

Pediatric Sepsis



Objectives

This Quick Start Guide (QSG) will review:

- ED Nursing and Provider Pediatric Sepsis Workflows
- Inpatient Nursing Documentation and Workflow
- Inpatient Pediatric Provider BPAs and Information

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Table of Contents

Overview-----	3
Peds Sepsis Alerts and Best Practice Advisory- EDRN -----	4
Try it out -----	4
Peds Sepsis BPA for ED Provider -----	8
ED Physician BPA -----	8
Inpatient Nursing: Acute Care, Step-Down, and ICU Units-----	10
Identifying the Peds Sepsis Score and Documenting Peds Sepsis Additional Assessments----	10
Documenting in the Huddle Decision/Paging Activity-----	12
Documenting the Sepsis Huddle -----	13
Locating Sepsis Documentation in the Flowsheets Activity-----	14
Locating Additional Sepsis Documentation in the Overview Report-----	14
Locating ED Sepsis Documentation-----	15
Identifying the Components of the Peds Sepsis Huddle Sidebar Report-----	15
Utilizing the Peds Sepsis Navigator -----	16
Pediatric Provider BPAs -----	17
Initial Pediatric Sepsis BPA -----	17
Secondary Pediatric Sepsis BPA - 24 hrs. -----	18
Tertiary Pediatric Sepsis BPA-More than 24 hrs. -----	19
Order Set Suggestions -----	20
Pediatric Sepsis Information -----	21
PEDS SEPSIS Score Patient List Column -----	21
Peds Sepsis Sidebar Huddle Summary-----	22
Peds Sepsis Navigator -----	23

Overview

Creation and implementation of a new guideline to standardize sepsis care for pediatric patients at Loma Linda University Health. The guideline is designed to expedite identification and treatment of sepsis. There will be decision support identifying when patients are potentially septic, and the ability to document the huddle process within the EMR for improved interdisciplinary communication about the treatment plan.

The Pediatric Sepsis Guideline is designed to standardize identification and treatment of pediatric patients with sepsis. It will provide decision support to identify potentially septic patients and allow for documentation of the “huddle” (an interdisciplinary meeting to assess the patient and discuss interventions) within the electronic medical record (EMR). The goals are early identification, timely treatment, and decreased mortality for pediatric septic patients.

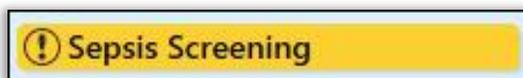
Peds Sepsis Alerts and Best Practice Advisory- EDRN

When a pediatric patient presents to the Emergency Room with certain signs and symptoms, it is important to document accurately and quickly. Certain threshold vital signs will trigger Storyboard Alerts and Best Practice Advisories. Follow the instructions in the BPA to speed provider notifications and start patient care.

Try it out

1. Triage the Peds patient as usual and include accurate pulse, temperature, respirations, including height and weight.
2. Set the acuity of the patient.
3. If the patient meets or exceeds the threshold vital signs, a BPA will populate.

4. Sepsis Screening warning also populates to Storyboard:



5. Complete the ED Peds Sepsis Screening Additional Assessments within the BPA window:

BestPractice Advisory - Alaska, Nome

⚠ Patient may meet criteria for sepsis.

Document Do Not Document This patient may meet criteria for sepsis. Please complete the following documentation: [Collapse](#)

ED Peds Sepsis Screening Additional Assessments

Change in mental status

Confused Lethargic Unresponsive/Obtunded Restless Agitated Irritable ! 📄

Inconsolable crying None of the above

Abnormal perfusion

Capillary refill >3 seconds Diminished pulses Bounding pulses Cool extremities ! 📄

Skin mottled Skin flushed Petechial rash (non-blanching)

None of the above (normal perfusion)

Decreased urine output

Urine output < 0.5mL/kg/hr Marked decrease in diapers None of the above ! 📄

High risk condition

Infant < 28 days old Device present (e.g.: central line, PICC) 📄

Immunosuppressed / Immunocompromised

Chronic steroid use (Rheumatology patient, Congenital Adrenal Hyperplasia)

Oncological diagnosis Transplant Critical Cardiac Kid None of the above

Sepsis Screening Complete?

Yes

✔ Accept Dismiss

6. If the patient has 3 or more items checked in Change in Mental Status and Abnormal Perfusion sub-sections or any High Risk Condition checked, a second BPA will populate.

7. Second BPA populates confirming the patient meets sepsis criteria and to notify the ED attending.

BestPractice Advisory - Alaska, Nome

⚠ This patient meets Sepsis criteria. Notify ED attending.

	6/18/2021 1022	6/18/2021 1024
Pulse:	150 !	155 !
Resp:	25	—
Temp:	102 °F (38.9 °C) !	—
BP:	95/65	—

Change in mental status: (!) **Confused, Restless, Inconsolable crying**
 Abnormal perfusion: (!) **Diminished pulses, Skin mottled**
 Decreased urine output: (!) **Urine output < 0.5mL/kg/hr**
 High risk condition: None of the above

[Dismiss and update Sepsis Screening documentation](#)

Acknowledge Reason _____

Provider notified; huddle initiated (Pro...

ED Attending MD

✓ Accept Dismiss

8. Sepsis Huddle Initiation warning also populates to the Storyboard:



9. Click on [Provider notified; huddle initiated \(Pro...](#)

10. Enter the name of the provider being notified. Click 

11. Nurse notifies provider.

12. The ED Provider opens the patient chart and is presented with a Sepsis BPA.

BestPractice Advisory - Alaska, Nome

⚠ This patient meets Sepsis criteria. Please evaluate.

	6/18/2021 1022	6/18/2021 1024
Pulse:	150 !	155 !
Resp:	25	—
Temp:	102 °F (38.9 °C) !	—
BP:	95/65	—

Change in mental status: (!) **Confused, Restless, Inconsolable crying**
 Abnormal perfusion: (!) **Diminished pulses, Skin mottled**
 Decreased urine output: (!) **Urine output < 0.5mL/kg/hr**
 High risk condition: None of the above

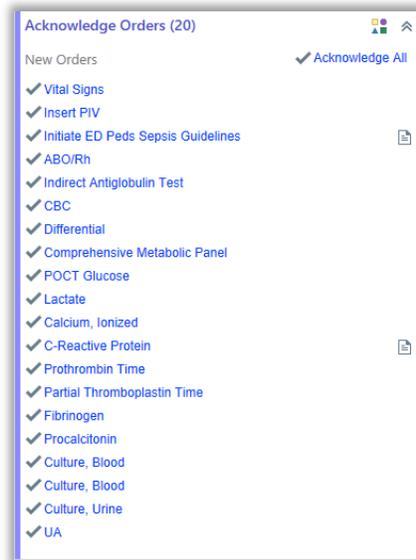
[Open Order Set](#) [Do Not Open](#) [ED PEDS Suspected Sepsis Orders Preview](#)

Acknowledge Reason _____

[Low suspicio](#) [Remind me in](#)

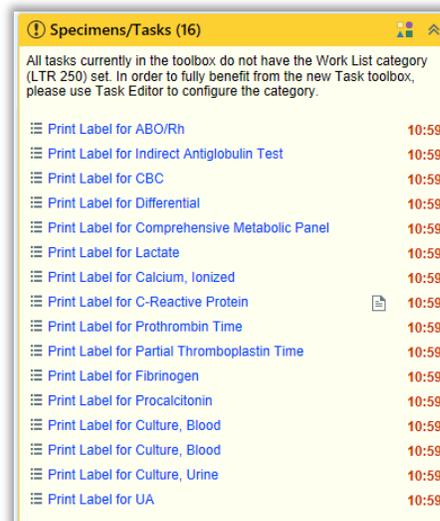
✓ Accept

13. Provider opens order set, configures the orders, and signs the order as required.



14. Orders populate to the EDRN Narrator:

15. Acknowledge Orders as required.



16. Complete Specimens/ Tasks as required:

Peds Sepsis BPA for ED Provider

After the ED nurse has triaged a patient with signs and symptoms of Sepsis, BPAs and Storyboard warnings will populate to alert the provider into action. The ED nurse will also document the provider notified within the ED nursing Peds Sepsis BPA.

ED Physician BPA

1. ED MD opens the patient chart and is presented with a Sepsis BPA.
2. Selecting **Open Order Set** and clicking **Accept** will open the *ED Suspected Sepsis Orders* order set.

BestPractice Advisory - Sepsis (Pediatric)

⚠ This patient meets Sepsis criteria. Please evaluate.

	6/18/2021	6/18/2021	6/18/2021	6/18/2021
	1043	1045	1046	1047
Pulse:	150 !	155 !	—	160 !
Resp:	25	—	30 !	—
Temp:	103 °F (39.4 °C) !	—	—	104 °F (40 °C) !
BP:	95/65	—	—	90/60 !

Change in mental status: (!) **Confused, Restless, Agitated, Irritable**
 Abnormal perfusion: (!) **Diminished pulses**
 Decreased urine output: (!) **Urine output < 0.5mL/kg/hr**
 High risk condition: None of the above

[ED PEDS Suspected Sepsis Orders Preview](#)

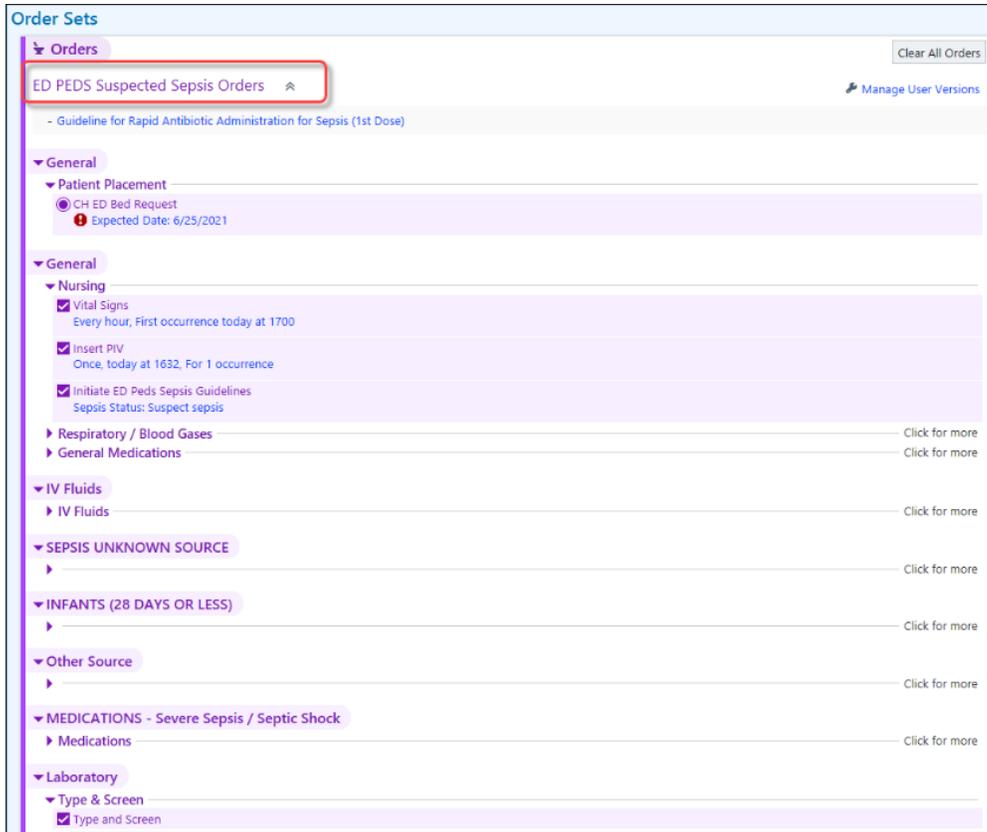
Acknowledge Reason _____

3. Selecting **Do Not Open** will require a selection:

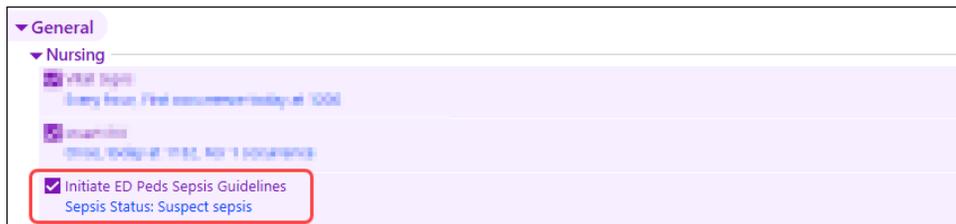
[ED PEDS Suspected Sepsis Orders Preview](#)

⚠ Acknowledge Reason _____

- a. **Low Suspicion for sepsis (Peds)** – deactivates the BPA for all users.
 - b. **Remind me in 10 minutes** – locks out the BPA for all users for 10 min.
4. Once the order set is open, you have the ability to select and configure the appropriate orders.



5. Note that once the *Initiate ED Peds Sepsis Guidelines* order has been placed, it will send a page to the PICU resident.



6. **Sign** the orders to complete the process.



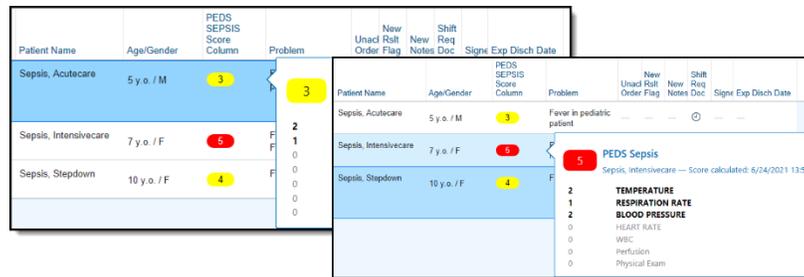
7. After signing the orders, it will populate tasks for the nurse on the ED Narrator.

Inpatient Nursing: Acute Care, Step-Down, and ICU Units

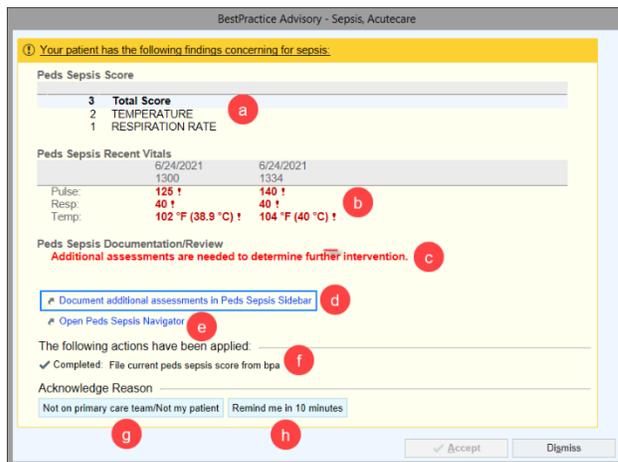
Pediatric patients with sepsis scores of 3 or higher in acute care and step-down units, and 5 or higher, in ICU units, pose a threat in becoming septic if interventions are not utilized. When assessments and lab data contribute to elevated scores, EPIC provides Best Practice Advisories (BPA's) for interventions, reports to identify the details of the patient's risks, and tools of collaboration in decisions of care.

Identifying the Peds Sepsis Score and Documenting Peds Sepsis Additional Assessments

1. In Patient Lists, locate the **Peds Sepsis Score Column** and hover over the **score** to see the contributing documentation.



2. Upon opening a patient's chart, a BPA will populate for acute care and step-down patients who have sepsis scores of 3 or 4 and ICU patients who have scores of 5 or more. Components of the BPA are as follows:

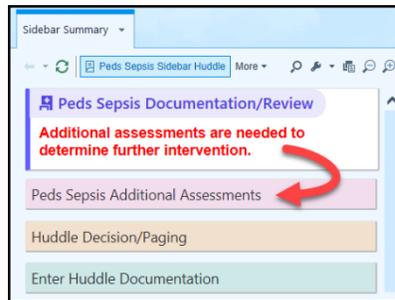


- a. Documentation that contributed to the Peds Sepsis Score
- b. 3 most recent Vitals
- c. Help text indicating next steps to take
- d. Link that opens the Peds Sepsis Sidebar
- e. Link that opens the Peds Sepsis Navigator
- f. Indicates filed Sepsis Score
- g. Note on Primary Care Team
 - Lockout for 12 hours per user
- h. Remind me in 10 minutes
 - Lockout for 10 minutes per user
 - Places task on worklist

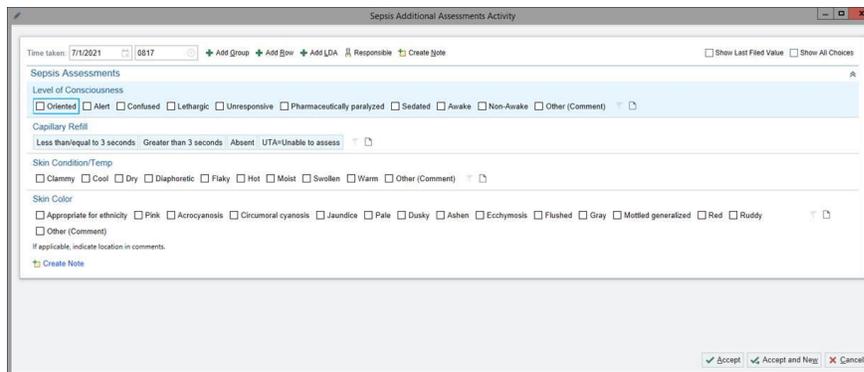
3. In the BPA, the Peds Sepsis Documentation/Review indicates that additional assessments for this patient are required. Click the **hyperlink that takes you to the Peds Sepsis Sidebar**.



4. The Peds Sepsis Sidebar Huddle report opens. Click the **Peds Sepsis Additional Assessments hyperlink** in the report.



5. Complete the **Sepsis Additional Assessments Activity** pop-up flowsheet.

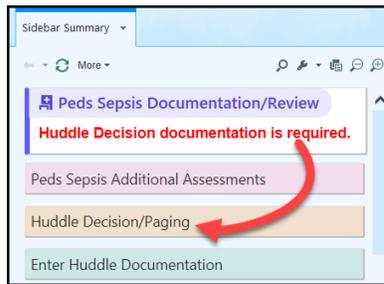
A screenshot of a "Sepsis Additional Assessments Activity" pop-up window. The window has a title bar and a toolbar with options like "Add Group", "Add Item", "Add LDA", "Responsible", and "Create Note". The main content area is titled "Sepsis Assessments" and contains several sections with checkboxes and dropdown menus:

- Level of Consciousness:** Oriented, Alert, Confused, Lethargic, Unresponsive, Pharmacologically paralyzed, Sedated, Awake, Non-Awake, Other (Comment)
- Capillary Refill:** Less than/equal to 3 seconds, Greater than 3 seconds, Absent, UTA/Unable to assess
- Skin Condition/Temp:** Clammy, Cool, Dry, Diaphoretic, Flaky, Hot, Moist, Swollen, Warm, Other (Comment)
- Skin Color:** Appropriate for ethnicity, Pink, Acrocyanosis, Circumoral cyanosis, Jaundice, Pale, Dusky, Ashen, Erythema, Flushed, Gray, Mottled/generalized, Red, Ruddy, Other (Comment)

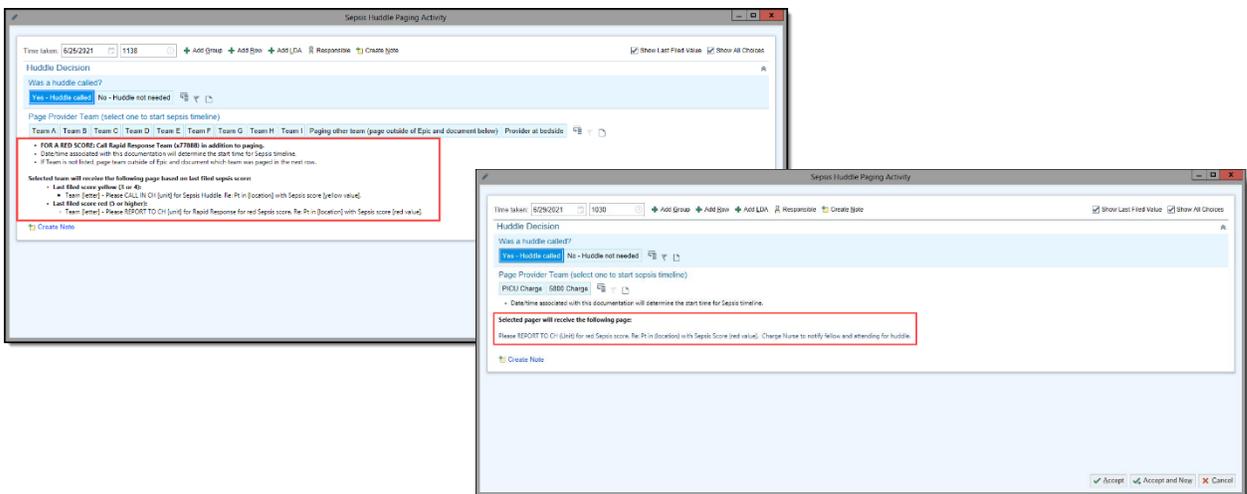
At the bottom right, there are buttons for "Accept", "Accept and New", and "Cancel".

Documenting in the Huddle Decision/Paging Activity

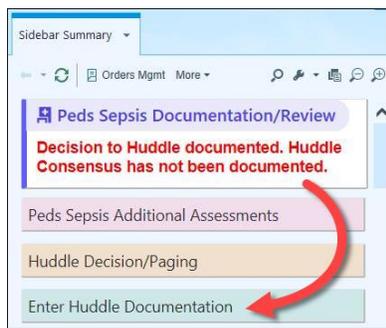
1. Back on the Peds Sepsis Sidebar Huddle Report, the help text now indicates a Huddle Decision documentation is required. Click the **Huddle Decision/Paging** hyperlink.



2. If a Huddle is necessary, click **Yes-Huddle called** and select the appropriate provider team to page. **Note:** Additional instructions for each area should be followed in addition to paging.

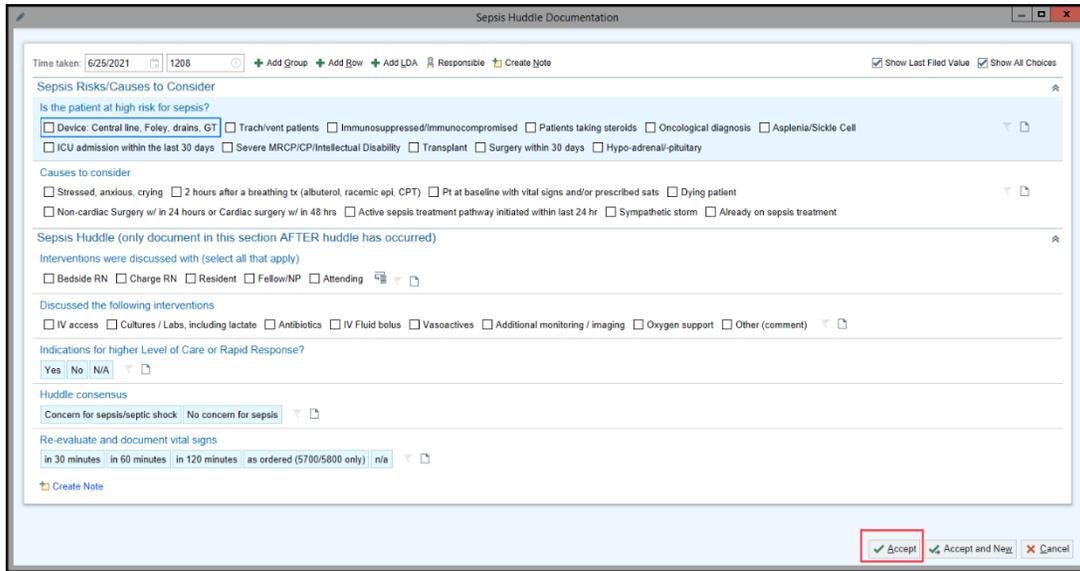


3. Back on the report, click the **Huddle Documentation** hyperlink to begin documenting the details of the huddle once attendants have arrived.

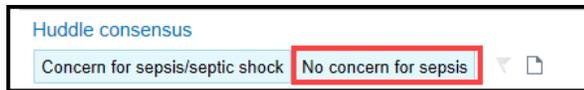


Documenting the Sepsis Huddle

4. Complete the **Sepsis Huddle Documentation** and click **Accept**.



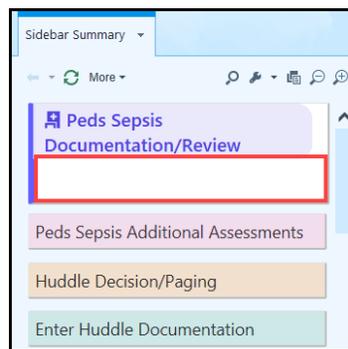
- Documenting **No concern for Sepsis**, stops the Huddle Documentation Timeline in the Sepsis Huddle Report.



- Documenting **30, 60, or 120 minutes for re-evaluating** at patient places a task on the worklist, however, documenting **as ordered (5700/5800 only)** does not.



5. The **Peds Sepsis Documentation/Review** help text is now empty. All required documentation has been completed.



Locating Sepsis Documentation in the Flowsheets Activity

1. Select the **Frequent Charting (Peds) flowsheet** from the Flowsheets Activity.
2. Documented Sepsis Assessments and Peds Sepsis Scores can be located from within the flowsheet.

Peds Sepsis Score	<input checked="" type="checkbox"/>	Vital Signs							
Respiratory Scoring T...	<input checked="" type="checkbox"/>	Temp	↑ 101.8 (38.8)		↑ 100.8 (38.2)				100.8 (38.2) ↑
Level of Sedation	<input checked="" type="checkbox"/>	Temp etc		Temporal		Temporal			Temporal
FLACC (Blinded)	<input checked="" type="checkbox"/>	Heart Rate	↑ 162	↑ 165	↑ 158	↑ 157			154 ↑
Pain Assessment	<input checked="" type="checkbox"/>	Heart Rate Source	Monitor	Monitor	Monitor	Monitor			Monitor
FLACC (Blinded)	<input checked="" type="checkbox"/>	Cardiac Rhythm Extended	NSR	NSR	NSR	NSR			ST
Oxygen Therapy	<input checked="" type="checkbox"/>	Respirations	↑ 34	↑ 29	↑ 46	↑ 36			28
Mobility	<input checked="" type="checkbox"/>	End Tidal CO2							8 mmHg ↑
Anti-Embolism Devic...	<input checked="" type="checkbox"/>	SpO2	99	96	98	100			100 %
Hygiene	<input checked="" type="checkbox"/>	Blood Pressure	↑ 110/61	↑ 110/74					120/68 ↑
Thermoregulation	<input checked="" type="checkbox"/>	MAP (mmHg)	76	87					90 mmHg
MPEWS (Modified Pe...	<input checked="" type="checkbox"/>	BP Location							Left Upper Ar
Provider Interaction	<input checked="" type="checkbox"/>	BP Method							Automated Cu
Visitor Interaction	<input checked="" type="checkbox"/>	BP Patient Position							Sitting
Alarms Set per Patient	<input checked="" type="checkbox"/>	Alarms Set per Patient							Yes
Patient Off Unit	<input checked="" type="checkbox"/>	Sepsis Assessments							
Patient Observation	<input checked="" type="checkbox"/>	Level of Consciousness	Alert	Alert					Alert/Awake
		Capillary Refill							
		Skin Condition/Temp							
		Skin Color							
		Peds Sepsis Score							
		PEDS Sepsis Temp Score		2					2 (calculated)
		PEDS Sepsis RR Score	1	1					1 (calculated)
		PEDS Sepsis HR Score	1						1 (calculated)
		PEDS Sepsis Physical Exam Score	1						1 (calculated)
		Ped Final Sepsis Score	3	3					2

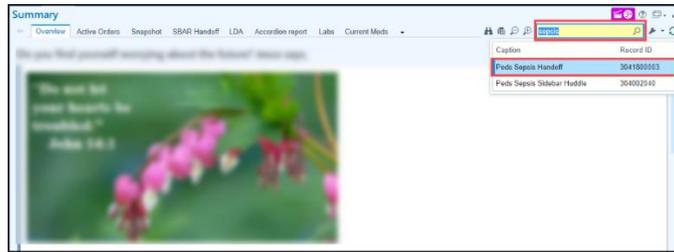
Locating Additional Sepsis Documentation in the Overview Report

1. Under Summary activity, in the Overview Report, locate **Peds Sepsis documentation**. This information updates based on current assessments.

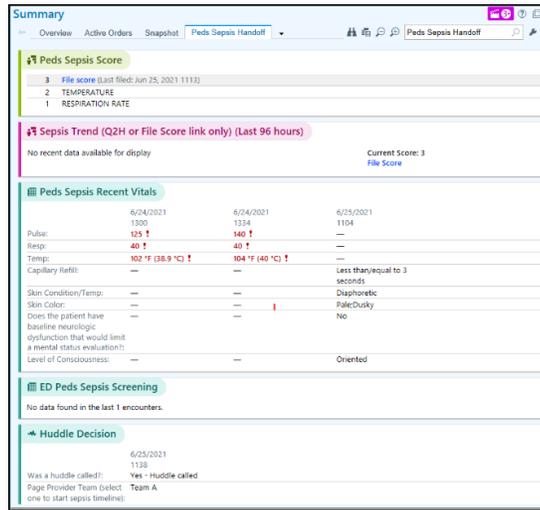
PEDS Sepsis 3		PEDS Sepsis : 3 Comment
Peds Sepsis BPA within last 12 hours Jump to Peds Sepsis Sidebar Report		TEMPERATURE: 2 points (Up 2 points since last review) - [Last updated: 06/25/21 1230] Comment
Peds Sepsis Documentation/Review		RESPIRATION RATE: 1 points (Up 1 points since last review) - [Last updated: 06/25/21 1230] Comment
		BLOOD PRESSURE: 0 points - [Last updated: 06/25/21 1230] Comment
		HEART RATE: 0 points - [Last updated: 06/25/21 1230] Comment
		WBC: 0 points - [Last updated: 06/25/21 1230] Comment
		Perfusion: 0 points - [Last updated: 06/25/21 1230] Comment

Locating ED Sepsis Documentation

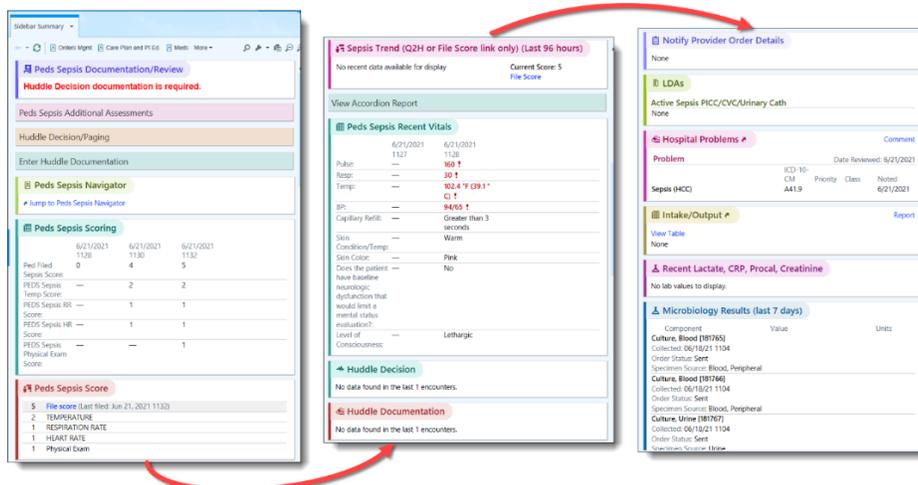
2. In the search box, of the Summary activity, find the **Peds Sepsis Handoff** report.



3. Peds Sepsis documentation from the ED now populates for viewing.

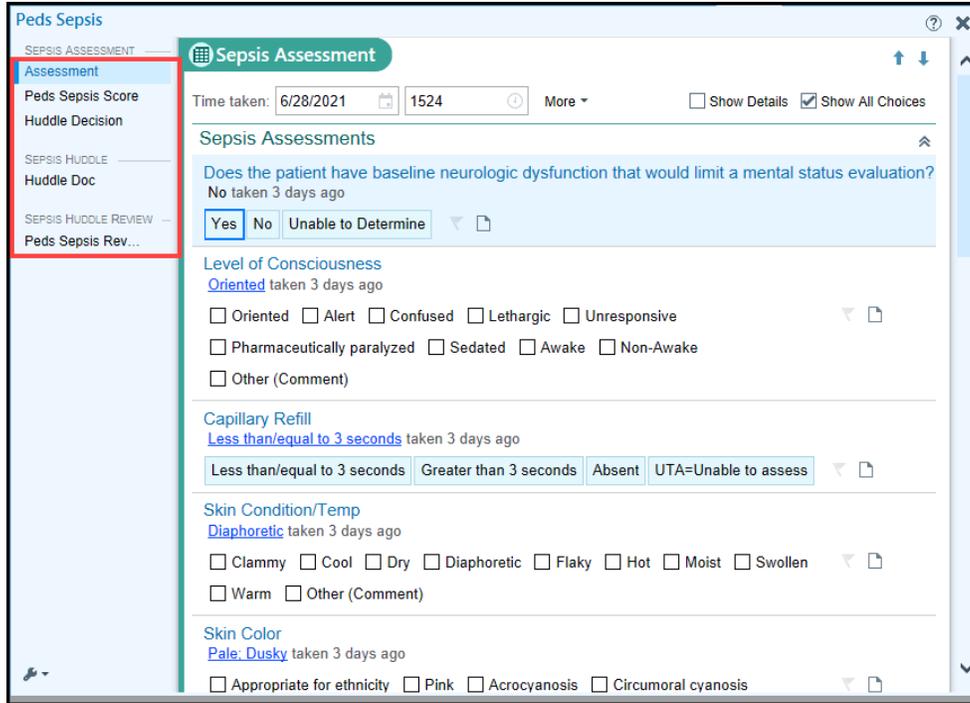


Identifying the Components of the Peds Sepsis Huddle Sidebar Report



Utilizing the Peds Sepsis Navigator

1. Click the **Jump to the Peds Sepsis Navigator hyperlink** in the Peds Sepsis Sidebar Huddle report to view documented assessments or document new assessments as appropriate.

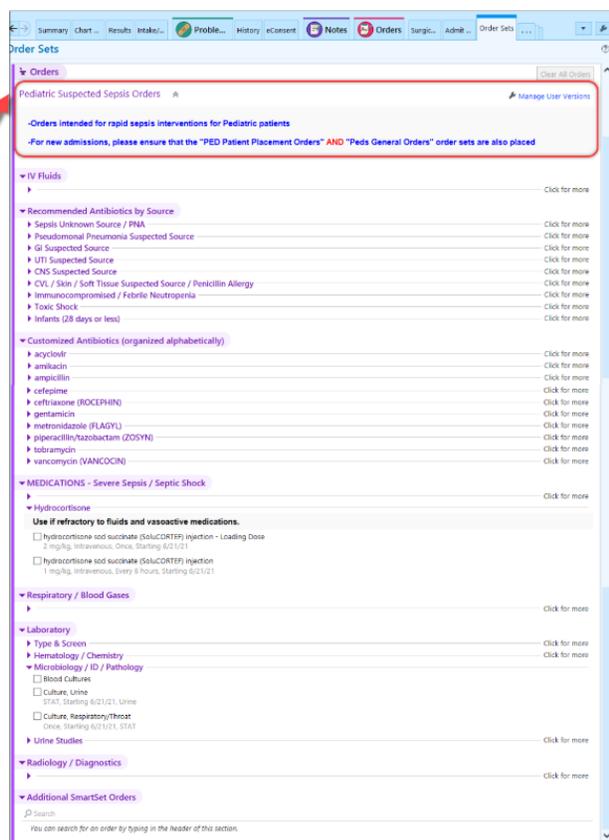
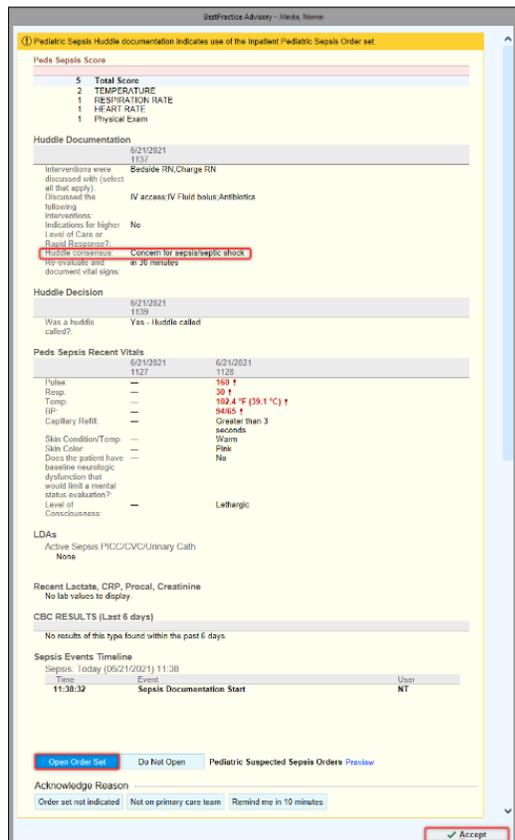


Pediatric Provider BPAs

Once the huddle documentation indicates there is a concern for pediatric sepsis, the provider BPA notification will activate. The initial BPA will recommend placing the *Pediatric Suspected Sepsis Orders* order set. Once the order set has been placed, secondary and tertiary BPAs will trigger at various times, based on specific documentation, inquiring if the provider needs to add additional orders from the *Pediatric Suspected Sepsis Orders* order set.

Initial Pediatric Sepsis BPA

1. During the Pediatric Sepsis Huddle, the nurse will document within the *Huddle Documentation*. If there is a consensus of concern for sepsis/septic shock, this will activate the Provider Pediatric Sepsis BPA.
 - a. Note, addition criteria must be met within the huddle documentation:
 - The *No concern for sepsis* has not been selected within the past **12 hrs.**
 - Under causes to consider, *Dying patient* must not be selected.
2. Opening a patient's chart will trigger the Pediatric Sepsis BPA displaying:
 - Peds Sepsis Score
 - Huddle Documentation
 - Recent vital signs and laboratory results
3. The BPA will prompt the provider to open the *Pediatric Suspected Sepsis Order* set.



4. If **Do Not Open** is clicked then an acknowledgement reason must be selected.

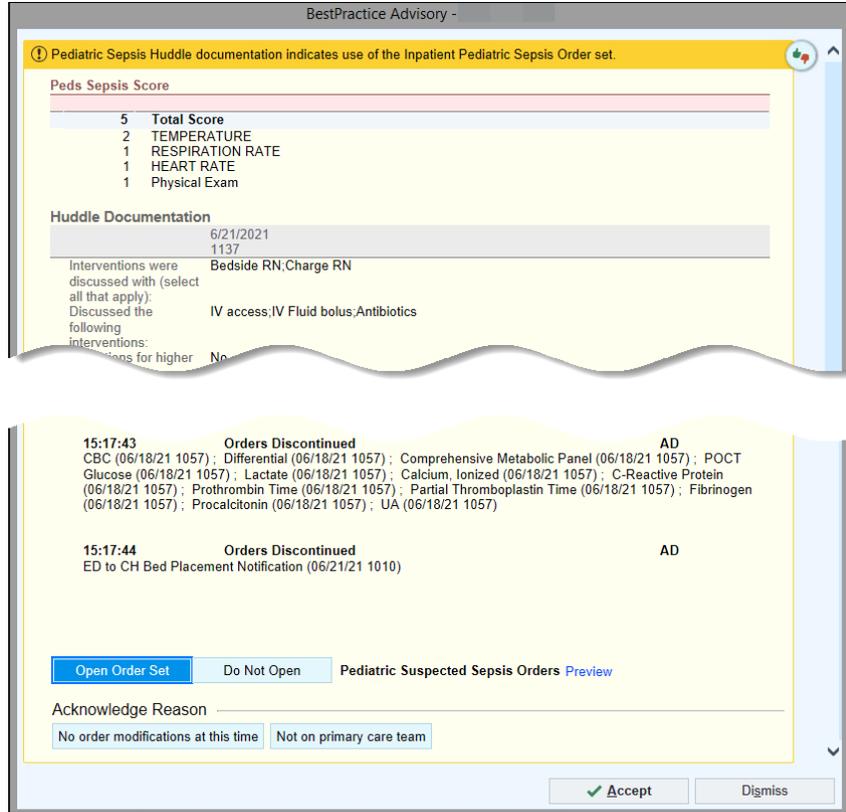


- a. **Order set not indicated** = locks out the BPA for all users for 12 hrs.
- b. **Not on primary care team** = locks out the BPA for the current user for 12 hrs.
- c. **Remind me in 10 minutes** = locks out the BPA for all users for 10 minutes.

Secondary Pediatric Sepsis BPA - 24 hrs.

Twenty-four hours after the last instance of signing the Pediatric Suspected Sepsis Order set, will activate a second BPA asking the Provider if new orders need to be placed from the order set.

- 1. The BPA will trigger if the most recent huddle documentation indicates:
 - a. A continued concern for sepsis/septic shock.
 - d. The *No concern for sepsis* has not been selected within the past 12 hrs.
 - e. Under causes to consider, *Dying patient* was not selected.
- 2. Opening the patient’s chart will trigger the secondary Pediatric Sepsis BPA.
- 3. The BPA will display similar information as the initial BPA.



4. If a decision is made to add more orders from the order set, select **Open Order Set** and click **Accept**. This will take you to the Orders activity.
5. If no action needs to be taken selecting **Do Not Open** will require a selection:

- a. **No order modifications at this time** = locks out the BPA for all users.
- b. **Not on primary team** = locks out the current user for 12 hrs.

Tertiary Pediatric Sepsis BPA-More than 24 hrs.

After the secondary BPA triggers, a tertiary BPA will activate. Please reference the criteria in step one below. The BPA will again ask the Provider if new orders need to be placed from the Pediatric Suspected Sepsis Order set.

1. The BPA will activate if the most recent huddle documentation indicates:
 - a. A continued concern for sepsis/septic shock.
 - b. The *No concern for sepsis* was not selected within the past 12 hrs.
 - c. Under Causes to consider, *Dying patient* was not selected.
 - d. Under Discussed interventions, one of the following was selected within the last 8hrs.: *Cultures /Labs, including lactate, Antibiotics, IV Fluids, or Vasoactives.*
 - e. And the secondary 24 hrs. Peds Sepsis BPA has already been triggered.
2. Opening the patient's chart will trigger the tertiary Pediatric Sepsis BPA.
3. The BPA will be similar to the secondary BPA.

4. If a decision is made to add more orders from the order set, select **Open Order Set** and click **Accept**. This will take you to the Orders activity.
5. If no action needs to be taken, selecting **Do Not Open** will require a selection:

The screenshot shows a yellow header bar with three buttons: 'Open Order Set', 'Do Not Open', and 'Pediatric Suspected Sepsis Orders Preview'. Below the header is a section titled 'Acknowledge Reason' with two buttons: 'No order modifications at this time' and 'Not on primary care team'.

- a. **No order modifications at this time** = locks out the BPA for all users for 8 hrs.
 - b. **Not on primary team** = locks out the current user for 12 hrs.
6. **Note**, this BPA will continue to trigger until the most recent huddle documentation indicates there is no longer a concern for sepsis or septic shock.

Order Set Suggestions

The *Pediatric Suspected Sepsis Orders* order set will also appear under *Suggestions* within the Orders activity within the patient’s chart based on specific criteria.

1. If any of the following has been documented within a patient’s chart, the *Pediatric Suspected Sepsis Orders* order set will appear under *Suggested Order Sets*:
 - a. If there is a diagnosis or clinical impression of sepsis or septic shock
 - b. If the *ED PEDS Suspected Sepsis Orders* order set was ordered within the ED
 - c. If the inpatient huddle documentation indicates the concern for sepsis or septic shock

The screenshot shows a window titled 'Order Sets'. Inside, there is a 'Suggestions' section with a red box around it containing a checked checkbox for 'Pediatric Suspected Sepsis Orders'. Below this, there are three buttons: 'Open Order Sets' (with a green checkmark), 'Clear Selection' (with a red X), and 'Remove Open' (with a grey X).

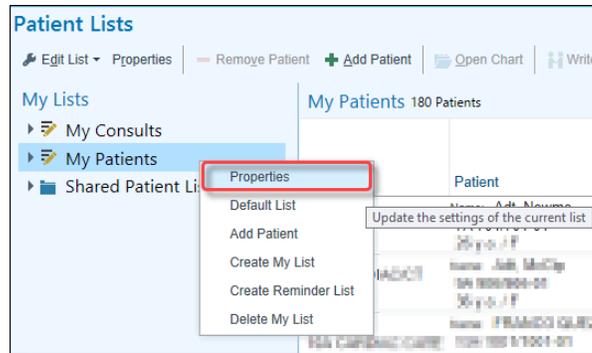
2. Selecting the *Pediatric Suspected Sepsis Orders* order set and clicking Open Order Sets will open the orders allowing the provider to place the desired orders appropriate for patient care.

Pediatric Sepsis Information

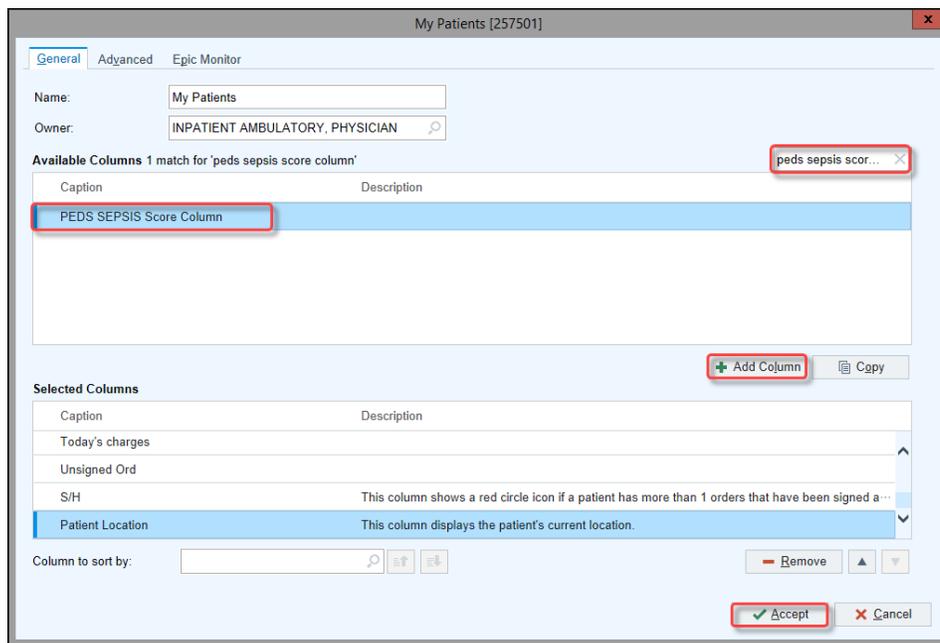
PEDS SEPSIS Score Patient List Column

From Patient Lists, you can add the *PEDS SEPSIS Score Column* for quick referencing.

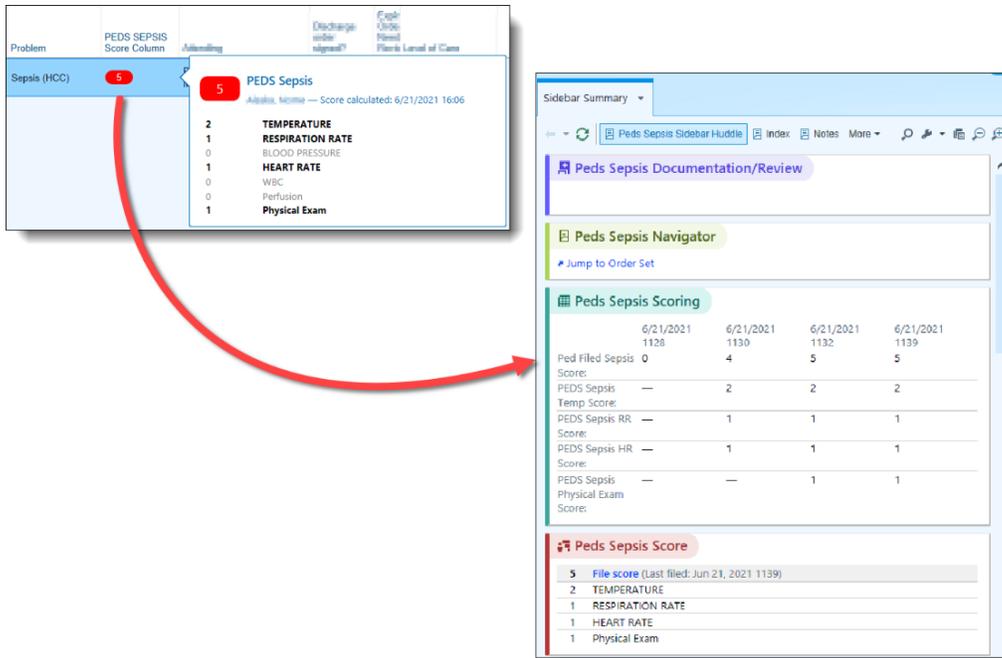
1. Select the List you would like to add the *PEDS SEPSIS Score Column* to.
2. Right click on the list and click **Properties**.



3. Under *Available Columns*, search for '**peds sepsis score column**' and click + **Add Column**.
4. You can move the location of the column using the arrows.



5. Once completed click **Accept**.
6. The **PEDS SEPSIS Score Column** will now be visible. If applicable, the Peds Sepsis score will be displayed within the column.
7. Hovering over the score will display the breakdown of sepsis score indicated.

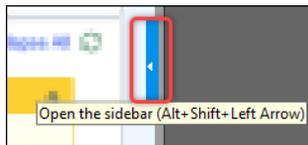


8. Double clicking on the score will open up the patient’s chart to the *Sidebar Summary* displaying the **Peds Sepsis Sidebar Huddle** summary. Here, there is a wealth of information related to the patient’s sepsis treatment.

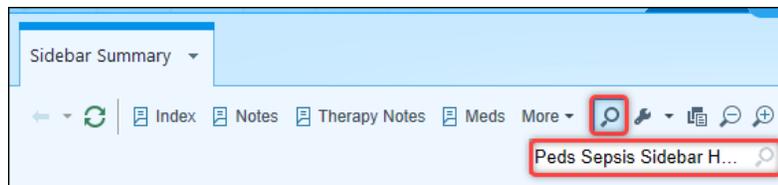
Peds Sepsis Sidebar Huddle Summary

Within a patient’s chart you can access the *Peds Sepsis Sidebar Huddle* summary. This will give you access to the *Peds Sepsis Navigator* and documented information related to sepsis.

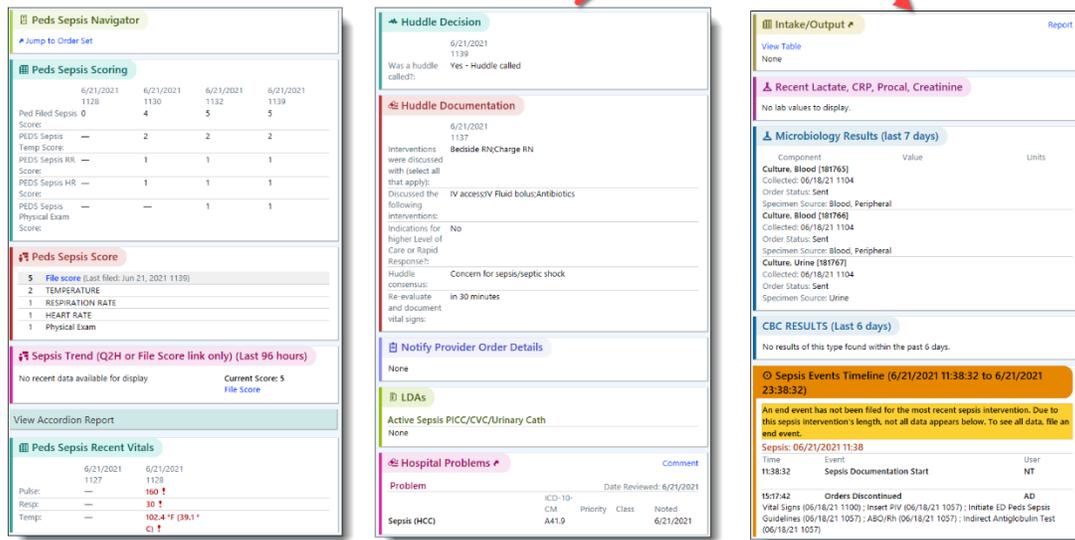
1. Within a patient’s chart, if you do not have the sidebar open, click on the tab to the right of the screen to open the sidebar summary.



2. Click on the search glass and type in ‘**peds sepsis sidebar huddle**’ to open the summary.



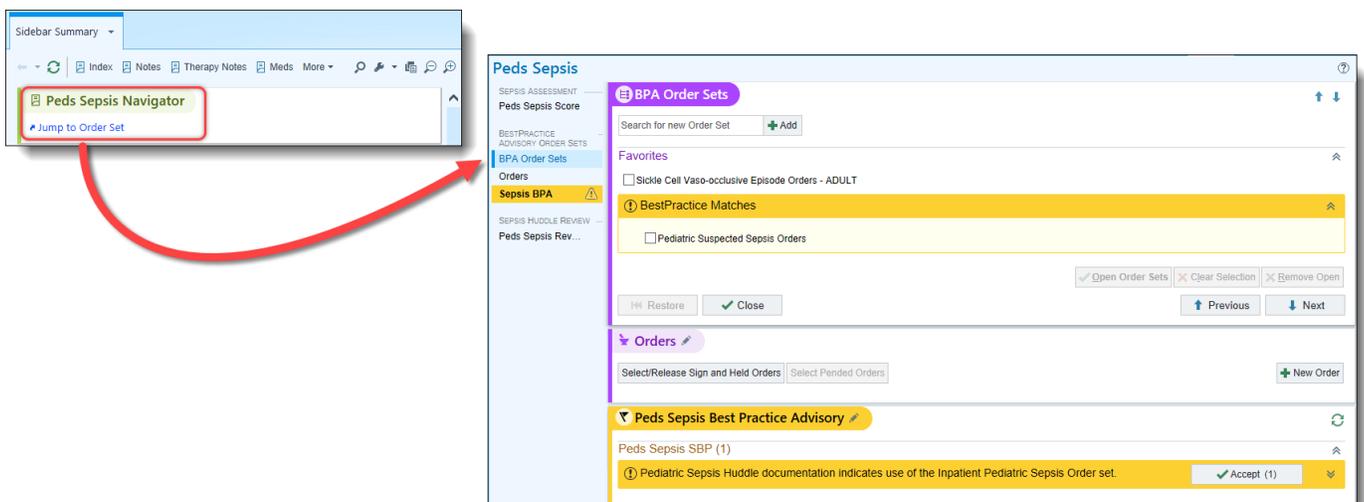
3. The **Peds Sepsis Sidebar Huddle** summary will display.



Peds Sepsis Navigator

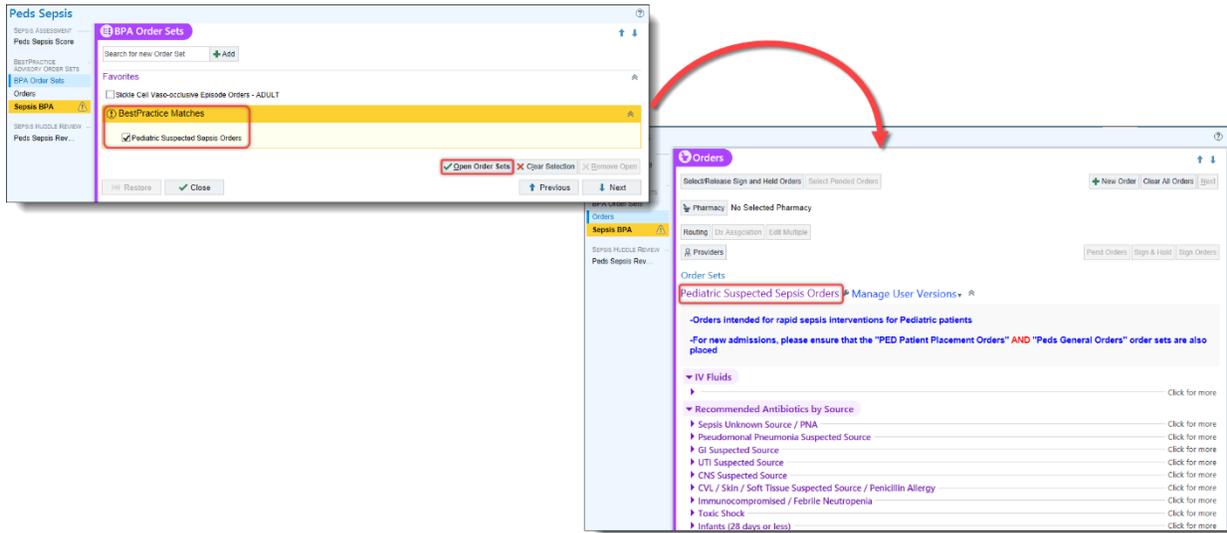
You can access the Peds Sepsis Navigator from the Peds Sepsis Sidebar Huddle summary. From the Peds Sepsis Navigator you can place appropriate Order Set required from the BPA, review the Peds Sepsis BPA and other documentation as necessary.

1. From the *Peds Sepsis Sidebar Huddle summary* you can access the Peds Sepsis navigator. At the top under the heading *Peds Sepsis Navigator*, click on the hyperlink *Jump to Order Set*.



2. This will open up the BPA Order Sets section of the navigator. From there you have the ability to select the requested order set and open the orders within the navigator. This

allows you to reference information within the navigator such as, Huddle Documentation, recent laboratory studies and the Sepsis events Timeline.



3. Note that the Peds Sepsis Navigator displays similar information as the Peds Sepsis Sidebar Huddle Summary.