Greater Cincinnati COVID-19 Situational Awareness Dashboard: Slide Descriptions

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Vaccination

Slide 2: Percentage of eligible population who have been vaccinated by Get Out the Vax campaign county
The Get Out the Vax campaign started soon after vaccines became eligible for the population. The included geography for the campaign are 15 counties across Southwestern Ohio, Southeastern Indiana, and Northern Kentucky. The population-weighted average for the entire region is also provided. The numerator is the number of people who have received at least their first dose. The denominator is individuals who are 12 years or older. Importantly, this differs from the value displayed on subsequent slides where the denominator is the entire population. For more information on the #GetOutTheVax campaign and for additional information on where to go and how to get vaccinated, please go to http://testandprotectcincy.com. The source for these data is the CDC, available at: https://data.cdc.gov/resource/8xkx-amqh.csv.

Slide 3: Cumulative vaccination by county
Here, we look at the cumulative % of each regional county that has started (blue) and completed (orange) their vaccination series. Starting the series means having received the 1st dose of the Pfizer or Moderna vaccine. Completing the series means having received the 2nd dose of the Pfizer or Moderna vaccine or the single dose of the Johnson & Johnson vaccine. The source for these data is the CDC, available at: https://data.cdc.gov/resource/8xkx-amqh.csv. Denominators are obtained for the US Census.

Slide 4: Vaccinations started and completed over time
This slide is a companion to slide 3. This slide depicts the daily absolute number of vaccines started (defined as receiving 1st dose) over time in blue and the number of vaccines completed (2nd dose for Pfizer or Moderna, single dose for Johnson & Johnson) in orange. The line is the 7-day moving average of this absolute numbers. The top figure is the amalgamation of all 8 Southwestern Ohio counties and the 3 counties in Southeastern Indiana (we don’t yet have access to a similar data source for Northern Kentucky); each included county is depicted individually below. Note that the axes differ given different population sizes within each county. The sources for these data are Ohio Department of Health and the Indiana Department of Health: https://coronavirus.ohio.gov/static/dashboards/vaccine_data.csv and https://hub.mph.in.gov/dataset/c484a6a3-2f32-4af9-8e02-c98801c3454f/resource/a4d23ae8-34c2-4951-85e0-3ea9345ee6ea/download/county-vaccinations-by-date.csv, respectively.

Context of regional pandemic

Slide 5: Incidence - Weekly SARS-CoV-2 cases measured per 100,000 per week (7-day average per county)
This slide shows this value for each regional county. Data are obtained from the New York Times public feed, based on reports from local and state public health agencies [https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html]. Cut points are defined according to the Centers for Disease Control & Prevention [https://covid.cdc.gov/covid-data-tracker/#datatracker-home]. Cuts are defined as low (0-9.99), moderate (10-49.99), substantial (50-99.99), or high (≥100). These align with CDC recommendations, including for certain non-pharmaceutical interventions. See a visual depiction of these levels in the figure above.

Slide 6: Cases and vaccination
This slide includes two panels. The panel on the left is a scatter plot with data for all Hamilton County zip codes. The x-axis is the current % of the population who are vaccinated. The y-axis is the incidence of new cases in the preceding 14 days. The y-axis maximum is set at 1000 new cases per 100,000 people per 2-week period. There appears to be a downward trending line of fit (not displayed) indicative of a negative correlation (that is – the more cases occur in the zip codes with lower vaccination rates). The zip codes in the top left quadrant of the scatter plot are those with particularly high case rates and low vaccination rates. The top several are labeled on the scatter plot and the accompanying map on the right. This is a zip code bivariate choropleth map of Hamilton County depicting the data present in the scatter plot.

Slide 7: Cases and vaccination (maps and histograms)
This slide includes four panels. The panels on the left display the percentage of the population that has started their vaccination series by zip code. The map displays all zip codes entirely or partially in Hamilton County, Ohio. The histogram below displays the distributions of the data (number of zip codes in each of the vaccine percentage blocks). The panels on the right are for the same geography (Hamilton County zip codes) but now display the number of COVID-19 cases per 100,000 individuals in the preceding 14 days. The source for data for all elements on this slide is the Ohio Department of Health.

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) – Southwestern Ohio counties
This slide displays the daily case incidence rate by age group for the 8 counties in Southwest Ohio that compose the region. The numerator is the number of cases as identified in the Ohio Department of Health dashboard. The denominator is number of people within each age group within the counties composing Region 6 in Southwest Ohio, 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: Age group incidence - Daily positive SARS-CoV-2 (virus that causes COVID-19) cases measured per 100,000 per day (7-day moving average) – Hamilton County
This slide displays the daily case incidence rate by age group for Hamilton County. The numerator is the number of cases as identified in the Ohio Department of Health dashboard. The denominator is number of people within 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 10: Effective reproductive ratio (R_eff) for Hamilton County and 14 county region with incidence for corresponding geography
R_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_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_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, here depicted as a daily incidence (7-day moving average). Data are obtained from the New York Times public feed, based on reports from local and state public health agencies (https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html).

Slide 11: Map of R_eff and incidence for the included 14 counties
The map includes each county. The top number is the R_eff and the bottom number, in parentheses, is the incidence. Counties are colored red if the calculated R_eff is significantly above 1; blue if it is significantly below 1; yellow if the bounds cross 1. Data are obtained from the New York Times public feed, based on reports from local and state public health agencies (https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html).

Slide 12: R_eff for Ohio, Kentucky, Indiana, and the US with incidence for corresponding geography
The top panel reflects R_eff; bottom the incidence, both measures over time. Data are obtained from the New York Times public feed, based on reports from local and state public health agencies (https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html).
Slide 13: Percentage of test results returned positive and number of tests completed
This slide 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). Each are measured as 7-day moving averages. 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
These slides 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 as 7-day moving averages. 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.

Slide 16: 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 Ohio-based hospitals in Region 6, which includes 8 counties in Southwest Ohio: Hamilton, Butler, Warren, Clermont, Clinton, Brown, Highland, and Adams.

Slide 17: Number of positive COVID-19 patients in Region 6 ICUs, Statistical Process Control (SPC) Chart
Slide 18: Number of positive COVID-19 patients in Region 6 hospitals, SPC Chart
These slides present the daily number of positive COVID-19 patients in ICU and hospital beds in Ohio-based hospitals of 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. Each slide now includes a call-out box highlighting the trends over the preceding 30 days.

Slide 19: Percentage of adult beds occupied in the Greater Cincinnati area
This slide illustrates the daily number of ICU beds (left) and medical-surgical beds (right) in use across Greater Cincinnati. The source for these data is the SurgeNet system which includes data input by each hospital regionally, inclusive of hospitals within Region 6, including those across state lines. The green-orange-red-black coloration indicates staffing strain. The upper limit reflects current staffing capabilities that may be beyond the region’s normal staffing capacity. This number is also subject to change. The coloration depicts the degree of strain. Green indicates ‘Usual operations and staffing.’ Orange indicates ‘Mild to moderate staffing strain; staff managing higher than usual patient volumes.’ Red indicates ‘Moderate to extreme staffing strain; staff pulled from other areas to manage care outside usual scope. Black indicates ‘Critical operations.’

Slide 20: Number of COVID-19 deaths in Southwestern Ohio
This slide shows the daily number of COVID-19 deaths in the 8-county region Southwestern Ohio 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 Ohio Department of Health (https://coronavirus.ohio.gov/static/dashboards/COVIDDeathData_CountyOfResidence.csv). These data can lag up to 1-2 months. Thus, the dotted line and lightly shaded data points should be considered preliminary.

Statewide patterns

Slide 21: Ohio counties and incidence, $R_{eff}$, and vaccination
This slide uses data made available by ODH. Each map is split into regions and counties. The map on the left displays the daily 14-day running sum of cases per 100,000 individuals within each county. Lighter shading is indicative of lower incidence and darker shading higher incidence. The map in the middle displays $R_{eff}$ for each county. Those counties in blue have an $R_{eff}$ value that is significantly below 1, red significantly above 1, and yellow crossing 1. The map on the right displays the % of the population with at least a first dose of vaccination (denominator total population). Darker shades indicate lower percentage, lighter shades indicate higher percentage.

**Slide 22: Ohio counties and incidence, $R_{eff}$, and vaccination over time**

Slide 22 is a companion slide to 21, using the same data made available by ODH. Each component is again split into regions and counties. Counties are ordered, within regions, by population sizes (biggest on top, smallest on bottom). The panel on the left displays the daily 14-day running sum of cases per 100,000 individuals within each county. Lighter shading is indicative of lower incidence and darker shading higher incidence. The panel in the middle displays $R_{eff}$ for each county. Those counties in blue have an $R_{eff}$ value that is significantly below 1, red significantly above 1, and yellow crossing 1. The panel on the right displays the % of the population with at least a first dose of vaccination (denominator total population). Darker shades indicate lower percentage, lighter shades indicate higher percentage. Each panel is displayed over time is indicated by the timeline at the bottom of the page.