

Intensive Care Services

Module overview

Please note: This module must be read in conjunction with the Fundamentals of the Framework (including the glossary and acronym list) and the Children's Intensive Care Services Module.

The availability of and access to intensive care services is vital to the health of the community and fundamental to the delivery of healthcare in Queensland. The intensive care unit (ICU) is a pivotal component of the hospital as it supports the delivery of acute care and post-operative recovery from major surgery.

An ICU is a specially staffed and equipped, separate and self-contained section of a hospital for the management of patients with life-threatening or potentially life-threatening, and reversible or potentially reversible, organ failure.¹ An ICU provides specialist expertise and facilities for the support of patients and their families, utilising the skills of medical, nursing and other staff trained and experienced in the management of critically ill patients.²

Intensive care services provide care to a broad mix of patient types, and services may be delineated by clinical subspecialty (e.g. cardiothoracic ICU, neurosurgical ICU) and/or age groups—although this does not preclude collocating patient types. It is preferable that neonatal ICUs, paediatric ICUs and cardiac (coronary) care units are separated from general ICUs—although coronary care patients and children can be effectively managed in general ICUs, where necessary.

The level of intensive care services available should support the levels of other clinical services provided within a particular facility. The role of the ICU will vary depending on staffing expertise, facilities and support services, as well as the severity of illnesses and number of patients admitted.¹ It requires access to the emergency department (if present), operating theatres and organ imaging on-site.

This module recognises three levels of complexity for ICU service provision: Levels 4 to 6. The different service levels take into consideration the complexity and risks associated with the delivery of a service and the need for specialised support.

Children have specific needs in health services—please refer to the relevant children's services modules.

Service requirements

In addition to the requirements outlined in the Fundamentals of the Framework, specific service requirements include:

- active participation in the Australian and New Zealand Intensive Care Society's Adult Patient Database (available from www.anzics.com.au).

Workforce requirements

In addition to the requirements outlined in the Fundamentals of the Framework, specific workforce requirements include:

- an adequate supply of a suitably trained workforce with credentials and competencies to provide evidence-based, safe, high-quality intensive care practice,¹ with guidance for staffing requirements in ICUs outlined in various documents including:
 - College of Intensive Care Medicine *Policy Document Review IC-1* (2010)¹
 - Australian College of Critical Care Nurses *Staffing Position Statement* (2003).³

Level 4 Intensive Care Service

Service description

A Level 4 service is capable of providing immediate resuscitation and short-term cardiorespiratory support for critically ill patients. It will also have a major role in the monitoring and prevention of complications in at-risk medical and surgical patients. It must be capable of providing mechanical ventilation and simple invasive cardiovascular monitoring for a period of up to 24 hours. Provision of such care for more than 24 hours is allowed for patients with essentially single-system failure but only within the context of daily consultation with a Level 5 or 6 ICU with which the host unit has an established and documented referral process. Such processes should include a documented, mutual transfer and back-transfer policy, and an established joint review process.

Service requirements

As per module overview, plus:

- all patients admitted to the unit must be referred for management to the registered medical specialist taking responsibility for the unit at the time of admission
- a number of available beds based on demand with significant flexibility to meet increased admissions
- number of admissions sufficient to maintain clinical skills of both medical and nursing staff
- daily consultation with a higher level ICU for all patients mechanically ventilated for greater than 24 hours and/or with multisystem failure—though if a Fellow of the College of Intensive Care Medicine (CICM) is in charge of the unit, this provision may be unnecessary except to facilitate access to subspecialty services outside the ICU.

Workforce requirements

As per module overview, plus:

Medical

- a lead clinician with responsibility for clinical governance of the service who is a registered medical specialist with credentials in intensive care medicine, anaesthetics, emergency or general medicine
- support always available to the unit from a registered medical specialist with experience in intensive care medicine; though, if the registered medical specialist is simultaneously rostered for a second clinical area (e.g. operating suites), a second registered medical specialist with intensive care medicine experience must be identified to support the ICU in the event that the duty specialist is unable to attend
- in addition to the registered medical specialist, at least one registered medical practitioner with an appropriate level of experience on-site 24 hours, exclusively rostered to the unit and immediately available at all times
- all registered medical practitioners competent in providing advanced life support

Nursing

- a nurse manager (however titled) with or working towards postgraduate qualification in management or intensive care nursing
- a designated, senior registered nurse in charge of each shift
- a minimum nurse–patient ratio of 1:1 for ventilated and similarly critically ill patients³
- an additional supernumerary registered nurse providing assistance to bedside nurses for every four patients requiring 1:1 nursing³
- all nursing staff in the unit responsible for direct patient care being registered nurses
- a minimum of two registered nurses present in the unit at all times when there is a patient admitted to the unit
- all registered nurses must be competent in providing advanced life support

Allied health

- access—during business hours—to allied health professionals, including an identified dietician, occupational therapist, pharmacist, social worker and speech pathologist, as required
- access—24 hours—to a physiotherapist on request

Other

- access to technical support staff (e.g. biomedical engineers and scientific officers), as required.

Support service requirements

A Level 4 service requires:

Service	On-site	Accessible
anaesthetic	4	
medical	4	
medical imaging	4	
medication	4	
mental health (relevant section/s)		4
pathology		4
perioperative (relevant section/s)	4	
surgical	4	

Level 5 Intensive Care Service

Service description

A Level 5 service is capable of providing a high standard of general intensive care including complex multisystem life support. It should be capable of providing mechanical ventilation, renal replacement therapy and invasive cardiovascular monitoring for a period of at least seven days or for longer periods in remote areas. Transfer of patients to a higher level ICU will primarily be due to the unavailability of subspecialty services at the facility.

Service requirements

As per Level 4, plus:

- must have sufficient clinical workload and case mix of patients to maintain a high level of clinical expertise and adequate clinical exposure
- normally has at least four staffed and equipped beds capable of managing ventilated patients
- normally manages more than 200 mechanically ventilated patients per year.

Workforce requirements

As per Level 4, plus:

Medical

- a lead clinician with responsibility for clinical governance of the service who is a Fellow of the CICM and is a registered medical specialist with credentials in intensive care medicine
- a registered medical specialist with credentials in intensive care medicine, anaesthetics, emergency or general medicine must be rostered and available exclusively to cover the intensive care unit at all times
- in addition to the duty specialist, at least one registered medical practitioner with intensive care experience exclusively rostered and predominantly present in the unit at all times

Nursing

- nursing staff available to ensure a patient–nurse ratio greater than 1:1 for patients requiring complex management
- a minimum of 50 per cent of nursing staff with, or working towards, a recognised qualification in intensive care or clinical specialty of the unit

Allied health

- access—24 hours—to social work services on request

Other

- as per Level 4 service.

Support service requirements

A Level 5 service requires:

Service	On-site	Accessible
anaesthetic	5	
cardiac (cardiac medicine)		5
medical	5	
medical imaging	4	
medication	5	
mental health (relevant section/s)		5
pathology	4	
perioperative (relevant section/s)	5	
renal		5
surgical	5	

Specific risk considerations

In addition to what is outlined in the Fundamentals of the Framework, specific risk management requirements relevant to a Level 5 service include:

- acknowledgement by CICM that recruitment of Fellows to rural/regional units may be difficult and the College supports the designation of Level 5 for a regional ICU if this were the only deficiency, genuine attempts had been made at the recruitment of suitable personnel¹ and, under such circumstances, appropriately trained and registered medical specialists (e.g. anaesthetists, general physicians, emergency medicine specialists) were able to provide the required medical/specialist coverage.

Level 6 Intensive Care Service

Service description

A Level 6 service is the highest level referral unit for intensive care patients and is capable of providing comprehensive critical care, including complex and multisystem life support for an indefinite period, and support for complex Level 6 and superspecialty activity. It has 24-hour access to an on-site laboratory and clinical service facilities to support the referral role.

Service requirements

As per Level 5, plus:

- at least eight staffed and equipped beds
- normally manages more than 300 mechanically ventilated patients per year.

Workforce requirements

As per Level 5, plus:

Medical

- 80 per cent of registered medical specialists must be Fellows of the CICM
- during business hours, the registered medical specialist may be rostered to either a single ICU (up to a maximum of 15 beds) or to a pod of 8–12 beds within an ICU of more than 15 beds, with the specialist rostered and available exclusively to the ICU or pod and predominantly present within it, and able to proceed immediately to it
- sufficient supporting registered medical specialists to provide a minimum cover ratio of 1:4 out of business hours averaged over a six-month period (when calculating the ratio of cover, leave should be treated as time rostered off duty to enable safe and sustainable working hours and leave of all types)

Nursing

- as per Level 5 service

Allied health

- access—24 hours—to allied health professionals, including an identified physiotherapist and social worker, as required

Other

- as per Level 4 service.

Support service requirements

A Level 6 service requires:

Service	On-site	Accessible
anaesthetic	6	
cardiac (cardiac medicine)	5	
medical	5	
medical imaging	5	
medication	5	
mental health (relevant section/s)		5
nuclear medicine	4	
pathology	5	
perioperative (operating suite)	6	
renal	5	
surgical	6	

Legislation, regulations and legislative standards

Refer to the Fundamentals of the Framework for details.

Non-legislative standards, guidelines, benchmarks, policies and frameworks

In addition to what is outlined in the Fundamentals of the Framework, the following are relevant to intensive care services:

- Australasian Health Infrastructure Alliance. Australasian Health Facility Guidelines v2.0. Part B – Health Facility Briefing and Planning, 360 Intensive Care – General. www.healthfacilityguidelines.com.au/guidelines.htm
- Australian and New Zealand College of Anaesthetists, Joint Faculty of Intensive Care Medicine, Australasian College for Emergency Medicine. Minimum Standards for Intrahospital Transport of Critically Ill Patients. ANZCA, JFICM, ACEM; 2003. www.acem.org.au/media/policies_and_guidelines/min_stand_intrahosp_crit_ill.pdf
- Australian College of Critical Care Nurses. ACCCN Position Statement (2006) on the Use of Healthcare Workers other than Division 1 Registered Nurses in Intensive Care. ACCCN; 2006. www.acccn.com.au/images/stories/downloads/use_of_healthcare_workers.pdf
- Australian College of Critical Care Nurses. ACCCN Resuscitation Position Statement (2006): Adult & Paediatric Resuscitation by Nurses. ACCCN; 2006. www.acccn.com.au/images/stories/downloads/adult__paediatric_resus.pdf
- The Australian Council on Healthcare Standards. Intensive Care Indicators. ACHS; nd. www.achs.org.au
- College of Intensive Care Medicine of Australia and New Zealand. Minimum

Standards for Intensive Care Units: Review IC-1. CICM; 2003.

- College of Intensive Care Medicine of Australia and New Zealand. Intensive Care Specialist Practice in Hospitals Accredited for Training in Intensive Care Medicine. CICM; 2010. www.bonntech.com.au/testing/cicm/cmsfiles/IC-2%20Intensive%20Care%20Specialist%20Practice%20in%20Hospitals%20Accredited%20for%20Training%20in%20Intensive%20Care%20Medicine.pdf

Reference list

1. College of Intensive Care Medicine of Australia and New Zealand. Minimum Standards for Intensive Care Units: Review IC-1. CICM; 2003.
2. Victorian Government, Department of Human Services. Victoria's Critical Care Services: Strategic Directions 2007–2012. Melbourne: Department of Human Services, Metropolitan Health and Aged Care Services Division; 2007. www.health.vic.gov.au/criticalcare/ccare-stratdir.pdf
3. Australian College of Critical Care Nurses. ACCCN ICU Staffing Position Statement on Intensive Care Nursing Staffing. ACCCN; 2003. www.accn.com.au/images/stories/downloads/staffing_intensive_care_nursing.pdf