Children's Hospital of Philadelphia
PolicyLab

COVID-19 Outlook: A Pandemic in Transition Requires Updated School Guidance

Population Health Sciences

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As we welcome the new year, we continue to be challenged by high levels of COVID-19 cases in many areas of the country, revealing the omicron variant's increased ability to infect both vaccinated and unvaccinated individuals. The demand on testing has outstripped supply, leaving many struggling to navigate current mitigation guidelines. Fortunately, omicron appears to be associated with less severe illness, likely due to both higher population-level immunity (from vaccination and/or prior infection) and a potentially less virulent virus. Also promising, our COVID-Lab forecasting models from just before Christmas projected a decline in case incidence in the weeks ahead and, in some areas, there is already a decline in emergency department visits and new hospital admissions.

This changing epidemiology and reduced testing access requires us to adapt our guidance for mitigation strategies at the community level and within our schools for the weeks ahead. In this week's blog post, we will update you on current hospital census across the country and provide new recommendations for mitigation of COVID-19 in schools that can be considered alongside emerging guidance from local health departments and the Centers for Disease Control and Prevention (CDC). Immediately following the holidays, data are not yet reliable enough to provide accurate county-level projections of transmission in the weeks ahead, but we plan to return next week with updated forecasts.

Let's start with a review of this week's hospitalization and emergency department data. Note that during periods of very high COVID-19 infection across a community, a significant proportion of hospitalized patients may test positive for SARS-CoV-2 during pre-admission screening, but are hospitalized for reasons unrelated to COVID-19**:**

- National daily adult hospital census surpassed 100,000 patients with confirmed or suspected COVID-19 infection over the weekend and has continued to rise. Pediatric hospital census reached a pandemic high of nearly 3,800 children.
- The Northeast and Mid-Atlantic have seen the most accelerated growth in hospital census. This has led to

peaks in many communities along the I-95 corridor that are surpassing census from last winter, including from New York City down through Washington D.C.
- States in the Southeast (particularly Georgia) and along the southern coastline, from Florida to Texas, are seeing the most quickly growing hospital admissions and census.
- Even as hospitalizations have grown quickly in the last week, emergency department visits are already declining in many locations. Where this is the case, we're also often seeing early evidence of declining hospital admissions, particularly in the Southwest, Mountain West, Pacific Northwest, Upper Midwest, and Upper New England, areas which had already moved past peak. Improvement has been slower in the Mid-Atlantic where COVID-19 impacts were greatest over the holiday season.

Here are some data updates from Dec. 28, 2021 – Jan. 3, 2022, across the 812 counties we're monitoring:

- The national average PCR test positivity rate approached 25%, up from 14% the previous week.
- The average reproduction number (a measure of transmission that estimates how many additional individuals, on average, will be infected by every positive case) was 1.92, the highest weekly average we have recorded since early in the pandemic, with two-thirds of counties above 1.25, indicating substantial transmission.
- Average county-level case incidence rose to 650 weekly cases per 100,000 residents, with three-quarters of all counties above 400 weekly cases per 100,000 residents.
- Three of the regions with the highest measured case incidence over the holiday week were Miami, which accelerated to a pandemic record of 3,500 weekly cases per 100,000 residents, the New York City metropolitan region, which surpassed 2,500 weekly cases per 100,000 residents, and Washington D.C., which surpassed 2,000 weekly cases per 100,000 residents.

Taking stock of unprecedented case incidence and hospitalizations over the holiday period

Years from now, when the COVID-19 pandemic story is retold, the 2021-22 holiday season will be known as one of the most challenging periods for hospitals in many areas of the country. However, omicron cannot be blamed for the entirety of this fall and winter surge. Prior to omicron's presence in the U.S., hospital census in the Upper Midwest, Mountain West, and Upper New England had already exceeded peaks from last winter. Truth be told, a pandemic-weary public had largely abandoned mitigation practices and resumed their lives, creating a ripe environment for SARS-CoV-2 to spread. Add to that a more transmissible omicron variant and you are left with the somewhat predictable and amplified resurgence of cases we've witnessed recently, particularly in the Northeast, Mid-Atlantic and Southeast.

Whereas autumn case incidence peaks in the Upper Midwest and Mountain West neared 700 weekly cases per 100,000 residents, holiday season peaks throughout parts of the country rapidly reached 1,000 to 2,000 weekly cases per 100,000 residents. Through our Project: ACE-IT school-based testing program in southeastern Pennsylvania, we quickly saw the rate of asymptomatic infection rise from less than 1% in students and staff 2 weeks before Christmas, to greater than 5% just before Christmas, to as high as 25% between Christmas and New Years among 3,000 individuals who sought testing last week. Fortunately, that rate has subsided and is closer to 7% this week as the region begins to improve.

(We noted that the positivity rate of 25% last week is nearly 20-fold higher than the measured rate of 800 to 1,200 weekly cases per 100,000 residents that was reported across Philadelphia and its collar counties during the same time period, suggesting that many individuals may have mild or asymptomatic illness, many could not obtain testing, and many may have used at-home tests that were not reported in public health statistics.

While, on average, omicron appears to be associated with milder illness, the extreme peaks in case incidence have still resulted in a rising number of individuals, mostly unvaccinated, with severe disease. Thus, our health care system and those working within it have continued to be pushed beyond capacity. The continued negative consequences of this pandemic on the well-being of patients and providers cannot be overstated. This challenge requires a collective effort to ensure that communities move safely past the worst of this seasonal resurgence.

Finding new footing in the new year

Understandably, the rapid rise in infections and simultaneous hospital capacity challenges have caused anxiety throughout school communities that were prepared to return for in-person instruction this week. Amidst this uncertainty, PolicyLab last week released a statement, endorsed by Children's Hospital of Philadelphia's (CHOP) clinical leadership team, which encouraged schools to reopen for full in-school instruction as planned. Our support to reopen schools is founded on the knowledge that—within our own health system as well as others across the country and globally—the spectrum of illness with omicron is much milder. While data from Project: ACE-IT had revealed that it was spreading at twice the rate in school-aged children and adolescents than in adult school staff, most youth testing positive in the school setting were asymptomatic or had mild respiratory infections. And at CHOP, a lower proportion of children who have been admitted are requiring intensive care services.

With evidence that COVID-19 is becoming a milder infection in most children, and at a time when all adults and youth in K-12 settings have been offered vaccination, our PolicyLab experts and CHOP clinical leadership have reached a consensus that preserving as much in-person schooling as possible outweighs the risks of infection to children and school staff at this stage of the pandemic.

Throughout this pandemic, schools (and particularly the students) have been asked to shoulder a significant burden as high-risk sites for transmission to allow time for community members to receive vaccinations and avert the risk of severe disease. Now that all within K-12 school communities have been offered vaccination, the competing risks to children of education loss from prolonged school closures alongside social isolation are far more concerning than COVID-19 itself. Furthermore, while it is too soon to conclude that COVID-19 has become an endemic seasonal virus like influenza, RSV, or other viruses we typically encounter at CHOP, the declining virulence makes us hopeful that we are rapidly shifting in that direction, particularly for vaccinated individuals. Finally, with limited access to testing and schools overwhelmed with contact tracing and required testing solutions that are no longer feasible or sustainable, the time has come to pivot towards solutions that prioritize normalization of in-school education alongside practical safety measures that can manage the worst of this resurgence. Failure to pivot quickly risks closure of many under-resourced schools, which have been disproportionately impacted by staffing shortages, and whose communities have had more limited access to testing. This has heightened equity concerns in access to in-school education and associated supports in many communities.

Given these deliberations, PolicyLab and CHOP are releasing new guidance that can help school communities and families best navigate this moment of uncertainty and high community transmission. Considerate of recent changes CDC has made to its guidance and reviewed with local health department leaders, our updated recommendations below place greater emphasis on masking to reduce transmission during periods of high case incidence in the community and among individuals with recent exposure or infection, while reducing routine school-based testing and contact tracing. We would from here forward advise that schools:

1. Continue indoor masking requirements within buildings and at school activities, regardless of vaccination status. Await reductions in case incidence and hospitalizations before introducing mask-optional approaches. Please refer to local health department guidance for timing of mask-optional approaches**.**

2. Emphasize to family and staff that individuals with a respiratory illness stay home while symptomatic. Per CDC guidance from January 2022, individuals with respiratory symptoms who test positive for SARS-CoV-2 can return to school 5 days after symptom onset, provided they are asymptomatic or have resolving symptoms (including resolution of fever) and will continue to wear a mask at all times for 5 additional days. No additional tests are required for return to school.

3. Students and teachers with mild symptoms consistent with COVID-19 may consider testing, if available. We recommend individuals with mild illness test for COVID-19 if they or a household contact is at high risk of severe infection. If testing is not available, individuals with mild illness should isolate at home, assume they are infected with COVID-19, but may return to school 5 days after symptoms start, provided they are now asymptomatic or have resolving symptoms and will continue to wear a mask at all times for 5 additional days. If testing is available, and the individual with respiratory symptoms tests negative for SARS-CoV-2, they

can return as soon as they have fever resolution, and their symptoms improve.

4. Discontinue required weekly testing of asymptomatic students, teachers and school staff. If resources allow, offer voluntary participation in weekly testing during periods of high community transmission for those with personal health concerns (e.g., a student with special health care needs, a staff member with chronic illness) or family health risk concerns (e.g., a caregiver with chronic illness).

5. Allow COVID-exposed, but asymptomatic staff and students to continue attending school in person under a 7-day "modified quarantine" during periods of high community transmission (otherwise known as "mask to stay"). Individuals who are exposed to COVID-19 from others outside of their household may attend school and will be required to wear a mask at all times during this 7-day period. Within settings that elect this option, daily symptom screening with referral for testing (or isolation in the absence of testing) would be required for any respiratory symptoms that develop. If testing permits, asymptomatic individuals may also opt in to voluntary testing 5-7 days after exposure based on personal or family risk. Due to a higher risk of secondary transmission from household members, participation in "mask to stay" for individuals whose are exposed to COVID-19 from a household member should be conditional on them having received at least a primary vaccination series (two doses of Pfizer-BioNTech or Moderna vaccines, or a single dose of the Johnson & Johnson vaccine), and those individuals may also be prioritized for an in-school "test to stay" program should sufficient in-school testing be available.

6. Encourage all staff and students to update vaccinations, per CDC and Food and Drug Administration (FDA) guidance. Eligible staff and students should be encouraged to receive booster vaccinations. All children over 5 years of age should be strongly encouraged to complete the primary vaccination series.

This simpler, more flexible approach acknowledges that we have reached a unique point in the COVID-19 pandemic. However, we are hopeful because some locations have moved past their peak, and we are forecasting that other regions will soon follow. Soon enough, we anticipate transitioning to a point where we coexist alongside COVID-19 in our communities. This starts with returning schools to their pre-pandemic footing and normalizing the lives of children and our communities.

Happy New Year from the PolicyLab team; 2022 is bound to be a better year.

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