Presentation Type:
Poster Presentation

Improving Patient Knowledge and Understanding of Their Antimicrobial Therapy: An Antimicrobial Stewardship Intervention

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Background: The Australian Antimicrobial Stewardship Clinical Care Standard states that patients should receive information about their antimicrobial therapy, including their indication, how and when to take them, their duration, and potential side effects. The level of information provided to hospital inpatients about their prescribed antimicrobial therapy is not well understood. Our objective was to evaluate whether adult inpatients received specific information about their antimicrobials in accordance with antimicrobial stewardship clinical care standards, to identify any gaps that needed to be addressed. **Methods:** Patients receiving 1 or more antimicrobials for >72 hours who were admitted on an acute or subacute ward were recruited. A survey tool was designed and conducted to establish the current status of information provision to patients. The information gathered was used to develop and deliver activities and resources to facilitate better communication about antimicrobial therapy. **Results:** In total, 54 patients were surveyed. Most patients (83%) were informed that they were taking antimicrobials, and of these, 96% said they knew the indication, 18% were informed of potential side effects, and 36% knew the duration. Only 22% were informed of the review plan, and only 27% knew whether antimicrobials would be continued on discharge. Written information was given to 11% of patients. Over half of these patients (56%) either wanted more information or had concerns about their antimicrobials. Patients reported difficulty in obtaining information with some receiving information via "word-of-mouth from other patients." Moreover, 58% of patients received antimicrobial information from doctors, 13% from nurses, and 12% from pharmacists. However, most patients stated that they expected information from all 3 professional groups. In response to these survey findings, a focus group of antimicrobial stewardship experts was convened to discuss methods of improving delivery of information to patients regarding their antimicrobial therapy. We undertook nursing education to empower nurses to discuss information about antimicrobials with their patients, and we developed consumer information sheets. **Conclusions:** More needs to be done to inform patients about the antimicrobials used in their treatments to empower them to participate in their treatment. This factor will be the focus of future antimicrobial stewardship interventions.

Presentation Type:
Poster Presentation

Improving Prescribing Practices at Hospital Discharge With Pharmacist-Led Antimicrobial Stewardship at Transitions of Care

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Background: Antimicrobial stewardship (AMS) is recommended in hospital, postacute, and outpatient settings. Transitions of care (TOC) are important in each of these settings; however, AMS efforts during TOC have been limited. Beginning in October 2018, we sequentially implemented a pharmacist-led multidisciplinary review of oral antimicrobial therapy prescribed at hospital discharge from general and specialty medicine wards across a health system. Pharmacists facilitated data input of discharge prescriptions following early identification and collaborative discussion of patients to be discharged on oral antimicrobials The purpose of this study was to evaluate the impact of AMS during TOC. **Methods:** This project was an IRB-approved stepped-wedge, quasi-experimental study in a 5-hospital health system that included hospitalized adults with skin, urinary, intra-abdominal, and respiratory tract infections who had been discharged from general and specialty wards with oral antimicrobials. Patients with complicated infections, neutropenia, or who were transferred from an outside hospital were excluded. The primary end point was optimization of antimicrobial therapy at time of hospital discharge, defined by correct selection, dose, and duration according to institutional guidance. Outcomes were compared before and after the intervention. **Results:** In total, 800 patients were included: 400 in the preintervention period and 400 in the postintervention period. Among this cohort, 252 (63%) received the intervention by a pharmacist per protocol during TOC. Patients had similar comorbid conditions before and after the intervention. Preintervention patients were more likely to be discharged from community hospitals. Before the intervention, 36% of discharge regimens were considered optimized, compared to 81.5% after the intervention ($P < .001$); this difference was largely driven by a reduction in patients receiving a duration of therapy beyond the clinical indication (44.5 vs 10%; $P < .001$). We observed similar clinical resolution, 30-day readmission, and adverse drug events (ADEs) between the pre- and postintervention periods. Postdischarge antimicrobial duration of therapy was reduced from 4 days (range, 3–5) to 3 days (range, 2–4) ($P < .001$) Severe ADEs occurred more frequently in the preintervention group (9 vs 3.3%; $P = .001$), which was driven by isolation of multidrug-resistant pathogens (7 vs 2.5%; $P = .003$) and *Clostridioides difficile* (1.8 vs 0.5%; $P = .094$). Patients who received optimal therapy at discharge were less likely to develop an ADE (aOR, 0.530; 95% CI, 0.363–0.773). **Conclusions:**
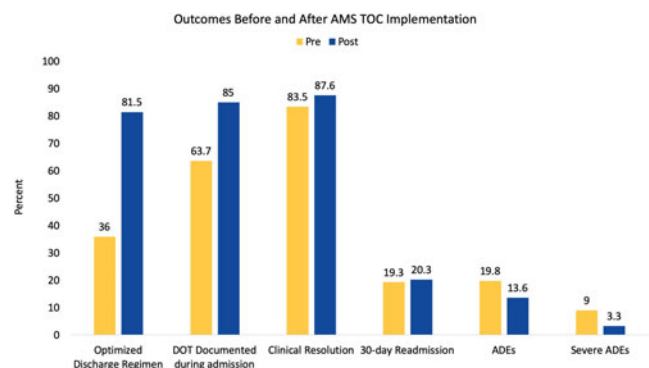
Fig. 1.

Implementation of an AMS TOC protocol reduced antimicrobial days, optimized therapy selection, and reduced duration. This intervention was associated with improved safety without compromise of clinical effectiveness. To increase patient safety, AMS programs should target antimicrobial optimization during TOC.

Presentation Type:
Poster Presentation
Improving Surveillance of Pneumonia in Nursing Homes

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Background: Pneumonia (PNA) is an important cause of morbidity and mortality among nursing home residents. The McGeer surveillance definitions were revised in 2012 to help NHs better monitor infections for quality improvement purposes. However, the concordance between surveillance definitions and clinically diagnosed PNA has not been well studied. Our objectives were to identify nursing home residents who met the revised McGeer PNA definition, to compare them with residents with clinician documented PNA, and determine whether modifications to the surveillance criteria could increase concordance. **Methods:** We analyzed respiratory tract infection (RTI) data from 161 nursing homes in 10 states that participated in a 1-day healthcare-associated infection point-prevalence survey in 2017. Trained surveillance officers from the CDC Emerging Infections Program collected data on residents with clinician documentation, signs, symptoms, and diagnostic testing potentially indicating an RTI. Clinician-documented pneumonia was defined as any resident with a diagnosis of pneumonia identified in the medical chart. We identified the proportion of residents with clinician documented PNA who met the revised McGeer PNA definition. We evaluated the criteria reported to develop 3 modified PNA surveillance definitions (Box), and we compared them to residents with clinician documented PNA.

Results: Among the 15,296 NH residents surveyed, 353 (2%) had ≥ 1 signs and/or symptoms potentially indicating RTI. Among the 353 residents, the average age was 76 years, 105 (30%) were admitted to postacute care or rehabilitation, and 108 (31%) had clinician-documented PNA. Among those with PNA, 28 (26%) met the Revised McGeer definition. Among 81 residents who did not meet the definition, 39 (48%) were missing the chest x-ray requirement, and among the remaining 42, only 3 (7%) met the constitutional criteria requirement (Fig. 1). Modification of the constitutional criteria requirement increased the detection of clinically documented PNA from 28 (26%) to 36 (33%) using modified definition 1; to 51 (47%) for modified definition 2; and to 55 (51%) for modified definition 3. **Conclusions:** Tracking PNA among nursing home residents using a standard definition is essential to improving detection and, therefore, informing prevention efforts. Modifying the PNA criteria increased the identification of clinically diagnosed PNA. Better concordance with clinically diagnosed PNA may improve provider acceptance and adoption of the surveillance definition, but additional research is needed to test its validity.

Box: Modified Pneumonia Surveillance Definitions for Nursing Home Residents

Definitions	Criteria
Revised McGeer Surveillance Definition	• Chest X-ray with findings suggestive of pneumonia • ≥ 1 respiratory signs or symptoms * • ≥ 1 constitutional criteria sign or symptoms **
Modified Surveillance Definition 1	• Chest X-ray with findings suggestive of pneumonia • ≥ 1 respiratory signs or symptoms * • ≥ 1 constitutional criteria sign or symptoms with probable delirium definition***
Modified Surveillance Definition 2	• Chest X-ray with findings suggestive of pneumonia • ≥ 2 respiratory signs or symptoms* **and/or** constitutional criteria sign or symptoms**
Modified Surveillance Definition 3	• Chest X-ray with findings suggestive of pneumonia • ≥ 2 respiratory signs or symptoms **and/or** constitutional criteria sign or symptoms with probable delirium definition***

*a. new or increased cough b. new or increased sputum production c. O2 saturation <94% on room air or a reduction in O2 saturation of >3% from baseline d. new or changed lung examination abnormalities e. pleuritic chest pain f. respiratory rate of >24 breaths/min

**a. fever (single oral temperature > 37.8°C (>100°F) or repeated oral temperatures >37.2°C (99°F) or single temperature >1.1°C (2°F) over baseline from any site) b. leukocytosis (neutrophilia (>14,000 leukocytes/mm³) or left shift >6% bands or ≥ 1,5000 bands/mm³) c. delirium defined as acute change in mental status from baseline including 1) acute onset 2) fluctuating course 3) inattention AND 4) either disorganized thinking or altered level of consciousness d. acute functional decline defined as a new 3-point increase in total activities of daily living (ADL) score (range, 0-28) from baseline, based on the following 7 ADL items, each scored from 0 to 4 (a. bed motility, b. transfer, c. locomotion within LTCF, d. dressing, e. toilet use, f. personal hygiene, g. eating)

***probable delirium definition includes residents with any 1 of the following signs/symptoms (a. disorganized thinking, b. altered consciousness, c. fluctuating behavior and/or d. inattention)

Fig. 1.