

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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Presentation Type:

Poster Presentation - Top Poster Award

Subject Category: COVID-19

COVID-19 Vaccination of HCWs in the First Phase of a Large-Scale Mass Vaccination Program within a Healthcare System

Kimberly Korwek; E. Jackie Blanchard; Julia Moody; Katherine Lange; Ryan Sledge; Maria Benedetti and Kenneth Sands

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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Presentation Type:

Poster Presentation - Top Poster Award

Subject Category: Disinfection/Sterilization

High-Level Disinfection in Ambulatory Care: Overcoming the Barriers of a Decentralized System through Auditing and Education

Sonja Rivera Saenz

Background: High-level disinfection (HLD) of semicritical instruments in a multispecialty ambulatory care network has the potential for increased risk due to the decentralized instrument reprocessing and lack of a sterile processing department. Attention to HLD practices is an important part of device-borne outbreak prevention. **Method:** An HLD database was developed to identify specific departments and locations where HLD occurred across a 30-medical practice ambulatory care network in eastern Massachusetts, which included otolaryngology, urology, endoscopy, and obstetrics/gynecology departments. Based on qualitative feedback from managers and reprocessing staff, this database centralized information that included the supply inventory including manufacturer and model information, HLD methodology, standard work, and listing of competency evaluations. The infection control team then led audits to directly observe compliance with instrument reprocessing and a monthly-driven HLD calendar was developed to enforce annual competencies. **Result:** The results of the audits demonstrated variability across departments with gaps in pre-cleaning, transportation of used instruments, the dilution of enzymatic cleaner, and maintenance of quality control logs. Given the uniqueness of shape and size of various ambulatory locations, proper storage and separation between clean and dirty spaces were common pitfalls. Auditing also revealed different levels of staff understanding of standard work and variable inventory management. Centralized education sessions held jointly by the infection control team and various manufacturers for the reprocessing staff helped to create and reinforce best practices. **Conclusion:** Decentralized HLD that occurs across multiple ambulatory care sites led to gaps in instrument reprocessing and unique challenges due to variable geography of sites, physical space constraints, and an independent approach to procuring medical supplies. Through the auditing and feedback of all areas that perform HLD, an effective and sustainable strategy was created to ensure practice improvement. Streamlining standard work, seeking direct input from frontline staff, and collective educational events were critical to our success in the ambulatory setting.

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Poster Presentation - Top Poster Award

Subject Category: Long-Term Care

Coronavirus in Wisconsin Nursing Homes: A Longitudinal Analysis of the First 10 Months of the Pandemic

Cameron Gmehlin; Frida Rivera; Jorge Ramos-Castaneda; Liliana Pezzin; Edmund Duthie and L. Silvia Munoz-Price

Background: The COVID-19 pandemic has disproportionately affected nursing home residents, and emerging evidence suggests quality, location, resident demographics, and staffing levels may be related to COVID-19 incidence within facilities. We describe the distribution of COVID-19 cases in Wisconsin nursing homes from January 2020 to October 2020, the effect of rural versus urban locations on COVID-19 incidence, and the temporal changes in COVID-19 incidence. **Methods:** We constructed a database using the Center for Medicaid and Medicare Services' (CMS) publicly available data. Variables obtained per facility included location, number of beds, ownership type, average census, 5-star ratings (overall, quality, health, staffing, and nurse staffing categories), number of COVID-19 cases, resident Medicaid/Medicare share, area deprivation index, and social vulnerability index. Nursing homes were divided into tertiles based on total COVID-19 cases for descriptive analysis (zero cases, 1–7 cases, >7 cases). Demographic and clinical variables were reported as frequencies, mean

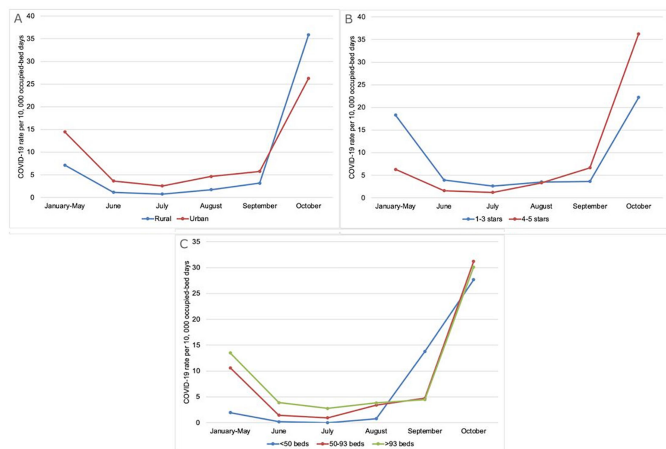


Figure 1: Temporal analysis of various nursing home characteristics vs calculated COVID-19 incidence.

(standard deviation) or median (interquartile range). We compared groups using the Pearson χ^2 test and the Kruskal-Wallis test. COVID-19 incidence rates were calculated by dividing the number of COVID-19 cases by monthly occupied bed days and multiplied by 10,000. **Results:** From January 1, 2020, to November 1, 2020, in total, 3,133 SARS-CoV-2–confirmed cases were reported among 248 (70.5%) nursing homes. Urban location ($P = .027$), overall 5-star rating ($P = .035$), number of beds ($p < 0.001$), and average count of residents per day ($p < 0.001$) were associated with a greater number of COVID-19 cases. Temporal analysis showed that the highest incidence rates of COVID-19 in NHs were observed from January to May and in October 2020 (11.36 and 30.33 cases per 10,000 occupied-bed days, respectively). Urban NHs experienced higher incidence rates until September, then incidence rates among rural facilities surged (Fig.1A). In the first half of the year, NHs with lower quality scores (1-3 stars) had a higher COVID-19 incidence rate; however, in August this trend reversed, and facilities with higher quality scores (4-5 stars) showed the highest incidence rates (Fig.1B). Fig. 2 shows a temporal depiction of the shift from urban to rural settings. **Conclusions:** Higher COVID-19 incidence rates during the first 5 months of the pandemic were observed in urban, larger facilities with lower 5-star rating. By the end of the year, nursing homes in rural areas and those with higher quality ratings had the highest incidence rates.

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Presentation Type:

Poster Presentation - Top Poster Award

Subject Category: Respiratory Viruses Other than SARS-CoV-2

Traditional Definition of Healthcare-Associated Influenza Underestimates Cases Associated with Other Healthcare Exposures

Erin Gettler; Thomas Talbot; H. Keipp Talbot; Bryan Harris; Danielle Ndi; Edward Mitchel; Tiffanie Markus and William Schaffner

Background: Healthcare-associated transmission of influenza leads to significant morbidity, mortality, and cost. Most studies classify healthcare-associated viral respiratory infections (HA-VRI) as those with a positive test result after the first 3 days following admission, which does not account for healthcare exposures prior to admission. Utilizing an expanded definition of healthcare-associated influenza, we aimed to improve the estimates of disease prevalence on a population level. **Methods:** This study included laboratory-confirmed cases of influenza in adult and pediatric patients admitted to any acute-care hospital in a catchment area of 8 counties Tennessee identified between October 1, 2012, and April 30, 2019. Surveillance information was abstracted from hospital and state laboratory databases, hospital infection control practitioner databases, reportable condition databases, and electronic health records as a part of the Influenza Hospitalization Surveillance Network (FluSurv-NET) by the Centers for Disease Control and Prevention (CDC) Emerging Infections Program (EIP). Cases were defined as healthcare-associated influenza laboratory confirmation of infection occurred (1) on or after hospital day 4 (“traditional definition”), or (2) between hospital days 0 and 3 in patients transferred from a chronic care facility or with a recent discharge from another acute-care facility in the 7 days preceding the current index admission (ie, enhanced definition). The proportion of laboratory-confirmed influenza designated as HA-VRI using both the traditional definition as well as with the added enhanced definition were compared. Data were imported into Stata software for analysis. **Results:** We identified 5,904 cases of laboratory-confirmed influenza in hospitalized patients over the study period. Using the traditional definition for HA-VRI, only 147 (2.5%, seasonal range

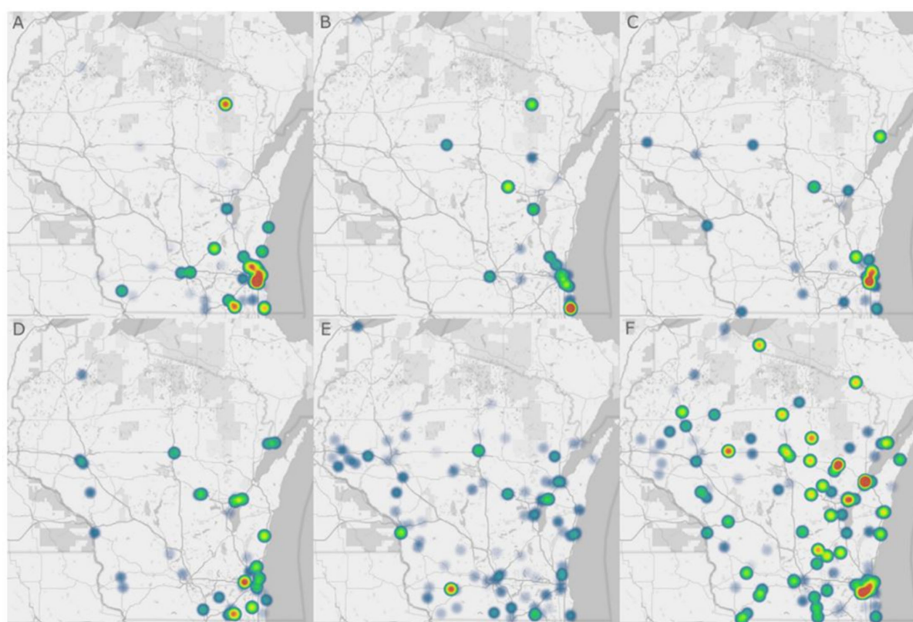


Figure 2: Map of COVID-19 incidence in Wisconsin nursing homes from January to October.