Figure 1. Identification of Microorganisms responsible for ventilatory associated pneumonia during Pre-COVID 19 period.

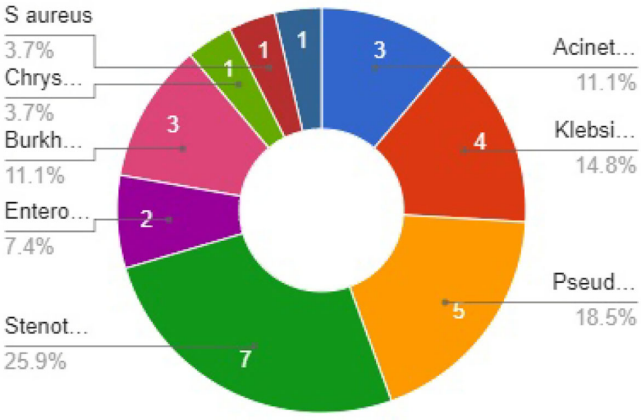
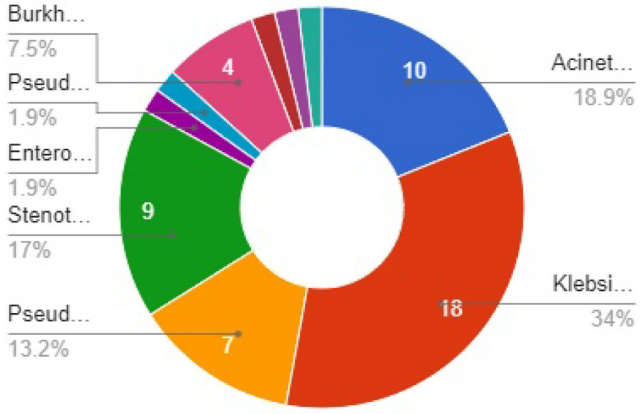


Figure 2. Identification of Microorganisms responsible for ventilatory associated pneumonia during COVID 19 period.



disease (14 vs 9; $P = .0012$), which decreased significantly from the pre–COVID-19 period to the COVID-19 period. Only 15 (56%) of 27 versus 37 (70%) of 53 patients developed MDR-VAP during the pre–COVID-19 and COVID-19 period, with incidence densities of 19.3 of 1,000 and 27.8 of 1,000 ventilator days ($P = .0371$), respectively. The median length of stay prior to VAP for the pre–COVID-19 and COVID-19 periods were 17 and 10 days, respectively ($P < .0001$). Extended-spectrum β-lactamase (ESBL) resistance increased significantly from 1 (3.7%) of 27 before COVID-19 to 15 (28.3%) of 53 during the COVID-19 period. Carbapenem-resistant Enterobacteriaceae (CRE) resistance was higher before COVID-19 than during the COVID-19 period: 15 (56%) of 27 versus 10 (19%) of 53. In both periods, *Klebsiella pneumoniae* and *Acinetobacter baumannii* were the most common pathogens isolated. Mortality was high in both periods at 93% and 83%, respectively. Only female sex was associated with MDR-VAP in the COVID-19 period on multivariate analysis (OR, 3.47; 95% CI, 1.019–11.824; $P < .047$). **Conclusions:** The frequency of VAP and MDR-VAP increased during the COVID-19 period, despite a shorter median hospital stay. Mechanisms of resistance differed in the pre–COVID-19 and COVID-19 periods. Mortality with VAP was extremely high. The factors associated with increased risk of VAP and COVID-19 need to be studied further, and measures to prevent VAP should be prioritized.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s51–s52
doi:10.1017/ash.2023.293

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: COVID-19

Identifying COVID-19 clusters in Tennessee long-term care facilities based on weekly staff vaccination rates

Marissa Turner; Ashley Gambrell; Erin Hitchingham and Simone Godwin

Background: In September 2021, the CMS mandated that long-term care facility (LTCF) healthcare workers be vaccinated for COVID-19 unless medically or religiously exempt. Vaccinating healthcare workers reduces transmission of COVID-19 among patients and workers, reducing the risk of illness among residents and patients. We examined the relationship between COVID-19 clusters and staff vaccination rates in Tennessee LTCFs. **Methods:** COVID-19 cluster data were collected using REDCap from January 3, 2021, to September 25, 2022, and LTCF vaccination rates were collected from the NHSN. Clusters were identified in facilities with 2 or more cases. The staff vaccination rate 2 weeks prior to the cluster was used, accounting for the lag time between vaccination dose and reaching full immunity. We selected 75% as the critical immunization threshold. The facility case rate was calculated per 100 beds. A test was performed to determine whether reaching the critical vaccination threshold was associated with cluster occurrence. The relationship between vaccination rate and case number was tested using Pearson correlation. Statistical analyses were conducted using SAS version 9.4 software. **Results:** The average staff vaccination rate when NHSN first required long-term care facilities to report rates rose from 47% in June 2021 to 83% in September 2022. In total, 806 clusters were identified with 20,868 combined weeks from all facilities being reported after merging facilities' weekly vaccine percentage rates with cluster data. Most weeks from all facilities did not identify a cluster (n = 20,064, 96.15%) and did not meet the critical immunization threshold (n = 11,050, 52.95%). The association between a cluster occurring and a facility meeting the threshold was significant ($\chi^2 = 5.41$; df = 1; P 95% CI, .7327–.9740). The Pearson correlation coefficient between vaccination rate and case number was 0.05560 ($P = .2894$). **Conclusions:** There was a significant association between facilities not reaching the immunization threshold and presence of a COVID-19 cluster. The facility case rate was not correlated with staff vaccination rate; however, a limitation of this analysis was that resident vaccination was not tested. Another limitation was that medical and religious exemptions could not be differentiated. Healthcare staff should consider getting vaccinated, if able, to reduce the risk of COVID-19 and to keep staff and residents safe from COVID-19.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s52
doi:10.1017/ash.2023.294

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: COVID-19

Utilizing data to foster equity in infection prevention outreach among skilled nursing facilities in Michigan

Christine White; Michael David and Ruben Juarez

Background: Since October 2020, the Infection Prevention Resource and Assessment Team (IPRAT) has provided infection prevention guidance and support to congregate-care settings throughout Michigan. Specifically, outreach to skilled nursing facilities (SNFs) in response to reported positive COVID-19 resident and staff cases. Case rates provide limited data and do not factor in additional variables, such as staffing shortages, geographical location, or access to supplies, which can increase the vulnerability of staff and residents to outbreaks. To facilitate equitable outreach, a risk assessment was developed using variables related to infection prevention and poor COVID-19 outcomes utilizing local, state, and federal data reporting websites. **Methods:** A retrospective data review of IPRAT's electronic data repository was performed, and 2 distinct periods were identified between November 6, 2020, and December 5, 2022. Outreach method 1 involved only using case counts from November 6, 2020, to September

24, 2021. Outreach method 2 (new risk-assessment–based outreach) involved additional data points from April 12, 2021, to December 5, 2022. Data included 17 self-reported items from the NHSN, 3 characteristics regarding facilities' COVID-19 units, and 7 community-level variables derived from county vaccine rates, social vulnerability index (SVI), and COVID-19 community transmission level. The scoring of each data point ranged from 0–10, and outreach was prioritized to facilities with the highest overall scores. Successful referrals (resulting in a site visit) were compared to the SVI and healthcare emergency regional maps to determine whether the new outreach method reached more facilities in vulnerable communities. **Results:** Of 358 outreach attempts, IPRAT had a higher success rate with method 2 (6.9%) compared to method 1 (5.3%) and improved outreach in rural Michigan regions 7 and 8 (15% vs 3%). Site visits in counties with a high SVI rating with method 2 were 14.5% versus 10.6% using method 1. COVID-19 prevention referral success rates were higher (4.4% vs 3.1%) using method 2. **Conclusions:** The risk-assessment–based outreach method showed improvement in overall referral success rates among facilities in rural and higher-SVI counties. These communities tend to experience higher health disparities and poorer health outcomes. Incorporating the more nuanced data variables correlated with at-risk congregate-care settings receiving timelier outreach. The limitations of the study include sample size, period of data collected (2 years), and the complexity of objectively measuring equity.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s52–s53
doi:10.1017/ash.2023.295

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: COVID-19

Universal COVID-19 screening at hospitals in a large Canadian health region

Matthew Garrod and Katy Short

Background: Hospitals were affected by COVID-19, with significant concern regarding transmission from unidentified cases. Fraser Health, a Canadian regional health authority, implemented universal testing along with screening questions for emergency department (ED) admissions. We sought to determine which factors were associated with SARS-CoV-2–positive test on admission as well as patient outcome, stratified by screening question responses. **Methods:** This retrospective analysis included patients aged ≥6 years admitted through 12 hospital EDs between November 1, 2020, and June 30, 2022. Admission, laboratory, and screening data were extracted from electronic health records. Patients who had a first SARS-CoV-2 PCR–positive test in the prior 60 days collected within 48 hours of admission were classified as positive. Covariates included age, geographical region, and SARS-CoV-2 variant era. All questions were modeled using multinomial logistic regression, with components informed through crude analysis in R Studio software. **Results:** There were 88,511 unique eligible admissions, with 7,642 positive tests (8.6%). The positivity rate over the study period ranged from 0.6% to 21.8%, with a mean of 6.5%. Patients meeting screening criteria were 4.7 times (95% CI, 4.43–4.92) as likely to test positive as those who did not. Patients in the SARS-CoV-2 omicron variant era were 3.2 times (95% CI, 2.98–3.47) as likely to test positive as those in the earlier era of the pandemic. Patients later in the pandemic were less likely to be identified by screening questions than those in earlier eras, with patients in the SARS-CoV-2 omicron variant era only 14% (95% CI, 12%–17%) as likely as in the earlier stages of the pandemic to be identified by screening questions. Patients who tested positive were 1.5 (95% CI, 1.37–1.64) times as likely to die as patients who tested negative, whereas patients in later stages of the pandemic were less likely to die overall. **Discussion**: Patients who tested positive on admission were more likely to meet screening criteria; however, screening missed half of all positive cases. It is not known whether patients who tested positive without meeting screening criteria would have resulted in transmission. **Conclusions:** Due to changes in COVID-19 epidemiology, Fraser Health has discontinued universal admission screening. Although universal testing increased resource needs, more than half of patients who tested positive during the study period would not have been identified based on screening criteria alone, allowing for implementation of precaution measures to prevent possible transmission. Ultimately, the decision to conduct universal testing must be a balance of the resources required, community prevalence, and patient population.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s53
doi:10.1017/ash.2023.296

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: COVID-19

Inpatient remdesivir versus nirmatrelvir-ritonavir in the progression of COVID-19

Dimple Patel; Christopher Mccoy; Kendall Donohoe; Matthew Lee; Howard Gold and Ryan Chapin

Background: Nirmatrelvir-ritonavir received emergency use authorization (EUA) for the prevention of progression of COVID-19 in December 2021. Most data supporting this authorization are limited to the outpatient setting in unvaccinated patients, and high-quality head-to-head comparisons to other antivirals such as remdesivir are lacking. Patients at high risk of disease progression, such as advanced age, smokers, and those with cardiovascular disease, diabetes, obesity, or cancer continue to be admitted to acute-care settings for various indications, and some are incidentally found to have mild COVID-19. The objective of this project was to compare rates of progression of mild-to-moderate COVID-19 for inpatients treated with remdesivir versus nirmatrelvir-ritonavir. **Methods:** This study was a single-center, retrospective cohort study that included patients aged ≥18 years with PCR-confirmed SARS-CoV-2 infection who were initiated on nirmatrelvir-ritonavir within 5 days or remdesivir within 7 days of symptom onset between June 2022 and August 2022. The primary outcome was the worsening of symptoms via the WHO ordinal clinical severity scale for COVID-19. Secondary outcomes included escalation of care or readmission due to COVID-19, discharge prior to treatment completion, and any adverse drug reactions (ADRs). Within our institutional guidelines, prior approval is needed for COVID-19 treatment through collaboration between the primary team and antimicrobial stewards. Nirmatrelvir-ritonavir is the preferred agent for both in- and outpatients unless the patient had drug

Figure 1. Change in Severity Score at End of Therapy