Johns Hopkins University; Sujan Reddy, Centers for Disease Control and Prevention and David Canaday, Centers for Disease Control and Prevention

Background: Nursing home (NH) residents are at high risk of COVID-19 from exposure to infected staff and other residents. Understanding SARS-CoV-2 viral RNA kinetics in residents and staff can guide testing, isolation, and return to work recommendations. We sought to determine the duration of antigen test and polymerase chain reaction (PCR) positivity in a cohort of NH residents and staff. **Methods:** We prospectively collected data on SARS-CoV-2 viral kinetics from April 2023 through November 2023. Staff and residents could enroll prospectively or upon a positive test (identified through routine clinical testing, screening, or outbreak response testing). Participating facilities performed routine clinical testing; asymptomatic testing of contacts was performed within 48 hours if an outbreak or known exposure occurred and upon (re-) admission. Enrolled participants who tested positive for SARS-CoV-2 were re-tested daily for 14 days with both nasal antigen and nasal PCR tests. All PCR tests were run by a central lab with the same assay. We conducted a Kaplan-Meier survival analysis on time to first negative test restricted to participants who initially tested positive (day zero) and had at least one test ≥10 days after initially testing positive with the same test type; a participant could contribute to both antigen and PCR survival curves. We compared survival curves for staff and residents using the log-rank test. **Results:** Twenty-four nursing homes in eight states participated; 587 participants (275 residents, 312 staff) enrolled in the evaluation, participants were only tested through routine clinical or outbreak response testing. Seventy-two participants tested positive for antigen; of these, 63 tested PCR-positive. Residents were antigen- and PCR-positive longer than staff (Figure 1), but this finding is only statistically significant (p=0.006) for duration of PCR positivity. Five days after the first positive test, 56% of 50 residents and 59% of 22 staff remained antigen-positive; 91% of 44 residents and 79% of 19 staff were PCR-positive. Ten days after the first positive test, 22% of 50 residents and 5% of 22 staff remained antigen-positive; 61% of 44 residents and 21% of 19 staff remained PCR-positive. **Conclusions:** Most NH residents and staff with SARS-CoV-2 remained antigen- or PCR-positive 5 days after the initial positive test; however, differences between staff and resident test positivity were noted at 10 days. These data can inform recommendations for testing, duration of NH resident isolation, and return to work guidance for staff. Additional viral culture data may strengthen these conclusions.

Disclosure: Stefan Gravenstein: Received consulting and speaker fees from most vaccine manufacturers (Sanofi, Seqirus, Moderna, Merck, Janssen, Pfizer, Novavax, GSK, and have or expect to receive grant funding from several (Sanofi, Seqirus, Moderna, Pfizer, GSK). Lona Mody: NIH, VA, CDC, Kahn Foundation; Honoraria: UpToDate; Contracted Research: Nano-Vibronix

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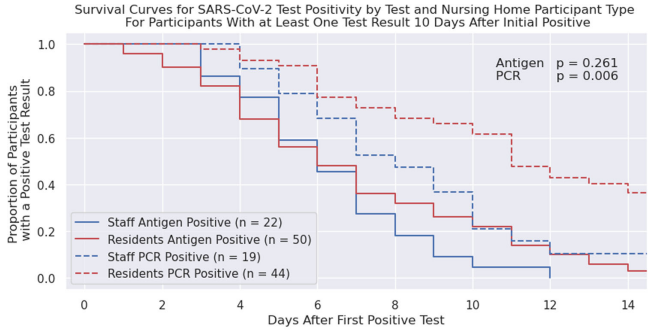

Figure 1 Survival curves for Antigen and PCR test positivity by participant type. 72 participants both tested antigen positive for SARS-CoV-2 and had at least one test result 10 days after initial positive antigen test. Of those 72 participants, a subset of 63 participants also tested PCR positive for SARS-CoV2 and had at least one test result 10 days after initial positive PCR test.

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Decolonization Strategies

Survey of Hemodialysis Patients' Knowledge of Their Infection Risk and Acceptability of a Nasal Decolonization Intervention

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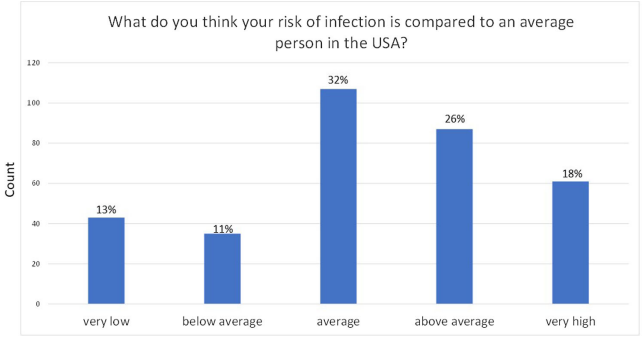
Background: Patients undergoing hemodialysis are at high risk for healthcare-associated infections; they are at 100 times the risk of Staphylococcus aureus bloodstream infections (BSI) compared with U.S. adults not on hemodialysis. Prior studies found that nasal decolonization with mupirocin prevented S. aureus BSI among hemodialysis patients. We implemented a nasal decolonization intervention in which patients self-administered povidone-iodine (PVI) at each dialysis session. We aimed to assess: 1) hemodialysis patients' knowledge of their infection risk and their willingness to take an active role in infection prevention; 2) the acceptability of the PVI nasal decolonization intervention. **Methods:** We performed a stepped wedge cluster randomized trial at 16 outpatient hemodialysis centers. Patients were surveyed: before starting PVI, 1 month after their center started using PVI, and ~6 months after starting PVI. We used a chi-square test to compare results. **Results:** 469 patients completed at least 1 survey: 400 pre-intervention, 237 at 1 month and 201 at 6 months. Overall, 56% of patients thought that their risk of infection was average or below average compared with an average person in the U.S. (Figure). Over 98% agreed with the statement "One of the most important things I can do for my health is to take an active role in my health care." In the pre-intervention survey, 73% were willing to do "a lot of effort" to prevent an infection. This proportion was similar (73%) in the 2nd survey, but decreased to 63% in the final survey (p < 0 .01). Among 106 patients who reported starting PVI, 85% reported that PVI felt neutral or pleasant, 9.4% reported a side effect, and 79% reported using it during the past 3 dialysis sessions. Among 102 patients who reported using PVI at 6 months, 87% said it felt neutral/pleasant, 3.9% reported a side effect and 75% reported using it during the past 3 dialysis sessions. Side effects included nasal dripping, congestion or burning/stinging, unpleasant smell, headache, yellow tears, and minor nose bleeding. **Conclusions:** Hemodialysis patients are



not aware of their high risk of infection. Although many were willing to expend a lot of effort to prevent an infection, this willingness decreased during an infection prevention intervention. There were few PVI side effects and most patients stated that PVI felt neutral/pleasant, yet many patients chose to not use PVI. Future research should aim to improve patient education on their risk of infection and assess barriers to adherence with infection prevention interventions.

Disclosure: Marin Schweizer: Speaker- 3M; Contracted research-3M; Anitha Vijayan: Honoraria - Quanta, Baxter, Fresenius Consulting, Astute, NxStage

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Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Decolonization Strategies

Heterogeneity in Pre-operative Staphylococcus aureus Screening and Decolonization Strategies among Healthcare Institutions

Sarah Bennis, University of Minnesota; Shalini Kulasingam, University of Minnesota; Patricia Ferrieri, University of Minnesota and Susan Kline, University of Minnesota

Background: Staphylococcus aureus (SA) is the most common pathogen causing surgical site infections (SSIs). In the past decade, strategies incorporating new SA decolonization products have been implemented to prevent SSIs in surgical patients. The objective of this cross-sectional study was to determine which pre-operative screening and decolonization strategies are currently utilized in healthcare institutions. **Methods:** A survey was programmed in REDCap and emailed to members of the Society for Healthcare Epidemiology of America Research Network, the Minnesota chapter of the Association of Practitioners in Infection Control and Epidemiology, and the Minnesota Hospital Association between May-August 2023. We report the prevalence of institutional screening and decolonization strategies and decolonization products used for the prevention of SA SSIs. **Results:** A total of 153 unique institutions initiated the survey and 111 provided complete data on their institutional screening and decolonization strategies. The most commonly reported strategies included universal decolonization (decolonization of pre-operative patients without screening for carrier status) (n=31, 27.9%), no screening or decolonization (n=24, 21.6%), targeted screening for methicillin-sensitive Staphylococcus aureus (MSSA) or methicillin-resistant Staphylococcus aureus (MRSA) and decolonization based on carrier status (n=24, 21.6%), or MRSA only screening and decolonization (n=11, 9.9%) (Figure 1). Institutions that utilized targeted screening and decolonization strategies frequently reported using nasal mupirocin (n=18, 66.7%MSSA, n=29, 60.4%MRSA), chlorhexidine gluconate (CHG) bathing (n=16, 59.3%MSSA, n=28, 58.3%MRSA), and CHG cloths (n=7, 25.9%MSSA, n=14, 29.2%MRSA) (Figure 2). Among the 31 institutions that reported implementing the universal decolonization strategy, CHG bathing (n=18, 58.1%), CHG cloths (n=15, 48.4%), and nasal povidone iodine (n=14, 45.2%) were the most prevalent decolonization products. Additionally, a smaller percentage of institutions used nasal alcohol gel (n=5, 16.1%) for universal decolonization. **Conclusion:** Compared to the survey we conducted in 2012, we report a new shift towards universal decolonization and a small increase in targeted SA screening and decolonization.1 In the 2012 survey we reported 37% of respondents' institutions screened pre-operative patients for SA carriage and the majority of those institutions decolonized carriers.1 Universal decolonization was not reported in the 2012 survey.1 We highlight the continued heterogeneity in practice at this time, which may reflect the ongoing uncertainty in optimal decolonization practices and emphasizes the need for future research.

References: 1. Kline, S. et al. Infect Control Hosp Epidemiol 2014;35(7):880-882.

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doi:10.1017/ash.2024.204

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: DEI

Analyzing the Relationship Between Socioeconomic Deprivation and Outpatient Medicare Part D Fluroquinolone Claims in Texas

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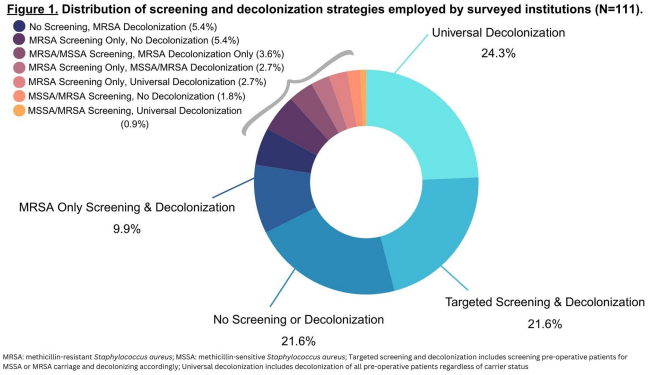
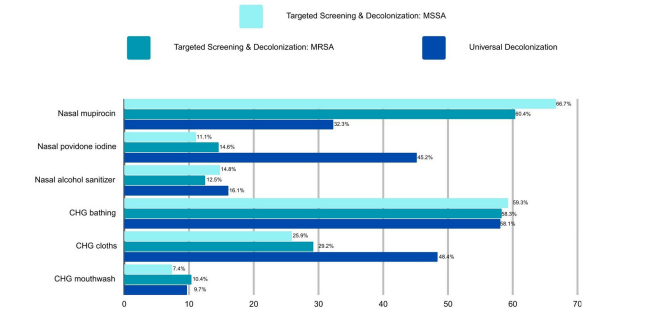
Background: Only a few studies have assessed the relationship between deprivation and excessive antibiotic use. In Texas, antimicrobial prescription is particularly high compared with the rest of the US. This study analyzed the association between local area socioeconomic deprivation and providers' fluoroquinolone claim rates among beneficiaries 65 years and older in Texas. **Method:** This ecological study utilized provider- and area-level data from Medicare Part D Prescribers and the Social Deprivation Index (SDI) repositories. To identify geographic patterns and autocorrelation in and between SDI and fluoroquinolone claims, spatial dependence of these two variables was assessed by bivariate Local Indicators of Spatial Association (LISA) cluster mapping along with the global and local Moran's I analyses. Negative binomial regression models were employed to evaluate the relationship between provider- and area-level characteristics (prescriber's gender, specialty, rural-urban community area, beneficiaries' demographics, area-level population, and normalized SDI) and fluoroquinolone claim rates per 1,000 beneficiaries. **Result:** A total of 11,996 providers were included. There was no spatial dependence between SDI and rates of fluoroquinolone claims in Texas (Global Moran's I =0.01, P=0.618). Bivariant LISA maps showed 85 high-high and 38 low-low spatial clusters. Higher SDI (incidence rate ratio (IRR) 0.98, 95% confidence interval (CI) 0.97-0.99 per 1-unit increment) and male providers (IRR 0.96, 95%CI 0.94-0.99) were associated with lower claim rates. In contrast, several factors were associated with higher claim rates, including non-metropolitan areas (1.04, 95%CI 1.00-1.09), and practices with a high

Figure 1. Distribution of screening and decolonization strategies employed by surveyed institutions (N=111).



MRSA: methicillin-resistant *Staphylococcus aureus*; MSSA: methicillin-sensitive *Staphylococcus aureus*; Targeted screening and decolonization includes screening pre-operative patients for MSSA or MRSA carriage and decolonizing accordingly; Universal decolonization includes decolonization of all pre-operative patients regardless of carrier status

Figure 2. Prevalence of products utilized to decolonize pre-operative patients by strategy.



MSSA: methicillin-sensitive *Staphylococcus aureus*; MRSA: methicillin-resistant *Staphylococcus aureus*; Targeted screening and decolonization includes screening pre-operative patients for MSSA or MRSA carriage and decolonizing accordingly; Universal decolonization includes decolonization of all pre-operative patients regardless of carrier status; CHG: chlorhexidine gluconate; *Note: respondents selected all that apply for decolonization products used at their institution (bars do not add to 100%)*