Background: Coronavirus disease 2019 (COVID-19) has demonstrated a variety of presentations and clinical complications, among them coinfection of pneumonia with the mold Aspergillus spp. Patients at risk for invasive disease include transplant recipients and those with prolonged neutropenia, immune disorders, cystic fibrosis, and steroid use. There have been recent descriptions of coronavirus disease-associated pulmonary aspergillosis (CAPA). An outbreak investigation into a cluster of Aspergillus fumigatus infections in a health system intensive care unit uncovered a community-onset (CO) increase in CAPA. Methods: A multidisciplinary outbreak investigation was conducted evaluating sources of contamination, completion of construction projects, and changes in clinical processes. Retrospective chart review was done for the prior 18 months and incidence density rates for Aspergillus infections from June 2019 through December 2020 were calculated per 10,000 patient days, stratified by unit, specimen source, and coinfection with COVID-19. Data were linked with all positive and negative COVID-19 tests performed by the health system’s regional laboratory from March to December 2020. Healthcare-onset (HO) classification was based on infections identified ≥7 days after admission. Statistical analysis was calculated with significance at p < 0.05. Results: Over the last 18 months, 82 patients were identified positive with Aspergillus cultures; of which 10 (12%) met CAPA definitions. Aspergillus fumigatus was the most common species and accounted for 62% of samples, followed by Aspergillus niger (17%). Median rates of HO Aspergillosis were 0.45 cases per 10,000 patient days, whereas the median total rates of infection were 1.97 cases per 10,000 patient days. Rates of CAPA coincided with COVID-19 hospitalization rates. In the spring and fall, surges of COVID-19, the rate ratio of CAPA to COVID-19 hospitalized infections per 10,000 patient days, ranged from 0.006 to 0.015. Once CAPA infections were adjusted for, rates of HO Aspergillus remained high, whereas HO cases suggested baseline acquisition. Conclusion: This study outlines rates of HO aspergillosis as well as CAPA rates coinciding with the healthcare system’s spring and fall surges of COVID-19 hospitalizations. Despite the determination that this was not a hospital-acquired cluster, the investigation revealed some areas for opportunity in construction processes along with maintaining coverage of all patient supplies to reduce the risk of contamination.

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Disclosures: None

Aspergillosis

Aspergillus fumigatus

Aspergillus niger

COVID-19

COVID-19 intensive care unit

COVID-19 hospitalizations

COVID-19 intensive care unit in September

COVID-19 survival

COVID-19 transmission
2020. Source investigation, contact tracing, and serial testing revealed 3 additional patients, and 8 HCWs. One HCW also had a community exposure. Patient median age was 60 years (range, 48–68) and all were male. In total, 11 samples (4 patients and 7 HCWs) were sequenced. Using WGS, cluster 1 was confirmed to be an outbreak: WGS showed 0–5 mutations in between samples. Cluster 2 was also an outbreak: WGS showed less diversity (0–3 mutations) and ruled out the HCW with a community exposure (20 mutations of difference). Conclusion: Whole-genome sequencing confirmed the outbreaks identified using classic epidemiologic methods. Serial testing allowed for early outbreak detection. Early outbreak detection and implementation of control measures may decrease outbreak size and genetic diversity.

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Subject Category: COVID-19
COVID-19 Vaccination of HCWs in the First Phase of a Large-Scale Mass Vaccination Program within a Healthcare System
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Background: The approval of the first SARS-COV-2 vaccines for COVID-19 were accompanied by unprecedented efforts to provide vaccination to healthcare workers and first responders. More information about vaccine uptake in this group is needed to better refine and target educational messaging.

Methods: HCA Healthcare used federal guidance and internal experience to create a systemwide mass vaccination strategy. A closed point-of-dispensing (POD) model was developed and implemented. The previously developed enterprise-wide emergency operations strategy was adapted and implemented, which allowed for rapid development of communications and operational processes. A tiering strategy based on recommendations from the National Academies was used in conjunction with human resources data to determine vaccine eligibility for the first phase of vaccination. A comprehensive data and reporting strategy was built to connect human resources and vaccine consent data for tracking vaccination rates across the system.

Results: Vaccination of employed and affiliated colleagues began December 15, 2020, and was made available based on state-level release of tiers. Within the first 6 weeks, in total, 203,544 individuals were eligible for vaccine based on these criteria. Of these, 181,282 (89.1%) consented to and received vaccine, 19,788 (9.7%) declined, and 2,474 (1.2%) indicated that they had already been vaccinated. Of those eligible, the highest acceptance of vaccine was among the job codes of specialists and professionals (n = 7,914 total, 100% consent), providers (n = 23,335, 99.6%), and physicians (n = 3,218, 98.4%). Vaccine was most likely to be declined among job codes of clerical and other administrative (n = 12,889 total, 80.1% consent), clinical specialists and professionals (n = 22,853, 81.0%), and aides, orderlies and technicians (n = 17,803, 82.6%). Registered nurses made up the largest eligible population (n = 56,793), and 89.5% of those eligible consented to receive vaccination. Average age among those who consented was slightly older (48.3 years) than those that declined (44.7 years), as was length of employment tenure (6.9 vs 5.0 years).

Conclusion: A large-scale, closed POD, mass vaccination program was able to vaccinate nearly 200,000 healthcare workers for SARS-CoV-2 in 6 weeks. This program was implemented in acute-care sites across 20 different US states, and it was able to meet the various state-level requirements for management of processes, product, and required reporting. The development of a standardized strategy and custom, centralized monitoring and reporting facilitated insight into the characteristics of early vaccine adopters versus those who decline vaccination. These data can aid in the refining and targeting of educational materials and messaging about the SARS-CoV-2 vaccine.

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