

Queensland Paediatric Sepsis Program

Paediatric Sepsis Education Framework

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Overview

Approximately 49 million cases of sepsis and 11 million sepsis-related deaths occurred worldwide in 2017 (reference 1 from mortality). Sepsis is reported to be among the top ten leading causes of death in children and adolescents internationally (3). In Australia, sepsis remains a leading cause of childhood morbidity and mortality (1). Between 2004 and 2021, there were 444 sepsis-related paediatric deaths in Queensland (2), with an average of 450 children admitted each year to Queensland Paediatric Intensive Care Units (PICUs) with sepsis (3).

A third of paediatric sepsis survivors suffer long term cognitive or functional sequelae resulting in lifelong impacts for these children, their families, the community, and the health system (4). Failure to recognise sepsis and the delay in appropriate treatment are common themes in reviews of sepsis related mortality in children (5). Knowledge-based and cognitive errors contributed 62% and 92% respectively to poor sepsis management in a recent review of Queensland serious adverse clinical events in children with sepsis (15). Most children with sepsis in QLD present to clinicians without specialised paediatric experience.

The World Health Organisation recommend inclusion of sepsis specific training in to medical and nursing training programs. This includes training for health professionals on the recognition and management of suspected sepsis.

The Queensland Paediatric Sepsis Program (QPSP) is an innovative, multidisciplinary program to reduce the burden of sepsis on families, clinicians, and the health system.

Sustainability is a key focus for all activities of the program. Stakeholder feedback provided to QPSP reflects concerns about sustainability in relation to embedding the paediatric sepsis pathway into clinical practice, improving sepsis management, improving family experience and outcomes, and

improving health service efficiency and effectiveness.

Although funded for a multidisciplinary team, the QPSP lacks capacity and authority to provide continual bespoke and intensive support for all stakeholders. This framework seeks to support stakeholders in the implementation of sustainable paediatric sepsis education relevant to their organisation, ensuring healthcare workers remain compliant with the Australian National Standard for sepsis care.

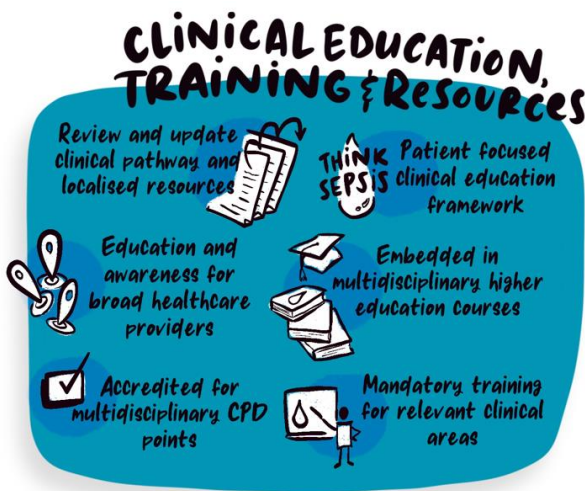
This framework aligns with the [Sepsis Clinical Care Standard](#) (nationally agreed standard) to meet the contemporary needs of current workforce.



Purpose and Objectives

The *QPSP Education Framework* is a document that has been developed as a proposed structure to guide the approach to paediatric sepsis education in Queensland. It describes the needs and expectations of stakeholders regarding stakeholder specific paediatric sepsis education. It outlines the topics recommended for inclusion in paediatric sepsis training for health professionals and directs stakeholders to resources available to support learning.

This education framework aligns with the [QPSP Clinical Education Strategy](#), which outlines goals for how QPSP will support paediatric sepsis education in Queensland, and links to multimodal, sustainable, current, evidence-based education for multidisciplinary health professionals.



This framework is applicable to the stakeholders listed under Primary and Secondary stakeholders. The framework can be used to provide healthcare clinicians and other stakeholders with a clear description of the nature, scope, standards, and outcomes applied in the development and completion of paediatric sepsis education and training.

This framework also outlines the recommended knowledge and clinical skill requirements of clinicians responsible for providing direct or indirect

care or advice to paediatric patients within Queensland.

Use this framework as a template or guide when delivering educational programs and training packages as a set of minimum curriculum content requirements to assist planning and implementation of paediatric sepsis education strategies. It is relevant to those who deliver and are responsible for clinical education and training in healthcare divisions. This framework presents a set of objectives that are simple, flexible, and accessible. It identifies knowledge, skills, behaviours, attitudes, and performance required by healthcare workers in relation to paediatric sepsis care.

Framework Development

Care of critically ill children with sepsis is priority 1 in the [Queensland Paediatric Patient Safety Review](#) (4). Reviews conducted by Queensland Health of adverse clinical events from 2012-17 demonstrate variation in paediatric sepsis care across the state (2,3,4).

QPSP has consistently received feedback regarding the need for accessible, sustainable, paediatric-specific sepsis education across geographically wide-spread healthcare settings.

“Making sepsis education mandatory at all levels of healthcare is critical”

We have recognised the need for a framework that provides the foundation for organisational led, uniform, paediatric sepsis education and training for clinicians across Queensland that meets the [Stopping Sepsis: A National Action Plan](#) (3c) recommendation for standardised, targeted, sepsis training for healthcare workers including allied health and the primary care workforce.

A review of the literature was undertaken to ascertain existing sepsis education resources and determine whether there were evidence-based recommendations for sepsis education. Reviews of literature that outline current sepsis education and training and clinician knowledge were conducted.

Requests for education submitted to the QPSP requests over the past four years were reviewed and examined for themes, and stakeholder feedback was examined from all available QPSP education evaluations.

The QPSP resources and education content were reviewed and revised according to feedback and recognised gaps in learning material.

A search was conducted for existing sepsis education packages and programs including adult, paediatric, and neonatal. Other Australian states and international programs and recommendations were explored.

Learning objectives were identified based on literature, national standards, clinician requests, and these were mapped against the QPSP sustainability plan.

Stakeholders

The responsibility of recognising and managing paediatric sepsis falls within the remit of all healthcare workers who provide advice about, manage, or treat paediatric patients. The education framework recognises the diversity among stakeholders, including different professions, roles, and experience, and is therefore designed with this in mind. Paediatric sepsis care is multi-faceted and requires input from various occupational groups within healthcare.

This framework understands that stakeholders will possess different levels of knowledge and skills, and the requirements for education will differ depending on each stakeholder's accountability for paediatric patients and their families.



The stakeholders included in the scope of the education framework include:

Primary Stakeholders

- Queensland Health
- Queensland Ambulance Service
- Primary Health Facilities
- Private Hospitals
- 13HEALTH
- Aboriginal Medical Services
- Retrieval Services Queensland
- School Based Youth Health Nurses

The framework is further divided by service group.

- Queensland Health: Hospital and Health Service facilities classified as levels 4-6.
- Queensland Health: Hospital and Health Service facilities classified as levels 1-3, including Queensland Ambulance Service, Private Hospitals and Retrieval Services Queensland.
- Queensland Health Allied Health and Support services: Includes Social Work, Pharmacy, Indigenous Health Liaisons
- Primary and Community Health Services: This includes Primary health facilities, 13HEALTH, Aboriginal Medical Services, School Based Youth Health Nurses.

Using the QPSP Education Framework

The purpose of the *QPSP Education Framework* is to guide development of paediatric sepsis education in Queensland. The *QPSP Education Framework* has a primary focus on the needs of clinicians working within services listed under Primary Stakeholders. It supports the development of education programs and directs clinicians to available resources for paediatric sepsis education and training. The modular approach to this framework lends itself to building of new programs as well as integration into existing education and training.

The *QPSP Education Framework* is not a standalone document. This framework is to be used in conjunction with existing organisational education structure and guidelines to enhance paediatric sepsis education. It is a template from which individuals and organisations can develop and implement educational programs and training for paediatric sepsis with confidence that their programs will appropriately identify the knowledge, skills and behaviours required for paediatric sepsis care.

The framework does not specify assessment or competency criteria. Detailed requirements for those will need to match organisational specific learning outcomes and activities within the adopted education criteria.

This framework provides foundational learning objectives and provides reference to resources useful in helping to reach these outcomes. It utilises widely accepted principles of adult learning, assuming that stakeholders will bring a mature learners view to learning.

This document links to the Paediatric Education Package online learning modules and Education Catalogue that will be launched in late 2025.

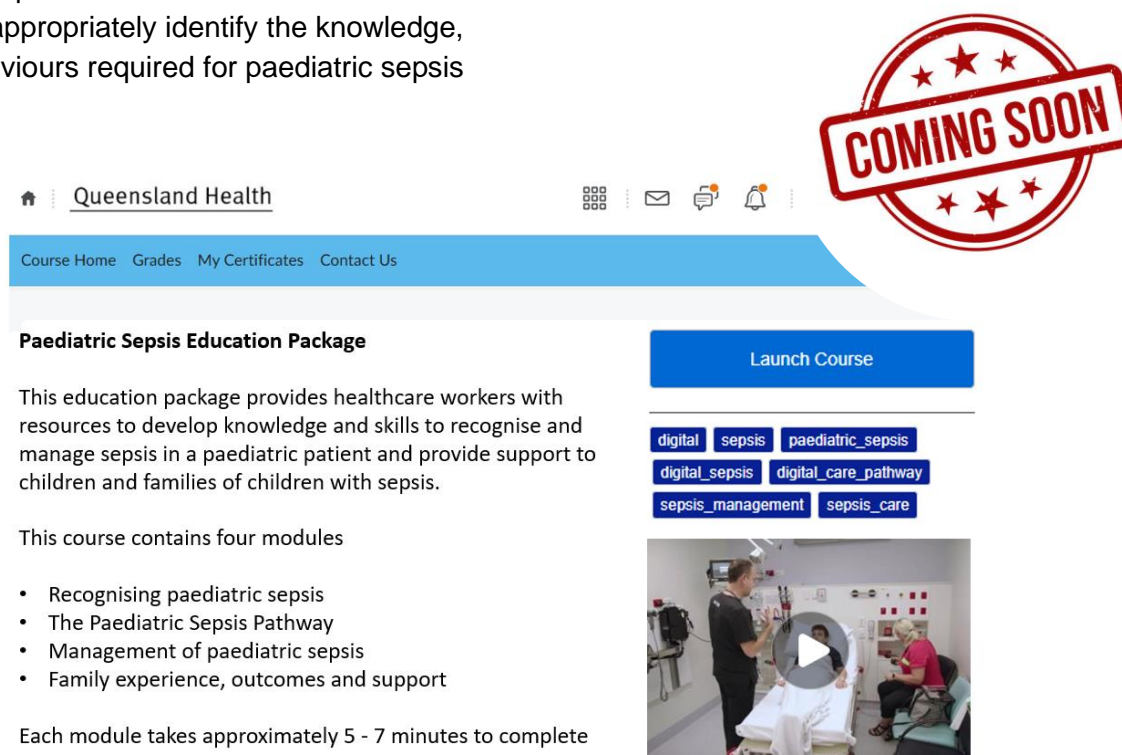


Figure: Education Package online learning modules

Framework Domains

This framework has been designed using the best available evidence in paediatric sepsis care. The education framework is clustered in four domains, each containing specific content and key topics.

These domains are considered the core units within paediatric sepsis education, and the concepts within these domains underpin paediatric sepsis care.

Paediatric sepsis care is inter-disciplinary. Each domain is inter-professional at varying degrees and therefore topics within each of these core units will vary across stakeholders.

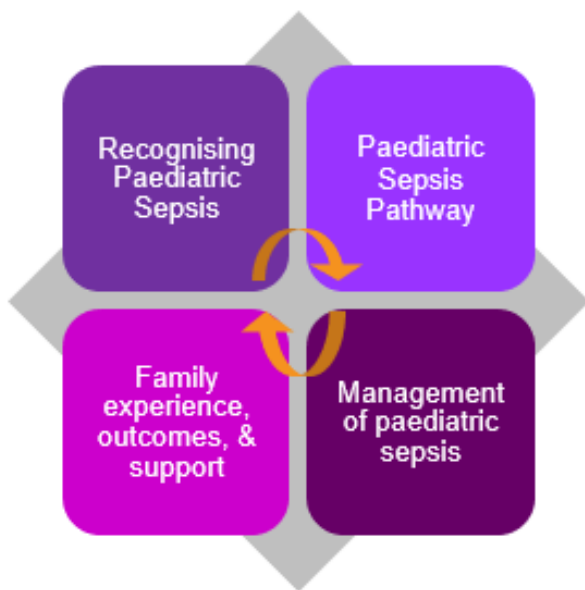


Figure: Education Framework domains

Domain 1: Recognising Paediatric Sepsis

- What is sepsis?
- Causes, prevention, and risk factors
- Signs and symptoms
- Sepsis incidence and outcomes

Domain 2: Paediatric Sepsis Pathway

The Paediatric Sepsis Pathway is designed as a decision support tool for clinicians to help with early recognition and prompt early senior clinical review. The treatment bundle is designed to support timely sepsis treatment in the first few hours. The antimicrobial guideline supports the prescription, dosing, and administration of appropriate antimicrobials. The Paediatric Sepsis Pathway also includes information leaflets for families.

- The background of pathway implementation
- How and when to use the Paediatric Sepsis Pathway and management plan
- Paediatric Sepsis Pathway components
 - Screening tool
 - Treatment bundle
 - Antimicrobials
 - Family information

Domain 3: Management of paediatric sepsis

- Acute management of sepsis and septic shock
- Antimicrobials
- Escalation of care
- Documentation

Domain 4: Family experiences, outcomes and support

- Impact of sepsis on families
- Supporting families
- QPSP Family Support Program
- Post Sepsis Model of Care

Domain 1: Recognising paediatric sepsis				
	Queensland Health Hospital and Health Service levels 4 – 6	Queensland Health Hospital and Health Service levels 1 – 3 Queensland Ambulance Service Private Hospitals RSQ	Queensland Health Allied Health and support services e.g. social work / Pharmacy / ILO	Primary and Community Healthcare Services e.g. 13HEALTH/Primary Health facilities
Learning objectives:	Define paediatric sepsis Recognise signs and symptoms of paediatric sepsis Understand the causes of paediatric sepsis Understand the outcomes of paediatric sepsis Understand the global and local impacts of sepsis			
	Suggested activities: Optimus CORE Optimus PRIME			

Domain 2: Paediatric Sepsis Pathway

	Queensland Health Hospital and Health Service levels 4 – 6	Queensland Health Hospital and Health Service levels 1 – 3 Queensland Ambulance Service Private Hospitals RSQ	Queensland Health Allied Health and support services e.g. social work / Pharmacy / ILO	Primary and Community Healthcare Services e.g. 13HEALTH/Primary Health facilities
Learning objectives:	Understand the background of the paediatric sepsis pathway implementation Understand the importance of pathways in condition recognition and management			
	Identify the paediatric sepsis pathway Understand the components of the paediatric sepsis pathway <ul style="list-style-type: none"> • Screening tool • Treatment bundle • Antimicrobial guidelines • Family resources 	Understand how and when the paediatric sepsis pathway is used Identify the components of the paediatric sepsis pathway <ul style="list-style-type: none"> • Screening tool • Treatment bundle • Antimicrobial guidelines • Family information 		
Knowledge:	Identify the most current version of the paediatric sepsis pathway Identify patients to be screened using the paediatric sepsis pathway Screening tool <ul style="list-style-type: none"> • Describe the steps involved in screening a patient using the paediatric sepsis pathway • Identify the main goal of screening a patient using the sepsis pathway Treatment bundle <ul style="list-style-type: none"> • Describe the steps within the sepsis treatment bundle 		Identify available family information and resources within the paediatric sepsis pathway <ul style="list-style-type: none"> • Family sepsis information sheet • Paediatric sepsis checklist information sheet 	

	Queensland Health Hospital and Health Service levels 4 – 6	Queensland Health Hospital and Health Service levels 1 – 3 Queensland Ambulance Service Private Hospitals RSQ	Queensland Health Allied Health and support services e.g. social work / Pharmacy / ILO	Primary and Community Healthcare Services e.g. 13HEALTH/Primary Health facilities
	Antimicrobial guidelines <ul style="list-style-type: none"> Describe the components of the antimicrobial guidelines Describe how to identify the appropriate choice of antimicrobial for varied patient demographics and suspected source of infection Family information <ul style="list-style-type: none"> Describe the components of the family sepsis information sheet Describe the components of the paediatric sepsis checklist information sheet Explain when to use the family information resources 			
Skills	<ul style="list-style-type: none"> Demonstrate screening of a paediatric patient using the paediatric sepsis pathway Demonstrate completion of documented information within the paediatric sepsis pathway e.g., time screening initiated, completion of patient features, time of medical review etc. 			
	Suggested activities: Optimus BONUS – Sepsis			

Domain 3: Management of paediatric sepsis

	Queensland Health Hospital and Health Service levels 4 – 6	Queensland Health Hospital and Health Service levels 1 – 3 Queensland Ambulance Service Private Hospitals RSQ	Queensland Health Allied Health and support services e.g. social work / Pharmacy / ILO	Primary and Community Healthcare Services e.g. 13HEALTH/Primary Health facilities
Learning objectives:	<p>Understand the acute management of a paediatric patient presenting with suspected sepsis ± septic shock</p> <p>Understand the recommended timeframe for antimicrobial delivery in sepsis and septic shock</p> <p>Identify the appropriate first line antibiotic for use in varying age range and suspected sources of infection</p> <p>Understand local care capabilities and escalation of care processes</p>		<p>Understand role in the acute management of a paediatric patient presenting with sepsis ± septic shock</p> <p>Understand local care capabilities and escalation of care processes.</p>	<p>Understand the acute management of a paediatric patient presenting with suspected sepsis ± septic shock</p> <p>Understand the recommended timeframe for antimicrobial delivery in sepsis and septic shock</p> <p>Understand local care capabilities and escalation of care processes</p>
Knowledge:	<p>Identify relevant referral pathways for a paediatric patient presenting with suspected sepsis ± septic shock</p> <p>Describe the process for escalation of care relevant to the local organisation</p>			<p>Identify the local capabilities for clinical resuscitation management (e.g. administration of oxygen, administration of intravenous fluids, administration of antibiotics)</p>

	Queensland Health Hospital and Health Service levels 4 – 6	Queensland Health Hospital and Health Service levels 1 – 3 Queensland Ambulance Service Private Hospitals RSQ	Queensland Health Allied Health and support services e.g. social work / Pharmacy / ILO	Primary and Community Healthcare Services e.g. 13HEALTH/Primary Health facilities
	<p>Identify components of the ACSQHC Sepsis Clinical Care Standard (Quality statements 1-7) and describe how they relate to patient care</p> <p>Identify documentation requirements for a sepsis encounter as per Sepsis Clinical Care Standard</p> <ul style="list-style-type: none"> - Sepsis diagnosis completed in patient medical record - Documented plan of care - Discharge and follow-up care - Information transfer to community health services 			<p>Identify relevant referral pathways for a paediatric patient presenting with suspected sepsis ± septic shock</p> <p>Describe the process for escalation of care relevant to the local organisation</p> <p>Identify components of the ACSQHC Sepsis Clinical Care Standard (Quality statements 1-7) and describe how they relate to patient care</p>
Skills:	<ul style="list-style-type: none"> • Demonstrate the preparation and administration of a fluid bolus • Demonstrate the preparation and administration of antimicrobials • Demonstrate the preparation and administration of an adrenaline infusion 			<p>Demonstrate the clinical skill components of sepsis management relevant to the organisation and clinician experience.</p>

Domain 4: Family experience, outcomes and support

	Queensland Health Hospital and Health Service levels 4 – 6	Queensland Health Hospital and Health Service levels 1 – 3 Queensland Ambulance Service Private Hospitals RSQ	Queensland Health Allied Health and support services e.g. social work / Pharmacy / ILO	Primary and Community Healthcare Services e.g. 13HEALTH/Primary Health facilities
Learning objectives:	<p>Understand the impact of sepsis on families.</p> <p>How to communicate with and educate families.</p> <p>How to support families across continuum of care.</p> <p>Understand the role of families within paediatric sepsis care.</p> <p>The Paediatric Post Sepsis Model of Care.</p>			
Knowledge:	<p>Identify the types and location of resources about paediatric sepsis available for patients, their families, and carers</p> <p>Identify the resources available for a family requiring support due to a sepsis diagnosis.</p> <p>Understand the QPSP family support structure.</p> <p>Identify the Post Sepsis Model of Care and associated report, and its implications for care post hospital discharge.</p>			
	<p>Describe when to use the paediatric sepsis checklist information sheet</p> <p>Describe when to use the sepsis information sheet.</p> <p>Describe the referral pathway for the Family support program and Peer mentorship</p>			<p>Describe when to use the paediatric sepsis checklist information sheet</p> <p>Describe when to use the sepsis information sheet.</p> <p>Describe the referral pathway for the Family support program and Peer mentorship</p>

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