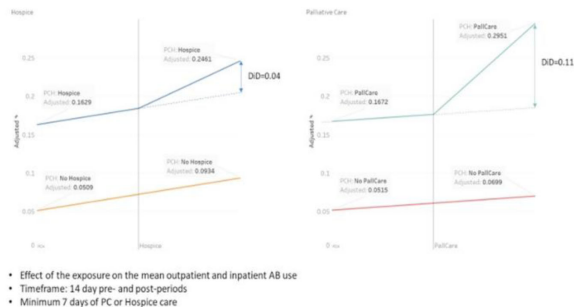


Figure 1: Difference in Difference (DiD) of Days of Therapy (DOT) between the two cohorts



needed to identify the optimal EOL strategies for collaboration between antimicrobial stewardship and palliative care.

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Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: Antibiotic Stewardship

Effect of the COVID-19 pandemic on Tennessee hospital antibiotic use

Yousoufou Ouedraogo; Christopher Evans; Daniel Muleta and Christopher Wilson

Background: On March 5, 2020, the Tennessee Department of Health (TDH) announced the first case of COVID-19 in the state. Since then, hospitals have been overwhelmed by the spike in respiratory infections. Several studies have attempted to describe the impact of the pandemic on antibiotic prescriptions. The NHSN Antimicrobial Use Option offers a platform for hospitals to report their antibiotic usage. The TDH has established access to hospital antibiotic usage data statewide through an existing NHSN user group. We compared the change in the volume of inpatient antibiotic prescriptions before and during the pandemic. **Methods:** An ecological study was conducted from January 2019 to December 2021. Aggregated facility-level data from the NHSN Antimicrobial Use Option were used to describe antibacterial use among Tennessee hospitals. Data from facilities that had reported at least 1 month of data during the study period were included in this study. The antimicrobial use rate was calculated by dividing the antimicrobial days of therapy (DOT) by the number of 1,000 days present. Overall antimicrobial use rates as well as specific antimicrobial use rates for azithromycin, ceftriaxone, and piperacillin–tazobactam were compared across years. **Results:** In total, 55 hospitals reported at least 1 month of data into the NHSN Antimicrobial Use Option during the study period. These hospitals had a median bed size of 140 (range, 12–689). **Conclusions:** We observed a modest increase in overall antibiotic use during the COVID-19 pandemic in Tennessee facilities. This trend appeared to be primarily attributed to agents used for

	Year			P-value
	2019	2020	2021	
Overall AU rate (DOT per 1,000 DP)	594.8	609.6	612.8	<0.001
Azithromycin use rate (DOT per 1,000 DP)	31.7	39	31.2	<0.001
Ceftriaxone use rate (DOT per 1,000 DP)	75.3	84.9	76.1	<0.001
Piperacillin/Tazobactam use rate (DOT per 1,000 DP)	66.6	64.9	62.1	<0.001

Fig. 1.

community-acquired respiratory infections, such as azithromycin and ceftriaxone, earlier in the pandemic. However, both of these agents have fallen to pre-pandemic use levels during 2021. The fact that overall use increased in 2021 suggests that other agents not analyzed may have contributed to this effect. Further analysis may help determine which agents are responsible for this increase in 2021.

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Disclosures: None

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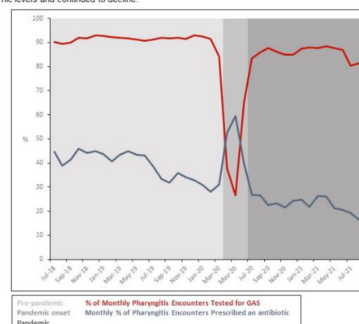
Subject Category: Antibiotic Stewardship

Rapid streptococcal pharyngitis testing and antibiotic prescribing before and during the COVID-19 pandemic

Allan Seibert; Eddie Stenehjem; Anthony Wallin; Park Willis; Kim Brunisholz; Naresh Kumar; Valoree Stanfield; Nora Fino; Daniel Shapiro and Adam Hersh

Background: Pharyngitis is 1 of the most common conditions leading to inappropriate antibiotic prescriptions. When personal protective equipment (PPE) was at first constrained during the COVID-19 pandemic, Intermountain Healthcare recommended limiting rapid group A streptococcal pharyngitis (GAS) testing in urgent-care clinics to preserve PPE. Notably, the percentage of pharyngitis encounters prescribed an antibiotic and that underwent GAS testing is a key Healthcare Effectiveness Data and Information Set (HEDIS) measure. We have described our experience with urgent-care pharyngitis encounters and the impact of temporarily reducing GAS testing on antibiotic prescribing before and during the COVID-19 pandemic. **Method:** We identified all urgent care encounters between July 2018 and August 2021 associated with a primary diagnosis of pharyngitis using ICD-10 CM codes and a validated methodology. Pharyngitis encounters were assessed for antibiotic prescriptions ordered through the electronic health record (EHR) and the use of point-of-care rapid GAS tests. Pharyngitis encounters were analyzed monthly. We assessed the percentage of encounters associated with an antibiotic prescription regardless of testing and the percentage of encounters associated with an antibiotic prescription when a GAS test was or was not performed. We examined 3 periods relating to COVID-19 and GAS testing recommendations: the pre-pandemic period (July 2018–March 2020), the pandemic onset period (April 2020–June 2020), and the pandemic period (July 2020–August 2021). **Results:** Prior to the pandemic, the monthly percentage of pharyngitis encounters for which rapid GAS testing was performed was nearly 90% (Fig. 1). The average monthly percentage of urgent-care pharyngitis encounters prescribed an antibiotic was 38.9%, and the average percentage of monthly pharyngitis encounters prescribed an antibiotic that also underwent GAS testing was 90.4%. This HEDIS measure declined from 90.4% during the pre-pandemic period to 29.8% in the pandemic onset period when GAS testing was limited. Following resumption of routine testing practices the monthly percentage of

Figure 1. Monthly Pharyngitis GAS Testing and Antibiotic Prescribing Rates July 2018 – August 2021. When testing limitations were introduced a concomitant increase in antibiotic prescribing for pharyngitis occurred. As testing volumes returned to pre-pandemic levels in July 2020, antibiotic prescribing decreased to pre-pandemic levels and continued to decline.



urgent-care pharyngitis encounters for which rapid GAS testing was performed returned to levels $\geq 80\%$ by July 2020 (Fig. 1). The average percentage of monthly pharyngitis encounters prescribed an antibiotic that also underwent GAS testing rose to 87.3% during this period. **Conclusions:** Limited PPE in our urgent care centers during the initial months of the COVID-19 pandemic was associated with a mandated substantial decline in rapid GAS testing. As testing volume decreased, we noted a simultaneous relative increase of $>30\%$ in antibiotic prescribing for pharyngitis. These findings suggest that rapid streptococcal testing promotes appropriate antibiotic prescribing.

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Subject Category: Antibiotic Stewardship

Hospital-level variation in the utilization of antipseudomonal antibiotics: A nationwide cross-sectional study at the VHA

Shinya Hasegawa; Satoshi Kakiuchi; Daniel Livorsi; Eli Perencevich and Michihiko Goto

Background: Avoiding unnecessary antipseudomonal coverage is 1 of the most common targets for antibiotic stewardship programs (ASPs), but little is known about the magnitude of facility-level variation in antipseudomonal agent utilization. We aimed to describe the variability in the use of antipseudomonal agents across inpatient settings within a nationwide integrated healthcare system. **Method:** We analyzed the data from a retrospective cohort of patients who were admitted to acute-care hospitals within the VHA system in 2019. We defined antipseudomonal agents as systemic antibiotics with activity against wild-type *Pseudomonas aeruginosa*, and we evaluated overall and antipseudomonal antibiotic use among 129 hospitals, according to the agents described in the NHSN Antimicrobial Usage and Resistance Module. We calculated each hospital's overall and antipseudomonal days of therapy (DOT) per 1,000 days present and the proportion of antipseudomonal agent usage among all antibiotics based on DOT at each hospital. Hospital-level variation was assessed by comparing the proportion of total antibiotic consumption accounted for by antipseudomonal agents. Associations between antipseudomonal proportions and overall antibiotic consumption were also assessed. **Results:** Among 129 VHA hospitals, the median DOT per 1,000 days present for all antibiotics was 434.4 (IQR, 371.9–487.1), and the median antipseudomonal DOT per 1,000 days present was 127.7 (IQR, 99.8–159.6). The median proportion of total antibiotic consumption accounted for by antipseudomonal agents was 30.0% (range, 14.9%–40.7%; IQR, 26.4%–34.4%) (Fig. 1). We detected only a weak correlation between overall antibiotic consumption and

Figure 1. The proportion of overall antibiotic consumption accounted for by antipseudomonal agents in each hospital.

(Footnote) Solid line: median, Dotted line: interquartile range.

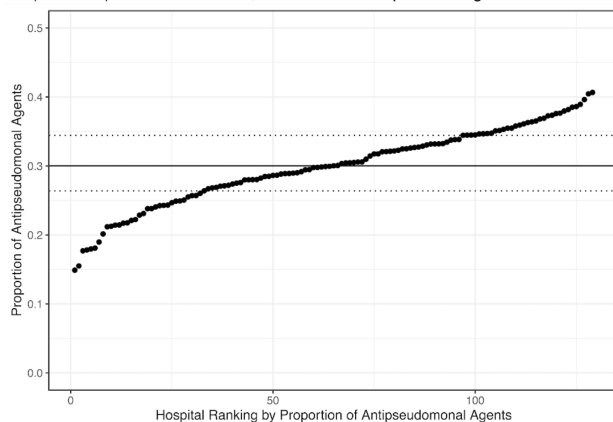
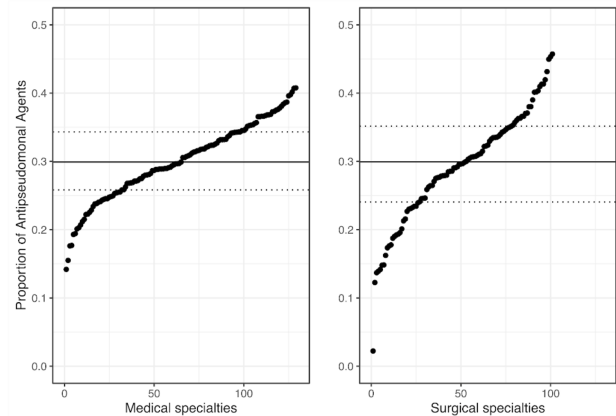


Figure 2. The proportion of overall antibiotic consumption accounted for by antipseudomonal agents comparing medical and surgical specialties in each hospital. (Footnote) Solid line: median, Dotted line: interquartile range.



antipseudomonal proportion (Pearson correlation coefficient, 0.396), which suggests that hospitals with higher total antibiotic consumption were not necessarily using more antipseudomonal agents. In a stratified analysis, there was more prominent hospital-level variability in surgical specialties than medical specialties (Fig. 2). **Conclusions:** We detected high hospital-level variability in the consumption and proportion of antipseudomonal antibiotics among an integrated healthcare system. Although it is plausible that these variabilities originated from case-mix differences among hospitals, including differing rates of *P. aeruginosa* infections, it may also highlight opportunities for reducing antipseudomonal antibiotic utilization, especially among surgical specialties. Further studies are needed to evaluate the contribution of modifiable patient- and facility-level factors to this variability.

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Subject Category: Antibiotic Stewardship

Determining the effect of COVID-19 on antibiotic use in long-term care facilities across Tennessee

Cullen Adre; Youssoufou Ouedraogo; Christopher Evans and Christopher Wilson

Background: Nationally, a decrease in total antibiotic use in nursing homes during the COVID-19 pandemic was observed with an increase in select agents used for respiratory infections. Currently there is minimal data on antibiotic use in long-term care facilities (LTCFs) in Tennessee. To address this issue, the Tennessee Department of Health (TDH) developed a monthly point-prevalence survey of antibiotic use. Utilizing this tool, we sought to determine the effect the pandemic had on antibiotic use in Tennessee LTCFs. **Method:** We developed a REDCap questionnaire to collect information on selected antibiotics administered in Tennessee LTCFs. Antibiotic use percentage was determined by dividing the number of residents who received an antibiotic on the day of survey by facilities' average censuses. Data were divided into a prepandemic period (January 2019–February 2020) and a period during the pandemic (March 2020–December 2021). Antibiotic prescriptions were grouped into 4 classes according to their most common uses: *Clostridium difficile* infections, urinary tract infections, skin and soft-tissue infections (SSTIs), and respiratory infections. Average percentage of residents on antibiotics were compared between study periods. **Results:** In total, 37 facilities participated in the survey during the prepandemic period and 32 facilities participated during the pandemic period; 14 participated during both periods. The