formulation level. For each month of the study period, a drug was considered to have an active supply chain issue if an FDA or ASHP shortage or recall report overlapped with that month for ≥15 days, or if a discontinuation had occurred within the previous 3 months. Total months of supply chain issues were summed for antimicrobials overall, at the agent formulation , and class levels. A Mann-Kendall test was used to determine the significance of trends in supply-chain issues. **Results:** Of 105 antimicrobials purchased in the United States, 74 (70%) had a supply-chain issue for ≥1 month from January 15, 2017, to June 30, 2022. Combined, the 74 agents had 1,611 total months of supply-chain issues over the 66-month study period. Agents from the penicillin class were most frequently affected (ie, 80% of penicillins had supply-chain issues for 206 months), but cephalosporins had supply-chain issues for the longest duration (66% of cephalosporins for 653 months). From 2017–2021, supply-chain issues decreased significantly for penicillins and quinolones (tests of trend, $P = .01$ and .02, respectively). No trend was identified for the other classes or antimicrobials overall. Interestingly, supply-chain issues for most classes did not increase with seasonal increases in antimicrobial use. Also, supply-chain issues affected 33 antimicrobial agents for at least half of the study period, and supply-chain issues affected ampicillin-sulbactam, cefotaxime, ceftazidime, cefotetan, cefepime, clindamycin, vancomycin for 100% of the study period. **Conclusions:** Drug supply-chain issues commonly affect antimicrobials and are not improving for most classes. Drug supply-chain issues cause significant strain on healthcare, including drug procurement, access to optimal therapy, and poses challenges to prescribing and antimicrobial stewardship. To decrease the threat to the antibacterial drug supply, action should be taken to strengthen the drug supply chain to ensure access to these essential medicines.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s106–s107

doi:10.1017/ash.2023.382

Presentation Type:

Poster Presentation - Oral Presentation

Subject Category: Antibiotic Stewardship

Understanding refugee and immigrant health literacy and beliefs toward antimicrobial resistance

Joseph Ladines-Lim; Elizabeth Scruggs; Tessa Adzemovic; Rachel Croxton; Ron Romero; Michael Lukela; Preeti Mehrotra and Payal Patel

Background: Antimicrobial resistance (AMR) is a global health threat, particularly in refugee populations, due to challenges posed by migration. Little guidance has been provided by public health agencies regarding antimicrobial stewardship specific to this demographic. Studies have primarily focused on encampment areas abroad. We sought to better understand health literacy and beliefs regarding AMR in local refugee and immigrant populations in southeastern Michigan. **Methods:** From November 1, 2022 to March 10, 2023, we distributed an anonymous questionnaire to adult patients at four primary care clinics in Southeastern Michigan and made it available online. The questionnaire collected demographic information and used 5-point Likert scale responses regarding antibiotic use in children with symptoms of respiratory infection. We binarized the questions and responses to determine whether respondents provided the preferred response and added these to create an overall health literacy score, then used simple linear and multivariable linear regression modeling to identify demographic variables independently associated with the health literacy score. Chi-squared and Mann-Whitney tests were also performed where appropriate. **Results:** Immigrants and refugees/asylum-seekers from low or middle-income countries (group A, n = 109) were compared to native-born Americans and immigrants from high-income countries (group B, n = 171) with participants from 40 countries (Figure 1). Age distribution did not differ between groups, while group B had generally longer duration of living in the United States (Figure 2). Differences were found in other demographic categories except female gender, with group B reporting higher income, educational levels, and English ability (Figure 3). Simple linear regression revealed that all demographic variables except age significantly correlated with responses (Figure 4). Multivariable linear regression

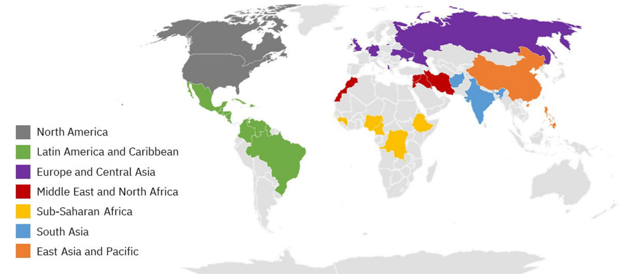

Figure 1: Map displaying countries of origin of research participants from 40 different countries. Countries highlighted in colors divided by region per the World Bank.

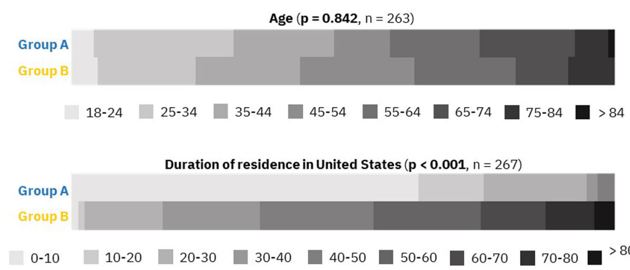

Figure 2: Distribution of age and duration of residence in United States of groups A and B.

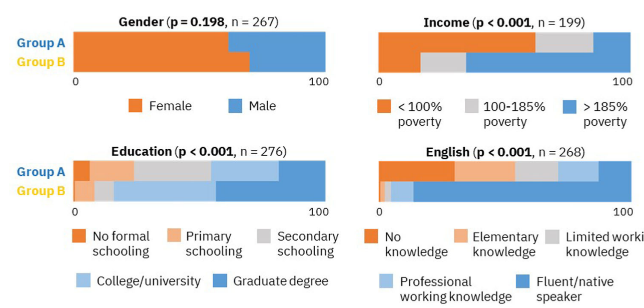

Figure 3: Proportion of gender, distribution of income level, educational level, and English ability of groups A and B. Federal poverty income level for household of four was utilized.

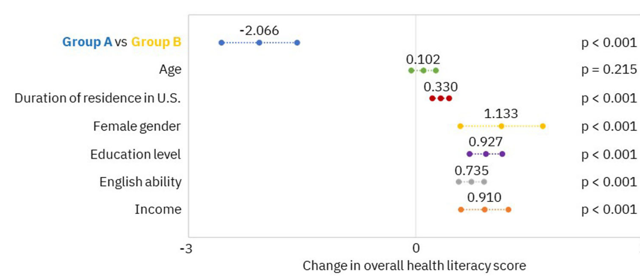

Figure 4: Size effect of demographic variables in simple linear regression with health literacy score. End points show 95% confidence intervals.

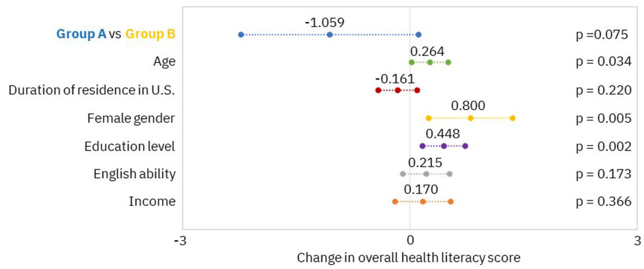

Figure 5: Size effect of demographic variables in multivariable linear regression with health literacy score. End points show 95% confidence intervals.

showed that female gender, educational level, and age correlated with greater health literacy, while being in group A trended towards significance with respect to correlating with lesser health literacy (Figure 5). **Conclusions:** Immigrants and refugees/asylum-seekers from LMICs demonstrated beliefs suggesting deficits in knowledge of AMR compared to native-born Americans and those from high-income countries, independent of other potentially confounding demographic characteristics. Female gender, educational level, and age independently correlated with greater health literacy. These results could inform future patient-centered antimicrobial stewardship educational interventions in certain target populations such as immigrants and refugees/asylum-seekers in the United States.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s107–s108

doi:10.1017/ash.2023.383

Presentation Type:
Poster Presentation - Oral Presentation
Subject Category: Antibiotic Stewardship
Proposing the "continuum of UTI" for a nuanced approach to antimicrobial stewardship

Sonali Advani; Nicholas Turner; Rebecca North; Rebekah Moehring; Alicia Nelson; Valerie Vaughn; Charles Scales Jr; Nazema Siddiqui; Kenneth Schmader and Deverick Anderson

Background: Historically, diagnosis of urinary tract infections (UTIs) has been divided into 3 categories based on symptoms and urine culture results: not UTI, asymptomatic bacteriuria (ASB), or UTI. However, some populations (eg, older adults, catheterized patients) may not present with signs or symptoms referrable to the urinary tract or have chronic lower urinary tract symptoms (LUTS), making the diagnosis of UTI challenging. We sought to understand the clinical presentation of patients who receive urine tests in a cohort of diverse hospitals. **Methods:** This retrospective descriptive cohort study included all adult noncatheterized inpatient and ED encounters with paired urinalysis and urine cultures (24 hours apart) from 5 community and academic hospitals in 3 states (NC, VA, GA) between January 1, 2017, and December 31, 2019. Trained abstractors collected clinical and demographic data using a 60-question REDCap survey. The study group met with multidisciplinary experts (ID, geriatrics, urology) to define the "continuum of UTI" (Table 1), which includes 2 new categories: (1) LUTS to capture patients with chronic lower urinary tract symptoms and (2) bacteriuria of unclear significance (BUS) to capture patients who do not clinically meet criteria for ASB or UTI (eg, older adults who present with delirium and bacteriuria). The newly defined categories were compared to current guideline-based categories. We further compared ASB, BUS, and UTI categories using a lower bacterial threshold of 1,000 colony-forming units. **Results:** In total, 220,531 encounters met study criteria. After using a random number generator and removing duplicates, 3,392 encounters were included. Based on current IDSA guidelines, the prevalence of ASB was 32.1% (n = 975), and prevalence of patients with "not UTI" was 1,614 (53%). Applying the expert panel's

Table 1: Comparison of Urinary Tract Infection (UTI) categories based on current IDSA guidelines and new "continuum of UTI" definition.

UTI Classification based on current IDSA guidelines (n, %)					
Category	**Not UTI** (Mixed + Negative cultures)		**Asymptomatic Bacteriuria** (Positive culture cut off ≥100,000 colony forming units (cfu))		**Definitive UTI**
	1614 (53)		975 (32.1)		452 (14.9)
New Definition of Continuum of UTI (n, %)					
Category	**Not UTI**	**LUTS**	**ASB**	**BUS**	**Definitive UTI**
Culture	Mixed + Negative cultures		Positive culture cut off ≥100,000 cfu		
	1147 (37.7)	467 (15.3)	226 (7.4)	749 (24.6)	452 (14.9)
Sensitivity Analysis: Continuum of UTI (Bacterial Cut-offs lowered, n, %)					
Category	**Not UTI**	**LUTS**	**ASB**	**BUS**	**Definitive UTI**
Category	Mixed + Negative cultures		Positive culture cut off ≥1000 cfu		
Culture	1147 (33.8)	467 (13.8)	276 (8.1)	962 (28.4)	540 (15.9)

Not UTI: Negative or mixed urine culture based on above criteria with no lower or upper urinary tract symptoms
LUTS: Negative or mixed urine culture based on criteria above plus dysuria, urgency, frequency, suprapubic/flank pain or tenderness, incontinence/retention, neurogenic bladder, urologic obstruction, other urologic issues.
Asymptomatic Bacteriuria (ASB): Positive urine culture based on criteria above but no lower or upper urinary tract symptoms
Bacteriuria of Unclear Significance (BUS) Positive urine culture based on above criteria but does not meet criteria for ASB or UTI (e.g., Positive urine culture + fever, or positive urine culture + confusion)
Definitive UTI: Positive urine culture based on criteria above plus dysuria, urgency, frequency, suprapubic/flank pain or tenderness **OR** two clinical criteria (fever + hypothermia) **OR** one clinical criterion + one urologic criterion:
Clinical criteria: fever/rigors/hypotension/hypothermia/shock/nausea vomiting/confusion/leukocytosis. **Urologic Criteria:** urologic procedure or surgery causing mucosal bleeding, urologic obstruction, e.g., stones or active malignancy; retention or incontinence; urologic trauma causing hematuria(catheter trauma; stent placement, etc)

new "continuum of UTI" definitions, the prevalence of "not UTI" patients decreased to 1,147 (37.7%), due to reassignment of 467 patients (15.3%)to LUTS. The prevalence of ASB decreased by 24% due to reassignment to BUS. Lowering the bacterial threshold had a slight impact on the number of definitive UTIs (14.9 vs 15.9%) (Table 1). **Conclusions:** Our rigorous review of laboratory and symptom data from a diverse population dataset revealed that diagnostic uncertainty exists when assessing patients with suspicion for UTI. We propose moving away from dichotomous approach of ASB versus UTI and using the "continuum of UTI" for stewardship conversations. This approach will allow us to develop nuanced deprescribing interventions for patients with LUTS or BUS (eg, watchful waiting, shorter course therapy) that account for the unique characteristics of these populations.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s108

doi:10.1017/ash.2023.384

Presentation Type:
Poster Presentation - Oral Presentation
Subject Category: Antibiotic Stewardship
Changes in US long-term care facility antibiotic prescribing, 2013–2021

Katryna Gouin; Stephen Creasy; Mary Beckerson; Marti Wdowicki; Lauri Hicks and Sarah Kabbani

Background: Antibiotic use (AU) data are needed to improve prescribing in long-term care facilities (LTCFs). CMS requires AU tracking in LTCFs (effective 2017). Although most LTCFs have limited resources for AU tracking, LTCFs contract with LTCF pharmacies to dispense, monitor, and review medications. The objective of our analysis was to report LTCF antibiotic prescribing and characterize temporal changes from 2013 to 2021. **Methods:** We estimated annual systemic AU rates using prescription dispenses and resident census data from PharMerica, a LTCF-pharmacy services provider that covers ~20% of LTCFs nationwide, although the number of LTCFs and residents serviced by PharMerica varied over time (Fig. 1). We included LTCFs with ≥4 months of antibiotic dispensing and 12 months of census data. We identified courses by collapsing the same drug dispensed to the same resident within 3 days of the preceding end date. Course duration was calculated as the difference between