

Presentation Type:

Poster Presentation - Top Poster Award

Subject Category: COVID-19

Low infectivity among asymptomatic patients with a positive SARS-CoV-2 admission test at a tertiary-care center, 2020–2022

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Background: Many hospitals have implemented admission SARS-CoV-2 testing to evaluate for the need for transmission-based precautions. However, a positive test in an asymptomatic patient may represent (1) active infection, signifying infectiousness; (2) false positivity; or (3) past infection with prolonged viral shedding. We used a strand-specific SARS-CoV-2 reverse real-time polymerase chain reaction (rRT-PCR) assay to assess infectivity among asymptomatic patients with a positive SARS-CoV-2 PCR admission test. **Methods:** We used a 2-step rRT-PCR specific to the minus strand of the SARS-CoV-2 envelope gene. We reviewed records of patients with a positive SARS-CoV-2 PCR who were also tested for the strand-specific SARS-CoV-2 PCR within 2 days of admission at Stanford Health Care during July 2020–April 2022. We restricted our analysis to each patient’s first test. We calculated the percentage of detectable minus strand-specific tests among asymptomatic patients over time and gathered descriptive statistics for age, sex, and immunocompromised state. **Results:** In total, 848 admitted patients had strand-specific SARS-CoV-2 assays performed. Of 532 patients with a strand-specific assay done within 2 days of admission, 242 (45%) were asymptomatic. Among asymptomatic patients, the mean age was 56 years (range, 19–99), 133 (55%) were male, 50 (21%) had immunocompromising conditions, and 30 (12%) were admitted for a surgical procedure. In total, 21 (9%; range, 4%–25% per quarter) had detectable minus strand-specific assays (Fig. 1). **Conclusions:** Most asymptomatic patients tested for SARS-CoV-2 on admission were not infectious. Hospitals using SARS-CoV-2 PCR admission testing may need to re-evaluate the continued use of this practice.

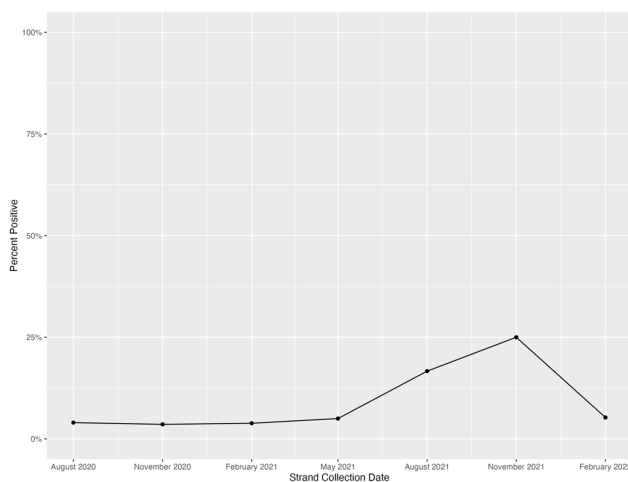


Fig. 1. Minus strand-specific SARS-CoV-2 assay percentage positivity per quarter among asymptomatic patients tested within 2 days of admission. The peak positivity in November 2021–January 2022 quarter coincided with the SARS-CoV-2 omicron variant surge in our county.

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Hospital-onset COVID-19: Associations with population- and hospital-level measures to guide infection prevention efforts

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Objective: To characterize hospital-onset COVID-19 cases and to investigate the associations between these rates and population and hospital-level rates including trends in healthcare worker infections (HCW), community cases, and COVID-19 wastewater data. **Design:** Retrospective cohort study from January 1, 2021, to November 23, 2022. **Setting:** This study was conducted at a 589-bed urban Midwestern tertiary-care hospital system. **Participants and interventions:** The infection prevention team reviewed the electronic medical records (EMR) of patients who were admitted for >48 hours and subsequently tested positive for SARS-CoV-2 to determine whether COVID-19 was likely to be hospital-onset illness. Each case was further categorized as definite, probable, or possible based on viral sequencing, caregiver tracing analysis, symptoms, and cycle threshold values. Patients were excluded if there was a known exposure prior to admission. Clinical data including vaccination status were collected from the EMR. HCW case data were collected via our institution’s employee health services. Community cases and wastewater data were collected via the Wisconsin Department of Health Services database. Additionally, we evaluated the timing of changes in infection prevention guidance such as visitor restrictions. **Results:** In total, 156 patients met criteria for hospital-onset COVID-19. Overall, 6% of cases were categorized as definite, 24% were probable, and 70% were possible hospital-onset illness. Most patients were tested prior to a procedure (31%), for new symptoms (30%), and for discharge planning (30%). Also, 53% were symptomatic and 41% received treatment for their COVID-19. Overall, 38% of patients were immunocompromised and 27% were unvaccinated. Overall, 12% of patients died within 1 month of their positive SARS-CoV-2 test, and 11% required ICU admission during their hospital stay. Hospital-onset COVID-19 increased in fall of 2022. Specifically, October 2022 had 16 cases, whereas fall of 2021 (September–November) only had 3 cases total. Finally, similar peaks were observed in total cases by week between healthcare workers, county cases, and COVID-19 wastewater levels. These peaks correspond with the SARS-CoV-2 delta and omicron variant surges, respectively. **Conclusions:** Hospital-onset cases followed similar trends as population and hospital-level data throughout the study period. However, hospital-onset rate did not correlate as strongly in the second half of 2022 when cases were disproportionately high. Given that hospital-onset cases can result in significant morbidity, continued enhanced infection prevention efforts and low threshold for testing are warranted in the inpatient environment.

Disclosure: None

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