

Collaborative Quality Improvement Initiatives for Sepsis Diagnosis



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Disclosures

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Roles:

Surviving Sepsis Campaign Guidelines Panelist
Physician-Lead, Hospital Medicine Safety CQI's
Sepsis Initiative, sponsored by BC/BSM

This talk does not represent views of US government or
Department of Veterans Affairs.

Outline

Real-time sepsis diagnosis is challenging

CQIs can improve (but not perfect) diagnosis

We must embrace diagnostic uncertainty at bedside



Diagnosing sepsis is subjective and highly variable: a survey of intensivists using case vignettes

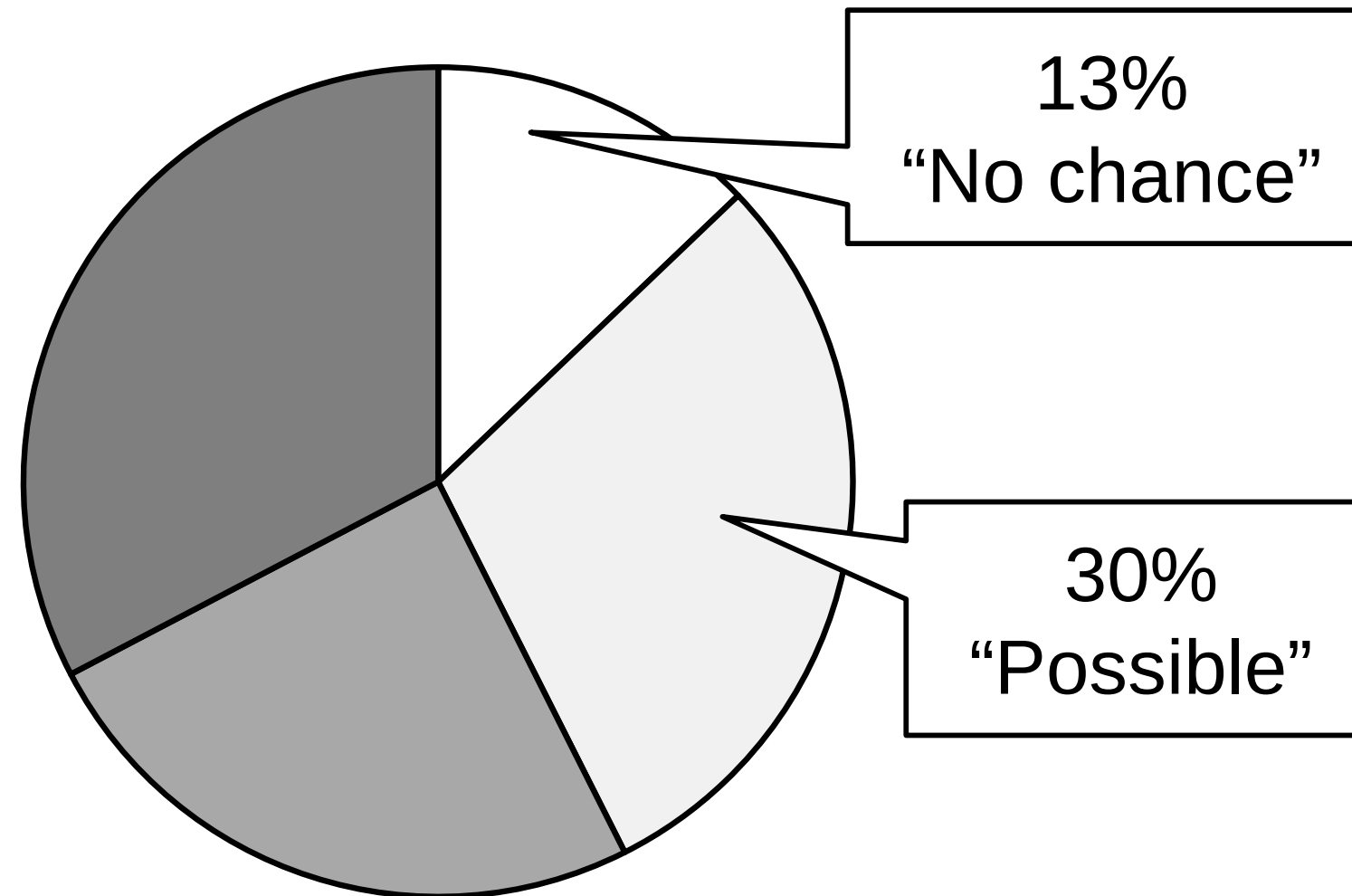
Chanu Rhee^{1,2*} , Sameer S. Kadri³, Robert L. Danner³, Anthony F. Suffredini³, Anthony F. Massaro², Barrett T. Kitch⁴, Grace Lee¹ and Michael Klompas^{1,2}

	Sepsis	Not Sepsis
Case 1	49%	51%
Case 2	49%	51%
Case 3	38%	62%
Case 4	32%	38%

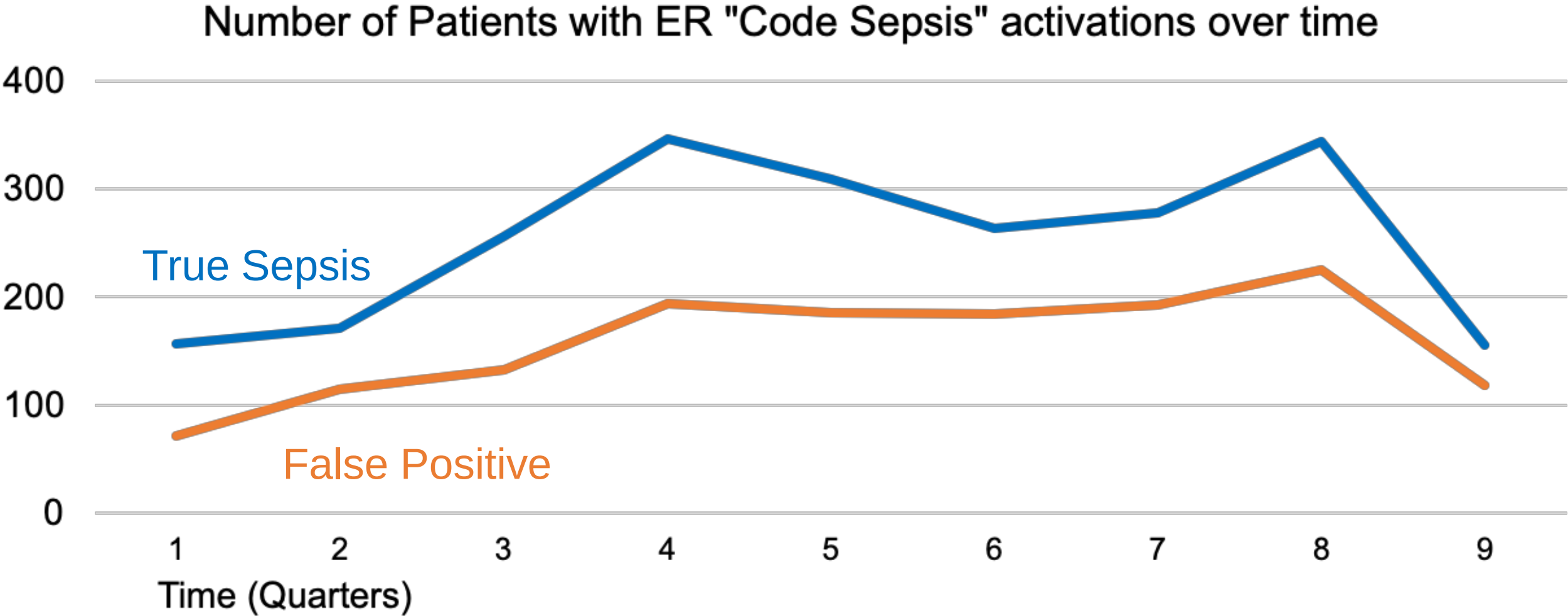


Likelihood of infection in patients with presumed sepsis at the time of intensive care unit admission: a cohort study

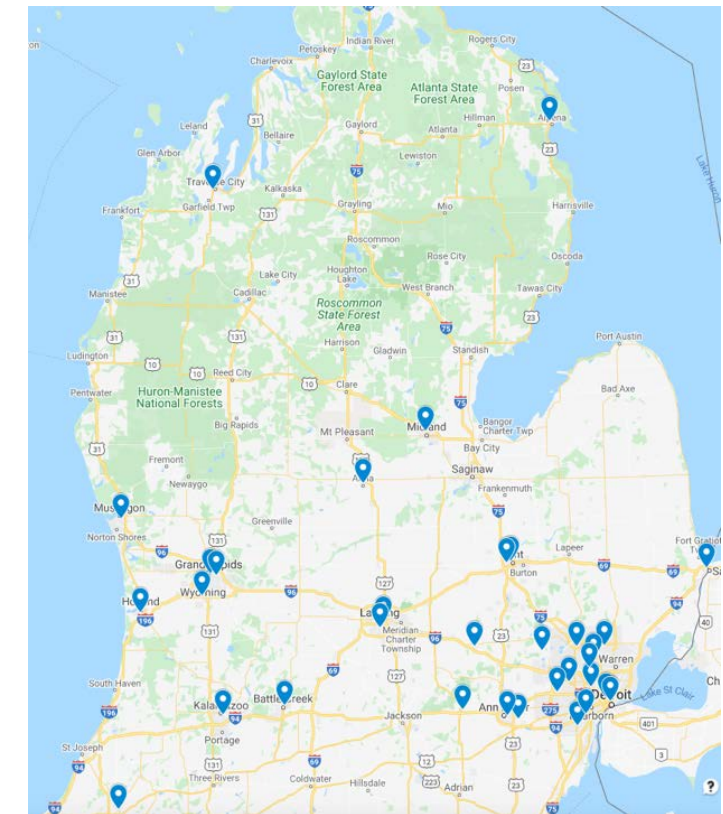
Peter M. C. Klein Klouwenberg^{1,2,3*}, Olaf L. Cremer¹, Lonneke A. van Vught⁴, David S. Y. Ong^{1,2,3}, Jos F. Frencken^{1,3}, Marcus J. Schultz⁵, Marc J. Bonten^{2,3} and Tom van der Poll⁴



Trends in False-Positive Code Sepsis Activations in the Emergency Department



Continuous Quality Improvement (CQI) Collaboratives to Improve Diagnosis & Treatment

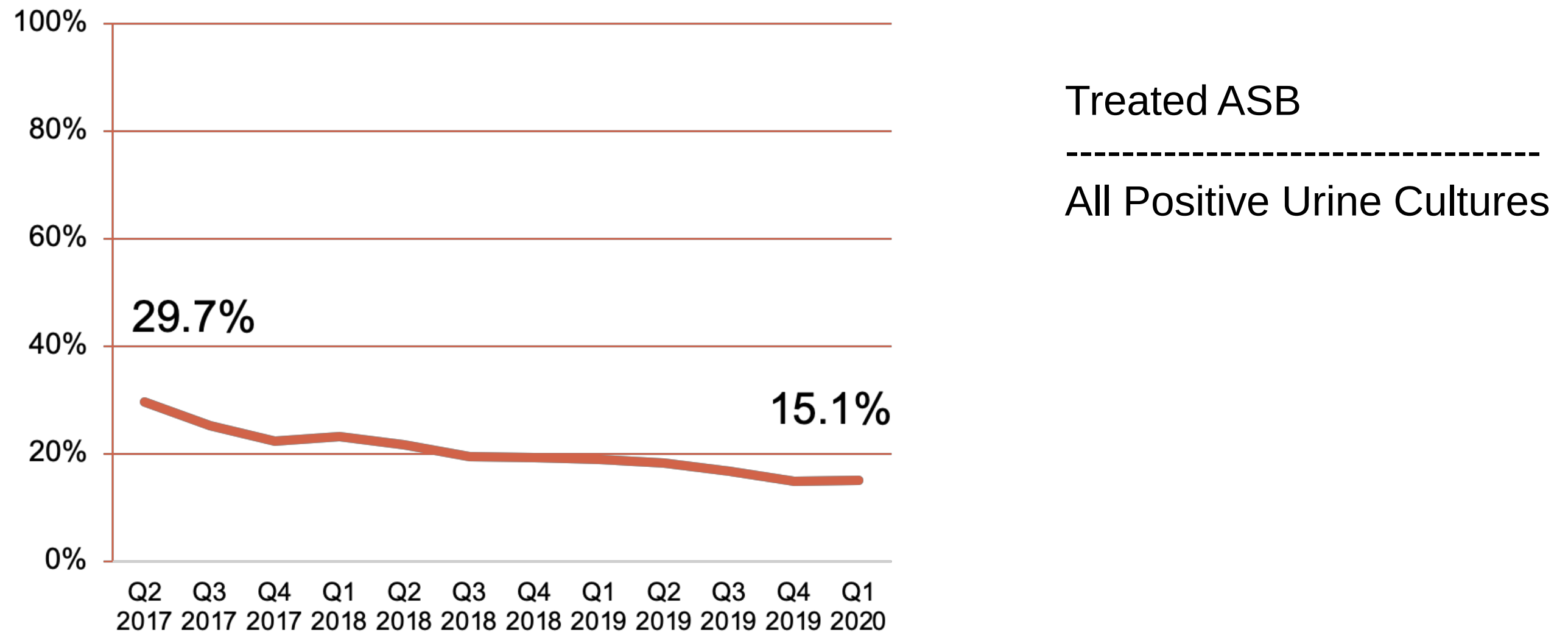


Granular data collection by professional abstractors
Education through quarterly meetings
Audit & Feedback



<https://mi-hms.org/quality-initiatives>

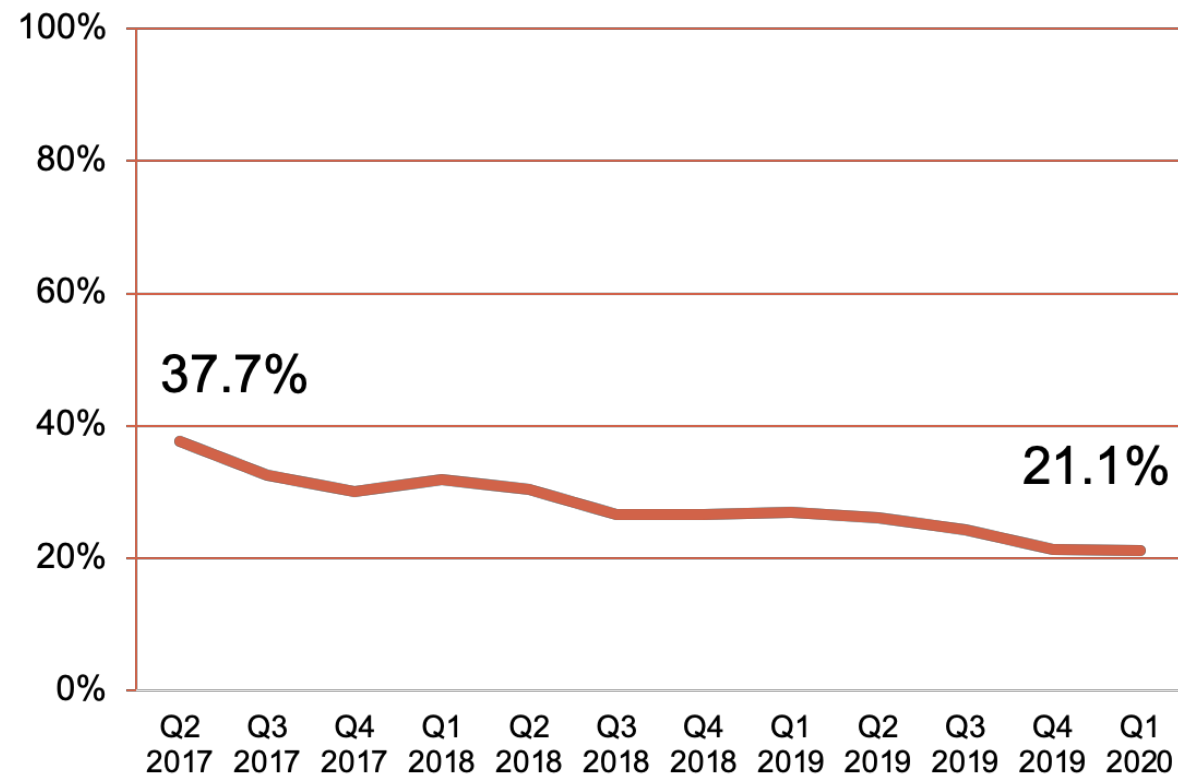
Reducing Treatment of Asymptomatic Bacteriuria (ASB)



Improvement is predominantly from reduced testing

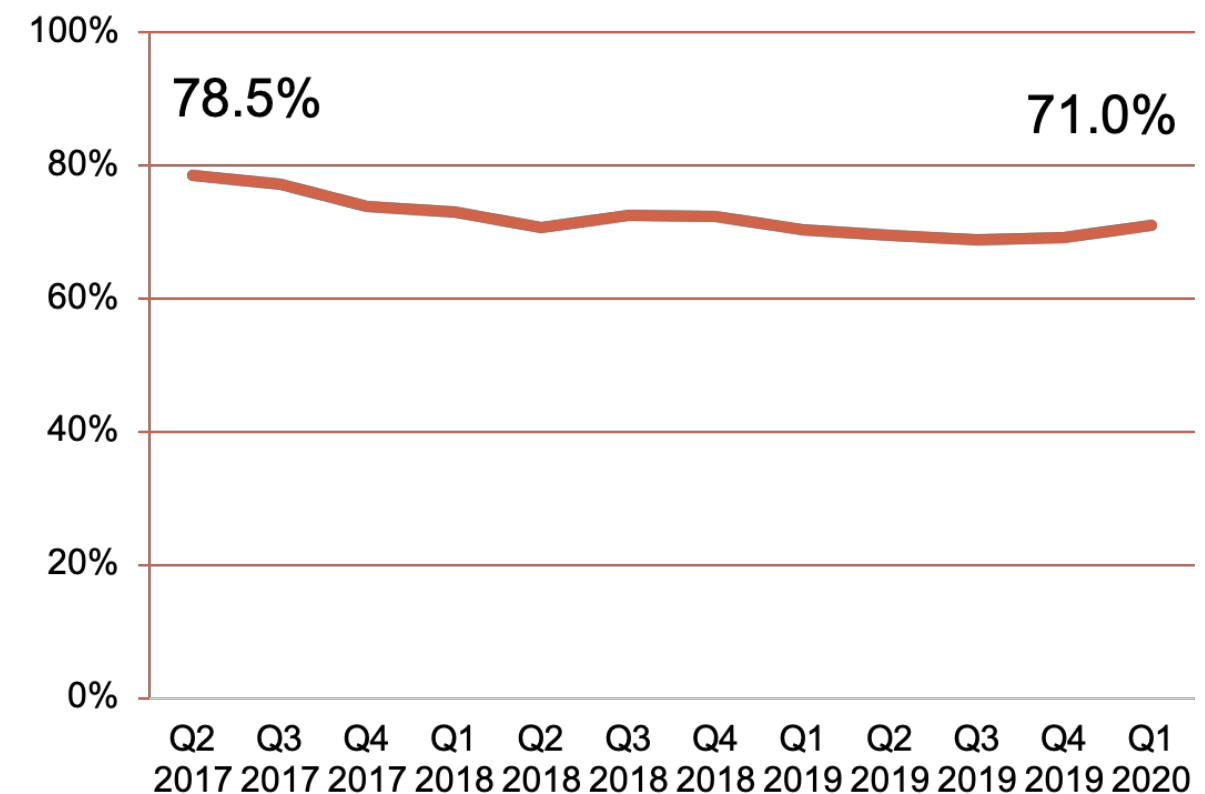
Reduced Testing

% of positive cultures that are in asymptomatic patients



Reduced Treatment

% of ASB that is treated



Interim Summary

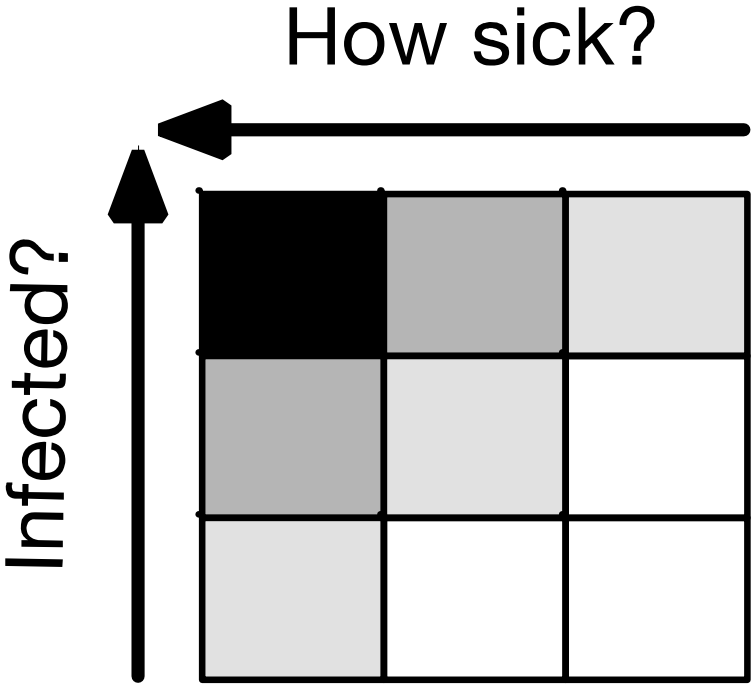
CQIs can improve diagnosis, appropriate treatment over time
Trustworthy data, focus on obvious cases improves buy-in
Some behaviors are harder to change than others

Can we better embrace diagnostic uncertainty in sepsis?

Current approach of guidelines
and quality improvement

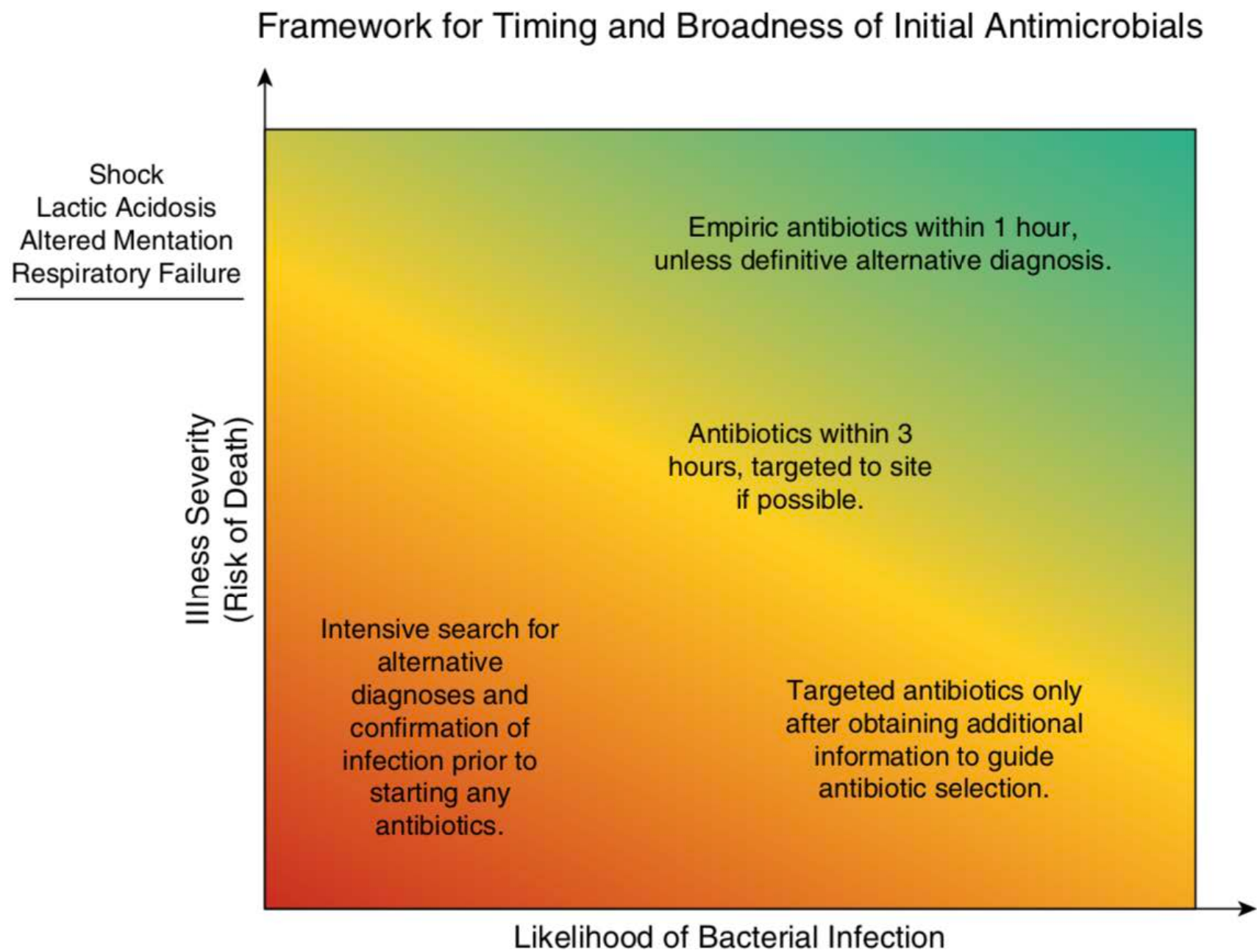


An alternate approach



Improving Sepsis Treatment by Embracing Diagnostic Uncertainty

Hallie C. Prescott^{1,2,3} and Theodore J. Iwashyna^{1,2,3,4}



Improving Sepsis Treatment by Embracing Diagnostic Uncertainty

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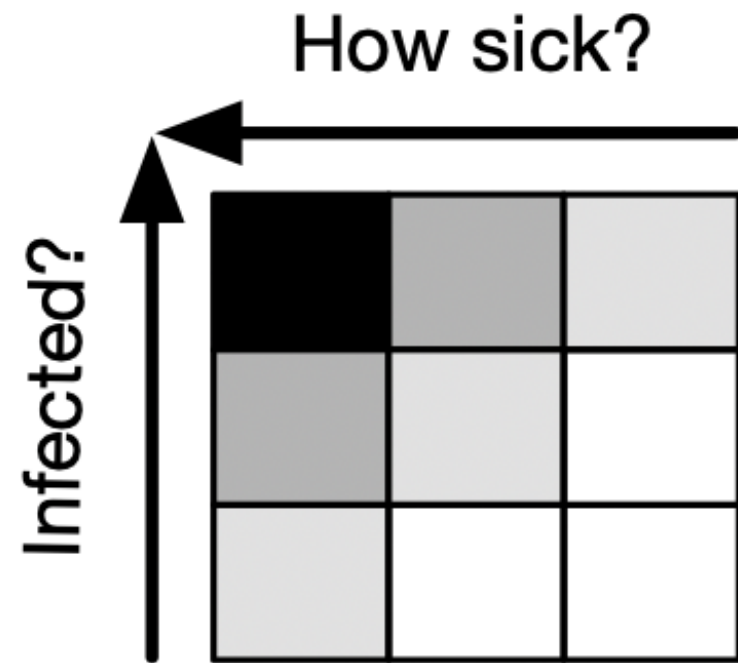
Threshold and urgency for initiating antibacterial treatment varies across patients.

Unidirectional measures will drive overdiagnosis / overtreatment.

We need better risk models (biomarkers, rapid tests), but even imperfect risk models can improve treatment decisions.

We already use simplistic risk-based approaches for other treatment decisions.
→ CHA₂DS₂-VASc & HAS-BLED scores to guide anticoagulation in Afib.

We can assess treatment appropriateness



Do these metrics vary rationally across clinical groups:

- percent treated
- time to treatment
- percent stopped early

Summary & closing thoughts

Studies consistently show high rates of diagnostic uncertainty in sepsis

CQIs, audit & feedback can be leveraged to improve care
(But clinicians + hospitals must believe the data)

We will never have 100% diagnostic certainty

We should use simple risk-based approach at bedside, in QI, and in performance measurement, as we do in other diseases (Afib, diabetes)

Clinicians need better training on diagnostic uncertainty, risk-based treatment