

## Post-Vaccination Outcomes: Report for August 23, 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.

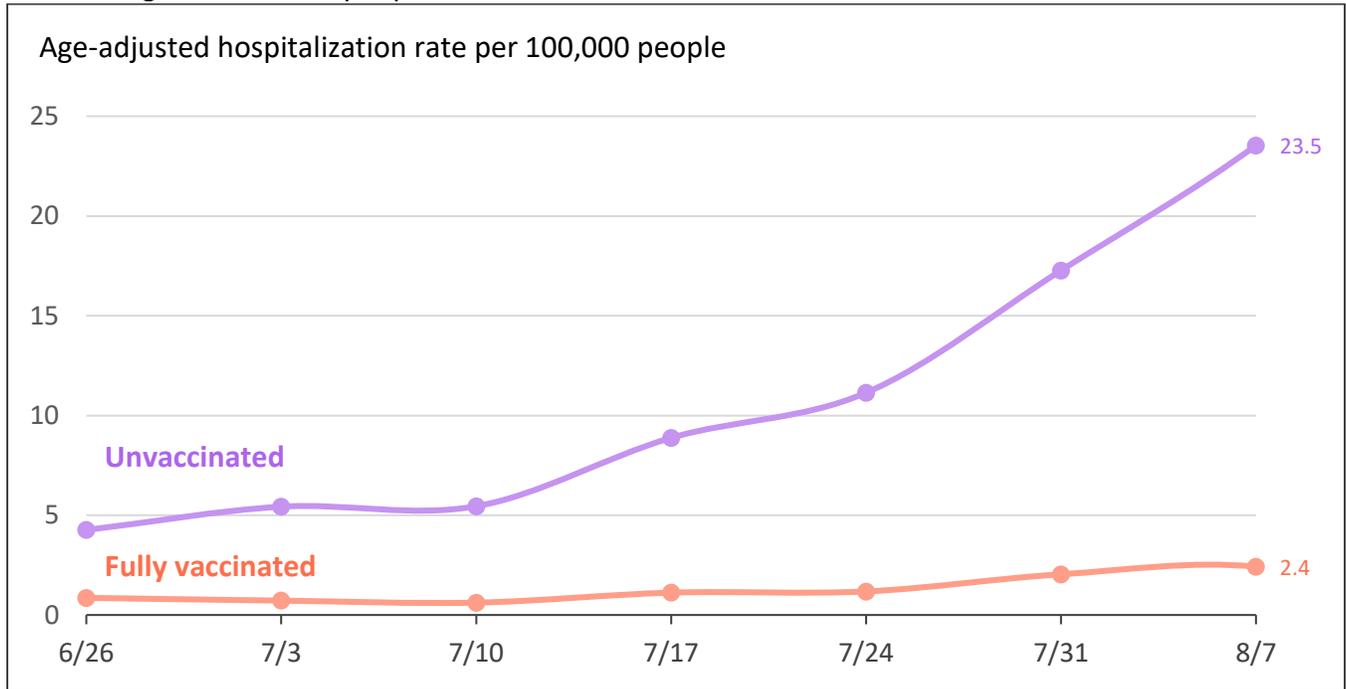
To monitor post-vaccination outcomes, the NYC Health Department uses information from the Citywide Immunization Registry (CIR) matched to reports of confirmed and probable COVID-19 cases.

### Summary of findings:

- COVID-19 cases have recently increased 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 recent weeks 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 January 17, 2021 through August 7, 2021, 96.1% of COVID-19 cases, 96.9% of COVID-19 hospitalizations, and 97.3% of COVID-19 deaths in NYC have been in people who are unvaccinated.

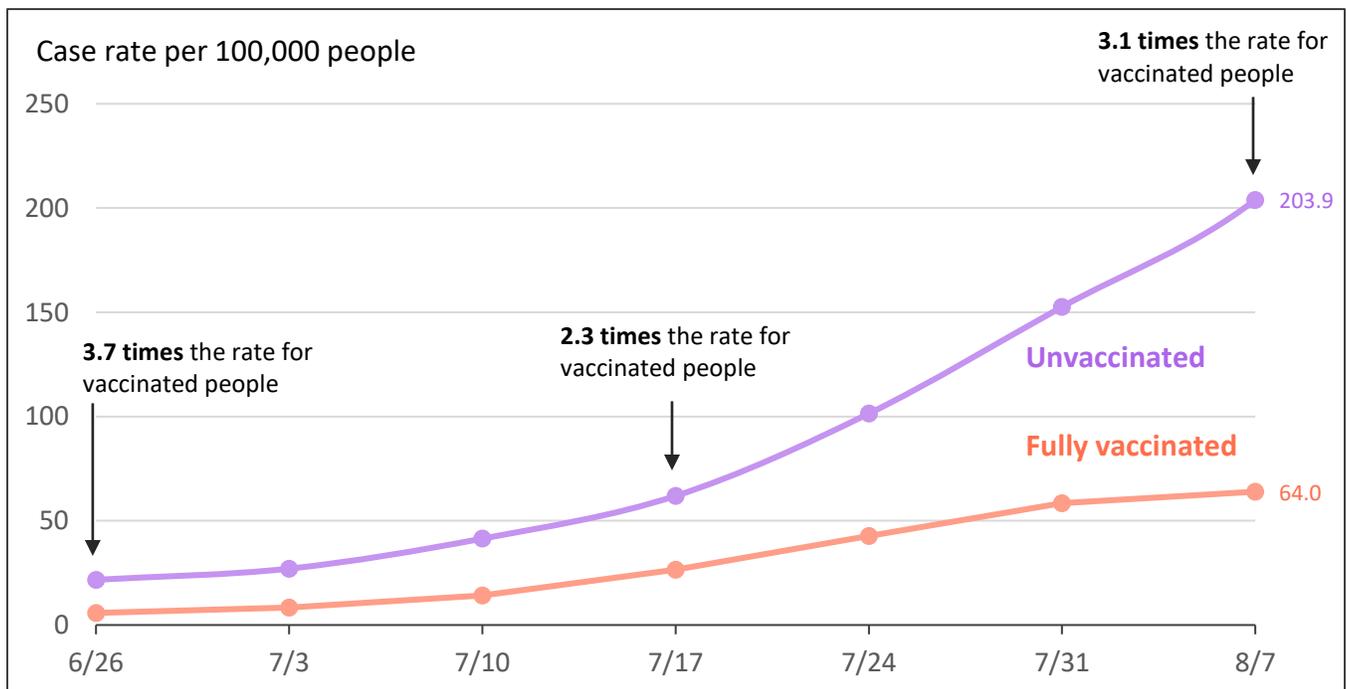
## Key findings of post-vaccination outcomes in NYC:

The **hospitalization rate<sup>1</sup>** has been consistently lower for fully vaccinated people, compared to the rate among unvaccinated people.



<sup>1</sup>Includes 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 much more likely to get COVID-19.** The crude case rate for unvaccinated people has been 2.3 to 3.7 times the rate for fully vaccinated people



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### Very few fully vaccinated New Yorkers are being infected and getting severely sick from COVID-19

- As of the most recent week (August 7, 2021):
  - 0.33% of fully vaccinated New Yorkers have been diagnosed with COVID-19.
  - 0.02% of fully vaccinated New Yorkers have been hospitalized for COVID-19.
  - 0.003% of fully vaccinated New Yorkers have died from COVID-19.

Cumulative cases, hospitalizations, and deaths among fully vaccinated New Yorker since January 17, 2021

As of:	Fully vaccinated:	— Number among fully vaccinated people —			— Percent of fully vaccinated people —		
		Cases	Hospitalizations	Deaths	Cases	Hospitalizations	Deaths
6/26/21	4,004,121	5,543	669	118	0.1384	0.0167	0.0030
7/3/21	4,131,830	5,898	697	123	0.1428	0.0169	0.0030
7/10/21	4,224,848	6,502	725	128	0.1539	0.0172	0.0030
7/17/21	4,299,254	7,637	777	137	0.1776	0.0181	0.0032
7/24/21	4,365,144	9,509	832	141	0.2178	0.0191	0.0032
7/31/21	4,427,563	12,104	926	152	0.2734	0.0209	0.0034
8/7/21	4,484,599	14,986	1,042	153	0.3342	0.0232	0.0034

### Overwhelmingly NYC COVID-19 illness, hospitalizations and deaths are among people who are not fully vaccinated.

- As of the most recent week (August 7, 2021):
  - 96.1% of COVID-19 cases are among those not known to be fully vaccinated.
  - 96.9% of COVID-19 hospitalizations are among those not known to be fully vaccinated.
  - 97.3% of COVID-19 deaths have been among those not known to be fully vaccinated.

Proportion of cumulative COVID-19 cases, hospitalizations, and deaths in New Yorks that are not fully vaccinated since January 17, 2021

As of:	Total cases:	— Among not fully vaccinated people —			— Proportion among not fully vaccinated people —		
		Cases	Hospitalizations	Deaths	Cases	Hospitalizations	Deaths
6/26/21	351,083	345,540	30,350	5,478	98.42	97.84	97.89
7/3/21	352,685	346,787	30,490	5,490	98.33	97.77	97.81
7/10/21	355,127	348,625	30,638	5,503	98.17	97.69	97.73
7/17/21	358,947	351,310	30,846	5,517	97.87	97.54	97.58
7/24/21	365,143	355,634	31,117	5,544	97.40	97.40	97.52
7/31/21	374,116	362,012	31,510	5,570	96.76	97.15	97.34
8/7/21	385,344	370,358	32,035	5,601	96.11	96.85	97.34

### 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 7, 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.