Best of
Bon Usage Antimicrobiens
Bon Usage Diagnostique

23/03/2026

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AMS

JAMA Internal Medicine | Original Investigation | LESS IS MORE

Improving Empiric Antibiotic Selection for Patients Hospitalized With Skin and Soft Tissue Infection

The INSPIRE 3 Skin and Soft Tissue Randomized Clinical Trial

2025

Shruti K. Gohil, MD, MPH; Edward Septimus, MD; Ken Kleinman, ScD; Neha Varma, MPH; Kenneth E. Sands, MD, MPH; Taliser R. Avery, MS; Amarah Mauricio, MPH; Selsebil Sljivo, MPH; Risa Rahm, PharmD; Kaleb Roemer, PharmD; William S. Cooper, PharmD; Laura E. McLean, MEd; Naoise G. Nickolay, RPh; Russell E. Poland, PhD; Robert A. Weinstein, MD; Samir M. Fakhry, MD; Jeffrey Guy, MD, MSc; Julia Moody, MS; Micaela H. Coady, MS; Kim N. Smith, MBA; Brittany Meador, BS; Allison Froman, MPH; Katyuska Eibensteiner, BA; Mary K. Hayden, MD; David W. Kubiak, PharmD; Chenette Burks, PharmD; L. Hayley Burgess, PharmD; Michael S. Calderwood, MD, MPH; Jonathan B. Perlin, MD, PhD; Richard Platt, MD, MSc; Susan S. Huang, MD, MPH

POPULATION

34 944 Men, 25 729 Women
2 Unknown Gender

Noncritically ill adults ≥18 y hospitalized with skin and soft tissue infections

Mean age, 58.0 y

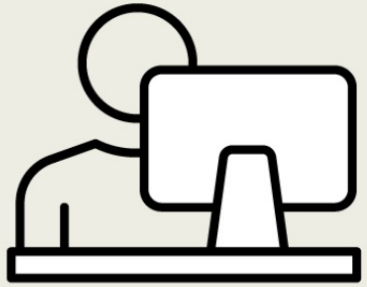
SETTINGS / LOCATIONS

92 US community hospitals

INTERVENTION

92 Hospitals randomized (60 725 patients in intervention period)

44 Hospitals (29 338 patients)
Computerized patient order entry (CPOE) bundle
CPOE prompts recommending standard-spectrum antibiotics coupled with clinician education and feedback



46 Hospitals (31 337 patients)
Routine stewardship
Educational materials and quarterly coaching calls to maintain stewardship activities per national guidelines

PRIMARY OUTCOME

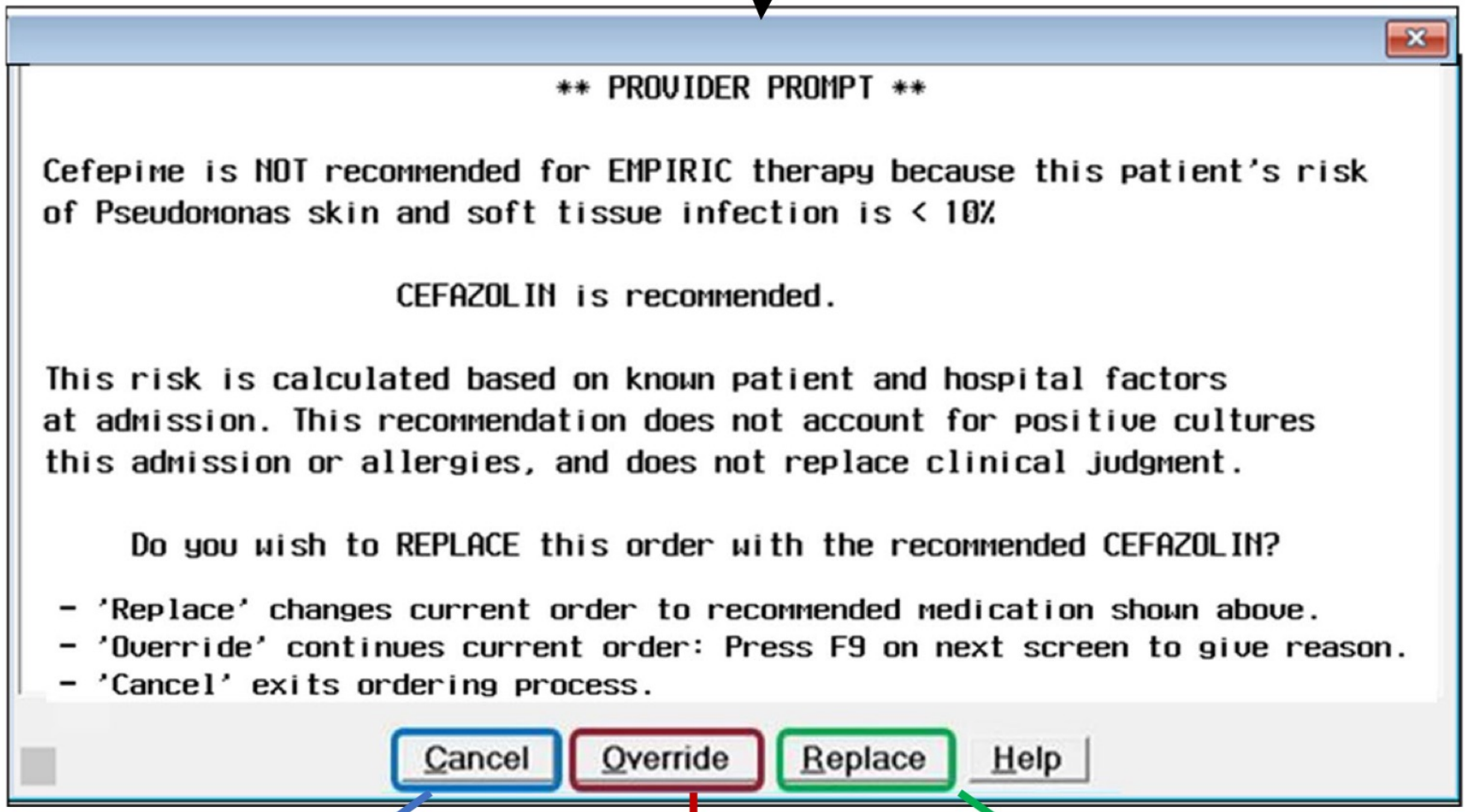
Empiric extended-spectrum (E-S) antibiotic days of therapy (ie, total No. E-S antibiotics targeting *Pseudomonas* or multidrug-resistant gram-negative bacteria received per patient from admission through day 3 / No. empiric days × 1000 days)

Computerized physician order entry

Hospitals in the **CPOE bundle group** received all education and activities provided to the routine stewardship group, plus monthly coaching calls, as well as:

1. **CPOE prompts** recommending standard-spectrum antibiotics instead of extended-spectrum antibiotics during the first **3 hospital days** (empiric period) **for patients with an absolute risk < 10%** of ***Pseudomonas spp.*** **or MDRO SSTI**
2. **Clinician education** on risk estimate calculations and local *Pseudomonas spp.* or MDRO SSTI prevalence, investigator site visits to each facility during the phase-in period, and webinars
3. **Clinician SSTI antibiotic prescribing reports**

MDRO Skin and Soft Tissue Infection Risk Estimate Model[a]	Elements Predictive of Absolute Risk ≥10%
Pseudomonas	Patient history of *Pseudomonas*
ESBL and MDR-*Acinetobacter* (Pathogen susceptible to ertapenem)[b]	History of ESBL AND Facility % ESBL of all skin and soft tissue infection ≥1.2%
ESBL, MDR-*Acinetobacter*, and MDR *Pseudomonas* (Pathogen susceptible to meropenem, imipenem, ceftolozane/tazobactam)[c]	History of ESBL AND facility % ESBL of all skin and soft tissue infection ≥1.6% OR No history of ESBL AND History of *Pseudomonas* AND History of MDR *Pseudomonas*
Carbapenem-Resistant *Enterobacterales*[d]	No risk factors predicted ≥10% risk
VRE	No risk factors predicted ≥10% risk

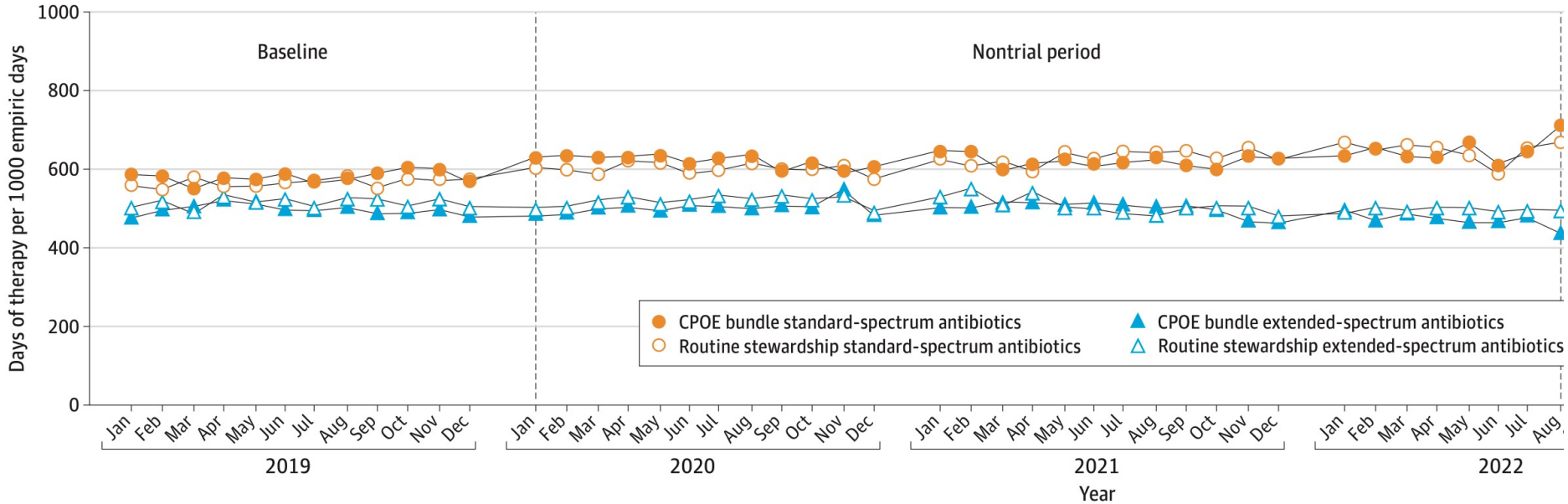


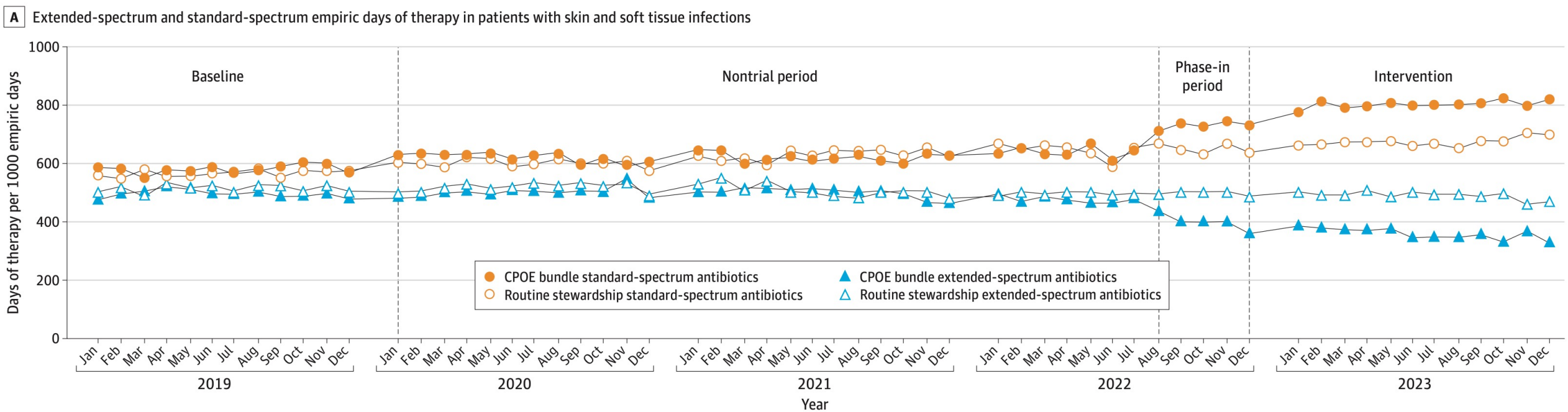
Returns to order screen

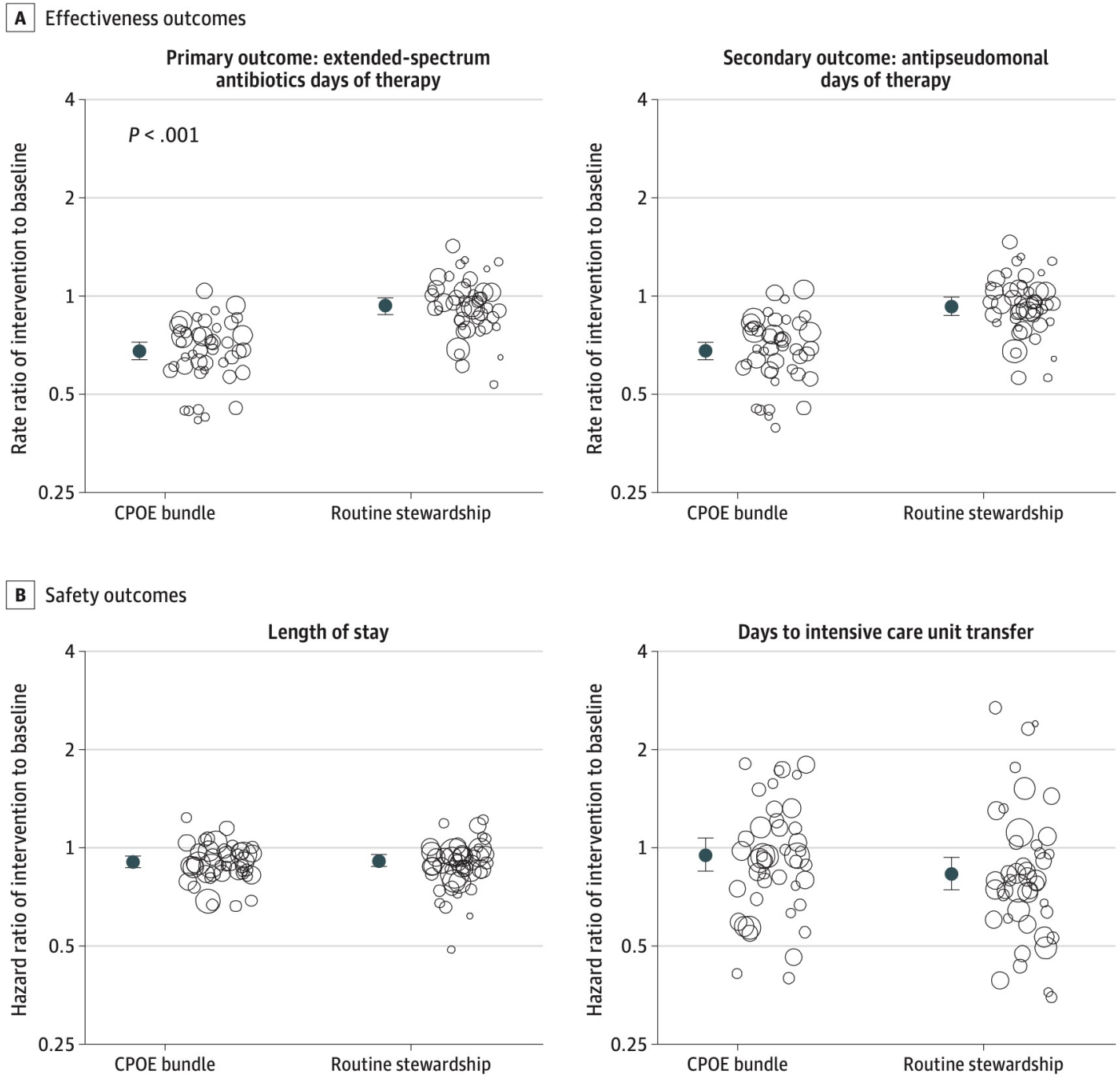
If override chosen, reason must be selected

Taken to cefazolin order screen

A Extended-spectrum and standard-spectrum empiric days of therapy in patients with skin and soft tissue infections




A
Extended-spectrum and standard-spectrum empiric days of therapy in patients with skin and soft tissue infections
Days of therapy per 1000 empiric days
1000
800
600
400
200
0
Baseline
Nontrial period
Phase-in period
Intervention
CPOE bundle standard-spectrum antibiotics
Routine stewardship standard-spectrum antibiotics
CPOE bundle extended-spectrum antibiotics
Routine stewardship extended-spectrum antibiotics
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2019
2020
2021
2022
2023
Year


A
Effectiveness outcomes
Primary outcome: extended-spectrum antibiotics days of therapy
P < .001
Rate ratio of intervention to baseline
4
2
1
0.5
0.25
CPOE bundle
Routine stewardship
Secondary outcome: antipseudomonal days of therapy
Rate ratio of intervention to baseline
4
2
1
0.5
0.25
CPOE bundle
Routine stewardship
B
Safety outcomes
Length of stay
Hazard ratio of intervention to baseline
4
2
1
0.5
0.25
CPOE bundle
Routine stewardship
Days to intensive care unit transfer
Hazard ratio of intervention to baseline
4
2
1
0.5
0.25
CPOE bundle
Routine stewardship

JAMA Surgery | Original Investigation

Improving Empiric Antibiotic Selection for Patients Hospitalized With Abdominal Infection

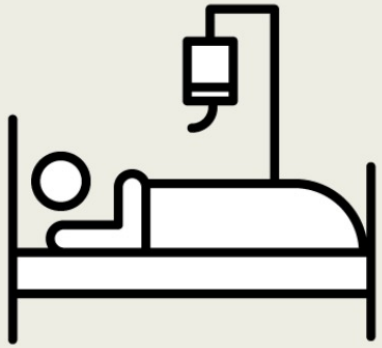
The INSPIRE 4 Cluster Randomized Clinical Trial

2025

Shruti K. Gohil, MD, MPH; Edward Septimus, MD; Ken Kleinman, ScD; Neha Varma, MPH; Kenneth E. Sands, MD, MPH; Taliser R. Avery, MS; Amarah Mauricio, MPH; Selsebil Sljivo, MPH; Risa Rahm, PharmD; Kaleb Roemer, PharmD; William S. Cooper, PharmD; Laura E. McLean, MEd; Naoise G. Nickolay, RPh; Russell E. Poland, PhD; Robert A. Weinstein, MD; Samir M. Fakhry, MD; Jeffrey Guy, MD, MSc; Julia Moody, MS; Micaela H. Coady, MS; Kim N. Smith, MBA; Brittany Meador, BS; Allison Froman, MPH; Katyuska Eibensteiner, BA; Mary K. Hayden, MD; David W. Kubiak, PharmD; Chenette Burks, PharmD; L. Hayley Burgess, PharmD; Michael S. Calderwood, MD, MPH; Jonathan B. Perlin, MD, PhD; Richard Platt, MD, MSc; Susan S. Huang, MD, MPH

POPULATION

42 903 Men, 62 099 Women, 2 Unknown gender

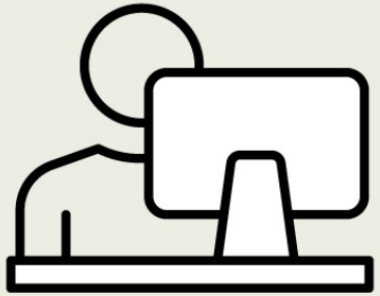


Noncritically ill adults aged ≥18 y hospitalized with abdominal infections

Mean age, 60 y

INTERVENTION

92 Hospitals analyzed
(**105 004** patients in the intervention period)



44 Hospitals (50 620 patients)
Computerized patient order entry (CPOE) bundle
CPOE prompts recommending standard-spectrum antibiotics coupled with clinician education and feedback

46 Hospitals (54 384 patients)
Routine stewardship
Educational materials and quarterly coaching calls to maintain stewardship activities per national guidelines

SETTINGS / LOCATIONS

92 Community hospitals in the US

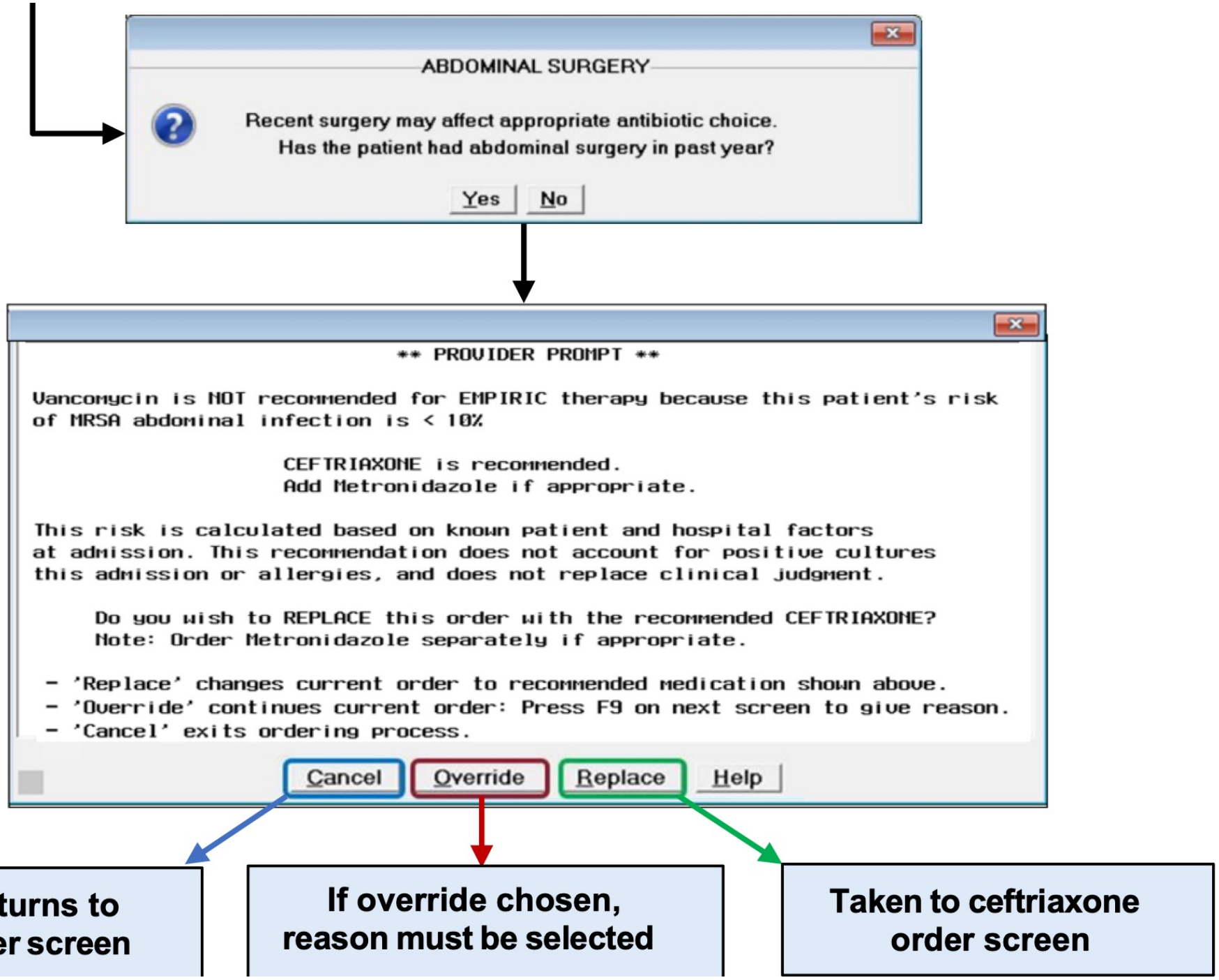
PRIMARY OUTCOME

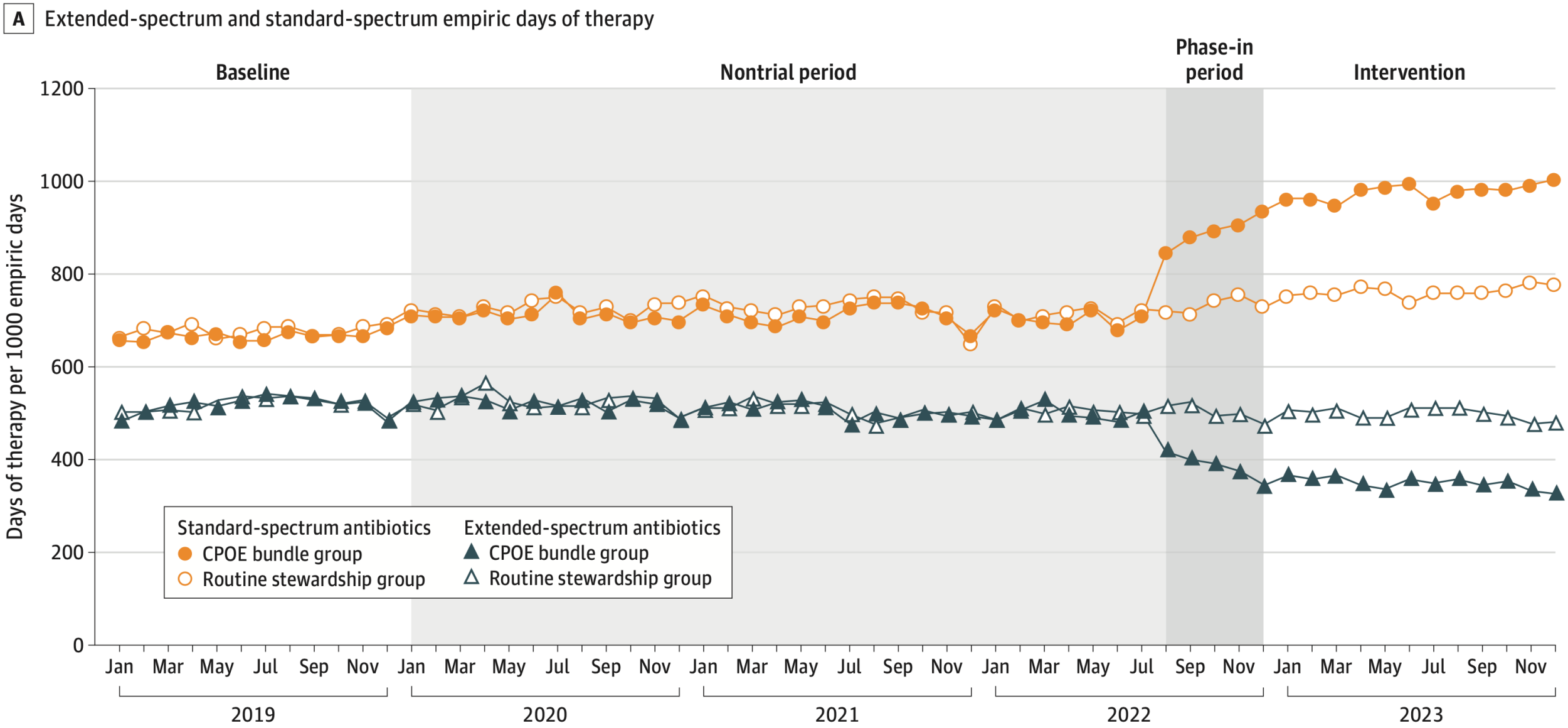
Empiric extended-spectrum (E-S) antibiotic days of therapy (ie, total No. of E-S antibiotics received per patient from admission through day 3 divided by No. of empiric days ×1000)

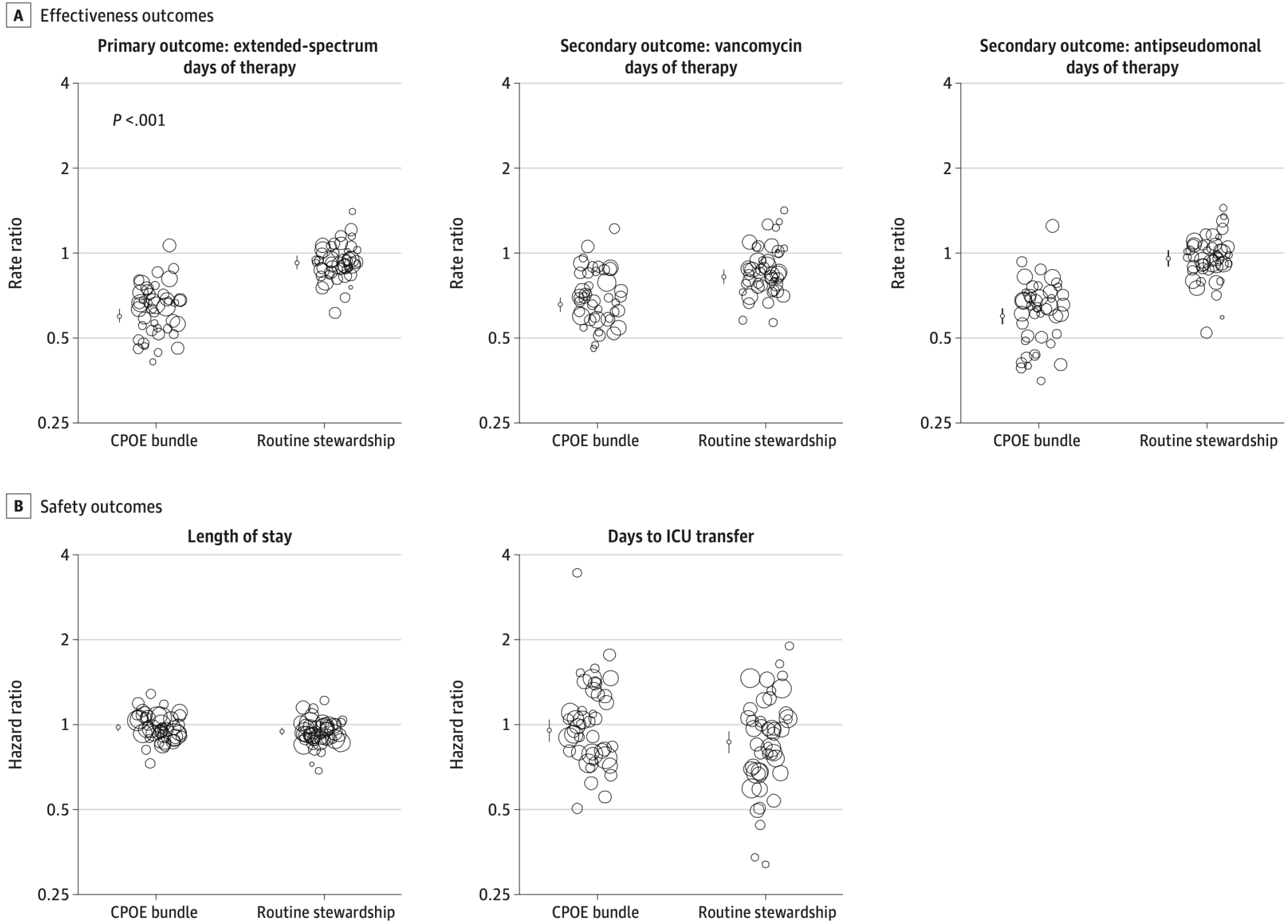
Gohil SK, Septimus E, Kleinman K, et al. Improving empiric antibiotic selection for patients hospitalized with abdominal infectio
JAMA Surg. Published online April 10, 2025. doi:10.1001/jamasurg.2025.1108

eTable 2: Risk Factors Predicting ≥ 10% Absolute Risk for Multidrug-Resistant Organism (MDRO) Abdominal Infection

MDRO Abdominal Infection Risk Estimate Model[a]	Elements Predictive of Absolute Risk ≥10%
Methicillin-Resistant *Staphylococcus aureus* (MRSA)	History of MRSA AND History of prior abdominal surgery within 1 year
Pseudomonas	History of *Pseudomonas* AND History of prior abdominal surgery within 1 year
ESBL and MDR-*Acinetobacter* (Pathogen susceptible to ertapenem)[b]	History of ESBL AND Percent facility ABD ESBL ≥1.75%
ESBL, MDR-*Acinetobacter*, and MDR *Pseudomonas* (Pathogen susceptible to meropenem, imipenem, ceftolozane/tazobactam)[c]	History of ESBL AND Percent facility ABD MDR ≥1.8%
Carbapenem-Resistant *Enterobacterales*[d]	No risk factors predicted ≥10% risk


ABDOMINAL SURGERY
Recent surgery may affect appropriate antibiotic choice.
Has the patient had abdominal surgery in past year?
Yes
No
** 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.
- 'Replace' changes current order to recommended medication shown above.
- 'Override' continues current order: Press F9 on next screen to give reason.
- 'Cancel' exits ordering process.
Cancel
Override
Replace
Help
Returns to order screen
If override chosen, reason must be selected
Taken to ceftriaxone order screen


A
Extended-spectrum and standard-spectrum empiric days of therapy
Baseline
Nontrial period
Phase-in period
Intervention
Days of therapy per 1000 empiric days
1200
1000
800
600
400
200
0
Standard-spectrum antibiotics
CPOE bundle group
Routine stewardship group
Extended-spectrum antibiotics
CPOE bundle group
Routine stewardship group
Jan Mar May Jul Sep Nov
2019
2020
2021
2022
2023


A
Effectiveness outcomes
Primary outcome: extended-spectrum days of therapy
P <.001
Secondary outcome: vancomycin days of therapy
Secondary outcome: antipseudomonal days of therapy
Rate ratio
4
2
1
0.5
0.25
CPOE bundle
Routine stewardship
B
Safety outcomes
Length of stay
Days to ICU transfer
Hazard ratio

JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Biomarker-Guided Antibiotic Duration for Hospitalized Patients With Suspected Sepsis

The ADAPT-Sepsis Randomized Clinical Trial

2025

- Essai clinique randomisé multicentrique dans 41 unités de soins intensifs du NHS (UK)

- Patients avec antibiothérapie intraveineuse pour suspicion de sepsis (pas de patients immunodéprimés ou avec durée prévisible d'antibiothérapie > 21 jours)

- De 2018 à 2024, 918 patients adultes ont été assignés au protocole guidé par PCT quotidienne, 924 au protocole guidé par CRP quotidienne et 918 aux soins standard.

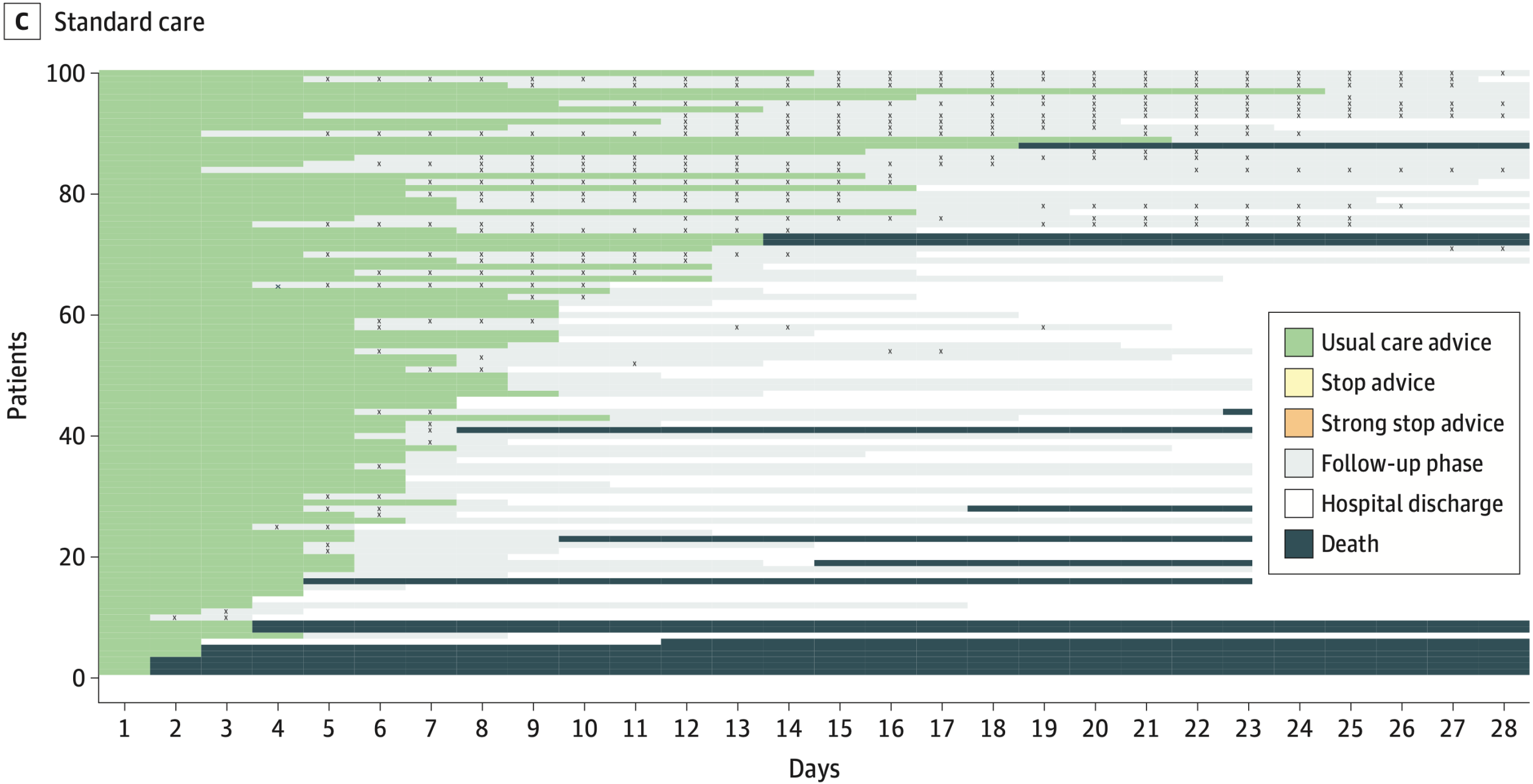
PCT

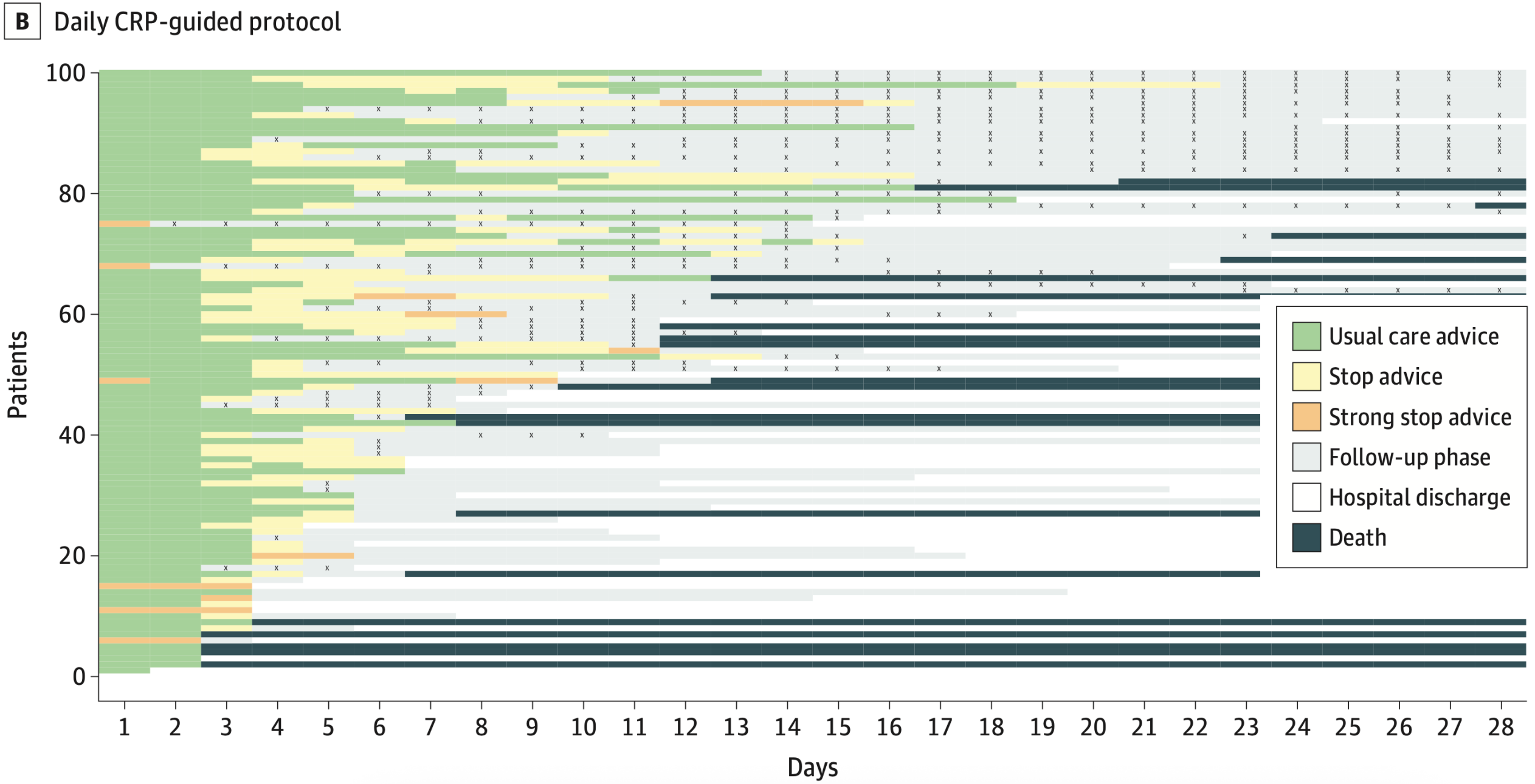
Three different advices:
Strong stop: PCT <0.25 µg/L
Supports stop: PCT fall by >80% from baseline or 0.25 µg/L <PCT <0.50 µg/L
Usual care: does not meet above criteria

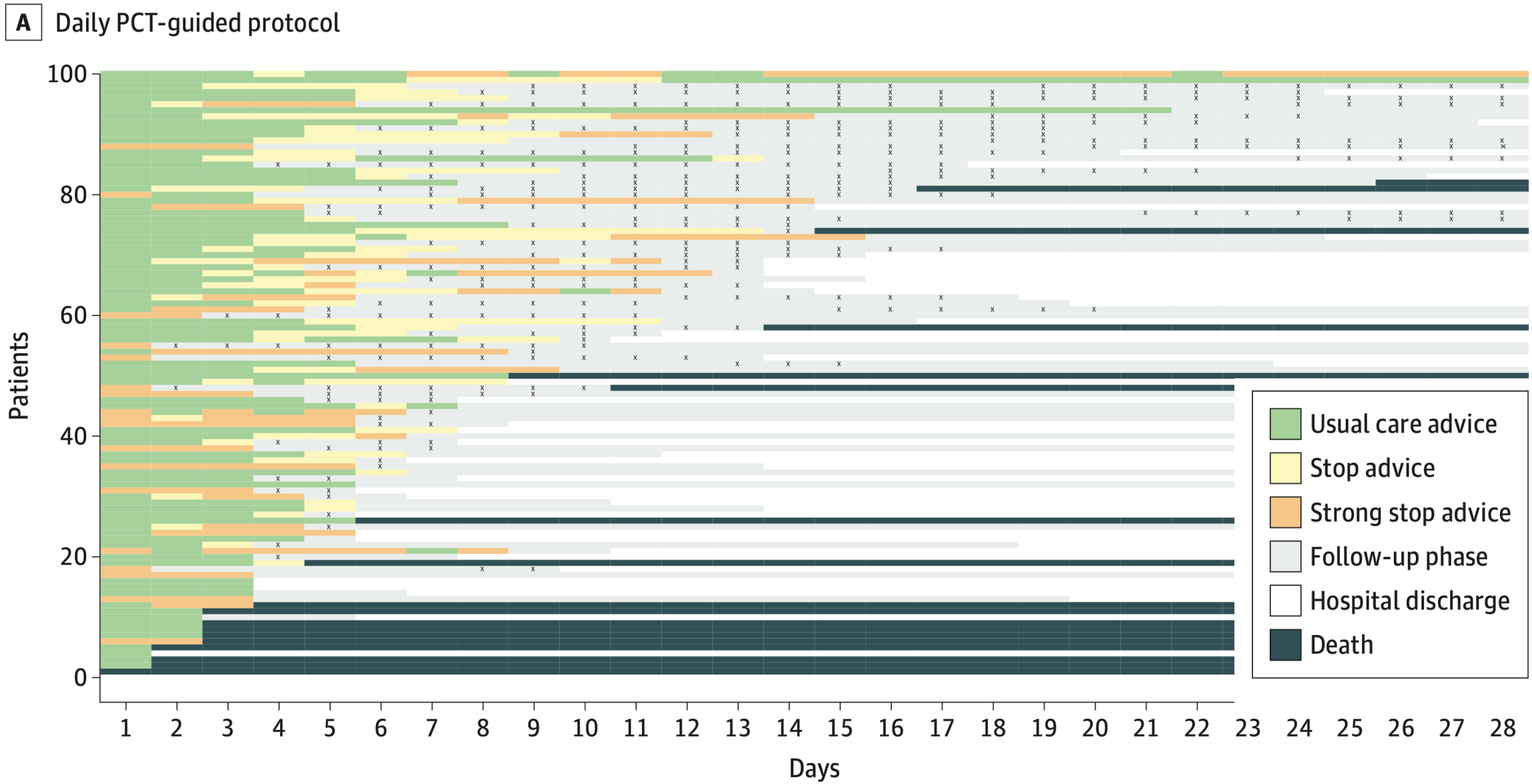
CRP

Three different advices:
Strong stop: CRP <25 mg/L
Supports stop: CRP fall by >50% from baseline
Usual care: does not meet above criteria

Usual care


C
Standard care
Patients
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
Days
Usual care advice
Stop advice
Strong stop advice
Follow-up phase
Hospital discharge
Death


B
Daily CRP-guided protocol
Patients
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
Days
Usual care advice
Stop advice
Strong stop advice
Follow-up phase
Hospital discharge
Death


A
Daily PCT-guided protocol
Patients
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
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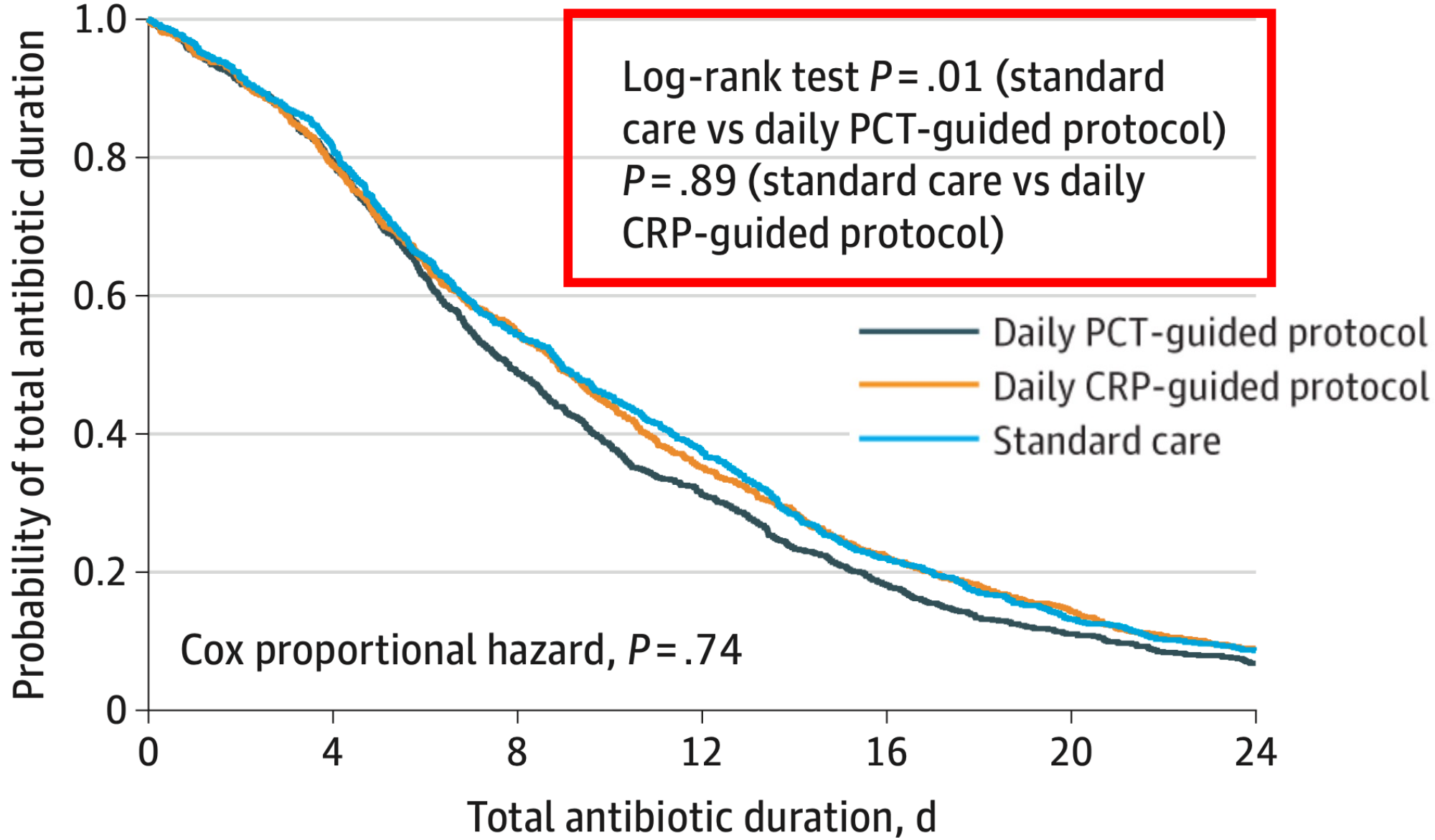
21
22
23
24
25
26
27
28
Days
Usual care advice
Stop advice
Strong stop advice
Follow-up phase
Hospital discharge
Death

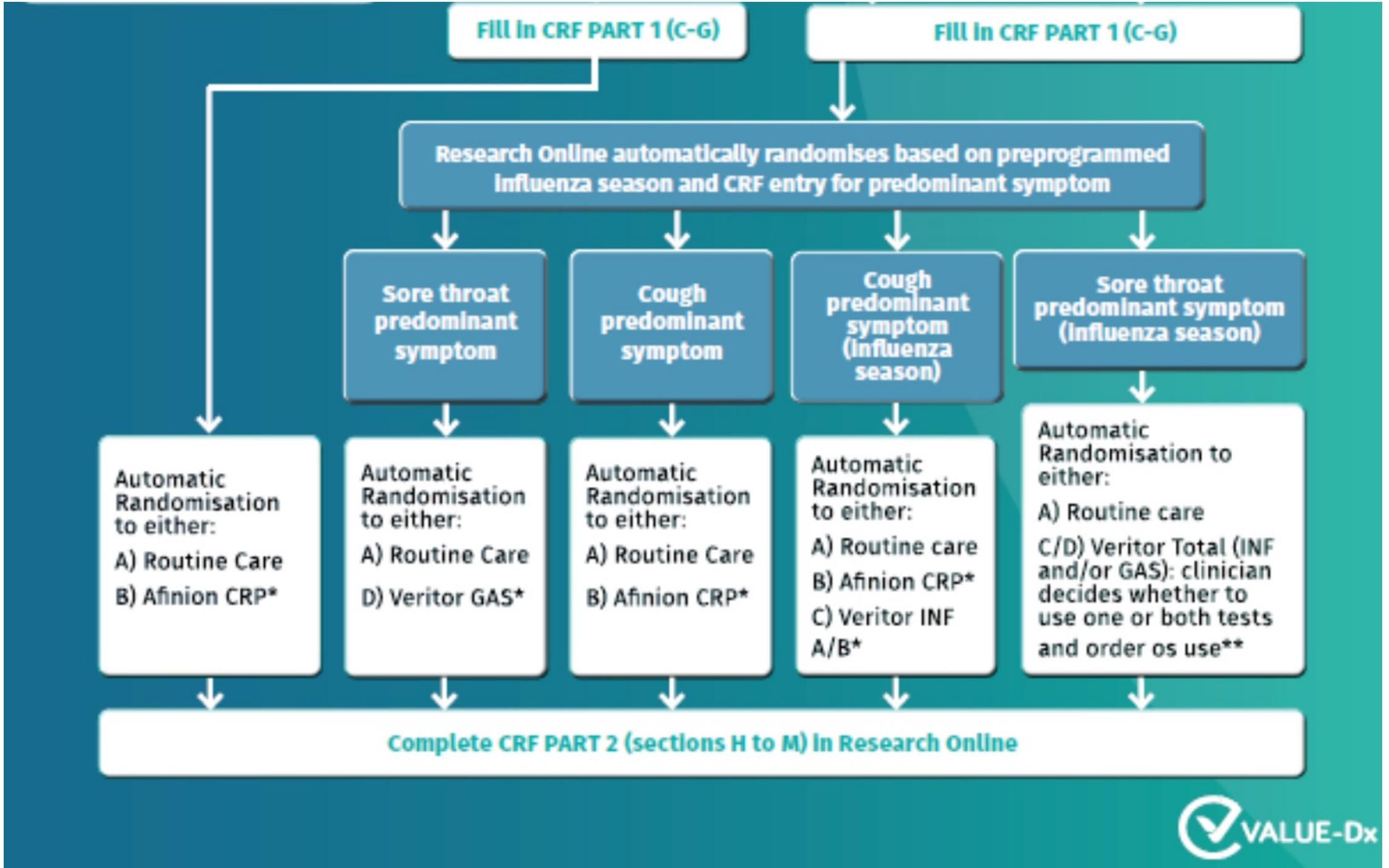
A Probability of total antibiotic duration (primary effectiveness outcome)

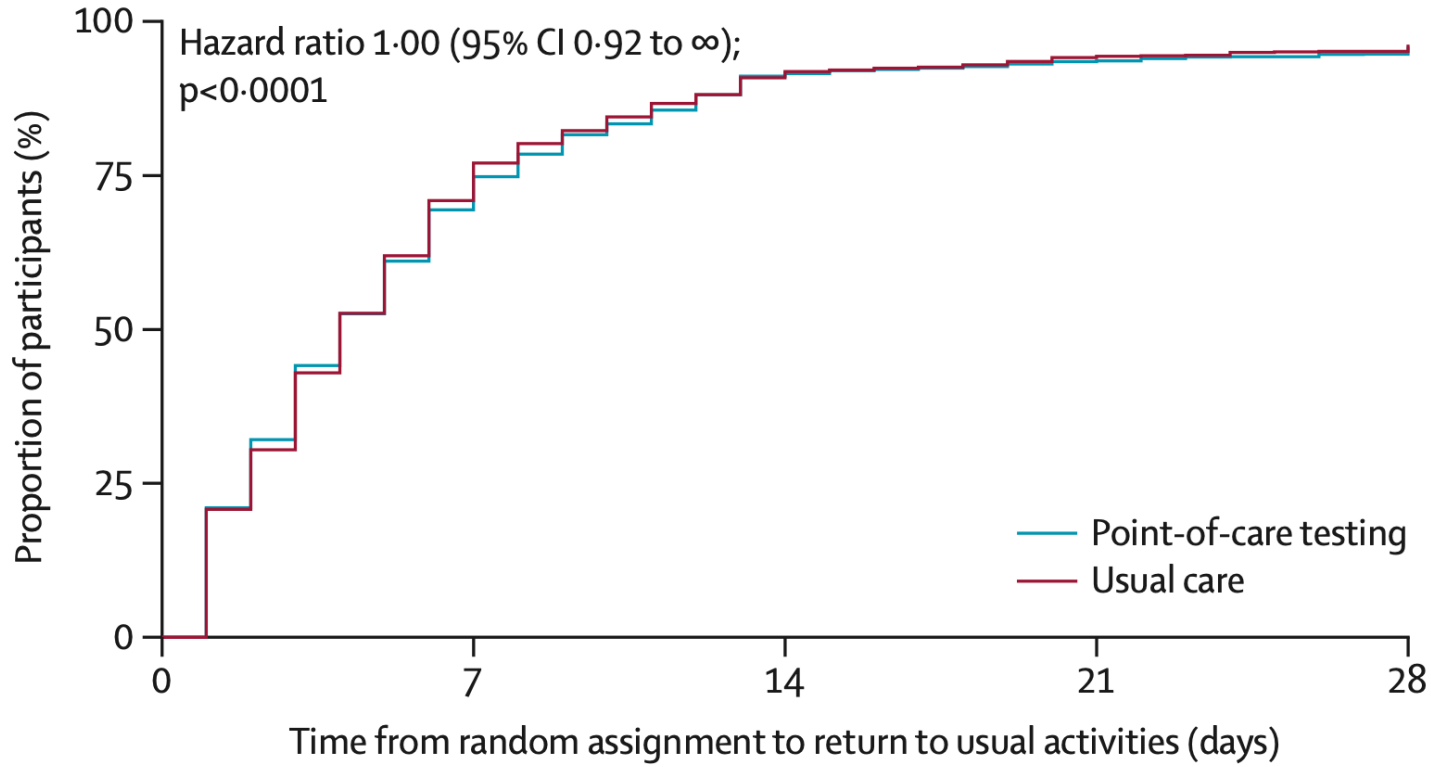


Point-of-care testing strategy versus usual care to safely reduce antibiotic prescribing for acute respiratory tract infections in primary care (PRUDENCE): a pragmatic, randomised controlled trial in 13 countries

2025

Alike W van der Velden, Samuel Coenen, Emma Harper, Marilena Anastasaki, Sibyl Anthierens, Femke Böhmer, Emily Bongard, Julie Domen, Ana Garcia-Sangenis, Gail N Hayward, Bernadett Kovacs, Anna Kowalczyk, Carl Llor, Lile Malania, Fulvia Mazzaferri, Sam Mort, Joanna Moschandreas, Louise Rossignol, Benjamin R Saville, Milensu Shanyinde, Evelina Tacconelli, Sarah Tonkin-Crine, Philip J Turner, Akke Vellinga, Marta Wanat, Ly-Mee Yu, Adam Zerda, Susanne Emmerich, Herman Goossens, Christopher C Butler


Fill in CRF PART 1 (C-G)
Fill in CRF PART 1 (C-G)
Research Online automatically randomises based on preprogrammed influenza season and CRF entry for predominant symptom
Sore throat predominant symptom
Cough predominant symptom
Cough predominant symptom (influenza season)
Sore throat predominant symptom (influenza season)
Automatic Randomisation to either:
A) Routine Care
B) Afinion CRP*
Automatic Randomisation to either:
A) Routine Care
D) Veritor GAS*
Automatic Randomisation to either:
A) Routine Care
B) Afinion CRP*
Automatic Randomisation to either:
A) Routine care
B) Afinion CRP*
C) Veritor INF A/B*
Automatic Randomisation to either:
A) Routine care
C/D) Veritor Total (INF and/or GAS): clinician decides whether to use one or both tests and order os use**
Complete CRF PART 2 (sections H to M) in Research Online
VALUE-Dx



Point-of-care testing					
Number at risk (censored)	1366 (0)	343 (3)	115 (3)	87 (3)	56 (3)
Number returned to usual activities	7	1027	1255	1283	1314
Usual care					
Number at risk (censored)	1104 (0)	254 (0)	89 (1)	62 (1)	41 (1)
Number returned to usual activities	4	854	1018	1045	1066

Figure 3: **Time to return to usual daily activities over 28 days for the point-of-care testing group versus usual care group**

	Point-of-care testing (n=1448)	Usual care (n=1191)	Treatment effect (95% CI)*	p value†
Coprimary outcomes				
Antibiotic prescription				
Yes	662 (45·7%)	561 (47·1%)	−1·3% (−4·9 to 2·3)‡	0·47
No	786 (54·3%)	629 (52·9%)	..	..
Missing	0	1	..	..

Interpretation A point-of-care testing strategy for respiratory tract infection, which included testing for CRP, group A streptococcus, and influenza, did not reduce antibiotic prescribing when clinicians were considering prescribing or had planned to prescribe an antibiotic. Point-of-care testing is unlikely to be effective as a standalone solution in antimicrobial stewardship.

Comment motiver (durablement) les prescripteurs ?

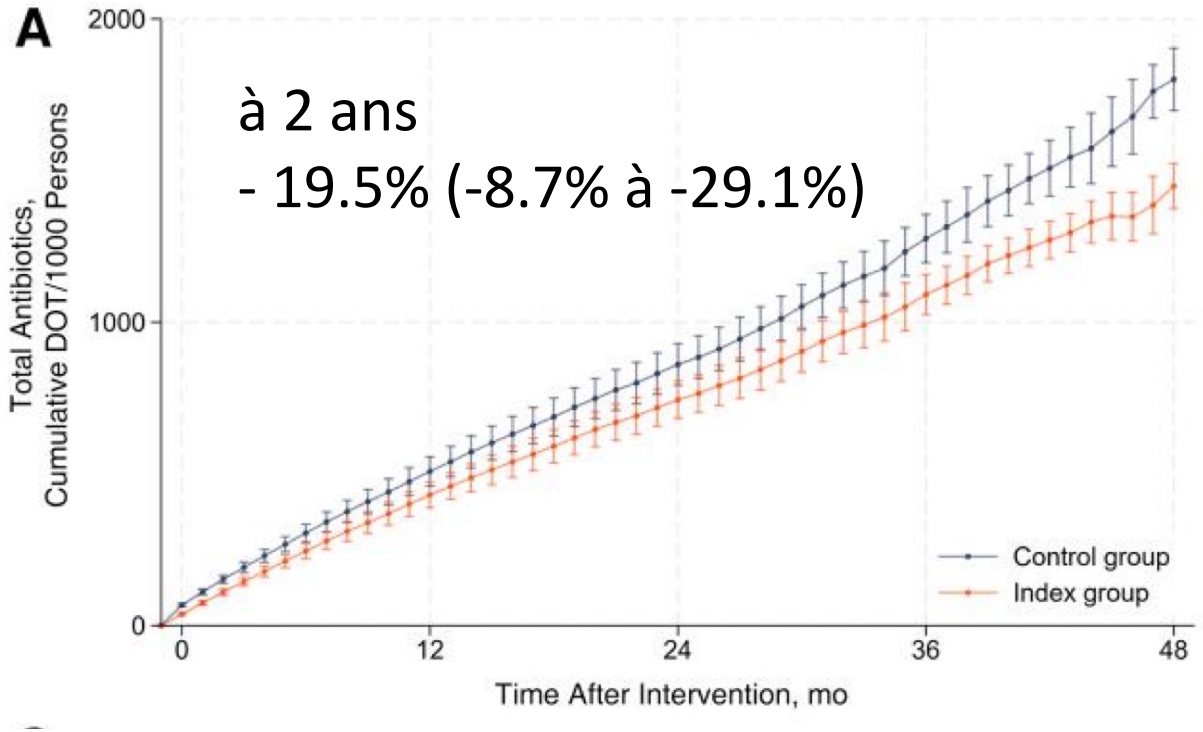
Long-Term Effectiveness of Financial Incentives for Not Prescribing Unnecessary Antibiotics to Children With Acute Respiratory and Gastrointestinal Infections: Japan's Nationwide Quasi-Experimental Study

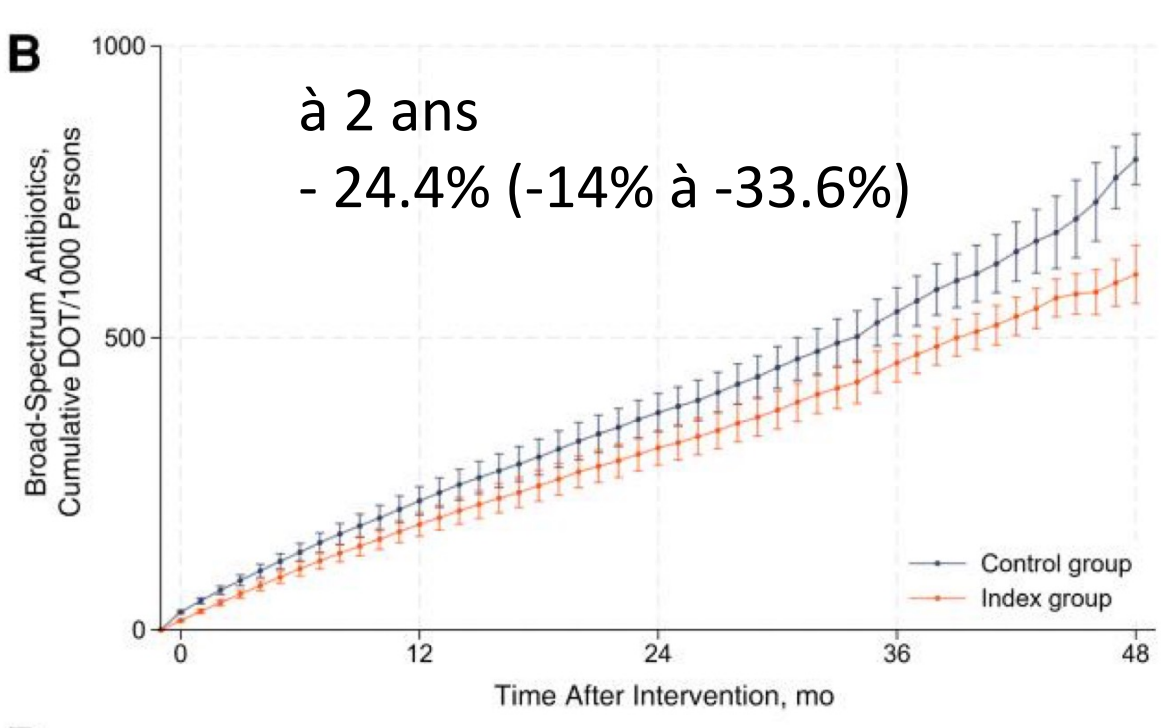
2025

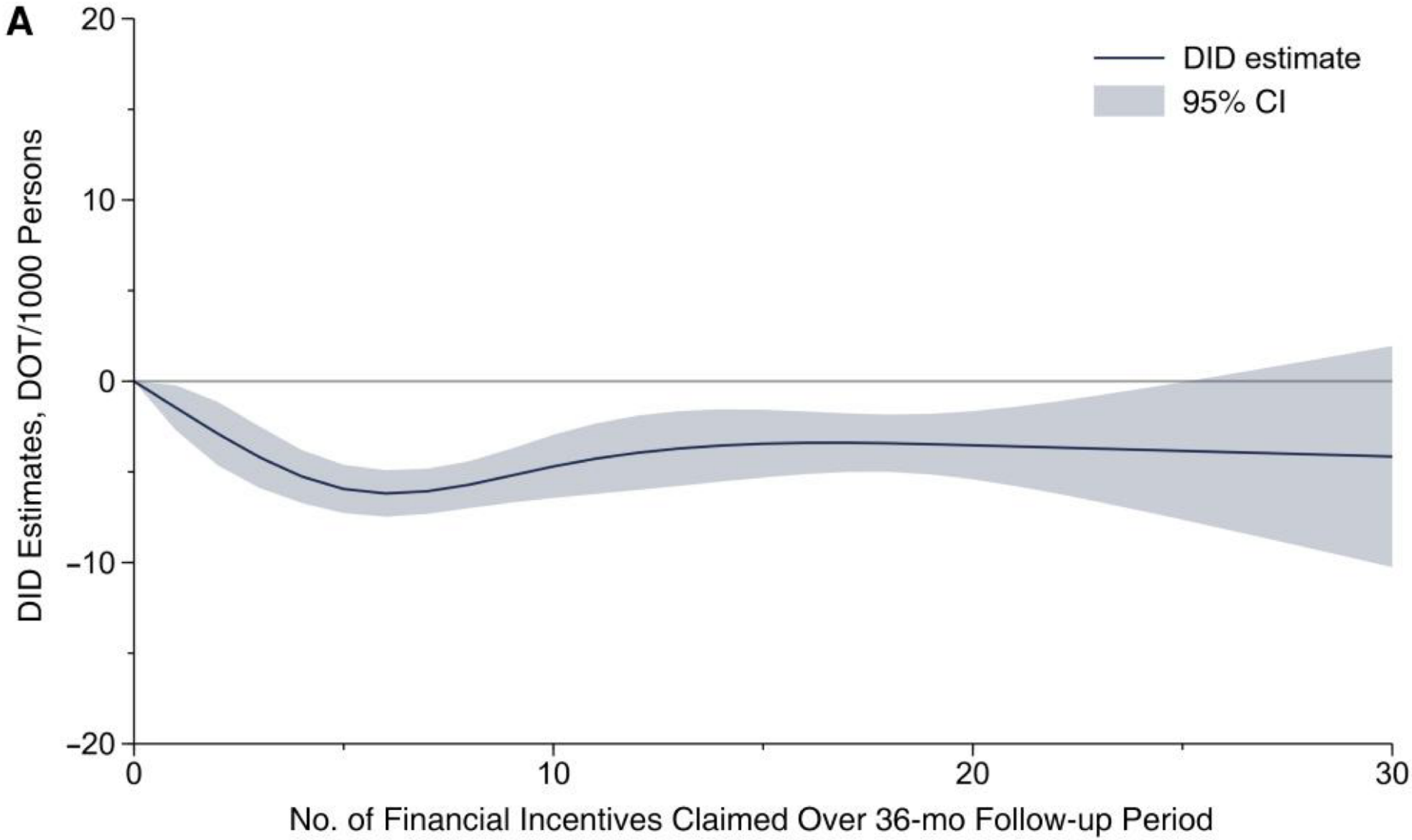
Yusuke Okubo,[1] Kazuhiro Uda,[2] and Isao Miyairi[3,4]

[1]Department of Social Medicine, National Center for Child Health and Development, Tokyo, Japan; [2]Department of Pediatrics, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Science, Okayama, Japan; [3]Department of Pediatrics, Hamamatsu University School of Medicine, Shizuoka, Japan; and [4]Department of Microbiology, Immunology, and Biochemistry, University of Tennessee Health Science Center, Memphis, Tennessee, USA

- En 2018, politique nationale japonaise permettant aux établissements de santé éligibles de réclamer 800 ¥ (environ 4 euros) par enfant de moins de 3 ans souffrant d'infections aiguës des voies respiratoires supérieures ou de gastro-entérite qui ne reçoit pas d'antibiotiques avec explications données aux parents
- A partir de 2020, concerne les enfants de < 6 ans
- Concerne uniquement les établissements qui se sont enregistrés pour le programme
- Bases de données nationales, environ 160 000 enfants, après appariement 44 000 enfants dans établissements participants, 44 000 « contrôles »


A
2000
1000
0
Total Antibiotics,
Cumulative DOT/1000 Persons
à 2 ans
- 19.5% (-8.7% à -29.1%)
Control group
Index group
0
12
24
36
48
Time After Intervention, mo


B
1000
500
0
Broad-Spectrum Antibiotics,
Cumulative DOT/1000 Persons
à 2 ans
- 24.4% (-14% à -33.6%)
Control group
Index group
0
12
24
36
48
Time After Intervention, mo


A
DID estimate
95% CI
DID Estimates, DOT/1000 Persons
20
10
0
−10
−20
0
10
20
30
No. of Financial Incentives Claimed Over 36-mo Follow-up Period

Vers un nouveau critère de choix antibiotique ?

Éco-soins en Maladies Infectieuses

3 piliers de l'éco-prescription

1. Moins prescrire
2. Mieux prescrire
3. **Tenir compte de l'empreinte environnementale de sa prescription**

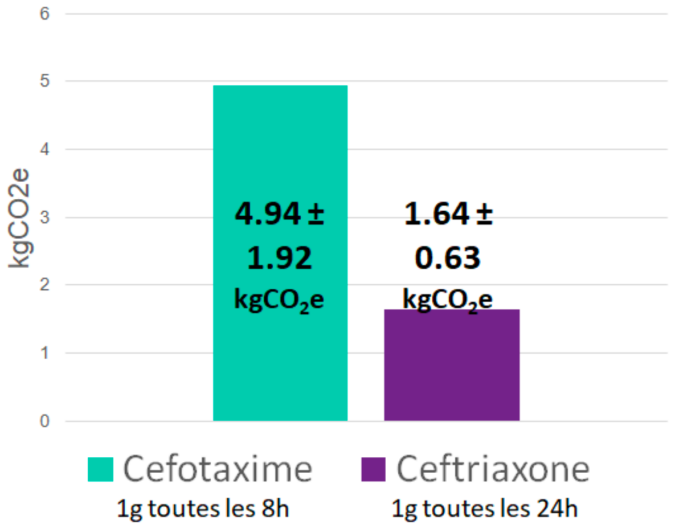
Sobriété énergétique & transition écologique du système de santé en Normandie

ZOOM SUR L'ÉCOPRESCRIPTION D'ANTIBIOTIQUES

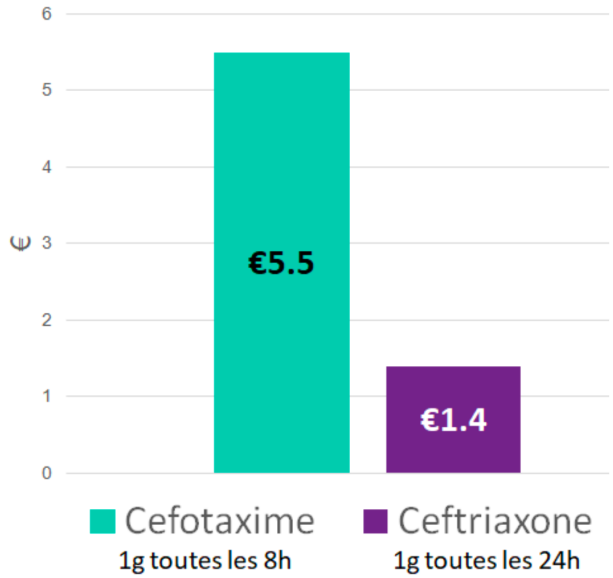
Merci Mathilde Réveillon-Istin et le GRINE

Quelle C3G privilégier pour moins « polluer »?

Empreinte carbone par jour de traitement



Prix par jour de traitement



Etienne Raphaël, APHP

Comparaison de l'empreinte carbone du Cefotaxime et de la Ceftriaxone

Ceftriaxone 2 fois moins carbonée que Cefotaxime

=

Ecotoxicité

Molécule	PBT	$PNEC_{res}$
Ceftriaxone	6	0,33 ug/l
Cefotaxime	9	0,13 ug/l

ECBU

A Diagnostic Stewardship Success: Implementing a Urine Culture Reflex Policy in the Emergency Department of a Large Safety-Net Hospital

Open Forum Infectious Diseases

MAJOR ARTICLE

2025

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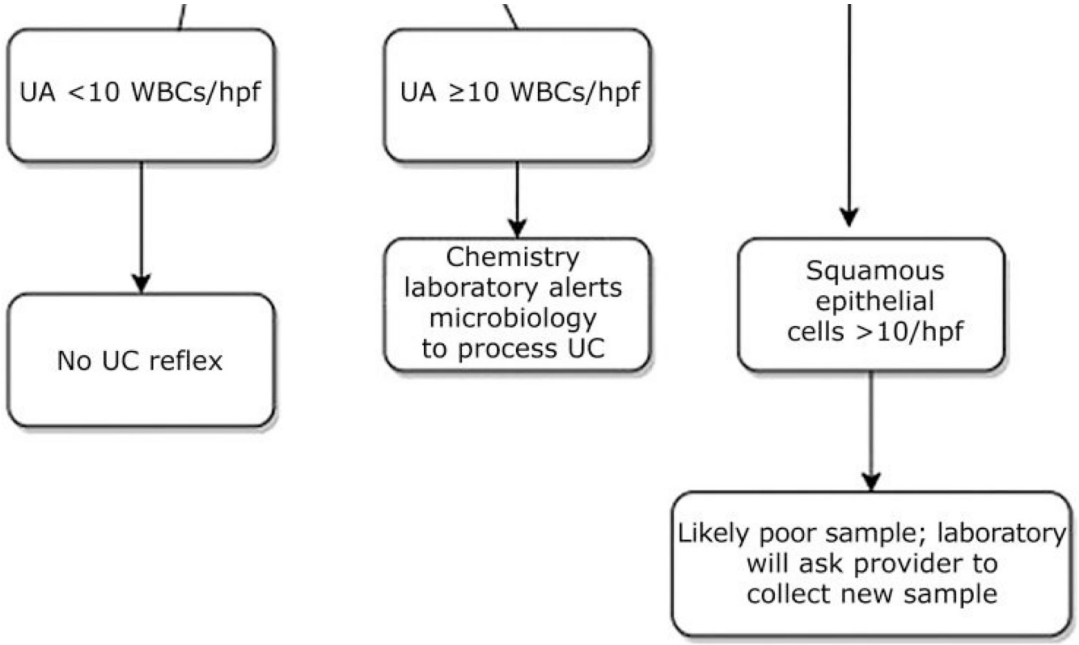
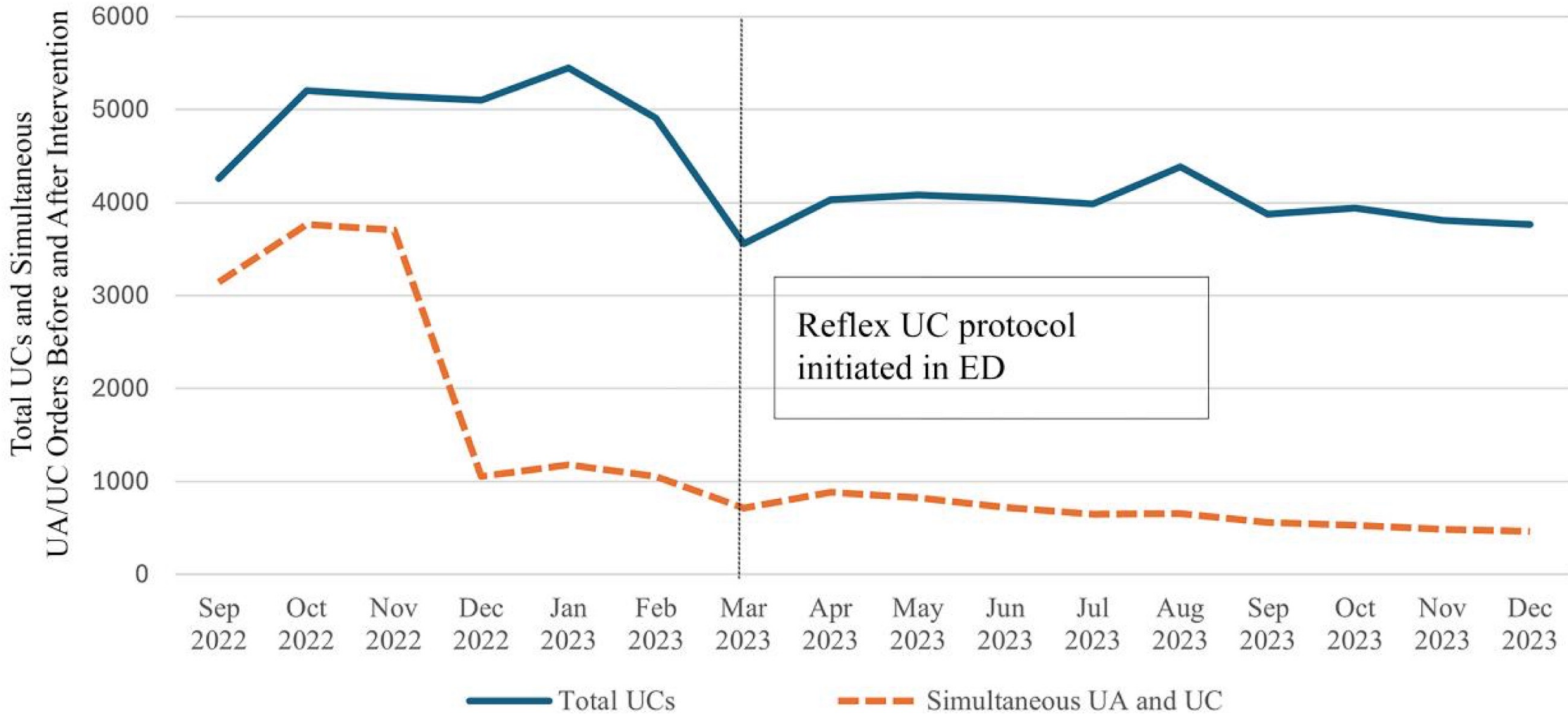
- Un hôpital au Texas
- Dans le service des urgences

- Création de deux « examens » pouvant être prescrits
  - ECBU classique avec cytologie et culture
  - « EC +/- BU »





- La moyenne globale mensuelle des cultures urinaires traitées au laboratoire de microbiologie a diminué de 20,3 % (de 5 011 par mois avant l'intervention à 3 991 après)
- 5 millions de dollars potentiellement économisés