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MAY 20–23, 2019 | ORLANDO

Untangling the Sepsis Web: Surviving Sepsis in 2019

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Learning Objectives

- At the completion of this educational activity, the learner will be able to:
  - Articulate the changes in international sepsis definitions, particularly Sepsis-2 vs. Sepsis-3
  - Understand hospital submission and abstraction requirements for core measure bundle SEP-1 compliance
  - Understand the current disconnect for hospitals when coding sepsis amidst the ongoing debate over defining and identifying sepsis
  - Understand the importance of physician documentation in full reimbursement for sepsis inpatient care amidst this debate
  - Adopt strategies to improve hospital SEP-1 performance and maximize sepsis reimbursement

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The Tangled Sepsis Web

The chaos over defining sepsis and recommending evidence-based care varies among industry professionals

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Sepsis: A Life-Threatening, Costly Disease

- CDC: “More than an estimated 1.7 million people get sepsis each year in the United States and about 270,000 Americans die from it. 1 in 3 patients who die in a hospital have sepsis.”

CDC (2019, Jan 3). 2016 sepsis data reports. Retrieved from: https://www.cdc.gov/sepsis/datareports/index.html

MCBG: 18% of our inpatients were coded with sepsis; 1.5 patients who die in hospital have sepsis.

- The Agency for Healthcare Research and Quality (AHRQ) reports that sepsis accounts for $24 billion in annual healthcare costs.

Torio, C., & Moore, B. (2016, May). National inpatient hospital costs: The most expensive conditions by payer, 2013. HCUP Statistical Brief #204. AHRQ. Retrieved from: https://www.cdc.gov/sepsis/datareports/index.html

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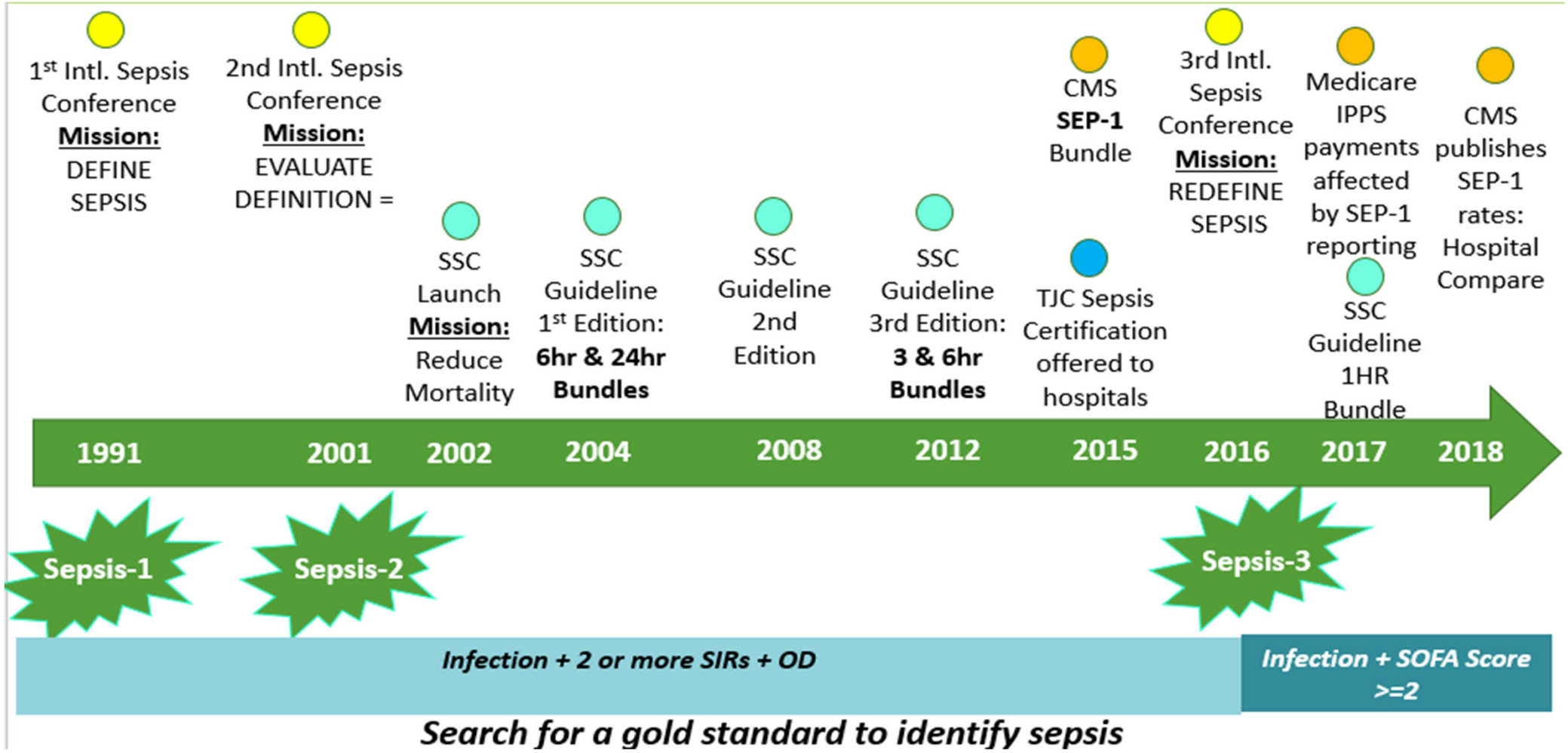
Sepsis Timeline: Sepsis-1, 2, or 3? Wait, What??



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Sepsis Timeline: Sepsis-1, 2, or 3? Wait, What??

- **1991 First International Sepsis Conference**
  - Mission: **Define sepsis** (Bone et al.)
    - Sepsis: infection leading to the onset of 2 or more SIRS
    - Severe sepsis: sepsis associated with organ dysfunction, hypoperfusion, or hypotension
    - Septic shock: sepsis-induced hypotension persisting despite adequate fluid resuscitation

Bone et al. (1992). Definitions for sepsis and organ failure and guidelines for the use of innovative therapies in sepsis. *CHEST Journal, 101*(6), 1644-1655. doi.org/10.1378/chest.101.6.1644

- **2001 Second International Sepsis Conference**
  - Mission: **Evaluate 1st Conference definitions, improve sensitivity through expanding diagnostic criteria**
    - Conclusion: "While SIRS remains a useful concept, the diagnostic criteria for SIRS published in 1992 are ***overly sensitive and non-specific.*** An expanded list of signs and symptoms of sepsis may better reflect the clinical response to infection […] ***No evidence exists to support a definition change."***

Levy et al. (2003). 2001 SCCM/ESICM/ACCP/ATS/SIS International Sepsis Definitions Conference. https://doi.org/10.1007/s00134-003-1662-x

- **2016 Third International Sepsis Conference**
  - Mission: Evaluate 2001 definitions due to considerable advances made over last 15 years. Previous definitions included an **"excessive focus on inflammation […] and inadequate specificity and sensitivity of SIRS criteria"** (Singer et al., 2016).

Singer et al. (2016). The third international consensus of definitions for sepsis and septic shock (Sepsis-3). *JAMA, 315*(8), 801-810. https://doi.org/10.1001/jama.2016.0287

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Sepsis Timeline: Sepsis-1, 2, or 3? Wait, What??

Sepsis-2

Sepsis: Infection leading to the onset of 2 or more SIRS criteria

- Temperature
- Pulse
- Respiratory rate
- WBC

Payers argue signs of isolated infection

Severe sepsis: Sepsis + associated organ dysfunction, hypoperfusion, or hypotension

Methodology: List of diagnostic criteria across organ systems per Marshall et al.

Septic shock: Sepsis-induced hypotension persisting despite adequate fluid resuscitation or Lactate ≥ 4 mmol/L

Sepsis-3

Sepsis: Life-threatening organ dysfunction due to a dysregulated host response to infection

Methodology: SOFA score based on 6 organ systems

~~Severe Sepsis~~

Septic shock: Persisting hypotension

Requiring vasopressors to maintain MAP > 65 mmHg and lactate > 2 mmol/L

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Organ Dysfunction Comparison: Methodology Similarities

Sepsis-3

Organ dysfunction: **Score ≥ 2 points linked to infection**.

SOFA SCORE: SEQUENTIAL ORGAN FAILURE ASSESSMENT

Organ System	Measurement	0	1	2	3	4
Respiration	PaO2/FiO2	>= 400	399-300	299-200	199-100 + resp support	99 + resp support
Coagulation	Platelets	>=150	150-100	99-50	49-20	<20
Liver	Bilirubin	<1.2	1.2- 1.9	2.0-5.9	6.0-11.9	>12
Cardiovascular	MAP/ Vasopressor Use	>=70	<70	---------- Dopamine/ Dobutamine	---------- Dopamine 5.1-15 Epinephrine <= 0.1 Norep <= 0.1	---------- Dopamine >15 Epinephrine <=-/1 Norep >0.1
CNS	Glasgow Coma Score	15	13-14	10-12	6-9	<6
Renal	Creatinine Urine Output	<1.2	1.2-1.9	2.0-3.4	3.5-4.9	>5.0

Note: Lactic acid not mentioned but is a treatment bundle indicator.

Sepsis-2

Organ dysfunction: **Any 1 criteria** associated with infection.

Sepsis-2: Acute respiratory failure evidenced by NEW need for ventilation

Sepsis-2: Platelet count < 100

Sepsis-2: Bilirubin > 2.0

Sepsis-2: MAP < 65 or SBP < 90

Sepsis-2: Creatinine > 2.0

Marik, P., & Taeb, A. (2017). SIRS, qSOFA and new sepsis definition. *Journal of Thoracic Disease, 9*(4), 943-945. https://doi.org/10.21037/jtd.2017.03.125

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“Raise Your Hand” Question #1

Are sepsis screenings at your facility based on SEP-2 or SEP-3 criteria?

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Surviving Sepsis Campaign Treatment Bundles: Sepsis Definitions in Action

2004 1st Edition

- 6-Hour Resuscitation Bundle
  1. Measure serum lactate
  2. Collect blood culture(s)
  3. Broad-spectrum abx
  4. IV crystalloid fluids ≥ 20 ml/kg **
  5. Vasopressor(s) to maintain MAP > 65 **
- 24-Hour Resuscitation Bundle
  1. Low-dose steroids **
  2. rhAPC
  3. Maintain glucose control

** only if indicated

2012 3rd Edition (SEP-1)

- 3-Hour Resuscitation Bundle
  1. Measure lactate
  2. Collect blood culture(s)
  3. Broad-spectrum abx
  4. IV crystalloid fluids ≥ 30 ml/kg **
- 6-Hour Resuscitation Bundle
  1. Repeat lactate measure if initial result > 2.0
  2. Vasopressor(s) to maintain MAP > 65
  3. Focused exam by provider

2018

- 1-Hour Resuscitation Bundle
  1. Measure lactate & re-measure if > 2.
  2. Collect blood culture(s)
  3. Broad-spectrum abx
  4. IV crystalloid fluids ≥ 30 ml/kg **
  5. Vasopressors to maintain MAP > 65

Barochia, A., Cui, X., & Eichacker, P. (2013). The surviving sepsis campaign's revised sepsis bundles. *Curr Infect Dis Rep, 15*(5), 385-393. https://doi.org/10.1007/s11908-013-0351-3

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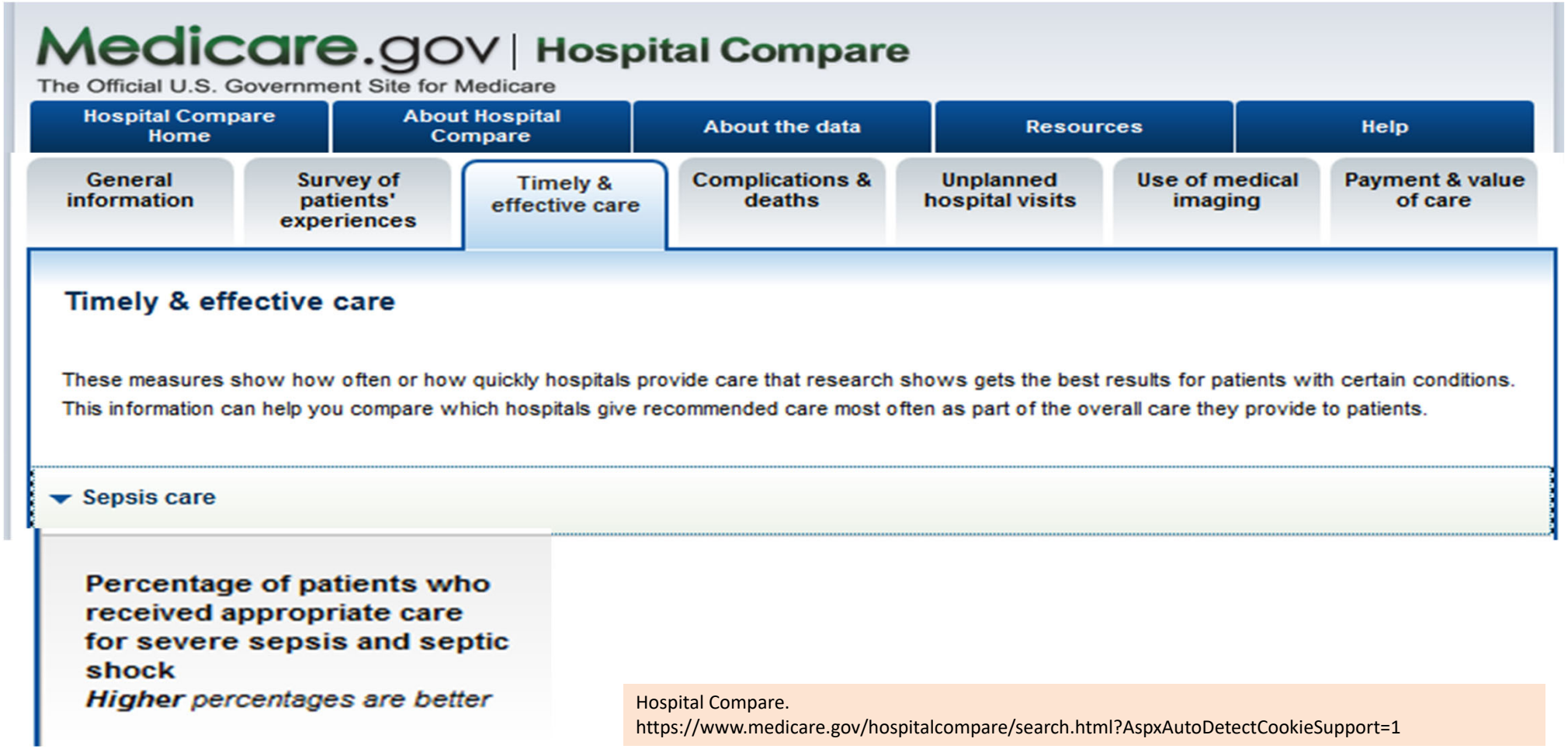
Sepsis-1, 2, or 3? Wait, What?? Public Reporting of SEP-1 Bundle

Despite debate over definition of sepsis, largest payer publically reports treatment performance based on Sepsis-2 definition.



Hospital Compare.
https://www.medicare.gov/hospitalcompare/search.html?AspxAutoDetectCookieSupport=1

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Sepsis-1, 2, or 3? Wait, What??

- ***JAMA (Feb, 2016)***

"Among ICU encounters with suspected infection, the predictive validity for in-hospital mortality of SOFA was not significantly different than the more complex LODS but **was statistically greater than SIRS and qSOFA, supporting its use in clinical criteria for sepsis**. Among encounters with suspected infection outside of the ICU, the predictive validity for in-hospital mortality of qSOFA was statistically greater than SOFA and SIRS, supporting its use as a prompt to consider possible sepsis."

- ***SSC (Mar, 2016)***

"**Define Sepsis using Sepsis-3**.....BUT 'Hospitals should continue screening for early identification and treatment of patients with sepsis (formerly called severe sepsis) as has been previously recommended by SSC.

Patients should be identified by the same organ dysfunction criteria including lactate level greater than 2 mmol/L."

- ***Annals of Internal Medicine (Feb, 2018)***

"Demonstrated that using the four traditional SIRS criteria of temp, WBC, heart rate, and RR is a more accurate screening test for obtaining the full SOFA score than qSOFA."

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Sepsis-1, 2, or 3? Wait, What??
Professional Disputes: Would the Sepsis Authority Please Stand Up?

- ***ACEP (2018): "Sepsis-3, a New Definition. Solutions or New Problems?"***

"ACEP, SAEM, ACCP, or IDSA [do not endorse Sepsis-3] due to extensive concerns:

  - Definitions have not been prospectively validated in a generalizable population, nor has it been validated or studied in the Emergency Department, pre-hospital or non-ICU, inpatient setting. In non-ICU patients, SOFA and SIRS perform identically in predicting mortality.
  - Although the previous iterations of sepsis definitions, i.e., SIRS, sepsis, severe sepsis and shock, were by no means perfect […] since their implementation massive improvements have been made in sepsis morbidity and mortality with a reduction from 40%-20%.
  - Many critics state that SOFA and more specifically qSOFA will act equally insensitive to SIRS.
  - Additionally, qSOFA was derived to be a predictor of mortality and not a diagnostic or immediate prognostic screening tool."

American College of Emergency Physicians

Slesinger, T. & Dubensky, L. (2016). Sepsis-3, a new definition. Solutions or new problems? ACEP. Retrieved from https://www.acep.org/how-we-serve/sections/quality-improvement--patient-safety/newsletters/july-2016/sepsis--3-a-new-definition.-solutions-or-new-problems/#sm.0160xtda11m6d7110wu13jv62yg0c

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Different Playbooks: ICD-10 Coding vs. SEP-1 Manual

- ICD-10 diagnosis coding guidelines require hospital coders to assign sepsis continuum codes based on Sepsis-2 definition.
- The CMS IQR program, which determines hospital IPPS reimbursement payments, requires hospitals to submit compliance with the SEP-1 core measure bundle based on ICD-10 diagnosis coding and Sepsis-2 methodology.
- ***YET, private payers are denying payment when sepsis documentation doesn't cite Sepsis-3 criteria.***

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Different Playbooks: Sepsis-3 vs. SEP-1 Bundle (Sepsis-2)

CMS mandated hospital reporting of the **Severe Sepsis Bundle measure (SEP-1)** per Inpatient Quality Reporting (IQR). To avoid total Medicare payment reduction, hospitals must report aggregate SEP-1 performance data ***regardless of payer.***

Hospitals must financially support chart-abstraction in order to report SEP-1 rate. The IQR Specification Manual for SEP-1 Bundle specifies the measure population using **Sepsis-2**.

Data Element Name: *Severe Sepsis Present*

QualityNet

Notes for Abstraction:

- Presence of Severe Sepsis may be identified based upon clinical criteria or physician/APN/PA documentation of Severe Sepsis.
- In order to establish the presence of Severe Sepsis by clinical criteria, all three clinical criteria (a, b, and c) must **be met within 6 hours of each other.** The three clinical criteria do not need to be documented in any particular order.
  - a. Documentation of an infection. Note: Physician or nurse
  - b. Two or more manifestations of systemic infection according to the Systemic Inflammatory Response Syndrome (SIRS) criteria, which are:
    - Temperature >38.3 C or <36.0 C (>100.9 F or <96.8 F)
    - Heart rate (pulse) >90
    - Respiration >20 per minute
    - White blood cell count >12,000 or <4,000 or >10% bands
  - c. Organ dysfunction, evidenced by any one of the following:
    - Systolic blood pressure (SBP) <90 mmHg or mean arterial pressure <65 mmHg.
    - Acute respiratory failure as evidenced by a new need for invasive or non-invasive mechanical ventilation.
    - Creatinine >2.0
    - Urine output <0.5 mL/kg/hour for 2 consecutive hours
    - Total Bilirubin >2 mg/dL (34.2 mmol/L)
    - Platelet count <100,000
    - INR >1.5 or aPTT >60 sec
    - Lactate >2 mmol/L (18.0 mg/dL)

CMS.gov Centers for Medicare & Medicaid Services

Retrieved from *QualityNet Specification Manual* (Version 5.5a)
https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1141662756099

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Different Playbooks: Sepsis-3 vs. SEP-1 Bundle (Sepsis-2)

Sepsis codes without reference to organ dysfunction

ICD-10-CM Code	Code Description
A021	Salmonella sepsis
A227	Anthrax sepsis
A267	Erysipelothrix sepsis
A327	Listerial sepsis
A400	Sepsis due to streptococcus, group A
A401	Sepsis due to streptococcus, group B
A403	Sepsis due to Streptococcus pneumoniae
A408	Other streptococcal sepsis
A409	Streptococcal sepsis, unspecified
A4101	Sepsis due to Methicillin susceptible Staphylococcus aureus
A4102	Sepsis due to Methicillin resistant Staphylococcus aureus
A411	Sepsis due to other specified staphylococcus
A412	Sepsis due to unspecified staphylococcus
A413	Sepsis due to Hemophilus influenzae
A414	Sepsis due to anaerobes
A4150	Gram-negative sepsis, unspecified
A4151	Sepsis due to Escherichia coli [E. coli]
A4152	Sepsis due to Pseudomonas
A4153	Sepsis due to Serratia
A4159	Other Gram-negative sepsis
A4181	Sepsis due to Enterococcus
A4189	Other specified sepsis
A419	Sepsis, unspecified organism
A427	Actinomycotic sepsis
A5486	Gonococcal sepsis
R6520	Severe sepsis without septic shock
R6521	Severe sepsis with septic shock

Cannot be Primary Dx codes per guidelines

PE, Coding & CDI collaborate to ensure R-codes assigned. Queries become teaching tools.

Retrieved from Quality Net Specification Manual (Version 5.5a) Appendix A
https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228776794502

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Different Playbooks: Sepsis-3 vs. SEP-1 Bundle (Sepsis-2)

R6520	Severe sepsis without septic shock
R6521	Severe sepsis with septic shock

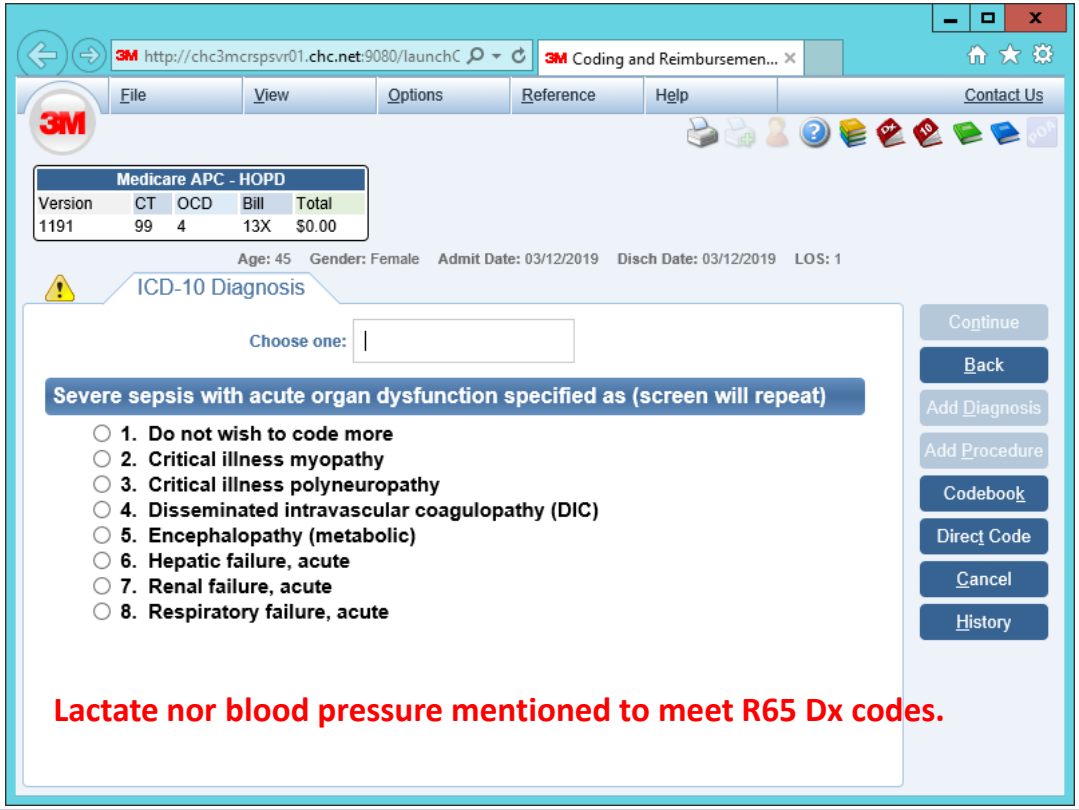
Sepsis-2 Criteria for Meeting Severe Sepsis

Organ dysfunction, evidenced by any one of the following:

- Systolic blood pressure (SBP) <90 mmHg or mean arterial pressure <65 mmHg.
- Acute respiratory failure as evidenced by a new need for invasive or non-invasive mechanical ventilation.
- Creatinine >2.0
- Urine output <0.5 mL/kg/hour for 2 consecutive hours
- Total Bilirubin >2 mg/dL (34.2 mmol/L)
- Platelet count <100,000
- INR >1.5 or aPTT >60 sec
- Lactate >2 mmol/L (18.0 mg/dL)

CMS.gov
Centers for Medicare & Medicaid Services

ICD-10 Criteria for Meeting Severe Sepsis



Lactate nor blood pressure mentioned to meet R65 Dx codes.

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“Raise Your Hand” Question #2

Does your facility self-abstract or contract with a third party?

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Different Playbooks: SEP-1 Case Abstraction Scenario

DIRECT ADMIT FROM SPECIALIST OFFICE				**5/10 @ 14:55**
Infection	"admit to do bronchoscopy for unusual infections and abx"		H&P	5/10 @ 15:53
SIRS	Pulse >90	106	Vitals	5/10 @ 16:02
SIRS	WBC >12 or <4	21.7	CBC (Labs)	5/10 @ 17:23
SIRS	Resp Rate >20	28	Vitals	5/10 @ 17:39
OD	SBP <90 or MAP < 65	MAP 45	Vitals	5/10 @ 18:47
SEVERE SEPSIS PRESENTATION TIME				**5/10 @ 18:47**
Vanc & Cefepime ordered				**5/10 @ 19:12**
3-HOUR BUNDLE DEADLINE (Blood Cultures, Initial Lactate, Abx)				**5/10 @ 21:47**
BROAD SPECTRUM ABX ADMINISTERED - VANC				5/10 @ 23:39
6-HOUR BUNDLE DEADLINE				**5/11 @ 00:47**
BROAD SPECTRUM ABX ADMINISTERED - CEFEPIME				5/11 @ 11:24
ID resident discontinues abx: " dyspnea and cough likely secondary to scleroderma, PCR negative." Other cultures and viral PCR pending.				**5/11 @ 17:55**
Infection	"cavitary pneumonia"		Pulm. Consult Note	5/15 @ 8:17
Infection	"pulmonary mycobacterial infection"		ID Consult Note	5/17 @ 11:02
BROAD SPECTRUM ABX ADMINISTERED - AZITHROMYCIN				5/17 @ 11:43
BLOOD CULTURE COLLECTED				**5/30 @ 21:24**
BROAD SPECTRUM ABX ADMINISTERED - CEFEPIME				6/2 @ 15:51
Infection	"sepsis syndrome"		Discharge Summary	6/8 @ 22:38
INITIAL LACTIC ACID COLLECTED -				**NONE**
REPEAT LACTIC ACID COLLECTED -				**NONE**
CRYSTALLOID FLUIDS STARTED -				N/A

Coding: A41.9 Sepsis, unspecified organism **POA-N**. Sepsis not diagnosed until discharge summary. Case subject to SEP-1 sample selection.
SEP-1: Severe sepsis criteria met Day 1. Fail for Abx within 3 hours, blood culture within 3 hours & initial lactic acid collected within 3 hours on Day 1.

Pulse excluded from criteria due to documented existing A-fib.

Antibiotics ordered within 30 minutes of 3-hour timer but first abx started by nursing 4.5 hours later. Vancomycin (Table 5.1) started before Cefepime (Table 5.0).

Antibiotics started Day 1, blood culture ordered Day 20 and urine culture Day 22.
Only BAL fluid culture on Day 1 ordered (revealed E. coli).

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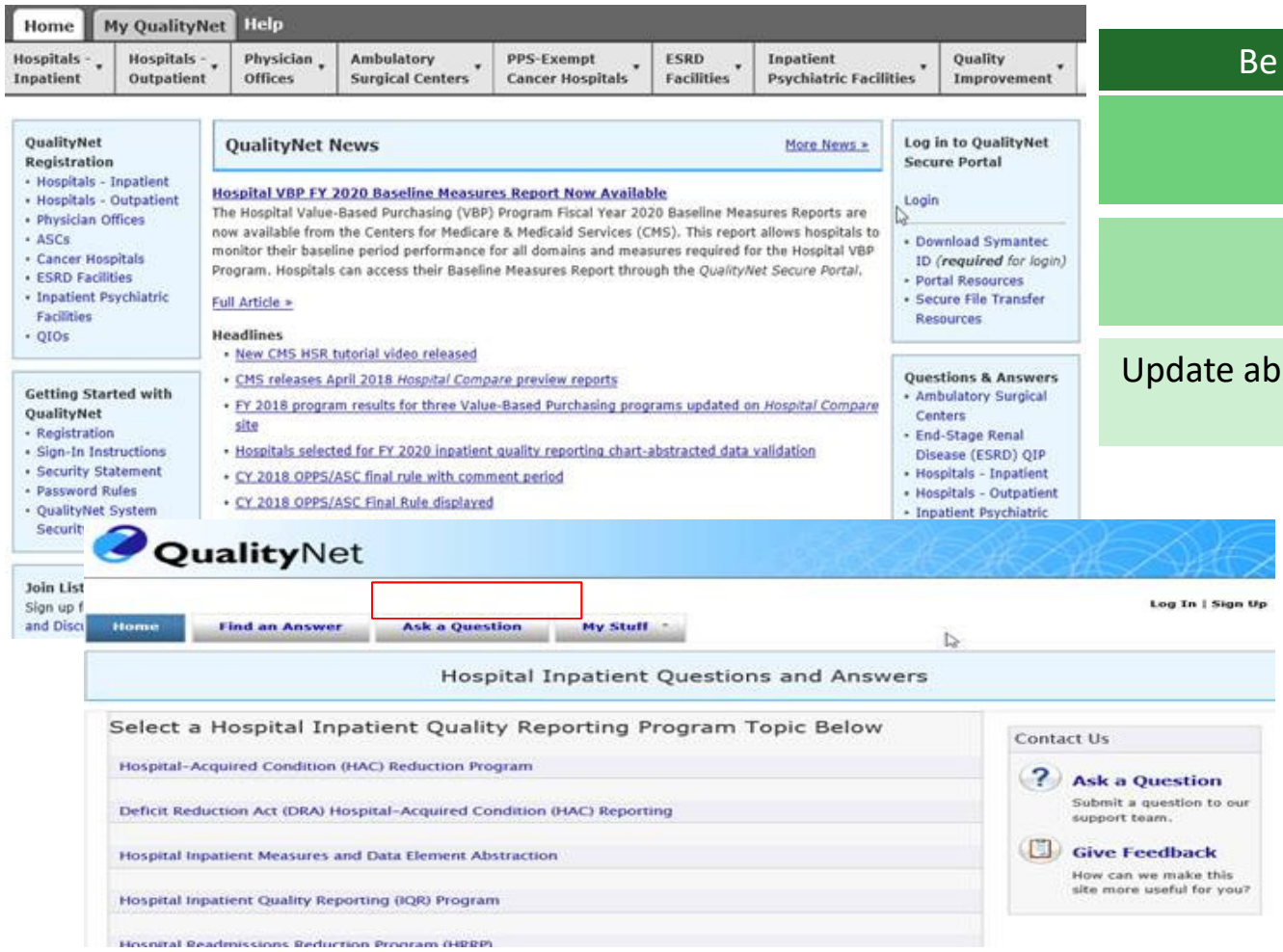
Impact of Abstraction on SEP-1 Performance



- Be a SEP-1 Specification Manual Expert
- Track down missing information (EMS, physician offices)
- Challenge/ask questions – disagree on interpretation?
- Update abstraction on EMR changes: order sets, order comments, documentation, etc.

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Impact of Abstraction on SEP-1 Performance

PE challenged this fallout as should have been excluded from population – Qnet agrees

Subject

Severe Sepsis present

Discussion Thread

Response Via Email (Dino [redacted] 04/24/2018 11:02 AM

Julie,

The documentation of sepsis with shock would not be documentation of severe sepsis or septic shock.

Based on this documentation you've never had presentation of severe sepsis, so you would continue abstracting even after the ED MD ruled out sepsis.

Customer By Web Form (Julie [redacted] 04/24/2018 09:15 AM

initially suspected sepsis initially after CODE SEPSIS called at triage and listed "sepsis with shock" as a differential diagnosis on the ER PDOC time stamped at 1/26 23:11. This is the time cited for Severe Sepsis Presentation Time. However, ED MD completed a Sepsis Event Note later @ 23:45 to do a focused exam and ruled out sepsis documented on this same note stamped 1/26 @ 2311. Do we abstract "no" for Severe Sepsis since the ED MD documented sepsis r/o under focus exam at a later time in the same note (conflict info in the same note)?

PE challenged severe sepsis presentation time for final element of infection – Qnet agrees: FAIL to a PASS for April 2019 rate

Subject

Infection?

Discussion Thread

Response Via Email (Reena [redacted] 04/18/2019 07:39 PM

Hi Julie

This documentation can be used for the suspected infection criteria.

Customer By Web Form (Julie [redacted] 04/18/2019 04:04 PM

Hello, If the order states Lactic Acid Sepsis Stat and not part of an order set can that be used to meet Sepsis infection criteria?

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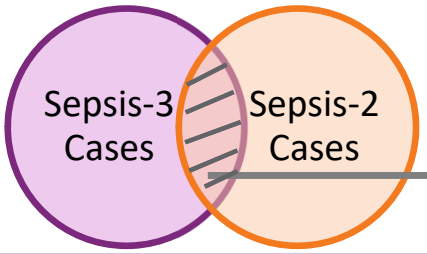
Different Playbooks: Payers Tap Into the Confusion

As the Surviving Sepsis Campaign, under the reins of SCCM and ESICM, continues to reshape the operational definition of sepsis and treatment bundle standards, private payers have found **opportunity to deny sepsis payment** citing varying professional entities. Despite **international treatment consensus** on SEP-1 Bundle, ***private payers are adopting Sepsis-3 criteria to define the sepsis population contrary to the nation's largest payer.***

Controversy: Hospitals, which have largely adopted ***Sepsis-2*** due to Medicare required SEP-1 reporting, are being denied payment for sepsis DRGs (870–872) for lower-weighted infection DRGs. ***Providers are diagnosing and treating sepsis but not getting paid for it.***

Which definition proves "life-threatening organ dysfunction from a dysregulated host response to infection" – do both?



Some cases will meet Sepsis-2 & Sepsis-3 definitions. Others will exclusively meet one and get fully paid, but fail SEP-1 or vice versa.

UnitedHealthcare Adopts Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3) and Supports the Surviving Sepsis Campaign International Guidelines for Management of Sepsis and Septic Shock

Effective Jan. 1, 2019, Sepsis-3 will be used as part of UnitedHealthcare's clinical claim reviews to validate that sepsis was present and sepsis treatment services were appropriately submitted as part of the member's claim. Hospital payments will be adjusted if UnitedHealthcare determines, after reviewing the member's medical record and Sepsis-3, that sepsis was not present and sepsis treatment services should not have been included as part of the member's claim. Sepsis-3 will be used for all UnitedHealthcare benefit plans including commercial, Medicare Advantage and Medicaid plans.

Jan 2019: New York state has decided they're not playing this game!

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“Raise Your Hand” Question #3

Which payer leads sepsis claim denials for your hospital?

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Physician, CDI, & Coding Opportunity

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ICD-10 Coding Guidelines Manual

1) Coding of Sepsis and Severe Sepsis

(a) **Sepsis**

For a diagnosis of sepsis, assign the appropriate code for the underlying systemic infection. If the type of infection or causal organism is not further specified, assign code A41.9, Sepsis, unspecified organism.

A code from subcategory R65.2, Severe sepsis, should not be assigned unless severe sepsis or an associated acute organ dysfunction is documented.

(i) Negative or inconclusive blood cultures and sepsis

Negative or inconclusive blood cultures do not preclude a diagnosis of sepsis in patients with clinical evidence of the condition; however, the provider should be queried.

(iii)Sepsis with organ dysfunction

If a patient has sepsis and associated acute organ dysfunction or multiple organ dysfunction (MOD), follow the instructions for coding severe sepsis.

(b) **Severe sepsis**

The coding of severe sepsis requires a minimum of 2 codes: first a code for the underlying systemic infection, followed by a code from subcategory R65.2, Severe sepsis. If the causal organism is not documented, assign code A41.9, Sepsis, unspecified organism, for the infection. Additional code(s) for the associated acute organ dysfunction are also required.

Due to the complex nature of severe sepsis, some cases may require querying the provider prior to assignment of the codes.

2) Septic shock

(a) Septic shock generally refers to circulatory failure associated with severe sepsis, and therefore, it represents a type of acute organ dysfunction.

For cases of septic shock, the code for the systemic infection should be sequenced first, followed by code R65.21, Severe sepsis with septic shock or code T81.12, Postprocedural septic shock. Any additional codes for the other acute organ dysfunctions should also be assigned. As noted in the sequencing instructions in the Tabular List, the code for septic shock cannot be assigned as a principal diagnosis.

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Sepsis Validation

Providers hold the ultimate responsibility for both establishing a diagnosis and documenting the criteria that led to the establishment of said diagnosis. When the medical record appears to lack evidence-based clinical criteria for a diagnosis, CDI specialists must query the provider. Doing so provides the physician an opportunity to either add more clinical criteria to support the diagnosis, confirm the diagnosis as it stands, or confirm that the diagnosis was ruled out or is without clinical significance.

ACDIS. July 2017. Clinical validation and the role of the CDI professional. Retrieved from https://acdis.org/system/files/resources/40329%20Clinical%20Validation%20paper.pdf

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Sepsis Validation Query Sample

Date:

Dr. _____

Sepsis (or septic shock) has been documented within the medical record.

CLINICAL INDICATORS: Admitted with

TREATMENT:

Based on the clinical indicators, treatment plan, and your professional judgment, can this diagnosis be confirmed or ruled out? Please complete this query by selecting one of the options below:

- Sepsis (or septic shock) is confirmed or has not been ruled out
  - **Please document additional information in the record to support this diagnosis**
- Sepsis (or septic shock) was ruled out. Upon further study, lab findings or clinical indicators were without clinical significance.
- Other explanation of clinical findings _____
- Unable to determine

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Create the Link: Think in Ink!

- Clearly link any organ dysfunction to the diagnosis of sepsis
  - Watch for encephalopathy, AKI/ATN, acute respiratory failure, shock liver, acute heart failure, NSTEMI, seizures, ischemic gut, etc.
- List infection site causing sepsis
  - Important when coding principal Dx
- Multi-system organ failure
  - No code for this, must specify type of failure and body system involved
- Infection due to device
  - Must be linked
  - Ex. UTI due to catheter (not with); "complicated UTI" will not link
- Link positive cultures to the infection
  - Ex. *Pseudomonas* pneumonia vs. pneumonia and sputum grew *Pseudomonas*

Retrieved from https://www.cms.gov/Medicare/Coding/ICD10/Downloads/2019-ICD10-Coding-Guidelines-.pdf

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Create the Link: Think in Ink!

- Look for common diagnoses to increase APR
  - Acidosis
  - Obesity
  - Chronic hypoxic, hypercapnic respiratory failure
  - Thrush
  - Stage II decubs
  - Chronic systolic/diastolic CHF (HFpEF, HFrEF)
  - Malnutrition
  - Hemiplegia
  - Paralysis
  - DM with manifestations
  - Specific pneumonias (aspiration pneumonia, staph pneumonia, etc.)
  - CKD III, IV
  - Specific types of seizures (complex partial seizures)

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Insurance Company or Denial Industry?

"To validate sepsis, the medical record is examined for **consistent documentation** of the condition; evidence that the patient's presentation **cannot be explained by the local infection alone** or by a **non-infectious condition**; and evidence of organ dysfunction caused by a dysregulated response to infection. While the patient's presentation warranted consideration of sepsis as a possible diagnosis, and localized infection of pneumonia was identified, upon investigation, the diagnosis of sepsis was not supported by the clinical evidence."

Letter received by our facility from a "contracted agency performing DRG validation" for insurance company requesting overpayment refund.

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Patient Scenario #1

- 56-year-old female presented to the ER with c/o fever at home
- Clinical information included in letter:
  - Temp 100.4
  - HR 111
  - RR 24
  - Positive blood culture
  - WBC 26.4

PAYER RESPONSE: "It is acknowledged a positive blood culture was obtained; however, 'bacteremia' is not evidence of sepsis. There was no evidence in the medical record provided of a systemic response to infection beyond that expected with pneumonia."

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The Rest of the Story: Patient #1

- Strep pneumoniae in blood culture
- WBC increased to 33.5 with 11% bands
- ABGs on admission: Po2 50.6, O2 sat 85%
- Lactic acid 2.6, 4.5

Why payment is at risk:

1. Respiratory failure was NOT linked to the sepsis to = severe sepsis
2. BACTEREMIA was listed on the problem list with sepsis noted only in the body of the record, causing the documentation to be deemed inconsistent.
3. No SOFA score was documented by the physician.

This case was overturned on appeal. Read "request for overpayment" letters carefully. The reviewer frequently omits pertinent clinical indicators that support the assigned coding. Add location of data on the appeal letter.

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Patient Scenario #2

- Chest CT: “diffuse multilobar pneumonia and parapneumonic effusions”
- Temp 100
- Pulse 150
- RR 22
- BP 124/81 (one reading 84/52)
- WBC 19.7 Segs 87.4 ABGs on 2L pO2 99.5
- Lactic acid 1.0

PAYER RESPONSE: “Though the patient was noted to have tachycardia, tachypnea, and leukocytosis; these are expected findings with an infectious process such as pneumonia. It is acknowledged the patient was hypotensive, yielding a SOFA score of 1. This resolved quickly with fluids.”

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The Rest of the Story: Patient #2

- "No distress" documented on H&P
- Physician queried concurrently by CDI to r/o or confirm sepsis
- "Sepsis present this admission" documented on query
- 19-year-old female with no med history
- 2-day length of stay
- Overpayment of $6,025.51
- No basis for appeal—teaching opportunity!

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Patient Scenario #3

According to the documentation provided, this patient presented with shortness of breath and was subsequently diagnosed with a NSTEMI and pneumonia. H&P stated patient had leukocytosis; however, progress note indicates **that leukocytosis was secondary to steroid usage.** There was conflicting diagnosis of sepsis on progress notes, with **some notes not including sepsis** as a diagnosis. Discharge summary stated patient was admitted for sepsis, but the narrative **did not specify sepsis treatment.**

PAYER RESPONSE: "In this case, the **documentation provided is incomplete, vague, and/or contradictory.** Due to the variation in documentation, the record does not provide the information necessary to achieve complete and accurate code assignment."

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The Rest of the Story: Patient #3

- ER chief complaint: SOA and fever
- Temp 102.3
- Pulse 89
- RR 32
- BP 132/59
- ABG on NRB pH 7.44 pCO2 32.4 pO2 69
- Glucose 381
- Procalcitonin 3.05
- Trop 1.9
- WBC 21.7 Segs 93
- ARDS & AKI documented (NEVER LINKED TO SEPSIS)
- **This case was appealed, but outcome is pending**

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“Raise Your Hand” Question #4

Is your CDI department involved in denials management?

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Med Center Health Sepsis Pathway Model

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MCH Blueprint: Building a Sepsis Pathway

Part I: Create the Team & Agenda

1. Create a hospital-based sepsis pathway committee
2. Recruit sepsis physician champion
3. Establish baseline data
4. Recruit key physician specialists
5. Determine KPIs & goals
6. Meet regularly but with dedicated purpose

Part II: Hardwire Your EMR

1. Sepsis screenings
2. Treatment order sets
3. Documentation templates

Part III: Measure Outcomes & Identify Opportunities

1. Use sepsis team meetings to analyze outcomes and identify opportunities
2. Link SEP-1 performance to outcomes
3. Consider costs, LOS, readmissions impact, resource issues (i.e., blood cx bottles)

Part IV: Integrate Quality, Coding, CDI, Abstraction, & Appeals Teams

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MCH Blueprint: Building a Sepsis Pathway: Part 1

1. Create a Sepsis Pathway Committee

Recruit involvement from multidisciplinary hospital departments:

- Laboratory
- Pharmacy
- Infection Prevention
- Education
- CDI
- Quality
- Chart abstraction teams
- EMS

2. Recruit a Sepsis Champion

4. Recruit Physicians of Key Specialties

- Emergency Department
- Hospitalists & IM Intensivists
- Infectious Disease
- Pulmonary
- Surgeons
- Nephrology

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MCH Blueprint: Building a Sepsis Pathway

3. Establish sepsis population & SEP-1 baseline data

Sepsis Volume	
ED Attending	745
Performing	587
Resident	NA
Responsible	1042

Payer Distribution	
Medicare	53.17%
Medicaid MCO	13.15%
Medicare Replacement	15.07%
Blue Cross	8.25%
Other Insurance	3.26%
Medicaid	2.50%

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MCH Blueprint: Building a Sepsis Pathway

First Fallout Element	Cases	% Total
Antibiotic Delay	42	37%
Crystalloid Fluid	33	29%
Repeat Lactate	10	9%
Initial Lactate	10	9%
Vasopressor Administration	5	4%
Antibiotic prior BC	5	4%
Blood Culture	4	4%
Focused Exam	3	3%
Antibiotic Selection	1	1%
Grand Total	113	100%

Top Infection Sources

Infection	%
Pneumonia	39%
UTI	24%
soft tissue	12%
abdominal	11%
sepsis- UNKNOWN	7%
device/catheter	5%

ED Chief Complaints

Complaint	%
Dyspnea	24%
AMS	14%
Fever	12%
Weakness	9%
Urogenital	4%

Origin

County	%
Warren	56%
Butler	8%
Logan	8%
Simpson	7%
Edmonson	6%

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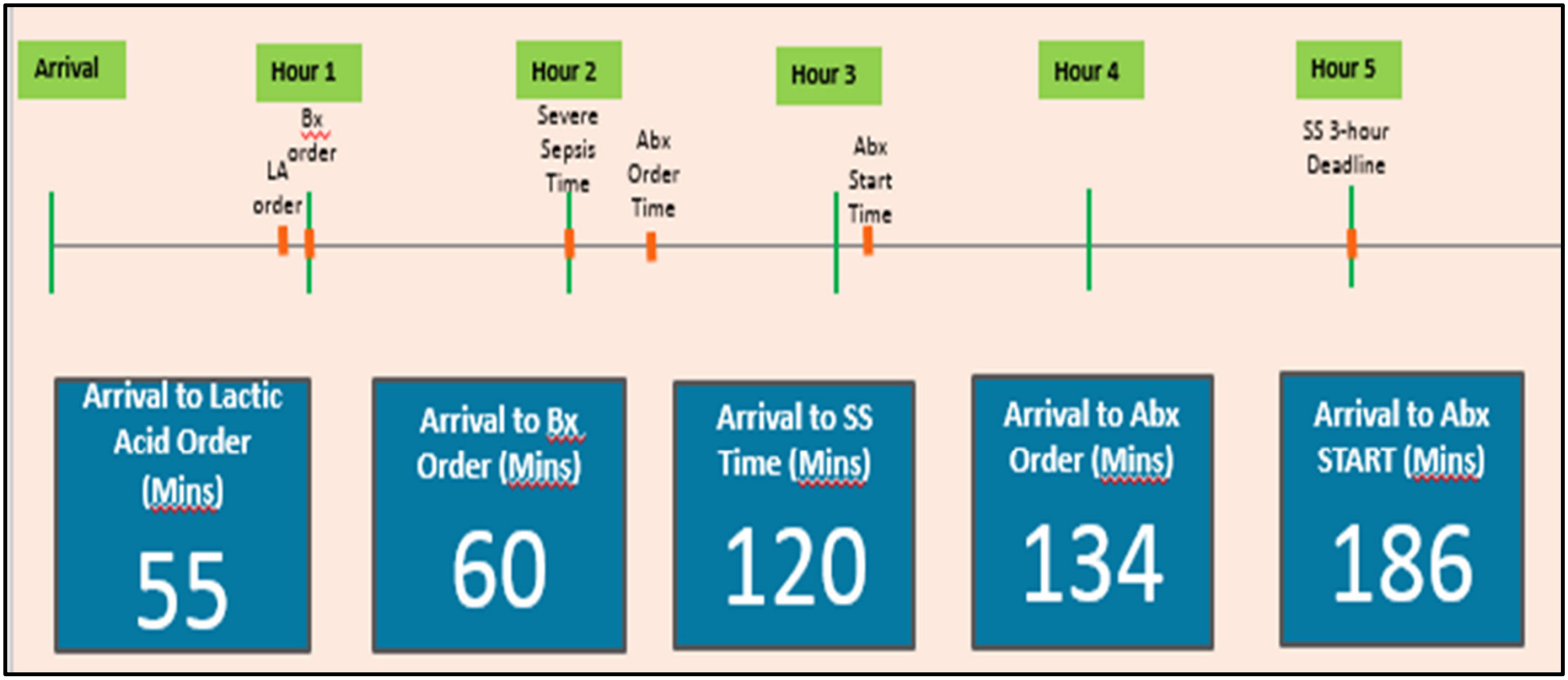
MCH Blueprint: Building a Sepsis Pathway



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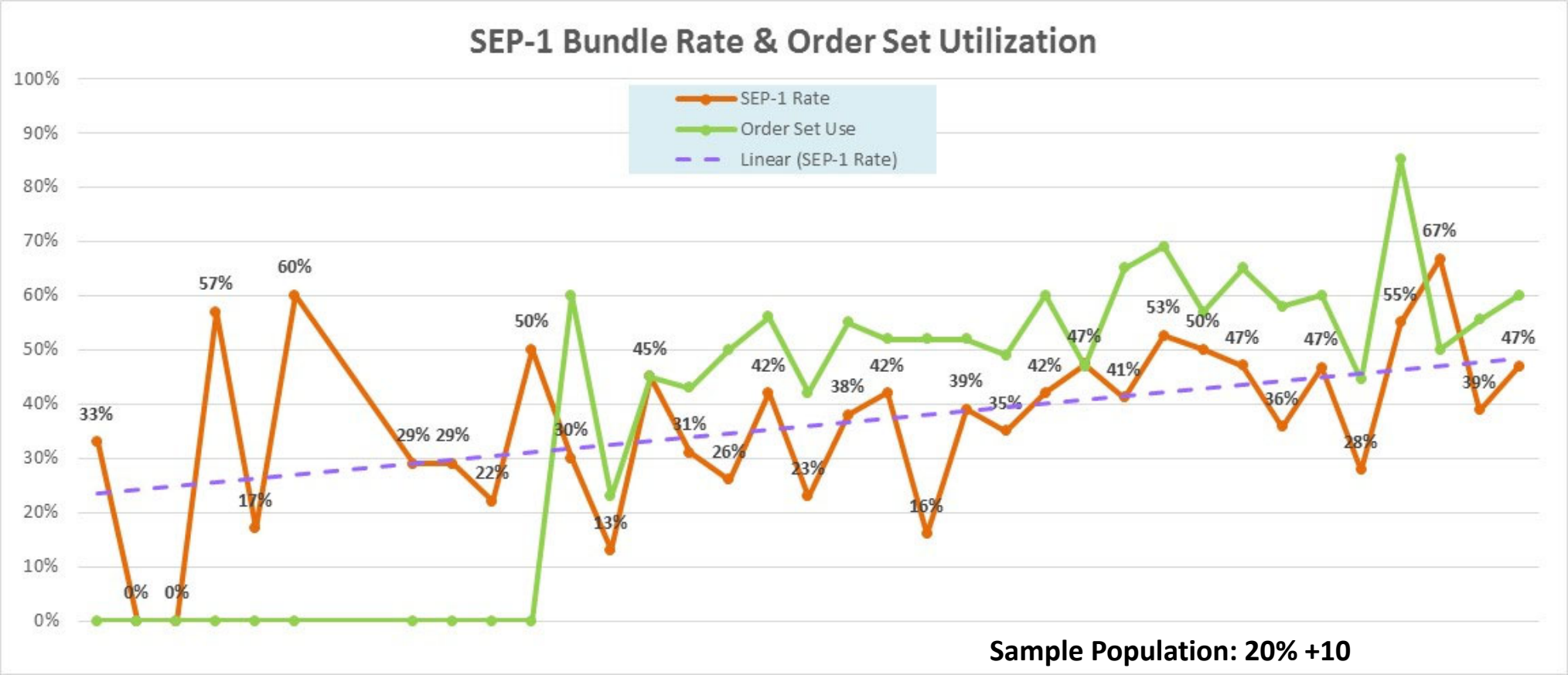
MCH Blueprint: Building a Sepsis Pathway



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MCH Blueprint: Building a Sepsis Pathway

5. Establish Key Performance Indicators (KPIs) & Goals

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MCH Blueprint: Building a Sepsis Pathway

6. Meet routinely utilizing the Committee to do the following:

- **Brainstorm** strategies to achieve KPIs & goals
- **Monitor** sepsis population data & SEP-1 performance
- **Standardize** sepsis care- order sets
- **Group reviews** of SEP-1 fallout cases Physician level SEP-1 compliance and mortality rates
- **Hardwire** your EMR to the MAX

- **Monitor/track** strategies
  i.e. Order Sets, EMR rules, Vitamin B12, arterial vs. serum labs, CODE Sepsis process
- **Literature reviews**
- **Discuss** SEP-1 Specification Manual updates
- **Participate** in related committees that could facilitate administrative & medical staff support
  (i.e. Antimicrobial Stewardship)

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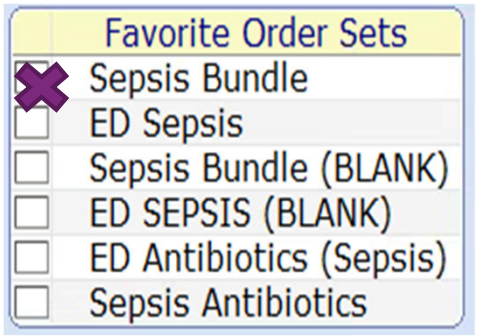
MCH Blueprint: Building a Sepsis Pathway: Part 2

Hardwire EMRs to Identify Sepsis & Pass SEP-1



Associated Data	Result	Date	Group
Temperature	98.6 F	08/16/18 04:12	
Pulse Rate	60	08/16/18 04:12	
Respiratory Rate	16	08/16/18 04:12	
Blood Pressure	130/80	08/16/18 04:12	
Blood Pressure Mean	96	08/16/18 04:12	

Order	SCH	Status	Start/Stop
Sepsis Bundle			
General			
Sepsis Identification			

SEVERE SEPSIS Definition:
- Infection
- Abnormal SIRS Criteria x 2 linked to infection
- Sepsis-induced organ dysfunction

SEPTIC SHOCK Definition:
- Infection
- Abnormal SIRS x 2 linked to infection
- Sepsis-induced organ dysfunction
- Lactate > 4 or "persistent" hypotension
  - o "Persistent" defined as hypotension remaining 1 hour after fluids given

IV Fluids

Initial Resuscitation

Sepsis Crystalloid Fluids NS 30 ML/KG over 2 HRS

☐ Sodium Chloride 0.9% [Normal Sali... 2,700 ml IV ONCE	ONE	

Sepsis Crystalloid Fluids LR 30 ML/KG over 2 HRS

☐ Lactated Ringers [Lr 1000 ml] 2,700 ml IV ONCE	ONE	

*** Lactated Ringers is incompatible with several antibiotics, including (but not limited to) Zosyn (Piperacillin/tazobactam), Rocephin (ceftriaxone), Merrem (meropenem).

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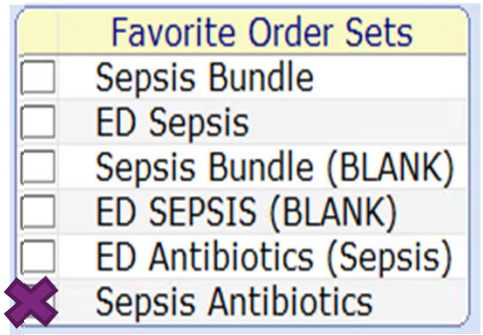
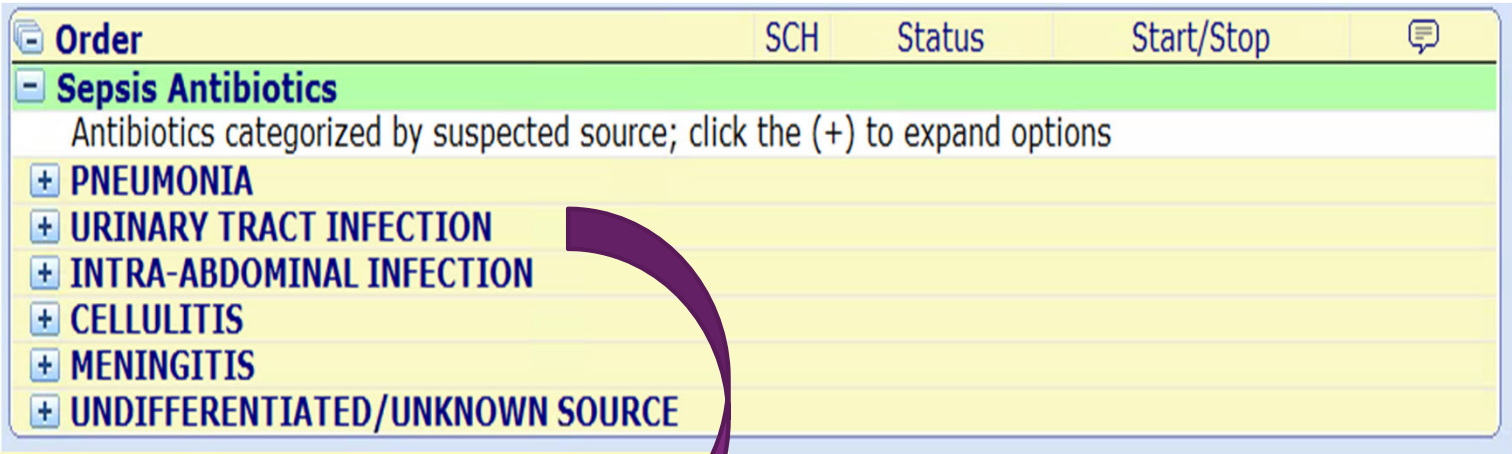
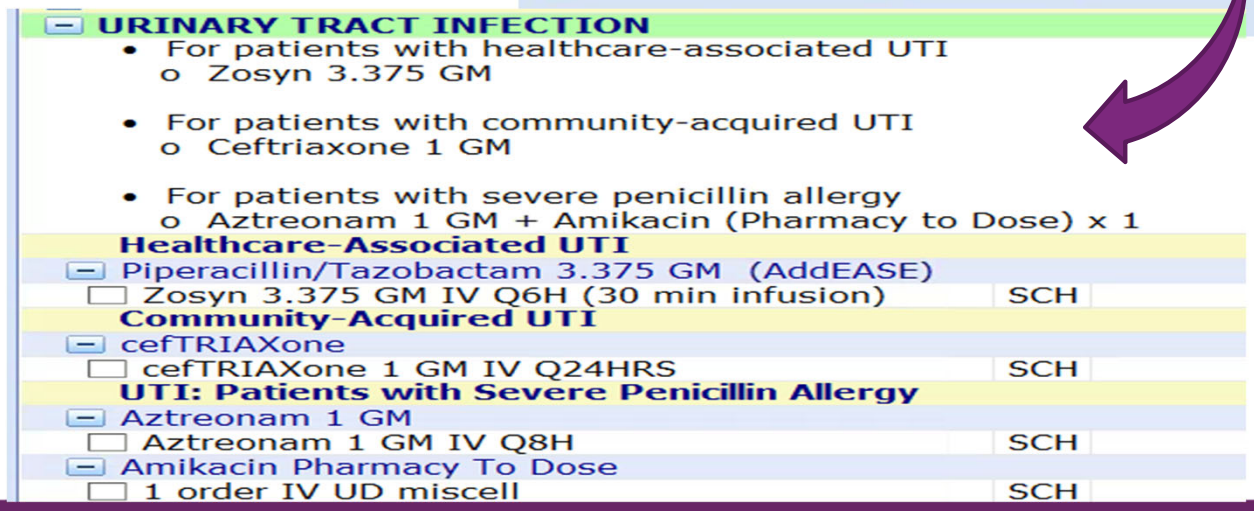
MCH Blueprint: Building a Sepsis Pathway: Part 2

Hardwire EMRs to Identify Sepsis & Pass SEP-1







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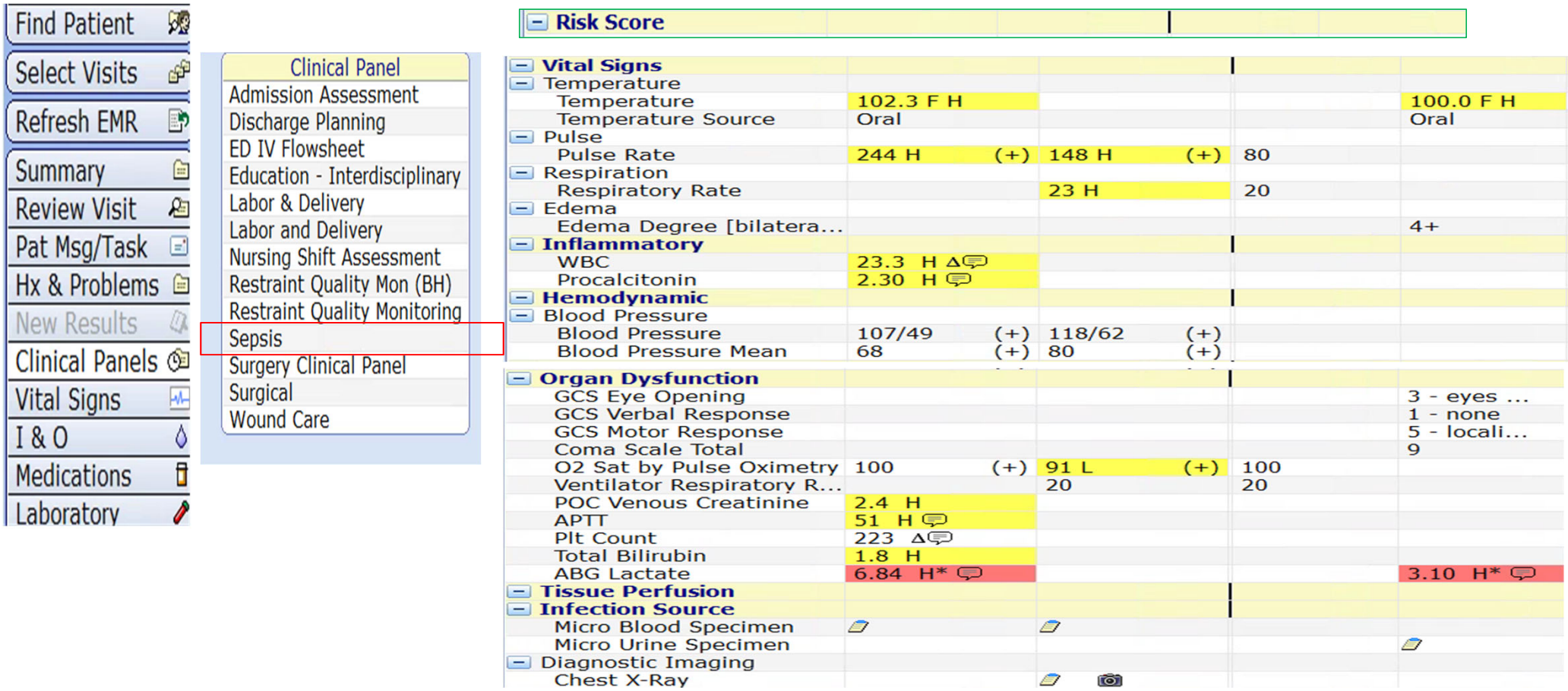
MCH Blueprint: Building a Sepsis Pathway: Part 2

Hardwire EMRs to Identify Sepsis & Pass SEP-1



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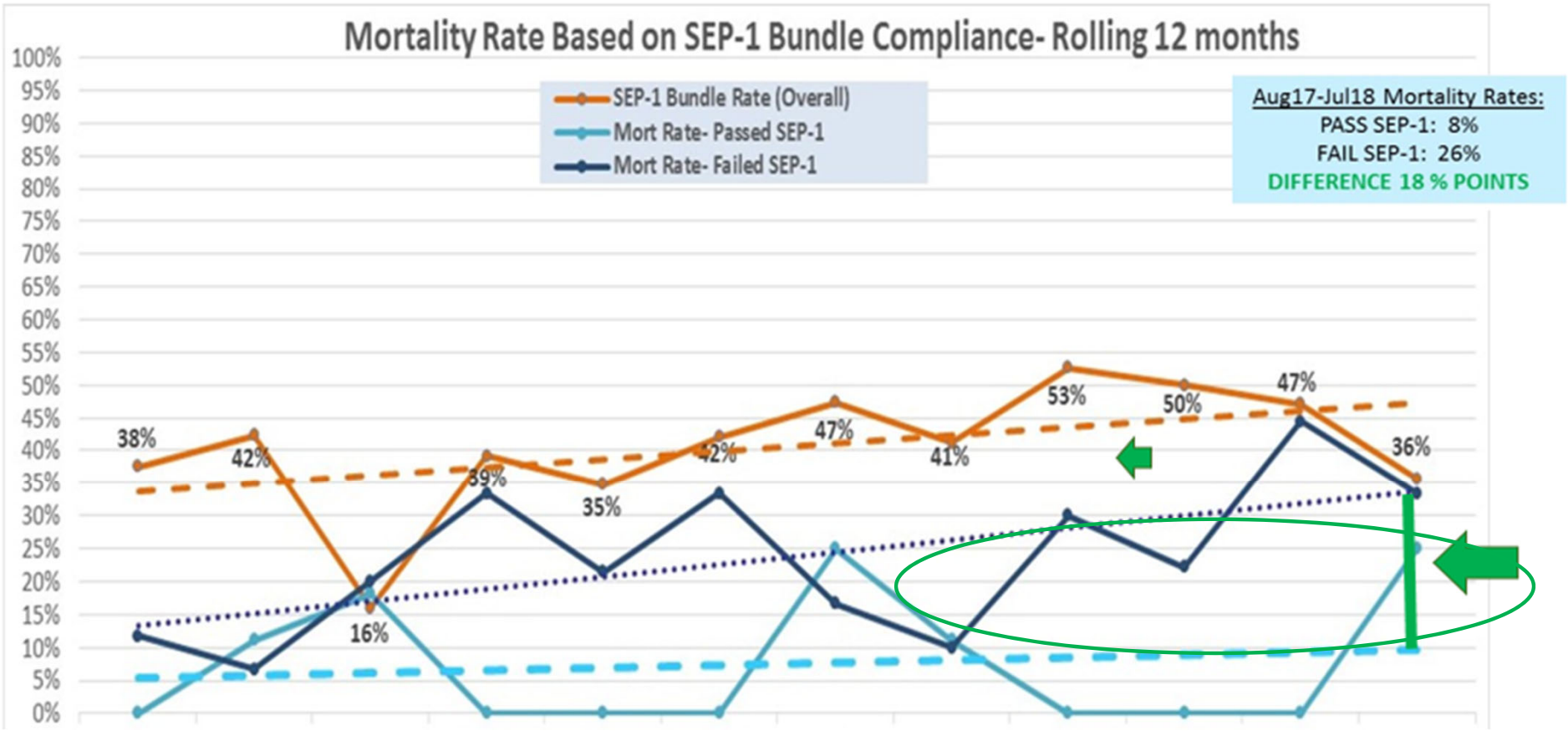
MCH Blueprint: Building a Sepsis Pathway: Part 3
Measure & Report Outcomes



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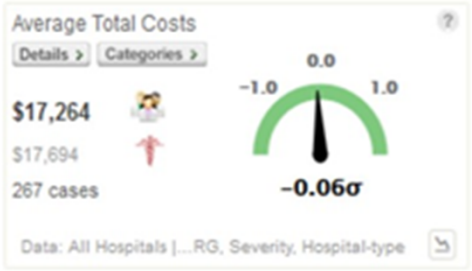
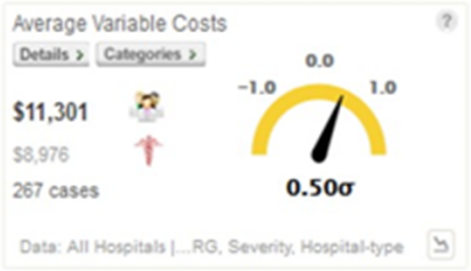
MCH Blueprint: Building a Sepsis Pathway: Part 3

Measure & Report Outcomes

MCBG Total Sepsis Population: Utilization





MCH Sepsis Bundle Treatment

Facility: MCBG		Facility: MCF		Facility: MCS		Facility: CRSH	
Period: Jun18-Aug18		Period: Jun18-Aug18		Period: Jun18-Aug18		Period: Jun18-Aug18	
Sepsis Ordering Statistics		**Sepsis Ordering Statistics**		**Sepsis Ordering Statistics**		**Sepsis Ordering Statistics**	
94%	Lactic Acid ordered	67%	Lactic Acid ordered	80%	Lactic Acid ordered	67%	Lactic Acid ordered
100%	CBC with differential	100%	CBC with differential	100%	CBC with differential	100%	CBC with differential
82%	CMP*	33%	CMP*	100%	CMP*	83%	CMP*
91%	Blood Culture ordered	100%	Blood Culture ordered	100%	Blood Culture ordered	50%	Blood Culture ordered
69%	Urine Culture ordered (UTI 2nd source)	67%	Urine Culture ordered (UTI 2nd source)	60%	Urine Culture ordered (UTI 2nd source)	33%	Urine Culture ordered (UTI 2nd source)
93%	IV Chest X-ray (Pneumonia top source)	100%	Chest X-ray (Pneumonia top source)	80%	Chest X-ray (Pneumonia top source)	100%	Chest X-ray (Pneumonia top source)
100%	IV fluids	67%	IV fluids	100%	IV fluids	100%	IV fluids
100%	Broad Spectrum IV abx ordered	100%	Broad Spectrum IV abx ordered	100%	Broad Spectrum IV abx ordered	83%	Broad Spectrum IV abx ordered
61%	Critical Care Utilization						

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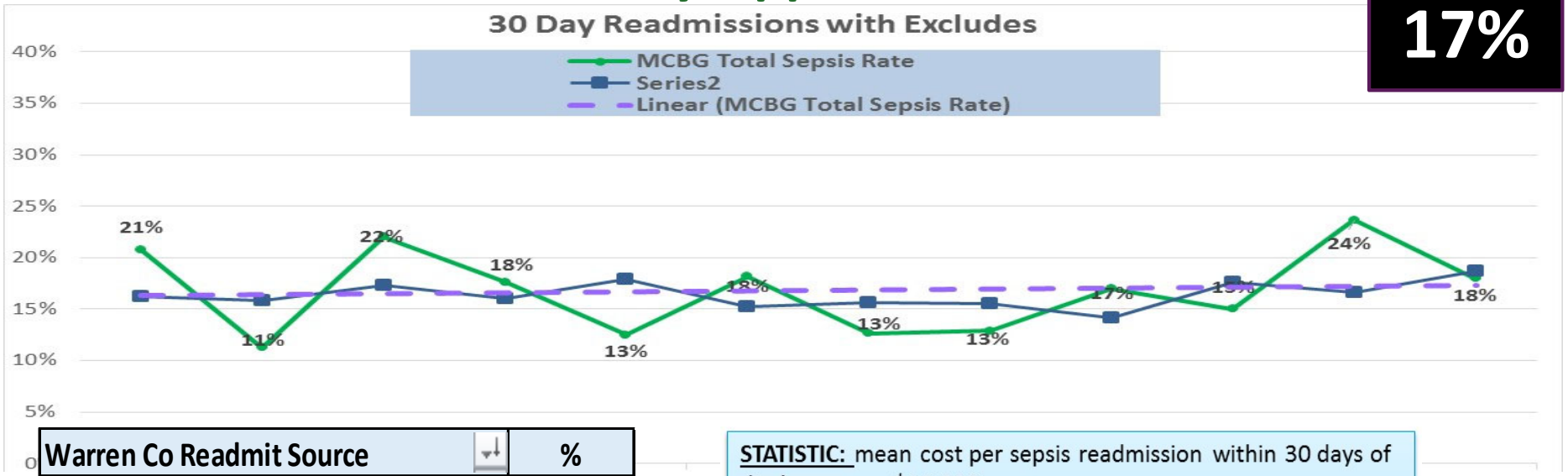
MCH Blueprint: Building a Sepsis Pathway: Part 3

Identify Opportunities

Sepsis Hospital Readmit Rate

17%



Warren Co Readmit Source	%
HOM - Home	71%
XSNF - Transfer From SNF	18%
PHY - Physician Referral	6%
XAC - Transfer From Acute Hosp	3%
XHCF - Transfer From Another HC Fac	2%
Grand Total	**100%**

STATISTIC: mean cost per sepsis readmission within 30 days of discharge was $16,852.

FACT: Greatest volume of MCBG sepsis readmits were discharged home. At MCBG, majority of 30-day readmit visits were received from home.

STRATEGY: Expand Community Paramedic Program to include sepsis discharges: site visits to check source infections are resolved/healing, manage medications, ensure antibiotics are completed, follow-up appointments attended, etc.

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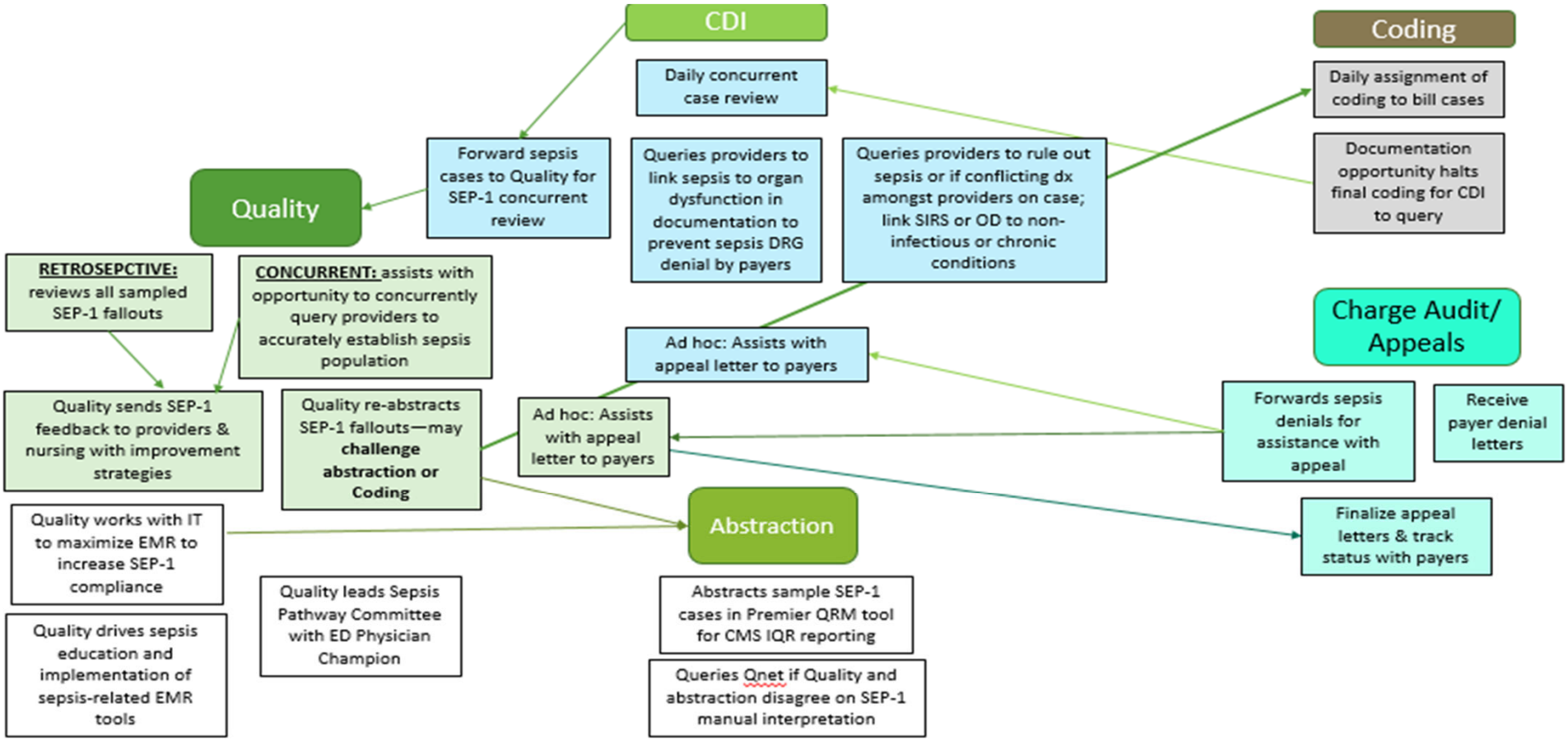
MCH Blueprint: Building a Sepsis Pathway: Part 4
Integration of Quality, CDI, Coding, Abstraction and Appeals Teams



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“Raise Your Hand” Question #5

How involved is CDI with quality/performance improvement at your hospital?

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Thank you. Questions?

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