Methods. We performed a retrospective review of inpatient and discharge antimicrobial prescribing at three hospitals from April to September 2016 using two data sources: electronic medication administrations and electronic prescription orders at discharge. Antimicrobial agents from the National Healthcare Safety Network Antimicrobial Use (NHSN AU) module were included. Durations were calculated for admissions in which patients received at least one dose of an antimicrobial agent on inpatient units. Intended post-discharge durations were captured in days during admission periods or calculated from the start of the discharge order and the date of discharge. Post-discharge days and inpatient days were summed to calculate the total duration of therapy resulting from the admission. Descriptive statistics were used to describe inpatient, post-discharge, and total durations.

Results. Among 45,693 inpatient admissions, NHSN AU antimicrobials were given during 23,447 inpatient admissions (51%) and in electronic discharge prescriptions for 7,442 admissions (16%). Median total duration was 4 days (IQR 2–11) among all patients who received antimicrobials and 12 (IQR 9–17) among those who received discharge prescriptions. Common post-discharge durations were 5, 7, and 10 days (Figure 1). Post-discharge days accounted for 40% (78,195/196,792) of the total days of antimicrobial therapy. The most common discharge agents were ciprofloxacin (14%), amoxicillin clavulanate (11%), and levofloxacin (8%). Most discharge prescriptions originated from medical (37.1%), surgical (15.6%), and hematology/oncology wards (14.5%).

Conclusion. Post-discharge days accounted for 40% of antimicrobial days related to inpatient admissions. Common post-discharge durations suggested clinicians were not counting inpatient days when completing discharge orders. Post-discharge days were feasibly captured through electronic prescribing records and could aid in targeting stewardship interventions at transitions of care.

Figure 1. Distribution of post-discharge durations

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894. Prevent Antibiotic overUSE (PAUSE): Impact of a Provider Driven Antibiotic-Time out on Antibiotic Use and Prescribing

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Session: 95. Use ‘em and Lose ‘em: Preventing Antibiotic Overuse

Thursday, October 5, 2017: 2:00 PM

Background. Empiric antibiotic (abx) therapy is often not readdressed after clinical progress becomes apparent and the results of diagnostic studies become available. We sought to evaluate whether an antibiotic time out (ATO) by front-line clinicians after 3–5 days of abx therapy could lead to a reduction in unnecessary abx use.

Methods. A quasi-experimental study to evaluate the impact of an ATO on decreasing abx use was performed over a 6-month base period and 9-month intervention period in 11 units across 6 hospitals in the greater Maryland region was conducted. Patients who received abx for at least 3 calendar days were eligible for study inclusion. Outcomes included days of abx therapy (DOT) per admission to cohort as well as percent of patients with a change in abx regimen on day 3–5 and appropriateness of abx regimens on days 3–5. Appropriateness of abx therapy was adjudicated by infectious diseases (ID) clinicians using prespecified criteria. Regression analysis was used to compare outcomes between the base and intervention periods.

Results. A total of 3,448 abx courses were reviewed, including 1,541 during the base and 1,907 during the intervention period. Overall DOT per cohort admission was similar between the two periods (12.7% vs. 12.2 hospital DOT per admission in the base and intervention periods, respectively, and was not statistically significant after controlling for unit and season (P = 0.18). After adjusting for season, unit, ID consultation, and comorbidities, there was a 12% decrease in the odds of changing or discontinuing abx on days 3–5 in the intervention period compared with the base period (48% vs. 54%, P < 0.05). Similarly, there was an 8% increase in the odds of receiving an appropriate abx regimen on days 3–5 in the intervention period compared with the base period (53% vs. 68%, P = 0.01). There was no difference in the rate of Clostridium difficile lab-events in the two study periods.

Conclusion. In this multicenter study, we found that performance of an ATO by front-line providers was effective at improving the appropriateness of abx therapy 3–5 days after initiation, but did not change the amount of abx use, suggesting that additional interventions, perhaps later during hospitalization or at discharge, are needed to impact duration of abx therapy.

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895. Implementing Antimicrobial Stewardship in Two Community Nepali Hospitals

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Session: 95. Use ‘em and Lose ‘em: Preventing Antibiotic Overuse

Thursday, October 5, 2017: 2:00 PM

Background. Antimicrobial stewardship programs (ASP) are crucial to improving patient outcomes and decreasing resistance, but the effectiveness and the presence of ASP in low-income countries, like Nepal, are unknown. Nepal has no formal ASP efforts or antimicrobial regulations, which leads to an increased prevalence of resistance in the community. We developed and implemented an educational ASP training program to identify areas for ASP in two community hospitals in Kathmandu. With a multidisciplinary team of clinicians and Nepal stakeholders, we developed an ASP toolkit aimed to improve patient outcomes through antimicrobial optimization.

Methods. A 1-day conference on ASP and resistance was held at a community hospital in Kathmandu, with subsequent field observations, microbiologic hospital surveillance, and 2,016 antibiotic chart review. Eleven physician champions (PC) from the two hospitals were selected for formal ASP instruction. ASP protocols were developed with stakeholders and included (i) empiric and definitive antibiotic selection recommendations, (ii) renal dose-adjustment guidelines, (iii) evidence-based duration of therapy recommendations, and (iv) an intravenous-to-oral antimicrobial conversion policy. Two days of fieldwork and stakeholder feedback occurred. A post-test PC evaluation was performed with the intent to gather feedback for implementation of a post-prescription review and feedback (PPRF) system incorporating AMS protocols related to antimicrobial optimization.

Results. The most prevalent infectious organism isolated was Escherichia coli (51%). Most E. coli isolates were commonly resistant to first-line or broad-spectrum antibiotics: 49% ceftriaxone, 46% ciprofloxacin, and 32% meropenem. The overall PC response to ASP toolkit was positive: 73% of PC felt the guidelines would be useful in making decisions about antimicrobials. Cost and availability of antimicrobials were identified as barriers to successful implementation.

Conclusion. Development of a simple ASP toolkit can be an effective means to bring awareness appropriate antimicrobial use, and may be extrapolated to other low-income countries. Stakeholder buy-in is necessary for a successful international interventional program.

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896. The Ontario Program To Improve AntiMiCrobial USE (OPTIMISE): A Descriptive Analysis of Dispensed Antibiotics

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Session: 95. Use ‘em and Lose ‘em: Preventing Antibiotic Overuse

Thursday, October 5, 2017: 2:00 PM

Background. Antimicrobial resistant infections are an emerging global public health crisis. Antibiotic use is the largest modifiable risk factor for antimicrobial resistance. Greater than 90% of antibiotic use in Canada occurs outside of the hospital setting; however, there is a lack of data describing the patterns of community antibiotic use. Our objective was to describe outpatient antibiotic prescriptions for all of Ontario, Ontario, Canada.
Canada and to examine variability in antibiotic prescribing across physicians.

Methods. We conducted a cross-sectional study of antibiotics dispensed from community pharmacies in Ontario, Canada, between March 1, 2014 and February 28, 2016. Ontario has a population of 13.9 million people and over 30,000 physicians. We analyzed data from the Xponent™ database by QuintilesIMS. Xponent™ uses a geospatial extrapolation algorithm to project antibiotic utilization on 100% of the population. This analysis describes physician antibiotic prescribing patterns stratified by patient age and sex.

Results. There were 6,895,616 antibiotics dispensed or 501/1,000 population. The highest prescribing rate was for patients aged 65 and older at 702 antibiotic scripts/1,000 population, children 0–17 years received 477 antibiotic scripts/1,000 population and adults 18–64 years 446 antibiotics/1,000 population. Females aged 65 years and older received the highest number of antibiotics. Narrow spectrum penicillins, macrolides, first-generation cephalosporins, and second-generation fluoroquinolones (ciprofloxacin and norfloxacin) were the most common classes of antibiotics overall; however, the urinary antibiotics including ciprofloxacin, norfloxacin, and nitrofurantoin were the most common in older females (Figure 1). There was significant prescriber variability with 25% of all antibiotics being prescribed by 2.2% of physicians. Family physicians comprised 91% of these high prescribers.

Conclusion. This population-based study quantified community antibiotic utilization and demonstrated marked prescriber variability. Future antibiotic stewardship interventions should target the minority of family physicians that prescribe the majority of antibiotics.

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989. Trends and Associations with PrEP Prescription Among 602 New York City (NYC) Ambulatory Care Practices, 2014–2016

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Session: 99. Featured Oral Abstract

Thursday, October 5, 2017: 4:45 PM

Background. Concern over equitable access to HIV preexposure prophylaxis (PrEP) informs comprehensive scale-up efforts in New York City (NYC). We examined trends plus patient and practice factors associated with PrEP prescribing by NYC ambulatory care practices.

Methods. We queried electronic health records (EHR) from Q1 2014 to Q2 2016 using the NYC Health Department’s “Hub.” Data from 602 practices were aggregated quarterly by patient factors, including age (18–29, 30–100); sex (male, female); and race/ethnicity (Asian, Black, Hispanic, White, other, missing). Practice factors included location (Manhattan, other); type (community health center [CHC], hospital, other); number of infectious disease (ID) specialists; and proportion of patients included location (Manhattan, other); type (community health center [CHC], hospital, other); number of infectious disease (ID) specialists; and proportion of patients in care at non-CHCs or practices outside of Manhattan.

Results. PrEP prescription increased from 38.9 per 100,000 in Q1 2014 to 418.5 per 100,000 in Q2 2016, a 976% increase. Increases were significant for both sexes (P < .001; Figure 1). In multivariate analysis (Table 1), PrEP prescription was associated with both patient (younger age, white race/ethnicity) and practice factors (Manhattan location, CHCs, and on-site ID specialists). While practices with a greater proportion of patients from high poverty neighborhoods were less likely to prescribe PrEP initially, this association weakened over time (Table 2).

Conclusion. PrEP prescription increased over 9-fold from 2014 to 2016 among NYC ambulatory care practices, but disparities persisted. While efforts to promote PrEP may have helped attenuate the disparity by neighborhood poverty of the patient population, continued work may be needed to facilitate PrEP access for women, persons of color and those in care at non-CHCs or practices outside of Manhattan.

Figure 1. PrEP prescription rates in 602 ambulatory care practices, overall and by sex, New York City, Q2 2014 – Q2 2016.

Table 1. Associations with PrEP prescription rate among male patients in 602 ambulatory care practices, New York City, Q1 2014 – Q2 2016.

Table 2. Associations with PrEP prescription rate among male patients in 602 ambulatory care practices, stratified by proportion of patients living in high poverty neighborhoods and time.

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