



Raise the Flag: Sepsis quality improvement: implementation guide

Hikitia te Haki: He aratohu whakatinana kia kounga te whakapai mate whakataoke

September 2025



Published September 2025 by Health Quality & Safety Commission Te Tāhū Hauora, PO Box 25496, Wellington, 6146.

ISBN 978-1-991122-37-7Available online at www.hqsc.govt.nz

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Te Kāwanatanga o Aotearoa

New Zealand Government

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Acknowledgements | He whakamihi

Health Quality & Safety Commission Te Tāhū Hauora (the Commission) acknowledges the significant work of everyone who has been involved in the development of the sepsis package. In particular, the project team would like to thank the following:

- Sepsis Trust NZ
- National Sepsis Technical Advisory Group (STAG)
- Bennett and Pepa Pomana, for sharing their lived experience
- Health New Zealand clinical staff who performed an audit that informed the sepsis measurement guide.

Members of the Commission's STAG have been major contributors to the development of the national sepsis pathway and this Guide. This group was established in September 2024 and includes representatives from the following professional groups:

- Ambulance Services (Hato Hone St John and Wellington Free Ambulance)
- Australasian Society for Infectious Diseases
- Australian and New Zealand College of Anaesthetists
- Australian and New Zealand Intensive Care Society
- Australian College for Emergency Medicine
- Health New Zealand Te Whatu Ora
- New Zealand Antimicrobial Stewardship & Infection Pharmacist Expert Group
- New Zealand College of Critical Care Nurses
- New Zealand College of Medicine
- New Zealand College of Midwives
- New Zealand Microbiology Network
- New Zealand Nurses Organisation
- Paediatric Society of New Zealand
- Royal Australasian College of Surgeons
- Royal Australian and New Zealand College of Obstetricians and Gynaecologists
- Royal New Zealand College of General Practitioners
- Royal New Zealand College of Urgent Care
- Sepsis Trust New Zealand.

Commitment to Te Tiriti o Waitangi and health equity | Ū ki Te Tiriti me te hauora tautika

The sepsis project team is committed to developing and implementing the sepsis project in a manner that enables equitable outcomes for Māori. The team incorporated Te Tiriti o Waitangi principles throughout the project.

The team applied an equity lens to various areas of the project by:

- having a Māori advisor in the project team, who consulted with other Māori elders when necessary
- using an ethnicity or demographic lens for data collection and review
- incorporating the lived experience of sepsis consumers and their whānau
- advising hospital project teams to collaborate with Māori and Pacific representatives, ensuring Te Tiriti principles are embedded and encouraging their involvement in relevant aspects of implementation.

About this guide | Mō tēnei aratohu

This implementation guide will help health care organisations implementing the national 'Raise the Flag' sepsis package to improve the early recognition and timely treatment of sepsis within Aotearoa New Zealand hospitals. This guide outlines recommended steps for successfully implementing the sepsis package and its components.

Background | Korero o mua

Sepsis is a leading cause of hospital deaths in the developed world (Fleischmann et al 2016). Each year 15,000 patients in Australia and Aotearoa are admitted to intensive care with sepsis (Finfer et al 2004).

In 2021, ACC supported the Sepsis Trust NZ to develop and publish the National Sepsis Action Plan (Sepsis Trust NZ 2021). The purpose of this plan was to reduce the number of preventable deaths caused by sepsis in Aotearoa.

In 2022, Health Quality and Safety Commission Te Tāhū Hauora (the Commission) published a stocktake of sepsis management in secondary care across Aotearoa (Williamson et al 2022). It had evaluated protocols and guidelines used across acute and secondary care settings in relation to recognition of risk, diagnosis, management and follow-up for sepsis patients. The report highlighted significant variations in the way sepsis was managed and monitored in Aotearoa and made several recommendations for action.

To facilitate the sepsis action plan and recommendations proposed in the stocktake, the Commission completed a scoping exercise (Health Quality & Safety Commission 2024b) and literature review (Health Quality & Safety Commission 2023) and started the 'Raise the Flag' sepsis quality improvement project (Health Quality & Safety Commission 2024a).

The Commission developed the 'Raise the Flag' sepsis package to improve the early recognition and timely treatment of sepsis for patients in hospital.

The sepsis package | Kōpaki mate kitakita pīrau

This initiative involves implementing all components of the sepsis package in hospitals. The package refers to a collection of resources – including guidance, tools, templates and other materials – designed to support the early recognition and treatment of sepsis in hospital setting.

The core components of the package include:

- governance: advice on governance for sepsis in hospitals
- clinical tools and guides: sepsis pathway tools and associated clinical resources to guide practice
- educational materials: resources to enhance staff knowledge, awareness and skills
- measurement systems: guidance on establishing an effective measurement system.

To achieve our desired outcomes, it is essential that all components of this package are implemented together. Appendix 1 provides a list of resources in each component.

How to implement the package | Me pēhea e whakatinana ai

This guide outlines a five-stage process for preparing and implementing the sepsis package (Figure 1).

We recommend following the steps outlined in this section, which are based on best practice; however, some tasks may not be applicable in all settings, or they may depend on available resources. Consult with your quality team or other relevant personnel for guidance on local implementation.

Appendix 2 provides a checklist of the steps set out here.

Figure 1: Planning through implementation stages



Stage 1: Planning for implementation

Stage 1 involves developing an approach to commence planning.

☐ Develop draft project documents

Develop a draft project charter or other relevant documentation to support the project. This may include a case for change, expected benefits, potential impacts, resource requirements and other key project-related information.

☐ Establish an executive sponsor(s)

An executive sponsor plays a crucial leadership role in steering and supporting the implementation. Key functions of this role are to:

- secure resources: secure the necessary resources: budget, personnel and time
- **provide strategic direction:** ensure alignment with organisational strategic goals and priorities; provide high-level direction and decision-making
- **champion the project**: advocate the importance of the project and communicate with leadership and key stakeholders
- remove barriers: address challenges, such as resistance to change and crossdepartmental collaboration barriers
- **monitor progress**: provide oversight, ensuring achievement of outcomes and deliverables.

☐ Recruit clinical lead(s) and clinical champion(s)

Clinical leads and clinical champions are crucial for implementation, as they bridge the gap between clinical practice and quality improvement efforts. These roles provide medical expertise, ensure that the interventions align with clinical standards and foster engagement among frontline clinical staff and peers. Clinical leads bring specialised knowledge in improving clinical systems and processes.

☐ Establish a project team

Leaders should establish a small core project team to set up the project and, as it progresses, ensure that additional and relevant stakeholders are included when required. Subgroups could be set up to tackle specific issues as they arise. Leaders should consider the skill and knowledge needed to take the project through each stage of implementation. Relevant skills could include:

- project management
- clinical knowledge and leadership from both inpatient and acute care perspectives
- te ao Māori and Pacific guidance
- consumer advocacy

- quality improvement
- data analysis
- education and training
- organisational networking and communication
- information technology.

☐ Establish or align with existing hospital governance groups/committees

Many hospitals already have established clinical governance groups, focused on adverse events, infection prevention and patient deterioration among other aspects. The project team should secure buy-in from the specific relevant governance group, ensuring that the project is included within their work plans, reporting mechanisms and agenda items.

Clinical governance will play a vital role in the success of the project. The clinical lead, clinical champions or project lead will be pivotal in establishing this relationship and providing periodic updates using the methods and guidelines outlined in the <u>clinical</u> governance resource included in the package.

\square Know who to engage with to accomplish the aim

The project team should identify stakeholders, including individuals and teams that will be impacted by the changes. The project team can develop a stakeholder map and analysis to understand the strategies required to increase engagement and interest.

☐ Agree on engagement with staff and other stakeholders

The project team should build on the stakeholder map to further understand engagement with each organisation, individual or team.

The team should consider how to frame key messages to influence and engage staff. It should consider using existing staff meetings, networks or communication pathways for this purpose, and use a mixture of formal meeting presentations and informal discussions.

The team should identify the right people to carry out the engagement, for example, an enthusiastic peer or champion. Direct peer-to-peer engagement is often required to effectively communicate key messages. The communications team may be a valuable asset; for example, in reaching the wider staff group through the intranet or existing newsletters.

Engagement activities will be required throughout each stage; key messages should reflect the progress made.

The team should consider which data (eg, audit data, case review findings, outcome measures) should be reported to different groups, and in which forums (eg, medical grand rounds, morbidity and mortality reviews, ward meetings).

The team should consider creating infographics and factsheets to support engagement.

☐ Agree on what will be accomplished

It is important to clearly understand the objectives for implementation and the rationale behind them. The team should decide on an aim statement to clearly confirm the purpose and scope of the project and clarify key terms and definitions to establish a common language within the project team and the wider organisation.

☐ Agree on success factors

The measurement guide outlines key measures and related information. These measures will help monitor implementation processes and identify improvement opportunities over time. The team should review the measurement guide, which will allow for the development of a data collection plan to support ongoing measurement, evaluation and improvement efforts.

☐ Document all decisions in the project charter

The team should update all relevant information, including decisions, purpose, scope, communication plans, reporting structures, and other relevant details, in the project charter used by the organisation.

Stage 2: Prepare

The focus of Stage 2 is to define the project scope and approach, and to gain a strong understanding of current processes in the early recognition and timely treatment of sepsis. This stage provides a comprehensive understanding of the current state of sepsis care within the hospital and planning for data collection and reporting.

\square Agree on the scope and implementation approach

The sepsis package is designed for the adult, maternity and paediatric patient cohorts, in acute areas such as emergency departments (ED) and inpatient wards.

The team should seek agreement on the approach for testing. In this regard, options include the following.

- **Simultaneous implementation:** Implement the interventions across all clinical areas in the hospital simultaneously. This approach will require more resources.
- **Sequential implementation:** Start by testing and implementing the interventions in a smaller area, then phase it across different clinical areas, patient cohorts or other criteria. This phased approach allows the team to identify successes and challenges early in the process and adapt approach prior to expanding implementation.

☐ Know the starting point (understand the current process)

The organisation may have existing systems and processes in place to identify and treat sepsis. The project team should explore and understand the following questions.

- How do these systems currently operate?
- Are there existing pathways currently in use, either electronic or manual?
- How are staff trained and educated on sepsis management?
- Are there existing policies, procedures and guidelines for the management of sepsis?
- What information is currently collected, who uses it, when is it reported and how are reports used? This may include data from audits, National Minimum Dataset¹ reports, adverse event reporting, complaints and compliments.

The team should consider a retrospective audit of sepsis cases to identify barriers to (and enablers of) good care; it should identify challenges and opportunities and document its findings.

☐ Review the sepsis package

The project team should review each component of the sepsis package, including the supporting resources, to gain a greater understanding of the requirements and identify necessary adjustments to standardise the existing system and processes.

☐ Collect data to establish baseline

The project team should begin collecting data to establish a baseline for the proposed measures. It should generate the necessary reports and share them with relevant stakeholders. See the measurement guide to learn more about baselines.

Sepsis quality improvement: measurement guide – www.hqsc.govt.nz/sepsis

Stage 3: Test the Sepsis Pathway

This stage provides an opportunity to test the national Sepsis Pathway and supporting materials to ensure they are fit for purpose, assess their suitability and allow for customisation.

☐ Agree on the approach to test the national Sepsis Pathway

The national Sepsis Pathway for adult, paediatric and maternity are based on best practice. However, the individual steps and flow of the Pathway may require local customisation to ensure they are fit for purpose.

We recommend testing of the Pathway in acute and inpatient areas; this should include adult, maternity and paediatric patient cohorts.

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¹ National Minimum Dataset (NMDS): It's a large database that collects and stores hospital discharge information for both public and private hospitals. This data includes clinical information like diagnoses and procedures, as well as details about the hospital stay such as length of stay and demographic information like age, sex, and ethnicity according to the Ministry of Health.

The project team should identify what will be tested and in which clinical areas. It should engage relevant teams, inform stakeholders and prepare clinical areas for the testing process. Pathways can be tested using a single patient or a group of patients.

Each test will provide valuable learning and help identify opportunities for improvement. Once changes are made, the team should continue testing them until it is confident the pathway is refined and consistently delivers the desired outcomes.

If the Sepsis Pathway is integrated into electronic patient management systems, the team should simulate the changes to test the Pathway to ensure it is fit for purpose.

☐ Test the Sepsis Pathway

The project team should test the Sepsis Pathway and any relevant package materials and gather feedback from users. It should review the findings, identify necessary adjustments and then re-test the Pathway to ensure it functions as intended.

Stage 4: Implement and spread the package

Stage 4 marks the start of full implementation and ongoing auditing. In this stage, relevant policies and supporting documents are updated, staff are trained and the project is actively promoted. The project team begins implementing each component of the sepsis package according to the agreed approach in the selected clinical areas.

From a quality improvement perspective, implementation means embedding the changes into existing systems and establishing them as part of standard practice. This may occur within a single clinical area or be scaled across a hospital.

☐ Develop an implementation plan and approach

The project team should collaborate with sponsors, stakeholders and clinical teams to plan the implementation and spread of the sepsis package beyond the initial test areas. It should use the planning and insights from the testing phase as a foundation to determine which components to implement more broadly.

The team should apply the implementation approach agreed on in Stage 2.

The team should agree on how implementation will be phased in across the hospital and develop a clear communication strategy for staff. This should include timelines, key messages and the planned approach for education and training.

☐ Replace old materials with new ones

The project team should confirm the date and time the new pathway will be introduced in clinical areas and ensure the removal of the old version and any other outdated materials.

If the Sepsis Pathway is integrated into electronic patient management systems, then the team should consult with the IT team in advance to accommodate the changes.

☐ Update policy, procedure and documents

Changes identified during testing should inform updates to existing policies and procedures. The project team should engage stakeholders and clinical teams to agree on the necessary revisions and follow the local process to update all relevant documents.

☐ Staff training on updated processes
It is essential to train all staff who will use the Sepsis Pathway. The project team should provide training or refresher sessions to current, new and ad hoc staff, using the methods and guidelines outlined in the education resources included in the package.
☐ Promote sepsis package implementation
The project team should use available promotional materials to socialise and promote the changes. The communications plan should outline the method and approach of all promotional activities.
☐ Initiate audits and data reporting
The project team should commence auditing in line with the data collection plan established in earlier stages. The team should analyse the results and report outcomes to relevant stakeholders as agreed, supporting transparency and ongoing improvement.
Stage 5: Sustain the changes
Sustaining improvement requires ongoing commitment, monitoring and adaptation, to ensure that changes are embedded into everyday practice. This section outlines key strategies to support long-term sustainability.
☐ Ongoing use of data
The project team should collect and use data to continuously monitor and assess whether changes are being sustained. The team should set long-term goals and targets and track progress regularly. It should continue reporting on key measures to support transparency and accountability.
☐ Ensure leadership continuity
The project team should maintain long-term leadership and oversight through the clinical governance group. It should ensure the group remains actively engaged by conducting regular reviews of systems and processes. The team should use dashboards and data visualisations to support monitoring and sustainability.
\square Ongoing training and education
The project team should provide regular training on updated processes to ensure all staff – new, current and temporary – remain aligned with best practices and know how to use the Sepsis pathway. The team should offer periodic refresher courses and develop a system for collecting and acting on clinician feedback to support continuous improvement and consistent practice.

If you need more information or have any queries, please contact sepsis@hqsc.govt.nz.

Appendix 1: Content of sepsis package | Āpitihanga 1: Tā te kōpaki mate kitakita pīrau

Core component	Specific tools/resources		
Clinical tools and guides	 Sepsis pathways for adult, maternity and paediatrics Pathway user guide Clinical guide for sepsis management Hypoperfusion pathway 		
Educational materials	 Education plan e-learning module with case studies and optional videos PowerPoint slides Staff knowledge survey Simulation checklist and VEMS training resource 		
Measurement systems	 Measurement framework including outcome, process and balancing measures Audit tool to support implementation 		
Governance	Advice on clinical governance for sepsis		
Additional resources	 Sepsis information for patients and whānau (4 documents includes 1 comprehensive document and 3 sections individually) Sepsis implementation guide 		

Appendix 2: Implementation checklist | Āpitihanga 2: Te rārangi arowhai

Stag	Stage 1: Plan				
#	Tasks	Sub-tasks			
1	☐ Develop draft project documentation	☐ Develop a draft project charter or other relevant documentation			
2	☐ Establish the executive sponsor(s)	 □ Identify executive sponsor(s) □ Share draft project documentation (eg, draft project charter) □ Secure commitment □ Agree on communication and reporting requirements 			
3	□ Recruit clinical lead(s)	 □ Identify clinical lead(s) □ Provide a draft project charter □ Agree on communication and reporting requirements 			
4	□ Establish project team	 □ Create a cross-functional team □ Identify key roles and responsibilities □ Share project charter with the team □ Ensure the team understands the aim and deliverables of the project □ Involve key stakeholders 			
5	□ Establish or align with existing hospital governance groups/committee	 □ Identify the appropriate governance group □ Present or share project information □ Include the project in the group's work plan □ Agree on communication and reporting requirements □ Review the governance guide in the sepsis package □ Link sepsis care to antimicrobial stewardship, infection prevention and control and patient safety efforts □ Formulate a long-term plan for sustaining 			
6	☐ Identify who to engage with to accomplish the aim	☐ Identify stakeholders☐ Develop a stakeholder map			
7	☐ Agree on how to engage with staff and stakeholders	 □ Complete stakeholder analysis □ Develop an engagement strategy and plan □ Agree on a communication plan 			
8	☐ Agree on what you are trying to accomplish	□ Review and finalise the aim statement□ Share and discuss with project team and stakeholders			
9	☐ Agree on success factors	 □ Review the measurement guide □ Develop a data collection plan □ Identify reporting requirements 			
10	☐ Document agreements in your project charter	□ Complete the project charter			

Stag	je 2:	Prepare		
1		Agree on the scope and implementation approach		Discuss and agree on the scope of the project Discuss and agree on the scope and approach to implementation
2		Know the starting point (understand the current process)		Map the current process Determine how training is currently provided to existing and new staff Identify current policies, guidelines, procedures and other associated documents Identify which sepsis data/information is collected and reported on Identify how this data is used and shared, and who it is shared with Complete a retrospective audit to understand the challenges and opportunities Identify all other information and sources (morbidity and mortality reports, adverse events, Health and Disability Commissioner reports) Review emergency response systems, processes and protocols Consult with local infectious disease, microbiology and antimicrobial stewardship and patient safety
				teams and committees Review the sepsis documentation in clinical notes and handovers Understand the technical capacity of clinical areas to deal with sepsis patients Understand and gather information on access to diagnostic tests, including serum lactate Understand the access to cross-sectional imaging
3		Review the sepsis package		Review and understand the Pathway Review the requirements of the Pathway For electronic systems, consider changes to workflow
4		Collect data to establish baseline		Review the measurement guide Develop a data collection plan
5		Agree the approach to test the interventions		Identify a clinical area to test the Pathway Agree on a testing approach
Stag	je 3:	Test the Sepsis Pathw	ay	
1		Agree the approach to test the interventions		Identify a clinical area to test the Pathway Agree on a testing approach
2		Prepare the clinical area for testing		Communicate and engage with staff in identified clinical areas Share the Pathway and other relevant materials Provide education/training where required
3		Test the intervention		Test the Pathway according to the testing approach

Stage 4: Implement and spread sepsis package			
1	□ Develop implementation plan and approach	☐ Discuss and agree on an implementation approach and plan activities	
2	□ Replace old materials with new ones	 ☐ Undertake a stocktake of the existing pathway or other resources ☐ Agree on a date to switch the resources ☐ Agree on a time and method to swap old and new materials 	
3	□ Update policy, procedure and documents	 □ Discuss the updates with stakeholders and clinical teams □ Agree to the updates □ Update all relevant documents □ Update sepsis-related pages on the website 	
4	☐ Train staff on the new process	 □ Develop a training plan □ Identify the clinical area □ Complete training □ Complete knowledge assessment 	
5	☐ Start promotion and share promotional materials	 □ Promote and share materials related to the project □ Use promotional materials in clinical areas □ Identify strategies to promote the project and pathway □ Organise launch events 	
6	☐ Start audits and reporting of data	☐ Start auditing☐ Analyse data and report to stakeholders	
Stag	ge 5: Sustain		
1	☐ Monitor data (ongoing)	☐ Share the dashboard or data with the governance group and other stakeholders	
2	☐ Ensure leadership continuity	 ☐ (Governance group) Undertake a quarterly review of the project ☐ Report to the hospital executive lead and hospital management 	
3	□ Provide training and education (ongoing)	 □ Develop a mechanism for ongoing training □ Incorporate the plan in hospital training calendars □ Incorporate training in study days, grand rounds and other training opportunities 	

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