Greater Cincinnati COVID-19 Situational Awareness Dashboard: Slide Descriptions

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Hospital Demand

Slide 2: Number of positive COVID-19 patients in Region 6 hospitals
These data are from the Ohio Hospital Association (OHA) Resource tracker. The top frame illustrates the total number, measured over time. The height of the orange represents all COVID-19 positive patients in hospitals. The height of the purple represents the subset who are in intensive care units (ICU). The height of the green represents the subset who are on ventilators. There are then 3 panels below. The chart on the left represents the % of all patients who are hospitalized who have COVID-19. The middle chart illustrates the % of COVID-19 patients who are in the ICU. Finally, the chart on the right depicts the % of all COVID-19 positive ICU patients who are on ventilators. These data include all hospitals in Region 6, which includes 8 counties in Southwest Ohio: Hamilton, Butler, Warren, Clermont, Clinton, Brown, Highland, and Adams.

Slide 3: Number of positive COVID-19 patients in Region 6 ICUs, I-Chart

Slide 4: Number of positive COVID-19 patients in Region 6 hospitals, I-Chart
Slides 3 and 4 present the daily number of positive COVID-19 patients in ICU (slide 3) and hospital beds (slide 4) in Region 6, which includes 8 counties in Southwest Ohio: Hamilton, Butler, Warren, Clermont, Clinton, Brown, Highland, and Adams. This type of chart tracks data over time. The y-axis is the number of patients in beds and the x-axis is time measured in days. The center line in between the points is fit to the direction of the points. The gray shading represents what would be consider standard, or common variation across the fit line. These data are obtained from the Ohio Hospital Association.

Slide 5: Number of Greater Cincinnati ICU beds in use
Slide 5 provides the daily number of ICU beds in use across Greater Cincinnati. These data emerge from the state’s SurgeNet database into which hospitals report their capacity. Hospitals report these data to SurgeNet every four hours, and the last value reported each day is used to construct this chart. This specifically highlights use in just the 5 largest health systems in Greater Cincinnati. The green-orange-red-black coloration indicates staffing strain. In the green zone, hospitals/ICUs are operating at normal staffing levels. Strain increases going up through orange and red. In the black zone, there is extreme strain on staffing, more patients per healthcare worker, increased and longer shifts for staff, and more patients sharing rooms, bathrooms, and TVs.

Slide 6: Number of Greater Cincinnati medical-surgical and ICU beds in use
Slide 6 illustrates the daily number of ICU beds and medical-surgical beds in use across Greater Cincinnati. These data emerge from Ohio Hospital Association. This specifically highlights use across Southwestern Ohio (Region 6, which includes 8 counties in Southwest Ohio: Hamilton, Butler, Warren, Clermont, Clinton, Brown, Highland, and Adams). The green-orange-red-black coloration indicates staffing strain. In the green zone, hospitals/ICUs are operating at normal staffing levels. Strain increases going up through orange and red. In the black zone, there is extreme strain on staffing, more patients per healthcare worker, increased and longer shifts for staff, and more patients sharing rooms, bathrooms, and TVs.

Context of regional pandemic

Slide 7: Incidence - Daily positive SARS-CoV-2 (virus that causes COVID-19) cases measured per 100,000 per day (7-day moving average per county)
Slide 7 shows this value for each regional county. Data are obtained from the New York Times public feed. Cut points are defined according to expert opinion using the Massachusetts Testing, Tracing, and Supported Isolation Collaborative (https://ethics.harvard.edu/ttsi-technical-handbook).

Slide 8: Age group incidence - Daily positive SARS-CoV-2 (virus that causes COVID-19) cases measured per 100,000 per day (7-day moving average per county)
Slide 8 displays the daily case incidence rate by age group. The numerator is the number of cases as identified in the Ohio Department of Health dashboard. The denominator is number of people with each age group within Hamilton County as captured in the US Census 2019 population estimates. The rate is normalized by 100,000 individuals. It uses a 7-day moving average to estimate each day’s count. Given lags in the reporting, the last several data points (depicted as dots) are preliminary counts.

**Slide 9: Effective reproductive ratio (\(R_{\text{eff}}\)) for Hamilton County and 14 county region with incidence for corresponding geography**

\(R_{\text{eff}}\) is a measure of transmission (simply, the number of cases 1 infected person will go on to infect while they are contagious. When this value is <1, the pandemic will decay away. When it is >1, the pandemic will expand. \(R_{\text{eff}}\) is calculated using open-source software, data on laboratory-confirmed cases, and an estimate of the time between someone becoming infected and infecting a second person. The top panel reflects \(R_{\text{eff}}\) for Hamilton County over time (left) and the 14 county region (right) inclusive of Hamilton, Butler, Warren, Clermont, Clinton, Brown, Highland, and Adams (OH), Boone, Campbell, and Kenton (KY), and Dearborn, Ripley, and Franklin (IN). Incidence over time is depicted below, mirroring that presented on Slide 7. These data are obtained from the New York Times public feed.

**Slide 10: Map of \(R_{\text{eff}}\) and incidence for the included 14 counties**

The map includes each county. The top number is the \(R_{\text{eff}}\) and the bottom number, in parentheses, is the incidence. These data are obtained from the New York Times public feed. Counties are colored red if the calculated \(R_{\text{eff}}\) is significantly above 1; blue if it is significantly below 1; yellow if the bounds cross 1.

**Slide 11: \(R_{\text{eff}}\) for Ohio, Kentucky, Indiana, and the US with incidence for corresponding geography**

The top panel reflects \(R_{\text{eff}}\); bottom the incidence, both measures over time. These data are obtained from the New York Times public feed.

**Slide 12: Number of COVID-19 deaths in 14 county area**

Slide 12 shows the daily number of COVID-19 deaths in the 14-county region. Each bar is the number of deaths reported each day. The line represents a 7-day moving average. These data are tracked by and drawn from the New York Times using reports from state and local health agencies.

**Slide 13: Percentage of test results returned positive and number of tests completed**

Slide 13 shows the daily number of SARS-CoV-2 (or COVID-19) tests completed by labs from Greater Cincinnati health systems (bottom), and the percentage of tests that were positive for the virus (top). The top chart is a statistical control chart that helps us to distinguish normal variation from variation inherent to a change in the system or context of the pandemic. Open dots suggest data that may still be subject to change. Studies suggest that we should be testing enough to see a positive rate at or below 3-5%. These data are shared from The Health Collaborative’s health information exchange.

**Slide 14-15: Percentage of test results returned positive and number of tests completed by age of patient**

Slides 14 and 15 are set up exactly like slide 13 just now split by age group. They show the percentage of daily SARS-CoV-2 (or COVID-19) tests from Region 6 that were positive for SARS-CoV-2 for different age groups. Open dots suggest data that may still be subject to change. The bottom panels illustrate the average daily testing number by age of patient. These data are shared from The Health Collaborative’s health information exchange.

**Vaccination**

**Slide 16: Vaccinations started over time**

Slide 16 depicts the daily absolute number of vaccines started (defined as receiving 1st dose) over time. The line is the 7-day moving average of this absolute numbers. The top figure is the amalgamation of all 8 Southwestern Ohio counties; each is depicted individually below. Note that the axes differ given different population sizes within each county. We can use these data to project movement toward population vaccination, a projection that will clearly change as supply increases. The source for these data is Ohio Department of Health.

**Slide 17: Cumulative vaccination by county**
Slide 17 is a companion to slide 16. The top figure is the amalgamation of all 8 Southwestern Ohio counties; each is depicted individually below. Here, we look at the cumulative % of each Southwest Ohio county that has started their vaccination series (1st dose). As the state adds information on % of the population that has completed their series (i.e., 2 doses for Moderna of Pfizer vaccine), this cumulative % will show up. To achieve herd immunity, we estimate that we will need to fully vaccinate ~80% of the population, more if vaccination moves slowly. The source for these data is Ohio Department of Health.

Mobility

Slide 18: Percentage change in weekday mobility in Hamilton County
Slide 18 uses data from Google to show how movement of Hamilton County residents has changed since the start of the pandemic across four different types of activity: grocery/pharmacy, residential, retail/recreation, and workplace. You can read more about these reports here.