Antimicrobial Stewardship Program Retreat

November 1, 2024

UCLA Health

Agenda

- Year in Review
- 2024 Priority Matrix
- Current Projects Review
- NHSN updates
  - AU/AR Data Review, Benchmarking
- Prospective Audit and Feedback
- Micro updates
- IDTS
- New Potential Projects
- 2025 Priority Matrix

Year in Review

UCLA Health

Accomplishments

- Blood culture shortage
- Critical Shortage IV fluids
- Perioperative guidance and data
- Nudges
- Next Day Clinic Pathways
- Educational efforts: multiple grand rounds, competency-based modules (nursing)
- Updated HS 1444
- CDPH SDOH Study, submitting data
- Pemibivart implementation
- Caspofungin --> Micafungin

- Submitted CDPH honor roll
- Successful AR validation for NHSN
- Enrollment in AHRQ/JHU project for ASP in Telehealth
- BCID approved!
- Vaccine Oversight Committee
- Intraamniotic infection updated guidance
- Karius paper

UC –Wide Beta-Lactam Allergy Project

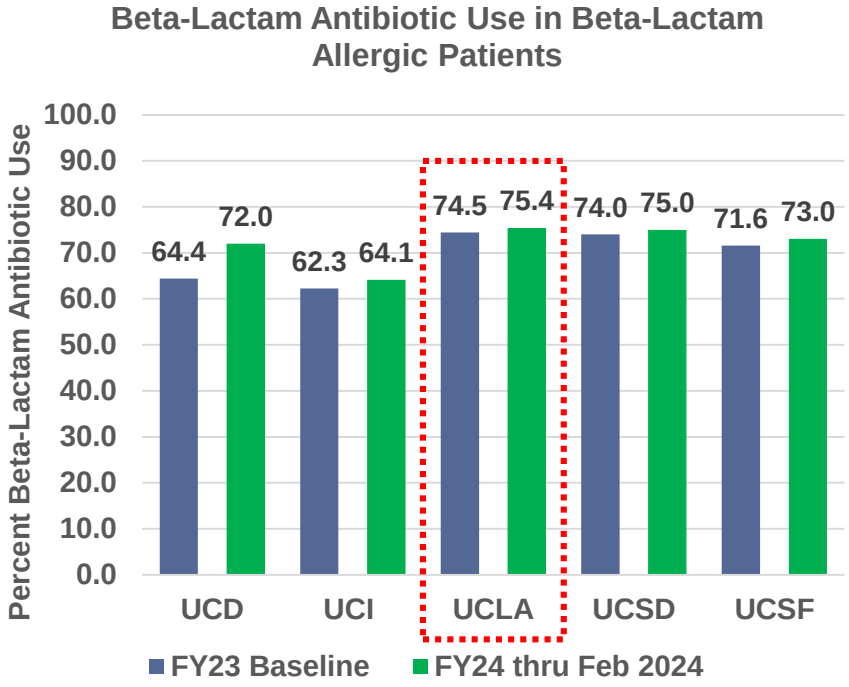
Beta-Lactam Utilization Dashboard was created in collaboration with UCDWH since July 2022 to date and compared between FY23 and FY24 YTD.

Numerator: # of encounters with beta-lactam allergy history that received any beta-lactam antibiotic dose

Denominator: # of encounters with beta-lactam antibiotic flag where the patient received any antibiotic dose.

Progress: all 5 UC sites improved/ increased beta-lactam antibiotic use in beta-lactam allergic patients in FY24 to date.

	Change since FY23
UCD	↑ 7.6%
UCI	↑ 1.9%
UCLA	↑ 1.0%
UCSD	↑ 1.0%
UCSF	↑ 1.7%



Graph created based on the data provided by UCDWH.

UC Collaborative ID: July 2023-June 2024 Highlights

UCLA Health	**Accomplishments**	• New ASP program manager - Bushra Rahman • Pemivibart roll out • Caspo/Mica BPA • Caspofungin to Micafungin conversion
		• NHSN AR implementation • Next Day Clinic Guideline Development • Olorofim/Fosmanogepix Expanded Access IRB protocol • Firstline clinical pathway overhaul • Ortho-ID case conferencing • Competency based modules for staff • Allergy Delabeling in Postpartum • Increasing WBC threshold for urinalysis to reflex to urine culture (collaboration with laboratory • stewardship, microbiology, infection prevention, antimicrobial stewardship) • Mycobacterium mucogenicum outbreak investigation, UCLA Santa Monica Medical Center (collaboration with infection prevention, facilities, microbiology) • CPO screening for UCLA patients (collaboration with infection prevention, microbiology) • Urine retention management standardization (collaboration with infection prevention, nursing, urology) • Creation of physician mini-root cause analyses for C difficile, CAUTI and CLABSIs at UCLA (infection prevention, health system CMOs) • Foley catheter exchange prior to collecting urine cultures (infection prevention, nursing, Information Services & Solutions, urology)

Awards

- UCLA Apple for Preceptor Award
  - Ethan Smith, Christine Pham, Meganne Kanatani
- Ethan Smith - Nominated for and accepted chair position for CDPH Antimicrobial Stewardship/Antimicrobial Resistance Subcommittee of the Hospital-Acquired Infection Committee
- Ethan Smith - UCLA ID Fellow Class of 2024 “Fellows First Award

UC Collaborative ID: July 2023-June 2024 Highlights

UCLA Health	Tara Vijayan, MD, MPH	• "#9: Arts & Grafts". Febrile: A Cultured Podcast • Sabbath Town Hall on Covid Vaccines • AHA sponsored Inglewood Active Community Town Hall • Covid Vaccine Townhall • Carnegie Science Center Covid-19 Vaccine Panel Series • Work for various decarceration groups (prison law firms, ACLU, Federal Defenders of San Diego) to reduce COVID in prisons
	Ishminder Kaur, MD	• Speaker for California Association of Neonatologists and AAP District IX Section on Neonatal-Perinatal Medicine Cool Topics in Neonatology Conference • Speaker for Tower Health Maternal Child Health Virtual Conference • AAP Speaker for California Chapter • Speaker for California Pediatric ASP Meeting
	Matthew Davis, PharmD	• Remdesivir SIDP Video • American College of Medical Toxicology Webinar • Contagion Live Interview • HHSP Covid Therapeutics Update

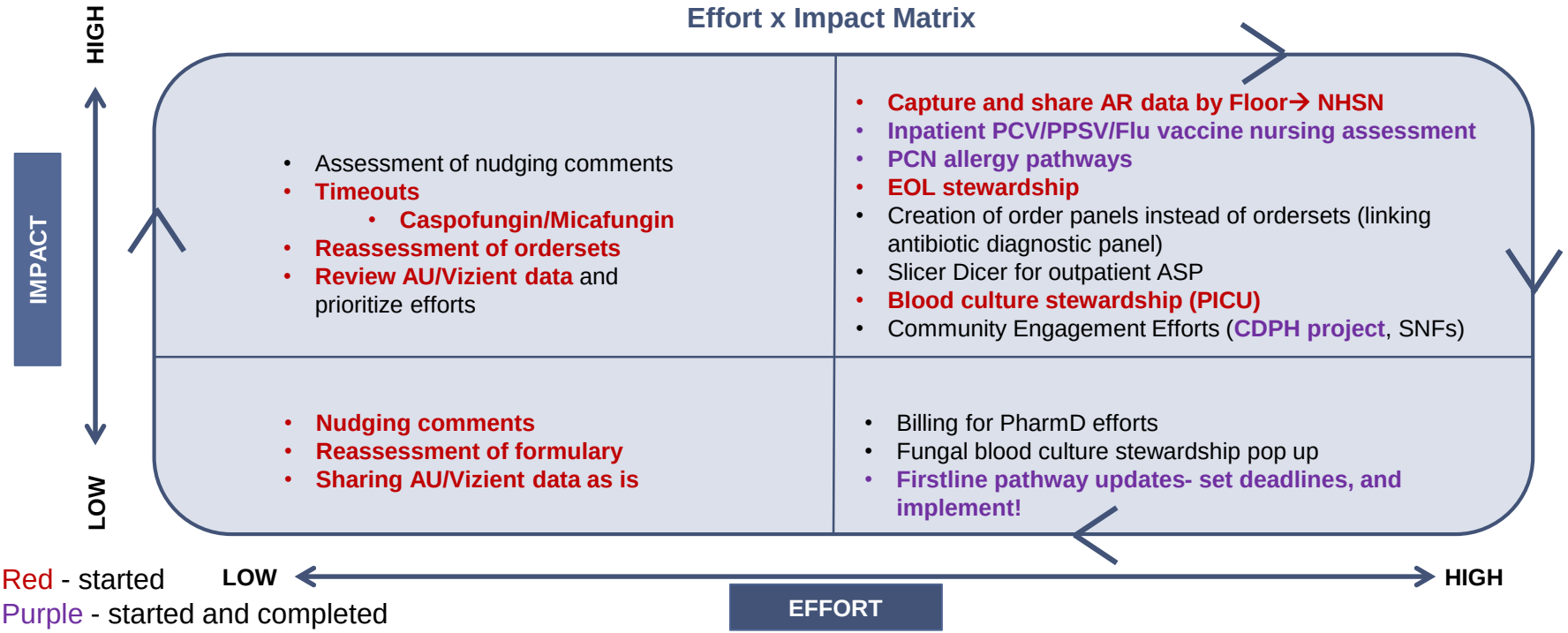
UC Los Angeles Posters

- Jasdhaul M, Fulgentes GE, Hsueh L, Brewer G, Dogan T, **Prabaker K**. Interdisciplinary Urine Culture Stewardship: Its Impact on Urine Cultures and CAUTI Rate [Abstract #87428]. National Teaching Institute & Critical Care Exposition, Philadelphia 2023
- Parti U, Lewis V, Ison RP, **Uslan DZ**, Bisht A, Walton S, Turay S, Wellbaum D, Mugford Y, de St. Maurice A, **Prabaker K**. Efficacy of Empiric Contact Precautions for Patients from High Risk Facilities [Abstract #97]. Society of Healthcare Epidemiology of America, Houston 2024
- Jasdhaul M, Dogan T, Bennett K, Fulgentes G, **Prabaker K**. Improving Catheter Associated Urinary Tract Infection (CAUTI) Outcomes Through Physician Engagement [Podium presentation]. UCLA Research and Evidence-Based Practice Conference, Los Angeles 2024
- Zamora, R, Dickson, D, **Vijayan, T**. "A Case of Pneumocystis Pneumonia Diagnosed Via Plasma Cell-Free DNA." Unusual Chest Infections Rapid Fire Case Reports. American College of Chest Physicians Annual Meeting, Hawaii, October 2023.
- Shields R, Cifuentes R, Claeys K, DeSear K, Gallagher J, Gregory E, Heil E, Hickey C, Klatt M, Kline E, Kubat R, Kufel W, Lee J, Lim A, Lingg T, MacDougall C, Mathers A, McCreary E, Moore W, Olson S, Oxer J, Pearson J, **Pham C**, Polk C, Satlin M, Satola S, Shah S, Solanki Y, Tamma P, Vega A, Veena V, Veve M, Wangchinda W, Witt L, Wu J, Pogue J. Efficacy of Ceftazidime-Avibactam versus Ceftolozane-Tazobactam for multidrug-resistant Pseudomonas aeruginosa infections in the United States (CACTUS) among immunocompromised. Poster Abstract. ECCMID, Barcelona, Spain, 2024. -Shields R, Cifuentes R, Claeys K, DeSear K, Gallagher J, Gregory E, Heil E, Hickey C, Klatt M, Kline E, Kubat R, Kufel W, Lee J, Lim A, Lingg T, MacDougall C, Mathers A, McCreary E, Moore W, Olson S, Oxer J, Pearson J, Pham C, Polk C, Satlin M, Satola S, Shah S, Solanki Y, Tamma P, Vega A, Veena V, Veve M, Wangchinda W, Witt L, Wu J, Pogue J.
- De La Reyes G, **Smith E**, Clarito L. Vancomycin Cerebrospinal Fluid (CSF) Concentration in Correlation with Standard Area Under the Curve (AUC) Monitoring Utilizing Bayesian Modeling Software for Patients with Central Nervous System (CNS) Infections. Vizient, Anaheim, California, 2023.
- Angela Castro, **Christine Pham**, Adonia Eskandari, Diep Phan, **Ishminder Kaur**. Retrospective Study on the Impact of Ongoing or Prior IV Vancomycin Therapy on MRSA Nares Test Results: A Time Based Analysis. Poster Abstract. Vizient, Anaheim, California, 2023.
- Beaulac K, Mentler P, Nagel J, Postelnick M, Patel PC, McCoy C, Kinn P, Casaus D, **Smith EA.** Benchmarking Clinical Outcomes by Antimicrobial Spectrum in Patients with Community-Acquired Pneumonia. IDWeek 2024. Los Angeles, California, 2024.
- De Los Reyes G, Blanco MB, Vespa P, **Smith E**, Wherry C, Johnson-Black P, Almahmoud M, Chaudhari A, Ibekwe E, Clarito L. Vancomycin Cerebrospinal Fluid (CSF) Concentrations Achieved with Bayesian Model-Guided Area Under the Curve (AUC) Dosing for Central Nervous System (CNS) Infections. Neurocritical Care Society, San Diego, California, 2024.
- Davis M, Kufel J, Kufel W, Ross J, Oleksiuk L, Ours R, **Smith E**, **Pham C**, Trisler M, Tverdek F. Infectious Diseases Pharmacist Curbsides: Questions Infectious Diseases Providers Ask Infectious Diseases Pharmacists. IDWeek 2024. Los Angeles, California, 2024.

UC Los Angeles Publications

- Daniel Karlin, **Christine Pham**, Daisuke Furukawa, **Ishminder Kaur**, Emily Martin, Olivia Kates, **Tara Vijayan**. State-of-the-Art Review: Use of Antimicrobials at the End of Life. Clinical Infectious Diseases, Feb 2024: ciad735, https://doi.org/10.1093/cid/ciad735
- Daniel Karlin**, Christine Pham**, Daisuke Furukawa, **Ishminder Kaur**, Emily Martin, Olivia Kates, **Tara Vijayan**. Executive Summary: State-of-the-Art Review: Use of Antimicrobials at the End of Life. Clin Infect Dis. 2024 Feb 1:ciad737. doi: 10.1093/cid/ciad737. Epub ahead of print. PMID: 38301074.
- Melgar M, Abrams JY, Godfred-Cato S, Shah AB, Garg A, Strunk A, Narasimhan M, Koptyev J, Norden A, Musheyev D, Rashid F, Tannenbaum R, Estrada-Y-Martin RM, Patel B, Karanth S, Achenbach CJ, Hall GT, Hockney SM, Caputo M, Abbo LM, Beauchamps L, Morris SB, Cifuentes RO, de St Maurice A, Bell DS, **Prabaker KK**, Sanz Vidorreta FJ, Bryant E, Cohen DK, Mohan R, Libby CP, SooHoo S, Domingo TJ, Campbell AP, Belay ED. A multicenter retrospective cohort study to characterize patients hospitalized with MIS-A and COVID-19 in the United States, 2020-2021. Clin Infect Dis. 2023 Nov 17;77(10):1395-1405. doi: 10.1093/cid/ciad374. PMID: 37384794; PMCID: PMC10654854
- Gray HK, Beaird OE, **Smith EA**, Schaenman JM, Yang S. Domestically Acquired NDM-1–Producing Pseudomonas aeruginosa, Southern California, USA, 2023. EID Journal. 2023;29(11):2382-5.
- **Vijayan, T**, Currier, J. “Realising Long-Acting ART as Firstline Therapy.” Lancet HIV, invited, published September 10, 2023 PMID: 3756720 Vijayan T. What Did I Miss? Clin Infect Dis. 2023 Oct 4 PMID: 37791971
- Kang D, Huang CX, Yuen AD, Norris KC, **Vijayan T.** Do hospitals that participate in COVID-19 research differ from non-trial hospitals? A cross-sectional study of US hospitals. Trials. 2023 Aug 7;24(1):504. doi: 10.1186/s13063-023-07450-6. PMID: 37550662; PMCID: PMC10408090.
- Olivo-Freites C, Davar K, Gallardo-Huizar O, **Vijayan T**, Younes R. Case Report: Cardiovascular Manifestations due to Flea-Borne Typhus. Am J Trop Med Hyg. 2023 Dec 4;110(1):150-154. doi: 10.4269/ajtmh.22-0794. PMID: 38052087; PMCID: PMC10793017.
- Sherwood, K and **Vijayan, T**. “Mycobacterium Avium Complex.” ClinicalKey Website. Elsevier, 2023
- **Prabaker, KK**. Vascular Catheter Infections. In: Margaret Hessen. Clinical Overviews. Elsevier. (Accessed on September 8, 2023.) Smith EA, Jariwala R. Precision in Practice: Optimizing Probability of Beta-Lactam Target Attainment with Prolonged Infusions and Therapeutic Drug Monitoring. Pharmacy Times: 21 March 2024.
- **Smith EA**, Jariwala R. Precision in Practice: Optimizing Probability of Beta-Lactam Target Attainment with Prolonged Infusions and Therapeutic Drug Monitoring. *Pharmacy Times.* 21 March 2024.
- **Smith EA**, Jariwala R. Standardized Stewardship” – Navigating the new TJC Standards for Antimicrobial Stewardship. Vizient VerifiedRx Podcast – https://podcasts.apple.com/dk/podcast/standardized-stewardship-navigating-the-new-tjc/id1544167927?i=1000642695995. 2024 January.

2024 Prioritization Matrix



- Red - started
- Purple - started and completed

Current Projects

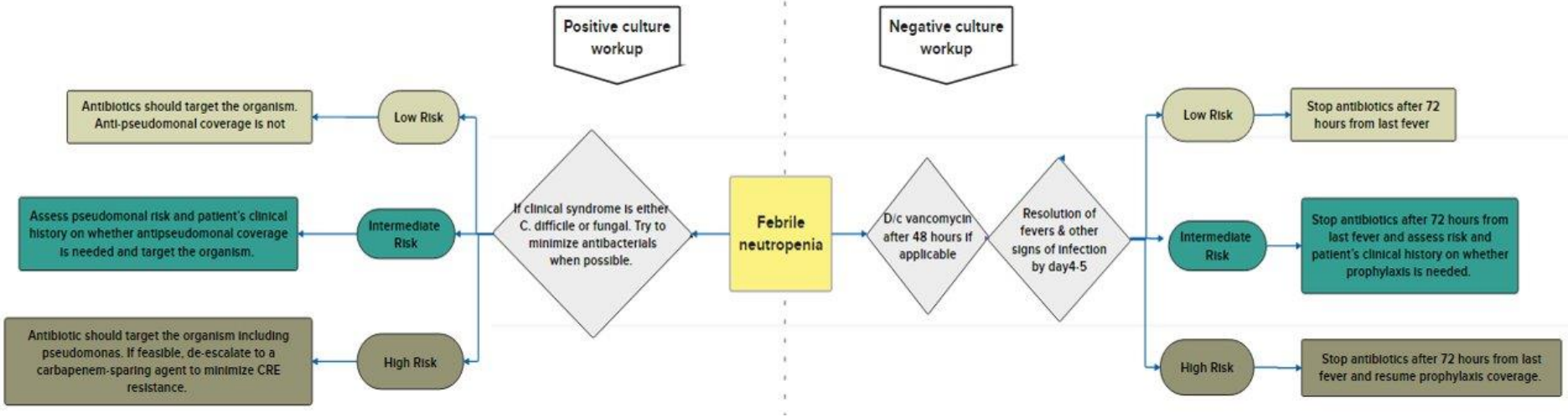
Current Projects: Pharmacy

- Inpatient Penicillin Delabeling (Ob, expanding)
- Optimizing desensitization ordersets
- Updating penicillin allergy alerts based on side chain similarities vs. Beta-lactam class
- EA: fosmanogepix, olorofim, ibrexafungerp, clofazimine
- Optimizing Intraperitoneal antimicrobials order set
- Inpatient and outpatient vaccine standardization
  - Example GSK contracting: Heplisav, Pediatric DTaP-IPV
- PrecisePK integration with EPIC for 2025 and getting a UC system wide contract discount
  - Updated flowsheet/note templates for pharmacists
- Neutropenic fever guidance
- Standalone antibiotic panels and automation for MRSA nares w/ PNA

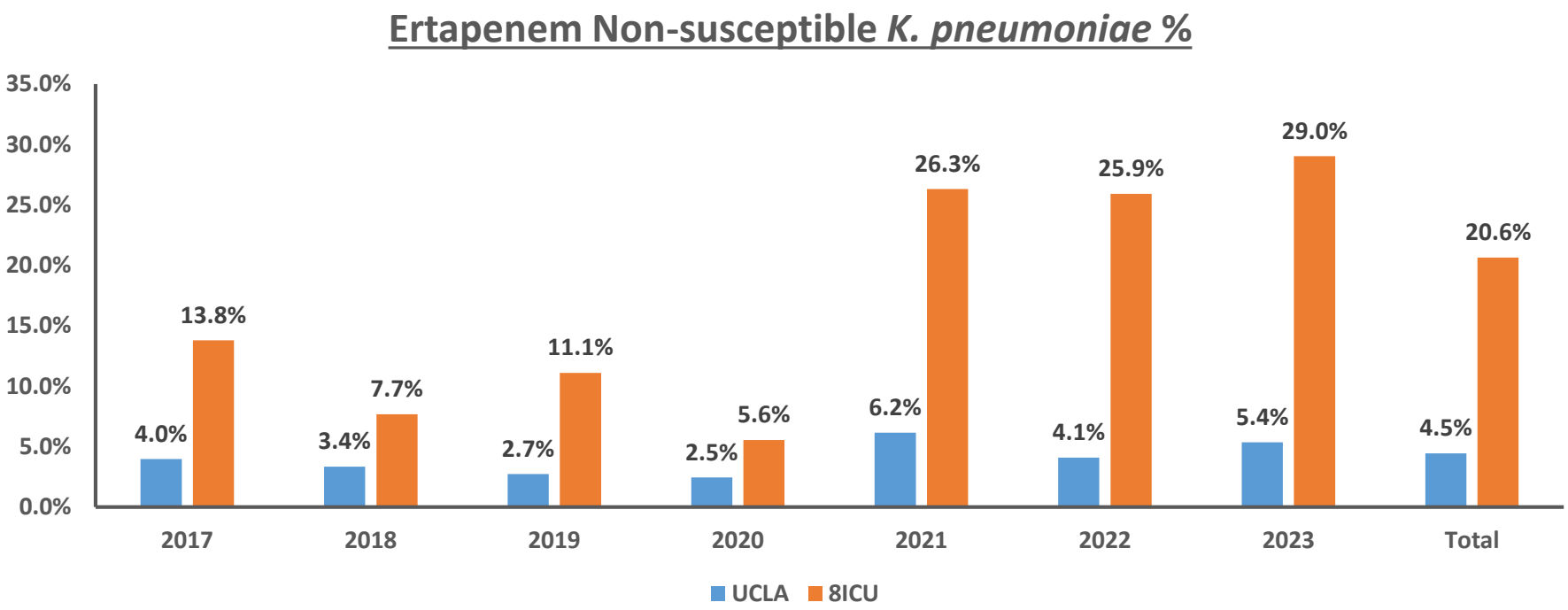
Micafungin BPA Data

- BPA performance
  - In the last 6 months, the BPA has fired 350 times on 86 patients
    - Of the 350 fires, an order was placed 102 times on 58 patients
      - BPA is accepted but ID consult order is not placed
  - BPA allows users to defer multiple times (no maximum- cannot be built in)
  - BPA logic to wait 72 hours was not working in the beginning (time frame confirmation pending)
- Next steps:
  - Add 'discontinue micafungin' button to the BPA
  - Add link to paging interface within BPA
  - Exclude indication “prophylaxis, immunocompromised host” from BPA

Febrile Neutropenia Guidance



8ICU – Planning for Enhanced ASP Activities



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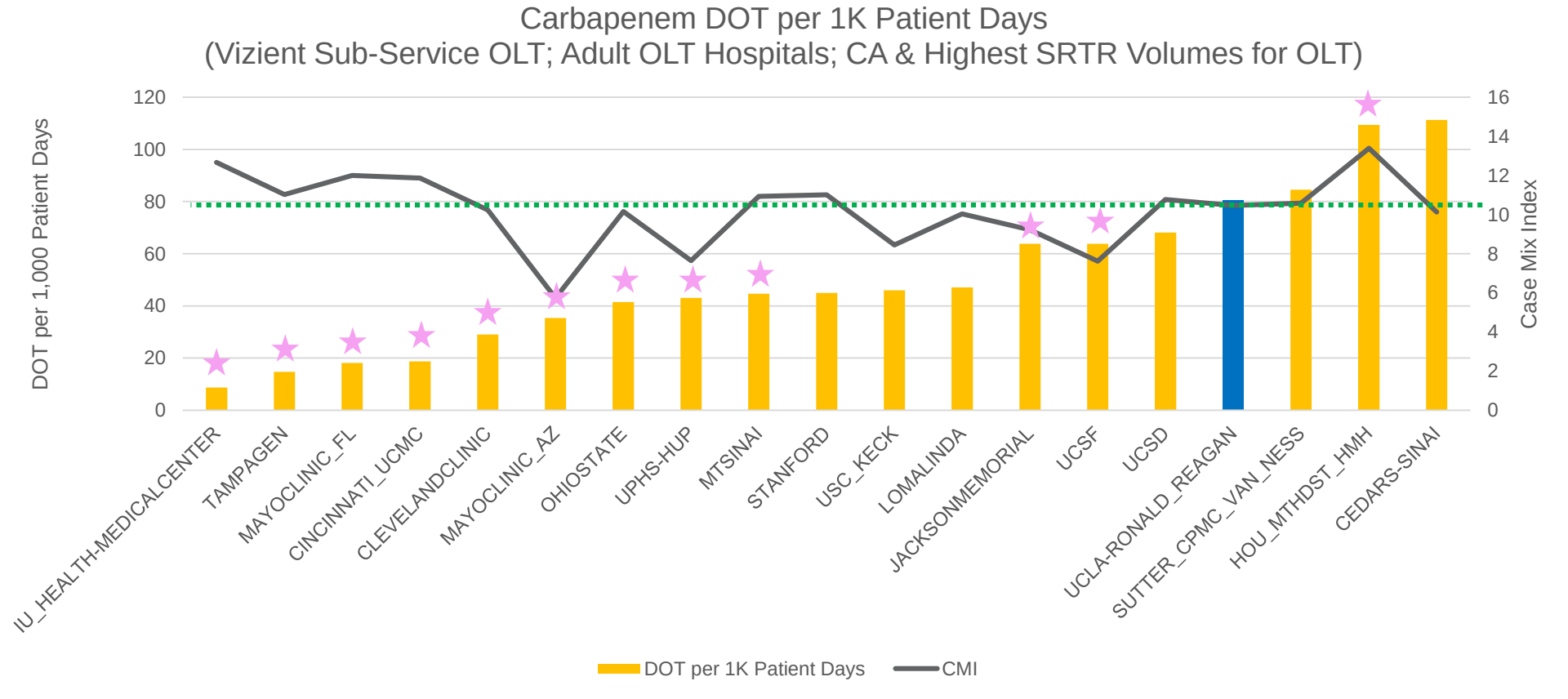
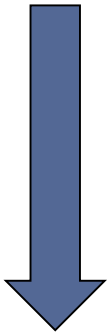
Vizient: Liver Transplant Carbapenem DOT per 1,000 Patient Days



OLT Carbapenem Mean Duration Per Case (Vizient) and Hospital Resistance Rates (Personal Communication)

Low Vizient Carbapenem DOTs



High Vizient Carbapenem DOTs

Hospital	Mean Duration per Case	ESBL%*	CRE%*
IU_HEALTH-MEDICALCENTER	11.5	17	3
TAMPAGEN	9.4	19	-----
MAYOCLINIC_FL	9.6	21	1
CINCINNATI_UCMC	7.7	18	1
CLEVELANDCLINIC	8.7	8.5	1.5
MAYOCLINIC_AZ	6.4	19	2.5
OHIOSTATE	5.5	-----	-----
UPHS-HUP	8.5	10.1	-----
MTSINAI	16.2	35.5	5.5
STANFORD	13.6	13.5	1
USC_KECK	9.8	28	-----
LOMALINDA	5.4	19	5
JACKSONMEMORIAL	14.4	-----	-----
UCSF	6.3	23	2.5
UCSD	11.7	26.5	-----
UCLA-RONALD_REAGAN	16.2	23.5	3.5
SUTTER_CPMC_VAN_NESS	11.3	12	-----
HOU_MTHDST_HMH	17.8	21.5	3
CEDARS-SINAI	16.6	(↓)	(↓)

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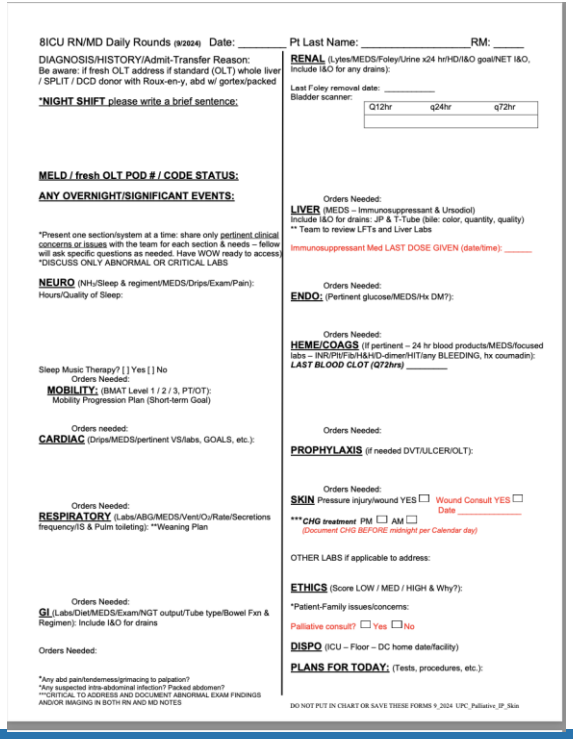
Highlighted hospitals perform more yearly OLTs vs. UCLA based on SRTR data

*Mean ceftriaxone-R (ESBL) and ertapenem-R/meropenem-R (CRE) between *E. coli* and *K. pneumoniae*

Meropenem in Liver Transplant Unit



8ICU RN/MD Daily Rounds (9/2024) Date: _____ Pt Last Name: _____RM: _____

DIAGNOSIS/HISTORY/Admit-Transfer Reason:
Be aware: if fresh OLT address if standard (OLT) whole liver / SPLIT / DCD donor with Roux-en-y, abd w/ gortex/packed

*NIGHT SHIFT please write a brief sentence:

MELD / fresh OLT POD # / CODE STATUS:

ANY OVERNIGHT/SIGNIFICANT EVENTS:

*Present one section/system at a time: share only pertinent clinical concerns or issues with the team for each section & needs – fellow will ask specific questions as needed. Have WOW ready to access
*DISCUSS ONLY ABNORMAL OR CRITICAL LABS

NEURO (NH3/Sleep & regiment/MEDS/Drips/Exam/Pain):
Hours/Quality of Sleep:

Sleep Music Therapy? [ ] Yes [ ] No
Orders Needed:
MOBILITY: (BMAT Level 1 / 2 / 3, PT/OT):
Mobility Progression Plan (Short-term Goal)

Orders needed:
CARDIAC (Drips/MEDS/pertinent VS/labs, GOALS, etc.):

Orders Needed:
RESPIRATORY (Labs/ABG/MEDS/Vent/O2/Rate/Secretions frequency/IS & Pulm toileting): **Weaning Plan

Orders Needed:
GI (Labs/Diet/MEDS/Exam/NGT output/Tube type/Bowel Fxn & Regimen): Include I&O for drains

Orders Needed:

*Any abd pain/tenderness/grimacing to palpation?
*Any suspected intra-abdominal infection? Packed abdomen?
**CRITICAL TO ADDRESS AND DOCUMENT ABNORMAL EXAM FINDINGS AND/OR IMAGING IN BOTH RN AND MD NOTES

RENAL (Lytes/MEDS/Foley/Urine x24 hr/HD/I&O goal/NET I&O, Include I&O for any drains):

Last Foley removal date: _____
Bladder scanner:

Q12hr	q24hr	q72hr

Orders Needed:
LIVER (MEDS – Immunosuppressant & Ursodiol)
Include I&O for drains: JP & T-Tube (bile: color, quantity, quality)
** Team to review LFTs and Liver Labs

Immunosuppressant Med LAST DOSE GIVEN (date/time): _____

Orders Needed:
ENDO: (Pertinent glucose/MEDS/Hx DM?):

Orders Needed:
HEME/COAGS (if pertinent – 24 hr blood products/MEDS/focused labs – INR/Plt/Fib/H&H/D-dimer/HIT/any BLEEDING, hx coumadin):
LAST BLOOD CLOT (Q72hrs) _____

Orders Needed:
PROPHYLAXIS (if needed DVT/ULCER/OLT):

Orders Needed:
SKIN Pressure injury/wound YES ☐ Wound Consult YES ☐
Date _____
***CHG treatment PM ☐ AM ☐
(Document CHG BEFORE midnight per Calendar day)

OTHER LABS if applicable to address:

ETHICS (Score LOW / MED / HIGH & Why?):

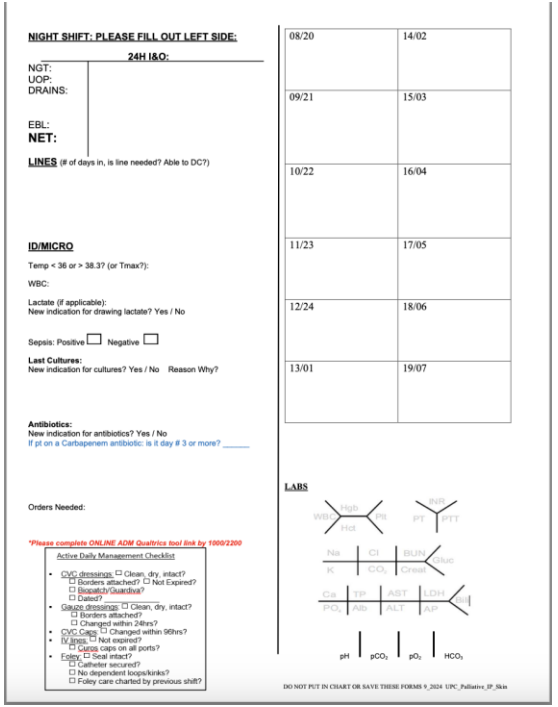
*Patient-Family issues/concerns:

Palliative consult? ☐ Yes ☐ No

DISPO (ICU – Floor – DC home date/facility)

PLANS FOR TODAY: (Tests, procedures, etc.):

DO NOT PUT IN CHART OR SAVE THESE FORMS 9_2024 UPC_Palliative_IP_Skin



NIGHT SHIFT: PLEASE FILL OUT LEFT SIDE:

24H I&O:

NGT:
UOP:
DRAINS:

EBL:
NET:

LINES (# of days in, is line needed? Able to DC?)

ID/MICRO

Temp < 36 or > 38.3? (or Tmax?):

WBC:

Lactate (if applicable):
New indication for drawing lactate? Yes / No

Sepsis: Positive ☐ Negative ☐

Last Cultures:
New indication for cultures? Yes / No Reason Why?

Antibiotics:
New indication for antibiotics? Yes / No
If pt on a Carbapenem antibiotic: is it day # 3 or more? _____

Orders Needed:

*Please complete ONLINE ADM Qualtrics tool link by 1000/2200

Active Daily Management Checklist

- CVC dressings: ☐ Clean, dry, intact? ☐ Borders attached? ☐ Not Expired? ☐ Biopatch/Guardiva? ☐ Dated?
- Gauze dressings: ☐ Clean, dry, intact? ☐ Borders attached? ☐ Changed within 24hrs?
- CVC Caps: ☐ Changed within 96hrs?
- IV lines: ☐ Not expired? ☐ Caros caps on all ports?
- Foley: ☐ Seal intact? ☐ Catheter secured? ☐ No dependent loops/kinks? ☐ Foley care charted by previous shift?

08/20	14/02
09/21	15/03
10/22	16/04
11/23	17/05
12/24	18/06
13/01	19/07

LABS

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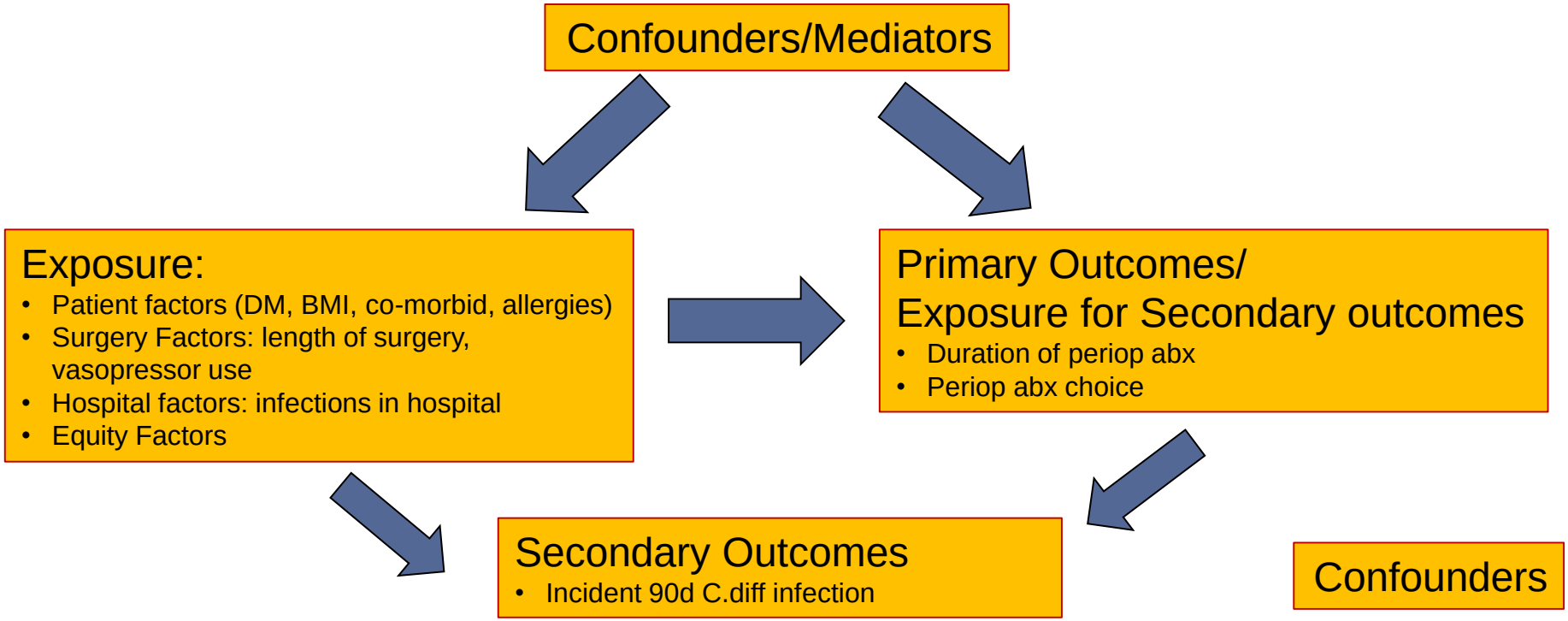
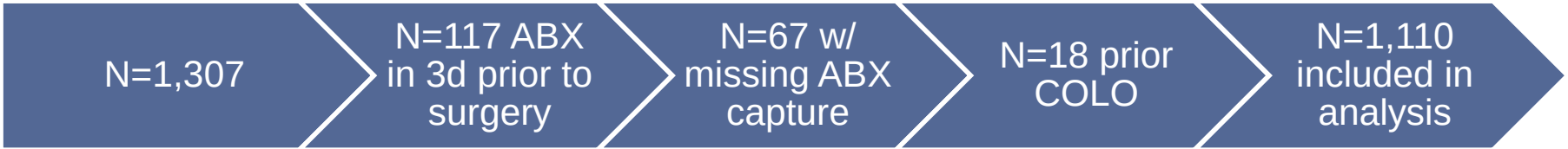
Perioperative guidance

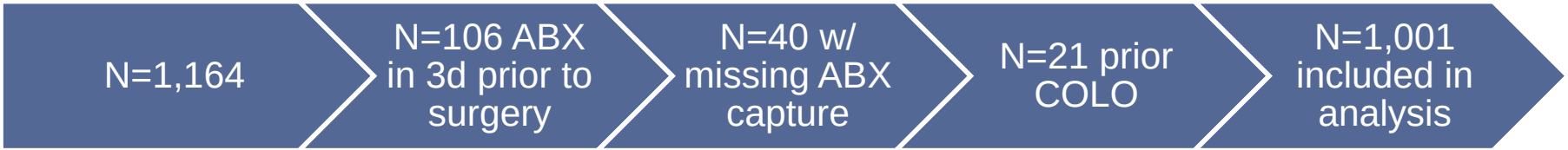


Perioperative Antibiotic Guideline Update

Pre-Intervention Cohort (2/1/22-2/28/23):



Post-Intervention Cohort (3/1/23-2/2/24):



Perioperative Antibiotic Guideline Update

Characteristics	Pre: 2/1/22-2/28/23 (n = 1,110)	Post: 3/1/23-2/2/24 (n = 1,001)
Age, mean (years)	64.1	63.7
Procedure, n (%)	-----	-----
COLO	357 (32.5)	335 (33.5)
HPRO	424 (38.2)	383 (38.3)
KPRO	329 (29.6)	283 (28.3)
Surgery Duration, mean (hours)	2.6	2.8
Wound Classification, n (%)	-----	-----
Clean	785 (70.7)	644 (64.3)
Clean-Contaminated	293 (26.4)	260 (26.0)
Contaminated	16 (1.4)	22 (2.2)
Dirty/Infected	6 (0.5)	19 (1.9)
No Classification Recorded	10 (0.9)	56 (5.6)
Time from ABX to Surgery Start, mean (minutes)	23.1	22.5
LOS, mean (days)	4.0	4.5
Post-Op Infection, n (%)	14 (1.3)	22 (2.2)
Received Post-Op ABX, n (%)	21 (1.9)	20 (2.0)
Post-Op ABX Duration, mean (hours)	85.2	128.6

AU/AR Data Review

UCLA Health

NHSN AR Reporting Validated for RRMC, NPH, SMH!

CDC

NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

Antimicrobial Resistance – Numerator CDA Results

Facility	Date Received	Date Tested	Validation Results	Issue(s) found and to be corrected	Production Ready
RRMC	4/23/2024	4/23/2024	Pass	None	Yes
NPH	4/24/2024	4/25/2024	Pass	None	Yes
SMH	4/23/2024	4/25/2024	Pass	None	Yes

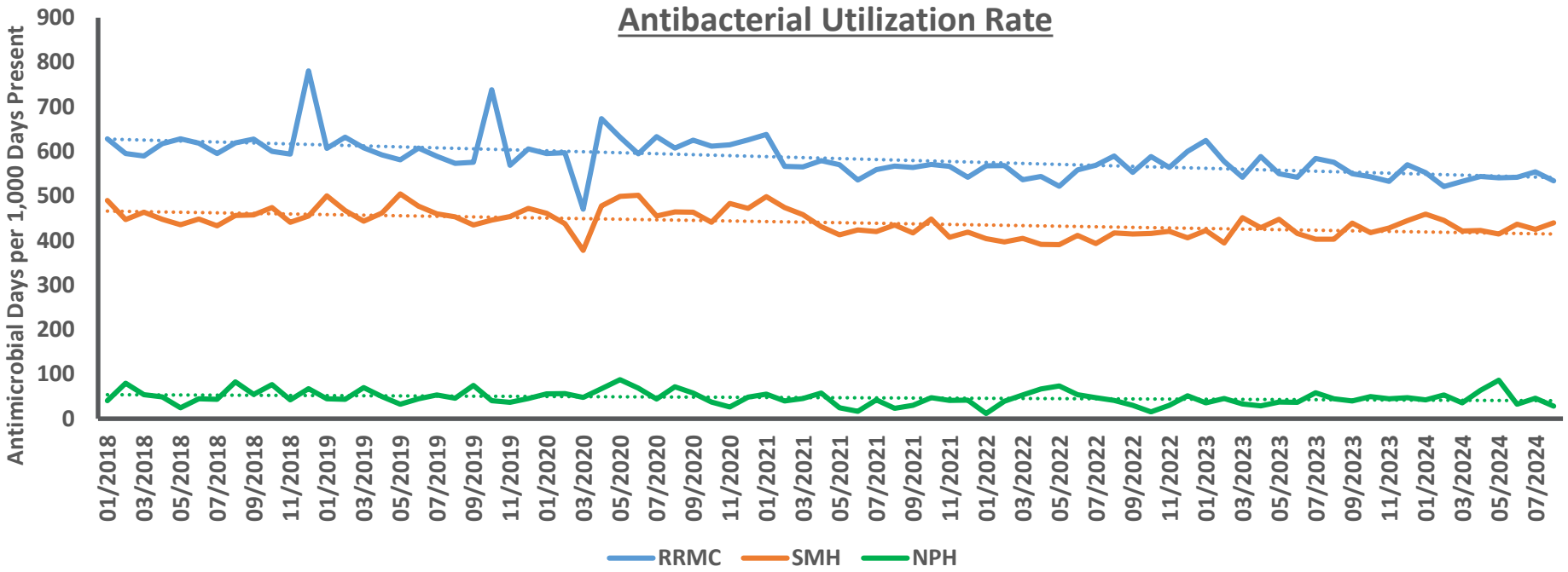
Antimicrobial Resistance – Denominator CDA Results

Facility	Date Received	Date Tested	Validation Results	Issue(s) found and to be corrected	Production Ready
RRMC	4/23/2024	4/23/2024	Pass	None	Yes
NPH	4/24/2024	4/25/2024	Pass	None	Yes
SMH	4/23/2024	4/25/2024	Pass	None	Yes

Antimicrobial Use – SAAR by Unit Type

Facility	LocationGroup	SAARTypeCat	Antimicrobial Days	Predicted Antimicrobial Days	Days Present	Location SAAR	95% Confidence Interval
RRMC	ICUS	BSHO	6816	4545.759	13716	1.499	1.464, 1.535
		GRAMPOS	3475	2552.985		1.361	1.316, 1.407
		ANTIFGL	3208	1042.63		3.077	2.972, 3.185
		CDI	2315	2300.954		1.006	0.966, 1.048
		BSCA	1831	1502.938		1.218	1.163, 1.275
		NSBL	575	1832.64		0.314	0.289, 0.340
	STEPDOWN	CDI	345	606.028	4075	0.569	0.512, 0.632
		BSCA	332	450.26		0.737	0.661, 0.820
		NSBL	188	337.858		0.556	0.481, 0.640
		GRAMPOS	160	378.957		0.422	0.360, 0.492
		ANTIFGL	158	122.11		1.294	1.104, 1.508
		BSHO	155	651.401		0.238	0.203, 0.278
	WARDS	CDI	5200	5945.122	41104	0.875	0.851, 0.899
		NSBL	5072	4682.772		[1.083]	1.054, 1.113
		BSHO	4859	5404.558		0.899	0.874, 0.925
		BSCA	4776	4784.357		0.998	0.970, 1.027
		GRAMPOS	2402	3714.371		0.647	0.621, 0.673
		ANTIFGL	1839	1045.927		1.758	1.679, 1.840

RRMC vs. SMH vs. NPH: AU by Class, Antibacterials



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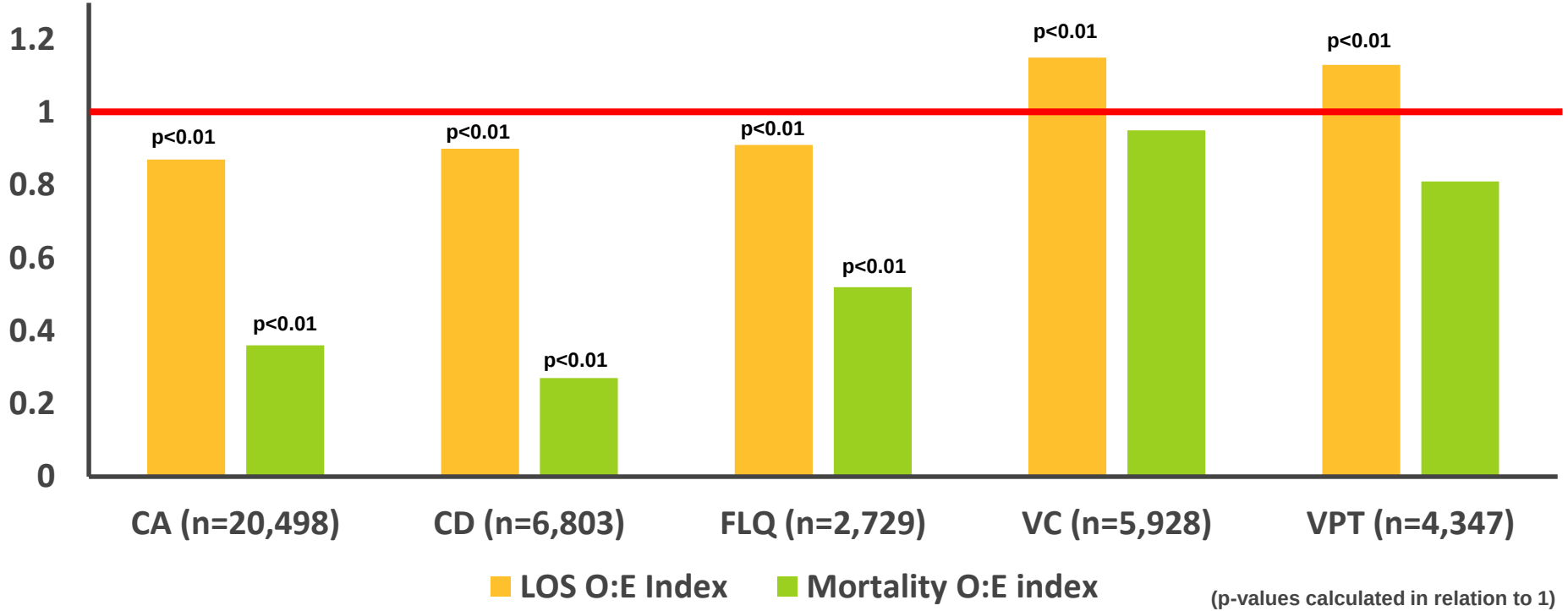
Vizient CAP Study

Demographics:

- 118 Academic Medical Centers
- 46,585 CAP encounters (with eLOS 3-7 days)

O:E index for LOS and mortality (NS ABX vs. BS ABX regimen; >1,000 encounters)



(p-values calculated in relation to 1)

ASP Audit and Feedback

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RR Prospective Audit and Feedback

Antimicrobial Audit Acceptance – RRUMC			
Interventions from October 30, 2023 to October 29, 2024			
Intervention Type	**Proposed**	**Approved**	**Rate**
Bug-Drug Mismatch	3	3	100.0%
De-Escalation	9	9	100.0%
Drug Information Consult	21	21	100.0%
Dose Change	64	63	98.4%
Drug-Lab Mismatch	29	27	93.1%
Duplicate Coverage	1	1	100.0%
Duration	3	3	100.0%
Home Health	3	3	100.0%
ID Consult	3	2	66.7%
Interactions	5	5	100.0%
IV to PO Conversion	10	9	90.0%
Regimen Change	30	30	100.0%
Restricted Med	3	0	0.0%
OVERALL	184	176	95.7%

SMH and NPH Prospective Audit and Feedback

Antimicrobial Audit Acceptance – SMH			
Interventions from October 30, 2023 to October 29, 2024			
Intervention Type	**Proposed**	**Approved**	**Rate**
Bug-Drug Mismatch	1	1	100.0%
De-Escalation	2	2	100.0%
Drug Information Consult	9	9	100.0%
Dose Change	19	19	100.0%
Drug-Lab Mismatch	9	9	100.0%
Duplicate Coverage	N/A	N/A	N/A
Duration	2	2	100.0%
Home Health	5	5	100.0%
ID Consult	3	3	100.0%
Interactions	2	2	100.0%
IV to PO Conversion	2	2	100.0%
Regimen Change	5	5	100.0%
Restricted Med	N/A	N/A	N/A
OVERALL	**59**	**59**	**100.0%**

Antimicrobial Audit Acceptance – NPH			
Interventions from October 30, 2023 to October 29, 2024			
Intervention Type	**Proposed**	**Approved**	**Rate**
Bug-Drug Mismatch	N/A	N/A	N/A
De-Escalation	N/A	N/A	N/A
Drug Information Consult	N/A	N/A	N/A
Dose Change	N/A	N/A	N/A
Drug-Lab Mismatch	N/A	N/A	N/A
Duplicate Coverage	N/A	N/A	N/A
Duration	N/A	N/A	N/A
Home Health	N/A	N/A	N/A
ID Consult	N/A	N/A	N/A
Interactions	N/A	N/A	N/A
IV to PO Conversion	N/A	N/A	N/A
Regimen Change	N/A	N/A	N/A
Restricted Med	N/A	N/A	N/A
OVERALL	**N/A**	**N/A**	**N/A**

Microbiology Updates

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Nudges and panels

- Amp C
- Shigella
- Ongoing steno updates
- Use of pip-tazo for ESBL
- Fosfomycin disc added to urine cultures with ESBL E.coli and cipro/TMP resistance
- Vitek GN panel approved N814 for urine, N810 for non urine

Drug	N809	N814	N806	N807	N808	N810	N811	N812	GN99 Current Card
amikacin									
amoxicillin/clav.acid									
ampicillin									
ampicillin/sulbactam									
aztreonam									
cefazolin									
cefepime									
cefotaxime									
cefoxitin									
cefpodoxime									
ceftazidime									
ceftazidime/avibactam									
ceftolozane/tazobactam									
ceftriaxone									
cefuroxime									
ciprofloxacin									
delafloxacin									
doxycycline									
ertapenem									
eravacycline									
esbl									
fosfomycin									
gentamicin									
imipenem									
imipenem/relabactam									
levofloxacin									
meropenem									
meropenem/vaborbctam									
minocycline									
moxifloaxacin									
nitrofurantoin									
pip/tazo									
polymyxin b									
tigecycline									
tetracycline									
tobramycin									
trimethoprim/sulfa									
Missing Drugs	IMP	IMP	IMP	IMP		IMP	IMP	IMP	
					ERT				
		Gent				Gent	Gent		
	TOB		TOB	TOB	TOB				
		AMK	AMK	AMK		AMK	AMK	AMK	
	Amox/Clav		Amox/Clav	Amox/Clav		Amox/Clav	Amox/Clav		
		P/T						P/T	
						Nitro	Nitro	Nitro	
	CAZ	CAZ					CAZ	CAZ	

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Infectious Diseases Transition Service (IDTS)

What's new in 2023

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Antibiotic: Vancomycin

UCLA Infectious Diseases Outpatient Parenteral Antimicrobial Therapy Team

Pharmacist: Lynn Chan
Contact: (310)267-1328

Nurse: Prest Oshodi
Contact: (310)694-1230

What

- Intravenous antibiotic medication used to fight off a bacterial infection
- Types of infection include: bloodstream, heart, lung, skin and bone infections

How

- Given intravenously over 1 to 2 hours through a type of device
- Dose and frequency may change based on your weekly drug level

Duration

- The length of time you take this medication will change depending on the type of infection you have and how severe it is.
- Your doctor will decide how long you need to take this medication.

Side effects

- Kidney toxicity
  - Tip: Drink plenty of fluids; watch for decreased urine and swollen legs or ankles
- Infusion-related reaction
  - Tip: Watch for redness, flushing, and itchiness shortly after intravenous infusion
- Ringing of the ears
- Low white blood cell and platelet counts
- Diarrhea, nausea, fatigue

Tips

- If you are having side effects, please inform your nurse, doctor, and pharmacist.
- Drug monitoring required: It is important to record the time you were given the medication and the time that your blood was drawn (should be drawn before the antibiotic is given).

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Antibiotics:

Penicillin
Oxacillin
Ampicillin
Piperacillin-tazobactam
Cefazolin
Ceftriaxone
Ceftazidime
Cefepime
Ertapenem
Imipenem- cilastatin
Meropenem
...And more!

UCLA Infectious Diseases Outpatient Parenteral Antimicrobial Therapy Team

Pharmacist: Lynn Chan
Contact: (310)267-1328

Nurse: Prest Oshodi
Contact: (310)694-1230

What

- Beta-lactams are a class of antibiotics that can be given intravenously to fight off bacterial infection.
- Types of infection include: bloodstream, heart, lung, skin, and bone infections.

How

- Given intravenously over 30 minutes or as continuous infusion over 24 hours
- Dose and frequency vary depending on the beta-lactam antibiotic selected for your type of infection

Duration

- The length of time you take this medication will change depending on the type of infection you have and how severe it is.
- Your doctor will decide how long you need to take this medication.

Side effects

- Side effects may vary depending on the type of beta-lactam antibiotic; ask your doctor or pharmacist for more information
- Decrease red blood cell, white blood cell, or platelet counts
- Diarrhea, nausea, fatigue

Tips

- If you have any side effects, please inform your nurse, doctor, and pharmacist.
- Let your doctor or pharmacist know if you have a beta-lactam allergy (for example: a penicillin allergy).

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Brainstorming

Executive Summary: (Antimicrobial Stewardship Program)

Date: July 17, 2024

Presenter(s): Tara Vijayan, MD MPH

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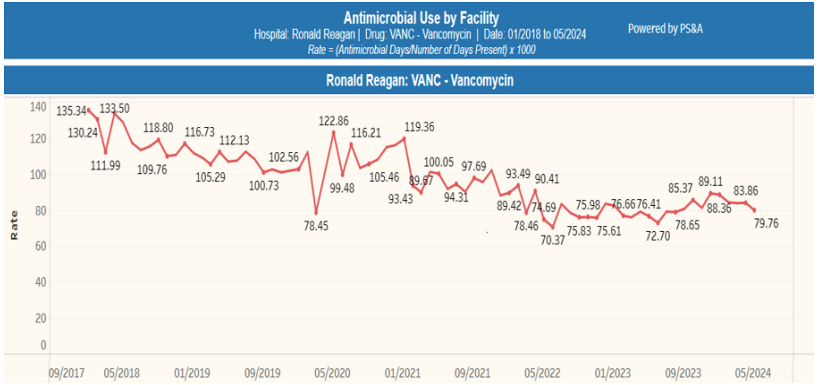
Overview:

Current Fiscal Year Goals	Baseline Data	Target	Current Data	Interventions	Met/Not Met
Integrated AR NHSN	Not submitted	submit	submitting	Integrated AR data	Met, ongoing
CDPH SDOH data submission	Not submitted	submit	submitting	Data pull for CDPH	Met, ongoing
Update pathways	Needs updating	update	updated	Periop guidance Quickstart	Met, ongoing
Vancomycin reduce AU	SAAR	Reduce	See below	MRSA nares BCID planned	Met, ongoing
Document OPAT efforts	23% 30d readmission	20%	19%	RN oversight; PharmD	Met, ongoing

Data Highlights



Accomplishments:

- Multiple educational interventions (competency based modules, AAW, grand rounds)
- Multidisciplinary collaborations with BMT, liver transplant, orthopedics
- Updating guidance
- Streamlining CARE Connect processes: ordersets, antimicrobial indications, nudges
- Academic productivity (>30 publications in 1 year)
- Reduction in some antimicrobial use
- Implementation of Time outs, allergy de-labeling pathways
- Reduction in readmissions documented (OPAT/IDTS program)
- Integrated AR NHSN

Challenges / Barriers / Lessons Learned:

We continue to have staffing shortages

Program Manager took another job, new Program Manager joining July 8, 2024 (50%)

We need dedicated time and staff to help us with measurements (much of our efforts are clinically oriented)

Sustainability Plans for Improvements:

Continue twice monthly meetings to ensure progress

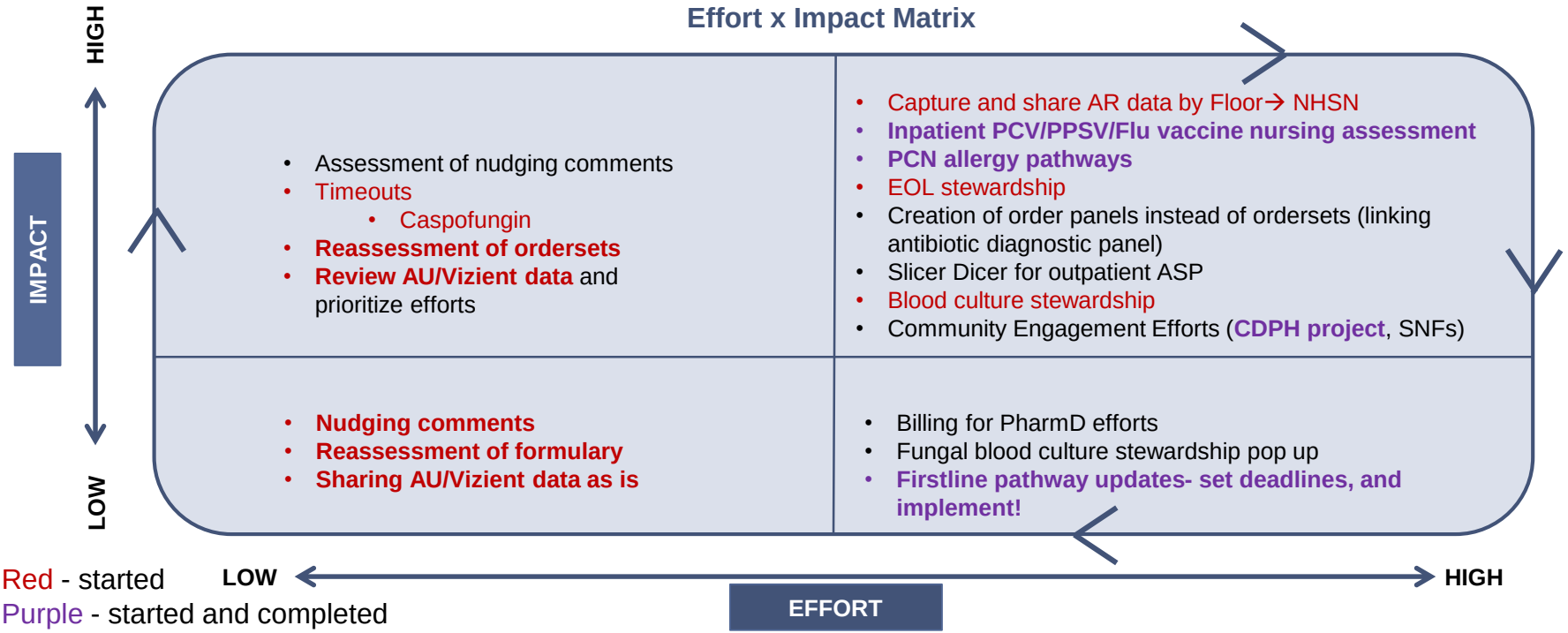
Advocate for continued support

Future Goals (for next 12-month period)	Interventions	Metrics	Baseline Data	Target	Dept. / Org. Goal Alignment
Reduce meropenem use in 8ICU	Time out	Reduction in DOT			Safety (reduce CRE rates)
Reduction of meropenem in BMT	Febrile neutropenia guidance	Reduction in DOT			Safety (reduce CRE rates)
Penicillin allergy pathways	Measure impact	Increase de-labeling			Safety (better antibiotics)
Nudging comments in micro	Measure impact	Adherence to nudges			Improve clinician experience)
PCV nursing updates	Measure adherence to guidance	Adherence to guidance			Safety

Pharmacist FTEs

- Ongoing discussions about need for outpatient pharmD FTE
  - Nursing home collaboratives
  - Outpatient Stewardship
  - Managing complex outpatient antimicrobial therapy (COpAT)
- Grant support for research projects

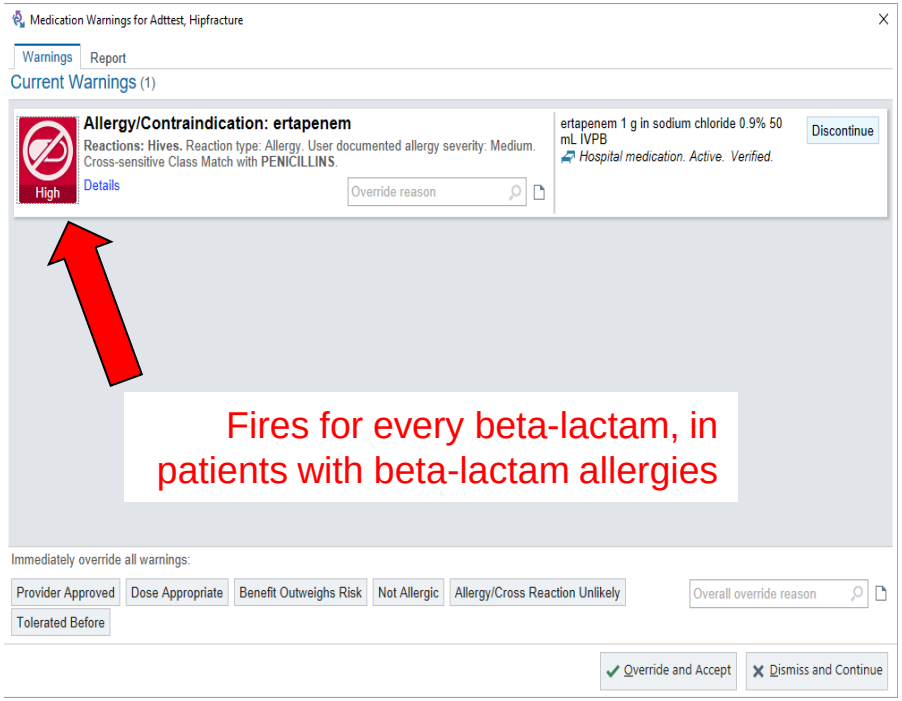
2024 Prioritization Matrix: What to Keep?



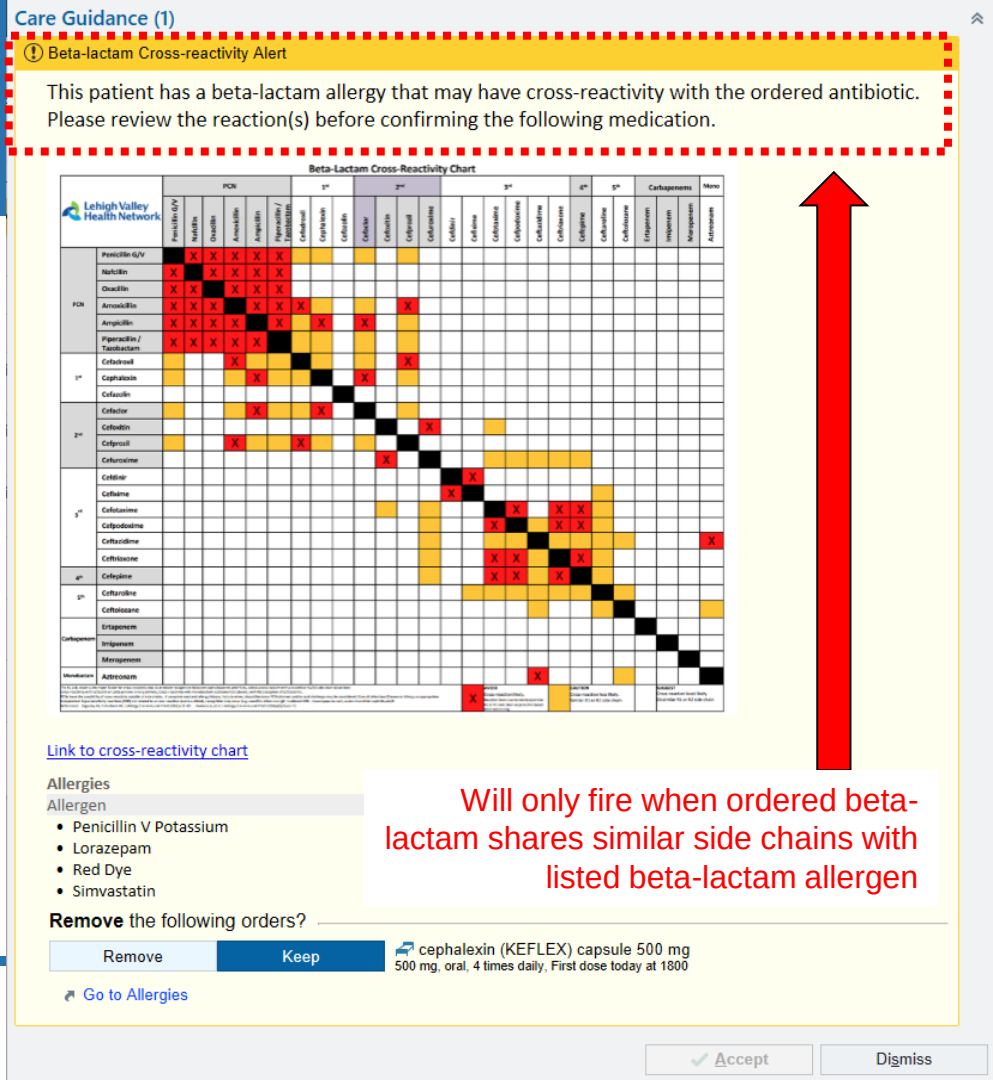
- Red - started
- Purple - started and completed

New Potential Projects

Beta-Lactam Allergy Project – Next Steps



Fires for every beta-lactam, in patients with beta-lactam allergies



Will only fire when ordered beta-lactam shares similar side chains with listed beta-lactam allergen

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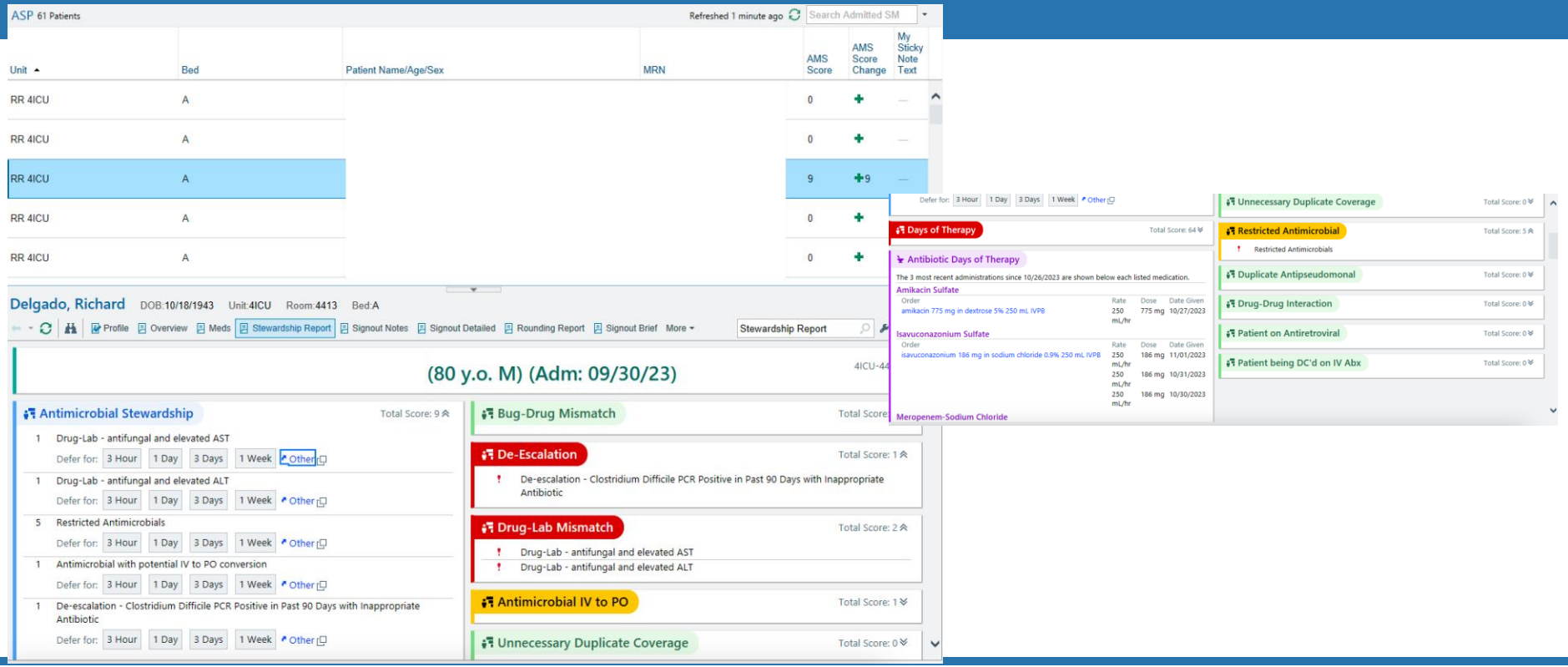
AS Navigator – Expanding utilization to ID physicians



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SEP-1 Bundle and Time to Appropriate Antibiotics

Clinical Infectious Diseases
IDSA FEATURES

Improving Sepsis Outcomes in the Era of Pay-for-Performance and Electronic Quality Measures: A Joint IDSA/ACEP/PIDS/SHEA/SHM/SIDP Position Paper

Chanu Rhee,[1,2,a] Jeffrey R. Strich,[3] Kathleen Chiotos,[4] Andre C. Kalil,[5] David N. Gilbert,[10] Henry Masur,[3] Edw and Michael Klompas[1,2,f]

[1]Department of Population Medicine, Harvard Medical School/Harvar and Women's Hospital, Boston, Massachusetts, USA; [3]Critical Care M and Critical Care Medicine, Children's Hospital of Philadelphia and Ur of Medicine, University of Utah School of Medicine, Salt Lake City, U Maryland, USA; [7]Society of Hospital Medicine, Philadelphia, Pennsy Baltimore, Maryland, USA; [9]Division of Infectious Diseases, Departme Department of Medicine, Oregon Health and Science University, Por Pulmonary and Critical Care Medicine, Department of Medicine, Univ Washington University School of Medicine, Washington D.C., USA; [1] and [15]Department of Emergency Medicine, University of Pittsburgh S

PART 1: REASONS TO RETIRE SEP-1 RATHER THAN MAKE IT A PAY-FOR-PERFORMANCE MEASURE

Real-world Evidence Indicates That SEP-1 Has Not Improved Patient Outcomes

Several time-series analyses using detailed clinical data from hundreds of hospitals elucidate the real-world impact of SEP-1 on patient outcomes (Table 1) [12–15]. Rhee et al analyzed 117 150 patients admitted to 114 academic and community hospitals with suspected sepsis between 2013 and 2017 and found that SEP-1 implementation in October 2015 was associated with an immediate increase in lactate testing but no improvement in the combined outcome of hospital death or discharge to hospice [12]. These findings persisted in several sensitivity anal-

caused on patient outcomes. This will encourage hospitals to pay more attention to the full breadth of sepsis care and stimulate further innovations in diagnosis and treatment. Hospitals could still choose to emphasize early resuscitation bundles based on internal assessments of gaps in care but they should not be forced to do so.

PART 2: RECOMMENDATIONS TO IMPROVE THE eCQM SEPSIS MORTALITY MEASURE

We support CMS's plan to implement a risk-adjusted sepsis outcome measure. Although there are multiple patient-centered sepsis outcomes that could be candidates, we believe that a focus on mortality is the right place to start. We also applaud CMS's plan to make the measure fully electronic, as this will improve efficiency, scalability, and objectivity compared to the current manual SEP-1 abstraction process which is highly resource-intensive and often variably applied [39–41].

The draft specification for the eCQM sepsis mortality measure identifies sepsis using three criteria (Table 2): (1) systemic inflammatory response syndrome (SIRS) criteria, defined using vital signs and white blood cell counts, (2) suspected infection, defined as antibiotic administrations *or* the use of

unintended consequences.

Remove SIRS Criteria From the eCQM

SIRS criteria are common and nonspecific. They are present in up to 50% of hospitalized patients at some point during their stay, most of whom do not have sepsis [42]. Another study found that 18% of ED patients met SIRS criteria, but only 26% of that group had an acute infection [43]. SIRS criteria are also insensitive; one in eight critically ill patients with sepsis do not meet SIRS criteria [44]. Limiting the eCQM to patients with SIRS criteria therefore risks both over-detection and under-detection of sepsis.

Anchoring the eCQM to SIRS also risks promoting overreliance on SIRS as a screening tool. Using an insensitive and nonspecific trigger cannot drive improvements in care. Indeed, the evidence suggests SIRS-based alerts in the ED increase antibiotic use and *Clostridioides difficile* infections but do not improve mortality [45, 46]. SIRS-based prompts for sepsis recognition in the intensive care unit (ICU) or inpatient setting have also not improved patient outcomes in randomized trials [47–49]. These limitations of SIRS led to their exclusion from current international consensus criteria for sepsis (Sepsis-3) [50].

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Vizient Benchmarks – Planning for Regular Reporting

Upcoming CDB Trainings:

- Vizient CDB Learning Center – https://learning.vizientinc.com/cdb/Pages/default.aspx
- CDB Orientation Session 1: Welcome to the CDB 2/7/2023 9:30 AM CT
- CDB Orientation Session 2: Introduction to Generating Reports 12/7/2023 12:00 PM CT
- Vizient CDB Manual – https://learning.vizientinc.com/cdb/Clinical/Clinical_Data_Base_User_Manual_UI.pdf

What Benchmarks to Report?:

- Carbapenem utilization (specific populations)?
- Unit specific reports?
- Perioperative antibiotic utilization?
- Specific diagnoses to evaluate?
- What external comparators do we want to use?

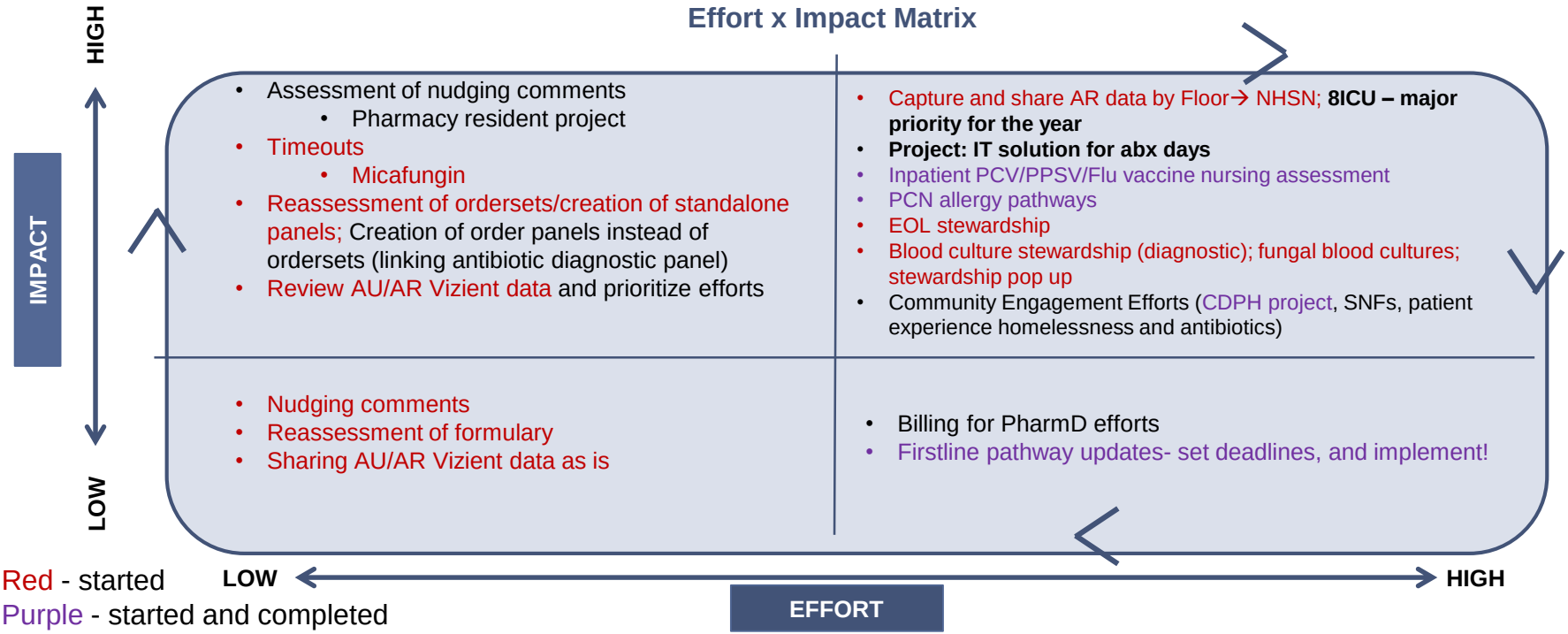
Cadence:

- Recommend no more frequently than quarterly given delays with reporting data to CDB

Other potential projects

- Community Engagement Efforts: Engagement of SNFs
- Antibiotic Time Outs: Expand to other antibiotics?
- Ongoing engagement of nursing and hospital pharmacists
- Outpatient ASP
- Vizient and NHSN data - how do we better utilize this information
- Implementation of bacteriophage therapy?
- Improving *Streptococcus pneumoniae* isolation
- Order panels/Ordersets
  - New ordersets:
    - Splenectomy vaccine order set?
    - IT amphotericin
    - Intraperitoneal antimicrobials

2025 Prioritization Matrix



- Red - started
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