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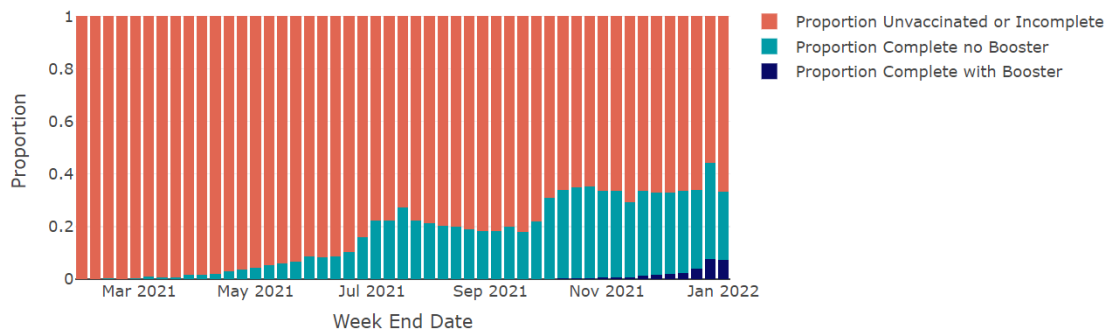
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## Masking and Vaccination Science Brief

CCDPH has determined that the mitigation measures presented in Cook County Department of Public Health Order 2021-11 are necessary to protect the public's health, in part, based on the following evidence:

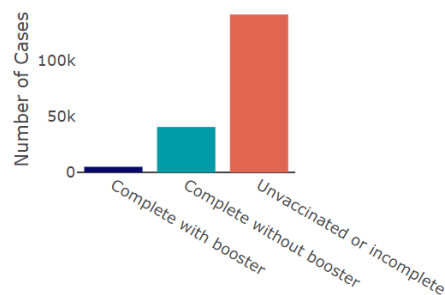
COVID breakthrough case data, analyzed by CCDPH staff, that shows that the majority of cases in CCDPH's jurisdiction are attributable to people who are not fully vaccinated.

Vaccination Status of All Cases by Week



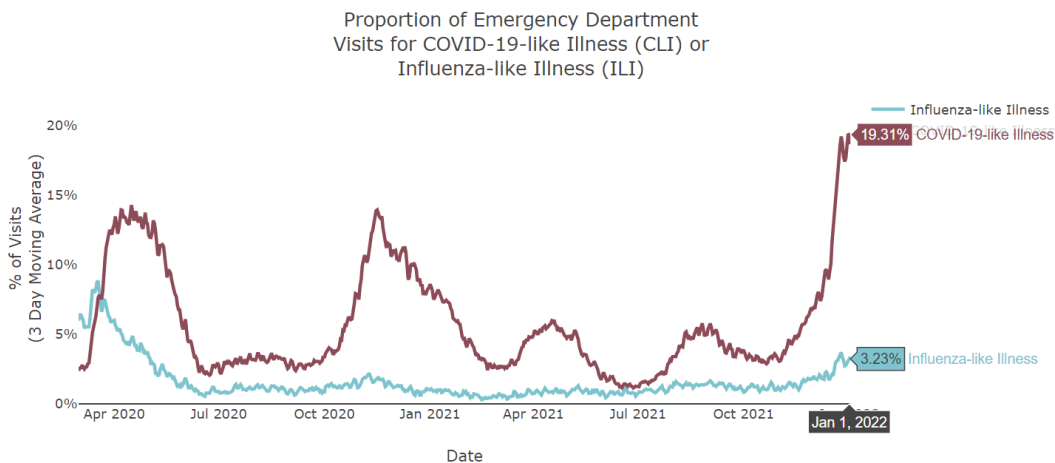
Data shows more than 75% of cases are in people who are not fully vaccinated.

Vaccination Status of All Cases Since Jan 24, 2021

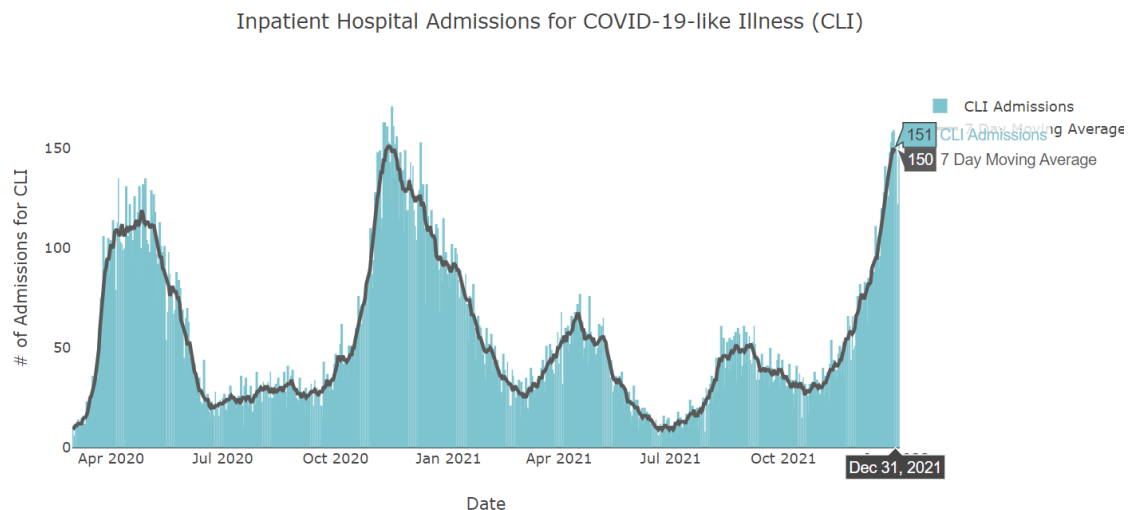


COVID case and hospitalization data, which is available on CCDPH's [data page](#), shows sharp recent increases in illnesses, hospitalizations, and death.

CCDPH data from January 1, 2022 shows the increase in ED visits in CCDPH's suburban jurisdiction.

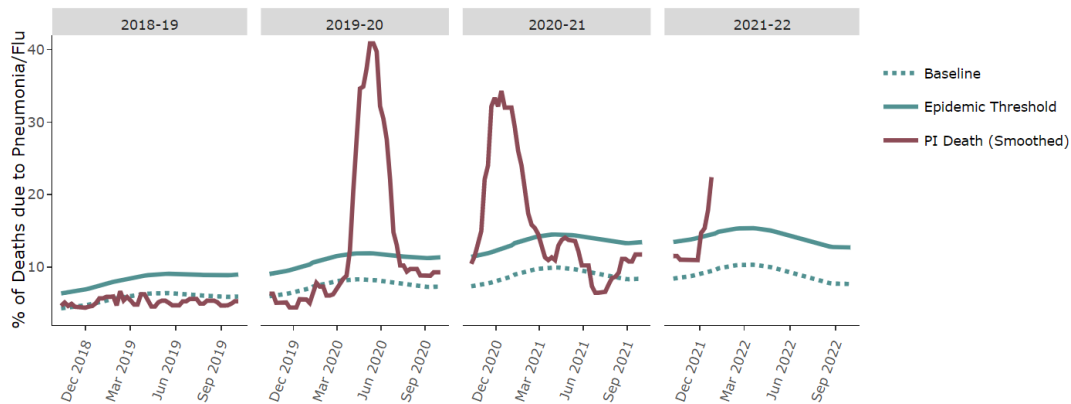


Additionally, CCDPH data shows that the 7-day moving average for in-patient hospitalizations for COVID-19 like illness matches the previous pandemic all-time high.

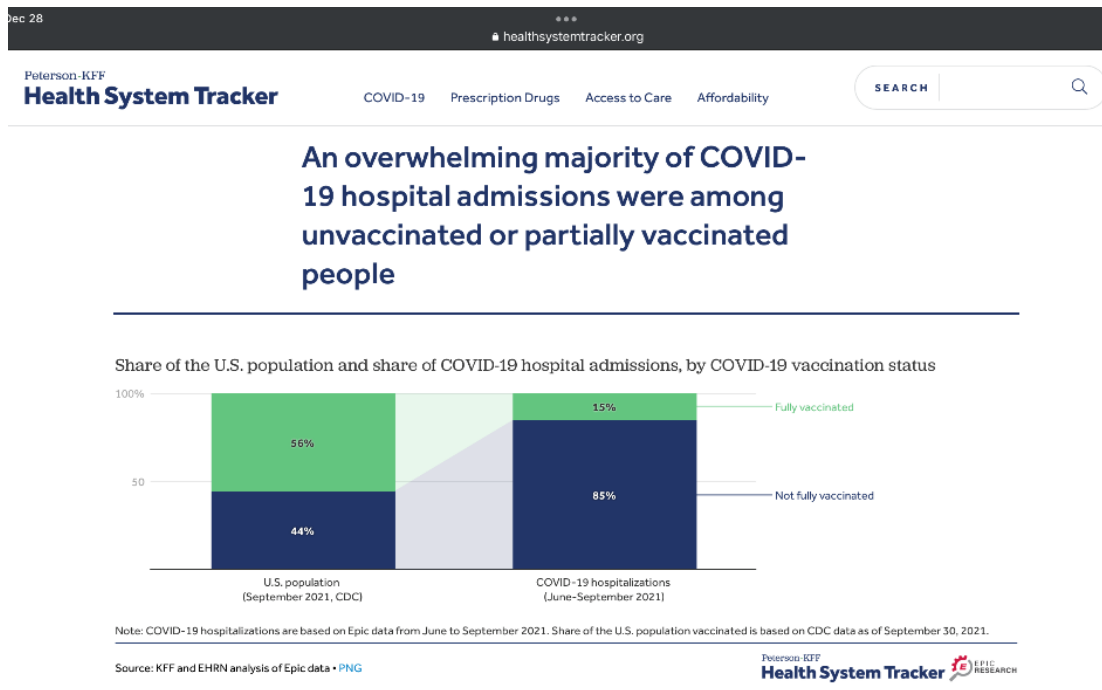


The following graph shows the percentage of all deaths that occurred in Cook County (including Chicago) with pneumonia, influenza, or COVID-19 listed as an immediate cause of death or contributing factor on the death certificate. Because many deaths due to COVID-19 are caused by pneumonia, this indicator can be adapted to track CLI as well.

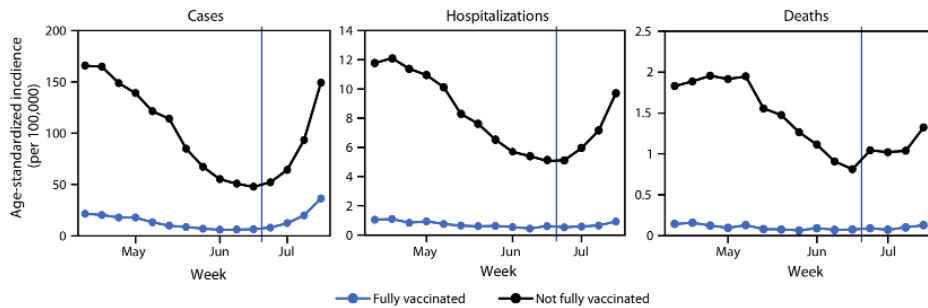
Proportion of Deaths Associated  
with Pneumonia, Influenza, or COVID-19



Below are two figures from the Kaiser Family foundation, Health System Tracker and the Centers for Disease Control and Prevention, respectively, illustrating the overwhelming majority of COVID-19 related hospitalizations have been occurring in those not fully vaccinated.



**FIGURE 2. Weekly trends in age-standardized incidence\* of COVID-19 cases, hospitalizations,<sup>†</sup> and deaths,<sup>§</sup> by vaccination status<sup>¶</sup> — 13 U.S. jurisdictions,\*\* April 4–July 17, 2021**



\* Rates are standardized by age, according to the enumerated 2000 U.S. Census age distribution. Blue vertical lines indicate when the B.1.617.2 (Delta) variant reached a threshold of >50%, using weighted estimates for 13 jurisdictions combined.

<sup>†</sup> To ascertain COVID-19–associated hospitalizations, two jurisdictions relied upon case investigations; seven jurisdictions relied upon hospital records; two jurisdictions relied upon both case investigations and hospital records; and two did not submit hospitalization data. Four jurisdictions reported hospitalizations only where COVID-19 was the cause, and seven reported COVID-19 cases in persons hospitalized for any cause.

<sup>§</sup> To ascertain COVID-19–associated deaths, eight jurisdictions relied upon vital records, and five jurisdictions relied upon a combination of vital records and provider reporting (two), case investigations and vital records (two), and provider reporting, case investigations, and vital records (one). Eleven jurisdictions provided deaths with COVID-19 as a cause; one provided all deaths that occurred within 30 days of becoming a case (without confirming cause); and one provided deaths confirmed with COVID-19 as a cause or within 60 days of positive specimen collection.

<sup>¶</sup> Fully vaccinated persons are those who are ≥14 days postcompletion of the primary series of a COVID-19 vaccine with Food and Drug Administration emergency use authorization. Not fully vaccinated persons are those who did not receive a COVID-19 vaccine with Food and Drug Administration emergency use authorization or who received a COVID-19 vaccine but are not yet considered fully vaccinated.

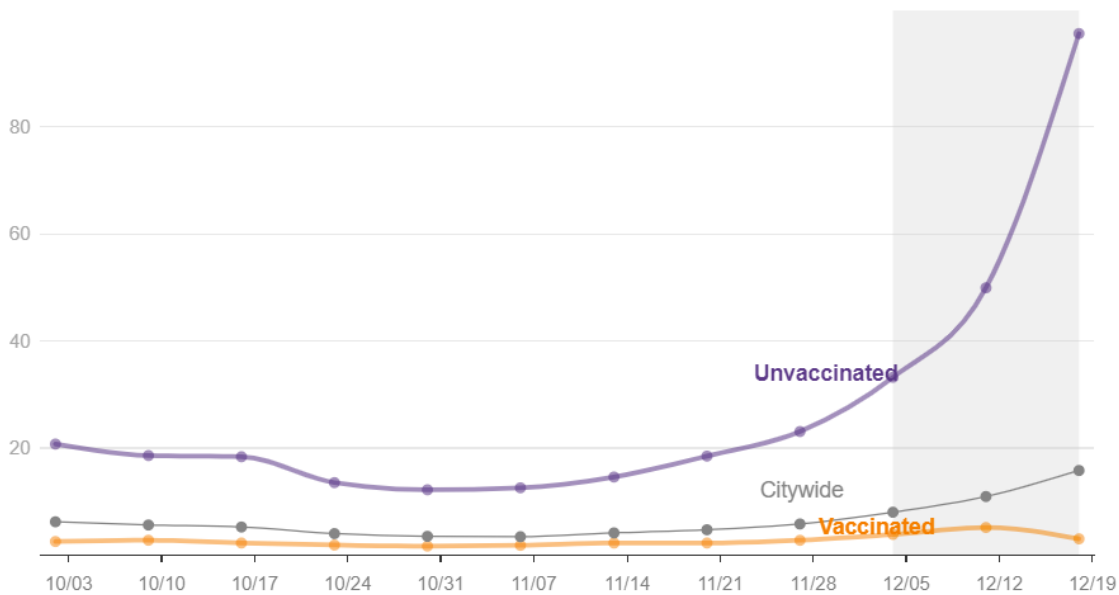
\*\* Alabama, Arizona, Colorado, Indiana, Los Angeles County (California), Louisiana, Maryland, Minnesota, New Mexico, New York City (New York), North Carolina, Seattle/King County (Washington), and Utah.

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Further evidence for the efficacy of vaccines is provided by data from New York City. The graph below shows hospitalization data for people who are vaccinated and unvaccinated. Many more people who are unvaccinated are hospitalized, providing evidence that vaccines are working to prevent severe disease and death.

Hospitalizations per 100,000 people (age-adjusted, for week ending on listed date)

Recent data may be incomplete.

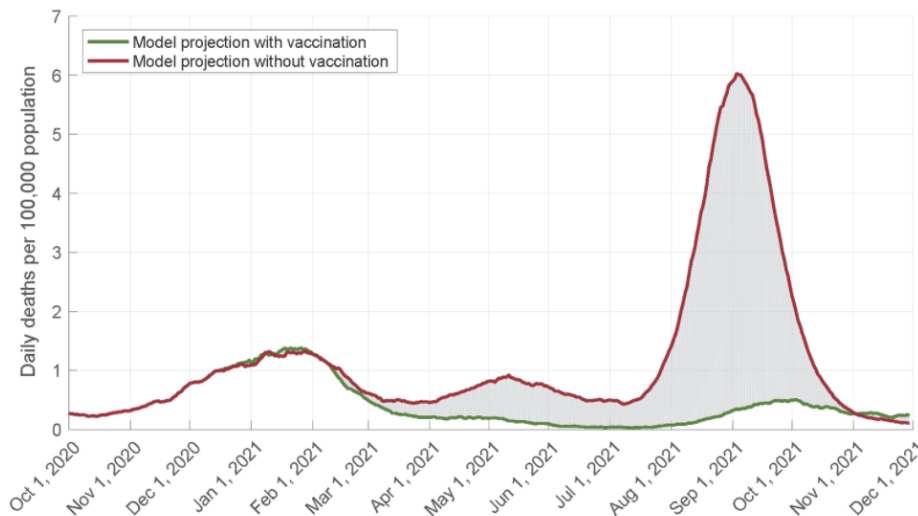


<https://www1.nyc.gov/site/doh/covid/covid-19-data.page#daily>

In an issue [brief](#) that was published recently by The Commonwealth Fund, data was analyzed to determine how vaccines in the United States helped to avert deaths and hospitalizations. The graph below shows a stark difference in the projected number of deaths that would have occurred without vaccines. Their conclusion, based on the data:

*“In the absence of a vaccination program, there would have been approximately 1.1 million additional COVID-19 deaths and more than 10.3 million additional COVID-19 hospitalizations in the U.S. by November 2021.”*

## Projected U.S. Seven-Day Rolling Average of Daily Deaths per 100,000 Population, With and Without Vaccination



According to the CDC Science Brief: Community Use of Masks to Control the Spread of SARS-CoV-2 Updated Dec. 6, 2021: “Experimental and epidemiologic data support community masking to reduce the spread of SARS-CoV-2, including alpha and delta variants, among adults and children. The prevention benefit of masking is derived from the combination of source control and wearer protection. The relationship between source control and wearer protection is likely complementary and possibly synergistic, so that individual benefit increases with increasing community mask use. Mask use has been found to be safe and is not associated with clinically significant impacts on respiration or gas exchange under most circumstances, except for intense exercise.” <https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/masking-science-sars-cov2.html> This brief includes a review of 90 scientific references and the conclusions support masking as one of the most important measures to mitigate the spread of SARS-CoV-2.

The CDC has also published several reports related to spread of infection in restaurants and in fitness facilities:

[https://www.cdc.gov/mmwr/volumes/69/wr/mm6936a5.htm?s\\_cid=mm6936a5\\_w#F1\\_down](https://www.cdc.gov/mmwr/volumes/69/wr/mm6936a5.htm?s_cid=mm6936a5_w#F1_down)

Findings: This case-control study examined data on symptomatic outpatients from 11 U.S. health care facilities. Data shows that adults in the study who had COVID-19 were approximately twice as likely to have reported dining at a restaurant than were those with in the study who did not contract COVID.

<https://www.cdc.gov/mmwr/volumes/70/wr/mm7010e3.htm>

- Findings: Daily COVID-19 case and death growth rates decreased within 20 days of the implementation of universal masking requirements. On-premises restaurant dining is associated with increasing daily COVID-19 case and death rates.

<https://www.cdc.gov/mmwr/volumes/70/wr/mm7009e1.htm>

- Findings: A case cluster of twenty-one people was associated with an infected fitness instructor in a health club in Hawaii.

<https://www.cdc.gov/mmwr/volumes/70/wr/mm7009e2.htm>

- Findings: In August 2020, 55 COVID-19 cases were identified among 81 attendees of indoor high-intensity classes at a Chicago exercise facility. Twenty-two (40%) persons with COVID-19 attended on or after the day symptoms began. Most attendees (76%) wore masks infrequently, including persons with (84%) and without COVID-19 (60%).

In summary, COVID-19 infections have been demonstrated to spread in unmasked infected individuals, especially in enclosed indoor spaces, and unvaccinated people are much more likely to contract severe cases of COVID leading to hospitalizations and deaths.

Therefore, requiring vaccinations for all individuals entering indoor spaces that serve food or drink and thus needing removal of masks is an appropriate mitigation measure. The same caution and vaccine requirement applies to fitness facilities as SARS-CoV-2 is more likely to circulate in the air in these spaces.