The SA Sepsis Story:

Gaps, Pathways and a Statewide Call to Action

Government of South Australia

SA Health

We would like to acknowledge this land that we meet on today is the traditional lands of the Kaurna people and that we respect their spiritual relationship with their country.

We also acknowledge the Kaurna people as the custodians of the greater Adelaide region and that their cultural and heritage beliefs are still as important to the living Kaurna people today.

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Sepsis Foundation work

Safety Quality 2022 - 2026

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June 2022

Sepsis Clinical Care Standard

- Clinical Care Standards (CCS) are released by the Australian Safety and Quality Health Commission (ASQHC) to supplement the mandatory National Safety & Quality Health Service (NSQHS) standards all public hospitals must meet.

- Each CCS recommends the nationally agreed health care for several health conditions suitable for a national coordinated approach. There are 19 CCS ranging from acute stroke to opioid management.

- The CCS have Quality Statements which describe high priority areas for Quality Improvement and indicators outlining recommended data for monitoring. The seven Quality Statements for sepsis are:

  - **Could it be Sepsis?** – clinicians, patients and families encouraged to ask *Could it be sepsis?*
  - **Time critical management** – systems in place to recognise sepsis – pathways to link into quickly
  - **Management of antimicrobial therapy -** antibiotics within the hour – review at 48hrs - tertiary hospital.
  - **Multidisciplinary coordination of care in hospital**
  - **Patient and carer education & information** – early diagnosis is key, listen to parents, education
  - **Transitions of care** – transfers to tertiary hospital, GP handover
  - **Care after hospital and survivorship**

Sepsis CCS – Statewide Gap Analysis

- In 2019 - 2020, prior to release of the sepsis CCS (in June 2022) there was a focus on 'sepsis' in SA Health resulting in each LHN developing their own processes and tools to support identification and management of sepsis.

- In Feb 2023 a high-level gap analysis from a state-wide, system leader perspective was completed using sepsis related SLS incident data, coroner's notifications, consumer stories, statewide pathways & national sepsis work was analysed.

- State-wide gaps were identified:
  - **Early Recognition of Sepsis -** lack of sepsis alert or flag in Sunrise EMR, no state-wide education/training
  - **Sepsis Data**- lack of available data to monitor quality indicators or for state and national benchmarking
  - **Pathways and Coordination of Care -** no state-wide sepsis pathway for adults (each LHN has their own)

- Briefing to the Health Chief Executives Council (HCEC) in June 2023 (with a recommendation for 1.0 FTE RN3 to lead a state-wide sepsis project which was not approved). Agreement at HCEC (October 2023) for DHW Safety & Quality to lead statewide coordinated efforts on:
  - **Sunrise EMR Sepsis Build -** screening, triggers, alerts, order sets, documents for adults, paediatrics, neonates
  - **State-wide Adult Sepsis Clinical Guideline/Pathway –** standardised recognition, response, treatment, resolution
  - **Sepsis Dashboard –** consider Sepsis CCS quality indicators (during EMR build) to ensure data can be extracted

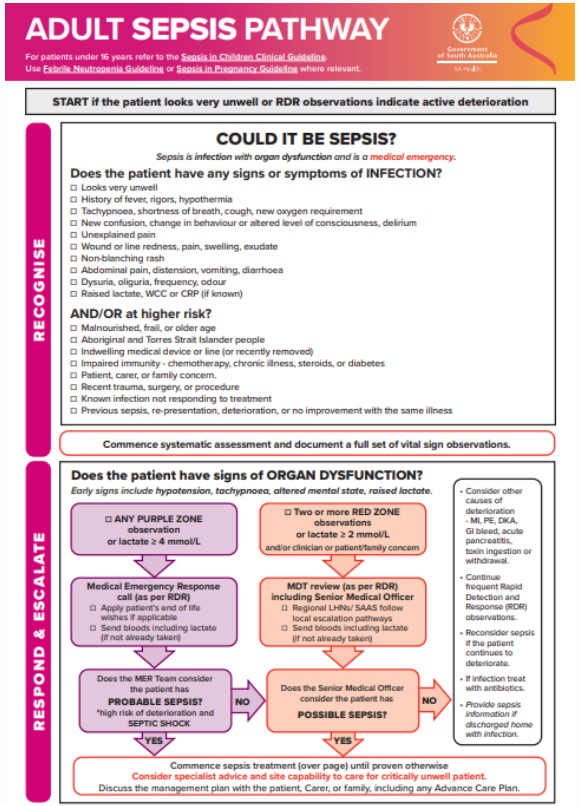
CAN OF WORMS

Projects

- Clinical Care Standard released – June 2022
- Statewide Gap Analysis – Feb 2023
- Project 1 – Adult Sepsis Pathway – Sept 2025
- Project 2 - EMR Sepsis Build
- Project 3 – Consumer resources
- Project 4 – iLearn Education module – August 2025
- Project 5 – Annual Sepsis Awareness - World Sepsis Day
- Project 6 – Sepsis branding & webpage updates
- Project 7 - Paediatric sepsis

Dec 2024

Project 1 – Adult sepsis pathway



ADULT SEPSIS PATHWAY

For patients under 16 years refer to the Sepsis in Children Clinical Guideline.
Use Febrile Neutropenia Guideline or Sepsis in Pregnancy Guideline where relevant.

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START if the patient looks very unwell or RDR observations indicate active deterioration

RECOGNISE

COULD IT BE SEPSIS?

Sepsis is infection with organ dysfunction and is a medical emergency.

Does the patient have any signs or symptoms of INFECTION?

- ☐ Looks very unwell
- ☐ History of fever, rigors, hypothermia
- ☐ Tachypnoea, shortness of breath, cough, new oxygen requirement
- ☐ New confusion, change in behaviour or altered level of consciousness, delirium
- ☐ Unexplained pain
- ☐ Wound or line redness, pain, swelling, exudate
- ☐ Non-blanching rash
- ☐ Abdominal pain, distension, vomiting, diarrhoea
- ☐ Dysuria, oliguria, frequency, odour
- ☐ Raised lactate, WCC or CRP (if known)

AND/OR at higher risk?

- ☐ Malnourished, frail, or older age
- ☐ Aboriginal and Torres Strait Islander people
- ☐ Indwelling medical device or line (or recently removed)
- ☐ Impaired immunity - chemotherapy, chronic illness, steroids, or diabetes
- ☐ Patient, carer, or family concern.
- ☐ Recent trauma, surgery, or procedure
- ☐ Known infection not responding to treatment
- ☐ Previous sepsis, re-presentation, deterioration, or no improvement with the same illness

Commence systematic assessment and document a full set of vital sign observations.

RESPOND & ESCALATE

Does the patient have signs of ORGAN DYSFUNCTION?

Early signs include hypotension, tachypnoea, altered mental state, raised lactate.

☐ ANY PURPLE ZONE observation or lactate ≥ 4 mmol/L

☐ Two or more RED ZONE observations or lactate ≥ 2 mmol/L and/or clinician or patient/family concern

Medical Emergency Response call (as per RDR)
- ☐ Apply patient's end of life wishes if applicable
- ☐ Send bloods including lactate (if not already taken)

MDT review (as per RDR) including Senior Medical Officer
- ☐ Regional LHNs/ SAAS follow local escalation pathways
- ☐ Send bloods including lactate (if not already taken)

Does the MER Team consider the patient has PROBABLE SEPSIS? *high risk of deterioration and SEPTIC SHOCK

NO / YES

Does the Senior Medical Officer consider the patient has POSSIBLE SEPSIS?

NO / YES

- Consider other causes of deterioration - MI, PE, DKA, GI bleed, acute pancreatitis, toxin ingestion or withdrawal.
- Continue frequent Rapid Detection and Response (RDR) observations.
- Reconsider sepsis if the patient continues to deteriorate.
- If infection treat with antibiotics.
- *Provide sepsis information if discharged home with infection.*

Commence sepsis treatment (over page) until proven otherwise
Consider specialist advice and site capability to care for critically unwell patient.
Discuss the management plan with the patient, Carer, or family, including any Advance Care Plan.

- October 2023 - Statewide Sepsis Workgroup established – nominated LHN/services members with expertise in sepsis – agreed on statewide poster style statewide pathway rather than a clinical guideline.
- Agreement – to adapt the NSW Clinical Excellence Commission adult sepsis pathway - SA Statewide sepsis branding applied - NSW CEC approved copyright in Dec 2024
- This pathway is a poster style evidence-based decision support tool for clinicians. It standardises the way sepsis patients are identified and treated to improve patient outcomes and reduce variations in care. Can be downloaded for printing.
- Tick boxes guide the four steps:
  - 1. **RECOGNITION** – Asking Could it be sepsis? signs/symptoms of sepsis & high-risk people
  - **2. RESPONSE** – Escalation of 'sepsis review' by a senior clinician or MDT review / MER call.
  - 3. **RESUSCITATION** – Oxygen, Blood Cultures, IV antibiotics & IV fluids within 60mins
  - 4. **REFER & REASSESS** – Monitor treatment response, refer/transfer if further care needed.

April 2022 – April 2025

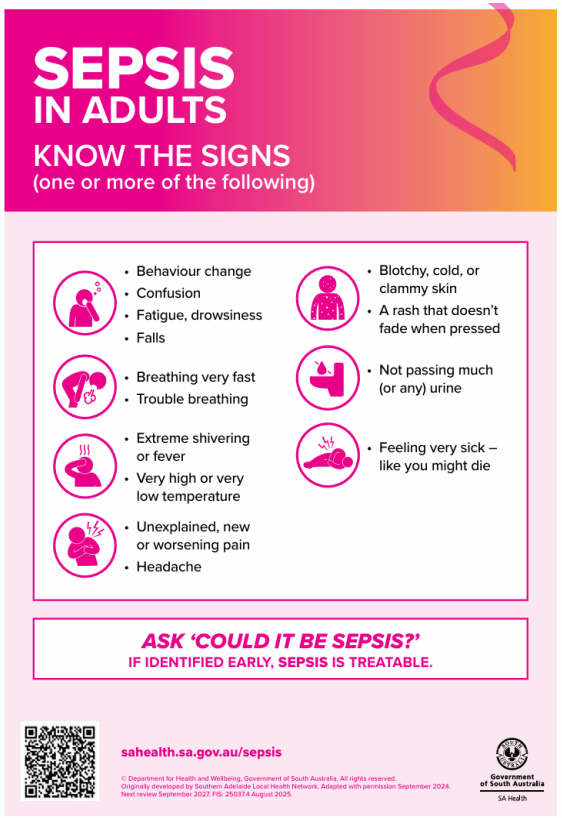
Project 2 – EMR Sepsis build

COMPONENT	DETAIL
Clinical Documentation	SIRS - Sepsis Assessment structured Note
Orders/Order set	• **A Sepsis Order Set** • **Sepsis Alert Notification order** and Perform SIRS/Sepsis • Assessment task • SIRS Assessment Complete order
Sepsis Alerts Tab	Documentation data relevant to **SIRS criteria** will appear in columns for the patient
MLMs	MLM applied to the flowsheet to calculate SIRS score Apply to structured note & within task form Apply to sepsis order set & patient list columns
Patient List Columns	• Column displays interactive flag when SIRS Alert is triggered • Column displays SIRS status and date/time option was selected from interactive alert

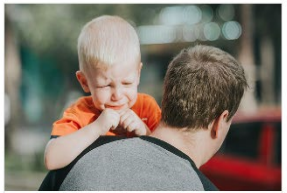
- April 2022 –CALHN submitted an improvement request (IR2301) for a sepsis alert in Sunrise EMR to detect potential sepsis cases.
- Altera offered a ‘sepsis solution’ triggering a ‘sepsis flag’ or alert in EMR in response to programmed SIRS criteria (Fever, Heart rate >90, Respiratory rate >20, elevated WCC)
- January 2023 DHW Safety & Quality formed a state-wide clinical sepsis working group to progress the solution.
- Oct 2024 - ?submitted to Digital HCEC for state-wide endorsement. Achieved consensus to progress but unable to agree on LHN executive sponsor or token allocation.
- April 2025 – project at a standstill

Sept 2025

Project 3 – Consumer resources



Information for consumers



Questions and answers

Common questions and answers about the causes, risks, treatment, diagnosis and prevention of sepsis.

Read more →

Sepsis in adults

Anyone can get sepsis, but especially people with weak immune systems or women who are pregnant or have given birth.

Read more →

Sepsis in babies and young children

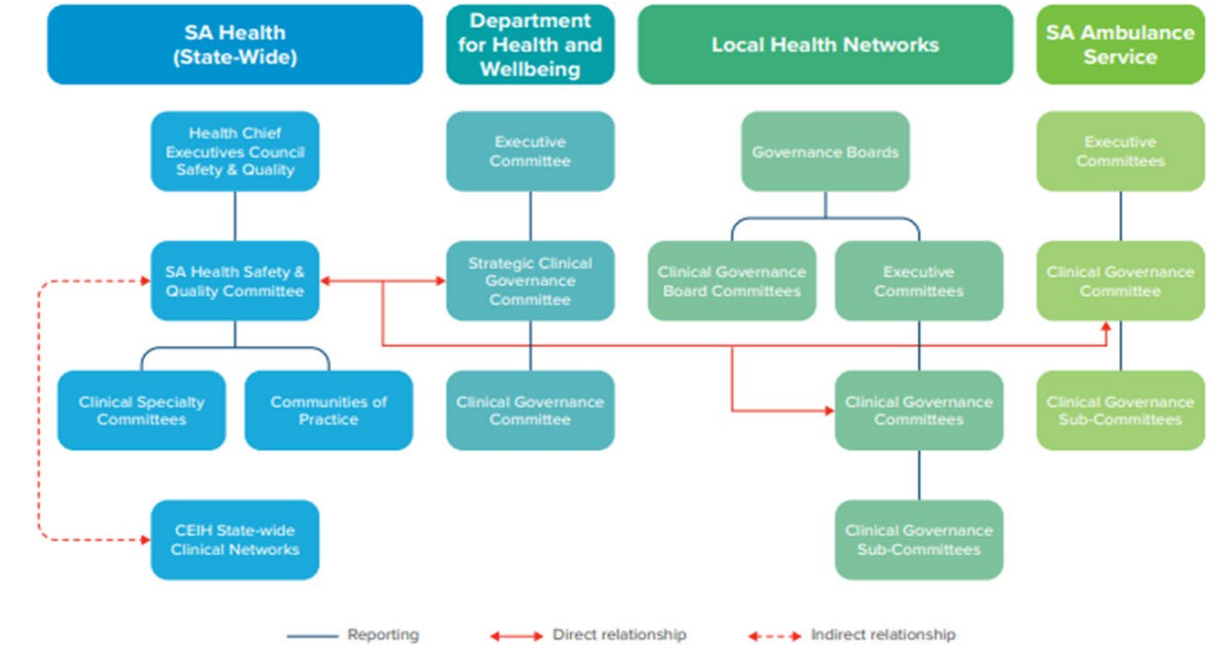
Sepsis can be hard to spot in babies and children so it's important to know what to look for.

Read more →

Life after sepsis

Clinical Governance

Figure 6: SA Health Clinical Governance Committee Structure



DHW – Health Chief Executive Council (HCEC)

Unwarranted clinical variation identified in 2025 as a system priority by HCEC Safety & Quality recognising its significant impact on safety, quality, equity and system efficiency

HCEC S&Q members endorsed Sepsis Improvement as a system wide priority focus area

Enter Commission on Excellence In Health

- HCEC Clinical Council endorsed Priority Focus Area - Clinical Excellence and Safety
- Alignment of Sepsis Improvement with Clinical Excellence and Safety
- DHW and CEIH partnering to lead system improvement

Statewide Sepsis Improvement Project

Sepsis Improvement Priority Project
Information Session

Government of South Australia
Commission on Excellence and Innovation in Health

25 Feb 2026

Overview of stages / timeframes

PHASE ONE:

Dec 2025 – April 2026

- Project briefing
- Complete current state analysis and stakeholder engagement
- Governance – recruit clinical lead, set up Expert Advisory Group
- Sepsis Innovation Showcase in March

PHASE TWO:

March 2026 - May 2026

- Finalise scope, streams, workplans
- Early intervention wins

PHASE THREE:

May 2026 - May 2027

- Intense delivery of workplace and improvement cycles

PHASE FOUR:

May 2027 - June 2027

- Evaluation and Closure

SA Sepsis Journey

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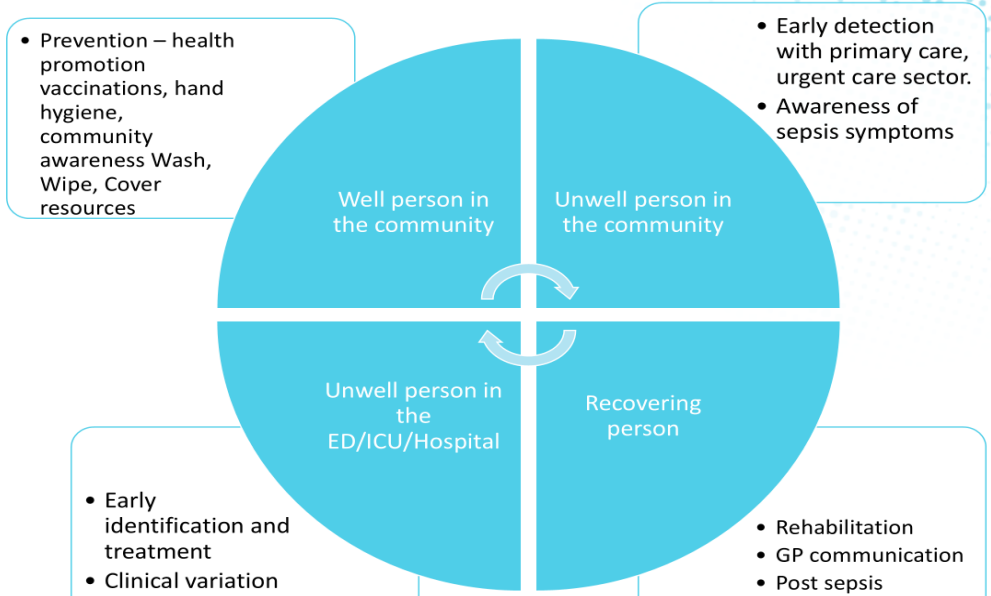
Sepsis Journey



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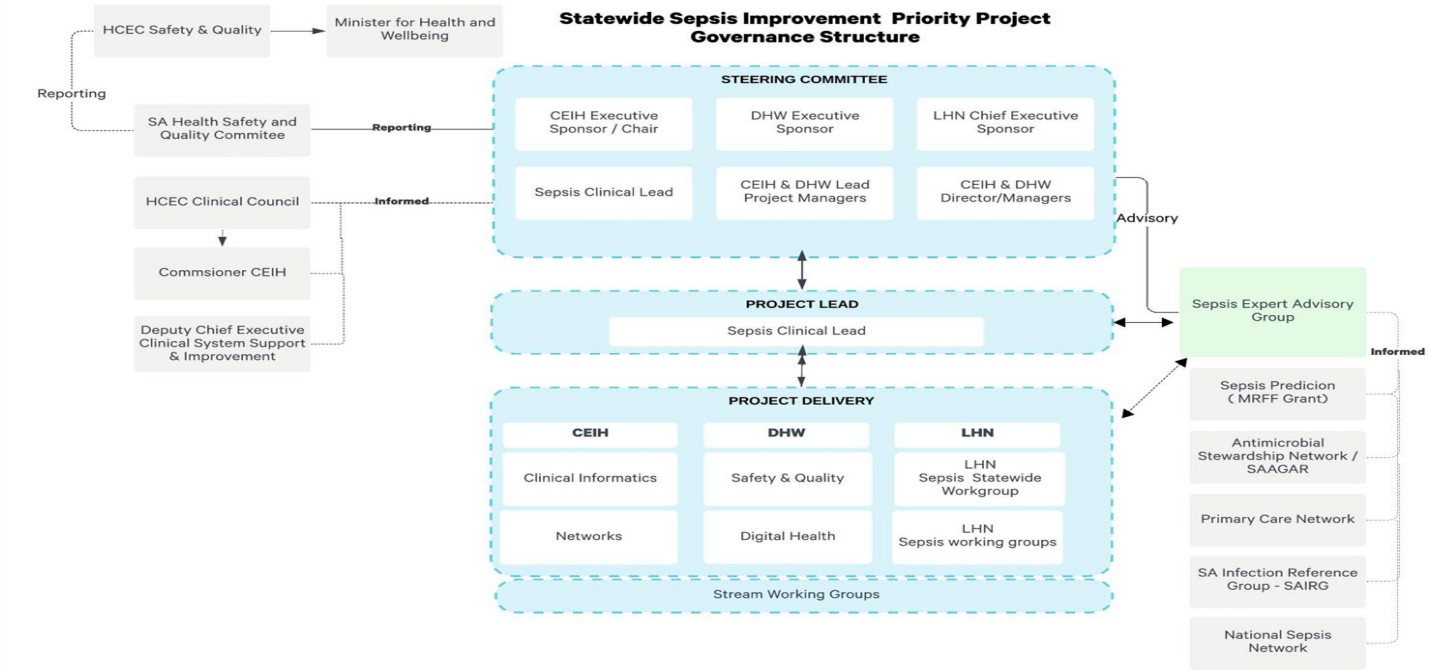
Statewide Sepsis Governance



Phase One – Current State Analysis

Commenced current state analysis

- LHN S&Q gap analysis – based on clinical care standard (CCS)
  - Initially completed Oct 23
  - Request for update Oct 25
  - Request for audit results Oct 25 – Jan 26 based on clinical indicators

Sepsis Audit results
Updated CCS Gap Analysis

Screening (CCS 1): Strongest performing domain statewide; most LHNs >85%.

Pathway adherence (CCS 2): Variable, reflecting differences in pathway integration and local implementation.

Cultures before antimicrobials (CCS 3): A persistent cross-system gap, commonly below optimal levels.

- **Time to antimicrobials ≤60 minutes (CCS 3):** Moderate performance, indicating workflow and escalation opportunities.
- **Documentation (CCS 6):** Inconsistent recording of sepsis in discharge summaries, limiting continuity of care and data quality.
- **Mortality (CCS 8):** Variable; interpretation limited by small sample sizes in some LHNs

LHN Improvement Actions – Common Themes

LHN action plans show strong alignment around shared improvement priorities:

- **Strengthened governance and oversight**, including sepsis collaboratives and quality committees
- **Improved clinical pathway visibility and use**, including digital and EMR-based supports
- **Targeted workforce education**, particularly in EDs and acute care areas
- **More consistent audit and feedback cycles** to drive improvement
- **Improved documentation and patient experience**, including discharge summaries

Priority Improvement Focus (Next 6-12 Months)

To reduce unwarranted variation and improve reliability of sepsis care, priority actions include:

- **Standardising ED** “front-door” sepsis bundles, including cultures, lactate, and antimicrobial timing
- **Embedding EMR** prompts for antimicrobial timing and discharge documentation
- Leveraging high-performing LHNs to **share practical improvement** exemplars
- **Strengthening audit feedback** loops to executive and governance forums

Key Statistics

- 6,400 separations or 17.5 sepsis separations/day across SA in 2024-25

- Although relatively low numbers compared with all admissions, there is:
  - Significant mortality (~20%)
  - Long length of stay (~ALOS 21 days)
  - ICU utilisation (~30%), with ICU ALOS of ~140 hours

	Australia - Separations (2022-23)	South Australia		
		Separations (all) (2024-25)	Separations (EMR) (2024-25)	Journeys (EMR)* (2024-25)
Separations (N)	84,382	6401	6327	5,540
Present on admission, n(%)				
Present on Admission	75,935 (90.0%)	5833 (91.1%)	5747 (90.8%)	4246 (82.5%)
Hospital Acquired	8,800 (10.4%)	597 (9.3%)	610 (9.6%)	1011 (19.6%)
Both	353 (0.4%)	29 (0.5%)	30 (0.5%)	NA
Urgency of admission, n(%)				
Emergency	65,742 (77.9%)	5221 (81.6%)	5095 (80.5%)	4912 (88.7%)
Elective	6,560 (7.8%)	283 (4.4%)	293 (4.6%)	263 (4.7%)
Not assigned	11,980 (14.2%)	897 (14.0%)	939 (14.8%)	365 (6.6%)
Mortality, n(%)				
Died during visit	12,273 (14.5%)	1118 (17.5%)	1114 (17.6%)	1247 (22.5%)
Died with 30 Days of Discharge	NA	NA	NA	261 (4.7%)
Admission to ICU (hrs)				
Admission to ICU, n(%)	23,422 (27.8%)	1684 (26.3%)	1624 (25.7%)	1661 (30.0%)
ICU LOS hours mean (SD)	168 (294.5)	156.9 (229.6)	138.0 (200.4)	140.9 (203.0)
ICU LOS hours median (IQR)	85 (44-174)	90.0 (50.0 - 171.25)	82.0 (46.0 - 150.0)	83.0 (46.0 - 152.0)
Length of stay (days)				
Mean (SD)	13 (22.2)	12.7 (20.2)	11.7 (19.7)	21.4 (39.8)
Median (IQR)	7 (3-14)	7.0 (3.0 - 15.0)		8.0 (3.0 - 24.0)
Aboriginal or Torres Strait Islander, n(%)				
Aboriginal or Torres Strait Islander	5,753 (6.8%)	310 (4.8%)	310 (4.9%)	267 (4.8%)
Discharge/transfer to residential aged care service, n(%)				
Not the usual place of residence	879 (1.0%)	61 (1.0%)	61 (1.0%)	198 (3.6%)
Usual place of residence	1,875 (2.2%)	286 (4.5%)	278 (4.4%)	297 (5.4%)
IRSD Quintile				
Most Disadvantaged 1	21,420 (25.4%)	2306 (36.0%)	2218 (35.1%)	1915 (34.6%)
2	18,015 (21.3%)	1401 (21.9%)	1381 (21.8%)	1210 (21.8%)
3	19,043 (22.6%)	1078 (16.8%)	1083 (17.1%)	956 (17.3%)
4	14,056 (16.7%)	1031 (16.1%)	1060 (16.8%)	940 (17.0%)
Least Disadvantaged: 5	11,129 (13.2%)	557 (8.7%)	568 (9.0%)	504 (9.1%)
NA		28 (0.4%)		15 (0.3%)

Limitations of Explicit ICD-10-AM definition

- Typically undercounts true sepsis burden, and skews towards more severe cases.
- Differences in coding practices across hospitals and ICD-10-AM editions may limit comparisons over time.
- Analysis of separations do not reflect the true incidence of sepsis, with the potential for multiple episodes of care to relating to a single episode of sepsis.
- Lack of time-of-diagnosis data in ICD-10-AM coding that could be used for determining timeliness of treatment measures.
- Limited concordance with other clinically-based measures.

Alternative approaches

Method	How it Works	Strengths	Limitations	Best Use Case
Administrative				
Explicit ICD-10-AM sepsis codes (e.g., A40, A41)	Sepsis identified if coded as primary or secondary diagnosis	Specific; standardised; allows comparison across years and jurisdictions	Underestimates true burden; relies on documentation quality; no time-of-diagnosis	National reporting; trend analysis
Implicit ICD-10 coding (infection + organ dysfunction codes)	Combines infection diagnosis with organ dysfunction codes	More sensitive; captures cases not explicitly coded	Inconsistent over time; depends on coding conventions; can overestimate	Broader surveillance; research requiring sensitivity
Clinical				
CDC Adult Sepsis Event (ASE)	Uses EHR data: suspected infection (e.g. blood cultures + antibiotics) + organ dysfunction.	Balanced sensitivity and specificity; consistent across hospitals.	Retrospective only; requires detailed EHR data; not real-time.	Surveillance, epidemiology, quality benchmarking.
Sepsis-3 (SOFA)	Increase in SOFA score ≥2 due to infection.	Clinically grounded; aligns with current sepsis definition.	Requires full lab data; not always feasible in real-time or in all settings.	Clinical diagnosis, research, ICU settings.
qSOFA	Quick bedside tool: altered mentation, RR ≥22, SBP ≤100 mmHg.	Fast, simple, no labs needed; good for triage.	Lower sensitivity; may miss early or less severe cases.	ED triage, pre-hospital care, resource-limited settings.
SIRS + Organ Dysfunction	≥2 SIRS criteria + evidence of organ dysfunction.	Historically used; sensitive to early signs.	Overly sensitive; includes non-septic inflammation; outdated by Sepsis-3.	Legacy systems, broader screening, historical comparisons.

**SIRS = 1) Temp >38˚ C (100.4˚ F) or <36˚ C (96.8˚ F), 2) Heart rate >90, 3) Respiratory rate >20 or $PaCO_2$ <32 mm Hg, 4) WBC >12,000/mm³, <4,00*

Proposed next steps

- Early analysis indicates the **CDC Adult Sepsis Event (ASE)** as a strong candidate for identifying sepsis events for improvement and monitoring.
  - Provides **greater clinical fidelity than coding-based measures**.
  - Enables identification of **sepsis onset timing**, supporting assessment of recognition and treatment delays.
- **Explore CDC Adult Sepsis Event criteria** across South Australian public hospitals for adult sepsis surveillance and quality improvement.
- **Investigate clinically based approaches** for identifying sepsis in **paediatric populations**, where CDC ASE is not directly applicable.
- Use clinically derived measures to **identify and quantify unwarranted clinical variation** across settings.

Next steps

- EOI closed 6 March for Clinical Lead and Expert Advisory Group members
- Sepsis Innovation Showcase- March
- 4th annual Best Sepsis Care for our Kids national forum April 22
- Complete stakeholder engagements and current state analysis

Picture created by Co-Pilot 08/04/2026

Future Objectives

Improve early recognition, diagnosis and acute management of sepsis

Reduce unwarranted clinical variation across Local Health Networks

Harness digital systems and data to drive real-time continuous improvement

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