Disclosures

• We have no relevant financial interests to disclose.
COVID Dashboard

CHICAGO COVID-19 Summary

Cases:
- Current daily avg: 249
- Prior week: 299 (-17%)
- Cumulative: 283,020
- Daily rate per 100,000: 9.2

Hospitalizations:
- Current daily avg: 12
- Prior week: 24 (-50%)
- Cumulative: 28,281
- Daily rate per 100,000: 0.4

Deaths:
- Current daily avg: 5
- Prior week: 7 (-29%)
- Cumulative: 5,457
- Daily rate per 100,000: 0.2

Vaccinations Administered:
- Current daily avg: 14,065
- Cumulative: 2,381,904
- Chi square test: 50.6%

Tests Performed:
- Current daily avg: 10,229
- Prior week: 11,378 (-10%)
- Cumulative: 4,234,305

Positivity Rate:
- Current daily avg: 3.0%
- Prior week: 3.3%
- Chi square test: 1 in 10

When You’ve Been Fully Vaccinated
How to Protect Yourself and Others

Choosing Safer Activities

- **If you are fully vaccinated**, you can resume activities that you did prior to the pandemic.
- Fully vaccinated people can resume activities without wearing a mask or physically distancing, except where required by federal, state, local, tribal, or territorial laws, rules, and regulations, including local business and workplace guidance.
- If you haven’t been vaccinated yet, [find a vaccine](https://www.cdc.gov/vaccines/).

Safer Activities
For now, if you’ve been fully vaccinated:

- You will still need to follow guidance at your workplace and local businesses.

- If you travel, you should still take steps to protect yourself and others. You will still be required to wear a mask on planes, buses, trains, and other forms of public transportation traveling into, within, or out of the United States, and in U.S. transportation hubs such as airports and stations. Fully vaccinated international travelers arriving in the United States are still required to get tested 3 days before travel by air into the United States (or show documentation of recovery from COVID-19 in the past 3 months) and should still get tested 3-5 days after their trip.

- You should still watch out for symptoms of COVID-19, especially if you’ve been around someone who is sick. If you have symptoms of COVID-19, you should get tested and stay home and away from others.

- People who have a condition or are taking medications that weaken the immune system, should talk to their healthcare provider to discuss their activities. They may need to keep taking all precautions to prevent COVID-19.
What’s the science the CDC used to make the decision?

• There were two key pieces of information that the CDC’s recommendation is based on:
  • First, **real-world studies have shown that mRNA vaccines** from Pfizer and Moderna “reduce risk of infection, not just severe disease, hospitalization and death,” The vaccines are very good, but they aren’t perfect. Some vaccinated people may still catch the coronavirus.
  • But even “if you are one of those individuals who gets a **rare breakthrough infection**, your risk of transmitting [the virus] onward to other people is exceedingly low,” That’s the second piece of evidence that swayed CDC’s decision.
Why did the CDC change mask recommendations?

This multisite test-negative design case-control study found that authorized mRNA COVID-19 vaccines are highly effective against symptomatic COVID-19 among HCP. Effectiveness of a complete 2-dose regimen of these vaccines was estimated to be 94%.

The results are also consistent with findings from an observational study among the general adult population from Israel, two cohort studies among HCP from the United Kingdom, and recently reported interim results from a U.S. cohort evaluation among HCP and frontline workers.

“This report provided the most compelling information to date that COVID-19 vaccines were performing as expected in the real world,” said CDC Director Rochelle P. Walensky, MD, MPH.
Why did the CDC change mask recommendations?

• The BNT162b2 vaccine was effective against infection and disease in the population of Qatar, despite the B.1.1.7 and B.1.351 variants being predominant within the country

• Reported in the clinical trials and in real-world conditions in Israel and the United States

• The reduced protection against infection with the B.1.351 variant did not seem to translate into poor protection against the most severe forms of infection
Neutralizing antibody levels are highly predictive of immune protection from symptomatic SARS-CoV-2 infection

David S. Khoury, Deborah Cromer, Arnold Reynaldi, Timothy E. Schluub, Adam K. Wheatley, Jennifer A. Juno, Kanta Subbarao, Stephen J. Kent, James A. Triccas, and Miles P. Davenport

- Predictive modeling data analyzing the relationship between in vitro neutralization levels and observed protection from SARS-CoV-2 virus
- Compared neutralization titers across seven vaccine studies to determine the mean and SD of neutralization titer
  - Then compared this normalized neutralization level against the corresponding protective efficacy reported from the seven phase 3 clinical trials
- Decay of vaccine-induced neutralization is similar to that observed after natural infection
- The 50% protective neutralization level of anti-SARS-CoV-2 antibodies was estimated be 20.2% of the mean convalescent level (95% CI=14.4-28.4%)
- Estimated neutralization level required for 50% protection from severe infection was 3% of the mean convalescent level; 95% CI=0.7-13%, p=.0004.

Modeling of decay of the neutralization titer over the first 250 days after immunization predicts that a significant loss in protection from SARS-CoV-2 will occur, although protection from severe disease should be largely retained.
What we are still learning

• How effective vaccines are against the variants
• How well vaccines work to protect people with weakened immune systems
• How long the COVID-19 vaccines will protect you
• If the updated CDC mask guidance will encourage others to get vaccinated who have not yet
Examples of Outdoor Activities

- **Unvaccinated People**
  - Walk, run, wheelchair roll, or bike outdoors with members of your household
  - Attend a small, outdoor gathering with fully vaccinated family and friends
  - Attend a small, outdoor gathering with fully vaccinated and unvaccinated people
  - Dine at an outdoor restaurant with friends from multiple households
  - Attend a crowded, outdoor event, like a live performance, parade, or sports event

- **Fully Vaccinated People**
  - Go to an indoor movie theater
  - Attend a fully vaccinated indoor event
  - Attend a fully vaccinated indoor event
  - Eat at an indoor restaurant or bar
  - Participate in an indoor high intensity activity, like a gym class

Examples of Indoor Activities

- **Unvaccinated People**
  - Visit a barber or hair salon
  - Go to an unvaccinated, indoor shopping center or museum
  - Attend a small indoor gathering of fully vaccinated and unvaccinated people from multiple households
  - Go to a fully vaccinated indoor event
  - Sing in an indoor chorus

- **Fully Vaccinated People**
  - Less Safe
  - Least Safe
But what if I am at higher risk of severe illness and vaccinated?
But what if I live with someone who is at higher risk of severe illness?

Consider the Level of Risk

In general, the more people you interact with, the more closely you interact with them, and the longer that interaction, **the higher your risk** of getting and spreading the virus that causes COVID-19.

Before you go out, consider the following:

- How many people will you interact with?
- Can you keep 6 feet of space between you and others?
- Will you be outdoors or indoors?
- What’s the length of time that you will be interacting with people?
- How likely is it that people will be wearing a mask?

**Consider avoiding activities where taking protective measures may be difficult**, such as activities where social distancing can’t be maintained.
Multisystem Inflammatory Syndrome in Adults (MIS-A)

Case Definition for MIS-A

A patient aged ≥21 years hospitalized for ≥24 hours, or with an illness resulting in death, who meets the following clinical and laboratory criteria. The patient should not have a more likely alternative diagnosis for the illness (e.g., bacterial sepsis, exacerbation of a chronic medical condition).

I. Clinical Criteria

Subjective fever or documented fever (≥38.0°C) for ≥24 hours prior to hospitalization or within the first THREE days of hospitalization* and at least THREE of the following clinical criteria occurring prior to hospitalization or within the first THREE days of hospitalization*. At least ONE must be a primary clinical criterion.

A. Primary clinical criteria

1. Severe cardiac illness
   
   Includes myocarditis, pericarditis, coronary artery dilatation/aneurysm, or new-onset right or left ventricular dysfunction (LVEF<50%), 2nd/3rd degree A-V block, or ventricular tachycardia. (Note: cardiac arrest alone does not meet this criterion)

2. Rash AND non-purulent conjunctivitis

B. Secondary clinical criteria

1. New-onset neurologic signs and symptoms
   
   Includes encephalopathy in a patient without prior cognitive impairment, seizures, meningeal signs, or peripheral neuropathy (including Guillain-Barré syndrome)

2. Shock or hypotension not attributable to medical therapy (e.g., sedation, renal replacement therapy)

3. Abdominal pain, vomiting, or diarrhea

4. Thrombocytopenia (platelet count <150,000/ microliter)

II. Laboratory evidence

The presence of laboratory evidence of inflammation AND SARS-CoV-2 infection.

A. Elevated levels of at least TWO of the following: C-reactive protein, ferritin, IL-6, erythrocyte sedimentation rate, procalcitonin

B. A positive SARS-CoV-2 test during the current illness by RT-PCR, serology, or antigen detection

NOTE: *These criteria must be met by the end of hospital day 3, where the date of hospital admission is hospital day 0.
• Single-center retrospective cohort study
• 15 patients during study time frame met criteria for MIS-A were compared to 683 hospitalized COVID-19 patients without MIS-A
• MIS-A patients were younger, more likely to have antibodies
• 33% admitted to ICU
• Median number of organ systems involved = 4

Study working definition:
• Hospital admission in age >21 with positive COVID-19 test within 12 weeks
• Severe dysfunction of at least one non-lung organ system (e.g. Low blood pressure, shock, cardiac abnormalities, arterial or venous blood clots, thromboembolism, liver damage)
• Test results indicated severe inflammation (e.g. CRP)
• The absence of severe respiratory disease
Vaccination numbers continue to increase!
Renewed look at global vaccine distribution

More than 75% of vaccines have been distributed in 10 countries.

Globally, as of 4:48pm CEST, 26 May 2021, there have been 167,492,769 confirmed cases of COVID-19, including 3,482,907 deaths, reported to WHO. As of 26 May 2021, a total of 1,491,041,497 vaccine doses have been administered.
Who Makes Up The Vaccine Hesitant?

In the United States overall...

8% are *Watchful*. They’re waiting to see what happens next.

9% are *Cost-Anxious*. They want the vaccine but can’t afford the time or cost.

4% are *System Distrusters*. They feel the health care system doesn’t treat them fairly.

14% are *Covid Skeptics*. They don’t believe the threat.

In Illinois...

9% are *Watchful*. They’re waiting to see what happens next.

7% are *Cost-Anxious*. They want the vaccine but can’t afford the time or cost.

4% are *System Distrusters*. They feel the health care system doesn’t treat them fairly.

12% are *Covid Skeptics*. They don’t believe the threat.

https://www.nytimes.com/interactive/2021/05/18/opinion/covid-19-vaccine-hesitancy.html
Who Makes Up The Vaccine Hesitant?

https://www.nytimes.com/interactive/2021/05/18/opinion/covid-19-vaccine-hesitancy.html
Vaccine Hesitancy

Fig. 2. “Three Cs” model of vaccine hesitancy.

https://doi.org/10.1016/j.vaccine.2015.04.036
Among respondents who were either vaccinated in the seven days ahead of Harris’ research or who said they planned to get vaccinated in the near future, 23% said that the CDC’s new mask policy encouraged them to get a shot. That’s a positive, if not massive, effect. But the data also reveal an arguably more interesting finding: among the same group, 41% said they got or plan to get vaccinated at least in part because they’re worried about being around maskless unvaccinated people.”

https://time.com/6051290/cdc-vaccine-mask/
45yoF with vaccine reaction

- 45yo woman with hx of recurrent EBV and VZV, hx of heroin abuse in her 20s
- Received 2\textsuperscript{nd} dose of Moderna vax on a Monday, had 1-2 d of sore arm, fatigue and muscle aches which improved
- Friday (day 5) she started having a rash at the vaccine site that spread over the next few days across her chest, to other arm, down torso, to upper legs, sparing breast area. Maculopapular vs mildly vesicular, but no frank vesicles with drainage or crusting.
- Has tried Benadryl with no effect
Rash on day 8:
Rash on day 8:
Questions:

• Could this be related to her shingles?
• Could this be HSV?

• I started prednisone for possible id reaction
• I am calling back in for HSV/VZV culture and to get further history on the HSV/VZV—only VZV documented in her chart, but has she had HSV as well?
mRNA-1273 (Moderna) vaccine trials reported delayed injection site reactions in 0.8% of patients after the first dose and 0.2% after the 2nd dose

Case series of 12 patients
Suspicion of delayed-type or T-cell mediated hypersensitivity reaction
Not a contraindication to subsequent vaccination
Variable recurrence

Hat tip: Keith So
Figure 1: Timeline representing the time to onset and duration of the top five most common dermatologic findings reported after the Moderna and Pfizer COVID-19 vaccines. Circles represent median time to onset of the cutaneous reaction and lines represent median duration of the cutaneous reaction. See Supplemental Table 1 for detailed information about timing of vaccine reactions.
Figure 1. Characteristic cutaneous findings in pediatric multisystem inflammatory syndrome in children. Arrows indicate regions of erythema.