

Individual Chart Measurement Tool:

Instructions: Attach this tool to each chart of a patient with severe sepsis, septic shock at the time of data abstraction. This tool can be used for concurrent, prospective, or retrospective data collection. However, individual hospitals are strongly encouraged to choose a single approach and maintain that collection over time. Once all Individual Chart Measurement Tools are gathered for a single month, complete the Monthly Measurement Worksheet to report results.

*****Important:** mark the date format you will be following: ____ (dd/mm/yy) ____ (mm/dd/yy)

1. Document whether the patient met criteria for severe sepsis or septic shock. Check only one answer. Because strict definitions apply it may be helpful to consult the Sepsis Definitions Tool or the Evaluation for Severe Sepsis Screening Tool to ensure accuracy.

____ No, does not meet criteria for either severe sepsis or septic shock. Stop data collection.
____ Yes, met criteria for severe sepsis. Continue data collection.
____ Yes, met criteria for septic shock. Continue data collection.

2. Record the patient identifier number _____

3. Question 3 establishes a uniform “time of presentation” for each patient depending upon their individual admission characteristics. The time of presentation will be the basis for answering subsequent questions and making calculations. Only one statement below (3a, 3b, or 3c) will apply to a single patient.

Note: A protocol, protocol form and protocol order set are recommended to facilitate the treatment process and the accurate recording of timelines.

- 3a. For patients admitted to the ICU from the ED meeting criteria for severe sepsis or septic shock, record the time of triage in the emergency department as the time of presentation.

____ Not applicable. Proceed to 3b.
____ Applicable, record time of presentation below and proceed to question 4.

- 3b. For patients transferred to the ICU from units other than the ED:

- **Preferred:** if the resuscitation and management of severe sepsis was annotated as beginning on the transferring unit, record the time and date of that annotation as the time of presentation.
- **Default:** if the resuscitation and management of severe sepsis was *not* in annotated as beginning on the transferring unit, record the ICU admission date and time as the time of presentation.

Note: it is critical to establish whether there was reasonable and straightforward annotation of the time of initiation of efforts to manage severe sepsis on the ward prior to ICU transfer. Otherwise, no credit can be assigned for key interventions performed prior to the default time of presentation, the time of ICU admission. Annotation may include a practitioner’s note, a practitioner’s timed and dated orders, a nurse’s timed and dated records documenting discussion of severe sepsis with a practitioner, timed records initiating referral to the ICU for severe sepsis.

- Not applicable. Proceed to question 3c.
- Applicable; the annotated time and date for the resuscitation and management of sepsis on the transferring unit is recorded below as the time of presentation. Proceed to question 4.
- Applicable; the ICU admission date and time is recorded below as the time of presentation. Proceed to question 4.

3c. For patients admitted to the ICU with a diagnosis other than sepsis and who subsequently develop severe sepsis or septic shock on the same ICU stay, record the annotated time and date of the beginning of the resuscitation and management of severe sepsis as the time of presentation.

- Not applicable. Stop data collection, time of presentation cannot be accurately determined. If data is being collected concurrently or prospectively, the patient may remain on the sepsis protocol without further data collection.
- Applicable, record time of presentation below and proceed to question 4.

*****Time of Presentation: ___ / ___ / ___ (date format as above) ___ : ___ (24 hour clock).*****

4. Document whether serum lactate was obtained:

- No. Proceed to question 5.
- Yes. Place a mark in Box 1 on line 16 of this document. Proceed to question 4a.

4a. Record the value serum lactate value if obtained: _____ mmol/L or _____ mg/dl

4b. Record date and time of serum lactate collection:

___ / ___ / ___ (date format as above) ___ : ___ (24 hour clock).

5. Document whether the patient received a broad-spectrum antibiotic:

- No. Proceed to question 7.
- Yes. Proceed to question 5a.

5a. Name of Antibiotic(s): _____

5b. Date and time of first broad-spectrum antibiotic administration:

___ / ___ / ___ (date format as above) ___ : ___ (24 hour clock).

5c. Calculate the difference between line 3, time of presentation above, and line 5b in hours and minutes: Difference: ___ hours ___ minutes

5d. Multiply the HOURS ONLY on line 5c above x 60 _____

5e. Time in minutes to broad spectrum antibiotic administration for this patient: add the total of line 5d above to the number of MINUTES ONLY listed on line 5c above: _____

5f. If item 3a above is marked applicable, was the number of minutes on line 5e above \leq 180 minutes:

- No. Proceed to question 6.
- Yes. Place a mark in Box 3 on line 16 of this document. Proceed to question 6.

5g. If item 3b or 3c is marked applicable, was the number of minutes on line 5e above \leq 60 minutes:

- No. Proceed to question 6.
- Yes. Place a mark in Box 3 on line 16 of this document. Proceed to question 6.

6. Document date and time of blood culture collection.

____ If not collected, enter "No" on 6a and proceed to question 7.
 ____ / ____ / ____ (date format as above) ____ : ____ (24 hour clock). Proceed to question 6a.

6a. Document whether the time and date listed on 6 above is earlier than the time and date listed on line 5b above:

____ No. Proceed to question 7.
 ____ Yes. Place a mark in Box 2 on line 16 of this document. Proceed to question 7.

7. Answer the following questions regarding resuscitation of severe sepsis or septic shock:

7a. Document whether the patient was hypotensive and/or if serum lactate was > 4 mmol/L (36 mg/dl) on line 4a of this document:

____ No. Place a mark in Box 4, 5, 6, 7 on line 16 of this document. Place a mark in Box A on line 17 of this document. Proceed to question 11.
 ____ Yes. Proceed to question 7b.

7b. Document the basis for the diagnosis of hypotension, if present:

____ SBP < 90 mm Hg
 ____ MAP < 65 mm Hg **Note:** $MAP = (2 \times \text{diastolic pressure} + \text{systolic pressure}) / 3$
 ____ SBP decrease of ≥ 40 mm Hg from known baseline

7c. Document whether initially the patient received ≥ 20 ml/kg of crystalloid or \geq an equivalent amount of colloid in response to hypotension or lactate > 4 mmol/L (36 mg/dl):

Crystalloid/Colloid Equivalency Chart:¹	
Normal Saline	20 ml/kg
Lactated Ringer's Solution	20 ml/kg
Albumin	0.24 grams/kg
4-5% Albumin	5.2 ml/kg
20-25% Albumin	1.1 ml/kg
Hetastarch	0.29 grams/kg
3% Hetastarch	9.7 ml/kg
6% Hetastarch	4.8 ml/kg
10% Hetastarch	2.9 ml/kg
Pentastarch	0.30 grams/kg
10% Pentastarch	3 ml/kg
10% Dextran-40	0.30 grams/kg (3ml/kg)
3% Dextran-60, 6% Dextran-70	0.19 grams/kg
3% Dextran-60	6.3 ml/kg
6% Dextran-70	3.1 ml/kg
Gelatins (succinylated & crosslinked 2.5, 3.0, 4.0%; urea-linked 3.5%)	0.23 grams/kg

¹Adapted from: Evidence-based Colloid Use in the Critically Ill: American Thoracic Society Consensus Statement. Am J Respir Crit Care Med. 2004. Vol 170:1247-1259. For percentage solutions, listed ml/kg are calculated from the g/kg data.

____ No. Record "No" on lines 7f, 8b, 9b and 10 below. Proceed to question 11.

____ Yes. Place a mark in Box 4 on line 16 of this document. Proceed to question 7d.

7d. Document whether MAP remained ≥ 65 in response to the initial fluid resuscitation described in 7c:

- i. ____ No. Proceed to question 7e.
- ii. ____ Yes, if lactate was ≤ 4 mmol/L (36 mg/dl) on line 4a of this document place a mark in Box 5, Box 6 and Box 7 on line 16 of this document. Proceed to question 10.
- iii. ____ Yes, if lactate was > 4 mmol/L (36 mg/dl) on line 4a of this document, proceed to question 8.

7e. Document whether the patient received vasopressors:

- ____ No. Record "No" on lines 7f, 8b, 9b and 10 below. Proceed to question 11.
- ____ Yes. Place a mark in Box 5 on line 16 of this document. Proceed to question 7f.

7f. Document whether the MAP remained ≥ 65 mm Hg without the use of vasopressors:

Note: If no evidence for removal of vasopressors can be found, mark item 7f "no" and proceed to question 8.

- i. ____ No. Proceed to question 8.
- ii. ____ Yes, if lactate was ≤ 4 mmol/L (36 mg/dl) on line 4a of this document place a mark in Box 6 and Box 7 on line 16 of this document. Proceed to question 10.
- iii. ____ Yes, if lactate was > 4 mmol/L (36 mg/dl) on line 4a of this document, proceed to question 8.

8. Document date and time CVP first ≥ 8 mm Hg within 24 hours:

____ CVP not obtained or never ≥ 8 mm Hg within 24 hours. Record line 8b as "No" and proceed to question 9.

Date: ____ / ____ / ____ (date format as above) **Time:** ____ : ____ (24 hour clock).

Proceed to question 8a.

8a. Calculate the difference between line 3, time of presentation, and line 8 above in hours and minutes: Difference: ____ : ____ (hours:minutes).

8b. Document whether line 8a is ≤ 6 hours.

- ____ No. Proceed to question 9.
- ____ Yes. Place a mark in Box 6 on line 16 of this document. Proceed to question 9.

9. Document date and time ScvO₂ first $\geq 70\%$ (or SvO₂ $\geq 65\%$) within 24 hours:

____ ScvO₂ not obtained or never $\geq 70\%$ (or SvO₂ $\geq 65\%$) within 24 hours. Record line 9b as "No" and proceed to question 10.

Date: ____ / ____ / ____ (date format as above) **Time:** ____ : ____ (24 hour clock).

Proceed to question 9a.

9a. Calculate the difference between line 3, time of presentation, and line 9 above in hours and minutes: Difference: ____ : ____ (hours:minutes).

9b. Document whether line 9a is ≤ 6 hours.

- ____ No. Proceed to question 10.

___ Yes. Place a mark in Box 7 on line 16 of this document. Proceed to question 10.

10. Answer the following questions regarding low-dose steroids administration:

10a. Document whether line 7d or line 7f above has been answered affirmatively:

___ Yes. The bundle element is not applicable because the patient's MAP was ≥ 65 and did not have persistent arterial hypotension. Place a mark in Box A on line 17 and proceed to question 11.

___ No. Proceed to question 10b.

10b. Document whether there is a standardized ICU policy regarding low-dose steroid administration for septic shock:

___ No. Proceed to question 11.

___ Yes. Proceed to question 10c.

10c. Indicate whether there is documentation that the patient did not merit low-dose steroids based upon the standardized protocol:

___ No documentation is present. Proceed to question 10d.

___ Yes there is documentation present. Place a mark in Box A on line 17 below. Proceed to question 11.

10d. Document whether low-dose steroids were administered:

Note: low-dose steroids refer to a daily dose of 200–300 mg of hydrocortisone or equivalent.

Steroid Equivalency Chart: ²	
Steroid:	Equivalent TOTAL DAILY dose:
Hydrocortisone	200 – 300 mg
Dexamethasone	8 – 12 mg
Prednisone	50 – 75 mg
Prednisolone	50 – 75 mg
Methylprednisolone	40 – 60 mg
Cortisone	250 – 375 mg
Triamcinolone	40 – 60 mg
Betamethasone	6 – 10 mg

²Adapted from: Knoben JE, Anderson PO. *Handbook of Clinical Drug Data*, 6th ed. Drug Intelligence Pub, Inc. 1988.

___ No. Proceed to question 11.

___ Yes. Record date and time below. Proceed to question 10e.

___ / ___ / ___ (date format as above) ___ : ___ (24 hour clock)

10e. Time of presentation: from line 3 above:

___ / ___ / ___ (date format as above) ___ : ___ (24 hour clock)

10f. Document whether the time and date on 10d is \leq 24 hours from the time of presentation listed on item 10e.

No. Proceed to question 11.

Yes. Place a mark in Box A on line 17 and proceed to question 11.

11. Answer the following questions regarding Drotrecogin alfa (activated) administration:

11a. Document whether there is a standardized ICU policy regarding Drotrecogin alfa (activated) administration:

No. Proceed to question 12.

Yes. Proceed to question 11b.

11b. Indicate whether there is documentation that the patient did not merit Drotrecogin alfa (activated) administration based upon the standardized protocol:

No documentation is present. Proceed to question 11c.

Yes there is documentation present. Place a mark in Box B on line 17 below. Proceed to question 12.

11c. Document whether Drotrecogin alfa (activated) was administered:

No. Proceed to question 12.

Yes. Record date and time below. Proceed to question 11d.

___ / ___ / ___ (date format as above) ___ : ___ (24 hour clock)

11d. Time of presentation: from line 3 above:

___ / ___ / ___ (date format as above) ___ : ___ (24 hour clock)

11e. Document whether the time and date on 11c is \leq 24 hours from the time of presentation listed on item 11d.

No. Proceed to question 12.

Yes. Place a mark in Box B on line 17 and proceed to question 12.

12. Document the median glucose* value within 24 hours of the time of presentation:

Median glucose: ___ mg/dl or ___ mmol/L

If and only if median glucose is $<$ 150 mg/dl (8.3 mmol/L) place a mark in Box C on line 17 of this document. Proceed to question 12a.

12a. Document the lower limit of normal for serum glucose at your institution: ___

12b. Document the total number of measurements that fell below the lower limit of normal within 24 hours from the time of presentation for this patient: ___

* Refer to the optional *Median Glucose Tool*, if necessary.

13. Document the median inspiratory plateau pressure (IPP)* achieved within 24 hours of time of presentation:

Not applicable because the patient was not mechanically ventilated. Place a mark in Box D on line 17 of this document. Proceed to question 14.

Median IPP: ___ If and only if $<$ 30 cm H₂O, place a mark in Box D on line 17 of this document.

* Refer to the optional *Median IPP Calculation Tool*, if necessary.

14. Date and time of hospital discharge:

__ __ / __ __ / __ __ (date format as above) __ __ : __ __ (24 hour clock)

15. Status at hospital discharge: ____ Alive ____ Deceased

16. Boxes 1 through 7:

Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7

17. Boxes A through D:

Box A	Box B	Box C	Box D