NEW JERSEY SEPSIS LEARNING ACTION COLLABORATIVE, CMS & STATE UPDATES

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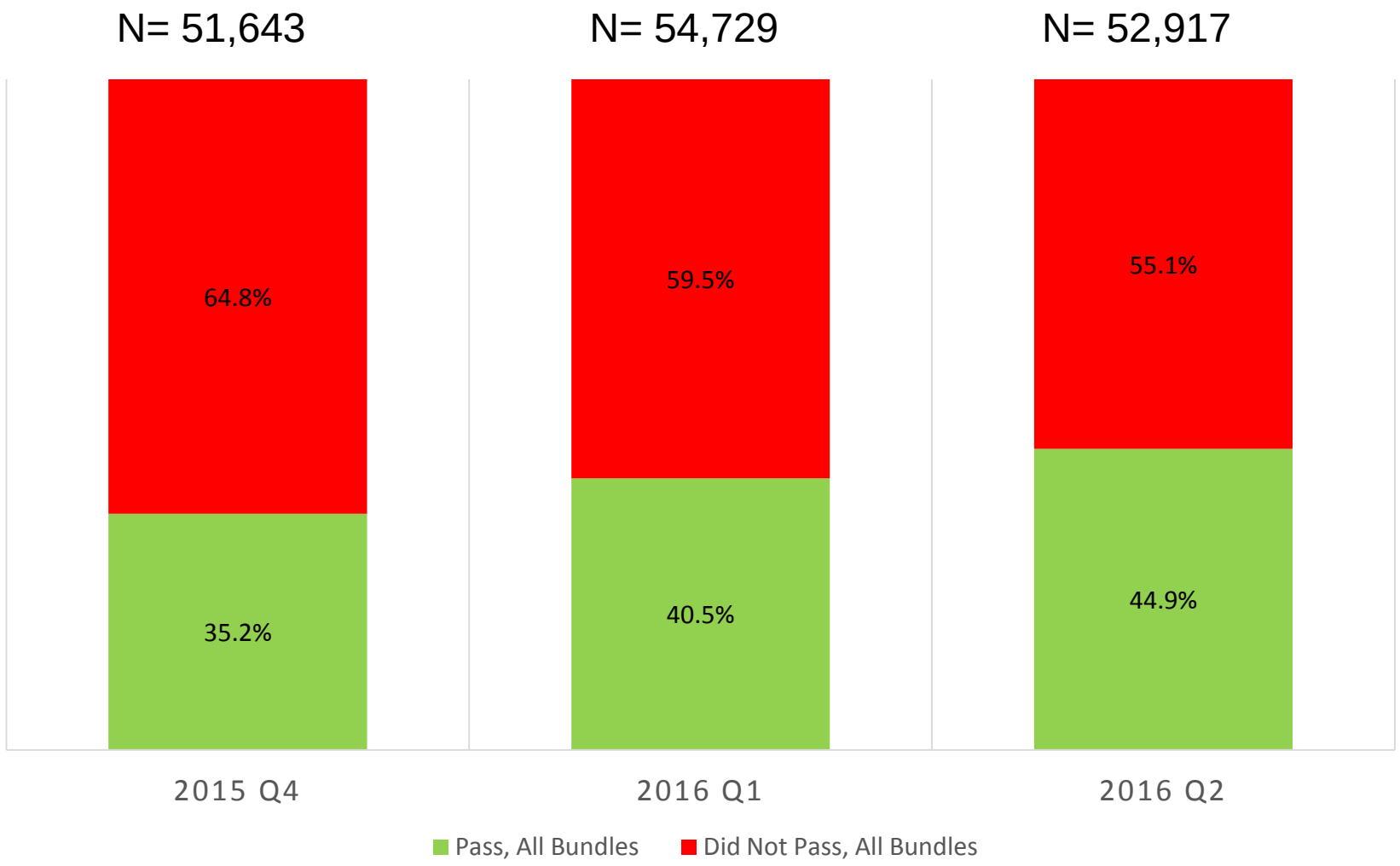
Cooper Medical School of Rowan University

Breakdown of SEP-1:

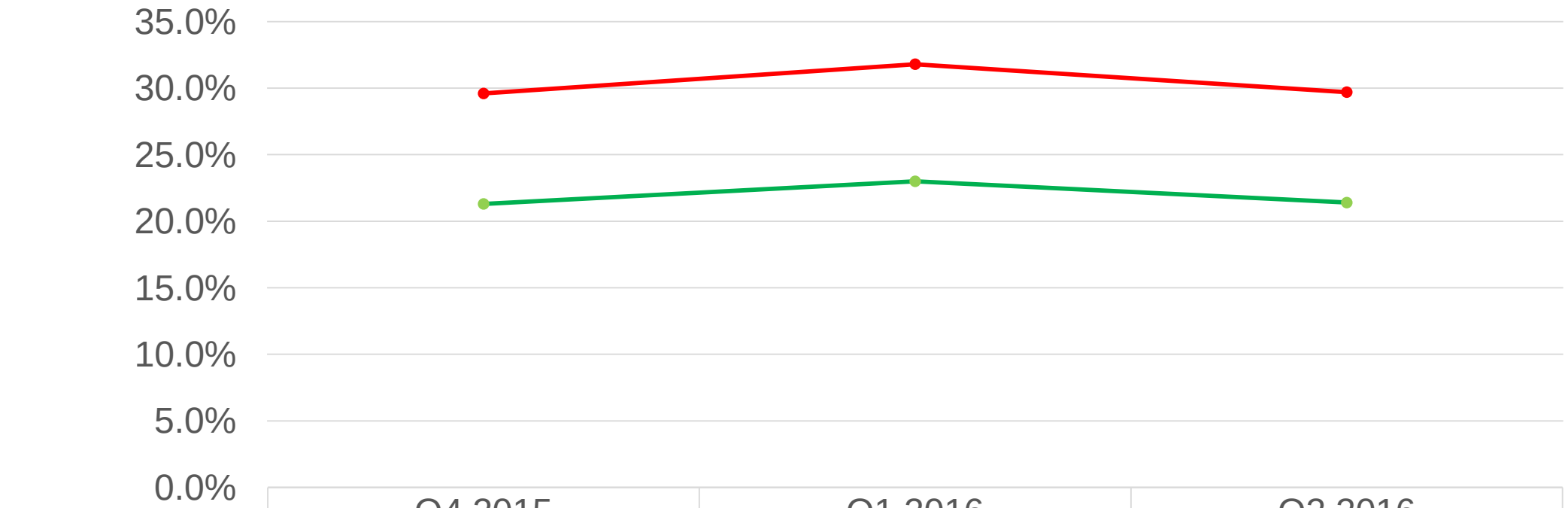
Combined Bundles for Eligible Population



SEP-1 Percentiles of Performance Nationally by Quarter

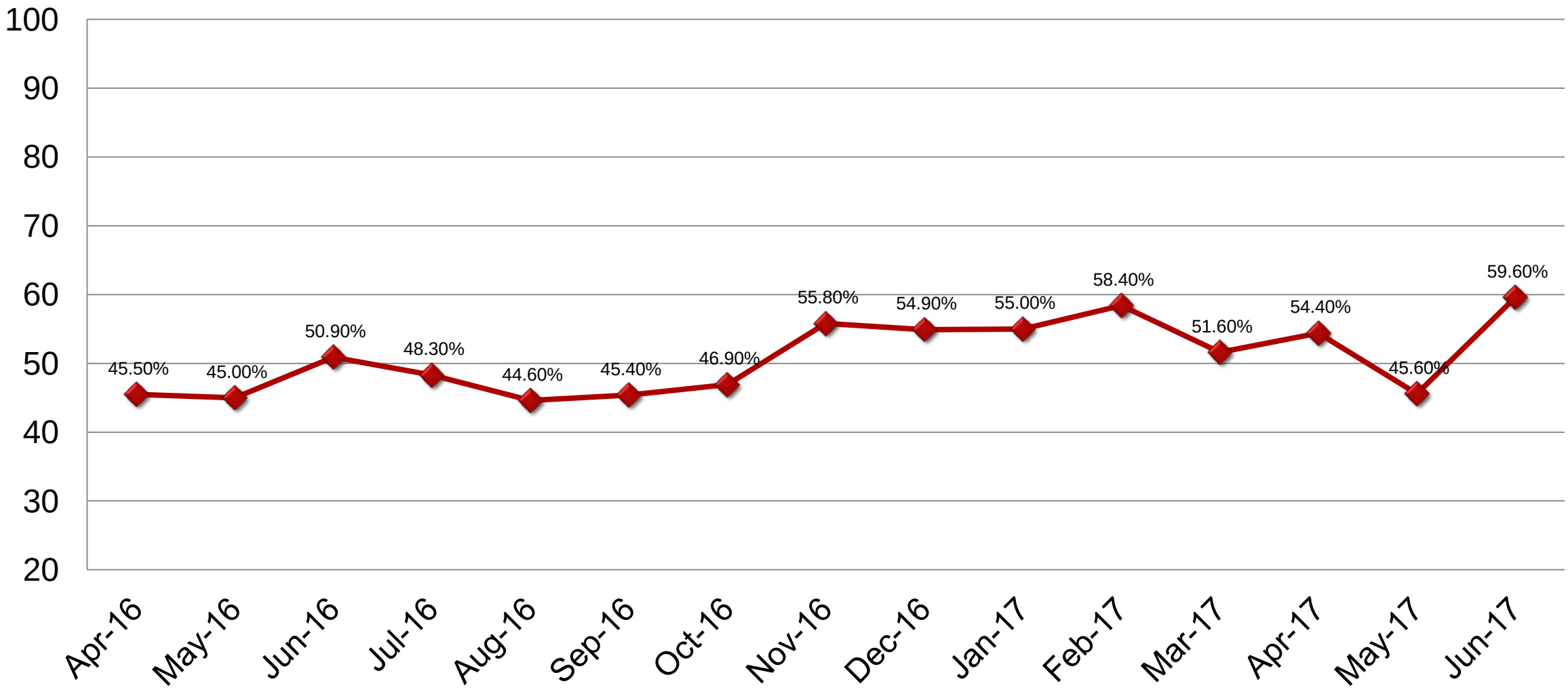
	Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016
# of hospitals	3,134	3,182	3,193
# of eligible cases	96,516	104,166	101,599
Overall performance rate	34.4	39.5	44.0
10th percentile	5.0	7.7	12.5
25th percentile	17.9	21.6	25.8
Median	31.0	36.1	41.7
75th percentile	45.8	51.3	57.1
90th percentile	60.0	66.7	71.4
Min, Max	0.0, 100.0	0.0, 100.0	0.0, 100.0
Average	32.6	37.1	41.9
Standard Deviation	21.1	21.9	22.9

SEP-1 Mortality Rate Trend for Eligible Population:

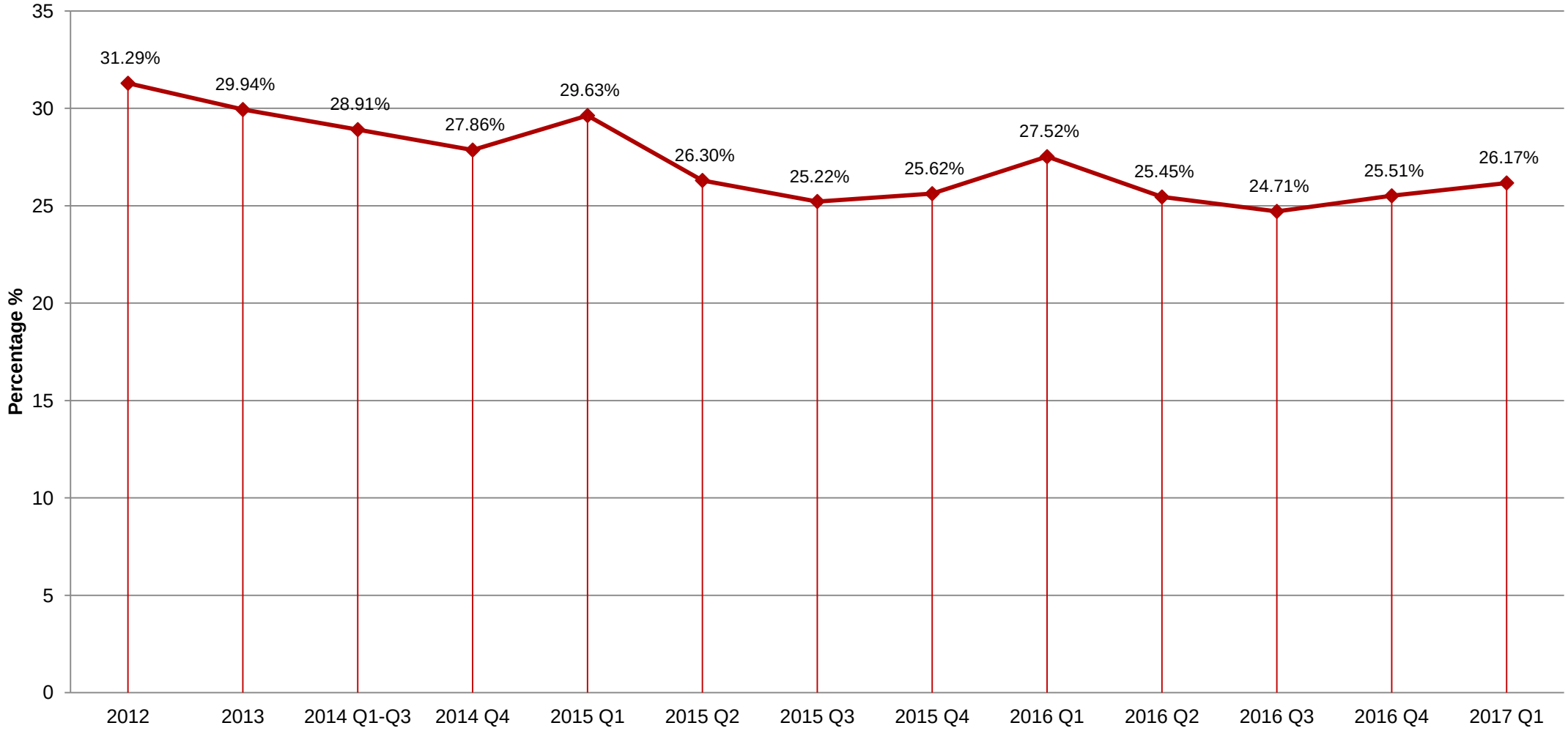


	Q4 2015	Q1 2016	Q2 2016
Delta	8.5%	8.8%	8.3%
Passed	21.3%	23.0%	21.4%
Did Not Pass	29.6%	31.8%	29.7%

Early Sepsis Management Sepsis Bundle-NJ Statewide



New Jersey Statewide Mortality Update



NJ Sepsis Regulation Update

Proposed New Rule: N.J.A.C. 8:43G-14.9

Hospital Licensing Standards

Infection Control: Sepsis Protocols

(a) A hospital shall establish, implement, and periodically update, evidence based protocols for the early identification and treatment of patients with sepsis and septic shock (“sepsis protocols”)

NJ Sepsis Regulation Update

(b) The sepsis protocols shall address, at a minimum:

1. **Screening** patients for, and early recognition in patients of, healthcare acquired and community-acquired sepsis and septic shock;

2. Identification of patients for whom treatment, using the **sepsis protocols, is appropriate, and for whom treatment would be inappropriate** based on patient specific clinical and/or bioethical considerations, and documentation of these patient identification activities;

3. **Treatment guidelines**;

4. Components that are **population-specific** as clinically indicated in accordance with evidence-based best practices, such as perinatal, neonatal, pediatric.

5. **Training of clinical staff** in the sepsis protocols and providing updated training upon substantive revision thereof.

NJ Sepsis Regulation Update

(c) Clinical staff who are to receive training include:

1. Clinical practitioners;
2. Registered professional nurses;
3. Licensed practical nurses; and
4. Other licensed health care professionals.

(d) A hospital shall ensure that clinical staff receive training in the sepsis protocols:

1. By (six months from the effective date of the adoption of this proposal) with respect to existing clinical staff; and
2. With respect to a person who becomes a member of a hospital's clinical staff after (the effective date of the adoption of this proposal), within six months of the first day on which that person becomes a member of the hospital's clinical staff; and
3. With respect to all clinical staff, annually thereafter following initial training

NJ Sepsis Regulation Update

(e) A hospital shall establish, maintain, and make available upon request to the Department, a record that identifies:

1. The name and position of each member of the hospital's clinical staff who is to receive training pursuant to (d) above; and
2. The date on which each clinical staff member receives training pursuant to (d) above.

(f) The Department suggests that hospitals consider **basing their sepsis protocols on guidelines** issued by the following entities, as amended and supplemented:

1. The Surviving Sepsis Campaign
2. The Hospital Improvement Innovation Network of the Health Research and Educational Trust,
3. The National Quality Forum

Considerations

- Hospitals should have the ability to create and adapt their own protocols based on current evidence available
- Sepsis quality improvement requires a multi-disciplinary approach
- NJ Collaborative approach has driven improvement and will continue to provide support to all NJ hospitals and facilities working to improve sepsis care

NJHA support hospitals by:

- Collect, measure, trend and provide sepsis mortality rates for all hospitals in the state
- Conduct at minimum **quarterly webinar educational sessions**, free of charge to all collaborative organizations
- Conduct **annual in-person learning session** for all collaborative organizations

Educational topics include:

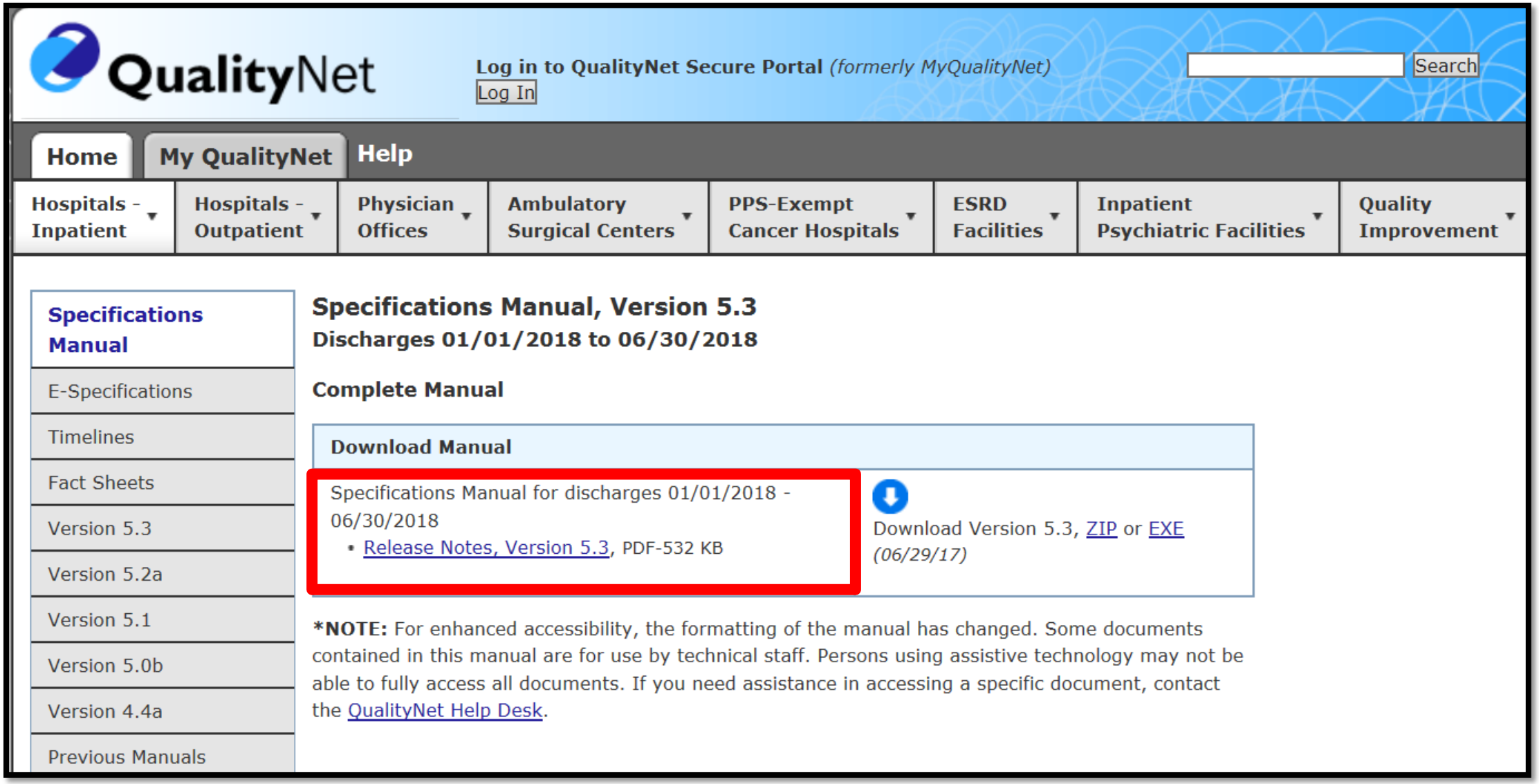
- Review of current evidence-based guidelines
- Review of state and federal sepsis mortality and process related data
- Sharing of best practices and innovative solutions to improve sepsis care

NJHA Statewide Support

- Coordinate with **special patient population** groups (pediatric-children's hospitals; perinatal- perinatal collaborative) to address needs of these groups
- **Support collaborative organizations** in engaging patients and families in sepsis education and awareness through:
  - Development of patient education materials
  - Partnering with Sepsis Alliance and Staunton Foundation
  - Working DOH to coordinate public outreach campaign

SEPSIS ALLIANCE®
Suspect Sepsis. Save Lives.℠

THE RORY STAUNTON FOUNDATION
FOR SEPSIS PREVENTION



https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1228776143120

Impacts:
Administrative Contraindication to Care, Severe Sepsis

Rationale: The Notes for Abstraction and Inclusion Guidelines for Abstraction are being updated to provide additional guidance to the abstractor.

Description of Changes:
Notes for Abstraction
Change to:

- Only acceptable sources are physician/APN/PA or nursing documentation.
- Documentation indicating patient or authorized patient advocate has refused blood draw, IV or IO fluid administration, or IV or IO antibiotic administration prior to or within 6 hours following presentation of severe sepsis can be used to select Value "1."
- Documentation of refusal of care that would result in blood draws, IV or IO fluids or IV or IO antibiotics not being administered is acceptable.
- For refusal of blood draws:
  - Documented refusal of blood draws is acceptable.
  - Refusal of specific blood draws or blood tests that do not impact the ability to meet the requirements of the SEP-1 measure data elements should not be used.
    Examples:
    - Patient refused HIV blood test.
    - Patient refused arterial blood gas (ABG).
- For refusal of IV or IO fluids:
  - Documented refusal of fluids or IV or IO fluids is acceptable.
- For refusal of IV or IO antibiotic administration:
  - Documented refusal of medications is acceptable.
  - Documented refusal of antibiotics or IV or IO antibiotics is acceptable.

Inclusion Guidelines for Abstraction
Change to:

- Declined
- Refused
- Requests not to be given

Impacts:
Bedside Cardiovascular Ultrasound Performed

Rationale: The Suggested Data Collection Question was simplified to decrease abstraction burden.

Description of Changes:
Suggested Data Collection Question
Change to:
Was a bedside cardiovascular ultrasound performed?

Impacts:
Bedside Cardiovascular Ultrasound Performed

Rationale: The Notes for Abstraction were updated to provide guidance on the timeframe and how to address if there are no assessments performed.

Description of Changes:
Notes for Abstraction
Change first bullet point to:

- Documentation must occur or reflect the assessment was performed between *Crystalloid Fluid Administration Date, Crystalloid Fluid Administration Time* and six hours after *Septic Shock Presentation Date, Septic Shock Presentation Time*.

Remove fifth bullet point:

- If multiple bedside cardiovascular ultrasounds were done in the time window beginning at the crystalloid fluid administration date and time and ending six hours after the presentation of septic shock date and time, abstract the date of the procedure that was done latest within the time window.

Change last bullet point to:

- If no bedside cardiovascular ultrasounds were documented or documentation reflects the assessment was not performed in the allowable time window, choose Value "2."

Impacts:
Bedside Cardiovascular Ultrasound Time

Rationale: The Suggested Data Collection Question was simplified to decrease abstraction burden.

Description of Changes:
Suggested Data Collection Question
Change to:
At what time was a bedside cardiovascular ultrasound performed?

Antibiotic Timing and Decreasing Abstraction Burden

Impacts:
Broad Spectrum or Other Antibiotic Administration Date
Broad Spectrum or Other Antibiotic Administration Time

Rationale: The Definition, Suggested Data Collection Question, and Allowable Values are being updated to remove intravenous route.

Description of Changes:
Definition, Suggested Data Collection Question
Change:
administered intravenously if given

To:
started

Impacts:
Broad Spectrum or Other Antibiotic Administration Time

Rationale: The Notes for Abstraction are being updated to include additional guidance to the abstractor.

Description of Changes:
Notes for Abstraction
Change to:

- Only IV antibiotic administered in the 24 hours prior to or 3 hours after severe sepsis presentation is acceptable.
  EXCEPTION:
  If there is documentation indicating IV access could not be established, antibiotics administered via intramuscular (IM) or intraosseous (IO) started in the 24 hours prior to or 3 hours after the severe sepsis presentation is acceptable.
- If one or more antibiotic was started within the 24 hours prior to presentation of severe sepsis, and none of those same antibiotics were started more than 24 hours prior to presentation, abstract the earliest dose started in the 24 hours prior to presentation of severe sepsis.

Impacts:
Cardiopulmonary Evaluation Time
Rationale: The Suggested Data Collection Question was simplified to decrease abstraction burden.

Fluid Administration

Impacts:

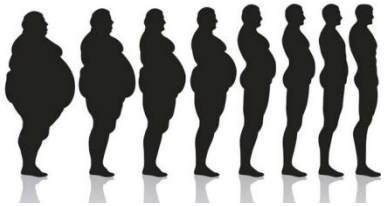
- *Crystalloid Fluid Administration*
- **Rationale:** The Notes for Abstraction are being updated to provide guidance and decrease abstraction burden.

Description of Changes:

Notes for Abstraction

- **Change** to:
- Crystalloid fluid volumes ordered that are equivalent to 30 mL/kg or within 10% less than 30 mL/kg are considered the target ordered volume.
- Crystalloid fluid volumes ordered that are within 10% lower than the 30 mL/kg total volume calculated by weight are acceptable.

Body Weight & Fluids



- Use the weight documented closest to and prior to the order for crystalloid fluids. If a weight is not documented prior to the crystalloid fluid order, use the weight recorded closest to and after the crystalloid fluid order.
- Use the patient's actual weight. Use estimated weight only if actual weight is not available to determine the volume of crystalloid fluids the patient should receive. Do not use ideal weight unless indicated by the physician/APN/PA.
- If there is physician/APN/PA documentation identifying the patient has obesity (defined as a Body Mass Index > 30), the clinician may choose to use Ideal Body Weight (IBW)to determine the target ordered crystalloid fluid volume. If the clinician prefers to use IBW, it must be documented clearly and the clinician must indicate that IBW will be the weight used to determine the target ordered volume.

Clinical Trial Exclusion

- **Impacts:**
- SEP-1
- **Rationale:** The measure is being revised to exclude patients that are enrolled in a clinical trial related to sepsis care and management.

Overcoming Barriers to Sepsis Bundle Implementation

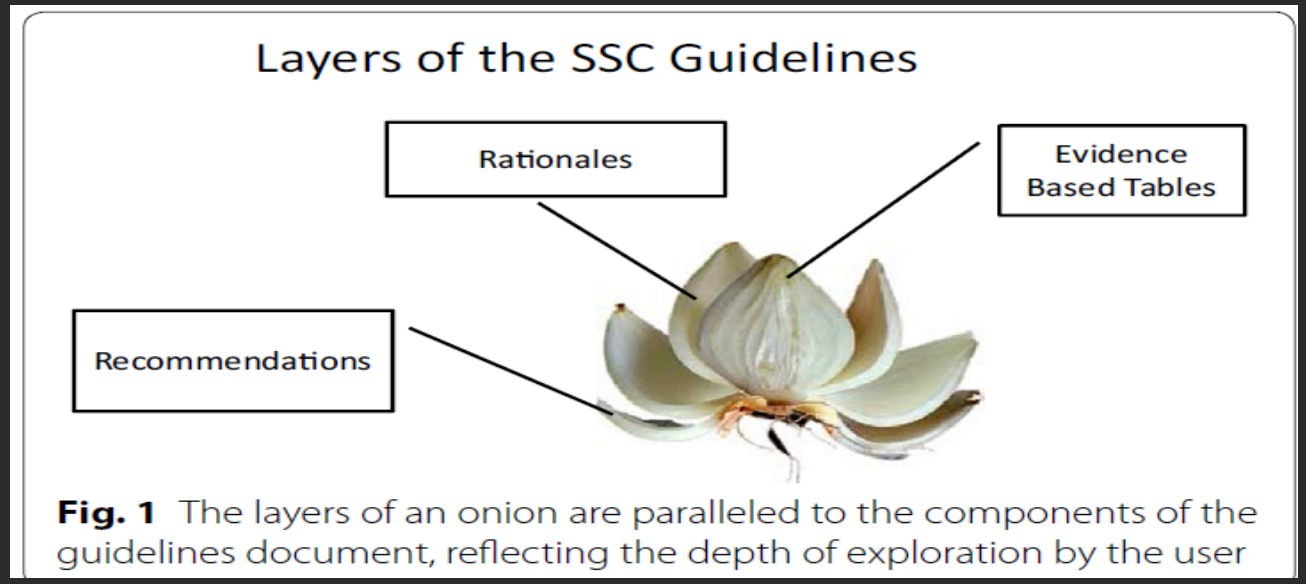
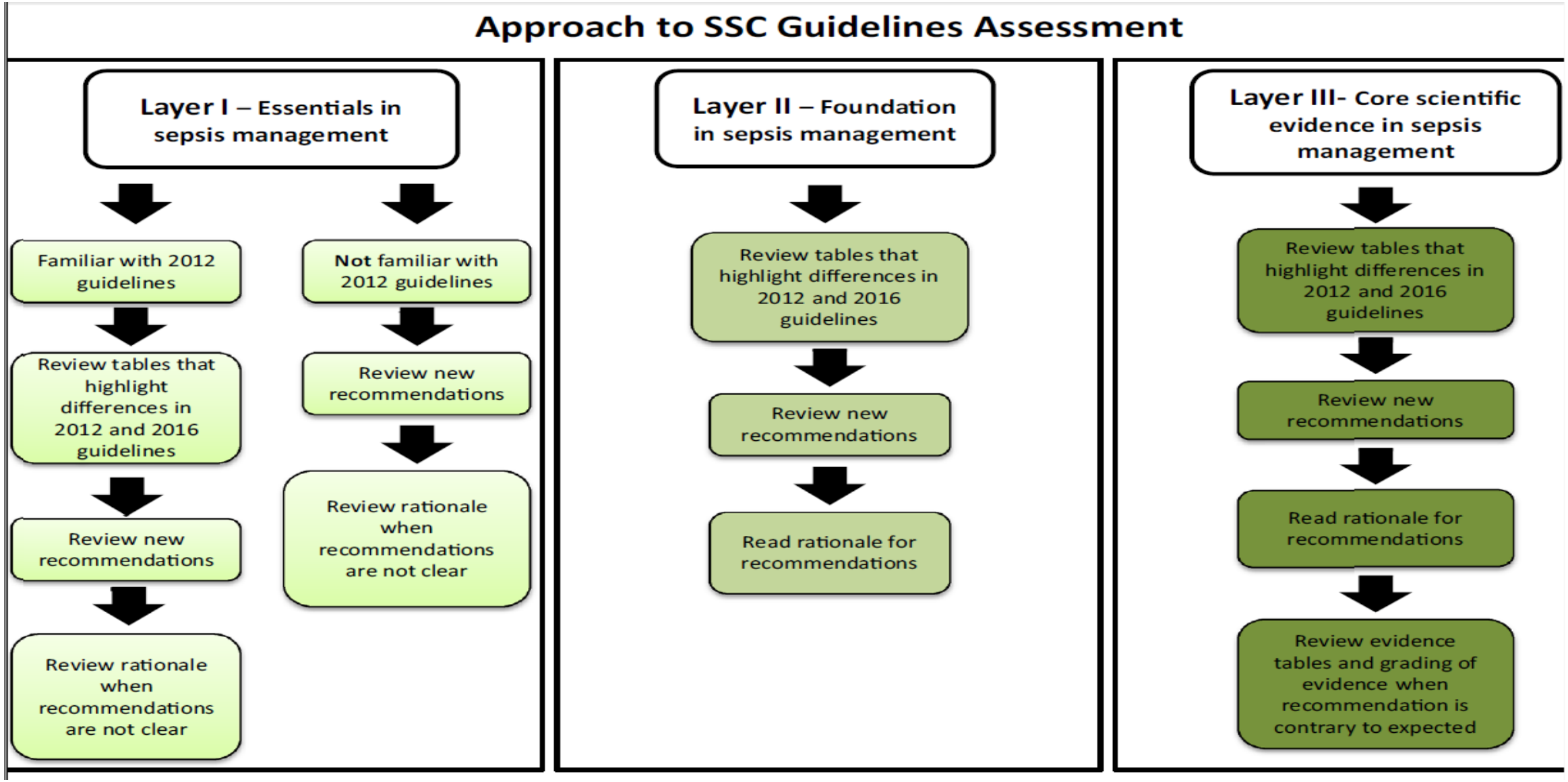


Fig. 1 The layers of an onion are paralleled to the components of the guidelines document, reflecting the depth of exploration by the user

SSC GUIDELINE TOOLS

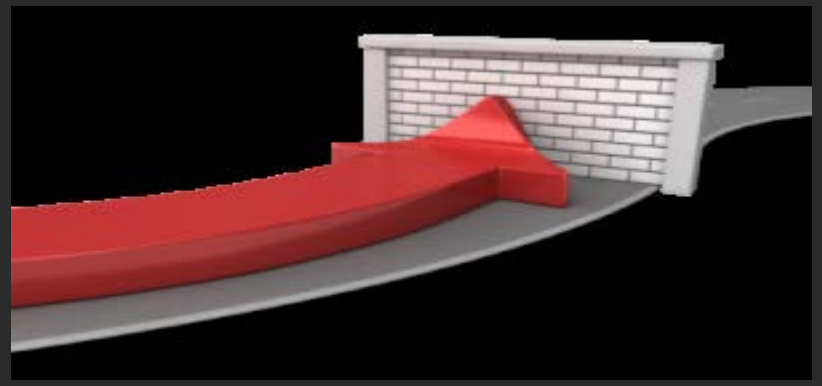
A User's Guide to the 2016 Surviving Sepsis Guidelines

Dellinger, Schorr, Levy. Intensive Care Medicine 2017. 43(3);299-303.

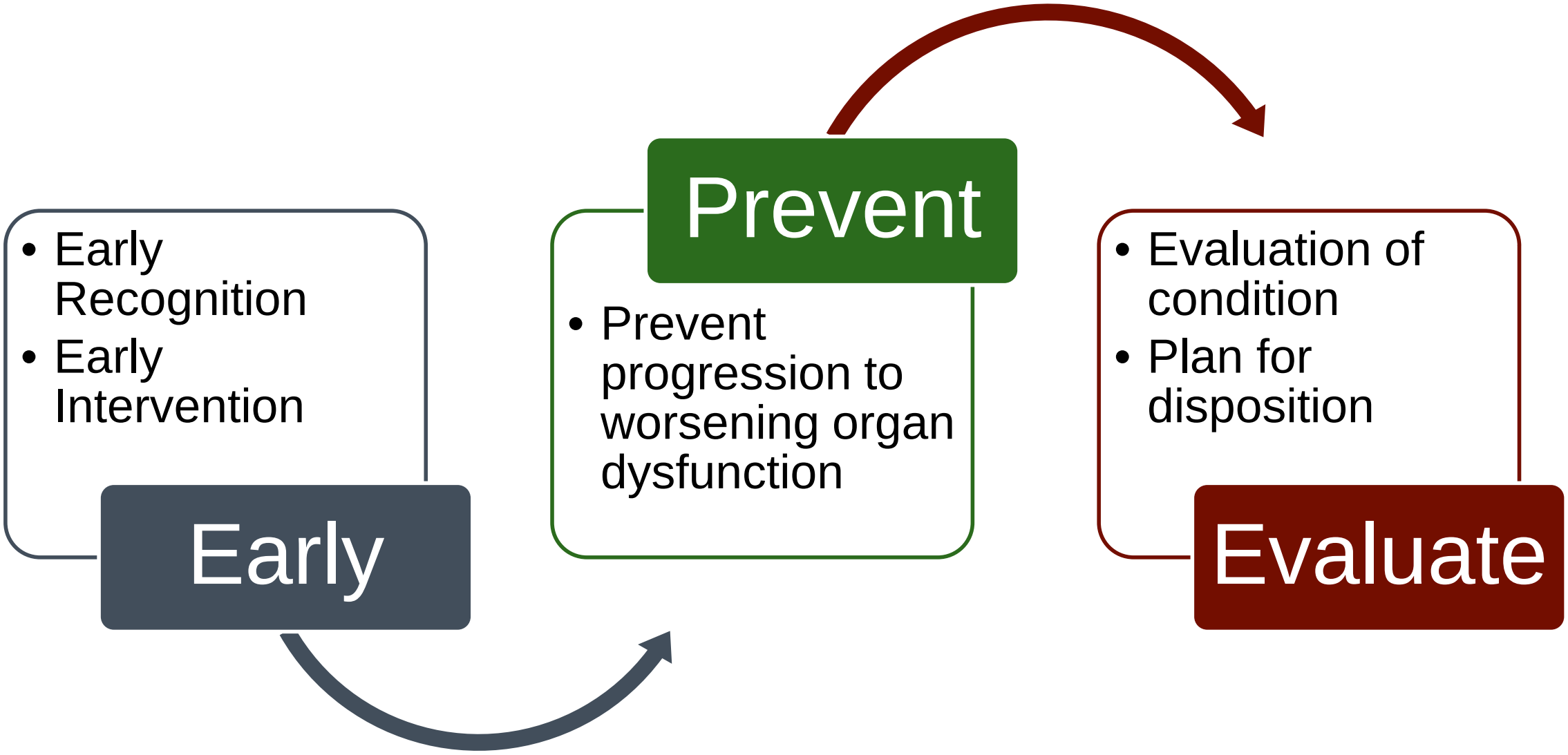


Dellinger, Schorr, Levy. Intensive Care Medicine 2017. 43(3);299-303

SEPSIS BUNDLE INDICATORS, BARRIERS TO ACHIEVEMENT, AND POTENTIAL SOLUTIONS.

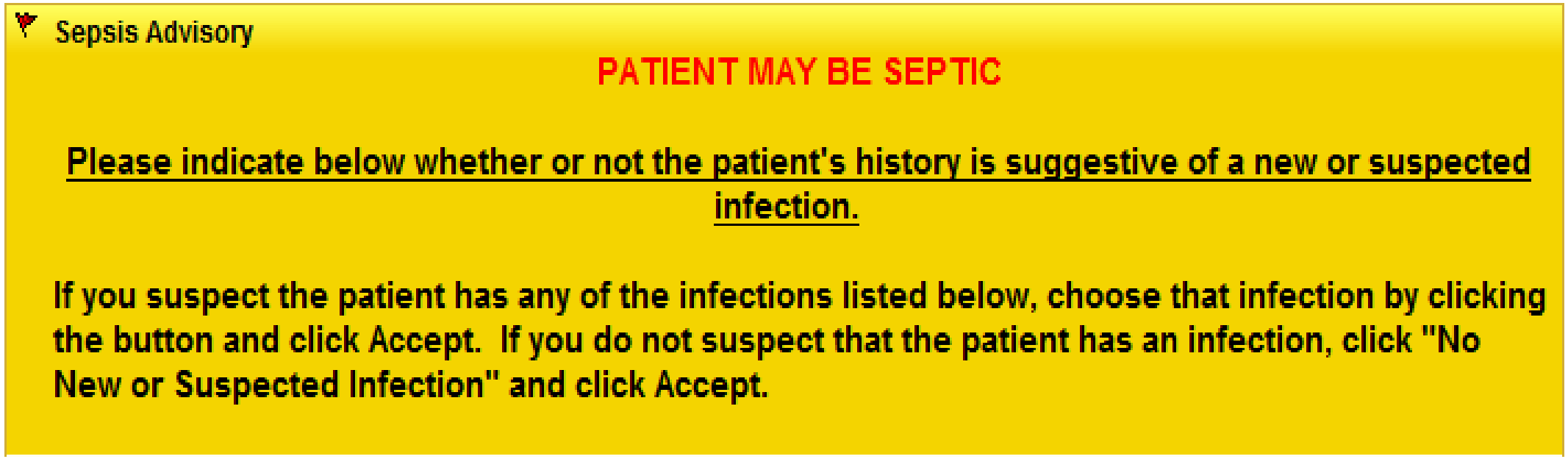


Importance of Sepsis Screening

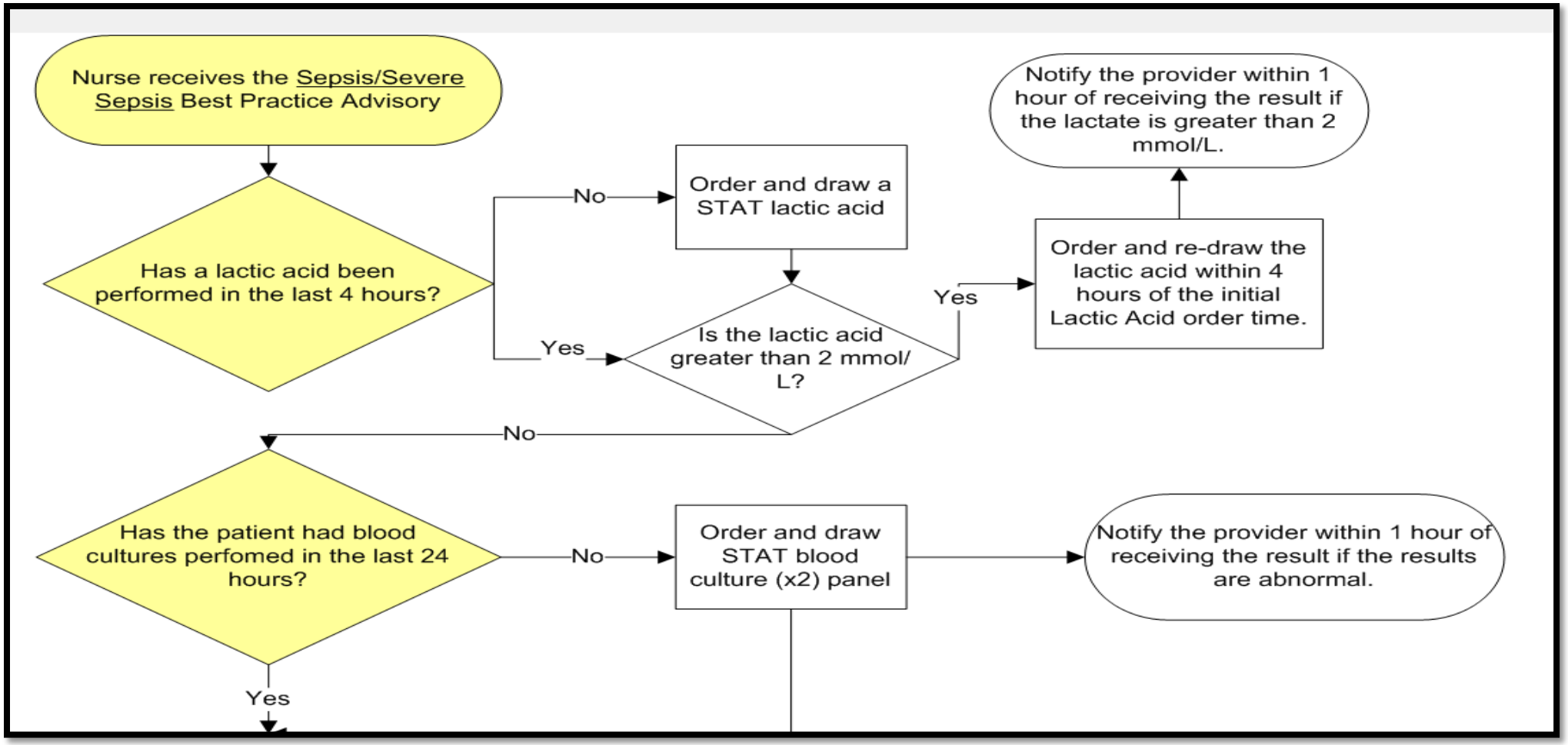


Screen every patient, every shift, every day

Electronic surveillance, prompts and nurse assessment



Empower Nurses



Sepsis Bundles

Surviving Sepsis Campaign

BUNDLES

TO BE COMPLETED WITHIN 3 HOURS:

1) Measure lactate level.
2) Obtain blood cultures prior to administration of antibiotics.
3) Administer broad spectrum antibiotics.
4) Administer 30 ml/kg crystalloid for hypotension or lactate ≥4mmol/L.

"Time of presentation" is defined as the time of triage in the emergency department or, if presenting from another care venue, from the earliest chart annotation consistent with all elements of severe sepsis or septic shock ascertained through chart review.

TO BE COMPLETED WITHIN 6 HOURS:

5) Apply vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) ≥65 mm Hg.
6) In the event of persistent hypotension after initial fluid administration (MAP < 65 mm Hg) or if initial lactate was ≥4 mmol/L, re-assess volume status and tissue perfusion and document findings according to Table 1.
7. Re-measure lactate if initial lactate elevated.

http://www.sccm.org/SiteCollectionDocuments/SSCBundleCard_Web.pdf Accessed 9/15/2016

Indicator	Barriers	Potential Solutions
 **All sepsis bundle indicators** 	• Delayed sepsis recognition • Delayed treatment • Differential diagnosis unclear • No order placed • Documentation insufficiency • Communication handoff failure • Competing priorities	• Education and real-time feedback • Routine sepsis screening tools and process with standardized response for positive screen • Protocol guidance • Order sets • Nurse-driven protocols* • Handoff transfer tools • Use of a sepsis clock at bedside • Flex nurse-to-patient staff ratio during initial 6 hours

Schorr & Posa. SCCM Critical Connections April 2017

Indicator	Barriers	Potential Solutions
Obtaining initial lactate 	• Inability to obtain specimen • Insufficient knowledge of importance of lactate • Documentation of time • specimen was sent to lab rather than time specimen was obtained • Prolonged lab turnaround times	• Education of staff regarding specific time-sensitive documentation and appropriate specimen collection process • Linking blood culture and lactate as a bundle
Obtaining blood cultures 	• Delay in sending to lab • Documentation of time specimen was sent to lab rather than time cultures were obtained • Inability to obtain cultures and failure to document cause	• Education of staff regarding specific time-sensitive documentation • Ensuring readily available supplies

Schorr & Posa. SCCM Critical Connections April 2017

Indicator	Barriers	Potential Solutions
Administration of antibiotics 	• Limited or no IV access • Limited pharmacy resources (i.e., delayed bedside delivery) • Administering most clinically important antibiotic first • Concern for developing Clostridium difficile • Competing protocols and core measures (i.e., pneumonia) • Multidisciplinary communication failure (i.e., emergent source control)	• Education of staff to document inability to obtain access • Including antibiotics in medication administration systems in emergency departments and ICUs • Developing sepsis stat order for antibiotics • Collaboration with infectious diseases to ensure timely treatment and de-escalation as appropriate • Identification of lead clinician to ensure appropriate handoff

Schorr & Posa. SCCM Critical Connections April 2017

If indicated:	Barriers	Potential Solutions
Administration of 30mL/kg crystalloid 	• Inability to account for EMS fluid resuscitation • No order in electronic health record, resulting in inability of nurse to document administration • Variable or no documentation • Small bolus (250–500 mL) due to concern for volume overload • Delayed resuscitation	• Collaboration with EMS to obtain documentation of prehospital fluid administration • Order set default to 30 mL/kg • Standardization of documentation • Applying users' guide for resuscitation
Initiation of vasopressors	• Inability to account for fluid volume before starting vasopressors • Requirement for more fluid before starting vasopressors • Hypotension not due to septic shock	• Education of staff regarding specific time-sensitive documentation • Applying users' guide for initiation of vasopressors

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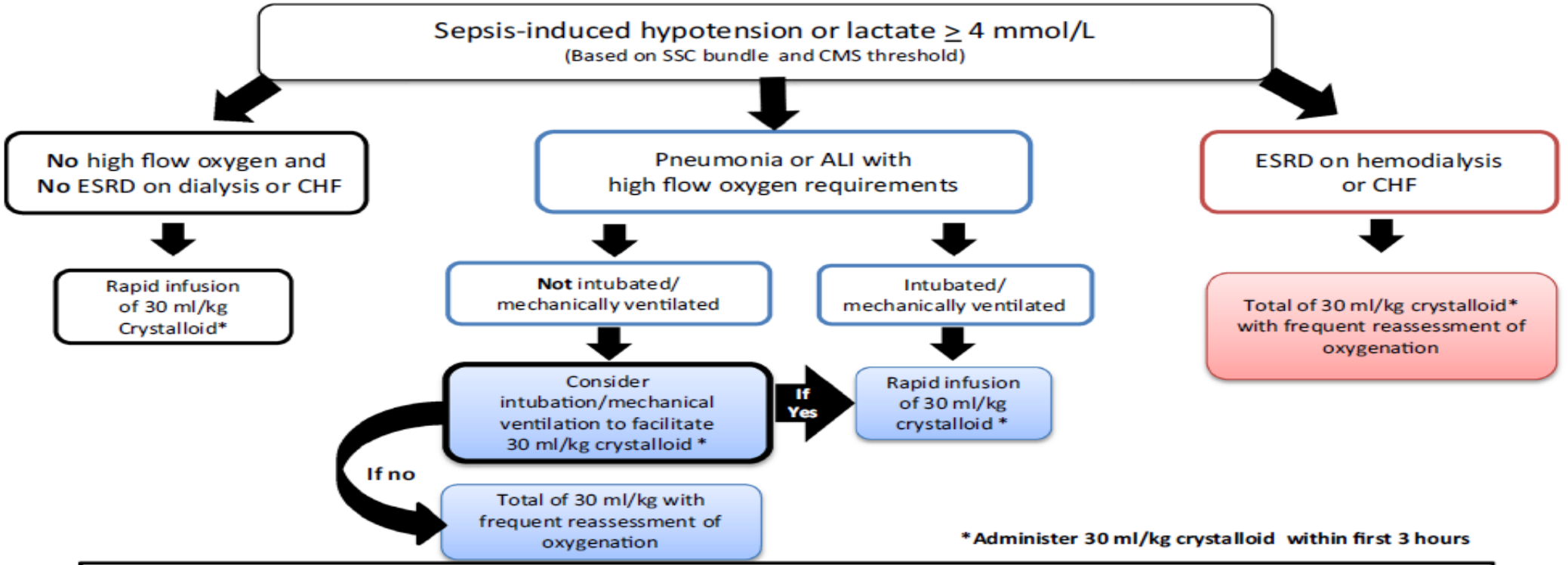
Application of Fluid Resuscitation in Adult Septic Shock



***Administer 30 ml/kg crystalloid within first 3 hours**

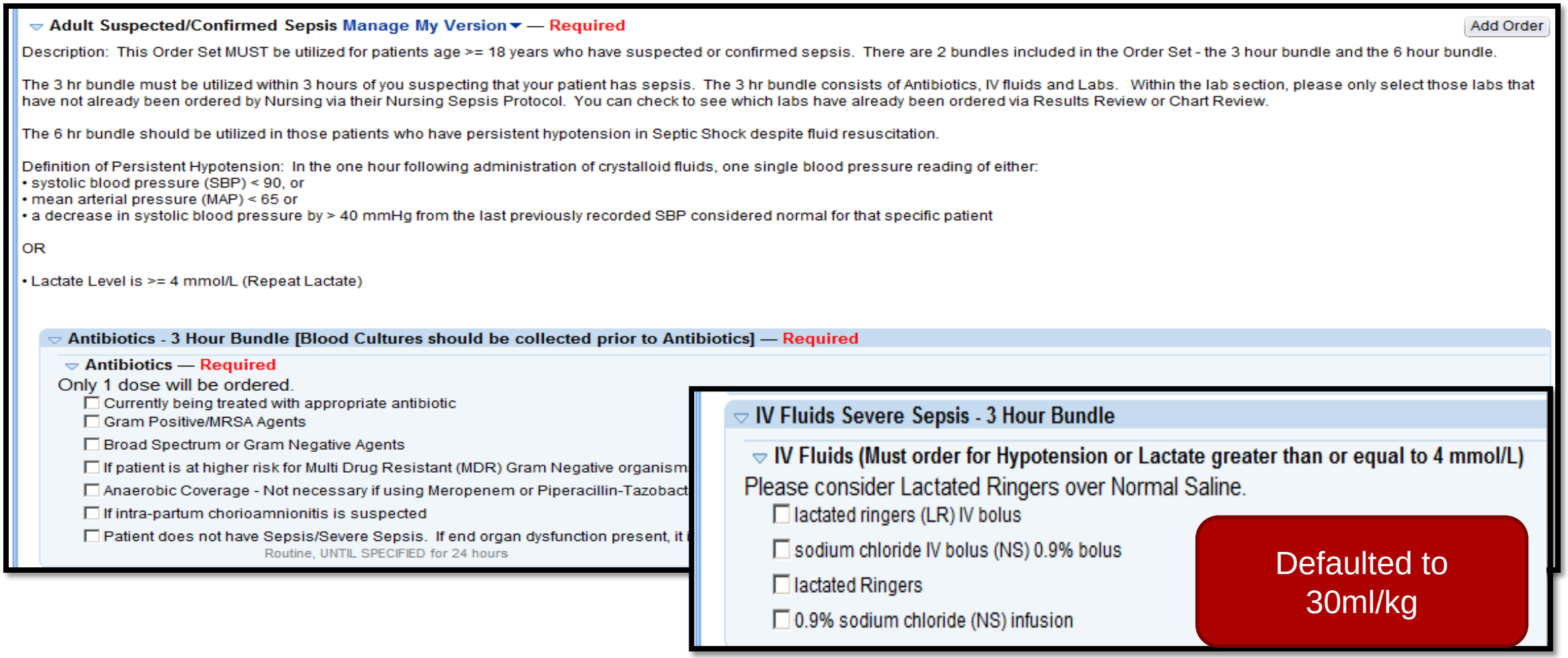
Considerations post 30ml/kg crystalloid infusion

1. Continue to balance fluid resuscitation and vasopressor dose with attention to maintain tissue perfusion and minimize interstitial edema
2. Implement some combination of the list below to aid in further resuscitation choices that may include additional fluid or inotrope therapy
   - blood pressure/heart rate response,
   - urine output,
   - cardiothoracic ultrasound,
   - CVP, ScvO2,
   - pulse pressure variation
   - lactate clearance/normalization or
   - dynamic measurement such as response of flow to fluid bolus or passive leg raising
3. Consider albumin fluid resuscitation, when large volumes of crystalloid are required to maintain intravascular volume.

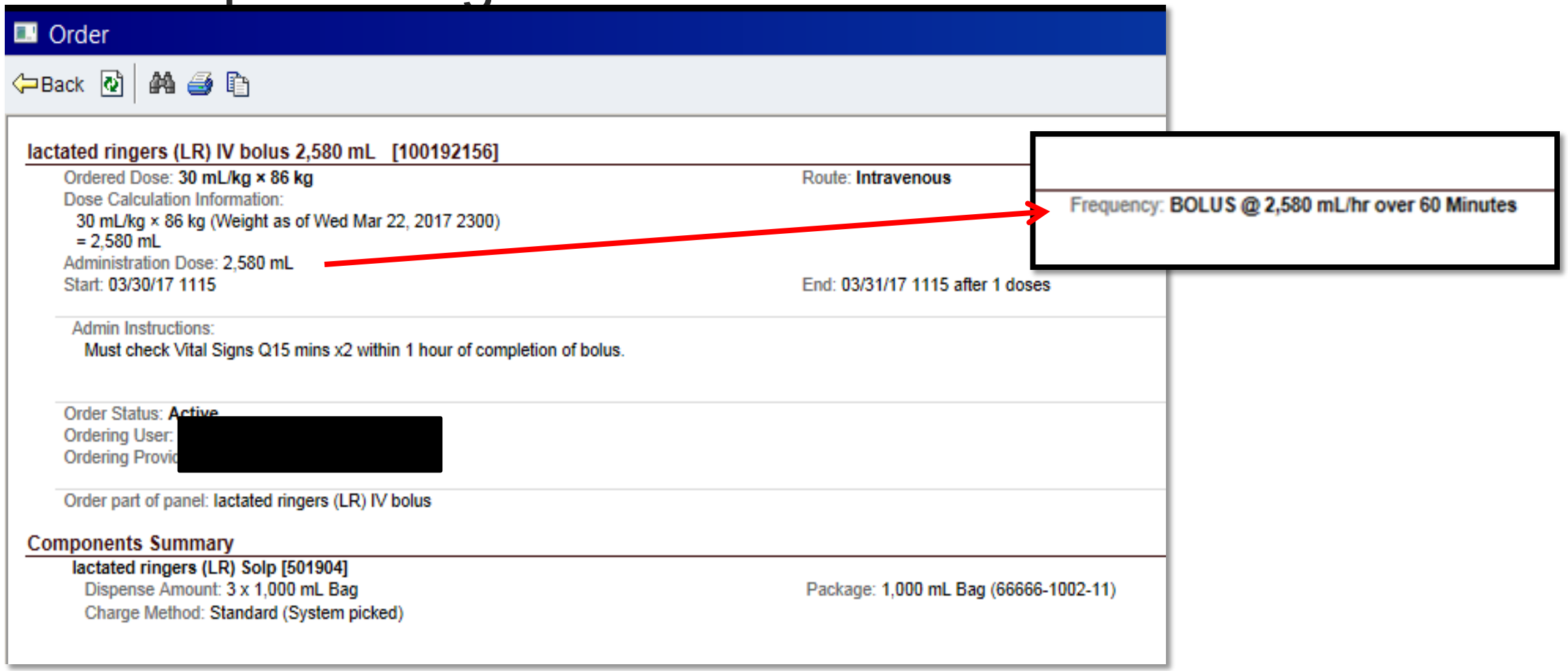
ALI=acute lung injury; CHF=congestive heart failure; CMS= US Centers for Medicare and Medicaid Services; CVP=central venous pressure; ESRD=end stage renal disease; kg=kilograms; ml=milliliters; oxyhgb=oxyhemoglobin; ScvO2=superior vena cava oxygen saturation

Dellinger, Schorr and Levy, Crit Care Med 2017 Mar;45(3)381-385.

Sepsis Order Set



Fluid Resuscitation and Follow-up Vital Signs Assessment



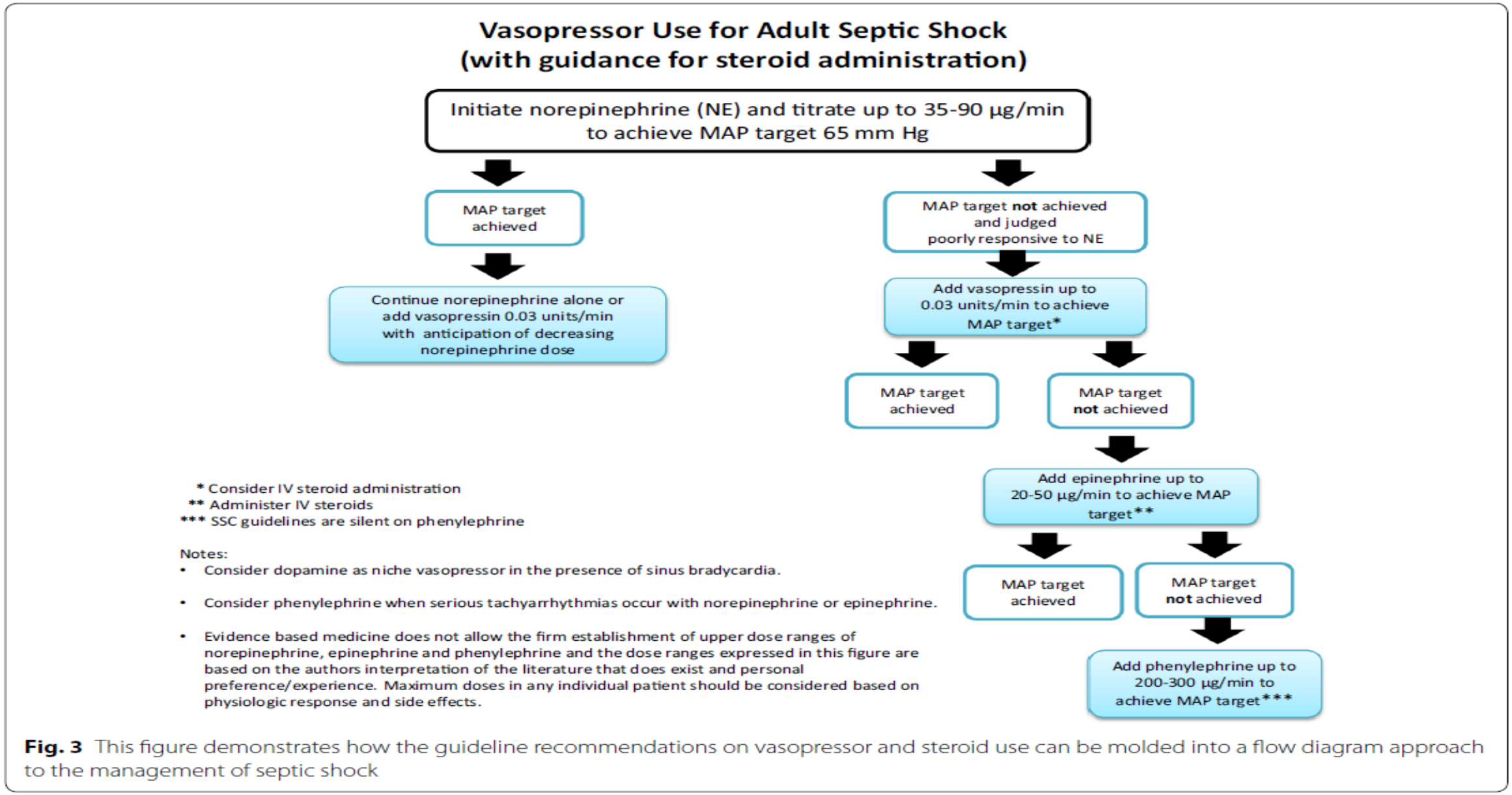


Fig. 3 This figure demonstrates how the guideline recommendations on vasopressor and steroid use can be molded into a flow diagram approach to the management of septic shock

Dellinger, Schorr and Levy, Crit Care Med 2017 Mar;45(3)381-385

Indicator	Barriers	Potential Solutions

Repeating lactate if initial > 2mmol/L	• No knowledge of initial value
	• No order for repeat
	• > 6 hours, due to delay in initial lactate
	• Miscommunication
	  • Handoff
	  • Unit transfer
		• Providing order for reflex lactate when initial value > 2 mmol/L

Assessment of fluid responsiveness	• Unavailability of physician or advanced practice provider to perform reassessment • Lack of hemodynamic monitoring tools (invasive and noninvasive) • Time stamp on note is distant from assessment time • Insufficient documentation to support assessment	• Education of staff regarding specific time-sensitive documentation • Development of a standard template for documentation

Schorr & Posa. SCCM Critical Connections April 2017

ED Provider Notes by Smith, John, MD

Note Time: 8/3/2017 1:00 AM

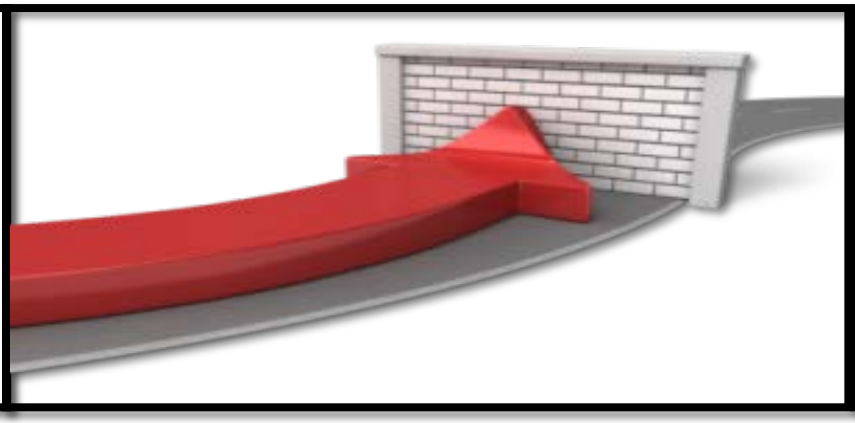
Sepsis 6 Hour Bundle: Repeat Volume Status and Tissue Perfusion Assessment

Focus examination for tissue perfusion assessment performed at 0100 AM.
Vitals: BP 68/60 mmHg | Pulse 98 | Resp 22 | SpO2 76% | Temp 99.2
I have reviewed these vitals
Cardio:regular rate and rhythm, S1, S2 normal, no murmur, click, rub or gallop
Pulmonary: clear to auscultation bilaterally, no rales or wheezes
Pulses: Right radial pulse normal Left radial pulse normal
Skin: Bilateral palms of the hands have normal color and has appropriate perfusion and warm
Capillary refill: bilateral hand nail beds are pink with good capillary refill

Advancing Toward Best Outcomes

- **Preparation** of protocols, order sets and alerts
- **Evaluate** effectiveness and use of the tools.
- **Feedback** close to the time of “misses” increases effectiveness.
- **Empower** nursing staff to actively screen and identify sepsis
- **Educate** Annually -International Sepsis Awareness Week. (September)

Summary



Progress
Local, Regional, National

Process,
People,
Communication
Documentation

Standardization,
Screening,
Order sets &
Protocols

THANK YOU FOR YOUR TIME