

Post-Vaccination Outcomes: Report for September 8, 2021

Background:

The City of New York monitors reported COVID-19 cases to determine if infections and illness are occurring among people who are fully vaccinated against COVID-19, also known as vaccine breakthroughs. All three COVID-19 vaccines available in the U.S. — Pfizer-BioNTech (Pfizer), Moderna and Johnson & Johnson/Janssen (Johnson & Johnson) — have been shown to be very effective at protecting people from severe COVID-19 illness, hospitalization and death. Hundreds of millions of doses of vaccine have been administered in the U.S.

Although the vaccines are effective at preventing serious illness and death from COVID-19, no vaccine is 100% effective. Rarely, people who have been fully vaccinated can be infected and become ill.

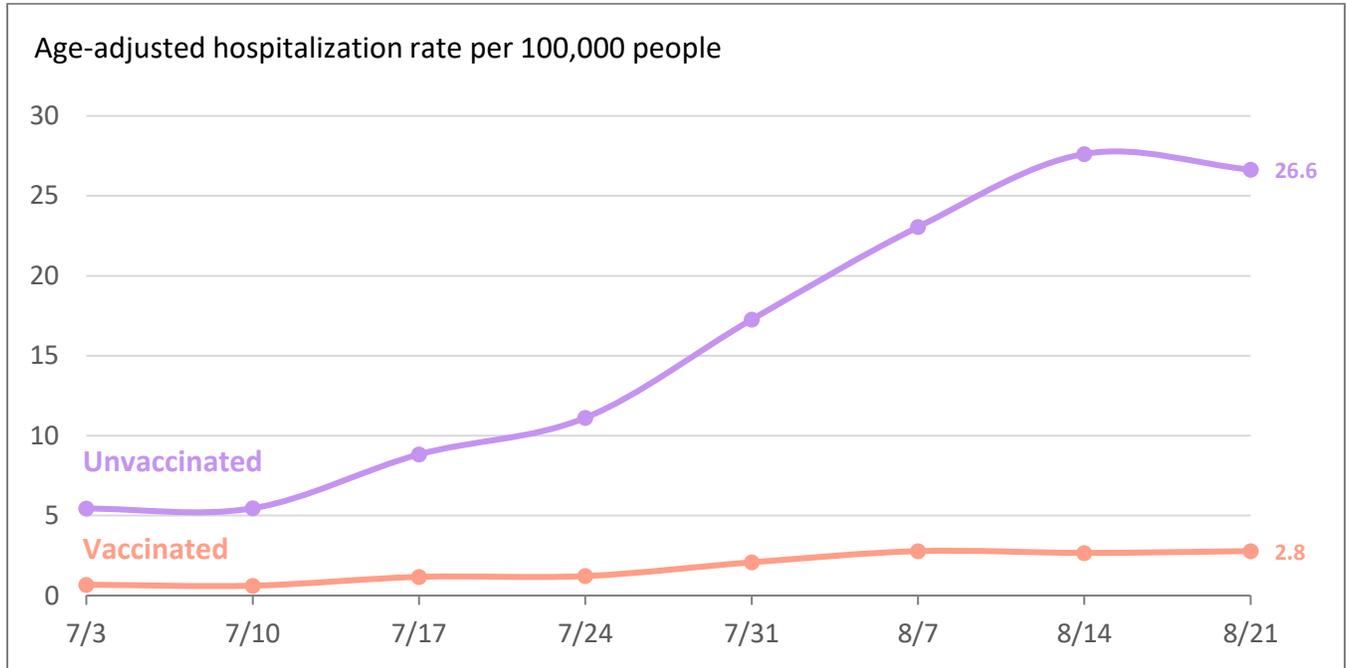
To monitor post-vaccination outcomes, the NYC Health Department uses information from the Citywide Immunization Registry (CIR) matched to reports of confirmed and probable COVID-19 cases.

Summary of findings:

- COVID-19 transmission is high in NYC, likely driven by the dominant and highly contagious delta variant.
- Vaccine breakthroughs remain uncommon among people who are fully vaccinated, but have increased in July and August as a proportion of all new cases, also likely driven by the delta variant and higher levels of community transmission in NYC.
- The COVID-19 vaccines continue to offer good protection and are particularly strong at preventing severe disease.
 - From June 27, 2021 through August 21, 2021, the age-adjusted hospitalization rate among people who are unvaccinated was 7.5 to 10.3 times the rate among people who are fully vaccinated

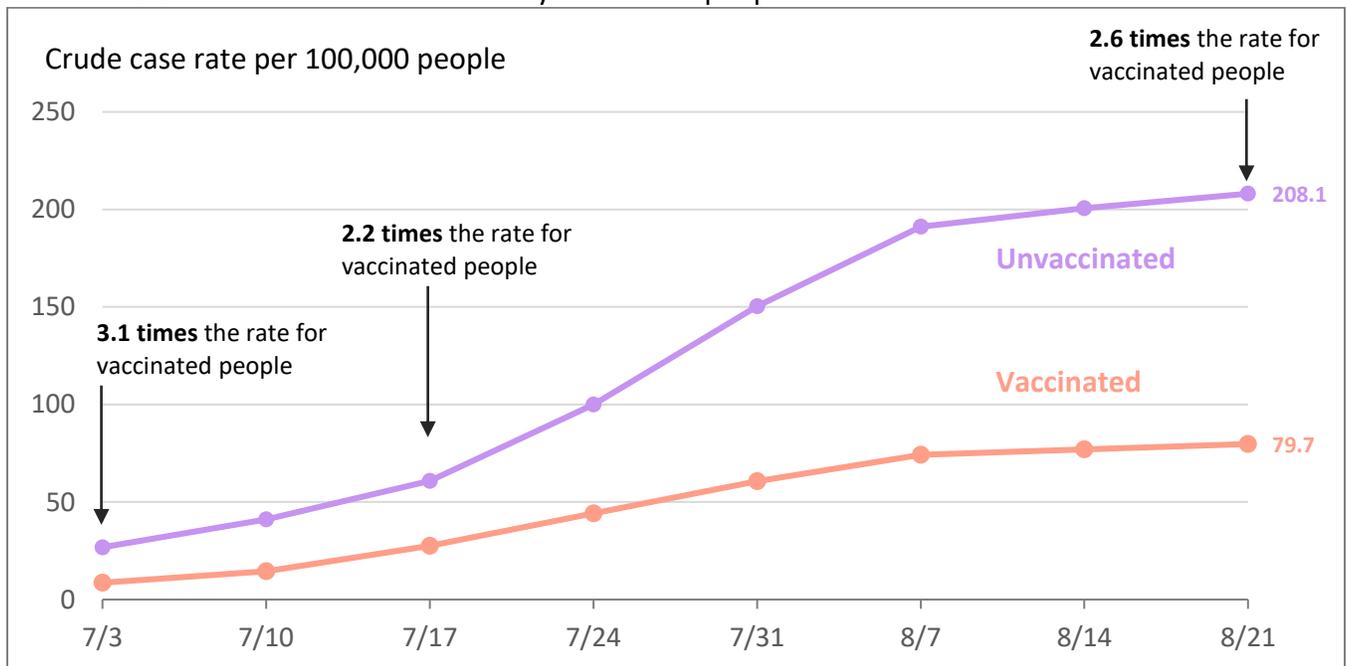
Key findings of post-vaccination outcomes in NYC:

Unvaccinated people are much more likely to be hospitalized. The age-adjusted hospitalization rate¹ among people who are unvaccinated was 7.5 to 10.3 times the rate among people who are fully vaccinated.



¹Includes hospitalizations within 14 days before or after COVID-19 diagnosis date or at time of COVID-19 death
Recent data are incomplete.
Data are preliminary and subject to change.

Unvaccinated people are more likely to get COVID-19. The crude case rate for unvaccinated people has been 2.2 to 3.1 times the rate for fully vaccinated people.



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Notes on this data:

- **Data include:** COVID-19 laboratory positive cases, hospitalizations and deaths — starting on January 17, 2021 (the first Sunday a NYC resident could qualify as fully vaccinated) through August 21, 2021 — that occurred among fully vaccinated people and all residents of NYC living in congregate (which include residents and employees of long-term care facilities, jails, shelters, and other types of congregate living facilities) and community settings in New York City.
- **Fully vaccinated cases (vaccine breakthroughs):** persons with a diagnosis date or reinfection (i.e., positive specimens collected 90 or more days from a previous positive) that occurred 14 or more days after a second dose of mRNA vaccine (Moderna or Pfizer) or 14 or more days after a single dose for viral vector vaccines (Johnson & Johnson).
- **COVID-19 hospitalizations:** hospitalization within 14 days before or after COVID-19 diagnosis date or at time of COVID-19 death.
- **COVID-19 deaths:** death within 60 days of COVID-19 diagnosis date or where COVID-19 cause of death is listed on the death certificate.
- **Vaccination records:** vaccinations of NYC congregate and community setting residents are obtained from a weekly bulk match to the CIR or are imported directly for individual cases from CIR via the Electronic Disease Reporting Infrastructure.