

October 29th, 2024

IDWeek 2024 Highlights

- Rupali Jain, PharmD
- Zahra Kassamali Escobar, PharmD
- Chloe Bryson-Cahn, MD

Daptomycin and Statins



Stanford
MEDICINE

Daptomycin and Statins: To Hold or Not to Hold?

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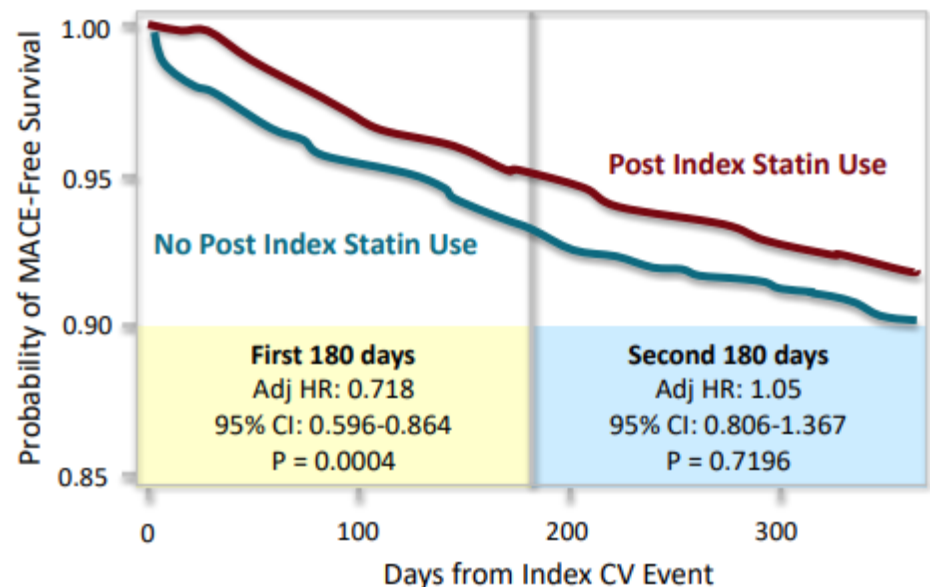
What do you recommend re: Statins and Daptomycin?

1. Nothing, continue both therapies
2. Hold the statin till completion of daptomycin
3. Depends on daptomycin dose
4. Depends on which statin



Secondary Prevention

- Multicenter, retrospective analysis of ASCVD survivors
- Statin vs. No Statin
- Mortality benefit primarily seen in first 180 days



“Statin Aversion”... think “Penicillin Allergy”

- Cardiology clinician aversion to re-prescribing
 - “Rhabdomyolysis” poorly defined in clinical studies and in practice
 - Statin permanently implicated regardless of cause (e.g., daptomycin DDI)
- Patient aversion to statins
 - Common at baseline
 - Likely worse if ADR occurs
- Exacerbate pre-existing disparities?
 - Women, non-white ethnicity associated with statin undertreatment



Risk of Holding Statin on CV Outcomes

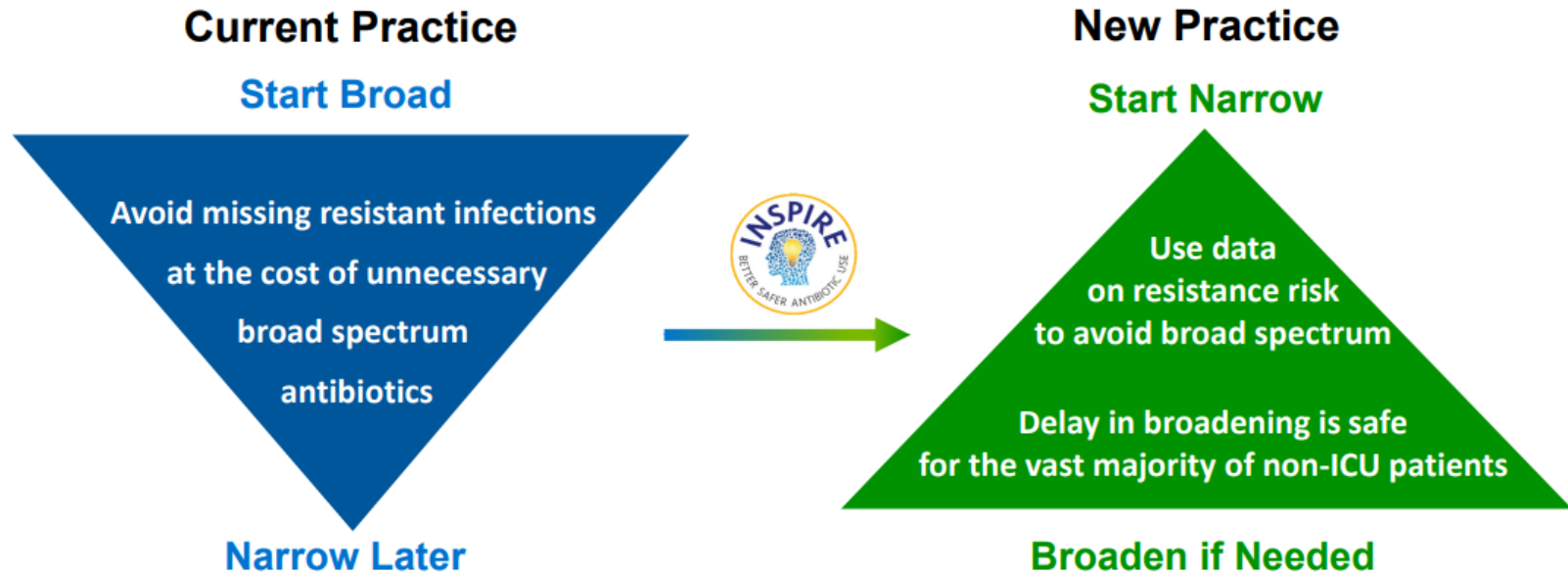
- Highest Risk = Secondary prevention <6 months from event
- Lower Risk = Primary Prevention OR
Secondary Prevention >6 months from event



INSPIRE Abdominal Infection Trial

Intelligent Stewardship Prompts to Improve Rea-time Empiric Antibiotic Selection for Patients

- More than 2.8 million antibiotic-resistant infections annually in US alone
- Overprescribing is a major contributor: 40% of inpatient antibiotics too broad



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Presenting Author(s)



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Infections & Bacteria That Account for Antibiotic Use

- **Most commonly treated infections in US hospitals**
 - Pneumonia¹
 - Urinary tract infection (UTI)²
 - **Abdominal infections**
 - Skin/soft tissue infections³
- **Multidrug-resistant organisms physicians worry most about**
 - Methicillin resistant *Staphylococcus aureus* (MRSA)
 - *Pseudomonas* species
 - Extended-Spectrum Beta-Lactamase producing *Enterobacterales* (ESBL)
 - Vancomycin Resistant *Enterococci* (VRE)
 - Carbapenem Resistant *Enterobacterales* (CRE)



INSPIRE Abdominal Infection Absolute Risk Models

- Based on 225,000 patients with abdominal infection (2017-2019)
- Used recursive partitioning to identify algorithm for MDRO infection
- Evaluated >60 variables: demographics, comorbidities, prior antibiotics, nursing home, hospitalization, admission labs, prior MDRO

Target Pathogen	Elements Predictive of Absolute Risk $\geq 10\%$
MRSA	History of MRSA, history of abdominal surgery
<i>Pseudomonas</i>	History of <i>Pseudomonas</i> , history of abdominal surgery
ESBL	History of ESBL, Facility %ESBL among abdominal infection admissions
CRE	No risk factors predicted $\geq 10\%$ risk

MRSA - Methicillin Resistant *Staphylococcus aureus*; ESBL – Extended-Spectrum Beta-Lactamase producing *Enterobacterales*; CRE – Carbapenem Resistant *Enterobacterales*.

¹Gohil SK, Stewardship Prompts to Improve Antibiotic Sel
²Gohil SK, Stewardship Prompts to Improve Antibiotic Sel
³Gohil SK, ID Week 2024 Oral Abstract #179

INSPIRE Abdominal Trial – Design

92-hospital, cluster-randomized trial

Arm 1: Routine Care – 46 Hospitals

- Standard-of-care antibiotic stewardship

Arm 2: INSPIRE Computerized Physician Order Entry (CPOE) Bundle Intervention – 46 Hospitals

- Physician “CPOE smart prompts” for patient-specific resistant organism risk
- Recommends appropriate antibiotic choice
- Provider encouragement and feedback reports (by local study champions)



INSPIRE Prompt Provides Patient-Specific Risk Estimates

- Physician orders vancomycin for **abdominal infection** and risk of MRSA abdominal infection calculated to be low (<10%)

**** PROVIDER PROMPT ****

Vancomycin is NOT recommended for EMPIRIC therapy because this patient's risk of MRSA abdominal infection is **< 10%**

CEFTRIAXONE is recommended.
Add Metronidazole if appropriate.

This risk is calculated based on known patient and hospital factors at admission. This recommendation does not account for positive cultures this admission or allergies, and does not replace clinical judgment.

Do you wish to REPLACE this order with the recommended CEFTRIAXONE?
Note: Order Metronidazole separately if appropriate.

Patient & syndrome-specific risk estimate

Returns to order screen

Next screen asks reason to keep vancomycin

Taken to ceftriaxone order screen



Override Comment Lookup

Select

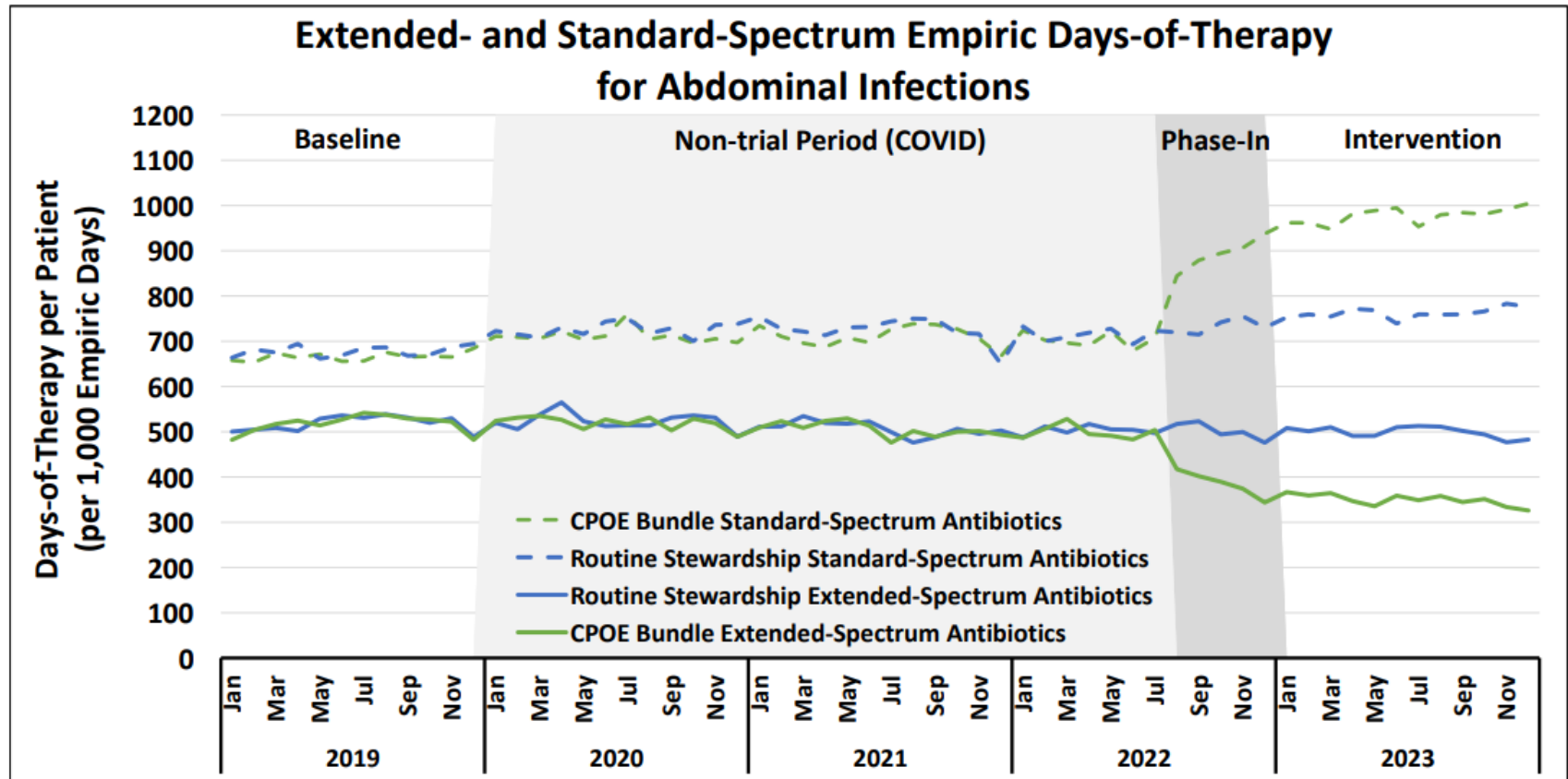
Description

1. Allergy
2. Patient requires ICU care for infection
3. Positive MDRO Culture this admission or outside hospital
4. Neutropenia
5. Other:

<End of list>

Empiric Extended-Spectrum Use Across Study Period - Abdominal Infection

- 30% crude absolute reduction with INSPIRE CPOE bundle



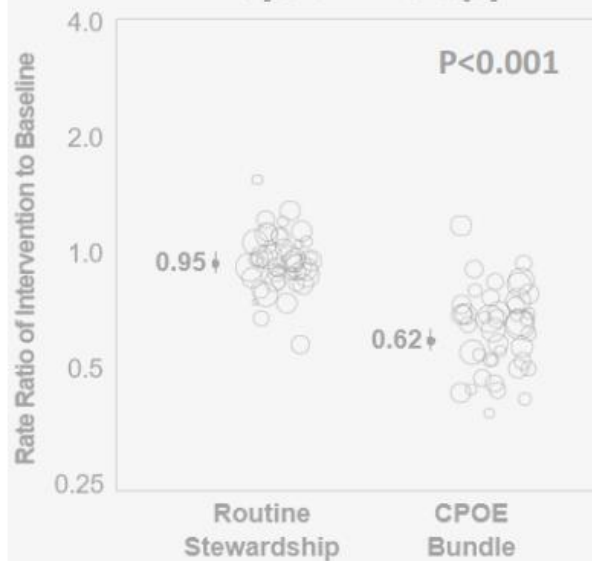
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INSPIRE Abdominal Infection Trial Safety Outcomes

- Days to ICU Transfer
 - No difference between groups
 - HR (CI) = 1.10 (0.96-1.26), p = 0.15
- Length of Stay
 - No difference between groups
 - HR (CI) = 1.02 (0.98-1.06), p = 0.27

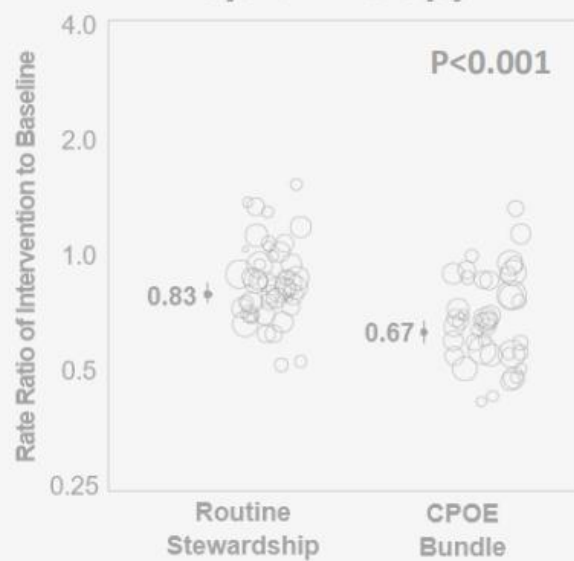
INSPIRE Abdominal Infection Trial Effectiveness Outcomes – As Randomized

Primary Outcome
Extended-Spectrum
Days of Therapy



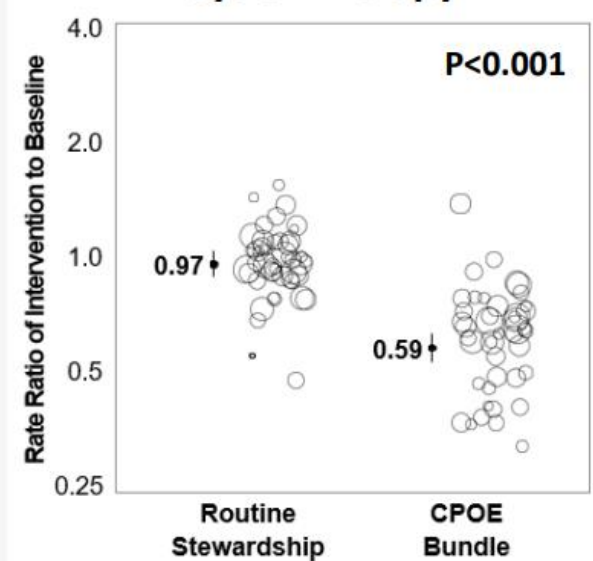
INSPIRE Intervention
35% reduction

Secondary Outcome
Vancomycin
Days of Therapy



INSPIRE Intervention
20% reduction

Secondary Outcome
Antipseudomonal
Days of Therapy



INSPIRE Intervention
39% reduction



Can doxycycline postexposure prophylaxis (doxy-PEP) implementation reverse syphilis trends?

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17 Oct 2024



Public Health
Seattle & King County



IDSA
Infectious Diseases
Society of America

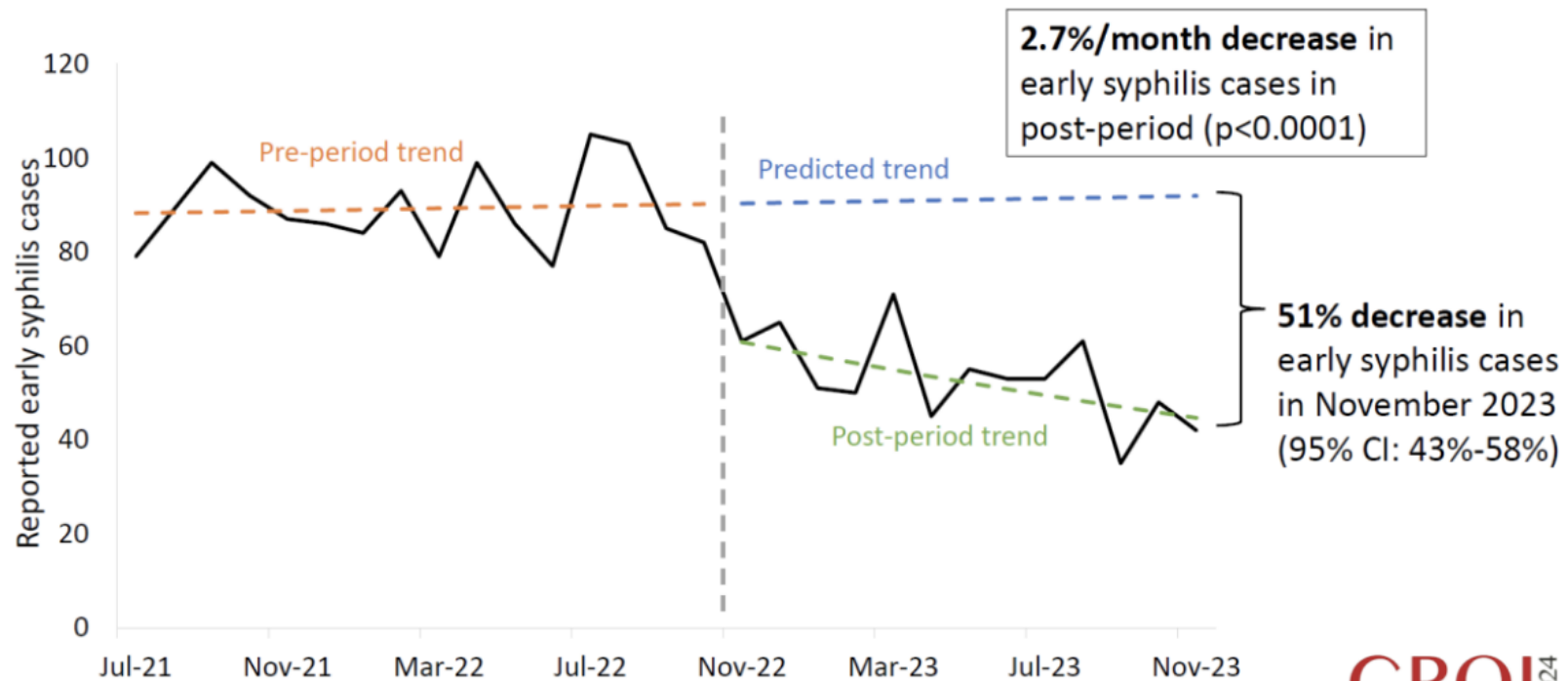
What is doxy PEP

- Doxycycline 200mg taken within 72 hours of condomless sex
 - Prevents bacterial STI (77% reduction in syphilis)
 - CDC Rec: Counsel all GBMSM and TGW with ≥ 1 bacterial STI in last year, offer through shared decision making
- But what are the downsides?
 - Gonorrhea resistance
 - Impact on microbiome



Effectiveness: San Francisco sees population-level syphilis declines after doxy-PEP guideline release

Early Syphilis Results: Monthly SF cases among MSM and TGW



Sankaran M, et al. CROI 2024, abs. 127

CROI 2024

IDWeek



Effectiveness: Real world syphilis declines in doxy-PEP users

- **San Francisco:** ES down 42% through April 2024 (Cohen, CDC STI Prev Conf 2024)
- **Seattle:** All-stage syphilis down 55% in MSM (but not MSMW) since May 2023 (PHSKC HIV/STI/HCV Program, unpublished surveillance data)
- **NYC:** 70% lower (95% CI: 0.05-1.09) RPR positivity in early adopters (Carnevale, CDC STI Prev Conf 2024)
- **Boston (MGH) SHC:** Down 41% (95% CI: 0.37-0.95) in post-doxy-PEP period (Jarolimova, CDC STI Prev Conf 2024)
- **Boston – Fenway:** Down 65% (95% CI: 0.12-0.71) in post-doxy-PEP period (Mayer, CDC STI Prev Conf 2024)





Core Elements of Hospital Diagnostic Excellence

Assessment Tool Additional Examples



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<https://www.cdc.gov/patient-safety/media/pdfs/DxEx-Tool-Additional-Examples-508.pdf>



CDC Core Elements

Components	Antibiotic Stewardship	Sepsis	Diagnostic Excellence
Hospital Leadership Commitment	✓	✓	✓
Accountability	✓	✓	
Multi-Professional Expertise	✓	✓	✓
Action	✓	✓	✓
Tracking	✓	✓	✓
Reporting	✓	✓	
Education	✓	✓	✓
Patient , Family, and Caregivers Engagement			✓

