



Levels of Critical Care for Adult Patients

STANDARDS AND GUIDELINES

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Introduction

This document describes the levels of care required by critically ill patients in hospital. It specifically does not comment on, or recommend, staffing establishments or skill mix in relation to each level, nor does the level of care relate to an individual patient's Critical Care HRG as defined by the Critical Care Minimum Dataset¹ (CCMDS). It follows the approach of allocating levels of care to patients according to their clinical needs and disregards location or the prevailing nurse to patient ratio.

The definitions were originally developed after the publication of Comprehensive Critical Care² in 2000, published in 2002³, and latterly revised to reflect the Critical Care Minimum Dataset¹ (CCMDS) which has been mandated since April 2006. The dataset supports the introduction of 'Payment by Results' into Critical Care by linking clinical interventions for critically ill patients to remuneration of activity and has recently revised several of the organ failure definitions.

This document has been agreed with the Critical Care Stakeholders' Forum and the Department of Health through the Critical Care Information Advisory Group (CCIAG), and should be regarded as the standard for data collection until further notice. Updates will be notified via the ICS website.

General Principles

Clinical judgement should be used to determine which level of care would be most appropriate based on the criteria below.

Although a lower level of care will usually require a lower nurse to patient ratio or reduced critical care support, this may not apply in all circumstances and the aim should be to be flexible in the provision of staff resources to meet the needs of the patient. The level of care assigned to a patient will influence, but not determine, staffing requirements.

The location of patients does not determine their level of care.

Patients who have 'not for resuscitation' orders written or who are receiving palliative care may also fulfil the criteria listed below. It may be appropriate to modify the actual level of critical care delivered to these patients whilst enhancing their palliative care.

The examples in the right hand column are provided to assist and are not intended to be exhaustive or prescriptive.

Definition of Levels of Care

Level 0 Criteria	Examples
Requires hospitalisation Needs can be met through normal ward care.	<ul style="list-style-type: none">▪ Intravenous therapy.▪ Observations required less frequently than 4 hrly.

Level 1 Criteria	Examples
<p>Patients recently discharged from a higher level of care</p>	<p>Patients requiring a minimum of 4 hrly observations.</p>
<p>Patients in need of additional monitoring/clinical interventions, clinical input or advice</p>	<ul style="list-style-type: none"> ▪ Requiring a minimum of 4 hrly observation on the basis of clinical need. ▪ Requiring continuous oxygen therapy. ▪ Boluses of intravenous fluid (need not determined by CVP). ▪ Epidural analgesia or Patient Controlled Analgesia in use. ▪ Parenteral nutrition. ▪ Postoperative surgical patients who are still requiring 4 hrly observations. ▪ Requiring administration of bolus intravenous drugs through a Central Venous Catheter. ▪ With a tracheostomy. ▪ With a chest drain in situ. ▪ Requiring a minimum of 4 hourly GCS assessment. ▪ With diabetes receiving a continuous infusion of insulin. ▪ Who are at risk of aspiration pneumonia. ▪ On established intermittent renal support. ▪ Requiring respiratory physiotherapy to treat or prevent respiratory failure. ▪ Requiring frequent (> 2x day) Peak Expiratory Flow rate measurement for clinical reasons.
<p>Patients requiring critical care outreach service support</p>	<ul style="list-style-type: none"> ▪ Abnormal vital signs but not requiring a higher level of critical care. ▪ Risk of clinical deterioration and potential need to step up to level 2 care. Patients fulfil the “medium” risk category as defined by NICE Guideline No: 50.

Level 2 Criteria	Examples
<p>Patients needing pre-operative optimisation</p>	<ul style="list-style-type: none"> ▪ Cardiovascular, renal or respiratory optimisation required prior to surgery. (Invasive monitoring inserted to assist optimisation (arterial line, and CVP as a minimum)).
<p>Patients needing extended postoperative care</p>	<ul style="list-style-type: none"> ▪ Immediate care following major elective surgery. ▪ Emergency surgery in unstable or high risk patients. ▪ Where there is a risk of postoperative complications or a need for enhanced interventions and monitoring.
<p>Patients stepping down to Level 2 care from Level 3</p>	<ul style="list-style-type: none"> ▪ Requiring a minimum of hourly observations. ▪ At risk of deterioration and requiring level 3 care again.
<p>Patients receiving single organ support</p> <p><i>(exceptions: Basic Respiratory and Basic Cardiovascular Support occurring simultaneously without any other organ support should be considered as Level 2 and Advanced Respiratory Support alone is Level 3).</i></p>	
<p>Patients receiving Basic Respiratory Support</p> <p><i>(NB: When Basic Respiratory and Basic Cardiovascular support are provided at the same time during the same critical care spell and no other organ support is required, the care is considered to be Level 2 care)</i></p>	<p>Indicated by one or more of the following:</p> <ul style="list-style-type: none"> ▪ Mask / hood CPAP or mask / hood Bi-level positive airway pressure (non-invasive ventilation) ▪ Patients who are Intubated to protect the airway but needing no ventilatory support ▪ CPAP via a tracheostomy ▪ More than 50% oxygen delivered by face mask. <i>(Note, more than 50% has been chosen to identify the more seriously ill patients in a hospital).</i> Short-term increases in FiO₂ to facilitate procedures such as transfers or physiotherapy do not qualify. ▪ Close observation due to the potential for acute deterioration to the point of needing advanced respiratory support. <i>(e.g. severely compromised airway or deteriorating respiratory muscle function).</i>

	<ul style="list-style-type: none"> ▪ Physiotherapy or suction to clear secretions at least two hourly, whether via tracheostomy, minitracheostomy, or in the absence of an artificial airway ▪ Patients who are recently (within 24 hours) extubated after a period (greater than 24 hours) of mechanical ventilation via an endotracheal tube. <p>NB: The presence of a tracheostomy used for long term airway access only does not qualify for basic respiratory support.</p>
<p>Patients receiving Basic Cardiovascular Support</p> <p><i>(NB: When Basic Respiratory and Basic Cardiovascular support are provided at the same time during the same critical care spell and no other organ support is required the care is considered to be Level 2 care)</i></p>	<p>Indicated by one or more of the following:</p> <ul style="list-style-type: none"> ▪ Use of a CVP line for monitoring of central venous pressure and /or provision of central venous access to deliver titrated fluids to treat hypovolaemia. ▪ Use of an arterial line for monitoring the arterial pressure and/or sampling of arterial blood. ▪ Single intravenous vasoactive drug used to support or control arterial pressure, cardiac output or organ perfusion. ▪ Single/multiple intravenous rhythm controlling drug(s) to support or control cardiac arrhythmias
<p>Patients receiving Advanced Cardiovascular Support</p> <p><i>(NB: Basic Cardiovascular support will frequently occur prior to Advanced Cardiovascular support and should not lead to both Advanced Cardiovascular support and Basic Cardiovascular support being recorded at the same calendar day. Advanced Cardiovascular support supersedes Basic Cardiovascular support where this occurs.)</i></p>	<p>Indicated by one or more of the following:</p> <ul style="list-style-type: none"> ▪ Multiple intravenous vasoactive and/or rhythm controlling drugs when used simultaneously to support or control arterial pressure, cardiac output or organ / tissue perfusion, (e.g. inotropes, amiodarone, nitrates). To qualify for advanced support status, at least one drug needs to be vasoactive. ▪ Continuous observation of cardiac output and derived indices (e.g. pulmonary artery catheter, lithium dilution, pulse contour analyses, oesophageal Doppler, impedance and conductance methods). ▪ Intra aortic balloon pumping and other assist devices. ▪ Insertion of a temporary cardiac pacemaker (criteria valid for each day of therapeutic connection to a

<p>Patients receiving Renal Support</p>	<p>functioning external pacemaker unit)</p> <p>Indicated by:</p> <ul style="list-style-type: none"> ▪ Acute renal replacement therapy (e.g. haemodialysis, haemofiltration etc.) or ▪ provision of renal replacement therapy to a chronic renal failure patient who is requiring other acute organ support in a critical care bed.
<p>Patients receiving Neurological Support</p>	<p>Indicated by one or more of the following:</p> <ul style="list-style-type: none"> ▪ Central nervous system depression sufficient to prejudice the airway and protective reflexes, <u>excluding that caused by sedation prescribed to facilitate mechanical ventilation or poisoning (e.g. deliberate or accidental overdose, alcohol, drugs etc.)</u>. ▪ Invasive neurological monitoring or treatment e.g. ICP, jugular bulb sampling, external ventricular drain. ▪ Continuous intravenous medication to control seizures and / or continuous cerebral monitoring. ▪ Therapeutic hypothermia using cooling protocols or devices
<p>Patients receiving Dermatological Support</p>	<p>Indicated by one or more of the following</p> <ul style="list-style-type: none"> ▪ Patients with major skin rashes, exfoliation or burns. <i>(e.g. greater than 30% body surface area affected)</i>. ▪ Use of complex dressings <i>(e.g. large skin area greater than 30% of body surface area, open abdomen, vacuum dressings or, large trauma such as multiple limb or limb and head dressings)</i>.

Level 3 Criteria	Examples
<p>Patients receiving Advanced Respiratory Support alone</p> <p><i>(NB: Basic Respiratory support will frequently occur prior to Advanced Respiratory support and should not lead to both Advanced Respiratory support and Basic Respiratory support being recorded at the same calendar day. Advanced Respiratory support supersedes Basic Respiratory support where this occurs.)</i></p>	<p>Indicated by one of the following:</p> <ul style="list-style-type: none"> ▪ Invasive mechanical ventilatory support applied via a trans-laryngeal tracheal tube or applied via a tracheostomy. ▪ Bi-level positive airway pressure applied via a trans-laryngeal tracheal tube or applied via a tracheostomy ▪ CPAP via a trans-laryngeal tracheal tube. ▪ Extracorporeal respiratory support.
<p>OR</p> <p>Patients receiving a minimum of 2 organs supported</p> <p><i>(NB: Basic Respiratory and Basic Cardiovascular do not count as 2 organs if they occur simultaneously (see above under Level 2 care), but will count as Level 3 if another organ is supported at the same time)</i></p>	<p>Examples:</p> <ul style="list-style-type: none"> ▪ Basic Respiratory and Neurological support. ▪ Basic Respiratory and Hepatic Support. ▪ Basic Respiratory and Renal support. ▪ Basic Cardiovascular and Hepatic support. ▪ Basic Cardiovascular and Renal support. ▪ Advanced Cardiovascular and Renal support. ▪ Advanced Cardiovascular and Hepatic support. ▪ Advanced Cardiovascular and Neurological support.

References

1. Critical Care Minimum Dataset.
2. Comprehensive Critical Care: a review of adult critical care services.
Department of Health May 2000
3. Intensive Care Society. Levels of Critical Care for Adult Patients 2002.