Conclusion. Approximately half of pNTM isolates were observed in patients who did not meet criteria for pNTMi diagnosis. Female patients, lower BMI, bronchiectasis, or MAC isolation were more likely to meet pNTMi criteria. Management of pNTMi remains a challenge, with younger patients with COPD and MAC more likely to receive treatment.

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1413. Effect of Automated Identification of Antimicrobial Stewardship Opportunities for Urinary Tract Infections
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Background. The treatment of asymptomatic bacteriuria (ASB) does not improve clinical outcomes in most patients and may be associated with an increased risk of adverse events such as *Clostridioides difficile* infection. A best practice alert (BPA) was created to identify patients with possible ASB for antimicrobial stewardship (AS) review. We aimed to determine whether automated identification of ASB improved the timing of stewardship intervention.

Methods. An electronic health record BPA message to inpatient AS pharmacists was activated on 01/19/2021. The BPA identified inpatients with a new antibiotic order with an associated genitourinary indication and a preceding urinalysis with 0 to 5 WBC/hpf. BPA messages were reviewed by an AS pharmacist during weekdays and normal business hours. We retrospectively evaluated the impact of the BPA on time to order to stewardship intervention between a cohort of pre-BPA (01/2020 to 12/2020) and post-BPA (01/2020 to 04/10/2021) patients. Included patients met the BPA criteria and had an AS intervention within 7 days of the antibiotic order. We specified interventions that were UTI-related. The median time from antibiotic order entry to any AS intervention was compared pre- to post-BPA using the Mann Whitney U test. Rates of UTI-related interventions were compared with Fisher’s Exact test.

Results. 327 antibiotic orders met BPA criteria and were analyzed: 245 and 82 in the pre- and post-BPA group, respectively. Groups had similar baseline characteristics (Table 1). A total of 33 (27 UTI-related) pre-BPA group and 24 (17 UTI-related) post-BPA group interventions were documented by the AS team. The median time to any intervention was 28 hours (IQR 18-64.5) in the pre-BPA group compared to 13.5 hours (IQR 3.5-28.75) in the post-BPA group (p = 0.03, Figure). The pre-BPA group had a lower rate of UTI-related interventions compared to the post-BPA group (11.0% vs 20.7%, p = 0.04).

Conclusion. Automated identification of antibiotics targeting UTI with urinalysis showing absence of pyuria reduced the time to stewardship intervention and increased rate of UTI-specific interventions. The use of clinical decision support may aid in efficiency of AS review and syndrome targeted AS impact.


1414. Real-World Study of Healthcare Resource Use and Costs Associated with Inappropriate and Suboptimal Antibiotic Use Among Females with Uncomplicated Urinary Tract Infection in the United States

Methods. This retrospective cohort study used RWD from IBM MarketScan (commercial/Medicare claims) to examine uUTI-related HRU and costs (inpatient, emergency room, outpatient, pharmacy) per index uUTI episode and during 1-year follow-up among females (age ≥ 12 years) diagnosed with uUTI from July 1, 2013–December 31, 2017 (index date). Patients had an oral AB prescription ≥ 5 days of the index date, and continuous health plan enrollment ≥ 6 months pre/1-year post-index dates; those with complicated UTI were excluded. Patients were stratified by AB prescription as follows: AP&OP = guideline-compliant and correct duration; IA/SO = guideline non-compliant/incorrect duration or re-prescription/switch within 28 days.

Results. The study included 557,669 patients. In the commercial population (n=517,664, mean age 37.7 years), fewer patients were prescribed AP&OP (11.8%) than IA/SO (88.2%) ABs, a trend also seen in the Medicare population (n=40,005, mean age 74.5 years). In both populations, adjusted average numbers of uUTI-related HRU and costs were $194 (AP&OP) versus $274 (IA/SO; p < 0.0001) (Table 1). In the commercial population, total adjusted uUTI-related costs were $253 (AP&OP) versus $355 (IA/SO; p < 0.0001) (Table 2).

Conclusion. Overall uUTI-related HRU and costs in the US were low during index episodes and follow-up. However, females with uUTI prescribed IA/SO ABs were more likely to incur higher HRU and costs than those prescribed AP&OP ABs, suggesting an unmet need for training to optimize uUTI prescribing per US guidelines.

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1415. Allergies to Antimicrobial Agents Among US Females with Uncomplicated Urinary Tract Infection

Methods. We performed a cross-sectional survey of US females ≥ 18 years of age with a self-reported urinary tract infection (UTI) in the 60 days prior to participation and a prescription of oral AB. Participants were further screened for evidence of a complicated urinary tract infection and, after exclusions, participants with a uUTI completed an online questionnaire about their most recent episode. Participants were from the Northeast (20%), Midwest (44%), South (20%), and West (16%). Descriptive self-reported allergy data were stratified into subgroups by whether the participant had recurrent UTI (defined as ≥ 2 uUTIs in the past 6 months or ≥ 3 uUTIs in the past 12 months including index UTI), the number of different ABs given for the index episode (1, 2, 3), and whether the treatment was clinically appropriate according to Infectious Diseases Society of America uUTI guidelines. Outcomes. Overall 375 female participants completed the questionnaire. The most commonly prescribed ABs for participants’ most recent uUTI were trimethoprim-sulfamethoxazole (TMSM; 38.7%), ciprofloxacin (22.7%), and nitrofurantoin (18.9%) (Table 1). Most participants received only 1 AB for their uUTI (62.7%) and the majority were classified as having a non-recurrent uUTI (56.5%). No AB allergies were reported for most participants (69.3%); overall, 24.0% reported 1 AB allergy and 6.7% reported ≥ 2. A higher proportion of participants reported ≥ 2 allergies in the recurrent uUTI (11.6%) than in the non-recurrent uUTI (9.9%) (Table 2). The most common allergy was to TMSM (15.7%), followed by amoxicillin-clavulinate (8.3%) and ciprofloxacin (5.3%) (Table 2). Similar allergy trends were seen across subgroups, except higher rates of ciprofloxacin allergy were seen in patients given multiple ABs (Table 2).

Table 1. Antibiotics used to treat most recent uUTI (N=375)

| Antibiotic to treat | n (%)       |
|--------------------|------------|
| Ciprofloxacin       | 145 (38.7) |
| Trimethoprim-sulfamethoxazole | 85 (22.7) |
| Nitrofurantoin      | 71 (18.9)  |
| Ceftriaxone         | 56 (14.9)  |
| Levofloxacin        | 35 (9.3)   |
| Cotrimoxazole       | 31 (8.2)   |
| Cefepime            | 10 (2.7)   |
| Ceftriaxone-proxetil| 20 (5.3)   |

Table 2. Frequency of antibiotic allergies across cohort subgroups

| Allergy Type        | uUTI cohort | p-value |
|---------------------|------------|---------|
| Ciprofloxacin allergy | 54 (14.7) | <0.0001 |
| Trimethoprim-sulfamethoxazole allergy | 70 (18.8) | 0.0297 |
| Nitrofurantoin allergy | 31 (8.3)  | 0.0054 |
| Ceftriaxone allergy | 28 (7.5)   | 0.0146 |
| Levofloxacin allergy | 18 (4.9)  | 0.0324 |
| Cotrimoxazole allergy | 15 (4.1) | 0.0474 |

Conclusion. AB allergies were relatively frequent in this uUTI cohort and the most common allergy was to TMSM, which was the most prescribed AB. Allergies to ABs reduce the available treatment options for uUTI in some females.

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