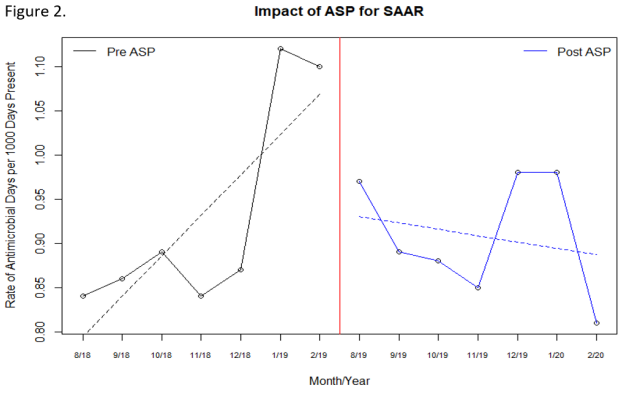
Conclusion. A targeted, multifaceted ASP intervention utilizing modified preauthorization, prospective audit feedback, and education significantly reduced antibiotic use in a community hospital.

Figure 2.



Disclosures. **All Authors**: No reported disclosures

40. Impact of an Antimicrobial Intake Process within a Post-acute Medical System

Katherine M. Shea, PharmD, BCIDP[1]; Segars Wayne, PharmD[1]; Jamie Stocker, PharmD[1]; Meredith Velez, PharmD, BCPS[1]; Elizabeth Davis, PharmD[1]; Darrell Snider, PharmD[1]; [1]Cardinal Health, Austin, TX

Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. Implementation of antimicrobial stewardship programs (ASPs) within long-term acute care facilities (LTACs) is challenging due to limited resources and missing patient data from transferring facilities. In October 2018, an ASP was established within a 43-hopital system consisting of LTACs and rehabilitation hospitals. Despite the presence of a restricted antimicrobial policy, increased utilization was observed for five restricted antimicrobials. The system ASP committee implemented a multipronged approach to optimize utilization of these five agents. Investigators sought to assess the impact of an antimicrobial intake process on antimicrobial consumption.

Methods. This was a retrospective analysis within a 43-hospital system of LTACs and rehabilitation hospitals, comparing use of five restricted antibiotics before (Jul19-Jun20) and after (Jul20-Apr21) implementation of a data-collection and system review process. An antibiotic intake form and process for review for five restricted antibiotics (ceftaroline, ceftazidime/avibactam, ceftolozane/tazobactam, fidaxomicin, meropenem/vaborbactam) was approved at the system ASP committee. The intake form consisted of a restricted antibiotic form, cultures and susceptibilities, physician notes, and other pertinent data. Any orders for the five antibiotics required completion of an intake form and submission to system ASP members for review and recommendations. Antibiotic consumption was measured in cost per acute patient day (cost/pd) using a 2-sided t-test.

Results. Post-implementation, the five restricted antibiotics comprised 29.1% of the total antibiotic expenditure for the healthcare system compared to 35.6% pre-implementation. Ten months after program implementation, the total antibiotic cost/PD decreased 29.45% [($12.02 ± 2.29) vs. ($8.48 ± 1.45); p=0.0003]. The cost/PD of the five restricted antibiotics decreased 42.52% [($4.28 ± 1.09) vs. ($2.46 ± 0.99) ; p=0.0005].

Conclusion. Implementation of an antimicrobial intake process within a post-acute medical system resulted in a significant reduction in antibiotic consumption for five targeted antibiotics as well as overall antibiotic expenditure.

Disclosures. **All Authors**: No reported disclosures

41. Impact of Discharge Antimicrobial Stewardship at an Academic Medical Center

Katie A. Parsels, PharmD[1]; Wesley D. Kufel, PharmD[2]; Jeni Burgess, PharmD[3]; Robert Seabury, Pharm.D.[4]; Rahul Mahapatra, DO[5]; Christopher Miller, Pharm.D.[4]; Jeffrey M. Steele, PharmD[1]; [1]Upstate University Hospital, Syracuse, New York; [2]Binghamton University School of Pharmacy and Pharmaceutical Sciences, Binghamton, New York; [3]Upstate Golisano Children's Hospital, Syracuse, New York; [4]SUNY Upstate University Hospital, Syracuse, NY; [5]State University of New York Upstate, Syracuse, New York

Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. The Centers for Disease Control and Prevention estimates approximately 30% of antimicrobials prescribed in the outpatient setting are unnecessary and up to 50% are inappropriate. Despite this, antimicrobial stewardship (AS) efforts mostly focus on the inpatient setting and limited data describe AS interventions at hospital discharge. Acknowledging the potential for discharge AS, we used our existing resources to review discharge antimicrobial prescriptions sent to our hospital-operated outpatient pharmacy to potentially optimize antimicrobial therapy.

Methods. Discharge antimicrobial prescriptions sent to our hospital-operated outpatient pharmacy, reviewed by an infectious disease (ID) pharmacist, and recorded into the REDCap® data collection tool from September 1, 2020 to February 28, 2021 were evaluated retrospectively. Both adult and pediatric patients were included. The primary outcome was to identify the frequency a DRP was identified by an ID pharmacist while reviewing discharge antimicrobial prescriptions. Secondary outcomes included DRP characterization, percentage of prescriptions with interventions, intervention acceptance rate, and the reduction in antimicrobial days dispensed at discharge when interventions to limit treatment duration were accepted.

Results. Of the 803 discharge antimicrobial prescriptions reviewed, at least one DRP was identified in 43.1% (346/803). The most frequently identified DRPs pertained to treatment duration, drug selection, and dose selection. The most common intervention categories included different antimicrobial duration, antimicrobial discontinuation, and different dose or frequency. At least one intervention was recommended in 42.8% (344/803) of prescriptions. In total, 438 interventions were made and the acceptance rate was 75.6% (331/438). When interventions to reduce the treatment duration were accepted, the median (interquartile range) number of antimicrobial days decreased from 8 (5 – 10) to 4 (0 – 5.5) days (P < 0.001).

Conclusion. ID pharmacist review of discharge antimicrobial prescriptions sent to our hospital-operated outpatient pharmacy resulted in identification of DRPs and subsequent interventions in a substantial number of prescriptions.

Disclosures. **Wesley D. Kufel, PharmD**, **Melinta** (Research Grant or Support)**Merck** (Research Grant or Support)**Theratechnologies, Inc.** (Advisor or Review Panel member)

42. INSPIRE-ASP UTI Trial: A 59 Hospital Cluster Randomized Evaluation of INtelligent Stewardship Prompts to Improve Real-time Empiric Antibiotic Selection versus Routine Antibiotic Selection Practices for Patients with Urinary Tract Infection (UTI)

Shruti K. Gohil, MD, MPH[1]; Edward Septimus, MD[2]; Ken Kleinman, PhD[3]; Neha Varma, MPH[2]; Lauren Heim, MPH[1]; Syma Rashid, MD[1]; Risa Rahm, PharmD[4]; William S. Cooper, PharmD[4]; Laura E. McLean, MEd[4]; Naoise G. Nickolay, RPh[4]; Robert A. Weinstein, MD[5]; Edward Rosen, BA[6]; Taliser R. Avery, MS[6]; Sljivo Selsebil, MPH[6]; Justin Vigeant, BA[6]; Kenneth Sands, MD, MPH[4]; Mandelin Cooper, PharmD[4]; H. L. Burgess, PharmD, MBA[4]; Julia Moody, MS[4]; Micaela H. Coady, MS[6]; Gilbert F. Rebecca, BA[6]; Kimberly N. Smith, MBA[4]; Brandon Carver, BA[4]; Caren Spencer-Smith, MS[4]; Russell Poland, PhD[4]; Jason Hickok, MBA[7]; S. G. Sturdevant, PhD[8]; Anastasiia Weiland, MD[9]; Abinav Gowda, BS[6]; Robert Wolf, BS[10]; Mary K. Hayden, MD, FIDSA, FSHEA[5]; Sujan Reddy, MD, MSc[11]; Melinda M. Neuhauser, PharmD, MPH[11]; Arjun Srinivasan, MD[11]; Arjun Srinivasan, MD[11]; David W. Kubiak, PharmD[12]; John A. Jernigan, MD, MS[11]; John A. Jernigan, MD, MS[11]; Jonathan B. Perlin, MD, PhD[4]; Richard Platt, MD, MSc[2]; Susan S. Huang, MD, MPH[13]; [1]UC Irvine School of Medicine, IRVINE, California; [2]Harvard Medical School, Houston, Texas; [3]University of Massachusetts, Amherst, Massachusetts; [4]HCA Healthcare, Nashville, Tennessee; [5]Rush University Medical Center, Chicago, IL; [6]Harvard Pilgrim Healthcare Institute, Boston, Massachusetts; [7]Ondine, Nashville, Tennessee; [8]NIH, Baltimore, Maryland; [9]UC Irvine, Irvine, California; [10]Boston University School of Medicine, Boston, California; [11]Centers for Disease Control and Prevention, Atlanta, GA; [12]Brigham and Women's Hospital, Boston, Massachusetts; [13]University of California, Irvine, Irvine, CA

Safety and Healthcare Epidemiology Prevention Research Development (SHEPheRD)

Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. Up to 40% of hospitalized patients receive unnecessary or inappropriately broad antibiotics despite a low risk of multidrug-resistant organism (MDRO) infection. Empiric standard spectrum antibiotic use would reduce extended-spectrum (ES) antibiotic exposure and future resistance. We evaluated whether computerized prescriber order entry prompts providing patient-specific MDRO risk estimates could reduce ES antibiotic use compared to routine stewardship practices in patients hospitalized with urinary tract infection (UTI).

Methods. This 59-hospital cluster randomized trial compared: 1) INSPIRE prompts providing patient-specific MDRO UTI risk estimates at order entry and recommended standard spectrum antibiotics for risk < 10% versus 2) routine stewardship practices. Prompt used an absolute MDRO risk algorithm based on a 140 hospital data set. Trial population included adults treated with antibiotics for UTI in ED or non-ICU wards in first 3 days of admission (empiric days); prompt was triggered if ES antibiotics were ordered. Prescribers received feedback on prompt response. Trial periods: 18-month Baseline (Apr 2017–Sept 2018); 6-month Phase-in (Oct 2018–Mar 2019); 15-month Intervention (Apr 2019 – June 2020). Primary outcome was ES antibiotic days of therapy (ES-DOT) per empiric day; secondary outcomes were a) vancomycin and b) anti-pseudomonal DOT per empiric day. Unadjusted, as-randomized analyses used generalized linear mixed effects models to assess differences in ES-DOT rates between the intervention vs baseline period across arms (difference in differences), while clustering by patient and hospital.

Results. **Results:** We randomized 59 hospitals in 12 states, with 87,749 and 66,996 non-ICU UTI admissions in baseline and intervention periods, respectively. Intervention group had a a 21% reduction in ES-DOT compared to routine care. Vancomycin and anti-pseudomonal DOT were similarly reduced in the intervention group by 17% and 23%, respectively (Table).

Table: Group Comparisons for Outcomes of INSPIRE-ASP UTI Trial

Strategy	Baseline DOT Rate[1]	Intervention DOT Rate[1]	Rate Ratio (97.5% CI)[2]	Difference-in-Differences	P-value[2]
AS RANDOMIZED ANALYSIS					
PRIMARY OUTCOME: Extended-Spectrum Days of Therapy					
Routine Stewardship	454	469	1.08 (1.06-1.11)	INSPIRE Prompt with 21% reduction	<0.001
INSPIRE Prompt Intervention	417	351	0.86 (0.84-0.88)		
SECONDARY OUTCOME: Vancomycin Days of Therapy					
Routine Stewardship	134	128	0.96 (0.93-1.00)	INSPIRE Prompt with 17% reduction	<0.001
INSPIRE Prompt Intervention	127	103	0.80 (0.77-0.83)		
SECONDARY OUTCOME: Anti-Pseudomonal Days of Therapy					
Routine Stewardship	256	269	1.08 (1.05-1.11)	INSPIRE Prompt with 23% reduction	<0.001
INSPIRE Prompt Intervention	223	186	0.83 (0.81-0.86)		

[1]DOT Rate: DOT per empiric day (first 3 days of hospitalization) expressed with multiplier 1,000 empiric days.
[2]P-value assessed at two-tailed significance set at alpha = 0.025 for null hypothesis that the relative rate ratio in each arm is not different.
*Abbreviations: UTI = Urinary tract infection; DOT = Days of Therapy; CI = Confidence Interval

Conclusion. **Conclusion:** INSPIRE order entry prompts providing real-time, patient-specific MDRO risk estimates with recommendation to use standard spectrum antibiotics in low risk patients significantly reduced empiric ES prescribing in adults admitted with UTI.

Disclosures. **Shruti K. Gohil, MD, MPH**, **Medline** (Other Financial or Material Support, Co-Investigator in studies in which participating hospitals and nursing homes received contributed antiseptic and cleaning products)**Molnlycke** (Other Financial or Material Support, Co-Investigator in studies in which participating hospitals and nursing homes received contributed antiseptic and cleaning products)**Stryker (Sage)** (Other Financial or Material Support, Co-Investigator in studies in which participating hospitals and nursing homes received contributed antiseptic and cleaning products) **Edward Septimus, MD**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic products)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic products) **Ken Kleinman, PhD**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic products)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic products) **Lauren Heim, MPH**, **Medline** (Other Financial or Material Support, Conducted clinical trials and studies in which participating hospitals and nursing homes received contributed antiseptic and cleaning products)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)**Stryker (Sage)** (Other Financial or Material Support, Conducted clinical trials and studies in which participating hospitals and nursing homes received contributed antiseptic product)**Xttrium** (Other Financial or Material Support, Conducted clinical trials and studies in which participating hospitals and nursing homes received contributed antiseptic product) **Syma Rashid, MD**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)**Stryker (Sage)** (Other Financial or Material Support, Conducted clinical trials and studies in which participating hospitals and nursing homes received contributed antiseptic product)**Xttrium** (Other Financial or Material Support, Conducted clinical trials and studies in which participating hospitals and nursing homes received contributed antiseptic product) **Taliser R. Avery, MS**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Kenneth Sands, MD, MPH**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Julia Moody, MS**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Kimberly N. Smith, MBA**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Brandon Carver, BA**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Caren Spencer-Smith, MS**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Russell Poland, PhD**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Jason Hickok, MBA**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Arjun Srinivasan, MD**, Nothing to disclose **John A. Jernigan, MD, MS**, Nothing to disclose **Jonathan B. Perlin, MD, PhD**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Richard Platt, MD, MSc**, **Medline** (Research Grant or Support, Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) **Susan S. Huang, MD, MPH**, **Medline** (Other Financial or Material Support, Conducted studies in which participating hospitals and nursing homes received contributed antiseptic and cleaning products)**Molnlycke** (Other Financial or Material Support, Conducted studies in which participating hospitals and nursing homes received contributed antiseptic and cleaning products)**Stryker (Sage)** (Other Financial or Material Support, Conducted studies in which participating hospitals and nursing homes received contributed antiseptic and cleaning products)**Xttrium** (Other Financial or Material Support, Conducted studies in which participating hospitals and nursing homes received contributed antiseptic and cleaning products)

43. Impact of a Five-Year Intervention of an Antimicrobial Stewardship Program on the Optimal Antibiotic Prophylaxis Selection in Surgery in a Hospital without Restrictions on Antibiotics Prescription in Costa Rica

José P. Díaz-Madriz, PharmD[1]; Esteban Zavaleta-Monestel, PharmD[1]; Jorge A. Villalobos-Madriz, PharmD[2]; Alison V. Meléndez-Alfaro, n/a[2]; Priscilla Castrillo-Portillo, n/a[2]; Ana F. Vásquez-Mendoza, n/a[1]; Gabriel Muñoz-Gutierrez, MD ID[1]; Sebastián Arguedas-Chacón, n/a[3]; [1]Hospital Clínica Bíblica, San José, San Jose, Costa Rica [2]Universidad de Ciencias Médicas (UCIMED), San José, San Jose, Costa Rica [3]Universidad de Costa Rica, San José, San Jose, Costa Rica

Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. In a private hospital without restrictions on antibiotic prescription, the success of an Antimicrobial Stewardship Program (ASP) depends mainly on prospective feedback and education. Previously, the ASP of this hospital (PROA-HCB) managed to achieve a positive impact on the antibiotic prophylaxis in cesarean delivery. The purpose of this study is to characterize the impact after implementing the PROA-HCB on the optimal prophylaxis selection of all the procedures included in the clinical guideline for surgical antibiotic prophylaxis in adult patients.

Methods. A retrospective observational study that compares the selection, duration, antibiotic consumption, bacterial resistance profiles and patient's safety outcomes regarding antibiotic use for all surgical prophylaxis prescription over six months for the periods before (pre-ASP) and after a five-year intervention of PROA-HCB (post-ASP).

Results. After a five-year intervention, the percentage of optimal selection of antibiotic prophylaxis in Surgery was 21.0% (N=1598) in the pre-ASP period and 80.0% (N=841) in the post-ASP period (59% absolute improvement, $p < 0.001$). Percentage of optimal duration was 69,1% (N=1598) in the pre-ASP period and 78.0% (N=841) in the post-ASP period (8.9% absolute improvement, $p < 0.001$). Mean ceftriaxone utilization was 217.7 defined daily doses (DDD) per 1,000 patient days DDD for the pre-ASP period and 139.8 DDD per 1,000 patient days for the ASP period (35.8% decrease; $p = 0.019$). Mean cefazolin utilization was 14.9 DDD per 1,000 patient days for the pre-ASP period and 153.3 DDD per 1,000 patient days for the ASP period (928.6% increase; $p = 0.021$). Regarding percentage of bacterial resistance, there was detected an improvement in some isolates like *Escherichia coli* with a decrease of ESBL detection (11% decrease; $p = 0.007$). In addition, no serious adverse reactions or an increase in surgical site infections were detected after the intervention.

Conclusion. The implementation of an ASP in the surgical ward showed an overall positive impact on selection and duration of antibiotic prophylaxis. Furthermore, this intervention could have had a positive impact on antimicrobial resistance and at the same time had no negative effects on the patients.

Disclosures. **All Authors**: No reported disclosures

44. Cost Effectiveness and Clinical Outcomes of Long Acting Lipoglycopeptides Used in Transitions of Care for Deep-Seated Infections

Kayla S. Antosz, PharmD[1]; Julie Ann Justo, PharmD, MS, BCPS-AQ ID[2]; Majdi N. Al-hasan, MD[2]; Benjamin Tabor, PharmD[1]; Joseph Kohn, PharmD, BCPS[1]; Alexander Milgrom, MD[1]; Kevin Lu, PhD[3]; P. Brandon Bookstaver, Pharm D[3]; [1]Prisma Health Midlands, Columbia, South Carolina; [2]University of South Carolina, Columbia, SC; [3]University of South Carolina College of Pharmacy, Columbia, South Carolina

Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. Dalbavancin and oritavancin are long-acting lipoglycopeptides (LaLGPs) FDA-approved for one-time only dosing for skin and skin structure infections. The use of these agents in serious, deep-seated infections requiring protracted antibiotic courses is of increasing interest. The purpose of this study is to evaluate the economic and clinical utility of LaLGPs in patients requiring protracted antibiotic courses who are not ideal candidates for oral transition or outpatient parenteral antibiotic therapy (OPAT).

Methods. This is a retrospective, observational, matched cohort study of adult patients who received a LaLGP. Patients who received a LaLGP were matched 1:1 to those who received standard of care (SOC) therapy by age (+/- 10 years), infection type, microorganism, and socioeconomic factor (e.g. persons who inject drugs, homelessness). Cost effectiveness was evaluated as total healthcare-related costs between groups. Clinical failure was a composite endpoint of mortality, recurrence, or need for extended antibiotics beyond planned course within 90 days of initial infection. Secondary outcomes included hospital length of stay and proportion of patients who left against medical advice (AMA).

Results. A total of 46 patients were included (23 per group). The most frequent indication was endovascular infection and the most common organism methicillin-resistant *Staphylococcus aureus*. The average length of stay was 22.9 days vs. 31.9 days in