Presentation Type:
Poster Presentation
Subject Category: Antibiotic Stewardship
Leveraging a Simulated Patient Approach to Measure Pharyngitis Diagnostics and Prescribing in a Large Integrated Primary Care Network
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Background: Bacterial pharyngitis is a commonly over-diagnosed ambulatory condition that can contribute to antibiotic overuse. Rapid antigen detection tests (RADT) are valuable in determining whether pharyngitis is caused by Group A streptococcus (GAS) and requires antibiotic therapy, or is viral in etiology. In 2021, Henry Ford Health partnered with QURE Healthcare to implement incentivized, evidence-based patient simulation training platforms for ambulatory primary care providers (PCP). This study aimed to describe outcomes of a simulated educational approach for ambulatory PCPs related to optimal pharyngitis testing and management. **Methods:** This was an IRB-exempt cross-sectional study of PCPs at an urban health system in Michigan. In 2024, four online simulated pharyngitis patients (two with characteristic GAS symptoms, two with hallmark viral symptoms) were incorporated into the program to assess antimicrobial stewardship among PCPs. PCPs provided care for simulated patients in random order over two seasons (spring and fall 2024), including the accuracy of medical decision-making about diagnostic testing and antibiotic treatment. At each decision point, PCPs received direct feedback on how decisions aligned with internal evidence-based guidelines. The primary outcome was to measure ordering decisions for RADTs and antibiotics by PCPs over the two simulation seasons. **Results:** 368 PCPs performed all four pharyngitis simulations. In cases where symptoms were congruent with GAS etiology, PCPs ordered RADT in 84.0%. Of those who ordered RADT, 98.7% ordered any antibiotic and 85.6% ordered an evidence-based antibiotic (i.e., penicillin or amoxicillin). For those who did not order RADT but received feedback within the case, 95.8% ordered any antibiotic and 76.3% ordered an evidence-based antibiotic. In cases with viral symptoms, 57.7% ordered RADT unnecessarily despite the low likelihood of GAS etiology. Antibiotics were ordered in 6.4% of cases with a negative RADT and without ordering RADT altogether. There was little difference in correct/incorrect RADT ordering patterns for the spring and fall seasons (P>0.05); there was an increase in ordering the preferred penicillin from the start of the first season to the end of the second season (25.0% to 33.7%, P = 0.062) and a 45.7% relative reduction in ordering non-recommended antibiotics (23.0% to 12.5%, P = 0.066). **Conclusion:** This study shows two-fold RADT challenges: overutilization for viral symptoms and underutilization for bacterial symptoms. Significant opportunities remain to increase guideline-recommended penicillin and reduce antibiotic use in viral pharyngitis cases. These results suggest that simulation-based measurement offers valuable insights into group-wide practice patterns and case-based feedback can improve evidence-based decision-making.

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Analysis of Antimicrobial Use Quality Reports from the NHSN AU Option in Tennessee 2021–2023
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Background: The National Healthcare Safety Network (NHSN) Antibiotic Use (AU) Option aids hospital antimicrobial stewardship programs (ASPs) by facilitating tracking and reporting of AU data. In 2021, the Tennessee Department of Health (TDH) launched an AU data quality project to improve reporting accuracy. Quarterly reports are generated, assessing data across 15 quality flags, such as reporting antimicrobial days when days present (DP) are zero or drug-route mismatches. Flags also highlight significant outliers, including DP or AU rates outside the median ±2 interquartile ranges compared to the prior year. Reporting facilities receive actionable solutions for flagged concerns. **Method:** Data from AU quality flag reports generated by the NHSN AU Option for Tennessee facilities (2021–2023) were analyzed in this cross-sectional study. The analysis summarized the frequency and distribution of flagged issues across facilities and time. Archived data were utilized, excluding updates facilities made after quarterly reports. Quarterly flags per category were calculated for each facility, with total flags compiled annually to determine category frequency and percentage. Additionally, the number of distinct facilities contributing to the annual flag count was evaluated, providing insights into data quality trends across the study period. **Result:** From 2021 to 2023, 97 facilities submitted data to the NHSN AU Option, resulting in 7336 flags identified in the AU quality reports (Figure 1). The most frequent flag was "location-level AU rate greater than outlying upper boundary" (n=1677, 22.9%), reported by 67 facilities and the highest reported in 2023 (n=722, 23.8%). The second was "location-level DP greater than outlying upper boundary" (n=1588, 21.6%), reported by 68 facilities and highest in 2021 (n=547, 23.5%). The most frequent non-outlier-based quality issue was "antimicrobial days reported for any drug when DP were reported as zero" (n=439, 6.0%) followed by "antimicrobial days for a single drug greater than DP" (n=48) **Conclusion:** The study reveals data quality concerns in AU reporting among Tennessee facilities. Flags with changes in "Location-Level Days Present" and "AU Rate" outliers being prominent across the study period. These findings underscore the need for continuous monitoring and targeted feedback to enhance data accuracy, as well as a need for antimicrobial stewardship personnel to be able to identify and address changes in prescribing patterns and patient populations efficiently within their facilities. Addressing recurring challenges identified can improve AU data reliability, supporting more effective antimicrobial stewardship and better patient care outcomes.

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Table: Antimicrobial Use Quality Flag reports 2021–2023

Antimicrobial Use quality flags	Number of Facilities	2021		2022		2023		Total	
Antimicrobial Days Reported for any Drug when Days Present Reported as Zero	5	210	9.0%	23	1.2%	206	6.8%	439	6.0%
Reported Antimicrobial Days for a Single Drug Greater Than Days Present	5	1	0.0%	12	0.6%	35	1.2%	48	0.7%
Sum of Routes Less than Reported Total Days of Therapy	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ceftriaxone IM not Used in ED	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Cefazolin not Used in OR	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sum of Routes Greater than Reported Total Days of Therapy for Drugs given Once Daily	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Drug Route Mismatch	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Drug-Level AU Rate Above Outlier Boundaries	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Drug-Level AU Rate Below Outlier Boundaries	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Days Present for All Specific Locations LESS THAN Facility-wide Days Present	33	73	3.1%	73	3.7%	115	3.8%	261	3.6%
Days of Therapy for All Specific Locations LESS THAN Facility-wide Days of Therapy	33	67	2.9%	70	3.5%	105	3.5%	242	3.3%
Location-Level Days Present GREATER THAN Outlying Upper Boundary	68	547	23.5%	396	20.1%	645	21.2%	1588	21.6%
Location-Level Days Present LESS THAN Outlying Lower Boundary	67	444	19.1%	480	24.3%	655	21.6%	1579	21.5%
Location-level AU Rate GREATER THAN Outlying Upper Boundary	67	481	20.7%	474	24.0%	722	23.8%	1677	22.9%
Location-level AU Rate LESS THAN Outlying Lower Boundary	66	502	21.6%	446	22.6%	554	18.2%	1502	20.5%
		2325		1974		3037		7336	

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Leveraging Medicare Part D Data for Antibiotic Stewardship: Peer Comparison Feedback to High-Volume Prescribers in Minnesota
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Background: Older adults are prescribed more antibiotics than younger populations and face increased risks of antibiotic-related adverse events. Identifying high-volume prescribers (HVPs) through Medicare Part D