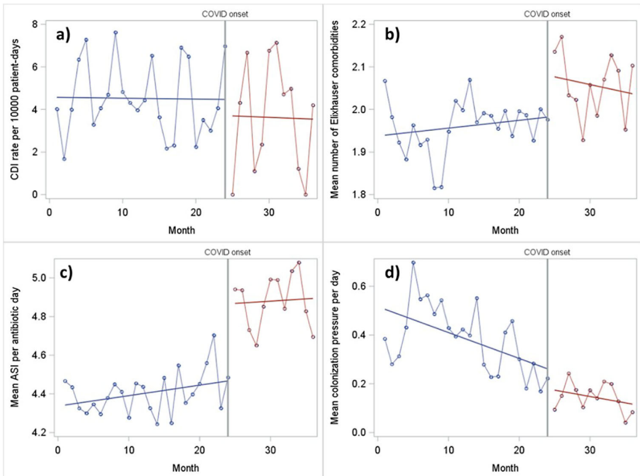
Figure 1. 30-day periods before and after the onset of the COVID-19 pandemic for a) HA-CDI rate per 10,000 patient-days, b) mean number of Elixhauser comorbidities, c) ASI per antibiotic day, and d) case-days of colonization pressure per hospital day



key CDI-related risk factors. **Methods:** We conducted an interrupted time-series study (March 2018–March 2021) of adult inpatients hospitalized 4 or more days with no known CDI on admission at a 576-bed academic medical center. Our primary outcome was monthly HA-CDI per 10,000 patient days. We performed segmented linear regression to compare the preinterruption trend in HA-CDI rate to the postinterruption slope and level change. We established a series of 30-day intervals before and after the interruption time-point of March 23, 2020, which corresponds with the Oregon stay-at-home executive order. The data included 24 preinterruption time points and 12 post-interruption time points. We also assessed changes in slope and trend for known HA-CDI risk factors. **Results:** We included 34,592 inpatient encounters in our prepandemic period and 10,932 encounters in our postinterruption period. The mean prepandemic HA-CDI rate was 4.07 cases per 10,000 patient days. After the pandemic onset, the rate was 3.6 per 10,000 patient days. However, the observed differences in rate (both in terms of slope and level) were not statistically significant ($P = .90$ for level; $P = .60$ for slope change). We observed a significant decrease in admissions per 30 days (1,441 vs 911; level-change $P < .0001$) and a slight increase in the mean number of Elixhauser comorbidities (1.96 vs 2.07; level-change $P = .05$). We also observed significant increases in both frequency and intensity of antibiotic use, with an increase average days of therapy per encounter (5.8 vs 7.2; level-change $P = .01$; slope-change $P < .0001$) and in antibiotic spectrum index (ASI) points per antibiotic day (4.4 vs 4.9; $P < .0001$). We observed a consistent downward trend for case days of CDI colonization pressure per hospital day (preinterruption slope $P < .0001$), which remained consistent after the pandemic onset ($P = 0.5$ for postinterruption slope change) (Fig. 1). **Conclusions:** Despite significant increases in high-intensity antibiotic use and comorbidity burden, we did not observe significant differences in HA-CDI after the pandemic onset. This may be due to the significant decrease in colonization pressure in the postpandemic period. Further research is required to fully understand the impact of the pandemic-related changes on
Disclosures: None

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Subject Category: COVID-19
How COVID-19 spread varied by resident length of stay and resident–staff transmission pathways over time in US nursing homes

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Background: Pathogen transmission among staff and residents in nursing homes can vary depending on their interactions and by the amount of time a resident receives care in the facility. Understanding the relative differences in transmission rates between and among staff and residents can identify the pathways that contributed most to the spread of SARS-CoV-2 in US nursing homes. Further exploring relative differences by categorizing facilities by residents' lengths of stay can identify priority categories for intervention. **Methods:** Using US National Healthcare Safety Network (NHSN) surveillance data on resident and staff cases, vaccination, and resident deaths during June 2020–June 2022, we estimated SARS-CoV-2 transmission among and between residents and staff. We used a Bayesian inversion of a susceptible–exposed–infected–removed–virus–death (SEIRVD) compartmental model to produce the estimates. The facilities were divided into those with median length of stay (LOS) among the residents of 10 weeks. Additional inputs included the incidence and vaccination levels of the county where each facility was located. For the compartmental model, all data were averaged to form a representative facility for each category. Transmission was estimated separately for 3 periods: (1) June 2020–March 2021 as before the SARS-CoV-2 delta variant, (2) April 2021—October 2021 during SARS-CoV-2 delta variant dominance, and (3) November 2021—June 2022 during the prevalence of the SARS-CoV-2 omicron variant. **Results:** Regardless of facility category, transmission was highest from staff to residents or resident to resident (Fig.). These estimates of transmission were highest during the pre–SARS-CoV-2 delta variant phase. Transmission in that phase was highest in the facilities with LOS >10 weeks from staff to residents at 0.88 per week (95% credible interval [CrI], 0.06–1.85), in the facilities with LOS 6–10 weeks from staff to residents at 0.68 per week (95% CrI, 0.03–1.78), and in the facilities with LOS <6 weeks between residents at 0.47 per week (95% CrI, 0.02–0.95). **Conclusions:** Staff-to-resident or resident-to-resident transmission were the dominant pathways of spread of SARS-CoV-2 across the periods or the facility categories. Facilities with LOS 6 weeks or longer had higher median transmission estimates across the periods and transmission routes compared to facilities with LOS less than 6 weeks, implying that when prioritization of intervention resources is needed, facilities caring for populations with longer stays could be prioritized.
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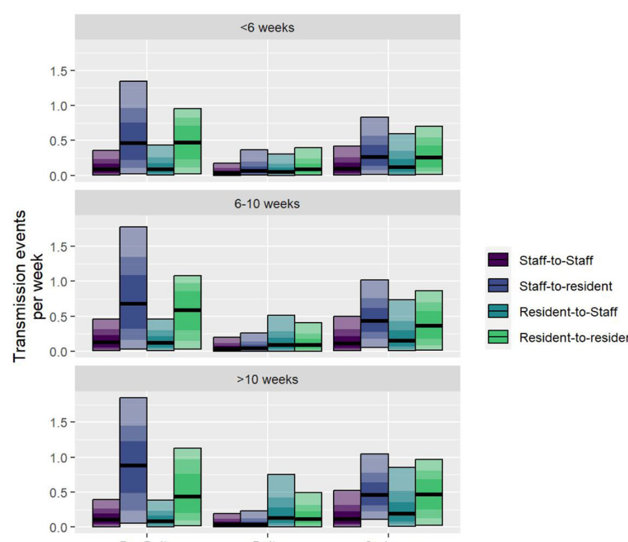

Figure. Estimates for the number of transmission events per week between staff (red-purple), from staff to residents (purple), from residents to staff (blue), and between residents (green) for facilities with a median facility-wide length of stay of less than six weeks, 6-10 weeks, or greater than 10 weeks. The black horizontal line indicates the median estimate for each transmission route. The shade of each bar corresponds to the credible interval (CrI) width for the estimate with the darkest shade containing the most credible of the estimates; the lightestshade is the 95% CrI, the next darkest shade is the 75% CrI, and the darkest shade is the 50% CrI.