

Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: Antibiotic Stewardship

Impact of Stewardship Pharmacist Driven MRSA Nasal Surveillance and De-escalation of Anti-MRSA Therapy

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Background: Intravenous vancomycin is commonly used as initial empiric coverage for pneumonia but is often unnecessary. MRSA nasal surveillance cultures (MRSA nasal swab) have been highlighted in recent literature and the 2019 IDSA Pneumonia Treatment Guidelines as a tool to avoid unnecessary MRSA coverage in pneumonia. A negative MRSA nasal swab can be utilized by clinicians to de-escalate anti-MRSA therapies for pneumonia. The purpose of this study is to determine if implementing stewardship pharmacist driven MRSA nasal surveillance increases use of the test and reduces the inappropriate use of vancomycin for MRSA coverage in patients with pneumonia. **Method:** This study was a retrospective chart review and was approved by the Trinity Health of New England Institutional Review Board. For this initiative, a stewardship pharmacist evaluated all patients receiving vancomycin for anti-MRSA therapy at Saint Francis Hospital and Medical Center in Hartford, CT. If the patient's indication was pneumonia and a MRSA nasal swab had not been ordered, the pharmacist contacted the patient's provider and requested an order for it. Upon receipt of a negative MRSA nasal swab result, the pharmacist recommended discontinuation of vancomycin to the provider if appropriate. Outcomes from the first four weeks of the pharmacist-driven initiative (April 10, 2023 to May 5, 2023) were compared to the four weeks prior to the initiative (March 13, 2023 to April 7, 2023) as a control group. The primary outcome of this study was percentage of patients who received a MRSA nasal swab. Secondary outcomes included percentage of patients who had vancomycin appropriately de-escalated based on MRSA nasal swab results and mean length of vancomycin therapy. **Result:** 116 patients met inclusion criteria: 61 in the control group and 55 in the intervention group. Percentage of swabs ordered increased from 36.1% (22/61) without pharmacist intervention to 80.0% (44/55) with pharmacist intervention ($p < 0.0001$). There were also increased rates of vancomycin de-escalation in patients with pharmacist intervention, with 58.2% (32/55) of patients in the intervention group having vancomycin discontinued following a negative MRSA swab compared to 19.7% (12/61) in the control group ($p < 0.0001$). **Conclusion:** The results suggest implementing a pharmacist driven MRSA nasal surveillance program into practice could increase the number of MRSA nasal swabs ordered and in turn promote more timely de-escalation of vancomycin in patients with pneumonia. The results from this study can be used to support the wide-spread use of pharmacist driven MRSA nasal surveillance protocols at other institutions.

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Beyond the Prescription Pad—Finding a Window of Opportunity to Prevent Antibiotic Diversion and Non-Prescription Use

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Background: Non-prescription antibiotic use is defined as taking antibiotics without medical guidance, which includes using leftover antibiotics,

obtaining antibiotics from friends or relatives, or purchasing antibiotics without a prescription. This study aimed to (1) determine the symptoms prompting individuals to use non-prescription antibiotics, identify their sources of acquisition, and document the types of antibiotics utilized, (2) identify any associated side effects, and (3) gain insights into antibiotic storage practices, including whether antibiotics were used beyond their expiration date. **Methods:** A cross-sectional quantitative survey was conducted from January 2020–June 2021 in waiting rooms of six safety-net primary care clinics and two private emergency departments in Houston, Texas. Participants were read survey questions in English or Spanish by a bilingual research coordinator, and their responses to five questions about antibiotic use were recorded. Descriptive analysis was performed. **Results:** Among the 564 patients surveyed, the median age was 51 (range 19–92). The majority identified as female (72%), Hispanic/Latinx (47%), Black/African American (33%), held a college education (44%), and received public health insurance, such as Medicaid or County Financial Assistance (56%). Of all patients surveyed, 44% (246) reported taking an antibiotic without a prescription and answered questions about associated symptoms. Of all symptoms/illnesses associated with non-prescription use, the most common were sore throat (18%), dental symptoms (16%), and cold/flu (13%). The most common sources for non-prescribed antibiotics were leftover antibiotics (50%), from friends or relatives (31%), and purchased abroad (13%), although 3% had purchased non-prescription antibiotics from a local store or market (Figure 1). The most common antibiotics used were amoxicillin (38%) and penicillin (7%). The reported side effects were stomach pain/upset (24%), nausea and vomiting (19%), allergic reaction (e.g., rash) (14%), and diarrhea (14%). Among 246 participants reporting antibiotic use, 63% reported that the antibiotic they took had been previously prescribed for the same symptom/illness, and 93% had acquired antibiotics in a container, of which 90% reported that the container had an expiration date. **Conclusions:** Our survey reveals that 63% of individuals who use non-prescription antibiotics were motivated by having received prescribed antibiotics for similar symptoms previously. Leftover antibiotics were the source for half of all non-prescription use. These observations suggest that outpatient antibiotic stewardship campaigns have a window of opportunity at the time of the initial prescription of antibiotics, to focus on providing the shortest course possible, and to deliver antibiotic safe use information at that time.

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Disclosure: Barbara Trautner: Stock: Abbvie—sold in December 2023; Abbott Laboratories—sold in December 2023; -Bristol Myers Squibb—sold in December 2023; Pfizer—sold in December 2023; Consultant—Phioegen—consultant. Contracted research through NIAID for STRIVE trial, currently testing Shionogi product; Contracted research—Peptilogics; Contracted research—Genentech

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Figure 1. Symptoms, Names, and Sources of Non-Prescription Antibiotic Use

Symptom (n = 258) n (%)	Name of Antibiotic (n = 250) n (%)	Source of Antibiotic (n = 250) n (%)
Sore throat 47 (18%)	amoxicillin 94 (38%)	Leftover 126 (50%)
Dental symptoms 42 (16%)	cannot recall 89 (36%)	Friends or relatives 78 (31%)
Cold/flu 34 (13%)	penicillin 17 (7%)	Purchased abroad 33 (13%)
Skin/wound infection 29 (11%)	ampicillin 13 (5%)	From store/market 8 (3%)
Sinus infection 25 (10%)	cephalexin 8 (3%)	Cannot recall 4 (2%)
Cannot recall 19 (7%)	trimethoprim/sulfamethoxazole 8 (3%)	Veterinarian office 1 (0%)
UTI 13 (5%)	azithromycin 7 (3%)	
Other* 11 (4%)	other† 5 (2%)	
URI 9 (3%)	ciprofloxacin 4 (2%)	
Strep throat 9 (3%)	tetracycline 3 (1%)	
Gastric issues 8 (3%)	clindamycin 2 (1%)	
Ear infection 5 (2%)		
Fever 4 (2%)		
Diarrhea 1 (0%)		
COVID 1 (0%)		
Bronchitis 1 (0%)		

*Other includes: allergies (6), kidney infection (1), hernia pain/infection (1), vaginal bacterial infection (1), catheter infection (1), body aches/malaise (1)

†Other includes: doxycycline (1), lincomycin (1), macrolid (1), metronidazole (1), nitrofurantoin (1)