COVID-19 UPDATE:
FOCUS ON XBB SUBLINEAGES

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All drugs/vaccines issues discussed consistent with FDA approvals or authorizations
COVID-19: UPDATE, 1/18

- Regional differences are increasingly driving the current state of the virus in the United States.

- On the East Coast, cases and hospitalizations are rising notably — and, due to the area’s large population, these increases are enough to drive up national figures. The Carolinas are especially hard hit, with new cases nearly twice as high as they were a month ago.

- In the West, however, many metrics are flat or falling. Several states, including South Dakota and Wyoming, are currently near their all-time lows for reported cases and hospitalizations.

- Deaths are rising, but data anomalies in recent reporting may have inflated these counts.

- Orange County community level = Moderate

COVID-19 IMPACT ON UNC-MC

• Occupational Health: 50-60 COVID-19 related absences
• COVID-19 hospitalizations: ~50-60
• Viral respiratory report (week ending )
  • Overall percent positivity of COVID tests was 9.7%
  • Percent positivity for symptomatic patients being tested was 12.7% (COVID-19)
  • Percent positivity for asymptomatic patients being tested was 4.9% (COVID-19)
  • 43 Flu positive (8 deaths this season) – sustained decline
  • 22 – 50% reduction compared to last week
Admissions to UNC Hospitals for patients with COVID-19 broken down by intensive care and floor units. Data includes transfers of patients between intensive care and floor units. Graph also displays number of weekly COVID related deaths.

Count of UNC Hospitals’ employees out of work on a COVID related Absence (CRA) by day. Data from OHS e-COVID database. Does not include UNC Medical School employees.

Data represents respiratory pathogen panel tests performed by UNC McLendon labs for UNC Hospitals’ facilities. Note: Number of tests and positive results included on the graph are not reflective of all RPP testing done by UNC McLendon Laboratories. COVID19 positives from RPP with COVID orders are included in the first graph of this report.
SARS-CoV-2 Variants: Current Summary

- XBB.1 first reported from India in August 2022; XBB.1.5 first reported from US (NY, CT) in late October 2022
- Epidemiology, US
  - The sublineages BQ.1, BQ.1.1, XBB and XBB.1.5 carry an additional spike mutation in a key antigenic site (i.e. R346T); these sublineages show a significant growth advantage over other circulating Omicron sublineages in many settings
  - Rapid increase of XBB.1 and XBB.1.5 – subvariant with greatest escape from vaccines and natural immunity (also not impacted by Evusheld or Bebtelovimab); similar severity of disease
  - XBB.1.5 = effective Ro, 1.6; 40% higher than any other sublineage
- XBB.1: Recombinant of BA.2.10.1 and BA.2.75 sublineages; evidence pointing at a higher reinfection risk, as compared to other circulating Omicron sublineages
- Best evidence suggests that antivirals (e.g., Remdesivir, Paxlovid, Molnupirvir) retain activity against all variants
  - Paxlovid effectiveness ~50% prevent hospitalizations & 75% to prevent death; also effective in reducing risk of long COVID-19
- Bivalent COVID-19 vaccine elicits lower neutralizing antibodies to XBB than other SARS-CoV-2 variants and Omicron sublineages but is superior to monovalent vaccines including persons who have had 2 boosters (i.e., 4 doses)
  - Vaccination also reduces risk post-COVID-19 of vascular events (heart attacks, strokes; 30-90 days) and long COVID-19
- Only ~18% of Americans 5+ have received bivalent booster; ~35% of persons 65 years and older
Multiple sublineages escape from monoclonal antibody prophylaxis (i.e., Evusheld) and treatment (i.e., bebtelovimab) including BQ.1., BQ.1.1, XBB.1, XBB.1.5

https://covid.cdc.gov/covid-data-tracker/#variant-proportions
Effectiveness of the Bivalent mRNA Vaccine in Preventing Severe Covid-19 Outcomes: an observational cohort study

- **Methods:** This retrospective cohort study included all members of Clalit Health Services, aged ≥65, eligible for a bivalent booster. Hospitalizations and death due to Covid-19 among participants who received the bivalent vaccine were compared with those who did not. A Cox proportional-hazards regression model with time-dependent covariates was used to estimate the association between the bivalent vaccine and Covid-19 outcomes while adjusting for demographic factors and coexisting illnesses. Study enrollment, 9/24/22-12/12/23 (data extraction, 12/14/23)

- **Findings:** A total of 622,701 participants met the eligibility criteria. Of those, 85,314 (14%) received a bivalent-booster during the 70-day study period. Hospitalization due to Covid-19 occurred in 6 bivalent recipients and 297 participants who did not, adjusted hazard ratio (HR): 0.19 (95% CI, 0.08-0.43). Death due to Covid-19 occurred in 1 bivalent recipient and 73 participants who did not, adjusted HR 0.14: (95% CI, 0.02-1.04).

Rates of laboratory-confirmed COVID-19 hospitalizations by vaccination status, CDC

In November 2022, compared to adults ages 18 years and older who received an updated COVID-19 bivalent booster dose, monthly rates of COVID-19-associated hospitalizations were 12.9x Higher in Unvaccinated and 2.7x Higher in Vaccinated Adults without an updated booster. *

13.6x Higher in Unvaccinated Adults Ages 50-64 Years
2.9x Higher in Adults Ages 50-64 Years Vaccinated but Without an Updated Booster
2.5x Higher in Adults Ages 65 Years and Older Vaccinated but Without an Updated Booster

https://covid.cdc.gov/covid-data-tracker/#covidnet-hospitalizations-vaccination