Revised Paediatric Sepsis Clinical Pathway Frequently Asked Questions (FAQ)

Table of Contents

Contents

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 Sepsis Pathways are aligned.

Why have the ED Paediatric Sepsis Pathways for rural and remote and secondary and tertiary HHS and Inpatient Pathways been combined into one?

There have been many advancements made since the ED Pathways were first introduced in 2018 including:

- an 18-month trial of the Paediatric Sepsis Inpatient Pathway in 8 paediatric wards across the state
- the development of a national Sepsis Clinical Care Standard
- evaluation by the Paediatric Sepsis Collaborative to identify which screening and recognition factors were reliable in determining sepsis and
- ongoing feedback from consumers wanting consistent information and support through their sepsis journey.

To meet these needs, the revised Paediatric Sepsis Pathway has now been combined into one single pathway that is suitable regardless of location. The Pathway now extends beyond the acute resuscitation and treatment bundle into a sepsis management plan covering the whole sepsis episode form presentation to discharge home.

What are the changes from the old ED and inpatient versions in 2020-2022 to the current version in 2023?

Over the last 12 months, the Queensland Paediatric Sepsis Program have been co-designing the revised Paediatric Sepsis Pathway. Newly included in this paper pathway is:

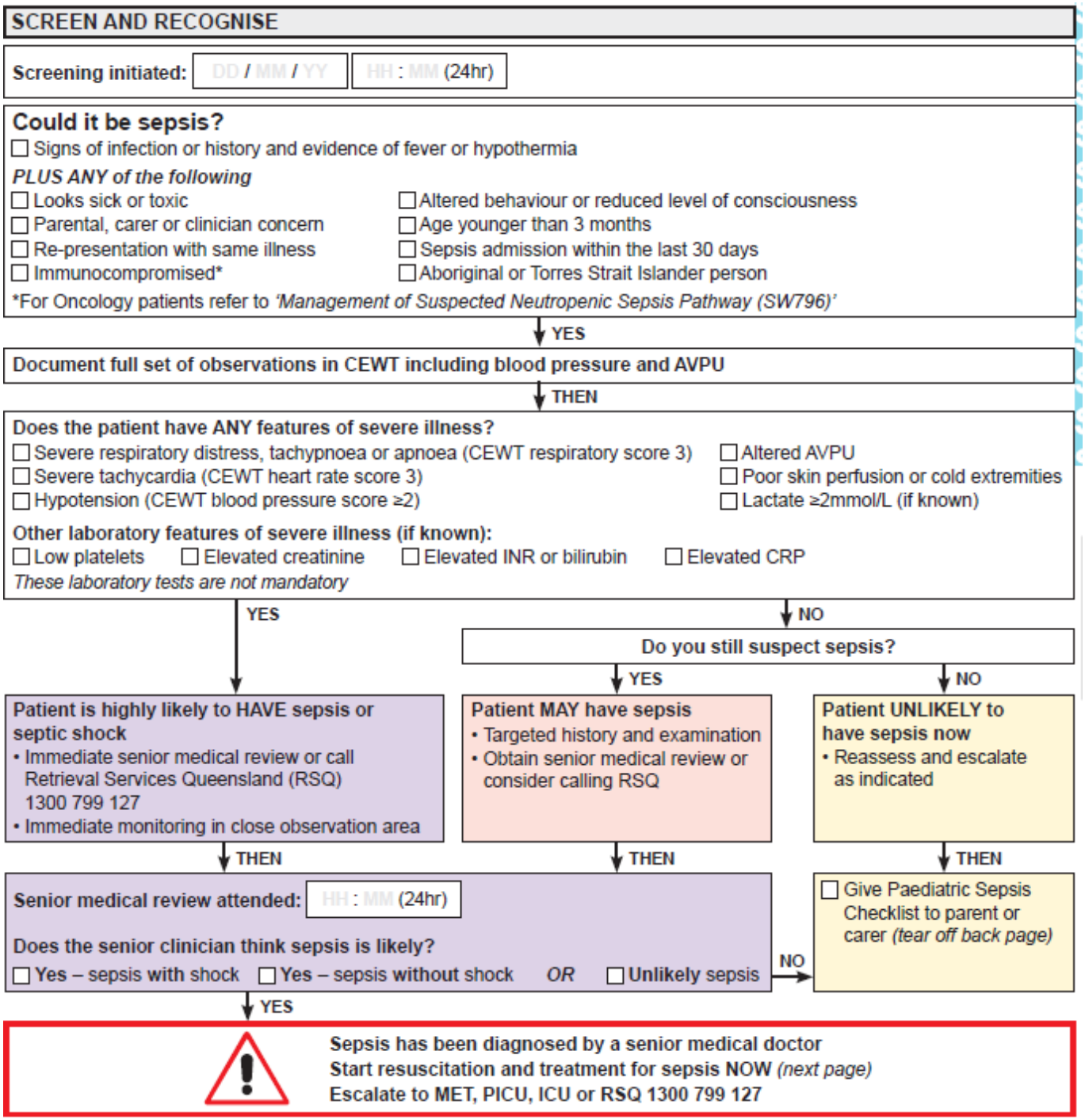
- monitoring and reassessment guide
- comprehensive management plan to align with the Sepsis Clinical Care Standard
- tear off information sheet for parents and carers of a child diagnosed with sepsis

Updated content includes:

- screening and recognition tool
- antimicrobial guidelines
- sepsis checklist for families

For a more detailed look at how we got to the revised pathway, evidence behind these changes and how to practically use it we recommend watching the Paediatric Sepsis Series – Revised Pathway Launch Part 1 and Part 2.

Screening and Recognition Tool (page 1 of pathway)



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 this 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 within:
1 hour of recognition of shock or where there is high likelihood of sepsis
3 hours to administer antimicrobials where there is less likelihood of organ dysfunction and sepsis. Prioritise timely collection of all relevant microbiological samples according to suspected source

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.

4. Commence appropriate IV or intraosseous antibiotics — ☐ Antibiotic commenced
- Check allergies and presence of MRSA risk factors
- Prescribe antibiotics according to the guidelines in Tables 1 and 2
- Give intramuscular antibiotics if failed IV or intraosseous access

Suspected source of infection:

☐ Sepsis where meningitis possible *OR* bacterial meningitis	☐ Intra-abdominal
☐ Sepsis (source unknown, but bacterial meningitis excluded)	☐ Urinary
☐ Febrile neutropenia (refer to '*Management of Suspected Neutropenic Sepsis Pathway [SW796]*')	☐ Cellulitis, skeletal or soft tissue
	☐ Central venous access device
☐ Toxic Shock Syndrome	☐ Pneumonia

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.

5. Commence fluid resuscitation — ☐ Fluid bolus commenced
- Administer rapid isotonic fluid bolus IV or intraosseous 10–20mL/kg; assess response
- Consider repeating up to 40–60mL/kg isotonic fluid within first hour
- Observe for signs of fluid overload (hepatomegaly)
- If hypoglycaemic, then give 2mL/kg glucose 10%
- Consider second IV or intraosseous access

Adrenaline

Refer to the Children's Resuscitation Emergency Drug Dosage Guide (CREDD) - outlined as a useful resource on page 4 of pathway.

6. Consider inotropic support and prepare early — ☐ Inotrope considered
- Consider IV or intraosseous adrenaline infusion if no or limited improvement in haemodynamic status after 40–60mL/kg of fluid
- Prepare adrenaline (epinephrine) infusion by diluting 1mg (1mL of 1:1000) to 50mL with sodium chloride 0.9% or glucose 5%; commence infusion at 0.1–0.5 microgram/kg/min *(see CREDD infusion chart for equivalent mL/hr for child's weight)*
- Call PICU, ICU or RSQ 1300 799 127

RESOURCES
Clinical: • Queensland Paediatric Sepsis Program clinical resources for health professionals • Children's Resuscitation Emergency Drug Dosage Guide (CREDD). Consider using CREDD for weight adjusted dosing measurements • National Sepsis Clinical Care Standard, including discharge planning guide, GP letter template and other resources • Surviving Sepsis Campaign Guidelines January 2020 **Family:** • Queensland Paediatric Sepsis Program family resources • Find an Aboriginal Community Controlled Health Organisation (ACCHO) near you **Bereavement:** • Children's Health Queensland Bereavement Service

When can I start using the Paediatric Sepsis Pathway (2023 version)?

The revised Paediatric Sepsis Pathway will be available for order from the 27 February 2023. Refer to the How do I order printed clinical pathways section for more information.

What's the trigger for starting a patient on the Paediatric Sepsis Pathway?

The simple message remains, if you think there is any possibility your patient could have sepsis, screen.

Ask yourself:

- Has there been a change in vitals?
- Is there a trend?
- Unexpected and unexplained deterioration?
- Are there changes in behaviour?
- Do you have a 'gut feeling' that something isn't quite right?
- Are the parents concerned?

The key is early recognition and escalation of care before the development of septic shock - Could this be Sepsis?

How often should I be screening a patient for sepsis?

There is no mandated time for how often screening should occur. Any child that meets the screening criteria should be screened in the first instance. Frequency after-the-fact should combine the screening tool and clinical judgement, with many possible scenarios which would trigger a screen and re-screen. See below for a few examples which may prompt you to screen, however the list is not exhaustive.

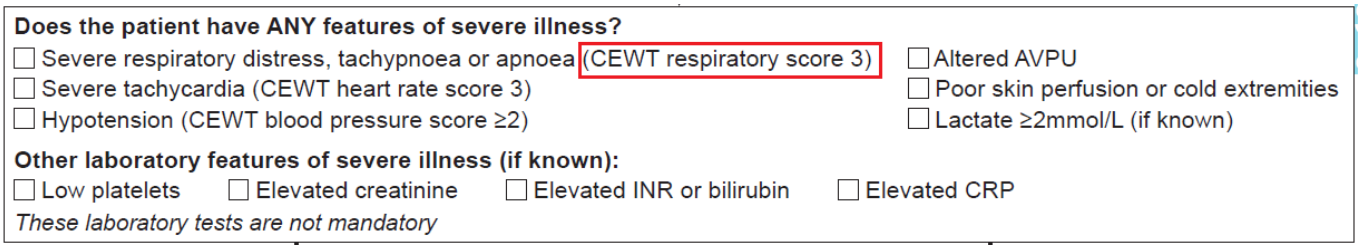
1. A child that has deteriorated on the ward
2. A child was screened many hours ago and deemed sepsis unlikely; something has now changed, or the patient has not improved despite earlier re-assessment
3. The clinical picture is evolving which gives you a 'gut feeling' or clinical intuition. You may be unsure if the working diagnosis fits with the signs and symptoms your patient may be displaying. Remember with paediatric sepsis the signs and symptoms can be subtle and mimic simple, uncomplicated conditions

To note: We did not want to create a screening aid that has no 'end' point and should be used as a prompt and escalation tool at any stage of the patient journey.

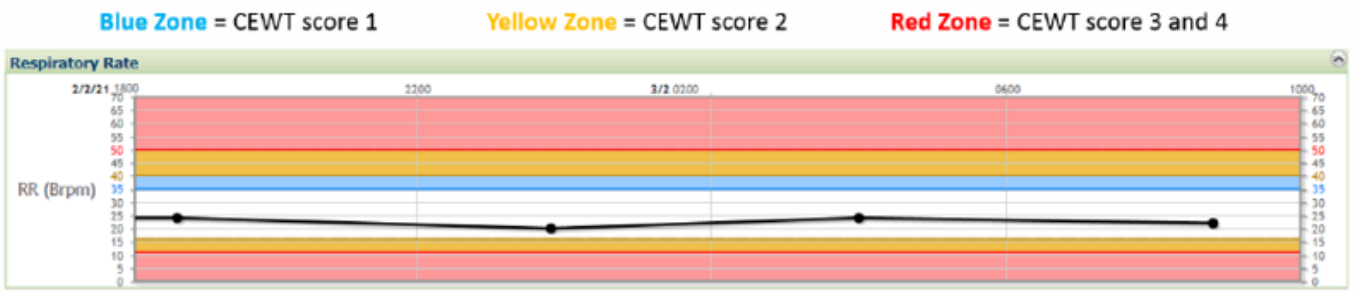
We raise the question: Where a patient could warrant 'several screens' (for example bronchiolitis) where *sepsis severity* criteria would be ticked often:

- Are you happy with the previous outcome and current plan?
- Does the patient match the condition you are treating for?
- Are you happy with trajectory the patient is on, is the team happy?

How do I determine individual vital sign CEWT scores within the ieMR to answer the pathway's screening questions? E.g. CEWT respiratory score 3



Refer to the patient's ieMR 'Managing Deterioration' page. Zone colours for each vital sign correlate to the CEWT score.



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.

Is the Pathway still only available as a paper pathway? When will a paediatric Digital Pathway become available?

Yes, the Paediatric Sepsis Pathways are currently available as paper pathways only.

We are in the process of developing paediatric sepsis recognition, assessment, and clinical management support tools within the integrated electronic medical record (ieMR). Following 9 months of design and consultation, the final digital pathway design progressed into testing in October 2021. During the testing phase, a technical defect was identified and was assessed as needing a resolution before going live for clinical use. The Queensland Paediatric Sepsis Program is working with eHealth Queensland and Cerner (ieMR software vendor) to determine a path to complete delivery of the ieMR paediatric sepsis care pathway project.

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 Paediatric Sepsis Pathway using the Winc code below. Please speak to you cost centre manager or local Health Information Manager (HIM) to arrange purchasing of the forms.

Form ID	Version	Form Title	Winc Code
SW1205	V1.00 02/2023	Paediatric Sepsis Pathway	1NY42186

Distribution takes 7-14 business days.

To note: There is no expectation for facilities to be using the revised pathway immediately after 'go live' in February/March. Facilities can exhaust all existing stock and then order the revised pathway via WINC when they are ready.

What is the review process?

Clinical pathways are usually reviewed each 24 months or as required when clinical evidence changes. As this is a major revision to the Paediatric Sepsis Pathway the Queensland Paediatric Sepsis Program (QPSP) will conduct an informal review in September 2023 and again 12 months after the release in March 2024.

I have some questions about the Pathway and would like support – who do I contact?

The Queensland Paediatric Sepsis Program (QPSP) is committed to supporting your service to adopt the Paediatric Sepsis Pathway and improve outcomes for families and children. Resources are available on our website including guidelines, posters, education material and toolkits to assist with implementation.

If you require further support submit a QPSP Referral or email paediatricsepsis@health.qld.gov.au

Who reviewed and endorsed the Pathway?

The revised Paediatric Sepsis Pathway is based on international best practice and incorporates input from a broad range of paediatric experts and consumers across the state. The Pathway was developed following extensive consultation with multiple stakeholders across Queensland. There has been repeated and widespread consultation with the following groups:

- Paediatric Sepsis Clinical Advisory Group
- Paediatric Intensive Care Advisory Group (PICAG)
- Queensland Child and Youth Clinical Network (QYCNC) Clinician Collaborative
- Children's Health Queensland Medicines Advisory Committee (CHQMAC)
- Rural and Remote Clinical Network
- Queensland Emergency Department Strategic Advisory Panel (QEDSAP) Emergency Care of Children Working Group
- CREDD working group
- Directors of Paediatrics and Nurse Unit Managers

The Pathway was also reviewed and evaluated by an independent human factors expert to ensure clarity, usability, and alignment with the national Sepsis Clinical Care standard.