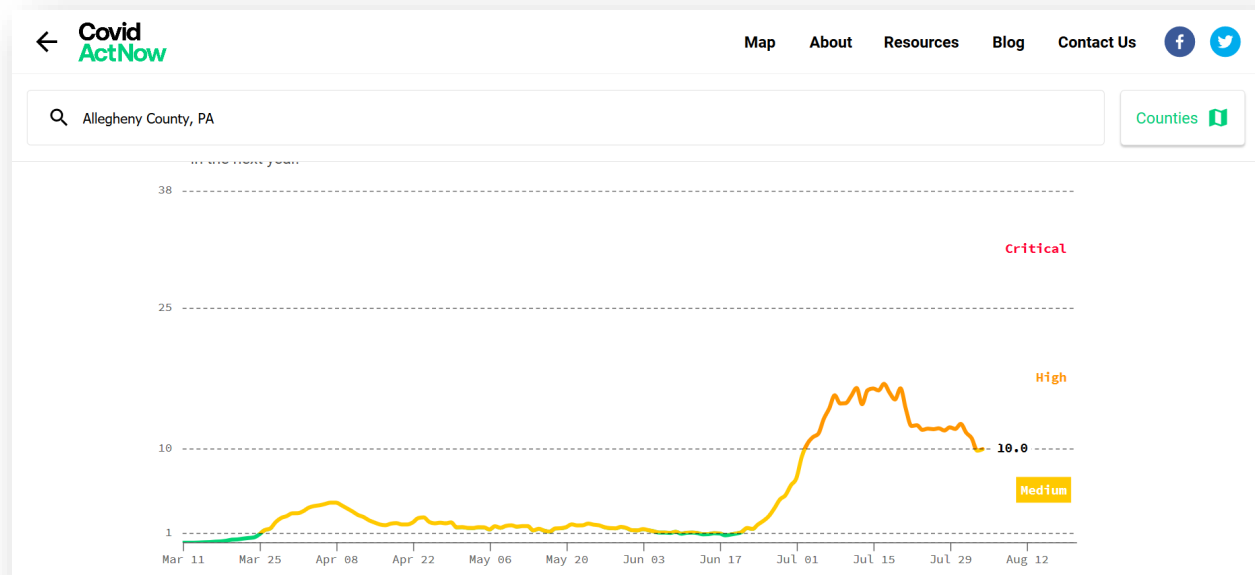


Of the five “indicators” listed, the first two—**Daily New Cases** and **Infection Rate**—are clearly the most significant at this time and in our state. (By contrast, the last two would become more important if our region were to suffer the kind of outbreak that Florida and Arizona have recently experienced.)

The first indicator shows **Daily New Cases per 100K Population**. While the current figure shown is unhelpful in isolation, the colored dot to its left (green, yellow—as in the screen shot above, orange or red) indicates the degree of concern that that figure should reasonably cause.

It is important to note here that the four-color scale employed by CovidActNow not only adds one level to the three-color scale used by Governor Wolf in his administration's Process to Reopen Pennsylvania but also sets a tough standard for a green rating. The Governor's plan was faulted by many for sending the unintended signal that all activities could resume as normal in the "Green Phase." CovidActNow's far tougher criteria make such an interpretation more appropriate; indeed, even their yellow (or "Medium") rating is arguably sustainable.

What is still more helpful is to scroll down the page to the **graphic** for Daily New Cases, since this shows change over time, providing valuable context for the current figure. The absolute number of daily new cases is not as important as the rising (or falling) trajectory over time. [Note also here that the criterion for green is ≤ 1 new case/100K, for yellow (medium), it is 2-9 new cases/100K; for orange (high), it is 10-24; and for red (critical), it is ≥ 25 .]



The second indicator that CovidActNow's site provides is a measure that they call the **Infection Rate** (referred to on other sites as the R-zero, R-naught, or Rt Rate). As the text above the graphic for this second indicator explains, the Infection Rate captures the average number of people that someone who has been confirmed to have COVID-19 will infect. While experts disagree on what value can reasonably be regarded as low enough to justify relaxing restrictions, CovidActNow is once again cautious and uses 0.9. A nice feature of this graphic that it uses a dotted line at the right side of the screen to provide a projection of how this measure is expected to change in the short term. Another critical value of this figure is the gray shadow around the colored line

depicting the confidence interval around the estimated infection rate. In other words, although there is uncertainty about the precise infection rate on any given day, it is reasonable to assume with a high degree of confidence that the “real” value lies somewhere between the upper and lower edges of the gray zone, indicating the likely best and worst case scenario for any given day.



We hope that this quick tour of the CovidActNow site has been useful. This Committee cannot offer parishes guidance on how they should apply the data they obtain to their own situations. Many purely local factors will affect those calculations—from the demographics of each parish to its members’ individual and collective understanding of the balance to be struck between the risk of infection on the one hand and the importance of gathering in person for worship or ministry on the other. Above all, we will all of course be listening carefully for the guidance of the Holy Spirit, even while we continue to use our God-given intelligence and experience to seek solutions—ideally, solutions that allow us both to work towards God’s kingdom and to keep all members of God’s flock from harm.

We always welcome comments on our work and will happily share suggestions that others may have for the common good.

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Sites other than CovidActNow that the more ambitious might choose to track

Many sites, including those developed by undeniably authoritative sources (such as the State of Pennsylvania Department of Health and the Allegheny County Public Health Department), suffer from shortcomings, especially for non-expert readers.

- **They may present raw counts of cases and deaths**, while providing no normative evaluation of what figures in each category should be regarded as positive or negative indicators.
- This drawback may then be compounded by the fact that **the counts are often cumulative**. Since a typical case of COVID-19 lasts about two weeks, knowing how many cases and deaths occurred in June—let alone in March, April, and May—is largely unhelpful for anyone trying to plan responsibly for August and September.
- For understandable reasons, **not all sites are truly current**; some may display data that is as much as a week out of date.
- And some sites report information at the level of **geographical units smaller than the county**—information that is even harder to interpret than county or state-level data.

Those who check these sites on a regular basis may be able to garner some sense of change over time, but such an approach is prone to error and its value is uncertain.

List

1. The State of Pennsylvania Department of Health’s COVID-19 Early Warning Monitoring System Dashboard at:

<https://www.health.pa.gov/topics/disease/coronavirus/Pages/Monitoring-Dashboard.aspx>.

This graphically sophisticated site allows access to a range of data in multiple forms. A good way to start is by scrolling down to a pair of boxes on the right side of the screen:



Select “By County,” and the page that comes up will (illogically) show you a “dashboard” summarizing data from the whole state. However, a small drop-down menu to the top right of the screen will then enable you to “Select a County” and obtain a more local report. The six measures included on the county page offer an overview not unlike that provided by CovidActNow, although the State’s site is refreshed only on a weekly basis. (You can check out which dates the site is currently counting as the “Current” and “Previous” 7-day periods by returning to the **All Counties** page, and looking for that information to the lower right of the green map of the State.) Six black arrows to the left of the screen indicate trends during the past two weeks—with an UP arrow always indicating a deteriorating situation. However, we warn users to recognize that these

arrows do not imply any statistical significance to the indicated trend (e.g., up or down)—they merely represent a raw subtraction of the current value from the previous, and even if the difference is 0.00001, it will report the arrow as either up or down. Furthermore, even a larger value of change week-over-week is not an indication of a statistically significant change over expected, natural variation. The plots on CovidActNow give you a much more transparent and reliable indication of trend.

2. A different area of the State DOH web site displays basic data regarding infections and deaths: <https://www.health.pa.gov/topics/disease/coronavirus/Pages/Cases.aspx>.

The landing page gives statewide information, but county-level statistics can be obtained by clicking on the County Data tab (second from left) just below the map and then selecting one's county from the drop down menu in the top right. (Selecting the Zip Code Case Data tab instead does allow access to even more fine-grained information—but only for confirmed COVID-19 cases and only in raw numbers, which makes comparisons between regions hard to draw. In addition, only cumulative numbers are reported making it difficult to assess change over time.)

3. For parishes in Allegheny County, there is an additional resource. Allegheny County Public Health maintains its own Covid-19 page with an interactive map that gives data by the township, and, within Pittsburgh, by the neighborhood. <https://www.alleghenycounty.us/Health-Department/resources/COVID-19/Covid-19.aspx>

By clicking on your township or neighborhood, you can access data on the total number of cases that have been identified throughout the pandemic, the number of infections per 10,000 inhabitants, the number of deaths, and the number of people tested. Once again, the data are all stated cumulatively (therefore including datapoints that are months out of date) and such fine-grained analysis does not yield actionable data.