Thinking Outside the Box: Sustaining and Expanding Antimicrobial Stewardship Programs

MN Antimicrobial Stewardship Conference

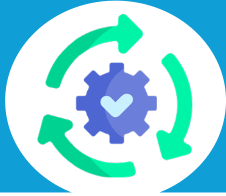
Alyssa Christensen, PharmD, BCIDP
HealthPartners System Antimicrobial Stewardship Program Manager

Objectives

1. Discuss limitations of prospective audit and feedback
2. Identify cost-saving opportunities to sustain and expand antimicrobial stewardship programs
3. List elements of interventions that bring high-value to patients and institutions
4. Optimize data collection to develop and communicate a convincing story to stakeholders
5. List considerations when delivering program outcomes to hospital executives

Outline

HealthPartners program structure



Factors that sustain programs

Overcoming challenges in time and staffing

Using data to drive change

Communicating outcomes

HP Antimicrobial Stewardship Program

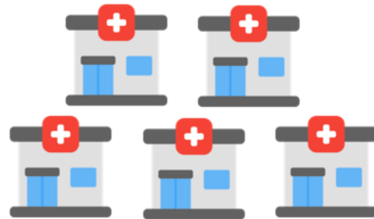
Enterprise Antimicrobial Stewardship Committee

Rebecca Peglow, MD & Alyssa Christensen, PharmD

ASP Core Group

Alyssa Christensen, PharmD
Rebecca Peglow, MD
Stefan Adler-Collinet, MD
Zack Nelson, PharmD
Maxx Enzmann, PharmD
Ethan Ryberg, PharmD

Clinics, Urgent Cares & Surgical Centers



West Region:

Zack Nelson, PharmD

Methodist, Hutchinson, Olivia

East Region:

Maxx Enzmann, PharmD

Regions, Lakeview, Hudson, Westfields, Amery

COpAT Program:

Ethan Ryberg, PharmD & Andrea Shahum, MD

Complex Outpatient Antimicrobial Therapy

Antimicrobial Stewardship Program

MISSION

The Antimicrobial Stewardship Program aims to optimize patient care using a health-system approach that improves use of diagnostic tests and treatment of patients with infectious diseases.

VISION

- Focus on evidence-based interventions that improve patient outcomes
- Promote collaborative, informed antimicrobial use decision-making
- Support front-line providers through education, protocol development, and EMR optimization
- Available for patient assessment and treatment selection support
- Share and standardize best practices across all facilities

HP Program Structure

Antimicrobial Stewardship Program

2023-2024 OUTPATIENT GUIDELINES

Empiric Antimicrobial Treatment Recommendations for ADULTS in Outpatient Settings

The recommendations herein are for patients 16 years of age or older; treatment of infections in neonates and children less than 16 years of age may vary.

In most types of infections, shorter durations of treatment are at least as good as longer durations of treatment (assuming the patient can absorb the PO antimicrobial) with less risk. Admission to the hospital is not an indication for IV antimicrobials. Patients who receive PO antimicrobials often have reduced side effects, lengths of stay, cost of care, among other positive benefits.

Using alternatives to β-lactams is associated with worse patient outcomes. Only a fraction of documented β-lactam allergies have been confirmed and most patients can receive a β-lactam safely without issue. The ASP has published comprehensive β-lactam allergy assessment guidance.

ASP β-lactam Allergy Assessment Guidance

NAVIGATION

Respiratory Tract | Genitourinary | Skin & Soft Tissue
Intra-abdominal | Sexually Transmitted Infections | Tick-Borne

INPATIENT 2024-2025 Treatment Guideline

amoxicillin (AMOXIL) tablet 875 mg — Accept — Cancel

Reference Links: Micromedex, Precautions, Adult Dose, ASP Inpatient Treatment Guidelines, Dose Adjustments, ASP Outpatient Treatment Guidelines

Order Instructions: If glomerular filtration rate is less than 30ml/min, patient should not receive the 875mg tablet.

Priority: Discharge Decision | Routine | Specified Time | STAT

Dose: 875 mg — 875 mg

Calculated dose: 1 Tablet

Route: Oral

Frequency: Q12H (NON-STND) — Q12H(NS)

What we do

Preauthorization policy

Clinical questions/support

Collaboration

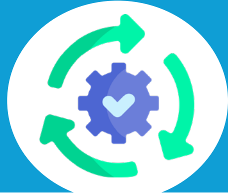
Education/Resource development

Implementing interventions

Tracking outcomes

Outline

HealthPartners program structure



Factors that sustain programs

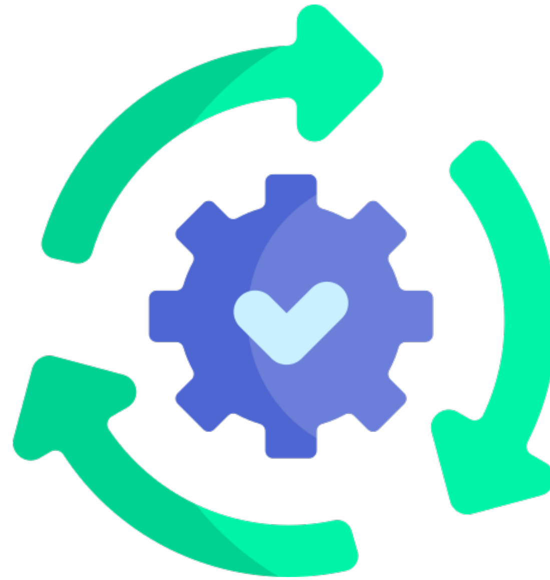
Overcoming challenges in time and staffing

Using data to drive change

Communicating outcomes

What Sustains Stewardship Programs

Leadership Support



Robust clinical and financial outcomes

Visibility and Communication

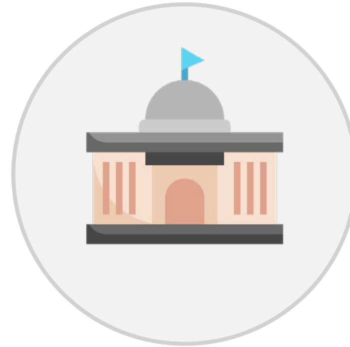
Benefits of Demonstrating Financial Impact

1. Gain support from leadership
2. Ensure program longevity
3. Expand program resources
4. Value based care benefits patients

State of Health Care in the US

Traditional models of hospital care are no longer sustainable for many healthcare systems

Growing elderly population

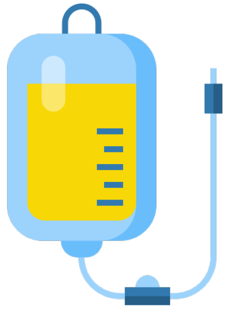


Reduced government reimbursement

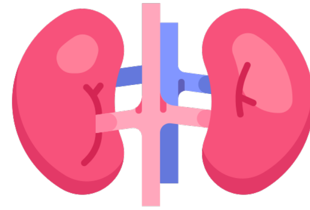
Inflation & Tariffs

- American Hospital Association. The Cost of Caring: Challenges Facing America's Hospitals in 2025. Washington, DC: American Hospital Association; April 2025. https://www.aha.org/system/files/media/file/2025/04/The-Cost-of-Caring-April-2025.pdf. Accessed February 5, 2026.
- American Hospital Association. New AHA Report: Hospitals and Health Systems Squeezed by Persistent Economic Challenges. Press release; April 30, 2025. https://www.aha.org/press-releases/2025-04-30-new-aha-report-hospitals-and-health-systems-squeezed-persistent-economic-challenges. Accessed February 5, 2026.
- Fitch Ratings. U.S. Not-for-Profit Hospitals and Health Systems Outlook 2026. Fitch Ratings; December 8, 2025. https://www.fitchratings.com/research/us-public-finance/us-not-for-profit-hospitals-health-systems-outlook-2026-08-12-2025. Accessed February 5, 2026

Cost Saving Opportunities



Drug use

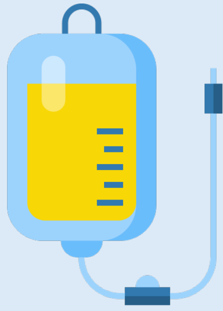


Clinical Events

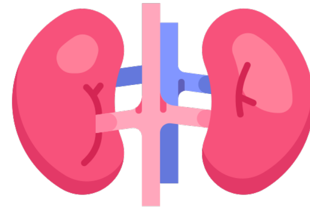
Diagnostics

Length of stay

Cost Saving Opportunities



Drug use



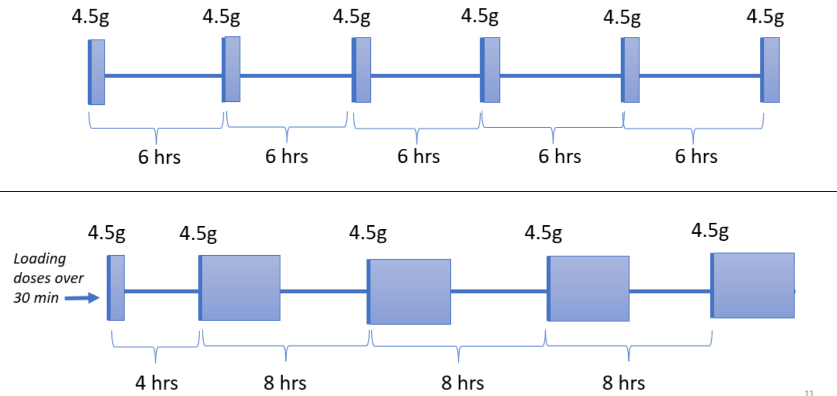
Clinical Events

Diagnostics

Length of stay

Antimicrobial Use

Extended infusion piperacillin/tazobactam



$200K

IV to PO: IV Doxycycline restriction

RESPIRATORY INFECTIONS

Pneumonia regimens, IV alternatives:
- Ceftriaxone + Azithromycin
- Levofloxacin

Atypical coverage *is not necessary in non-severe cases - consider ceftriaxone alone*

COPD regimens, IV alternatives:
- Azithromycin
- Ampicillin/sulbactam

TICK-BORNE INFECTIONS

Regimens depend on type of tick and severity. See ASP Outpatient Treatment Guidelines for alternatives in nonsevere infections.
For severe infections in patients that truly cannot take oral therapy, ID consultation is recommended

OB/GYN INFECTIONS

Pelvic Inflammatory Disease, IV Alternatives:
- Ceftriaxone + Azithromycin + Metronidazole

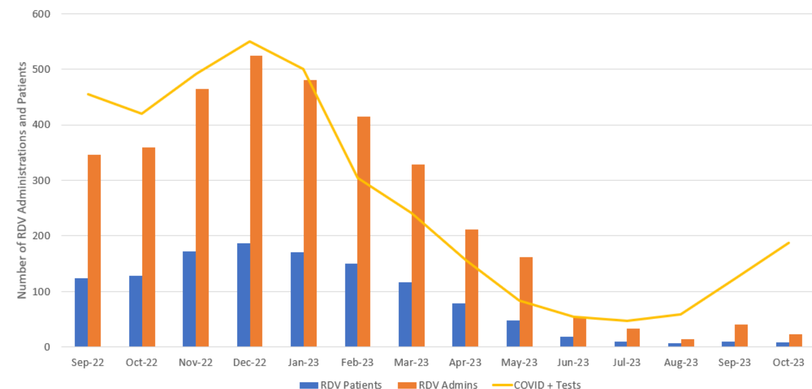
SKIN AND SOFT TISSUE INFECTIONS

Non-purulent infections: MRSA coverage is not necessary regardless of nares PCR results.

Purulent Infections IV alternatives:
- Vancomycin
- Daptomycin

$100K

Remdesivir restriction

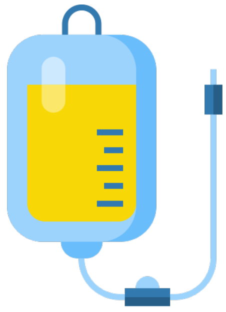


~$1.5M

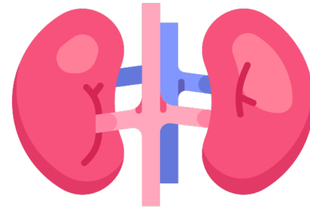
Formulary Changes: Caspofungin → micafungin

$40K

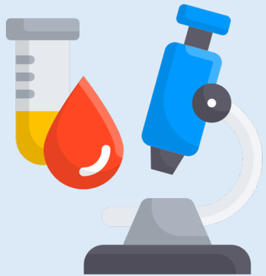
Cost Saving Opportunities



Drug use



Clinical Events



Diagnostics

Length of stay

Diagnostic Stewardship: Procalcitonin

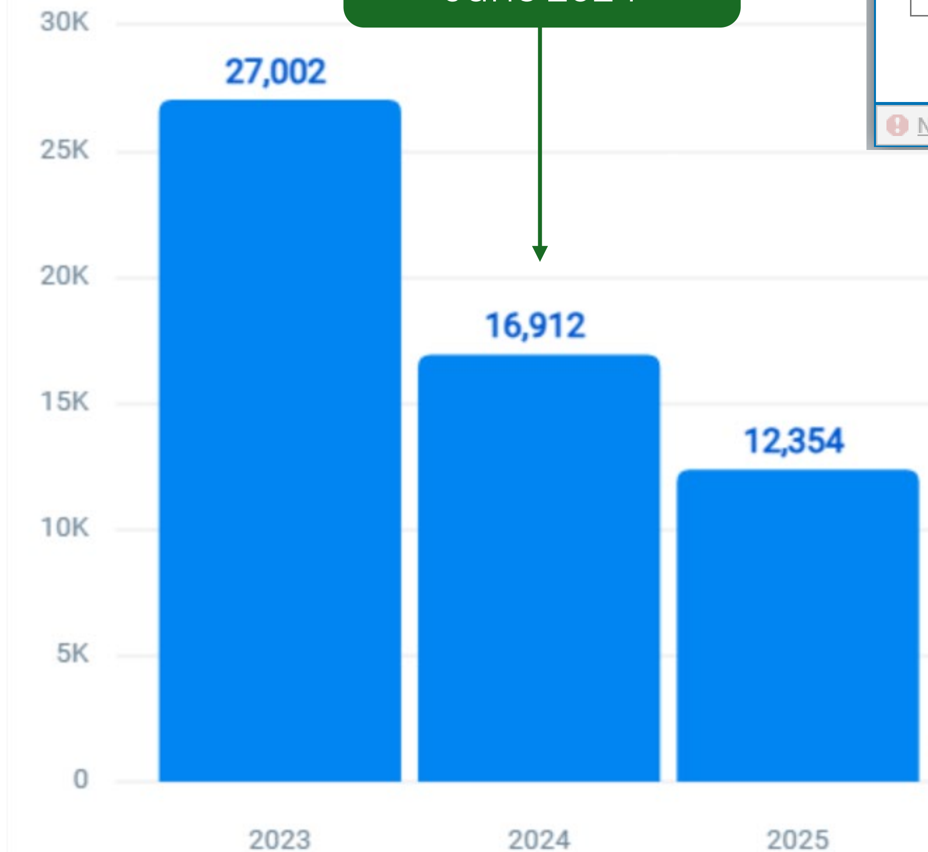
Chart review of ~200 patients

36% of patients did not have any signs or symptoms of infection

63% of results did not influence antibiotic use

82% of patients with negative results were still treated with 5 or more days of antibiotics

Procalcitonin Use



Procalcitonin ✔ Accept

Procalcitonin can be ordered for patients with suspected community-acquired pneumonia (infiltrate demonstrated on imaging and respiratory symptoms) in patients without significant reasons for false elevations (AKI, CKD, shock, etc) and if a negative result is likely to STOP/SHORTEN antibiotic use. Do NOT trend use to guide duration of therapy.

Antimicrobial Stewardship Program: Procalcitonin Use

☐ Procalcitonin

Next Required ✔ Accept

Resulted in >50% reduction

Cost Saving: ~$350,000/year

Cost Saving: Diagnostic Examples

S. pneumoniae Urinary Antigen

~$50,000/yr

Open Forum Infectious Diseases

CORRESPONDENCE

Things We Do for No Reason – Ordering *Streptococcus Pneumoniae* Urinary Antigen in Patients With Community-Acquired Pneumonia

Respiratory Viral Panel

~$300,000/yr

Respiratory Panel Multiplex Real-Time PCR kits

RV Panel 7	RB Panel 7	RB Panel 3
Influenza A virus	*Haemophilus influenzae*	*Pseudomonas aeruginosa*
Influenza B virus	*Mycoplasma pneumoniae*	*Group A Streptococcus*
Respiratory syncytial virus	*Legionella pneumophila*	*Staphylococcus aureus*
Human rhinovirus	*Klebsiella pneumoniae*	
Respiratory adenovirus	*Streptococcus pneumoniae*	
Mycoplasma pneumoniae	*Bordetella parapertussis*	
Parainfluenza virus	*Bordetella pertussis*	

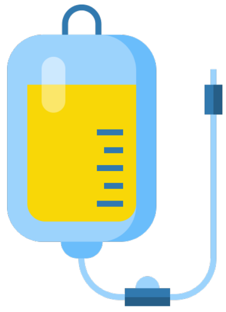
Urine Cultures

~$500,000-750,000/yr

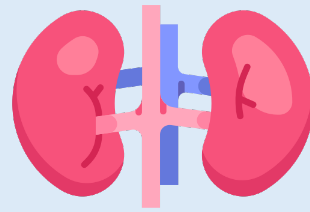
Susceptibility

	Escherichia coli (ESBL) Not Specified	
Aztreonam	>16 mcg/mL	Resistant *
Cefazolin	>16 mcg/mL	Resistant
Cefazolin (Urine)		Resistant [1]
Cefepime	>16 mcg/mL	Resistant
Cefoxitin	<=4 mcg/mL	Susceptible
Ceftazidime	>16 mcg/mL	Resistant *
Ceftriaxone	>32 mcg/mL	Resistant [2]
Cefuroxime	>16 mcg/mL	Resistant
Ciprofloxacin	1 mcg/mL	Resistant
Ertapenem	<=0.25 mcg/mL	Susceptible *
ESBL	Positive mc...	Positive *
Gentamicin	<=2 mcg/mL	Susceptible
Levofloxacin	1 mcg/mL	Intermediate
Meropenem	<=0.5 mcg/mL	Susceptible
Meropenem/Vaborbactam	<=2 mcg/mL	Susceptible *
Nitrofurantoin	<=16 mcg/mL	Susceptible

Cost Saving Opportunities



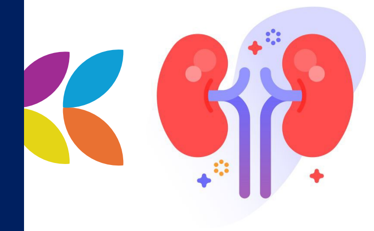
Drug use



Clinical Events

Diagnostics

Length of stay



Cost Saving: Clinical Events

Vancomycin dosing standardization
Pre → Post

Trough 10-15 → **Non-severe Infections** → Trough 10-15

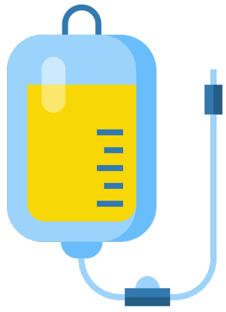
Trough 15-20 → **Severe Infections** → AUC 400-600

↑ 9.6% → ↓ 7.2%

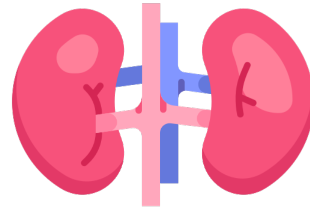
AKI reduction: $420,000/year

Christensen AB, Ryberg E, Nelson Z, et al. Better Together? Reducing vancomycin use and Acute Kidney Injury with a Blended AUC and Trough-based Dosing Guideline. Pharmacotherapy. March 2025

Cost Saving Opportunities



Drug use

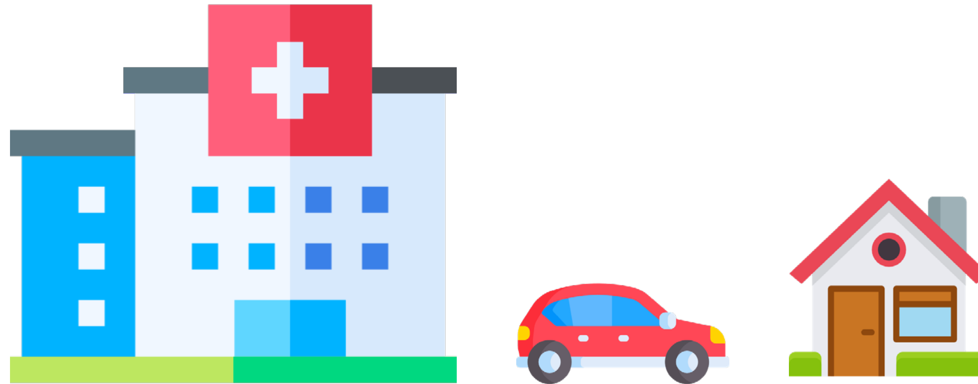


Clinical Events

Diagnostics

Length of stay

Cost Saving: Length of Stay



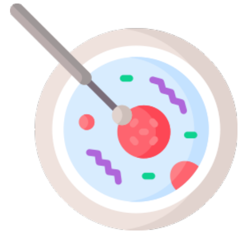
Reducing length of stay has obvious benefits for institutions but patient benefits are often overlooked

- ✓ Quicker recovery
- ✓ Reduced stress
- ✓ Improved sleep
- ✓ Reduced time away from work
- ✓ Limit exposure to hospital pathogens

Arsenault-Lapierre G, et al. *JAMA Netw Open*. 2021; doi:10.1001/jamanetworkopen.2021.11568
Caplan G, et al. Australian and New Zealand Journal of Surgery. 2002; https://doi.org/10.1046/j.1440-1622.1999.01441.x

Cost Saving: LOS Examples

Gram-negative Blood Culture Review

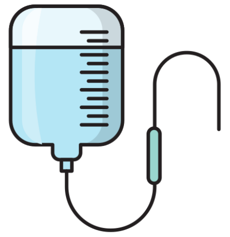


- ✓ No f/u cultures
- ✓ Oral antibiotics
- ✓ 7-day duration
- ✓ Discharge ready!

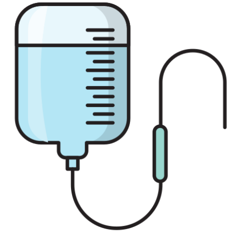
1.3 day LOS reduction

Nelson Z, Christensen A, P-893. Expedited Transition to Oral Antibiotics in Gram Negative Bacteremia Reduces Hospital Length of Stay, *Open Forum Infectious Diseases*, Feb 2025

Remdesivir restriction



PRE: All patients, even asymptomatic



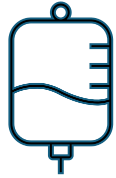
POST: Immunocompromised patients only

2 days LOS reduction

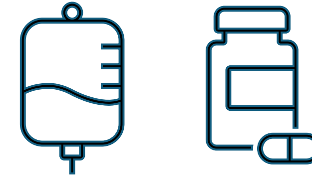
Christensen A, Nelson Z, Gustafson S, et al. Into the Unknown: Practical Remdesivir Restriction in the Era of Widespread SARS-CoV-2 Seropositivity. Clin Infect Dis. Nov 2025.

Implementing COpAT

Outpatient Parenteral Antimicrobial Therapy (OPAT)



Complex Outpatient Antimicrobial Therapy (COpAT)

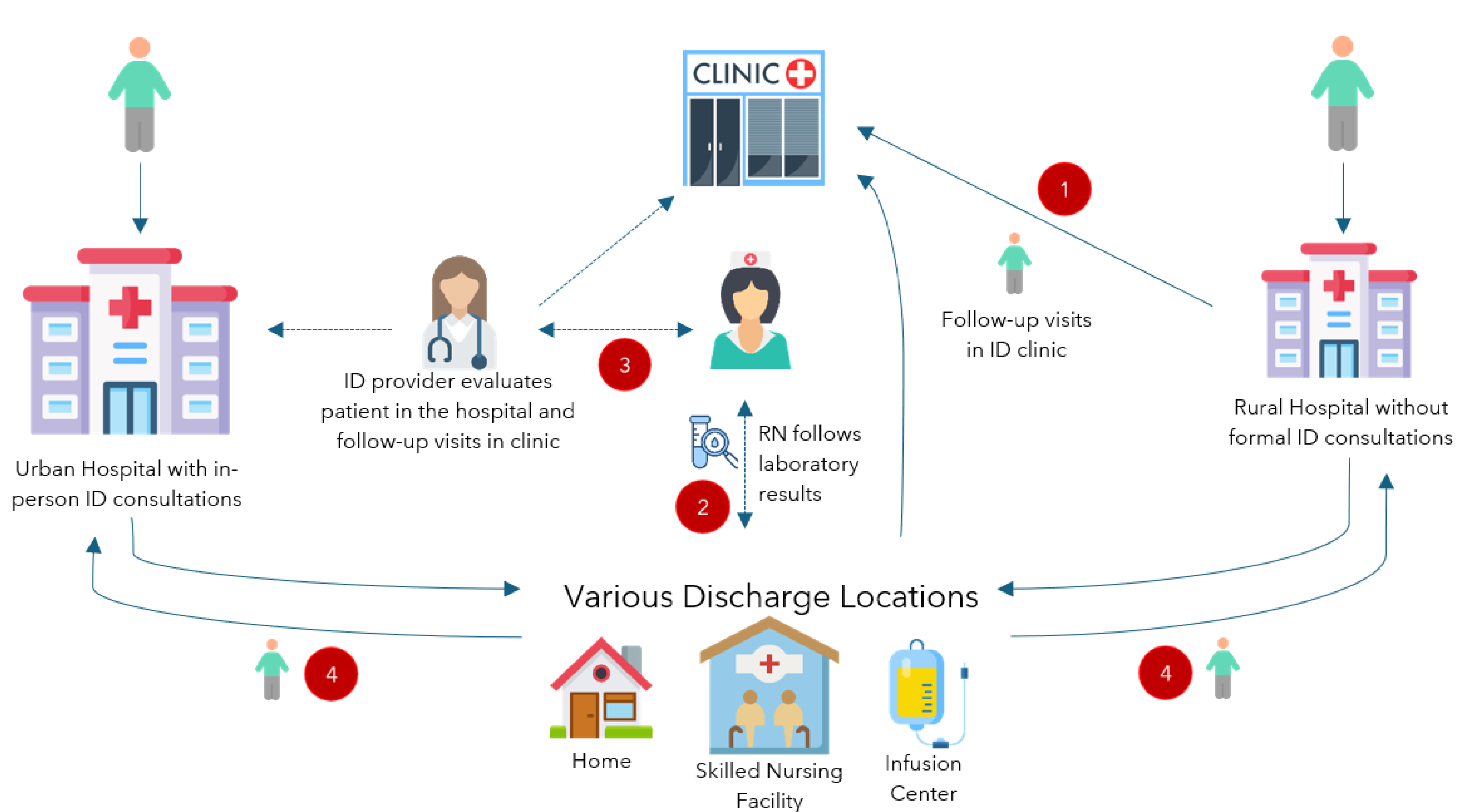


- Novel concept in 1990s
- Reduce duration of inpatient stay
- Huge financial incentives

- In 2026, OPAT is freely available
- Financial incentives to implement a program are limited

Williams DN, et al. International Journal of Antimicrobial Agents, 2015.

Pre-Intervention Workflow and Opportunities



1. Patients admitted to rural hospitals experienced **long wait times to be seen in the Infectious diseases (ID) clinic** leading to delays in discharge, lack of post-discharge monitoring by antibiotic experts, and frequent readmissions or emergency room visits due to treatment complications.

2. ID clinic nurses follow up on laboratory results being drawn at a variety of locations. This is a **time-consuming, manual process** that often involved many phone calls and faxed results.

3. ID clinicians spent a **large amount of non-billable time** evaluating laboratory results and patient questions triaged by nursing staff.

4. **Readmissions** were observed due to the nature of the complex infections being treated. Lack of early post-discharge follow-up and medication counseling led to confusion in treatment needs and monitoring.

Post-Intervention: Coordinated COpAT Program and Resources across Multiple Hospitals

CLINIC

COpAT facilitates early (1-2 weeks) follow-up appt

Urban Hospital with in-person ID consultations

ID clinicians consult COpAT for high-risk antibiotic monitoring & follow up cultures

COpAT provides treatment & monitoring recommendations

Rural Hospital without formal ID consultations

COpAT
(1) Calls patient within 48 hours of discharge
(2) Serves as point of contact
(3) Monitors laboratory results
(4) Triages complications

Various Discharge Locations

Home

Skilled Nursing Facility

Infusion Center

Simplified discharge planning & lower lengths of hospital stay

COpAT Team

ID Pharmacist: 1 FTE
ID Physician: 0.1 FTE

Proof-of-concept

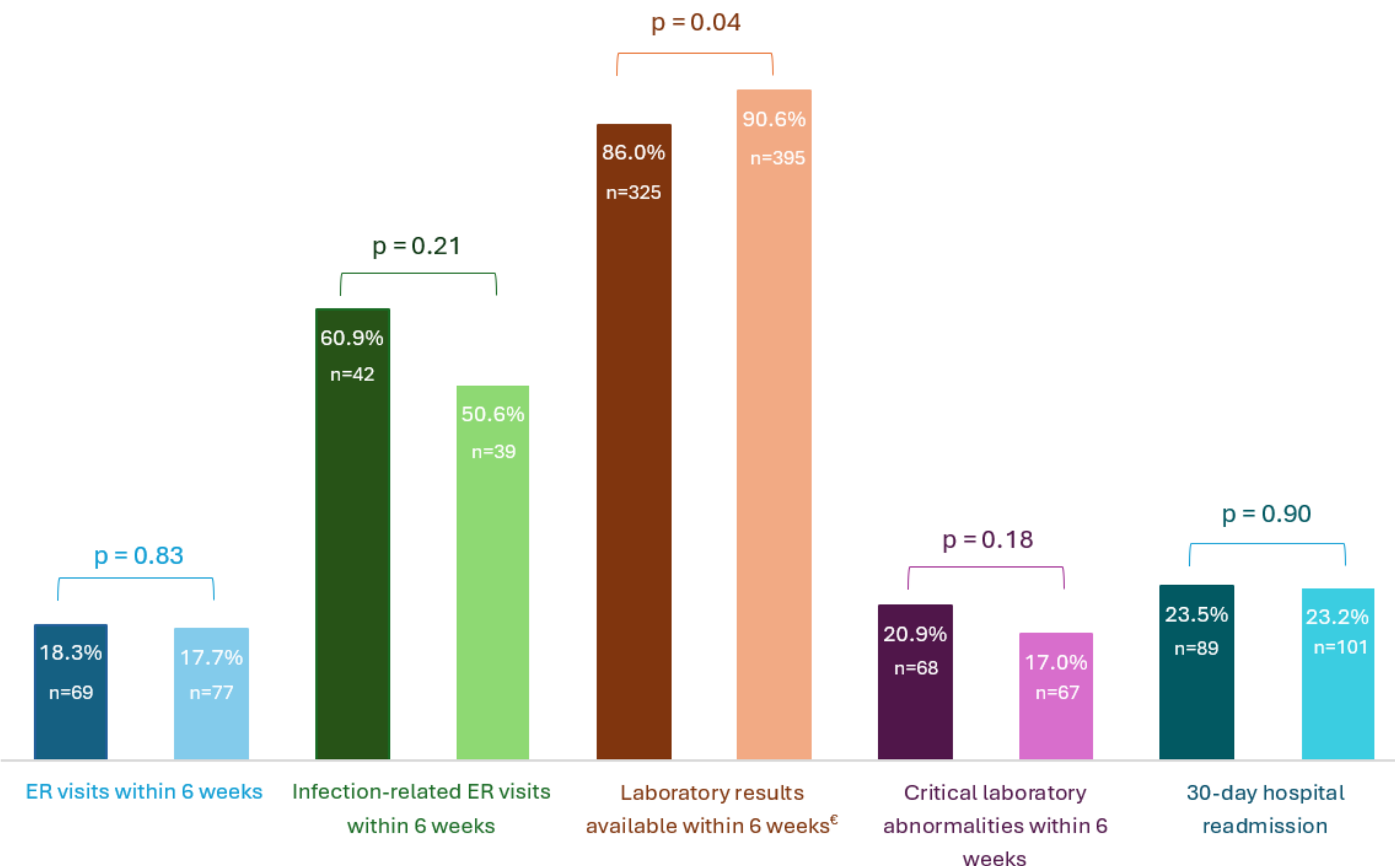
Regions & Valley Hospitals

Goals

- ✓ Increase access to ID expertise
- ✓ Improve transitions of care and post discharge complications
- ✓ Reduce LOS
- ✓ Increase oral therapy usage
- ✓ Support clinician workload

COpAT Program Antibiotic and Patient Outcomes

Pre-intervention (n=378) Compared to Post-intervention (n=436)



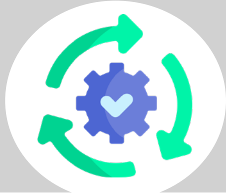
1.2 day reduction in hospital stay *p=0.04*

Representing **786.6 days saved** and **$865,260** per year at five hospitals

- ✓ Streamlined discharge planning
- ✓ More oral options and/or shortened durations of intravenous therapy

Outline

HealthPartners program structure



Factors that sustain programs

Overcoming challenges in time and staffing

Using data to drive change

Communicating outcomes

ASPs Are Consistently Understaffed

In one survey of 244 ASP, 62% disagreed with the statement "the financial resources for my program are adequate" with most citing lack of time as a significant barrier

…And really heaving enough time to balance not only doing the clinical aspect but…doing more of the policy work and other things like that is definitely a downside at the moment

Another [weakness] is just manpower. We don't have the hours to spare right now

…no one seems to have much time

We haven't done very much education. So education to providers hasn't really happened to this point…a weakness is just not being able to …do any of our education up to this point.

1. Appaneal HJ, Luther MK, Timbrook TT, LaPlante KL, Dosa DM. Facilitators and Barriers to Antibiotic Stewardship: A Qualitative Study of Pharmacists' Perspectives. Hosp Pharm. 2019 Aug;54(4):250-258. doi: 10.1177/0018578718781916. Epub 2018 Jun 18.
2. Sarah B Doernberg, Lilian M Abbo, Steven D Burdette, Neil O Fishman, Edward L Goodman, Gary R Kravitz, James E Leggett, Rebekah W Moehring, Jason G Newland, Philip A Robinson, Emily S Spivak, Pranita D Tamma, Henry F Chambers, Essential Resources and Strategies for Antibiotic Stewardship Programs in the Acute Care Setting, *Clinical Infectious Diseases*, Volume 67, Issue 8, 15 October 2018, Pages 1168–1174, https://doi.org/10.1093/cid/ciy255
3. Greene MH, Nesbitt WJ, Nelson GE. Antimicrobial stewardship staffing: how much is enough? *Infect Control Hosp Epidemiol*. 2020;41(1):102-112. doi:10.1017/ice.2019.294
4. Nelson GE, Narayanan N, Onguti S, et al. Principles and practice of antimicrobial stewardship program resource allocation. *Infect Dis Clin North Am*. 2023;37(4):683-714. doi:10.1016/j.idc.2023.07.002

Stewardship is a Balancing Act

Comply with regulatory requirements

Reduce unnecessary antibiotic use

Collect data and demonstrate improvements

Set and meet yearly goals

Save money & gain leadership support

A lot of work to do with limited resources

National Guidance

"We recommend Preauthorization and/or Prospective Audit and feedback over no such intervention"
(strong recommendation, moderate-quality evidence)

The Core Elements of
Hospital Antibiotic Stewardship Programs: 2019

"Implement interventions, such as prospective audit and feedback or preauthorization, to improve antibiotic use"

Barlam TF, et al. Clinical Infectious Diseases, 2016

CDC. Core Elements of Hospital Antibiotic Stewardship, 2019

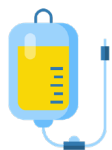
Prospective audit and feedback

Common	Occurred in 93% of program surveyed
Resource intensive	In one study, only 24% of chart reviews resulted in an actionable intervention
Minimal impact	Reduced duration of anti-MRSA therapy by 1 day Impact does not appear to extend to non-PAF patients

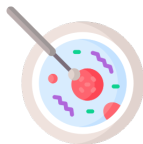
- Brace S, Rey Alvira-Arill G, Hamby A, et al. Beyond the 9 to 5: a cross-sectional survey of adult antimicrobial stewardship programs in the United States on their initiatives and resources based on on-call model participation. *Open Forum Infect Dis*. 2025;12(12):ofaf722. doi:10.1093/ofid/ofaf722
- Yamaguchi R, Yamamoto T, Okamoto K, et al. Prospective audit and feedback implementation by a multidisciplinary antimicrobial stewardship team shortens the time to de-escalation of anti-MRSA agents. *PLoS One*. 2022;17(7):e0271812. doi:10.1371/journal.pone.0271812
- Engel-Dettmers EM, Al Naiemi N, Dijkema HE, Braakman-Jansen ALMA, van Gemert-Pijnen LJEWC, Sinha B. Positive effects of audit and feedback on antimicrobial use in hospitalized patients limited to audited patients. *Antimicrob Stewardsh Healthc Epidemiol*. 2024;4(1):e46. doi:10.1017/ash.2024.37

Opt-out Intervention for Sepsis

1. Eligibility screen



Broad spectrum antibiotics



Negative blood cultures at 48-96 hr

2. Safety check

23-point safety checklist for e/o infection, micro data, high risk conditions

3. Randomization

1:1 usual care vs intervention

Intervention

"[This patient] has passed the initial safety screen for de-escalation of antibiotics. Antibiotics will be stopped per protocol unless you opt-out"

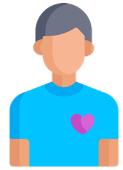
If the clinician opted out:

- *Why should antibiotics be continued in this patient?*
- *What is the patient's infection diagnosis?*
- *Can you narrow the breadth of antibacterial coverage?*
- *If the patient remains stable and no new clinical data emerge to suggest a different diagnosis, do you have an empiric de-escalation and duration-of-therapy plan?*

Moehring RW, Yarrington ME, Warren BG, et al. Evaluation of an opt-out protocol for antibiotic de-escalation in patients with suspected sepsis. *Clin Infect Dis*. 2023

Opt-out Intervention for Sepsis

1. Eligibility screen



Patients screened: 9,440

2. Safety check

8% passed: 767

3. Randomization

Intervention: 383

Intervention

Opt out: 299 (78%)

Agreed to stop antibiotics 59 (15%)

Moehring RW, Yarrington ME, Warren BG, et al. Evaluation of an opt-out protocol for antibiotic de-escalation in patients with suspected sepsis. *Clin Infect Dis*. 2023

Artificial Intelligence

SCIENCE AND PRACTICE

Journal of the American Pharmacists Association 64 (2024) 422–428

Contents lists available at ScienceDirect

Journal of the American Pharmacists Association

journal homepage: www.japha.org

ELSEVIER APhA

RESEARCH

Effectiveness of ChatGPT in clinical pharmacy and the role of artificial intelligence in medication therapy management

Don Roosan*, Pauline Padua, Raiyan Khan, Hasiba Khan, Claudia Verzosa, Yanting Wu

Intelligent Pharmacy 1 (2023) 32–40

Contents lists available at ScienceDirect

Intelligent Pharmacy

journal homepage: www.keaipublishing.com/en/journals/intelligent-pharmacy

KeAi CHINESE ROOTS GLOBAL IMPACT

The future of pharmacy: How AI is revolutionizing the industry

Osama Khan[a,*], Mohd Parvez[b], Pratibha Kumari[c], Samia Parvez[d], Shadab Ahmad[a]

[a] Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi, 110025, India
[b] Department of Mechanical Engineering, Al Falah University, Faridabad, Haryana, 121004, India
[c] Department of Mechanical Engineering, KIET Group of Institutions, Ghaziabad, UP, 201206, India
[d] Department of Civil Engineering, Jamia Millia Islamia, New Delhi, 110025, India

*“**ChatGPT 4.0 accurately solved 39 out of 39 (100 %) patient cases.** ChatGPT successfully identified drug interactions, provided therapy recommendations and formulated general management plans, but it did not recommend specific dosages.”*

Integration of AI into modern pharmacy practice:

EHR Integration	*Dose adjustments*
Telemedicine support	*Formulary management*
Drug interactions	*MTM*
Patient communication	*Patient triage*
Adverse effect monitoring	*Med reconciliation*
Patient education	*Adherence tracking*

Al Mazrouei, et al. BMC Infect Dis. 2026
Roosan D, et al. Journal of the American Pharmacists Association, 2024
Khan O, et al. Intelligent Pharmacy, 2023
Huang X, et al. British Journal of Pharmacology, 2023
Ranchon R, et al. Internat’l Jouurnal of Medical Informatics, 2023
Zink A, et al. JAMA, 2024 –how should medicare pay for AI?

Eliminating Prospective Audit & Feedback

DOTs/1000 PD

500
475
450
425
400
375
350
325
300

2021-09 2022-01 2022-05 2022-09 2023-01 2023-05 2023-09 2024-01 2024-05 2024-09

Date

Hospital A   Hospital B

HP eliminated PAF in 2023 at 2 large urban hospitals

No negative consequences on DOTs/1000 PD

What do you do instead of PAF?

Inpatient Stewardship

- Respond to clinical questions upon request
- Shared email in-basket for questions
- Provide regular updates at clinician meetings
- Monthly *ASP Updates* email
- Quarterly newsletter
- Maintain SharePoint Page
- Create and update treatment guidelines
- Create educational handouts
- Develop and update order sets
- Link education within EPIC

Data Collection and Analysis

Outpatient stewardship

- Respond to clinical questions upon request
- Provide updates at clinic dept and provider meetings
- Develop and optimize smart sets
- Update nursing standing orders
- Create patient education

Diagnostic Stewardship

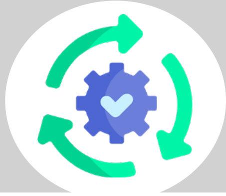
- Data analysis
- Design interventions
- Develop education
- Gain stakeholder approval
- Present at meetings

Consider Limiting PAF if Resource are Limited

- IDSA Guidelines and CDC Core Elements do not require PAF
- PAF is very resource intensive
- Someone is likely already doing this work, or will (e.g. AI)
- Difficult to associate PAF with cost-avoidance
- Ensure time for alternative upstream interventions and data collection

Outline

HealthPartners program structure



Factors that sustain programs

Overcoming challenges in time and staffing

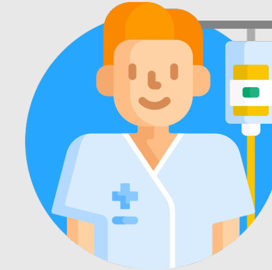
Using data to drive change

Communicating outcomes

High-Impact Interventions

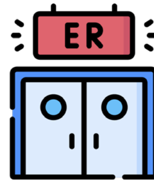
Focus resources on high-impact interventions

&



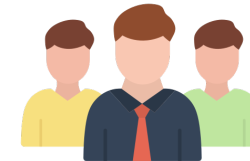
Consider and emphasize shared goals

Surgeons



Emergency medicine

Pharmacists



C-suite

Choosing Initiatives

Impact

Effort

Low effort **High impact**	High effort **High impact**
Low effort Low impact	High effort Low impact

Spend the majority of time and energy here

Collect Data

Identify data points early

Outcomes
(or surrogates)

Balancing measures
(e.g. readmissions,
ICU admissions)

Collect data

Request reports

Use small sample and extrapolate

Try SlicerDicer (EPIC)

Point prevalence analysis

Emphasizing Shared Goals

Leadership

- ✓ Connect stewardship initiatives to organizational values
- ✓ Focus on big-picture concepts
- ✓ Provide a detailed financial analysis
- ✓ Be transparent about perceived barriers and next steps

Clinicians

- ✓ Focus on patient outcomes and satisfaction: treatment success rates, mortality, readmissions, follow-up visits, etc.
- ✓ Address expected workflow changes and work to minimize impacts
- ✓ Stress shared goals

UC Example: Define the Problem

Unnecessary urine cultures and associated antibiotic treatment in patients without symptoms negatively impacts patients

- Antibiotic-related adverse effects
- Microbiome Imbalance can precipitate true infection
- Missing or overlooking other treatable problems
- Confusing for patients and families, often leading to antibiotic-seeking visits
- Unnecessary future medical visits, tests and/or treatments

Quantify the Scale of the Problem

1,000 Positive Urine Cultures
Adults
ED/Hospitals

Pregnant
Kidney Transplant
Lactate > 2
SBP < 90 mmHg
T ≥ 100.4 F

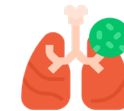
664 Positive Urine Cultures

Screened for urinary symptoms:
Dysuria
Suprapubic pain/tenderness
Flank pain
Frequency
Urgency

451 Asymptomatic (68%)

213 Symptomatic (32%)

65% of all patients that received antibiotics for a UTI did not have clear symptoms
16,500 antibiotic days/year



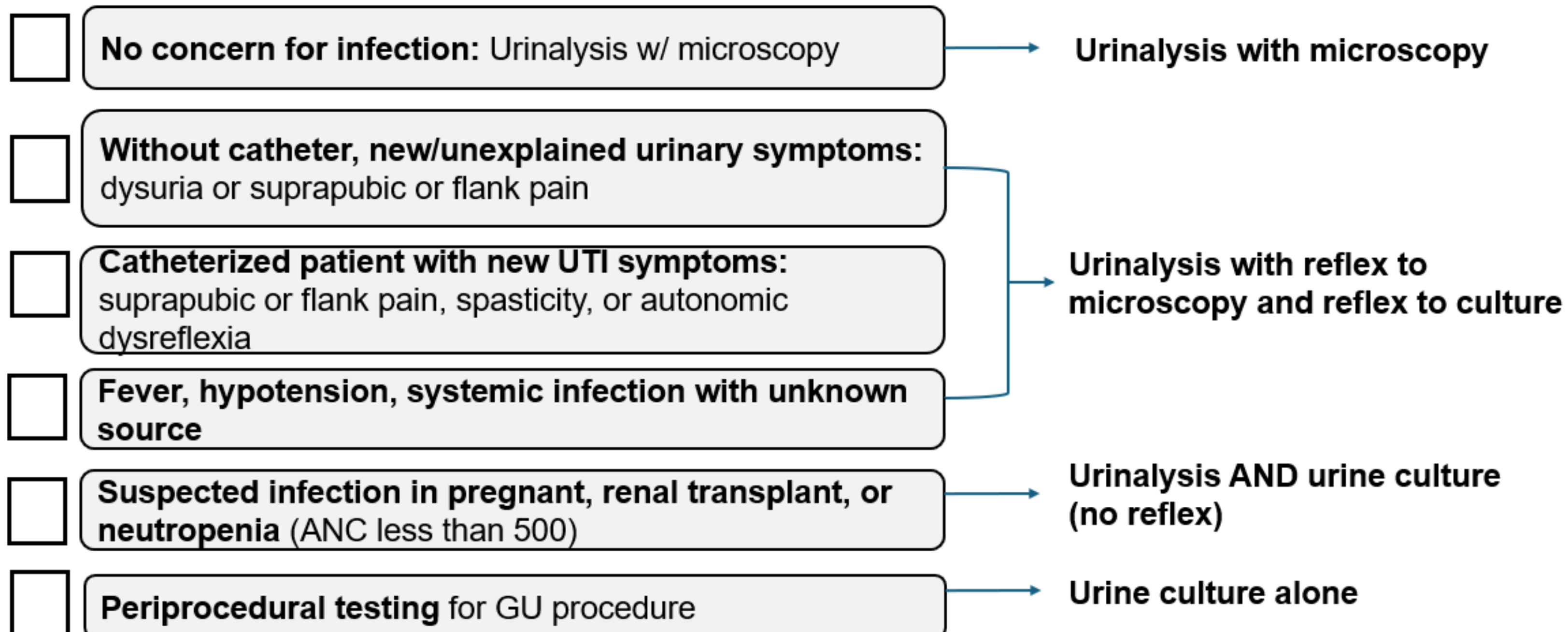
~2,800 days

~3,600 days

8,600-10,300 urine cultures per year

Propose a Solution

Indication-based ordering panel



Urinalysis with microscopy

Urinalysis with reflex to microscopy and reflex to culture

Urinalysis AND urine culture (no reflex)

Urine culture alone

Collaborate & Solicit Feedback

- Dept Approvals
  - Urology
  - Nephrology
  - Urgent Care
  - Primary care/Family Medicine
  - Pediatrics
  - Emergency medicine
  - Hospital medicine
  - Infection Prevention

Shared goals:

- Aligning practice with guideline recommendations
- Avoiding adverse events
- Excess provider & pharmacist work from culture follow up
- Patient stress and confusion
- Reducing cost

Summary of 2025 Accomplishments

Standardization & Clinician support

- Published **Pediatric Infectious Diseases Treatment Guidelines**
- Implemented coordinated plan to modernize **Community-acquired pneumonia treatment**
- Ongoing focus on **Diagnostic Stewardship:** Procalcitonin, Respiratory viral panel
- Expanded **Infection order set**
- Developed **outpatient antimicrobial stewardship plan**
- Updated **smart sets and RN standing orders**
- Developed and delivered multiple **educational presentations**

Antibiotic Use & Patient Care

- Steadily **increased oral antibiotic use by 28%** since 2023
- **Antibiotic use remains stable after initial reductions**

- **COpAT Program Impact**:
  - 10% reduction in infection-related ER visits within 6 weeks
  - 5% increase in patient adherence to recommended monitoring
  - 4% reduction in critical laboratory abnormalities (improved patient safety)
  - 1.2-day reduction LOS

Cost Saving

- **Diagnostic Stewardship:**
  - Respiratory Panel Restriction: 50% reduction
  - Procalcitonin restriction: 50% reduction
  - **COpAT program**:
  - 786.6 days saved
  - **Developed new vancomycin dosing plan**, eliminating costly external service:

- **Total Cost Savings/Avoidance: $1,350,724**

Acknowledgments

HP Antimicrobial Stewardship Program

Rebecca Peglow, MD
Zack Nelson, PharmD, BCIDP
Maxx Enzmann, PharmD, BCIDP
Ethan Ryberg, PharmD
Stefan Collinet-Adler, MD

Thank you!

Antimicrobial Stewardship Program

ams@healthpartners.com