

Omicron Variant: NYC Report for January 13, 2022

The New York City (NYC) Department of Health and Mental Hygiene (Health Department) routinely monitors key indicators of COVID-19 and conducts surveillance to identify and monitor variants of concern.¹ As of the week ending Dec. 25, 2021, the omicron variant has accounted for nearly all coronavirus samples sequenced in NYC. The Health Department routinely reviews surveillance data based on laboratory and provider reporting, symptoms data reported from all 53 NYC hospital emergency departments, as well as New York State (NYS) Health Electronic Response Data System (HERDS) data. These data sources are used to monitor disease trends, evaluate disease severity and monitor hospital capacity. This report summarizes preliminary findings related to the severity and impact of the surge of COVID-19 cases associated with the introduction of the omicron variant to NYC.

Key Findings

- 1. Omicron spreads swiftly — more people infected more quickly in NYC than any other point in the pandemic.**
 - Omicron became the dominant variant in NYC within five weeks after it was first detected. For comparison, the delta variant took 20 weeks to become the dominant variant.
- 2. Although the average severity of emergency department visits for COVID-19-like illness (CLI) was lower for omicron than prior waves, an increase in emergency department visits still predicted an increase in hospitalizations.**
- 3. Overall, a smaller percentage of reported cases were hospitalized compared to the delta wave (about 2% versus about 5%), but there were more total hospitalizations due to significantly greater case numbers. In NYC, those most likely to be hospitalized are people who are not vaccinated, and a higher proportion of Black New Yorkers and people age 75 and older were hospitalized.**
 - New Yorkers who were not vaccinated were more than eight times more likely to be hospitalized compared to New Yorkers who were fully vaccinated, early in the omicron wave.
 - Differences in health outcomes among racial and ethnic groups are due to long-term structural racism, not biological or personal traits.²
- 4. About half the proportion of hospitalized patients have required intensive care thus far in the omicron wave compared to the peak of the winter 2020-21 wave (about 11% versus about 20%). However, the volume of hospitalized COVID-19 patients has surpassed what was seen last winter and the number in the intensive care unit (ICU) is approaching last winter's peak.**

¹ For more information on key indicators of COVID-19 and data on variants, visit nyc.gov/coviddata.

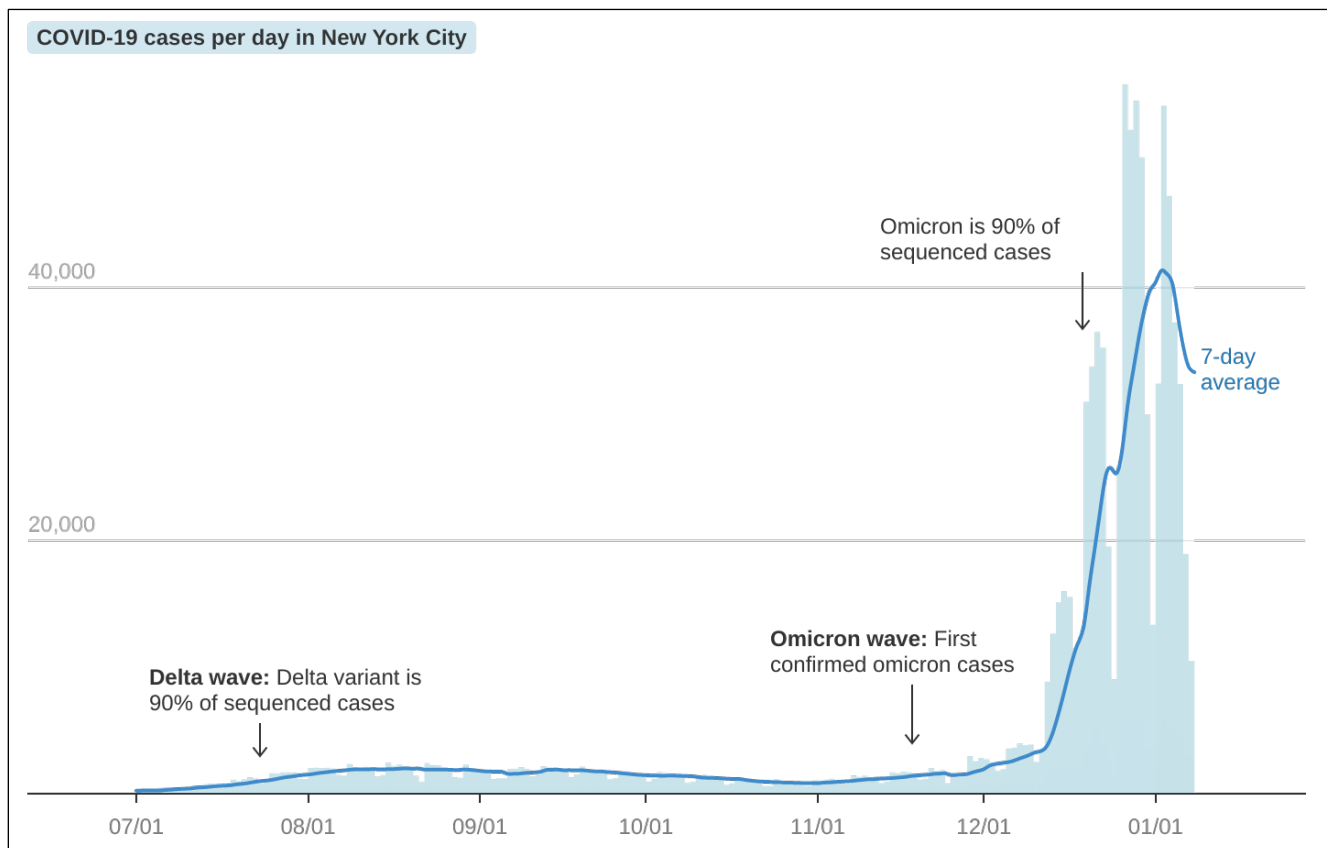
² Structural racism — centuries of racist policies and discriminatory practices across institutions, including government agencies, and society — prevents communities of color from accessing vital resources (such as health care, housing and food) and opportunities (such as employment and education), and negatively affects overall health and well-being. The disproportionate impact of COVID-19 on New Yorkers of color highlights how these inequities continue to negatively influence health outcomes.

5. **Overall number of people in the hospital (for all reasons) has remained stable even as more people have been hospitalized due to COVID-19 illness, conditions worsened by COVID-19 infection, or those hospitalized for other reasons but found to have COVID-19.**
 - Although the overall surge in COVID-19 patients has not reached the level of March 2020, hospitals and other health care facilities are also strained by staff outages related to COVID-19 isolation requirements and other staffing challenges. Total beds available is just one indicator of strain on the health care system and may not adequately reflect the overall strain on the health care system including increased patient-to-staff ratios which can impact the quality of patient care.
6. **Total pediatric hospital census was stable to slightly lower during the omicron wave, though pediatric hospitalizations due to or with COVID-19 increased significantly.**
 - Children who were not vaccinated were significantly more likely to be hospitalized with COVID-19 compared to all children.

Prevalence: Omicron quickly led to a dramatic increase in reported cases

Finding 1: After introduction, omicron quickly became the most prevalent variant and led to a dramatic increase in reported cases. Whereas the delta variant became the dominant variant (from 0% prevalence to more than 90% prevalence) over a period of 20 weeks, omicron became the dominant variant in five weeks.

Figure 1: Reported confirmed and probable COVID-19 cases, New York City, before and after omicron became the predominant circulating variant.

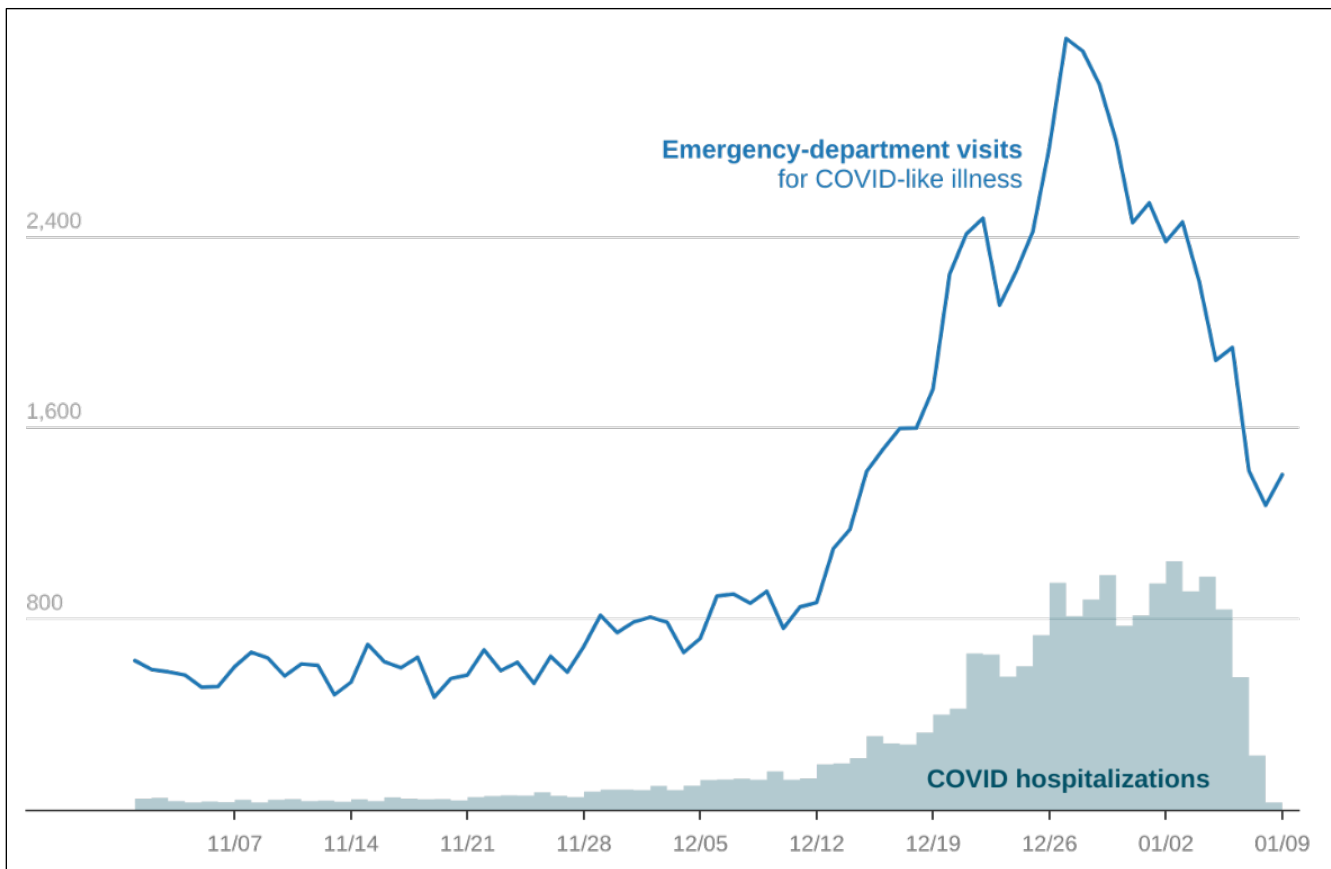


Severity: The Omicron Variant’s Effects on Hospitalizations and COVID-19 Disease Severity

A rise in emergency department (ED) visits predicted a rise in hospitalizations.

Finding 2: When the omicron variant emerged in NYC, it led to a steep rise in the number of people who visited emergency departments with CLI. Shortly afterward, the daily number of hospitalizations increased too.

Figure 2: Daily CLI ED visits and COVID-19 hospitalizations, Nov. 1, 2021 to Jan. 10, 2022

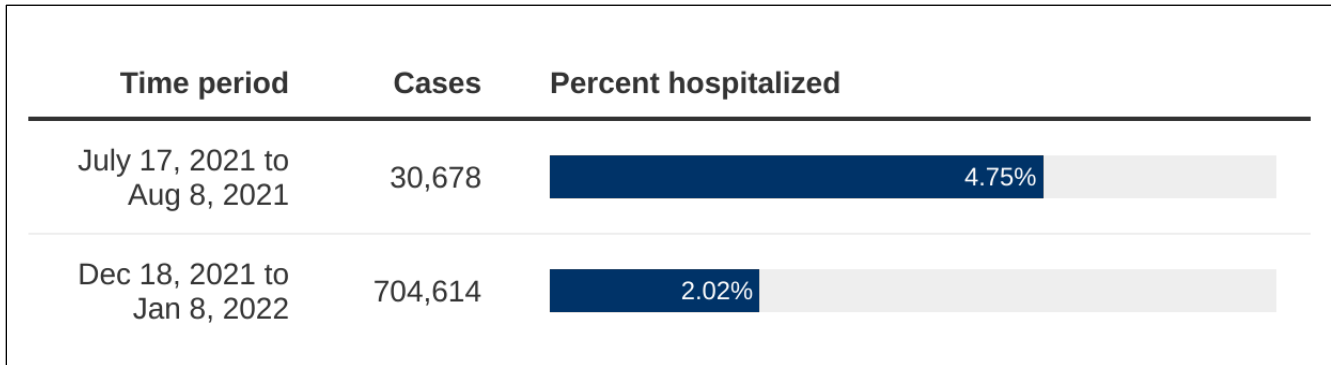


A smaller proportion of patients have been hospitalized.

Finding 3: Overall, a smaller proportion of patients diagnosed with COVID-19 since the omicron variant emerged in NYC have been hospitalized, but the total number of hospitalizations increased because of the very large number of reported cases.

- During a period when cases were increasing due to delta, 5% of reported patients were hospitalized. In the last 30 days, as omicron increased, 2% of patients have been hospitalized.

Figure 3: Percentage of patients hospitalized with COVID-19



This comparison should be interpreted with caution, as possible changes in COVID-19 testing practices over time may have influenced the number of COVID-19 cases identified throughout the pandemic. However, a decrease in the proportion of COVID-19 cases hospitalized during the period of omicron dominance was seen also in Gauteng, South Africa, where approximately 5% of COVID-19 cases were hospitalized during the most recent wave associated with omicron, compared to 19% and 47% during the prior two waves in the region.³

³ Jassat W, Karim SA, Mudara C, et al. Clinical severity of COVID-19 patients admitted to hospitals in Gauteng, South Africa during the Omicron-dominant fourth wave. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3996320. Published December 29, 2021. Accessed January 13, 2022.

Hospitalizations have been dramatically higher among unvaccinated people, older adults, and Black/African American people.

Finding 3: While the total number of hospitalizations increased substantially during the omicron surge due to very high total cases, rates of hospitalization have been dramatically higher among the unvaccinated, and proportion of hospitalizations have been higher among older adults and Black/African American New Yorkers. No meaningful differences in hospitalizations by gender have been observed. At the time of this report, over 73% of all New York City residents were fully vaccinated.

Figure 4: Age-adjusted hospitalization rates by week and vaccination status.

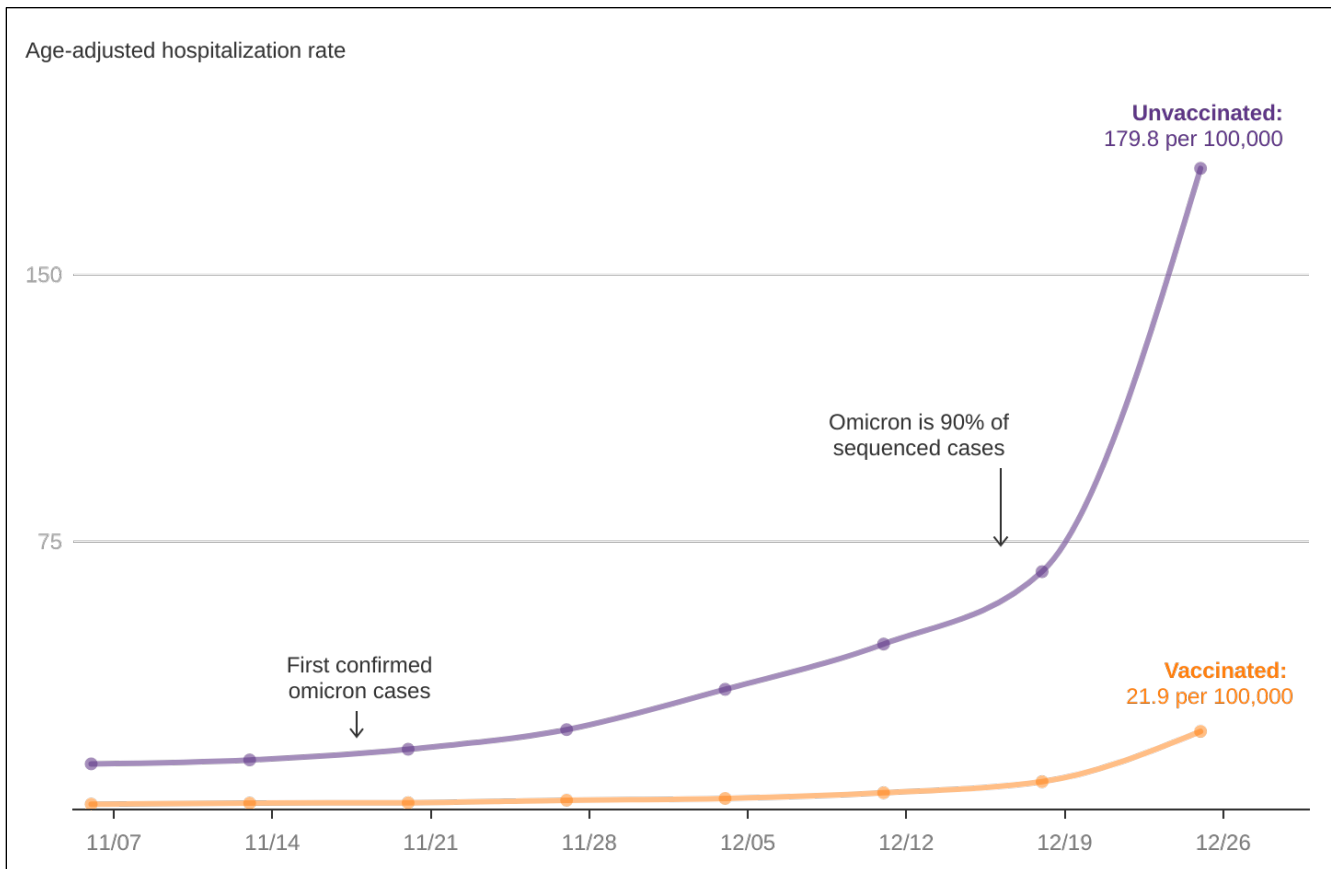
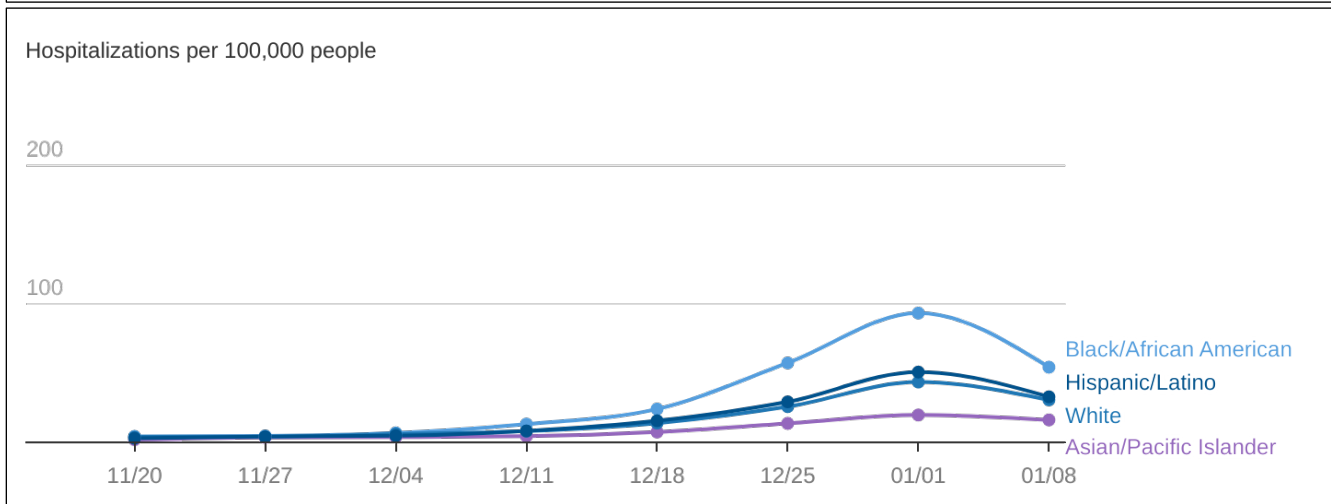
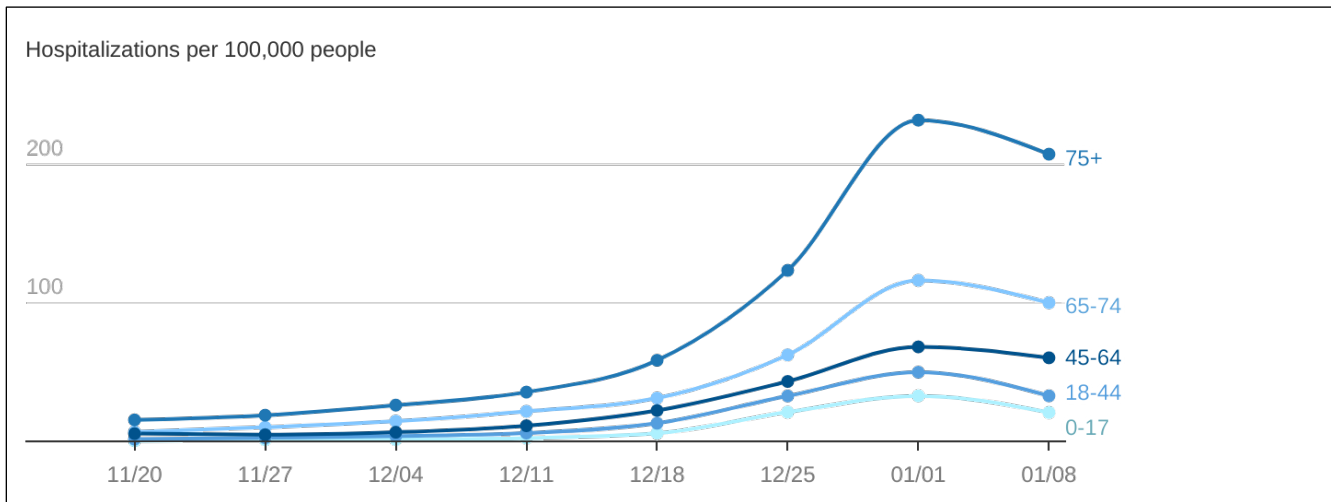


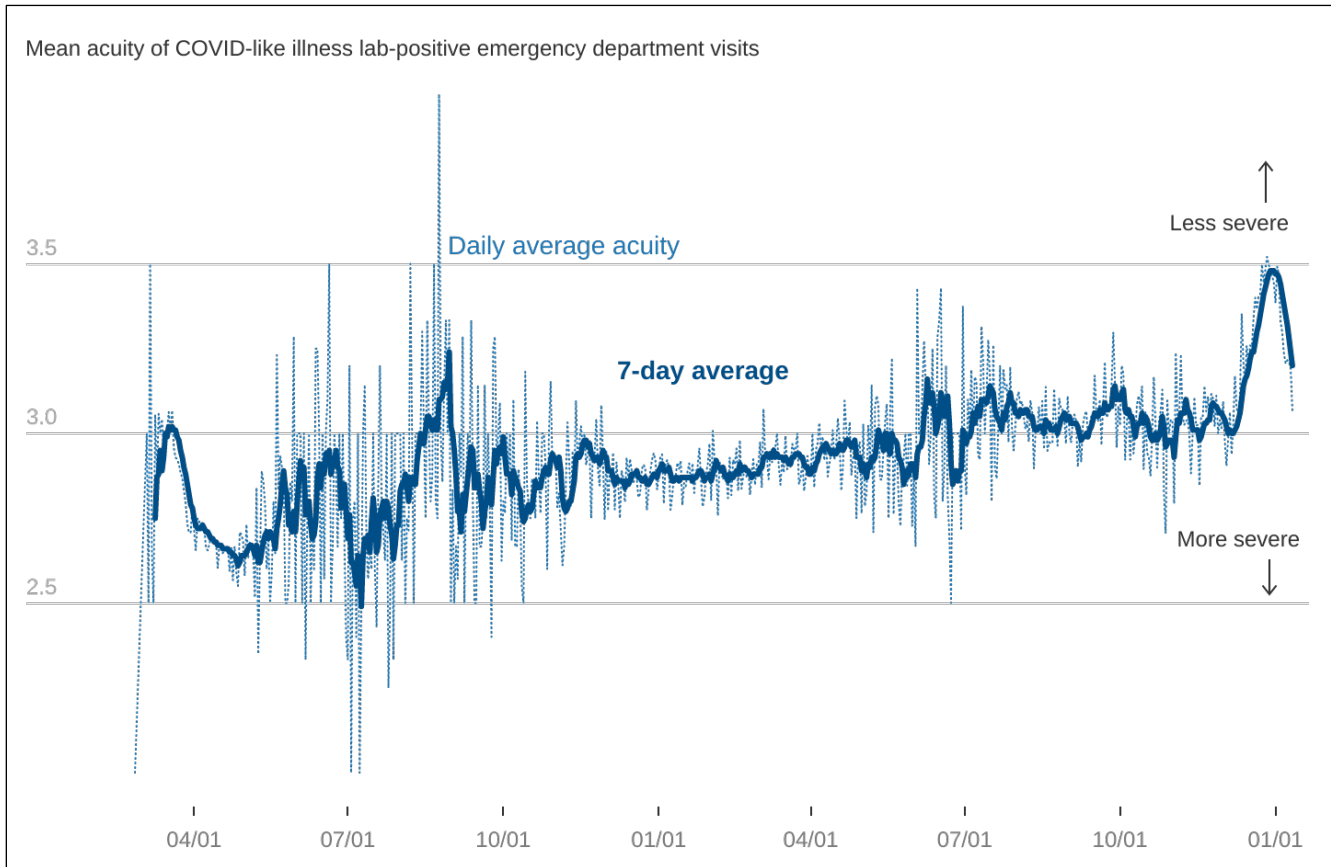
Figure 5: Hospitalization rates by age and race/ethnicity



ED visits for CLI have gotten less severe during the omicron wave.

Finding 4: The average acuity of ED visits for CLI who have a positive COVID-19 test during the omicron wave is less severe compared to previous waves. The emergency severity index is a rating with scale from 1 (most urgent) to 5 (least urgent).

Figure 6: Average severity of CLI lab positive ED visits, March 1, 2020 to Jan. 10, 2022.

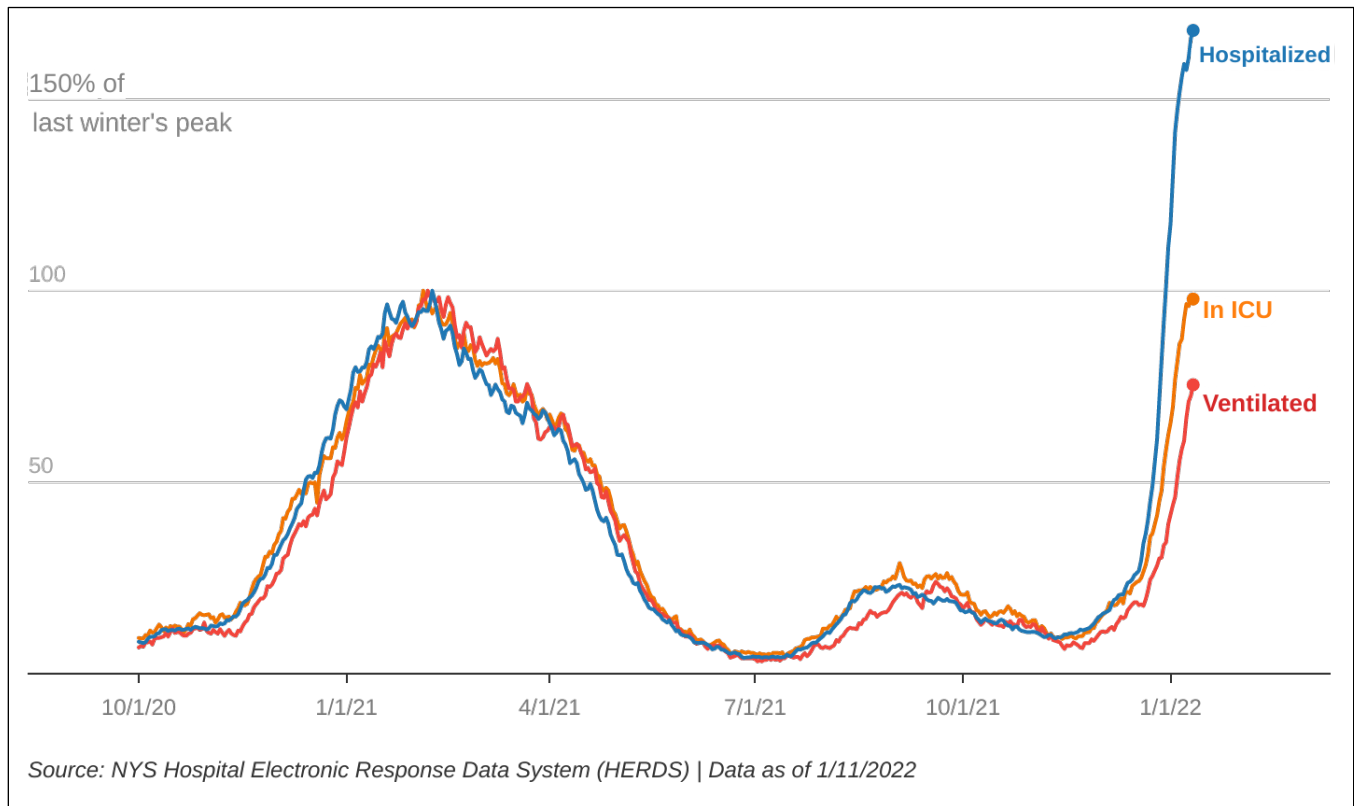


Severity: The Omicron Variant's Impact on Hospitals

The number of hospitalized patients increased dramatically.

Finding 4: As of Dec. 30, 2021, hospitalizations exceeded last winter's surge and the number of patients in the ICU is approaching what was seen last winter.

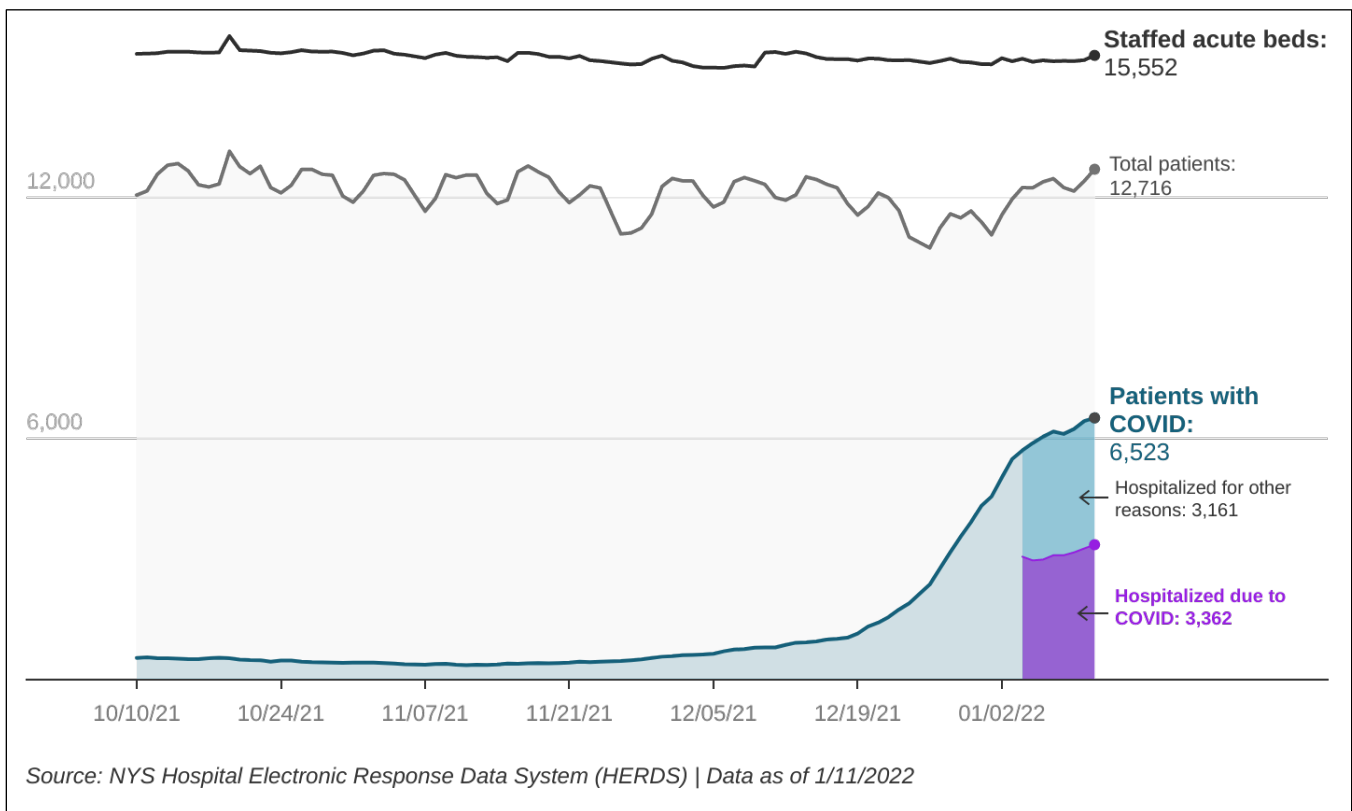
Figure 7: Trends in COVID-19 patients hospitalized and in the ICU



About Half of All Patients in NYC Hospitals Have COVID-19

Finding 5: The total number of patients in the hospital only increased slightly. Beginning on Jan. 5, 2022, hospitals reported patients hospitalized due to COVID-19 as well as those hospitalized for other acute or chronic conditions who were also found to have COVID-19. About half of the hospitalized patients are in the hospital due to COVID-19. Of the other half, it is important to keep in mind the role of COVID-19 infection as a comorbidity or exacerbating factor for other illnesses. Despite stable total numbers of hospitalized patients, staffing shortages have been felt widely during the omicron wave across the health care sector in NYC. Nearly all hospitals report some impact on operations. Hospitals are using several strategies to manage capacity including redeploying staff, using temporary staff, and curtailing some services.

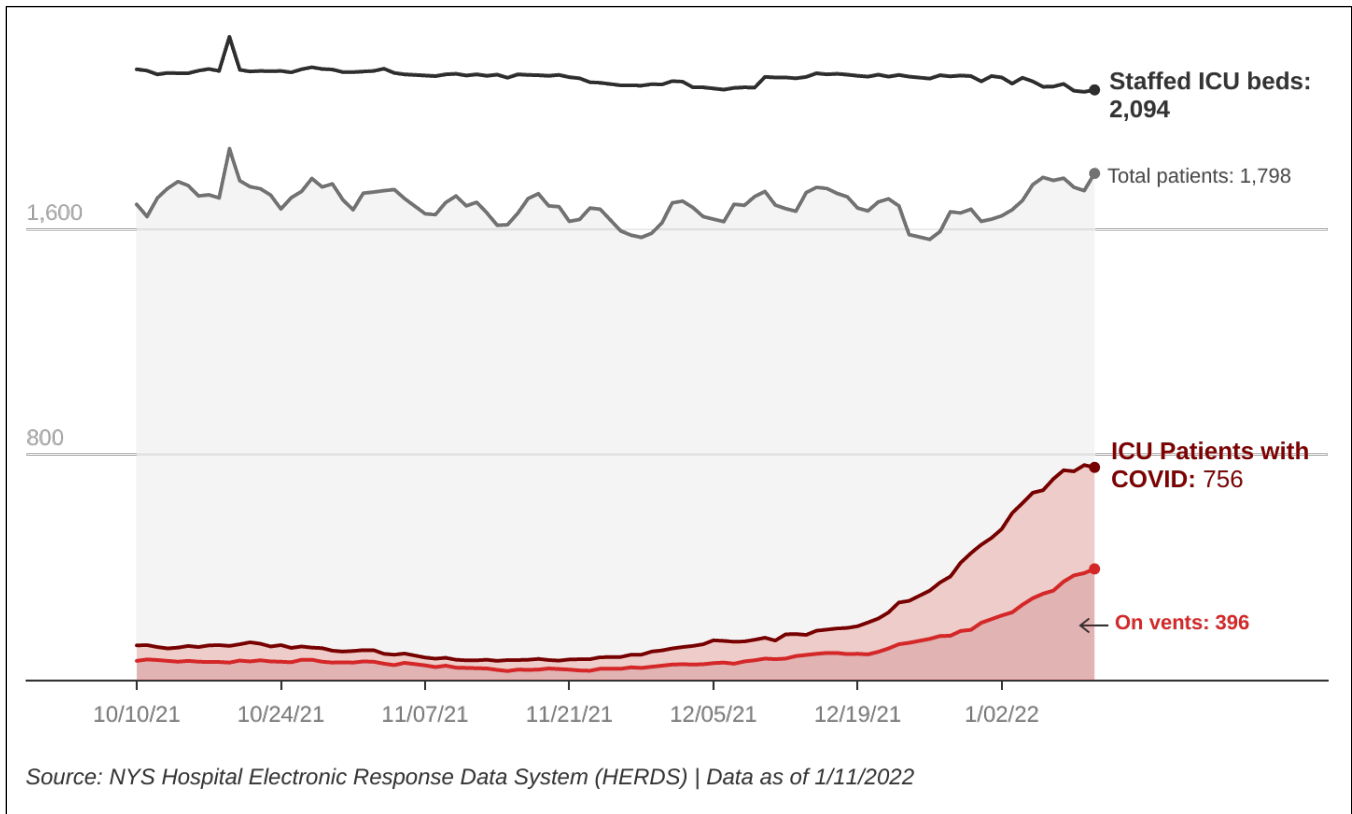
Figure 8: Total staffed acute care beds and bed utilization by COVID-19 status, all NYC hospitals.



As cases rose, the number of COVID-19 patients in the ICU also rose.

Finding 5: The number of COVID-19 patients in the ICU in NYC hospitals increased steadily as the number of cases rose. However, the proportion of patients in the ICU remains lower than in previous waves. From Jan. 3 to 9, 2022, on average, about one in nine hospitalized for COVID-19 were in the ICU and about 45% required ventilator support. During last winter’s peak (Feb. 6 to 13, 2021), closer to 20% of hospitalized COVID-19 patients were in the ICU and 70% were on ventilator support.

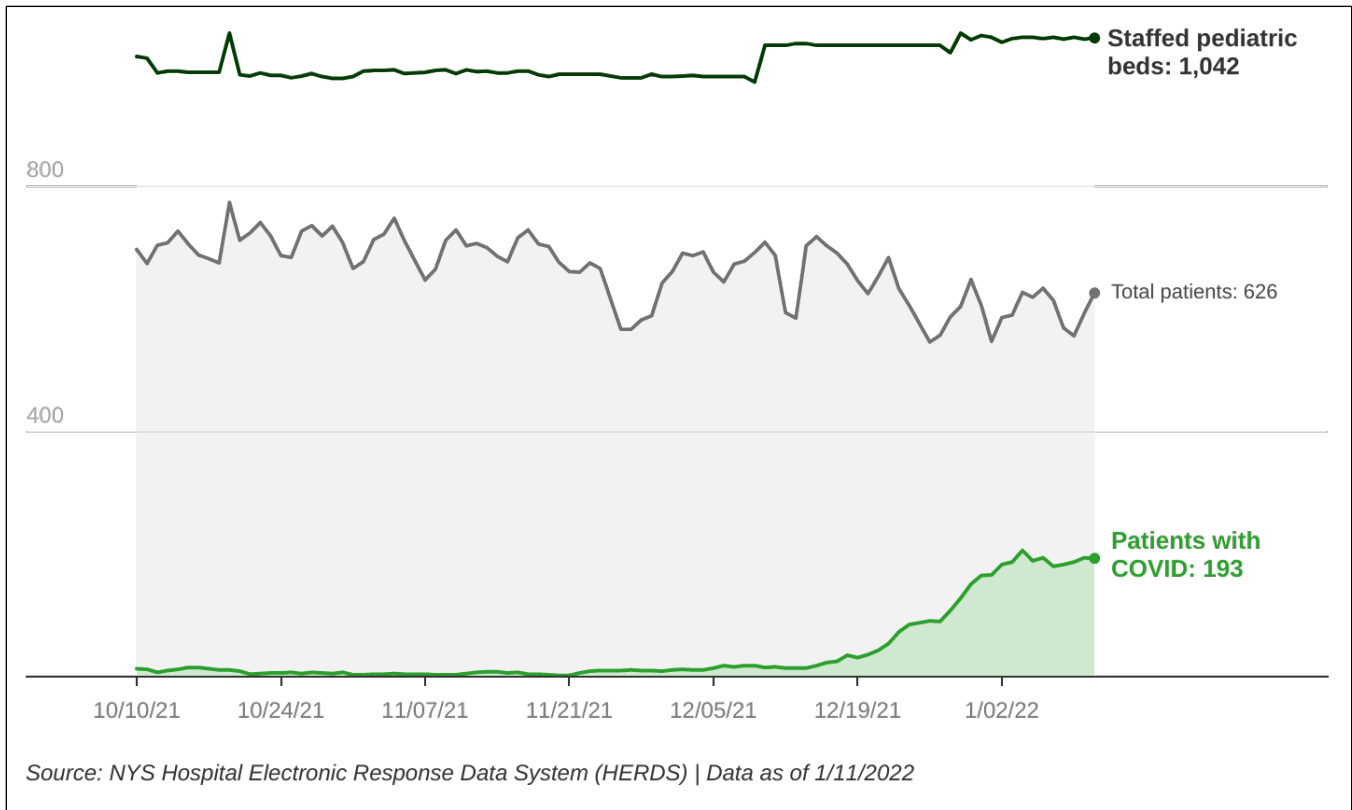
Figure 9: Total staffed ICU beds and bed utilization by COVID-19 status and ventilator requirement, all NYC Hospitals.



Pediatric hospitalizations also increased significantly.

Finding 6: Total pediatric hospital census was stable to slightly lower during the omicron wave, though pediatric hospitalizations due to or with COVID-19 increased significantly.⁴

Figure 10: Total pediatric beds and utilization by COVID-19 status, all NYC hospitals.



⁴ For more information on pediatric hospitalization trends in New York State, read the **Report on Pediatric COVID-19 Hospitalizations** at health.ny.gov/press/releases/2022/docs/pediatric_covid-19_hospitalization_report.pdf.

Limitations

- Given the recency of the omicron surge, there are limited data available to assess severity; therefore, all results are preliminary and subject to change.
- More recent data may be incomplete due to reporting delays.
- Data on vaccination status is lagged and may be incomplete.
- Time-based trends should be interpreted with caution.
 - There may be differences in care-seeking, testing practices and vaccination status during different periods and over time.

Data Sources and Technical Notes

Cases and hospitalizations from reporting to the NYC Health Department. NYC COVID-19 data include people who live in NYC. Any person with a residence outside of NYC is not included. Confirmed COVID-19 cases include persons classified as a confirmed COVID-19 case who tested positive with a molecular test. Probable COVID-19 cases include persons with no positive molecular test on record who test positive with an antigen test, have symptoms and an exposure to a confirmed COVID-19 case, or died and their cause of death is listed as COVID-19 or similar. The Health Department imports information on hospitalization status from a number of sources, including regional health information organizations, NYC public hospitals, non-public hospital systems, remote access to electronic health record systems, the Health Department's electronic death registry system, and the Health Department's syndromic surveillance database that tracks daily hospital admissions from all 53 emergency departments across NYC. People who were hospitalized more than one time are only counted once.

Hospital utilization and occupancy is reported by hospitals to NY State Department of Health. The New York State Health Electronic Response Data System (HERDS) is a survey submitted by hospitals daily on patients hospitalized, admitted, and discharged, as well as bed capacity. Hospitalized COVID-19 patients are lab-confirmed COVID-19 positive and currently admitted in either inpatient or observation beds at the time of report. Data from HERDS on the number of patients hospitalized, in the ICU or on ventilators are not unique over time as they may remain hospitalized over multiple days. Information on staffing impacts to hospitals captured through hospital shared situational awareness tool provided by Greater New York Hospital Association