



IMPROVING PEDIATRIC SEPSIS OUTCOMES

August 16, 2023

SEPSIS WEBSITE

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Sepsis

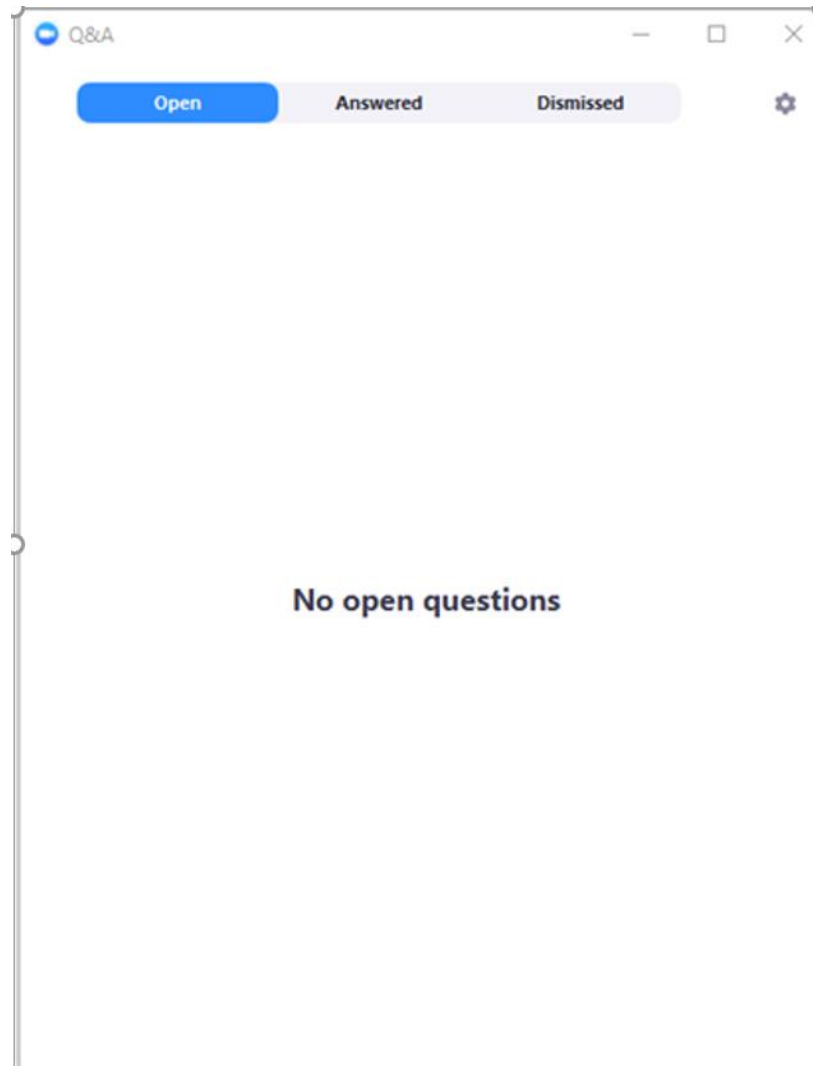
Reducing Sepsis Mortality in Ohio Through Early Recognition, Appropriate Intervention

The OHA Board of Trustees identified reducing sepsis mortality in Ohio as one of the key focus areas for OHA and Ohio hospitals. Sepsis is the body's overwhelming and life-threatening response to infection that can lead to tissue damage, organ failure and death. In other words, it's your body's over active and toxic response to an infection. Sepsis impacted an estimated 41,000 Ohioans in 2017. Early recognition and treatment can reduce the morbidity and mortality of sepsis.

CONTINUING EDUCATION

- The link for the evaluation of today's program is:
<https://www.surveymonkey.com/r/Sepsis-August2023>
- Please be sure to access the link, complete the evaluation form, and request your certificate. The evaluation process will remain open **two weeks** following the webcast. Your certificate will be emailed to you when the evaluation process closes after the 2-week process.
- If you have any questions, please contact Dorothy Frabott (Dorothy.Frabott@ohiohospitals.org)

SUBMITTING QUESTIONS



PRESENTER(S)



KALYN SEISLOVE, APRN-CNP
Pediatric Nurse Practitioner
Akron Childrens Hospital



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Pediatric Nurse Practitioner
Akron Childrens Hospital

Improving Pediatric Sepsis Outcomes at Akron Children's Hospital



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Amy McHenry, DNP, CPNP-AC/PC, CCRN



No financial disclosures



Objectives

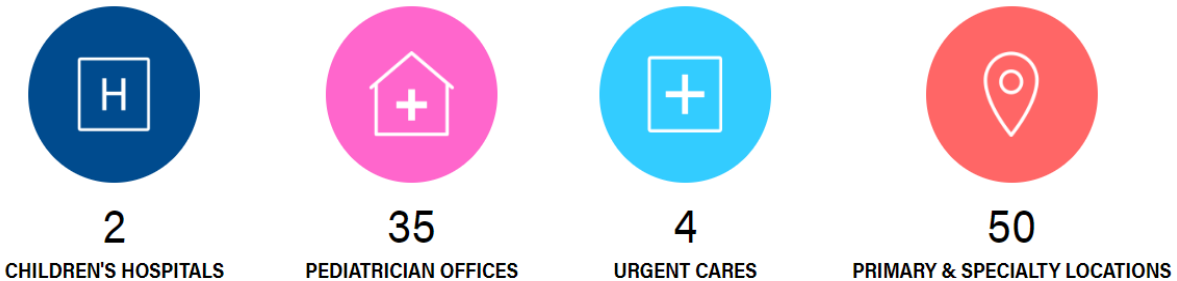
- Discuss Akron Children's Hospital involvement in national IPSO collaborative to standardize and improve sepsis care for pediatric patients
- Highlight the implementation of IPSO recommendations
- Address the successes and barriers over the last four years
- At the completion of this program, the participant will describe strategies for improving sepsis care for pediatric patients using tools, resources, and best practices.



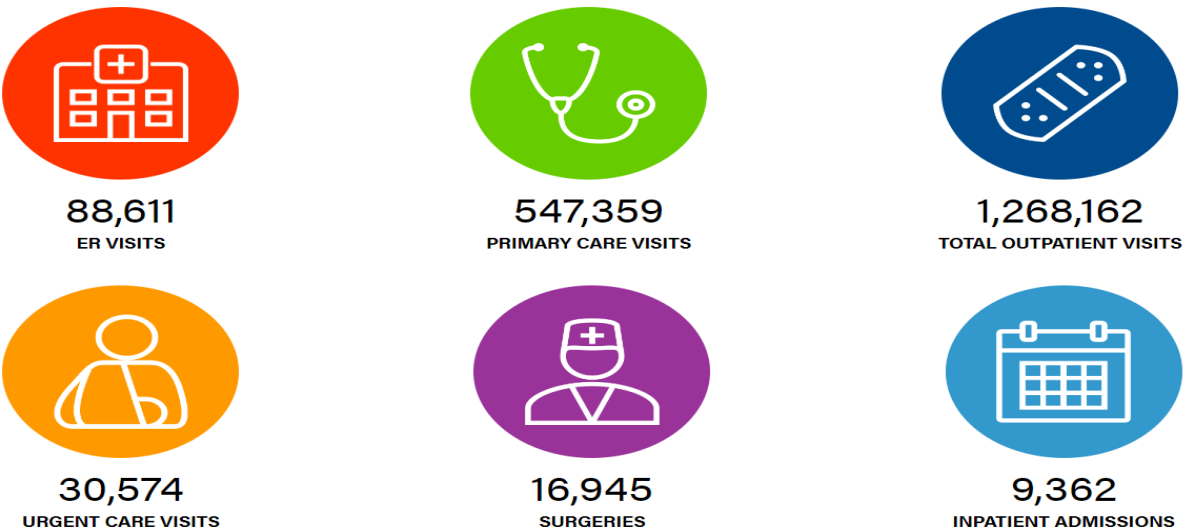
2022 Facts and Stats

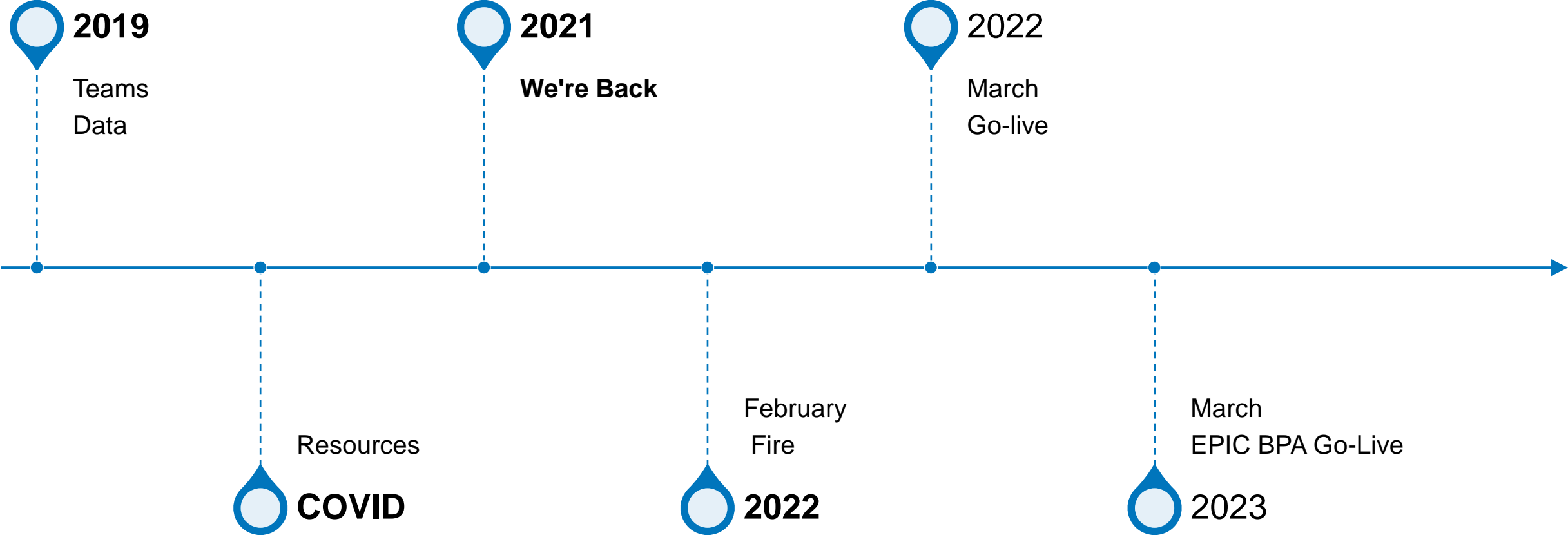


AT-A-GLANCE



TOTAL VISITS



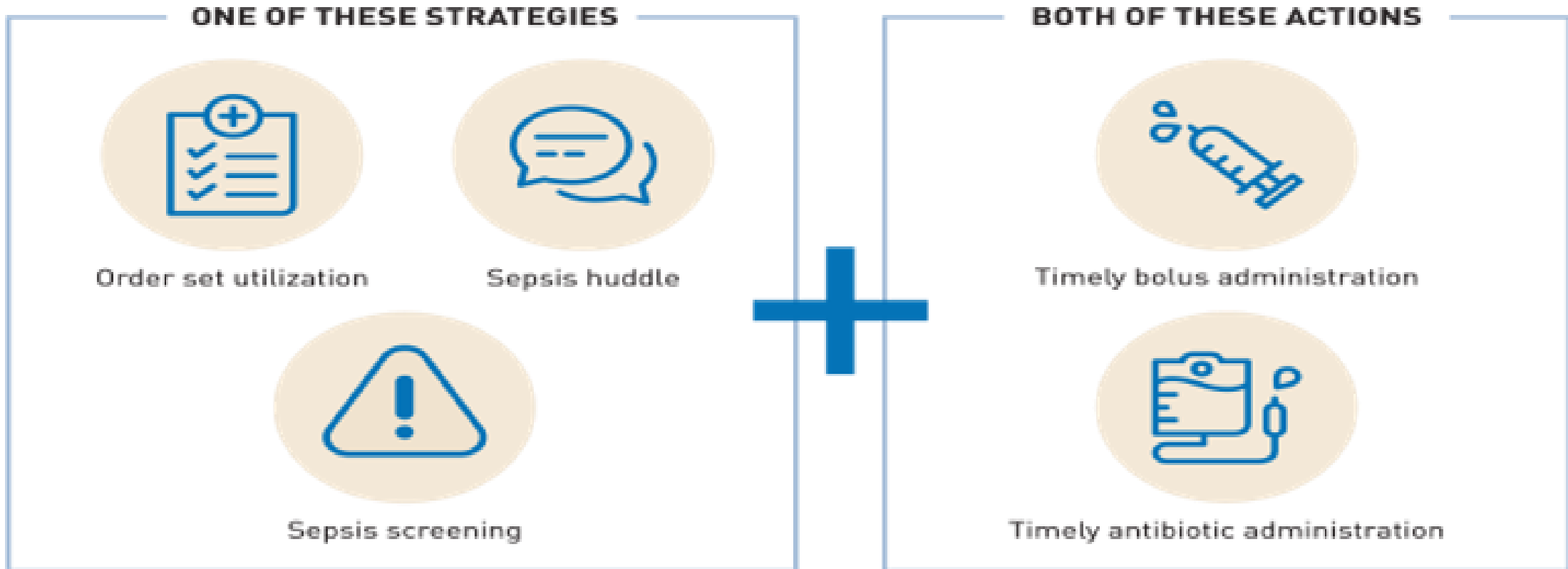


What is IPSO?

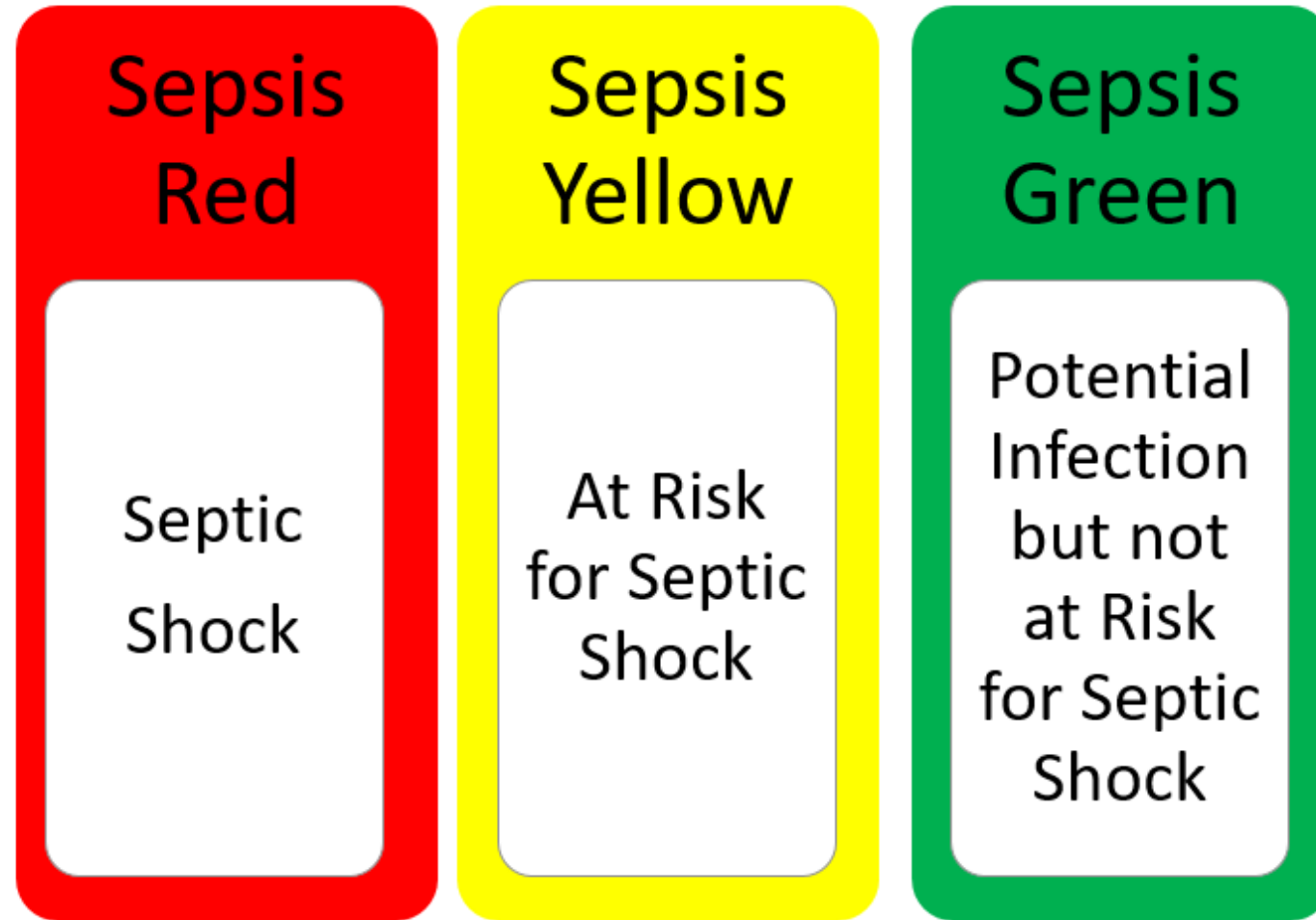
- Children's Hospital Association QI collaborative called Improving Pediatric Sepsis Outcomes
- IPSO Suspected Sepsis vs IPSO Critical Sepsis
- Decreased mortality with timely treatment



IPSO Recommended Key Metrics



Akron Children's Common Language

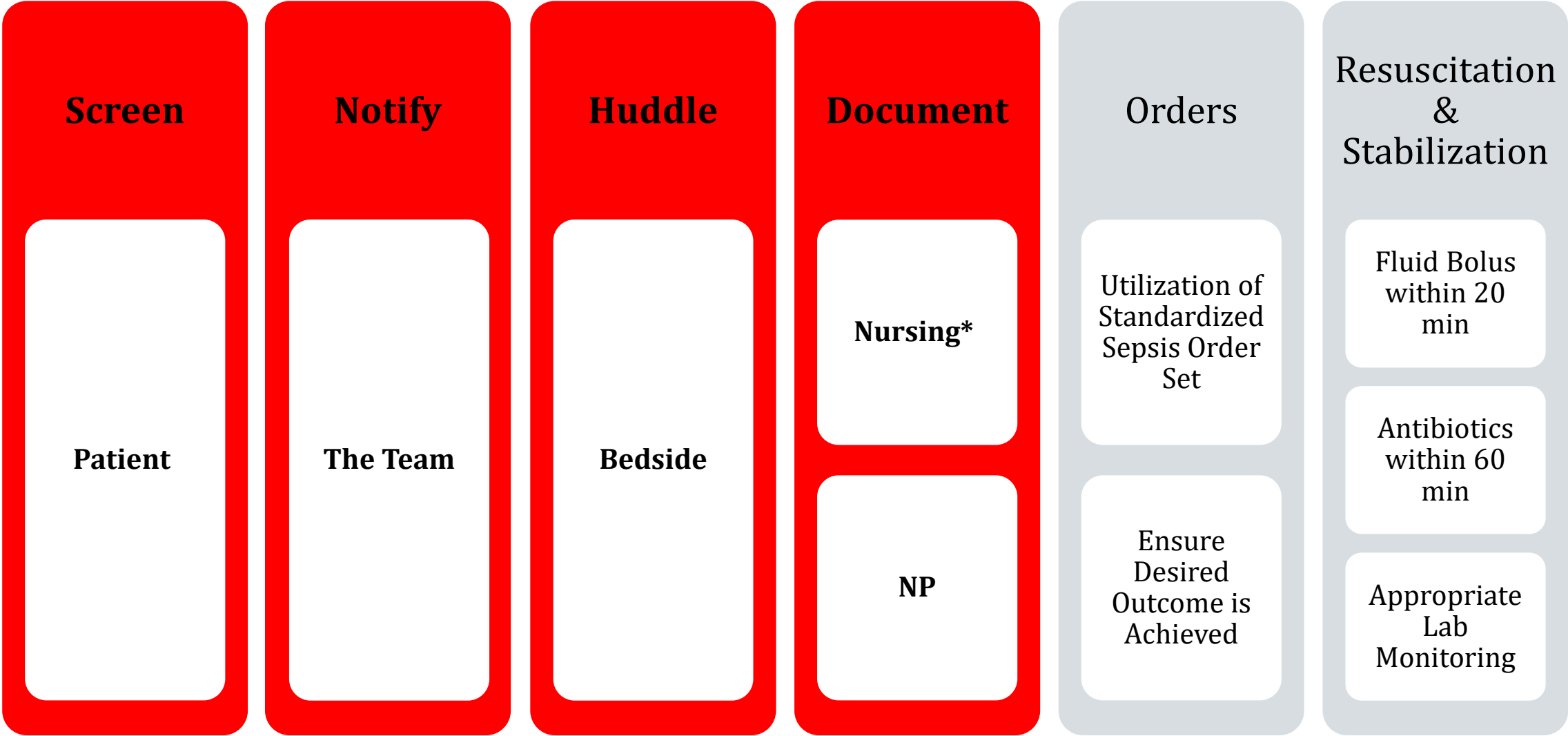


How did we get staff on board?

- Multimodal education
- Engagement and Awareness Activities



Sepsis Process Map



Sepsis Trigger Tool



Literature review: PICU specific trigger tools

CHOP PICU trigger tool

- [Sepsis Clinical Pathway – Emergency Department, Inpatient and PICU | Children's Hospital of Philadelphia \(chop.edu\)](#)

KDD and PDSAs

- Feedback from nursing and providers
- Interventions to improve sensitivity and specificity

Early Identification in the ED, Acute Care Floor and Hematology/Oncology Units



Deterioration Index on Acute Care Floors



Febrile Neutropenia Pathway in Hematology and Oncology Unit



EPIC BPA in Emergency Department



Akron Children's Hospital

Standardized Order Set

The screenshot shows a web-based interface for medical orders. At the top, there is a header with a left arrow and the word 'Orders', and a 'Clear All Orders' button on the right. Below the header, the title 'Gen IP IPSO Sepsis Orders- Sepsis Red & Sepsis Yellow' is displayed, followed by a 'Manage User Versions' link. A red text box contains 'Age based considerations' with two instructions: 'if patient is < 60 days old please use the "HOSP IP Fever Under 60 days" order set' and 'if patient has a hemabologic or oncologic condition please use the "HEM / ONC High Risk Fever Orders" order set'. The main content is organized into several expandable sections, each with a dropdown arrow and a title. Each section contains a list of items with a right-pointing arrow and a 'Click for more' link. The sections are: 'Medications Sepsis Red (Severe Sepsis or Septic Shock)' with items Bolus, Antibiotics, Steroids, and Antipyretics; 'Diagnostics Sepsis Red (Severe Sepsis or Septic Shock)' with items Diagnostics Sepsis Red Orders and Imaging; 'Medications Sepsis Yellow (SIRS plus suspected/confirmed infection)' with items Bolus, Antibiotics, Steroids, and Antipyretics; and 'Diagnostics Sepsis Yellow' with items Diagnostics Sepsis Yellow and Imaging. At the bottom, there is an 'Additional Orders' section with a search bar and the text 'You can search for an order by typing in the header of this section.' A small downward arrow is visible in the bottom right corner of the interface.

Orders Clear All Orders

Gen IP IPSO Sepsis Orders- Sepsis Red & Sepsis Yellow Manage User Versions

Age based considerations:
if patient is < 60 days old please use the "HOSP IP Fever Under 60 days" order set
if patient has a hemabologic or oncologic condition please use the "HEM / ONC High Risk Fever Orders" order set

▼ Medications Sepsis Red (Severe Sepsis or Septic Shock)

- ▶ Bolus Click for more
- ▶ Antibiotics Click for more
- ▶ Steroids Click for more
- ▶ Antipyretics Click for more

▼ Diagnostics Sepsis Red (Severe Sepsis or Septic Shock)

- ▶ Diagnostics Sepsis Red Orders Click for more
- ▶ Imaging Click for more

▼ Medications Sepsis Yellow (SIRS plus suspected/confirmed infection)

- ▶ Bolus Click for more
- ▶ Antibiotics Click for more
- ▶ Steroids Click for more
- ▶ Antipyretics Click for more

▼ Diagnostics Sepsis Yellow

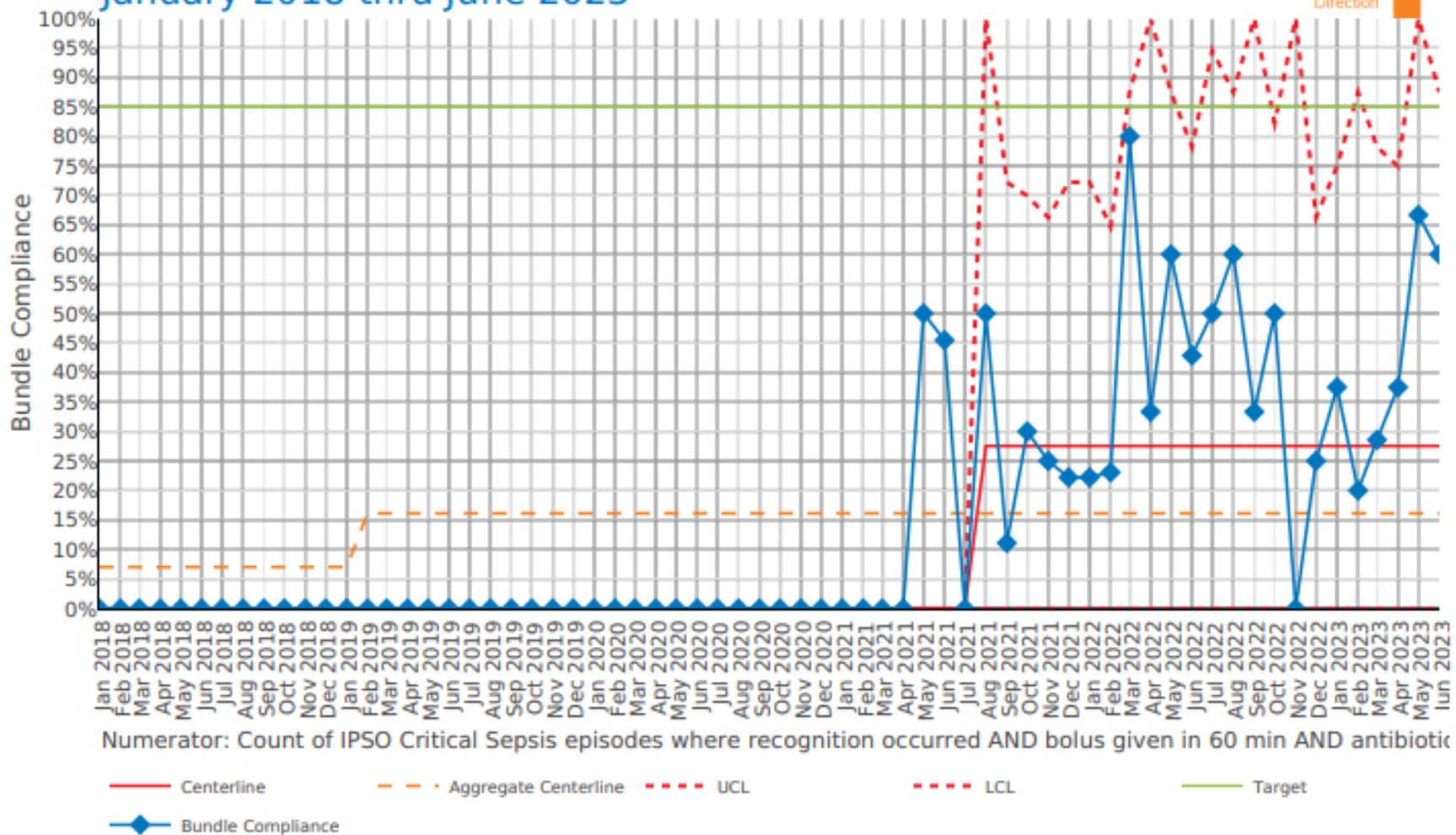
- ▶ Diagnostics Sepsis Yellow Click for more
- ▶ Imaging Click for more

▼ Additional Orders

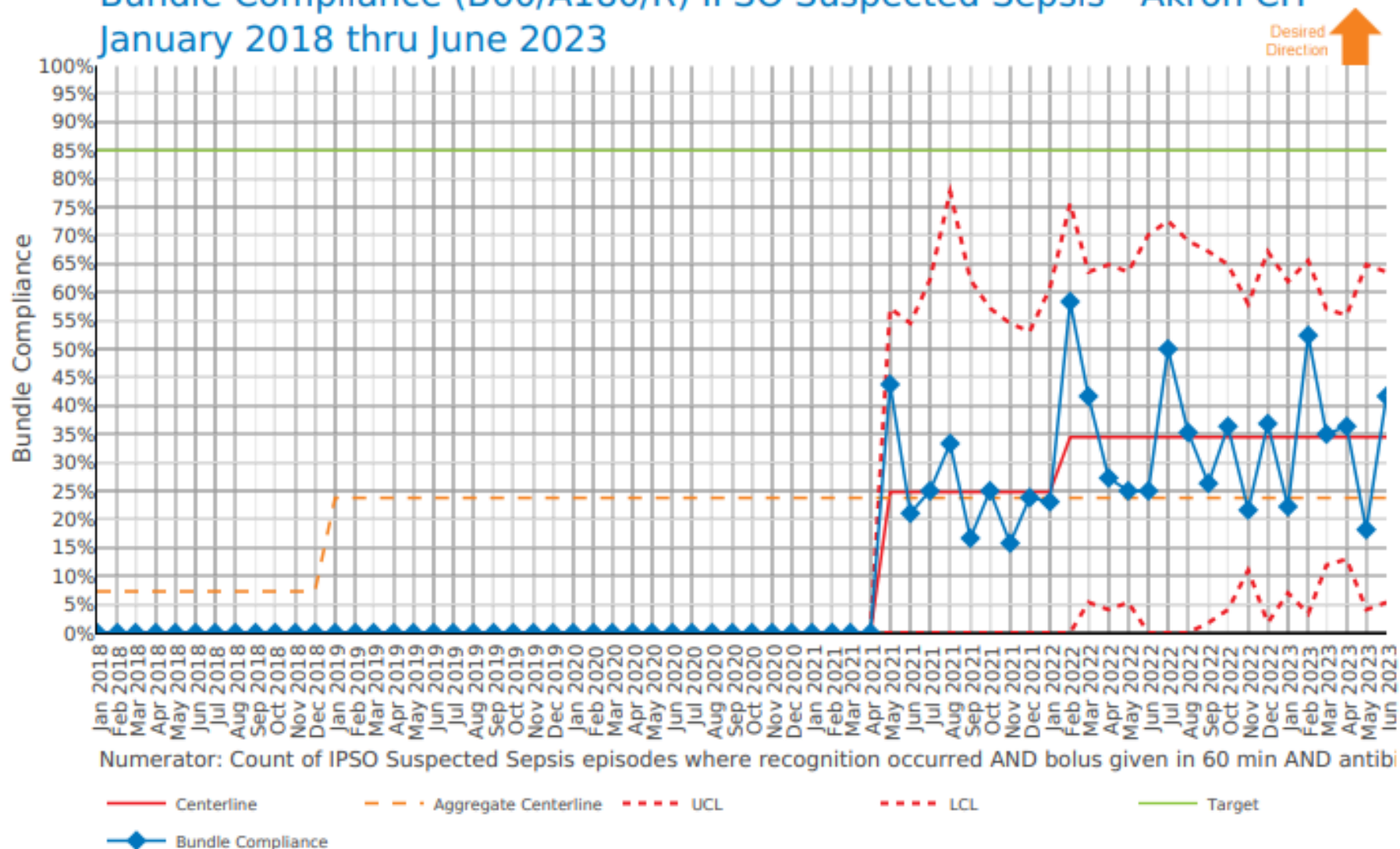
You can search for an order by typing in the header of this section.



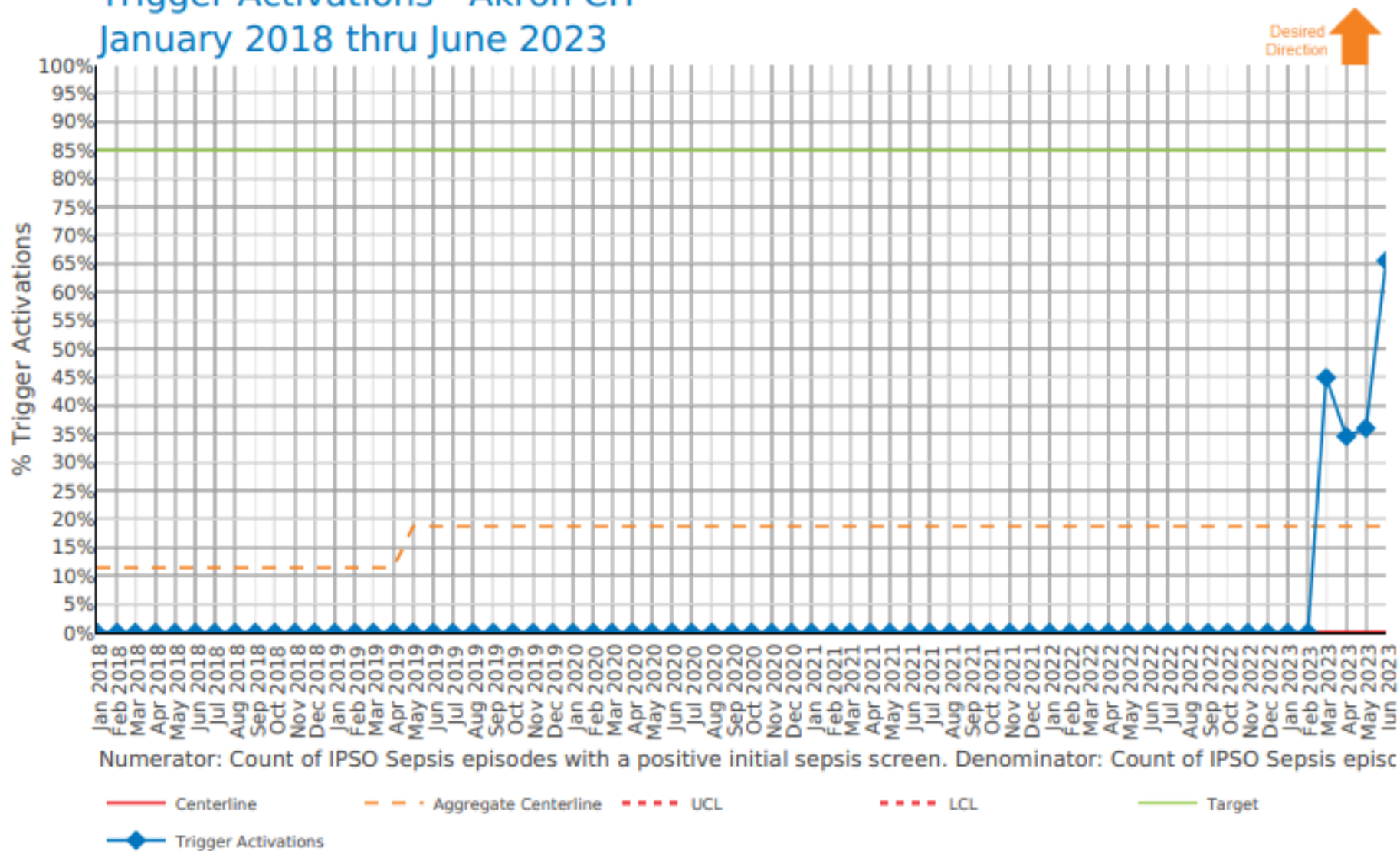
Bundle Compliance (B60/A180/R) IPSO Critical Sepsis - Akron CH January 2018 thru June 2023



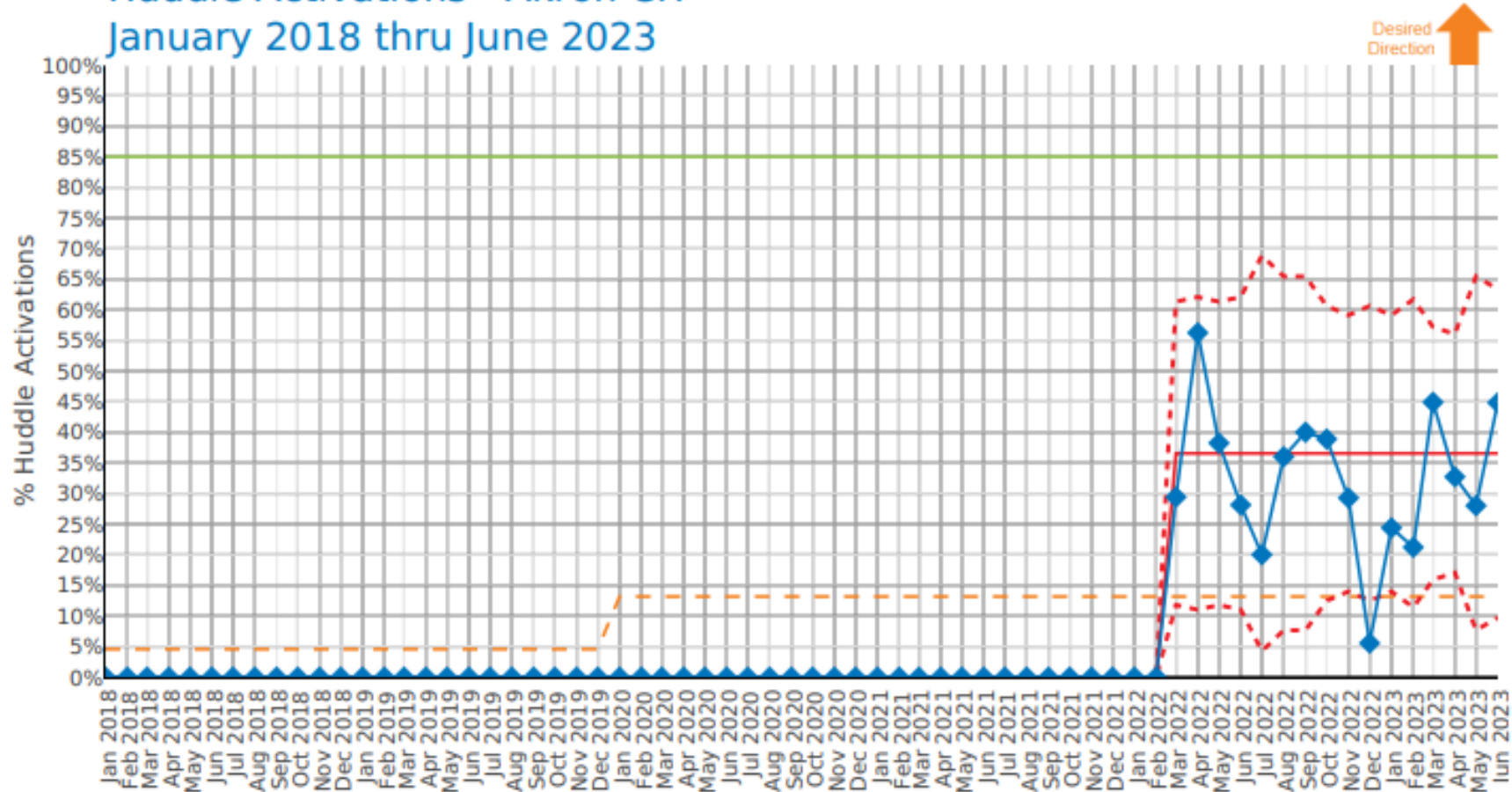
Bundle Compliance (B60/A180/R) IPSO Suspected Sepsis - Akron CH January 2018 thru June 2023



Trigger Activations - Akron CH January 2018 thru June 2023



Huddle Activations - Akron CH January 2018 thru June 2023

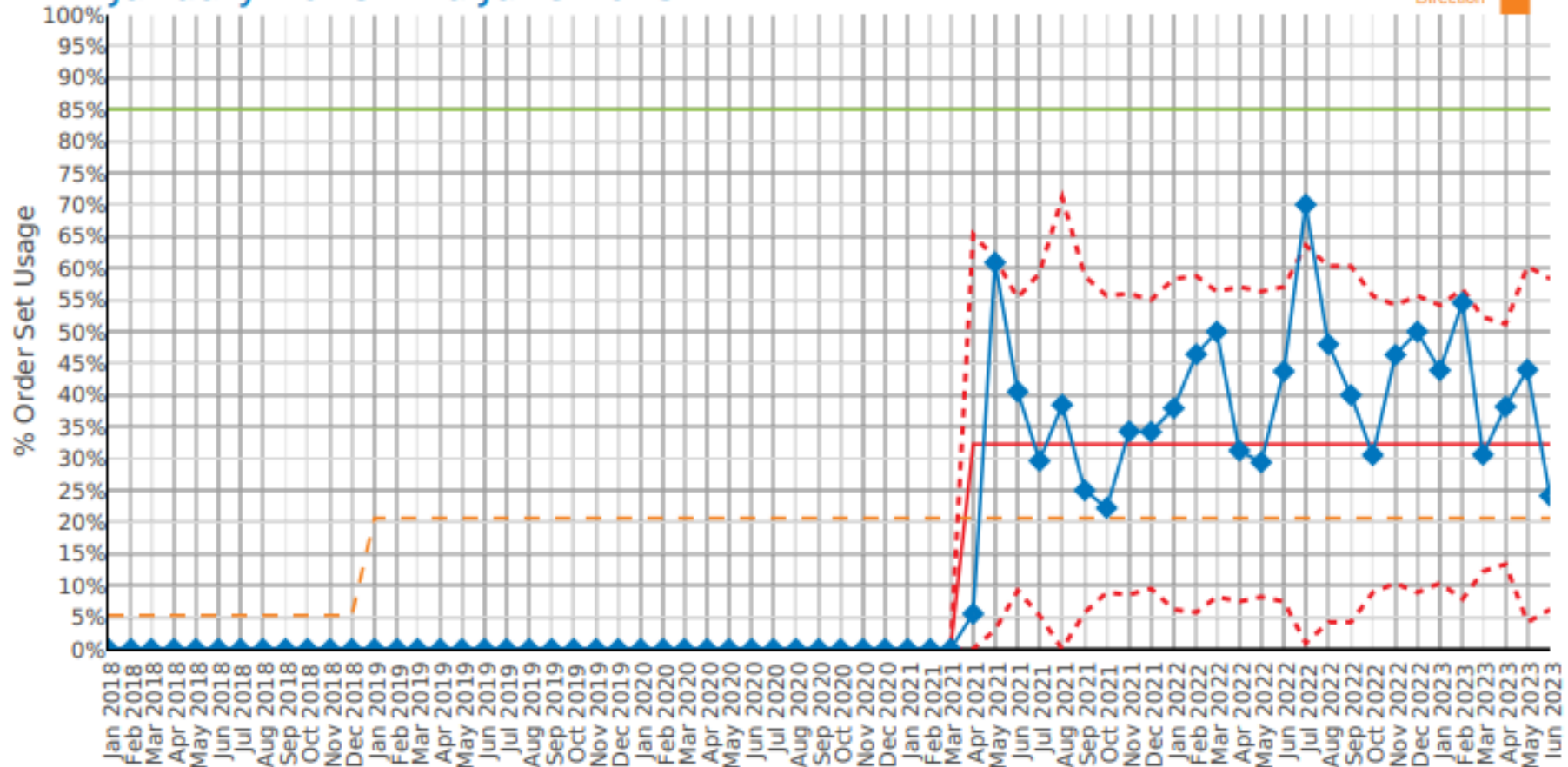


Numerator: Count of IPSO Sepsis episodes with a positive sepsis huddle. Denominator: Count of IPSO Sepsis episodes.

- Centerline
- - - Aggregate Centerline
- - - UCL
- - - LCL
- Target
- ◆ Huddle Activations



Utilization of Order Set - Akron CH January 2018 thru June 2023

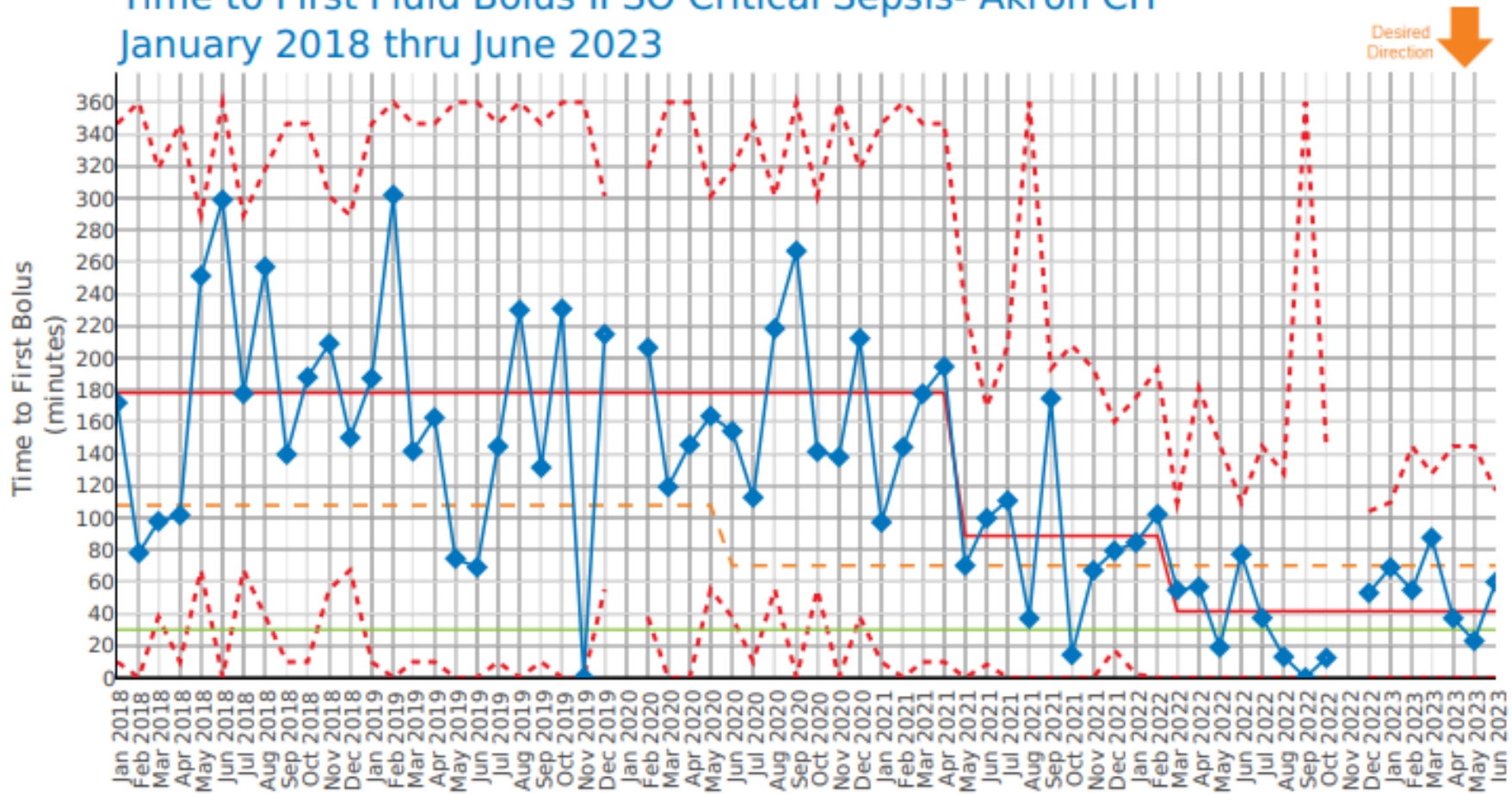


Numerator: Count of IPSO Sepsis episodes where a sepsis order set was used. Denominator: Count of IPSO Sepsis episodes

- Centerline
- Aggregate Centerline
- - - UCL
- - - LCL
- Target
- ◆ Utilization of Order Set



Time to First Fluid Bolus IPSO Critical Sepsis- Akron CH January 2018 thru June 2023



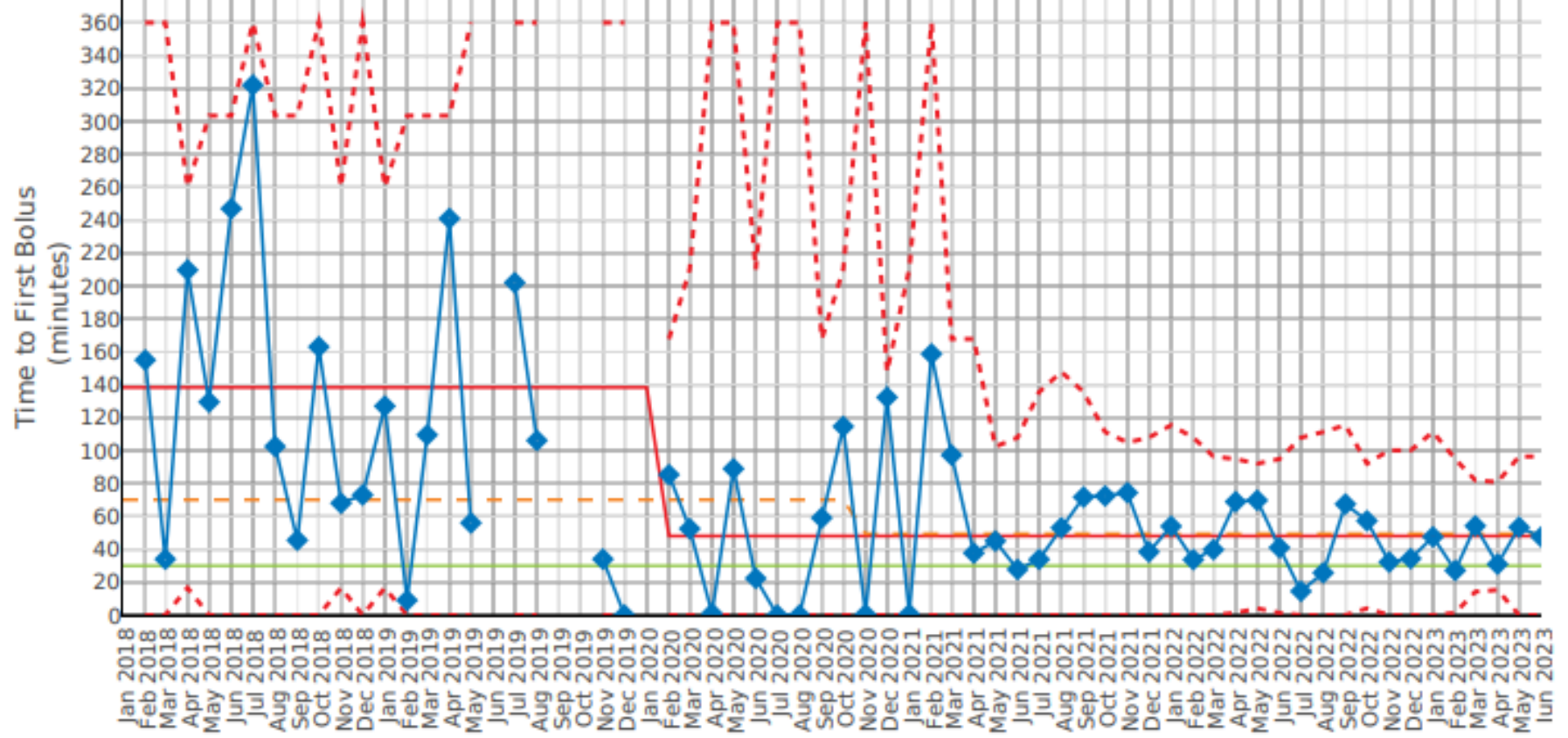
Numerator: Sum of time from time zero to initiation of first fluid bolus. Denominator: Count of IPSO Suspected Sepsis ep

- Centerline
- - - Aggregate Centerline
- - - - UCL
- - - - LCL
- Target
- ◆ Time to First Bolus



Time to First Fluid Bolus IPSO Suspected Sepsis - Akron CH January 2018 thru June 2023

Desired Direction 

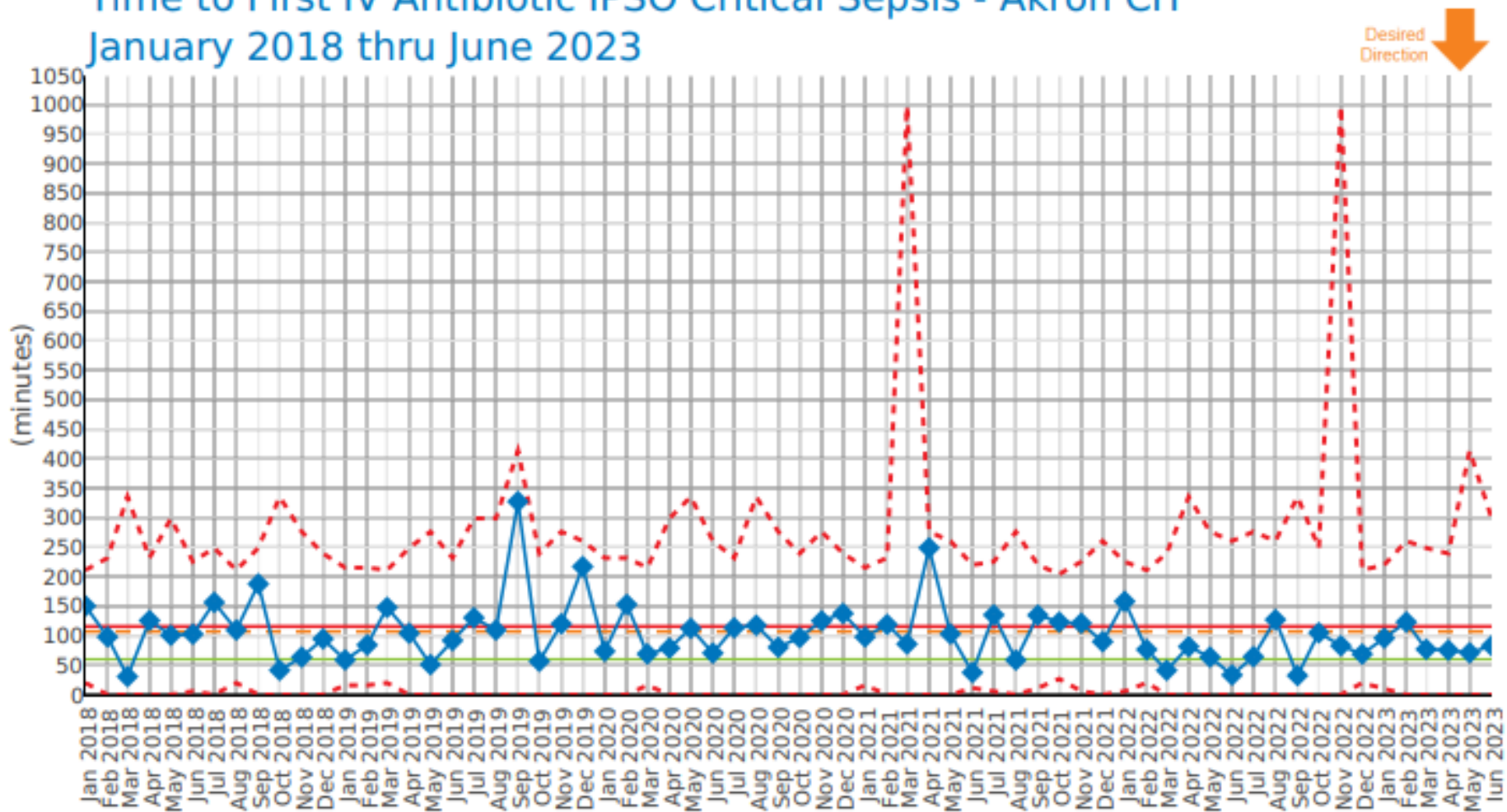


Numerator: Sum of time from time zero to initiation of first fluid bolus. Denominator Count of IPSO Suspected Sepsis ep

- Centerline
- - - Aggregate Centerline
- - - - UCL
- LCL
- Target
- ◆— Time to First Fluid Bolus



Time to First IV Antibiotic IPSO Critical Sepsis - Akron CH January 2018 thru June 2023



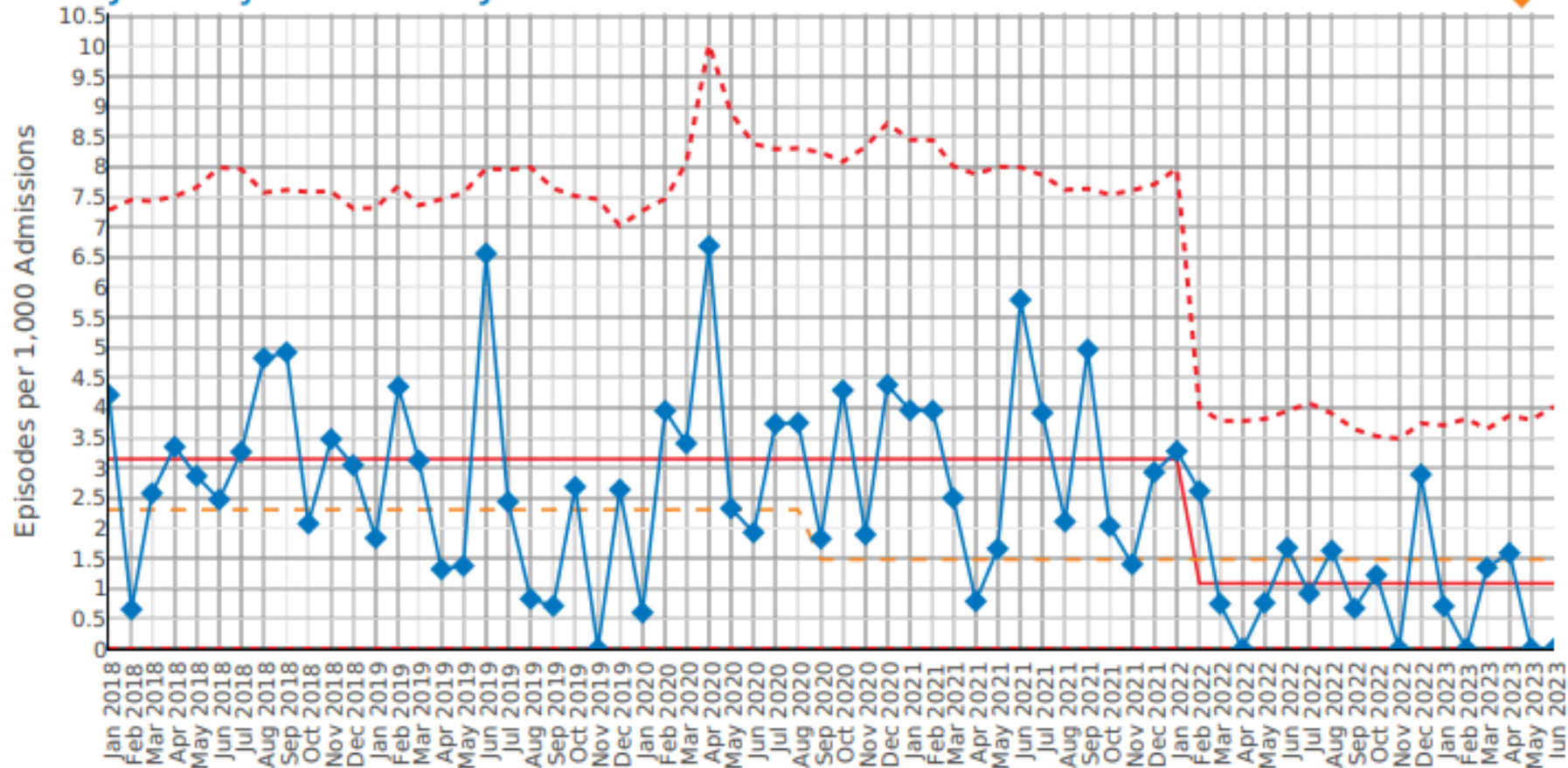
Numerator: Sum of time from time zero to initiation of First IV Antibiotic. Denominator: Count of IPSO Suspected Sepsis

- Centerline
- Aggregate Centerline
- - - UCL
- - - LCL
- Target
- ◆— Time to First IV Antibiotic



Hospital Onset IPSO Critical Sepsis - Akron CH

January 2018 thru June 2023



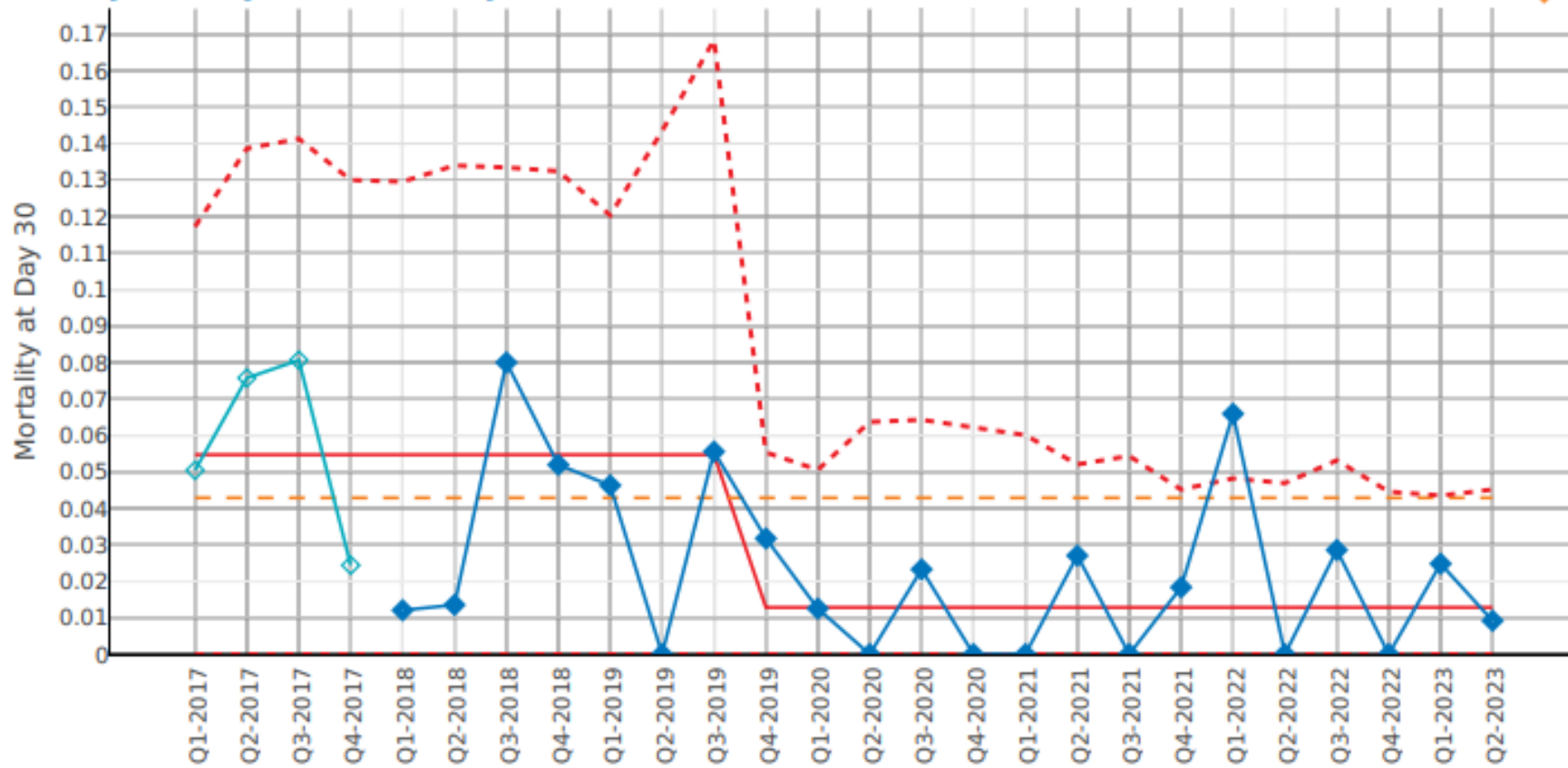
Numerator: Count of IPSO Critical episodes where TZ was more than 12 hours after arrival. Denominator: Admissions/1,

- Centerline
- - - Aggregate Centerline
- - - UCL
- - - LCL
- ◆ Hospital Onset IPSO Critical Sepsis



Sepsis Mortality at Day 30 - Akron CH January 2017 thru June 2023

Desired Direction 



Numerator: Count of sepsis-attributable deaths through Day 30. Denominator: Count of IPSO Sepsis episodes.

— Centerline
 - - - Aggregate Centerline
 - - - UCL
 - - - LCL
 —◇— Baseline
—◆— Mortality at Day 30





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Akron Children's Hospital

How do we sustain the momentum?



Focus on the WHY



Adapt and adopt new education and awareness based on priority needs and areas of improvement



Continue to speak SEPSIS



References

- Eisenberg, M. A., & Balamuth, F. (2022). Pediatric Sepsis Screening in US Hospitals. *Pediatric Research*, 91, 351-358. <https://doi.org/10.1038/s49310-021-01708-y>.
- Paul R, Niedner M, Riggs R, et al. Bundled Care to Reduce Sepsis Mortality: The Improving Pediatric Sepsis Outcomes (IPSO) Collaborative. *Pediatrics*. 2023;152(2): e2022059938
- [Sepsis Clinical Pathway – Emergency Department, Inpatient and PICU | Children's Hospital of Philadelphia \(chop.edu\)](#)



Appendix

PICU SEPSIS TRIGGER TOOL identifies patients at risk for sepsis. Patients with sepsis have an infection which triggers an exaggerated immune response that causes inadequate tissue perfusion leading to organ dysfunction and failure. Hypotension is a late finding. **Early recognition and goal directed therapy improves patient outcomes.**

1

Either of these two conditions

EITHER OF THESE:	08/20	09/21	10/22	11/23	12/00	13/01	14/02	15/03	16/04	17/05	18/06	19/07
Temperature >38.5C or <36 C												
Tachycardia* or >10% baseline												
PLUS, ONE OF THESE:												
Mental Status Abnormality*												
Perfusion Abnormality*												
Hypotension*/Increasing inotropic support (>0.05 increase in 1 hour)												
Tachypnea*												
Urine output <0.5ml/kg/hr												
Additional Factors Present*												
SEPSIS HUDDLE COMPLETED:												

Documentation to be completed with ordered vital frequency

2

Plus any one of these conditions

Date:

3

CALL A SEPSIS HUDDLE

Circle:
AM or PM shift?
Sepsis Red/
Yellow/Green?

4

5

Age	Respiratory rate	Tachycardia	Systolic BP	Diastolic BP	MAP
0-30 days	>65	>160	<75	<30	<45
1-12 months	>40	>140	<74	<35	<50
1-3 years	>30	>130	<76	<45	<55
3-6 years	>30	>110	<82	<50	<60
6-12 years	>25	>100	<94	<50	<65
12+ years	>25	>90	<94	<50	<65

Mental Status Abnormality	Anxiety, restlessness, agitation, irritability, inappropriate crying, drowsiness, confusion, lethargy, obtundation
Perfusion Abnormality	Cool extremities, delayed capillary refill (>3 seconds), diminished pulses, mottling or flushed, warm extremities, bounding pulses, flash capillary refill (<1 second)

Additional Factors Present	
Existing laboratory findings	Metabolic acidosis, elevated lactate, thrombocytopenia, coagulopathy, or elevated creatinine
Other factors	Other physical exam findings, including petechial and/or purpuric rash or erythroderma, requires change in temperature control management (actively cooling or warming)
High-risk conditions	<56 days of age, central line presence, invasive devices (ETT, Trach, EVD, PD Drain, Foley), immunocompromised (BMT, solid organ transplant, malignancy, asplenia/sickle cell disease), pre-existing neurologic dysfunction that limits mental status evaluation

Place patient sticker here

OHA collaborates with member hospitals and health systems to ensure a healthy Ohio

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