

ED Paediatric Sepsis Clinical Pathway – Frequently Asked Questions (FAQ)

Table of Contents

Should I use the Paediatric or the Adult pathway?	2
What’s the difference between the Paediatric Sepsis Clinical Pathway for rural and remote or secondary and tertiary HHS?	2
Which pathway should I use for immunocompromised children with an oncology diagnosis presenting with fever?	2
Which resources can be used for calculating and preparing inotrope infusions in paediatric patients?... 2	
Which antibiotics should we use for children presenting with MRSA risk factors at our hospital?	2
What changes were made to the pathway after the pilot and consultation period and why?	3
Screening and Recognition Section (page 1 of pathway).....	3
Treatment Bundle (page 2 of pathway).....	5
Within one hour of septic shock	5
Nursing staff commencing antibiotics.....	5
Isotonic Fluid.....	5
Adrenaline.....	6
When will a paediatric Digital Pathway become available?	6
How do I order printed clinical pathways?	6
What is the review process?	6

Should I use the Paediatric or the Adult pathway?

The Paediatric sepsis pathway should be used for children younger than 16 years. 16–18 year olds can use either the Paediatric or Adult sepsis clinical pathway at the discretion of the treating clinician and HHS. The Paediatric and Adult ED Sepsis Pathways are aligned.

What's the difference between the Paediatric Sepsis Clinical Pathway for rural and remote or secondary and tertiary HHS?

Both pathways include identical sepsis screening and recognition tools, treatment bundle, antibiotic prescribing and administration guidelines for paediatric patients and a factsheet for parents.

The key different between the two pathways is related to escalation. The rural and remote pathway prioritises early escalation to facilitate transfer to specialist services with paediatric and critical care expertise through Retrieval Services Queensland (RSQ) or Royal Flying Doctor Service (RFDS) whereas the secondary and tertiary pathway prioritises early escalation to ICU/PICU after notifying the consultant.

Which pathway should I use for immunocompromised children with an oncology diagnosis presenting with fever?

Refer to the [CHQ-GDL-01249 Management of Fever in a Paediatric Oncology Patient guideline](#) and the [Paediatric Clinical Pathway – Initial Management of suspected neutropenic sepsis](#).

For Digital sites: Refer to Paediatric Febrile neutropenia Power Plan

Which resources can be used for calculating and preparing inotrope infusions in paediatric patients?

Refer to the [Children's Resuscitation Emergency Drug Dosage Guide \(CREDD\)](#) and use Dose Error Reduction Software (DERS) on infusion pumps.

[CREDD education videos](#) demonstrate how to use the resource and there are paediatric specific skills videos available via [Optimus Educational Training Videos](#) that demonstrate how to

- prepare adrenaline infusion
- obtain a lactate
- take a blood culture and
- prepare and administer IV/IO antibiotics in a child with sepsis or sepsis shock.

Which antibiotics should we use for children presenting with MRSA risk factors at our hospital?

All antimicrobial recommendations should be derived from an understanding of the local epidemiology of antimicrobial-resistant infections including MRSA. Please check with your local Infectious diseases and/or Clinical Microbiology team which agent is preferred in your local patient group. We recommend regularly reviewing and disseminating this information.

Queensland Pathology provides Local Antibiograms annually to assist clinicians with this choice – available online: <https://qheps.health.qld.gov.au/pathology-queensland/services/antibiograms>

To assist, the paediatric sepsis pathway includes antibiotic recommendations for non-multi resistant MRSA or multi-resistant MRSA.

What changes were made to the pathway after the pilot and consultation period and why?

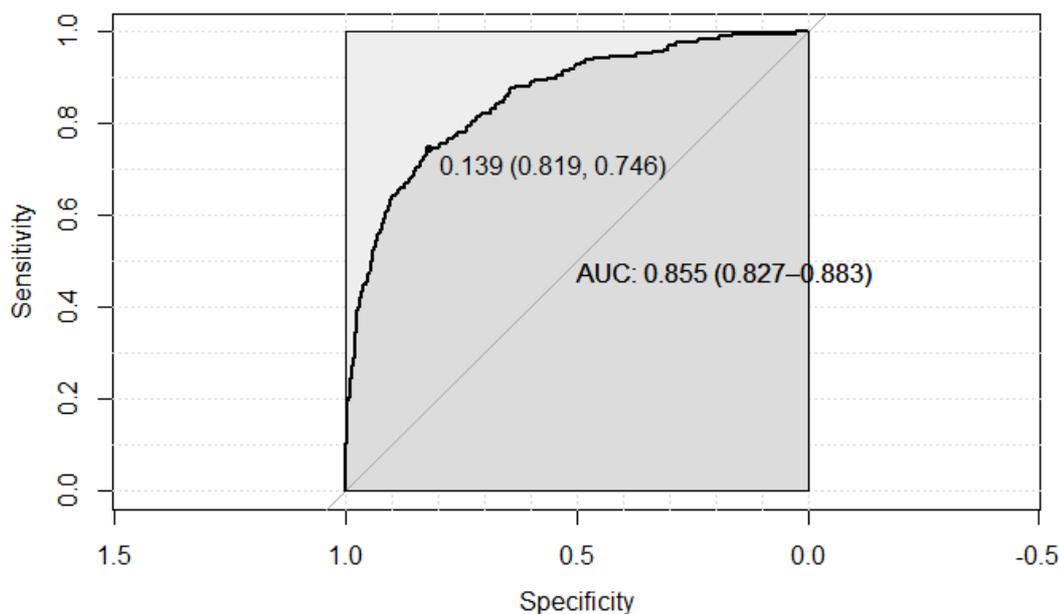
Screening and Recognition Section (page 1 of pathway)

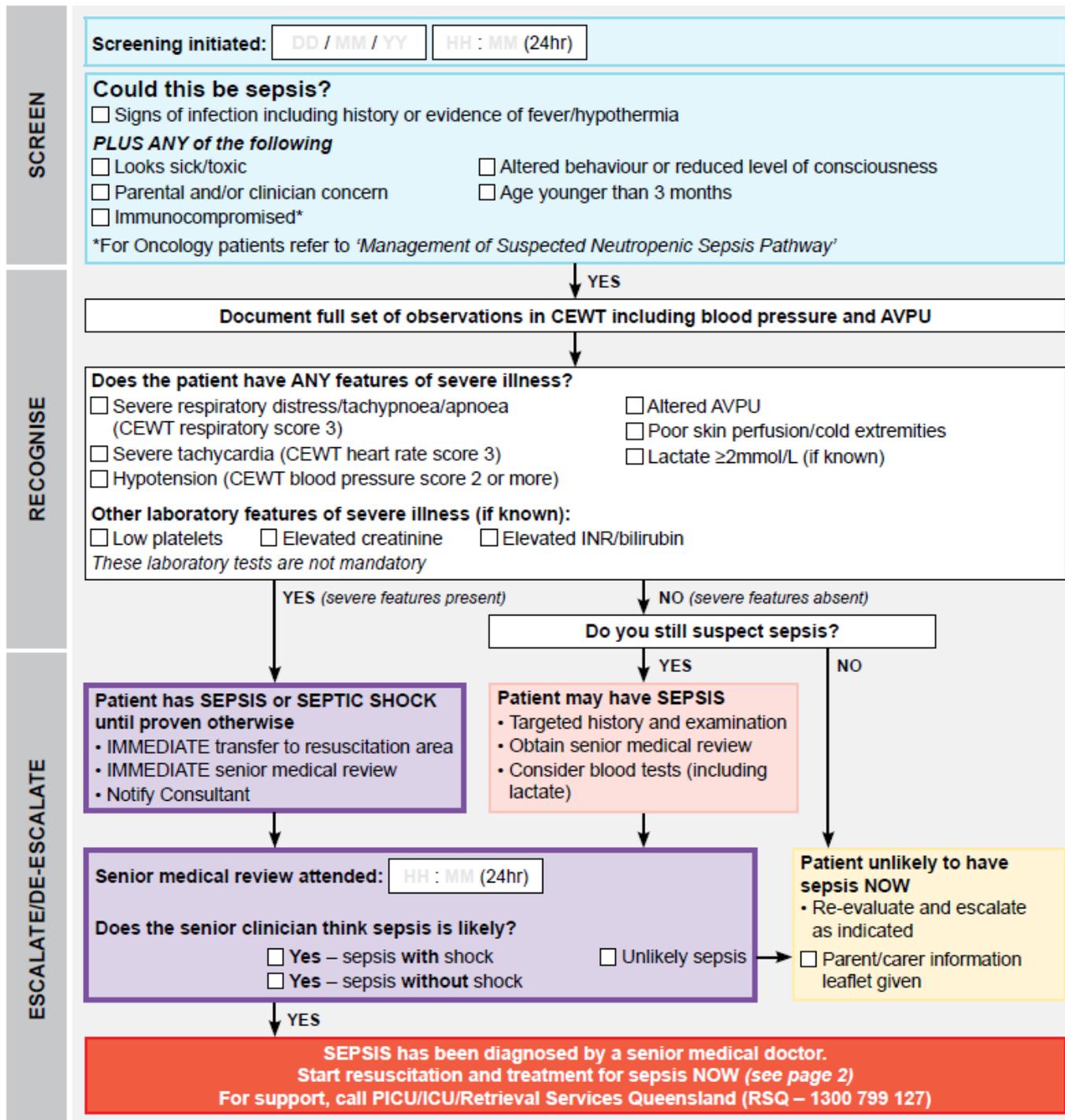
Evaluation: We analysed data from the Paediatric Sepsis Collaborative to identify which screening and recognition factors were reliable in determining sepsis. We removed features that did not perform well in discriminating patients with sepsis in order to increase the specificity of the tool. We assessed the performance of the revised screening and recognition tool using the Area Under the Curve (AUC) of the Receiver Operator Curve (ROC).

Our aim is to limit the use of the screening tool in children with mild illnesses, as this increases ED workload unnecessarily. It is critically important that clinicians are engaged if we are to improve sepsis care for children.

The pathway has reduced the screening features to 5 and the observational features to 6.

This model gives an AUC of 0.855 (95% CI 0.827-0.883) that indicates this performs very well in as an excellent discriminator of children with sepsis.





Treatment Bundle (page 2 of pathway)

The [Surviving Sepsis Campaign \(SSC\)](#) released updated, evidence-based, clinical guidelines for the management of paediatric sepsis in January 2020. We have aligned our treatment bundle with the new guidance.

Within one hour of septic shock

The 2020 paediatric SCC guidelines strongly recommend starting antimicrobials and fluid resuscitation as *soon as possible* in children with septic shock; at least within 1 hour of recognition. In children with sepsis-associated organ dysfunction, but without shock, they suggest starting antimicrobial therapy *as soon as possible* after appropriate evaluation, within 3 hours of recognition. The guidance demonstrates that the outcomes from sepsis improve with early treatment.

The time delay in treatment initiation, after which outcomes significantly worsen, is sooner for sicker children: namely those with septic shock (1 hour). The evidence for children with sepsis-associated organ dysfunction without shock suggests that outcomes worsen if treatment is delayed beyond 3 hours of recognition of sepsis. This allows for expedited evaluation in children with diagnostic uncertainty to determine features of organ dysfunction associated with sepsis.

Complete actions 1–6 as soon as possible and WITHIN ONE HOUR FOR SEPTIC SHOCK. Perform actions concurrently and with repeated assessment by senior medical doctor.

Nursing staff commencing antibiotics

This is to support role delineation, safety and accountability. Nursing staff are the clinicians most often tasked with administering antibiotics. We support the need for flexibility in the timely delivery of the treatment bundles – particularly for regional, rural and remote workforce.

<p>4. Commence appropriate IV/intraosseous antibiotics as soon as possible</p> <ul style="list-style-type: none">• Intramuscular if no IV/intraosseous access• Check allergies and presence of MRSA risk factors• Prescribe antibiotics according to the guidelines on page 3 and 4• Nursing staff commence antibiotics immediately <p>Suspected source of infection:</p> <table><tr><td><input type="checkbox"/> Sepsis where meningitis possible OR bacterial meningitis</td><td><input type="checkbox"/> Urinary</td></tr><tr><td><input type="checkbox"/> Sepsis (source unknown, but bacterial meningitis excluded)</td><td><input type="checkbox"/> Cellulitis/skeletal/soft tissue</td></tr><tr><td><input type="checkbox"/> Febrile neutropenia (refer to 'Management of Suspected Neutropenic Sepsis Pathway')</td><td><input type="checkbox"/> Central venous access device</td></tr><tr><td><input type="checkbox"/> Intra-abdominal</td><td><input type="checkbox"/> Pneumonia</td></tr></table>	<input type="checkbox"/> Sepsis where meningitis possible OR bacterial meningitis	<input type="checkbox"/> Urinary	<input type="checkbox"/> Sepsis (source unknown, but bacterial meningitis excluded)	<input type="checkbox"/> Cellulitis/skeletal/soft tissue	<input type="checkbox"/> Febrile neutropenia (refer to 'Management of Suspected Neutropenic Sepsis Pathway')	<input type="checkbox"/> Central venous access device	<input type="checkbox"/> Intra-abdominal	<input type="checkbox"/> Pneumonia	<input type="checkbox"/> Antibiotic commenced
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Isotonic Fluid

We recommend isotonic fluids rather than specifying 0.9% Saline in recognition of evolving practice in fluid prescription. The Surviving Sepsis Guidelines (Jan 2020) suggest the use of balanced isotonic solutions.

<p>5. Commence fluid resuscitation</p> <ul style="list-style-type: none">• Administer rapid fluid bolus IV/intraosseous 10–20mL/kg isotonic fluid; assess response. Consider repeating up to 40–60mL/kg isotonic fluid within first hour• Observe for signs of fluid overload (hepatomegaly)• Consider second IV access• If hypoglycaemic, give 2mL/kg glucose 10%	<input type="checkbox"/> Fluids commenced
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Adrenaline

Refer to the [Children's Resuscitation Emergency Drug Dosage Guide \(CREDD\)](#) - outlined as a useful resource on page 2 of pathway.

6. Consider inotropic support and prepare early <ul style="list-style-type: none">• After 40–60mL/kg of fluid, if no or limited improvement in haemodynamic status, consider IV/intraosseous inotropes• Prepare adrenaline (epinephrine) infusion by diluting 1mg (1mL of 1:1000) to 50mL with glucose 5%; commence infusion at 0.05–0.1 microgram/kg/min (maximum limit of 1 microgram/kg/min)• Call PICU/ICU/RSQ 1300 799 127	<input type="checkbox"/> Inotrope considered
Useful Resources <ul style="list-style-type: none">• Children's Resuscitation Emergency Drug Dosage Guide (CREDD) available on the Queensland Paediatric Emergency Care (QPEC) website. Consider using CREDD for weight adjusted dosing requirements.• Surviving Sepsis Campaign Guidelines January 2020.	

When will a paediatric Digital Pathway become available?

We are developing paediatric sepsis recognition, assessment and clinical management support tools within the integrated electronic medical record (ieMR). The solutions will support clinicians working in Emergency Departments and Inpatient areas at digital sites. We anticipate that the solutions will be ready for implementation within the first half of 2021.

Digital sites may still order and use the paper version of the pathway and include in downtime resources which will then be scanned into the patient chart.

How do I order printed clinical pathways?

All Statewide clinical pathways are available and ordered through [Winc](#) using your local ordering processes. This is to ensure high quality documents are being produced and the latest versions are always available.

Order the ED Paediatric and Adult Sepsis Clinical Pathways using the Winc code below. Please speak to your cost centre manager or local Health Information Manager (HIM) to arrange purchasing of the forms.

Form ID	Form Title	Winc Code
SW866	ED Paediatric Sepsis Pathway for Tertiary and Secondary Facilities	1NY37615
SW944	ED Paediatric Sepsis Pathway for Rural and Remote Facilities	1NY37617

What is the review process?

Clinical pathways are reviewed each 24 months or as required when clinical evidence changes, or an emergent issue arises that requires a change to the clinical pathway content. The review process is managed by the clinical pathways team within the Healthcare Improvement Unit, Clinical Excellence Queensland (CEQ).