CareDiscovery Quality Measures – Severe Sepsis and Septic Shock: Management Bundle measure

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New Sepsis Bundle Measure Set

- Implementation of Severe Sepsis and Septic Shock: Management Bundle Measure (NQF #0500) CMS believes this is important given that mortality ranges from 16-49% and that sepsis is one of the top ten most common principal causes for hospitalizations.

- Centers for Medicare & Medicaid Services (CMS) require that hospitals must submit data for Severe Sepsis and Septic Shock beginning Oct 1, 2015.

- Hospitals participating in the Inpatient Quality Reporting (IQR) Program will be required to collect and submit data for Severe Sepsis and Septic Shock: Management Bundle measure.

- This measure was adopted for the Fiscal Year (FY) 2017 payment determination in the Calendar Year (CY) 2015 Inpatient Prospective Payment System (IPPS) Final Rule.
CDQM SEP-1

- Release date will be September 21, 2015
- Supports Regulatory Changes for new Sepsis Bundle Measure Set
- Aligns with the specification manual for IP v5.0a starting with 10-01-15 discharges (4Q 2015) through 6-30-16 (2Q 2016)
- New measure set is being added to align with CY 2015 IPPS Final Rule
- One measure in this new set: SEP-1 Early Management Bundle, Severe Sepsis/Septic Shock
- Over 60 new data elements to be abstracted - most hospitals will need to abstract this data:
  - Unless you can upload all required data elements
  - Some data elements require calculations
Action Required to Begin Abstraction

- CDQM clients that currently participate in the CMS IQR program will need to submit the Sepsis measure effective with October 2015 discharges.

- Truven plans to submit the new Sepsis measures as part of the standard quarterly submissions to CMS.

- Activation of this measure does require that hospitals submit a formal request to activate and submit this new measure set as posted via Advantage Community.
Agenda

- SEP Bundle Initial Population
- SEP Data Elements
SEP-1 Performance Measure Name: Early Management Bundle, Severe Sepsis/Septic Shock

- **Description:** Adults 18 and older with a diagnosis of severe sepsis or septic shock. Consistent with Surviving Sepsis Campaign guidelines, it assesses measurement of: lactate, obtaining blood cultures, administering broad spectrum antibiotics, fluid resuscitation, vasopressor administration, reassessment of volume status and tissue perfusion, and repeat lactate measurement. As reflected in the data elements and their definitions, the first three interventions should occur within 3 hours of presentation of severe sepsis, while the remaining interventions are expected to occur within 6 hours of presentation of septic shock.

- **Rationale:** The evidence cited for all components of this measure is directly related to decreases in organ failure, overall reductions in hospital mortality, length of stay, and costs of care.
## Sepsis Care Measures

<table>
<thead>
<tr>
<th>Measure ID</th>
<th>Measure Short Name</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEP-1</td>
<td>Early Management Bundle, Severe Sepsis/Septic Shock</td>
<td>Greater than or equal to 18 years old with LOS less than or equal to 120 days</td>
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Data Elements
# Data Element List

<table>
<thead>
<tr>
<th>Name</th>
<th>Collected For:</th>
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<tbody>
<tr>
<td>Administrative Contraindication to Care</td>
<td>SEP-1</td>
</tr>
<tr>
<td>Bedside Cardiovascular Ultrasound Date</td>
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</tr>
<tr>
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<tr>
<td>Blood Culture Collection</td>
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<td>SEP-1</td>
</tr>
<tr>
<td>Blood Culture Collection Time</td>
<td>SEP-1</td>
</tr>
<tr>
<td>Broad Spectrum or Other Antibiotic Administration</td>
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</tr>
<tr>
<td>Broad Spectrum or Other Antibiotic Administration Date</td>
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</tr>
<tr>
<td>Broad Spectrum or Other Antibiotic Administration Selection</td>
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<table>
<thead>
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<th>Name</th>
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<tr>
<td>Broad Spectrum or Other Antibiotic Administration Time</td>
<td>SEP-1</td>
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<tr>
<td>Capillary Refill Examination Date</td>
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<tr>
<td>Capillary Refill Examination Performed</td>
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<tr>
<td>Cardiopulmonary Evaluation Date</td>
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<td>Cardiopulmonary Evaluation Time</td>
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<tr>
<td>Central Venous Oxygen Measurement</td>
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<td>Central Venous Oxygen Measurement Date</td>
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<td>Central Venous Oxygen Measurement Time</td>
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<tr>
<td>Central Venous Pressure Measurement</td>
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<tr>
<td>Central Venous Pressure Measurement Date</td>
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</tr>
<tr>
<td>Crystalloid Fluid Administration Time</td>
<td>SEP-1</td>
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<tr>
<td>Directive for Comfort Care, Septic Shock</td>
<td>SEP-1</td>
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<tr>
<td>Directive for Comfort Care, Severe Sepsis</td>
<td>SEP-1</td>
</tr>
<tr>
<td>Discharge Disposition</td>
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<td>Fluid Challenge Date</td>
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<td>Fluid Challenge Performed</td>
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<td>Initial Lactate Level Collection</td>
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<tr>
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<tr>
<td>Persistent Hypotension</td>
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<td>Peripheral Pulse Evaluation Date</td>
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<tr>
<td>Septic Shock Presentation Date</td>
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<tr>
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<tr>
<td>Skin Examination Date</td>
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<td>Skin Examination Time</td>
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<tr>
<td>Transfer From Another Hospital or ASC</td>
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<tr>
<td>Vasopressor Administration</td>
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<tr>
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<td>Vasopressor Administration Time</td>
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<tr>
<td>Vital Signs Review Date</td>
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<td>Vital Signs Review Time</td>
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## Sampling Requirements

<table>
<thead>
<tr>
<th>Average Monthly Initial Patient Population Size “N”</th>
<th>Minimum Required Sample Size “n”</th>
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</thead>
<tbody>
<tr>
<td>&gt;= 101</td>
<td>20</td>
</tr>
<tr>
<td>51 - 100</td>
<td>20% of Initial Patient Population size</td>
</tr>
<tr>
<td>10 – 50</td>
<td>10</td>
</tr>
<tr>
<td>&lt; 10</td>
<td>No sampling; 100% Initial Patient Population required</td>
</tr>
</tbody>
</table>
Sepsis Initial Population (SEP)

- The population of the SEP measure set is identified using 5 data elements:
  - ICD-10-CM Principal Diagnosis Code
  - ICD-10-CM Other Diagnosis Codes
  - Admission Date
  - Birthdate
  - Discharge Date

- Patients admitted to the hospital for inpatient acute care with an ICD-10-CM Principal or Other Diagnosis Code for SEP as defined in Appendix A, Table 4.01, a Patient Age (Admission Date minus Birthdate) greater than or equal to 18 years, and a Length of Stay (Discharge Date minus Admission Date) less than or equal to 120 days are included in the SEP Initial Patient Population and are eligible to be sampled.
Sepsis Initial Patient Population Algorithm

- ICD-10-CM Prin/Other Code, Table 4.01,
- Age >= 18
- LOS <= 120
Sepsis Measure Information Form

- Measure ID #: SEP-1
- Performance Measure Name: Early Management Bundle, Severe Sepsis/Septic Shock
- Type of Measure: Process so improvement noted as: An increase in the rate
- Focus on 18 years and older with a diagnosis of severe sepsis or septic shock.
- Consistent with Surviving Sepsis Campaign guidelines, assesses measurement of lactate, obtaining blood cultures, administering broad spectrum antibiotics, fluid resuscitation, vasopressor administration, reassessment of volume status and tissue perfusion, and repeat lactate measurement.
Sepsis Measure Information Form

- The first 3 interventions should occur within 3 hours of presentation of severe sepsis, the remaining interventions are expected to occur within 6 hours of presentation of septic shock.

- The evidence cited for all components of this measure is directly related to decreases in organ failure, overall reductions in hospital mortality, length of stay, and costs of care.

- Multicenter efforts to promote bundles of care for severe sepsis and septic shock were associated with improved guideline compliance and lower hospital mortality
SEP-1 Numerator

- Numerator is Patients who received ALL of the following: Received within three hours of presentation of severe sepsis:
  - Initial lactate level measurement
  - Broad spectrum or other antibiotics administered
  - Blood cultures drawn prior to antibiotics

- AND received within six hours of presentation of severe sepsis:
  - Repeat lactate level measurement only if initial lactate level is elevated

- AND ONLY if Septic Shock present: Received within three hours of presentation of septic shock:
  - Resuscitation with 30 ml/kg crystalloid fluids

- AND ONLY IF hypotension persists after fluid administration, received within six hours of presentation of septic shock: Vasopressors
SEP-1 Numerator

- Repeat volume status and tissue perfusion assessment consisting of either
  A focused exam including:
  - Vital signs, AND
  - Cardiopulmonary exam, AND
  - Capillary refill evaluation, AND
  - Peripheral pulse evaluation, AND
  - Skin examination

- OR Any two of the following four:
  - Central venous pressure measurement
  - Central venous oxygen measurement
  - Bedside Cardiovascular Ultrasound
  - Passive Leg Raise or Fluid Challenge

- Excluded Populations: Patients receiving IV antibiotics for more than 24 hours prior to presentation of severe sepsis.
SEP -1 Denominator

- Denominator- Inpatients age 18 and over with an *ICD-10-CM Principal or Other Diagnosis Code of Sepsis, Severe Sepsis, or Septic Shock.*

- Included Populations: Discharges age 18 and over with an *ICD-10-CM Principal or Other Diagnosis Code of Sepsis, Severe Sepsis, or Septic Shock as defined in Appendix A, Table 4.01.*

**Excluded Populations:**
- Directive for Comfort Care within 3 hours of presentation of severe sepsis
- Directive for Comfort Care within 6 hours of presentation of septic shock
- Administrative contraindication to care
- Length of Stay >120 days
- Transfer in from another acute care facility
- Patients with severe sepsis who expire within 3 hours of presentation
- Patients with septic shock who expire within 6 hours of presentation
Administrative Contraindication to Care

- Did the patient or surrogate decision-maker decline consent for blood draw, fluid administration, or antibiotic administration?

- Allowable Value
  1 - Yes there is documentation that the patient or decision maker refused draw, fluids or antibiotic
  2 - Yes. There is a witnessed consent form for draw, fluids, or antibiotic marked “refused.”
  3 - No. There is no documentation or witnessed consent form

- Only acceptable sources are physician/APN/PA documentation or a witness-signed consent form marked “refused.”

- Consent forms that are marked “refused” may be witnessed by physicians, APNs, or PAs or other hospital personnel, but the forms must be witnessed.
Transfer From Another Hospital or ASC

- Was the patient received as a transfer from an IP/OP or emergency/observation department of an outside hospital or from an ambulatory surgery center?

- Allowable Values:
  
  Y (Yes) Patient was received as a transfer from IP, OP, or ED observation department of an outside hospital or from an ambulatory surgery center.
  
  N (No) Patient was not received as a transfer from IP, OP, or ED observation department of an outside hospital or from an ambulatory surgery center

- The notes offer lists of when to select yes or no.

- If a patient is transferred in from any emergency department (ED) or observation unit OUTSIDE of your hospital, select “Yes.”

- If the patient is transferred to your hospital from an outside hospital where he was an inpatient or outpatient, select “Yes.”
Severe Sepsis Present, Date and Time

- Was severe sepsis present? Value: 1 (Yes) Severe Sepsis was present. 2 (No) Severe Sepsis was not present, or Unable to Determine.

- To establish severe sepsis, three criteria must be met within 6 hours of each other.
  
  a. Documentation of a suspected source of clinical infection. There may be reference to “possible infection from xx”, “suspect infection from xx”, or similar reference in progress notes, consult notes, or similar physician/APN/PA documentation

  b. Two or more manifestations of systemic infection according to the Systemic Inflammatory Response Syndrome (SIRS) criteria, which are:
     i. Temperature > 38.3 C or < 36.0 C
     ii. Heart rate (pulse) > 90
     iii. Respiration > 20 per minute
     iv. White blood cell count > 12,000 or < 4,000 or > 10% bands
Severe Sepsis Present, Date and Time

c. Organ dysfunction, evidenced by any one of the following:

   i. Systolic blood pressure (SBP) < 90, or mean arterial pressure < 65, or a systolic blood pressure decrease of more than 40 mmHg from the last previously recorded SBP considered normal for that specific patient.

   ii. Creatinine > 2.0, or urine output < 0.5 mL/kg/hour for 2 hours.

   iii. Bilirubin > 2 mg/dL (34.2 mmol/L).

   iv. Platelet count < 100,000.

   v. INR > 1.5 or aPTT > 60 sec.

   vi. Lactate > 2 mmol/L (18.0 mg/dL).

- Laboratory values must be within the 6 hours preceding onset of severe sepsis. If there are multiples of any lab value, use the value reported closest to the time of onset of severe sepsis.
Severe Sepsis Present, Date & Time

- If there is more than one episode of severe sepsis in the record, abstract only the first episode.

- If criteria for severe sepsis are not met, but there is physician/APN/PA documentation of severe sepsis, choose Value “1.”

- If criteria for severe sepsis are not documented and there is not physician/APN/PA documentation of severe sepsis, but there is physician/APN/PA documentation of septic shock, choose Value “1.”

- Source: ED record, Physician documentation, I & O sheets, labs, vitals
Directive for Comfort Care, Severe Sepsis

- Refers to medical treatment of a dying person where the natural dying process is permitted to occur while assuring maximum comfort. Did physician/APN/PA documentation of comfort measures only occur?

- Includes attention to the psychological and spiritual needs of the patient & family. It is not equivalent to a physician order to withhold emergency resuscitative measures such as DNR.

- Allowable Values 1 - Yes CMO prior to or within 3 hrs. presentation of severe sepsis or 2 – No CMO prior to or within 3 hrs of severe sepsis

- Only accept terms in the list of inclusions. See notes

- Documentation of some inclusion terms (in the notes) should be disregarded. If the only documentation found is an inclusion term in the following situations, select Value “2.”
Directive for Comfort Care, Severe Sepsis

- State Authorized portable orders (SAPOs) addressed:
  - SAPOs are specialized forms or identifiers authorized by state law that translate a patient’s preferences about specific end-of-life treatment

- Sources: PHYSICIAN/APN/PA DOCUMENTATION ONLY Consultation notes, DC summary, DNR/MOLST/POLST forms, ED record, H & P, Physician orders & Progress notes.
  - NOT restraint order sheet.

- Includes: Brain death, Comfort care, Comfort measures, Comfort measures only (CMO), Comfort only, DNR-CC, End of life care, hospice, Hospice care, Organ harvest, Terminal care, Terminal extubation
**Initial Lactate Level Collection, Date, and Time**

- Documentation of collection of an initial lactate level between 6 hours prior to and 3 hours following the presentation of severe sepsis.

- Allowable Value 1 yes initial lactate level was drawn or 2 - no.

- Abstract level closest to time of presentation of severe sepsis.

- Do not use “Labs Drawn” or physician order for levels. May use a physician order that has a notation “drawn” or “collected” next to it.

- Use the collection time in nursing notes, next to a physician order, or on lab reports.

- If failure to collect the specimen or the specimen was contaminated, select Value “1.” If level is drawn but there are no results in the record, choose Value “1.” If Value “2” is chosen for this data element, you must also choose Value “2” for the data element *Repeat Lactate Level Collection.*
Initial Lactate Level Collection

- Sources: Lab Reports, nurses notes, physician/APN/PA notes
- Inclusion: Lactate Drawn & lactate level collected
**Broad Spectrum or Other Antibiotic Administration, Date and Time**

- Was a broad spectrum or other antibiotic administered intravenously in the time window 24 hours prior to and 3 hours following the presentation of severe sepsis?

- Allowable value
  1 – yes a broad spectrum or other antibiotic was administered IV in the time window 24 hours prior to and 3 hours following the presentation of severe sepsis or
  2 – No it was not.

- To choose “1”, there must be a least one dose of the antibiotic given in the 24 hours preceding or 3 hours after the sepsis presentation

- If one of the IV antibiotics listed on Table 5.0 was not given to the patient within 3 hours after presentation of severe sepsis
**Broad Spectrum or Other Antibiotic Administration**

**Date & Time**

- Choose value “1”, there must be a least one dose of the antibiotic given in the 24 hours preceding or 3 hours after the severe sepsis presentation time.

- If one of the IV on Table 5.0 was not given to the patient within 3 hours after presentation, locate the name or names of antibiotics given within the 3 hour time window and identify the class they belong to by consulting Appendix C, Table 5.1,
  - There must be one antibiotic from a class in column A and one antibiotic from a class in column B administered.

- If the patient received both an antibiotic from Table 5.0, 5.1, or in data element *Broad Spectrum or Other Antibiotic Selection*, and they also received an antibiotic not listed in any of those sources, abstract the antibiotic listed on Table 5.0, 5.1, or in the data element.
**Broad Spectrum or Other Antibiotic Administration**

**Date & Time**

- Choose value “2” if no antibiotic was given within 24 hours preceding or 3 hours following the severe sepsis presentation time.

- Abstract the dose closest to and preceding the time of presentation of severe sepsis, abstract actual doses (not just an order in chart or on operative report), do not infer.
**Broad Spectrum or Other Antibiotic Administration Selection**

- Was the intravenous (IV) antibiotic administered within 3 hours after the date and time of presentation of severe sepsis consistent with antibiotic selection guidelines detailed in the Notes for Abstraction?

- **Allowable Values:** Allowable Value 1 or 2
  1 (Yes) The IV antibiotic that was given within 3 hours following the presentation of severe sepsis is consistent with antibiotic selection guidelines.
  2 (No) The IV antibiotic that was given within 3 hours following the presentation of severe sepsis is not consistent with antibiotics

- See Antibiotic monotherapy table in Appendix C, Table 5.0 & combination Table 5.1 – abstract within the three hour time window
Blood Culture Collection

- Was a blood culture (BC) collected in the time window 48 hours prior to and 3 hours following the presentation of severe sepsis?

  1 – Yes a BC was collected in 48 hours prior to and 3 hours following presentation of severe sepsis.  2 - No it wasn’t.

- Use the BC collection documented in nursing notes or on laboratory culture or Gram Stain report documents.

- Failed attempt to collect the specimen or contamination select value “1.”

- If there is documentation that a BC was collected and it is the earliest mention of a BC, this date and time can be used, select value “1.”
**Blood Culture Collection Date & Time**

- *Window 48 hours prior to or 3 hours following the presentation*

- Abstract the actual collection not the physician order

- If given antibiotics in 24 hours before presentation of severe sepsis, begin abstraction of a blood culture 24 hours before that 1st dose.

- If the patient received the first dose of antibiotics more than 24 hours prior to the time of presentation of severe sepsis, choose Value “2.”

- If patient was not on antibiotics at the time of presentation of severe sepsis, begin abstracting 24 hours prior to presentation of severe sepsis.

- **Sources:** ED record, H&P, Labs, microbiology, nurses and progress notes
**Initial Lactate Level Result**

- What was the initial lactate level result?

- **Allowable Values**
  1 \( (\leq 2) \) initial lactate level was \( \leq 2 \), or no initial lactate level
  2 \( (> 2 \text{ and } < 4.0) \) initial lactate level was \( >2.0 \) and less than 4.0.
  3 \( (\geq 4) \) initial lactate level was 4.0 or more, or no result or UTD.

- Use the result for the initial lactate level drawn in the data element **Initial Lactate Level Collection.** If no initial lactate level choose “1.”

- If there was an initial lactate level collected but there is no result or the result cannot be determined, choose Value “3.”

- **Sources:** Lab results & physician/APN/PA notes
Repeat Lactate Level Collection

- Was a repeat lactate level drawn in the time window beginning at severe sepsis presentation date and time and ending 6 hours thereafter?
  1 – Yes, a repeat lactate level was drawn in the time window beginning at severe sepsis presentation date and time and ending 6 hours thereafter.
  2 – No.

- Repeat lactate level is after the initial lactate level. Must be drawn in the time window beginning at severe sepsis presentation date and time and ending 6 hours after to choose Value “1.” If repeat level is drawn but not in the time window choose value “2.”

- If no initial lactate level drawn (answered Value “2” to Initial Lactate Level Collection data element), choose Value “2”

- Do not use documentation such as “Labs Drawn” & if attempt does not = collection use value 1.
Repeat Lactate Level Date & Time

- Window beginning at severe sepsis presentation date/time & ending 6 hours thereafter

- If there was no initial lactate level drawn (answered Value “2” to Initial Lactate Level Collection data element), choose Value “2” for this data element.

- Do not use “Labs Drawn”, it is not specific for lactate level.

- If a repeat lactate level is ordered and there is an attempt to collect it, but the attempt results in failure to collect the specimen (too dehydrated to get a vein) or the specimen was contaminated during or after the draw, select Value “1.”

- Sources: lab reports, nursing notes, physician notes/orders
Septic Shock Present

- Is there documentation of the presence of septic shock?

- Allowable Value 1 – Yes there is documentation of Septic Shock or 2 No/UTD

- The criteria for determining that Septic Shock is present are as follows:
  a. There must be documentation of severe sepsis present **AND**
  b. Tissue hypoperfusion persists in the hour after crystalloid fluid administration, evidenced by either
     - systolic blood pressure (SBP) < 90, or
     - mean arterial pressure < 65 or
     - a decrease in systolic blood pressure by > 40 mmHg from the last previously recorded SBP considered normal for that specific patient **OR**
     - Lactate level is >= 4 mmol/L
Septic Shock Presentation Date & Time

- For evaluation of BP parameters to establish whether or not hypoperfusion persists after crystalloid fluid admin:
  - begin abstracting at the time that crystalloid fluid administration concludes; abstract for the time period that follows for the next hour only. Choose Value “1” if hypotension (systolic blood pressure < 90, or mean arterial pressure < 65 or a decrease in systolic blood pressure by > 40 mmHg) was present in the hour after crystalloid fluid administration.

- If Severe Sepsis was not present, choose Value “2.”

- If crystalloid fluids were not administered after the presentation date and time of severe sepsis, choose Value “2.”

- If criteria for Septic Shock are not met, but there is physician/APN/PA documentation of Septic Shock, choose Value “1.”
**Directive for Comfort Care, Septic Shock**

- Refers to medical treatment of a dying person where the natural dying process is permitted to occur while assuring maximum comfort. It includes attention to the psychological and spiritual needs of the patient and support for both the dying patient and the patient's family. Not equivalent to a physician order to withhold emergency resuscitative measures such as Do Not Resuscitate (DNR).

- Did physician/APN/PA documentation of comfort measures only occur?
  - 1 (Yes) Physician/APN/PA documentation of comfort measures only was prior to or within 6 hours of the presentation of septic shock.
  - 2 (No) Physician/APN/PA documentation of comfort measures only was not prior to or within 6 hours of presentation of septic shock, or not documented or time is unclear.
Directive for Comfort Care, Septic Shock

- Only accept terms identified in the list of inclusions. See notes and examples for abstraction
- Determine the earliest documentation of comfort measures only by the physician/APN/PA.
- State-authorized portable orders (SAPOs) listed in notes
- Sources: PHYSICIAN/APN/PA DOCUMENTATION ONLY Consultation notes, DC summary, DNR/MOLST/POLST forms, ED record, H & P, Physician orders & Progress notes.
### Crystalloid Fluid Administration, Date and Time

- Were crystalloid fluids administered after the presentation of septic shock?

- Allowable Value
  1. Crystalloid fluids were administered after the presentation of septic shock, or crystalloid fluids were being administered at the time of presentation of septic shock AND the volume ordered was 30 mL/kg.
  2. Crystalloid fluids were administered after the presentation of septic shock, or crystalloid fluids were being administered at the time of presentation of septic shock AND the volume ordered was less than 30 mL/kg., or unable to determine.
  3. (No) Crystalloid fluids were not being administered at the time of presentation of septic shock and were not administered after the time of presentation of septic shock, or unable to determine.
Crystalloid Fluid Administration, Date and Time

- Crystalloid fluids are only 0.9% Normal Saline or Lactated Ringers

- Volume - calculate the patient weight in kilograms.
  - divide the weight in pounds by 2.2 = weight in kilograms.
  - Next, multiply the weight in kilograms by 30 = number of mLs of IV that should be specified in the order.

- Example: Patient is 160 pounds. 160/2.2 = 72.72. 72.72 x 30 = 2182 (mLs). Order is “Infuse 2400 mLs normal saline over the next two hours.” Choose Value “1” (2400 mL is greater than 2182).

- Documentation must be clear that fluids were actually given & don’t abstract line flushes & Physician orders may be used

- If fluids are given at 1000 mL over 8 hours, or at a “Keep Vein Open” (KVO) rate, choose Value “2.”
Crystalloid Fluid Administration Date & Time

- If a fluid volume is ordered but there is no order for the time over which the IV fluids are to be given, choose Value “2.”

- Sources: IV Record, MAR, weight record, physician/APN/PA orders

- Date and Time: Use the date solution was started as an IV infusion, & use the date the unit of fluid was started or hung.
Persistent Hypotension

- Criteria listed in definition related to systolic BP, MAP, or drop in BP >40

- Was persistent hypotension present within one hour of the conclusion of crystalloid fluid administration?

- Allowable Values:
  1 (Yes) Crystalloid fluids were administered at the rate of 30 mL/kg and persistent hypotension was present within one hour of conclusion of fluid administration.
  2 (No) Persistent hypotension was not present within one hour of the conclusion of crystalloid fluid administration at the rate of 30 mL/kg.
  3 (No) or UTD The patient was not assessed for persistent hypotension in the one hour after the conclusion of crystalloid fluid administration at the rate of 30 mL/kg, or Unable to Determine.
  4 (Not applicable) Crystalloid fluids were not administered, or crystalloid fluids were administered but at a rate less than 30 mL/kg.
**Persistent Hypotension**

- Notes indicate to begin abstracting at the time that crystalloid fluid administration concludes; abstract for the time period that follows for the next hour only. Choose Value “1” if persistent hypotension was present, choose Value “2” if not present.

- If there was no BP or mean arterial pressure recorded in the one hour after crystalloid fluid conclusion time, choose Value “3.”

- If no crystalloid fluids were administered, choose Value “4.”

- Fluids are LR or 0.9% Normal Saline only weight calculation ex. given

- Sources: ED record, Nurses notes, physician/APN/PA notes, VS flow sheet
Vasopressor Administration, Date & Time

- Was an intravenous vasopressor administered after the presentation of septic shock?

- Allowable Values:
  1 (Yes) The patient was given an IV vasopressor after the presentation of septic shock, or the patient was receiving a vasopressor at the time of presentation of septic shock.
  2 (No) The patient was not given an IV vasopressor after the time of presentation of septic shock and was not receiving a vasopressor at the time of septic shock.

- Notes indicate to abstract only vasopressors is contained in Appendix C, Table 5.2 and only those given via IV route

- Abstract only dose actually given. Do not abstract test doses
**Vasopressor Administration, Date & Time**

- A dose can be abstracted that is given by one person and documented by another.

- Authentication on one side/page of a multi-side or multi-page form applies to all pages of the form.

- The MARs must be clearly show the dose as “given”.

- Sources: ED record, IV flow sheets, MAR, Nursing notes, Physician/APN/PA notes, transport records.
**Vital Signs Review Performed, Date and Time**

- Was a vital signs review documented by a physician/APN/PA 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?

- **Allowable Values:**
  1. (Yes) Vital signs review was documented by a physician/APN/PA 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.
  2. (No) Vital signs review was not documented by a physician/APN/PA 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, or unable to determine.
**Vital Signs Review Performed Date & Time**

- Abstract at the *crystalloid fluid admin date and time and stop abstracting six hours after the presentation* of septic shock date and time.

- If multiple vital signs reviews in the time window, abstract the date and time of the review with all four components of temp, pulse or heart rate, respirations and blood pressure, done latest. From one entry.

- Sources: PHY/APN/PA documentation only: consult notes • ED record, H & P and progress notes.
Cardiopulmonary Evaluation Performed, Date and Time

- Was a cardiopulmonary evaluation performed by a physician/APN/PA 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?
  1 (Yes) Cardiopulmonary evaluation was performed by a physician/APN/PA.
  2 (No) Cardiopulmonary evaluation was not performed by a physician/APN/PA, or unable to determine.

- Start abstracting at the **crystalloid fluid administration date and time and stop six hours after the presentation of septic shock date and time**.

- Cardio evaluation is done to assess both the heart and lungs.
Capillary Refill Examination Performed, Date and Time

- Was a capillary refill examination performed by a physician/advanced practice nurse/physician assistant (physician/APN/PA) 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?

- **Allowable Values:**
  1 (Yes) Capillary refill examination was performed by a physician/APN/PA.
  2 (No) Capillary refill examination was not performed by a physician/APN/PA, or unable to determine.

- Start abstracting at the crystalloid fluid administration date and time and stop abstracting six hours after the presentation of septic shock date and time.
Capillary Refill Examination Performed, Date and Time

- Capillary refill exam is to assess superficial circulatory status & may be “capillary refill,” “fill,” “nail bed refill,” “mottled,” or similar.

- Capillary refill must be documented by physician/APN/PA & done in time window beginning at the crystalloid fluid admin date/time & end six hours after the presentation of septic shock.

- Sources: PHY/APN/PA documentation only: consult notes, ED record, H & P, progress notes.
Peripheral Pulse Evaluation Performed, Date and Time

- Was a peripheral pulse evaluation performed by a physician/APN/PA 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?

  1 (Yes) Peripheral pulse evaluation was performed by a physician/APN/PA 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.

  2 (No) Peripheral pulse evaluation was not performed by a physician/APN/PA in time window beginning at the crystalloid fluid administration date and time and ending six hours after presentation of septic shock date and time, or UTD.
Peripheral Pulse Evaluation Performed, Date and Time

- Start abstracting at the crystalloid fluid administration date and time and stop abstracting six hours after the presentation of septic shock date and time. If many abstract the one done latest in the timeframe.

- Peripheral pulse eval is to assess circulatory status and may include radial pulse, dorsalis pedis (or DP) pulse, or posterior tibialis (or PT) pulse. If none in the timeframe choose value “2”.
Skin Examination Performed, Date and Time

- Was a skin examination performed by a physician/APN/PA 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?
  1 (Yes) Skin examination was performed by a physician/APN/PA
  2 (No) Skin examination was not performed by a physician/APN/PA, or unable to determine

- Start abstracting at the crystalloid fluid administration date and time and stop abstracting six hours after the presentation of septic shock date and time.

- Skin exam is done to assess superficial circulatory status and must include reference to skin color. May include such terms as “flushed,” “mottled,” “pale,” “pallor,” “pink,” or similar terminology by Phy/APN/PA
Central Venous Oxygen Measurement, Date and Time

- Was a central venous oxygen measurement obtained after the presentation of septic shock?
  1 (Yes) Central Venous Pressure Measurement was obtained within 6 hours after the presentation of septic shock.
  2 (No) Central Venous Pressure Measurement was not obtained within 6 hours after the presentation of septic shock, or unable to determine.

- Central Venous Oxygen measurement may be expressed as \( \text{SvO2} \) or \( \text{ScvO2} \) (central venous oxygen saturation), & needs to be obtained via central venous catheter.

- Sources: Critical Care flow sheet, nurses notes, PHY/APN/PA notes, procedure notes, respiratory therapy notes or flow sheet & VS flow
Central Venous Pressure Measurement, Date and Time

- Was a central venous pressure measurement (CVP) obtained within 6 hours after the presentation of septic shock?
  
  1 (Yes) Central Venous Pressure Measurement was obtained within 6 hours after the presentation of septic shock.
  
  2 (No) Central Venous Pressure Measurement was not obtained within 6 hours after the presentation of septic shock, or unable to determine.

- If there are multiple CVP measurements, abstract the first one that occurs after the time and date of septic shock presentation.

- CVP measurement may be expressed as CVP, central venous pressure, or RAP, right atrial pressure.

- Reading must be obtained via central venous catheter
Bedside Cardiovascular Ultrasound Performed, Date and Time

- Was a bedside cardiovascular ultrasound performed 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?
  1 (Yes) Bedside cardiovascular ultrasound was performed 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.
  2 (No) Bedside cardiovascular ultrasound was not as above time window

- Start abstracting at the crystalloid fluid administration date and time and stop 6 hours after the presentation of septic shock date/time.

- Bedside cardio US may be referred to as echocardiogram, trans-thoracic echo, trans-esophageal echo, IVC Ultrasound, 2D echo, cardiac echo, Doppler echocardiogram, echocardiogram with Doppler, or Doppler ultrasound of the heart.
**Bedside Cardiovascular Ultrasound Performed, Date and Time**

- If the cardiovascular ultrasound is performed in a location other than the bedside, Ex. imaging department or ultrasound department, choose Value “1.”

- Abstract actual performance of the ultrasound.

- If multiple ultrasounds done in the time window, abstract the date of the procedure that was done latest. If none abstract value 2.

- Sources: bedside cardio ultrasound report, nurses & progress notes
Passive Leg Raise Exam Performed, Date and Time

- Was a passive leg raise examination performed by a physician/APN/PA 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?

- **Allowable Values:**
  1 (Yes) Passive leg raise examination was performed by a physician/APN/PA 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.
  2 (No) Passive leg raise examination was not performed per above window

- Start abstracting at the crystalloid fluid administration date and time and stop abstracting six hours after the presentation of septic shock date and time.
Passive Leg Raise Exam Performed, Date and Time

- Look for terms as PLR or leg raise and is commonly noted to be either positive or negative. With the patient in a semi-recumbent position, both legs are raised to a 45 degree angle to evaluate the vital sign response to additional fluid load.

- Only abstract documentation indicating actual performance of the examination by a physician/APN/PA.

- If exams performed in the time window abstract the date and time of the procedure that was done latest.

- Sources: PHY/APN/PA documentation only- Consultation notes, ED record, H&P & Progress notes
Fluid Challenge Performed, Date and Time

- Was a fluid challenge performed 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?

- Allowable Values:
  1 (Yes) Fluid challenge was performed 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
  2 (No) Fluid challenge was not performed 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, or unable to determine
Fluid Challenge Performed, Date and Time

- Fluid challenge is to assess responsiveness to fluids.

- Similar to crystalloid fluid administration but is done after the crystalloid fluid administration if the patient remains hypotensive.

- This is a rapid infusion of 0.9% saline or Lactated Ringers, typically 500 mL in fifteen minutes or 1000 mL in 30 minutes.

- Select “yes” if at least one fluid challenge in the time window beginning at the crystalloid fluid administration date/time and ending six hours after the presentation of septic shock date and time.

- Find a physician order for fluid challenge, fluid bolus, rapid fluid infusion, or similar terminology followed by specification of the IV fluid, volume, and time to infuse.
# Appendix A

## Table 4.01: Severe Sepsis and Septic Shock (SEP)

<table>
<thead>
<tr>
<th>ICD-10-CM Code</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A021</td>
<td>Salmonella sepsis</td>
</tr>
<tr>
<td>A227</td>
<td>Anthrax sepsis</td>
</tr>
<tr>
<td>A267</td>
<td>Erysipelothrix sepsis</td>
</tr>
<tr>
<td>A327</td>
<td>Listerial sepsis</td>
</tr>
<tr>
<td>A400</td>
<td>Sepsis due to streptococcus, group A</td>
</tr>
<tr>
<td>A401</td>
<td>Sepsis due to streptococcus, group B</td>
</tr>
<tr>
<td>A403</td>
<td>Sepsis due to Streptococcus pneumoniae</td>
</tr>
<tr>
<td>A408</td>
<td>Other streptococcal sepsis</td>
</tr>
<tr>
<td>A409</td>
<td>Streptococcal sepsis, unspecified</td>
</tr>
<tr>
<td>A4101</td>
<td>Sepsis due to Methicillin susceptible <em>Staphylococcus aureus</em></td>
</tr>
<tr>
<td>A4102</td>
<td>Sepsis due to Methicillin resistant <em>Staphylococcus aureus</em></td>
</tr>
<tr>
<td>A411</td>
<td>Sepsis due to other specified staphylococcus</td>
</tr>
<tr>
<td>A412</td>
<td>Sepsis due to unspecified staphylococcus</td>
</tr>
<tr>
<td>A413</td>
<td>Sepsis due to <em>Hemophilus influenzae</em></td>
</tr>
<tr>
<td>A414</td>
<td>Sepsis due to <em>anaerobes</em></td>
</tr>
<tr>
<td>A4150</td>
<td>Gram-negative sepsis, unspecified</td>
</tr>
<tr>
<td>A4151</td>
<td>Sepsis due to <em>Escherichia coli</em> [E. coli]</td>
</tr>
<tr>
<td>A4152</td>
<td>Sepsis due to <em>Pseudomonas</em></td>
</tr>
<tr>
<td>A4153</td>
<td>Sepsis due to <em>Serratia</em></td>
</tr>
<tr>
<td>A4159</td>
<td>Other Gram-negative sepsis</td>
</tr>
<tr>
<td>A4181</td>
<td>Sepsis due to <em>Enterococcus</em></td>
</tr>
<tr>
<td>A4189</td>
<td>Other specified sepsis</td>
</tr>
<tr>
<td>A419</td>
<td>Sepsis, unspecified organism</td>
</tr>
<tr>
<td>A427</td>
<td><em>Actinomycotic sepsis</em></td>
</tr>
<tr>
<td>A5486</td>
<td>Gonococcal sepsis</td>
</tr>
<tr>
<td>B377</td>
<td>Candidal sepsis</td>
</tr>
<tr>
<td>R6520</td>
<td>Severe sepsis without septic shock</td>
</tr>
<tr>
<td>R6521</td>
<td>Severe sepsis with septic shock</td>
</tr>
</tbody>
</table>
SEP-1 Basic Abstraction Page
SEP-1 Enhanced Abstraction Page

## SEP - Early Management Bundle, Severe Sepsis/Septic Shock

### Measure case criteria

- **Did the patient or surrogate decision-maker decline consent for blood draw, fluid administration, or antibiotic administration?**

- **Was the patient received as a transfer from an inpatient, outpatient or emergency/observation department of an outside hospital or from an ambulatory surgery center?**

- **What time was the patient discharged?**

### Presentation of Severe Sepsis

- **Was severe sepsis present?**

- **What was the date on which the patient met the last criterion for severe sepsis?**

- **What was the time at which the last criterion was met to establish the presence of severe sepsis?**

- **Did physician/PA documentation of comfort measures only occur?**

### Severe Sepsis Antibiotics

- **Abstraction type:**
  - Severe sepsis presentation date
  - Severe sepsis presentation time

- **Was a broad spectrum or other antibiotic administered intravenously in the time window 24 hours prior to and 3 hours following the presentation of severe sepsis?**

- **What was the earliest date on which an antibiotic was administered intravenously if given in the time window of 24 hours preceding and 3 hours after Severe Sepsis Presentation Time?**

- **What was the earliest time at which an antibiotic was administered intravenously if given in the time window of 24 hours preceding and 3 hours after Severe Sepsis Presentation Time?**

- **Was the intravenous (IV) antibiotic administered within 3 hours after the date and time of presentation of severe sepsis consistent with antibiotic selection guidelines detailed in the Notes for Abstraction?**
Abstraction Tools to Assist with Sepsis Abstraction

- Multiple data elements require abstractor to consider dates, times and timeframes to complete abstraction
  - Truven has built ABSTRACTION TIPS to assist in the review
    - Relevant dates and times
    - Related timeframes to aid in abstraction

- Crystalloid Fluid Administration requires abstractor to calculate before answering
  - Truven has built the OPTIONAL FLUID CALCULATOR
    - Convert weight from pounds to kilos
    - Multiply weight by 30 to provide fluid mLs required
Abstraction Tips Added to Aid in Abstraction

Lactate Levels

Abstraction Tips:
- Severe sepsis presentation date: 07/16/2015
- Severe sepsis presentation time: 09:00

*Initial lactate level collection: 1

Time Window: 07/16/15 03:00 - 07/16/15 12:00

*Initial lactate level date:

*Initial lactate level time:

*Initial lactate level result:

Repeat lactate level collection:

Time Window: 07/16/15 09:00 - 07/16/15 15:00

Repeat lactate level date:

Repeat lactate level time:

Data Element Name: Initial Lactate Level Collection

Collected For: CMS: SEP-1

Definition: Documentation of collection of an initial lactate level between 6 hours prior to and 3 hours following the presentation of severe sepsis.

Suggested Data Collection Question: Was an initial lactate level drawn between 6 hours prior to and 3 hours following the presentation of severe sepsis?

Format:
- Length: 1
- Type: Alphanumeric
- Occurs: 1

Allowable Values:
1 (Yes) An initial lactate level was drawn in the time window between 6 hours prior to and 3 hours following the presentation of severe sepsis.

2 (No) An initial lactate level was not drawn in the time window between 6 hours prior to and 3 hours following the presentation of severe sepsis, or unable to determine.
Abstraction Tips Added to Aid in Abstraction

Optional Fluid Calculator
Abstraction Tips Added to Aid in Abstraction

Data Element Name: Crystalloid Fluid Administration

Collected For: CMS: SEP-1

Definition: Documentation of administration of crystalloid fluids after the presentation of septic shock.

Suggested Data Collection Question: Were crystalloid fluids administered after the presentation of septic shock?

Format:
- Length: 1
- Type: Alphanumeric
- Occurs: 1

Allowable Values:
1 (Yes) Crystalloid fluids were administered after the presentation of septic shock, or crystalloid fluids were being administered at the time of presentation of septic shock AND the volume ordered was 30 mL/kg.
2 (No) Crystalloid fluids were administered after the presentation of septic shock, or crystalloid fluids were being administered at the time of presentation of septic shock AND the volume ordered was less than 30 mL/kg, or unable to determine.
3 (No) Crystalloid fluids were not being administered at the time of presentation of septic shock and were not administered after the time of presentation of septic shock, or unable to determine.

Notes for Abstraction:
- Crystalloid fluids are ONLY 0.9% Normal Saline or Lactated Ringers Solution
- To abstract the volume, first calculate the patient weight in kilograms. To do this, divide the weight in pounds by 2.2; that yields the weight in kilograms. Next, multiply the weight in kilograms by 30; the result is the number of mLs of IV that should be specified in the physician/APN/PA order.
Product Support

- Log on to Product Support Web Site
  - [http://truvenhealth.com/support/portal](http://truvenhealth.com/support/portal) will direct you to the CareDiscovery Quality Measures Customer Portal.

- Please see our Advantage Community for bulletins or notices at Advantage Community - [http://community.truvenhealth.com/](http://community.truvenhealth.com/).

- For complete regulatory requirements, always refer to the appropriate specifications manuals according to discharge dates published by CMS and TJC. It is your facility’s responsibility to comply with core measures requirements as regulated by CMS and TJC. The specifications manuals are available via the resource tab of the CareDiscovery Quality Measures application under Resources. Also you may reveal the manual by clicking on the abstraction question within the CDQM application. Truven Health Analytics recommends that you examine the specifications manuals carefully when revised versions are published and determine how the changes may affect your facility.
Thank you.

holly.lockwood@truvenhealth.com