

In this article...

- Description of the role of critical care nurses in intensive care units and the wider hospital
- Why critical care skills are essential when caring for patients who are acutely ill
- Why holistic assessment and care are fundamental to critical care nursing

Essential critical care skills 1: what is critical care nursing?

Key points

Critical care nursing is highly skilled, and requires postgraduate study and training

Critical care nurses provide outreach to support ward nurses who are caring for patients at risk of deterioration

Care of patients on critical care units often involves organ system support and close monitoring is needed

A holistic view of the patient – which takes into account physical and psychosocial matters – is vital, as is supporting families

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Abstract In this first article of a six-part series on critical care nursing, we introduce the role and what it involves, as well as looking at how critical care nurses can support the whole patient, from a physical and psychosocial perspective. The importance of rehabilitation, assessment of risk of ongoing morbidity and delirium are also discussed. Part 2 describes the assessment of the critically ill patient.

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Critical care nurses provide expert, specialist care to the most severely ill or injured patients in intensive care units and the wider hospital. They are highly trained and skilled safety-critical professionals working as part of a multidisciplinary team. Critical care is classified using four levels of patient acuity, as outlined in Table 1. Updated guidelines for the provision of intensive care services (Faculty of Intensive Care Medicine, 2019) recommend that level-3 patients should have a minimum registered nurse-patient ratio of 1:1 and level-2 patients must have a minimum nurse-patient ratio of 1:2.

To deliver highly skilled care, critical care nurses undertake postgraduate study and ongoing training. The Step Competency Framework ([Bit.ly/CC3NCompFrame](https://bit.ly/CC3NCompFrame)) underpins critical care nurse education; it recognises that, to be able to deliver high-quality care to patients, staff need the knowledge and skills so they can work at the highest level, with standardisation across all critical care units. Step 1 for adult critical care begins when a nurse with no previous experience of the specialty starts working in

intensive care medicine. Steps 2 and 3 should be incorporated into academic intensive care programmes.

Critical care nurses also lead many outreach teams that identify, monitor and initiate timely treatment to prevent clinical deterioration, and support ward nurses (Department of Health, 2000). They offer advanced system assessment and rescue before irretrievable deterioration and cardiac arrest takes place.

This article is the first in a six-part series on essential critical care skills, which aims to explore essential critical care nursing competencies.

Managing organ dysfunction

Admission to a critical care unit is usually because of organ dysfunction or organ failure. Respiratory failure alone leads to around 100,000 annual admissions to critical care in the UK (FICM, 2019). The goal is to correct or provide support to these dysfunctional organs. Technological and medical advances over the past few decades have meant significant growth in treatments and interventions, and more-effective management of patients who need organ support.

Table 1. Levels of care

Level	Description
0	Patients whose needs can be met through normal ward care in an acute hospital
1	Patients at risk of deteriorating, or those recently relocated from higher levels of care, whose needs can be met on an acute ward, with support from the critical care team
2	Patients needing more detailed observation or intervention, including support for a single failing organ system or post-operative care, or those 'stepping down' from level-3 care
3	Patients needing advanced respiratory support alone, or basic respiratory support and support for at least two organ systems. This includes all complex patients requiring support for multi-organ failure

Source: Faculty of Intensive Care Medicine (2019)

Table 2. Organ support interventions

Physiological system	Examples of organ support
Respiratory	<ul style="list-style-type: none"> ● Mechanical ventilators ● Non-invasive ventilation devices ● High-flow nasal oxygen devices
Cardiovascular	<ul style="list-style-type: none"> ● Infusion devices for administration of vasoactive medications – for example, noradrenaline infusion to support blood pressure ● Pacemaker devices ● Cardiac support devices – for example, intra-aortic balloon pumps and ventricular assist devices
Neurological	<ul style="list-style-type: none"> ● Infusion devices for administration of sedation, paralysing agents and analgesia ● Targeted temperature-management devices
Gastro-intestinal	<ul style="list-style-type: none"> ● Pump devices for delivery of enteral feed
Genito-urinary	<ul style="list-style-type: none"> ● Renal replacement therapy devices for renal dialysis
Skin	<ul style="list-style-type: none"> ● Pressure-relieving mattresses

The interventions most commonly used include mechanical ventilators, infusion devices and renal replacement therapy. Table 2 outlines the interventions used for different physiological systems.

Patient monitoring and documentation

It is crucial to gather accurate data on physiological parameters – such as oxygen saturation (SpO₂), heart rate and fluid balance – at the bedside of the patient who is critically ill. Typically, each patient will have their own monitor that will display a range of clinical factors (Box 1) and provide real-time feedback to help evaluate critical care interventions, and detect any deterioration or emergency situations promptly.

Critical care nurses need technical skill and knowledge to effectively use and interpret bedside monitors. A further common technical resource is the clinical

information system (CIS), which can record and process large amounts of data, such as:

- Patient physiological observations;
- Care or interventions delivered;
- Medication plans.

The FICM (2019) highlights how a CIS can not only improve efficiency, but also reduce errors and improve compliance with standards or guidelines.

Psychosocial care

Holistic patient-centred care – as outlined by Jasemi et al (2017) – is vital in critical care, with effective psychosocial care, and cultural, spiritual and family care being of particular significance. Immediately on admission to a critical care setting, patients are subjected to an onslaught of physical and psychosocial stressors including:

- Physical pain;
- An unfamiliar environment; equipment and treatments;

Box 1. Clinical factors recorded by bedside monitors

- Heart rhythm
- Heart rate
- Oxygen saturation
- Respiratory rate
- Exhaled carbon dioxide concentration/partial pressure
- Non-invasive blood pressure
- Arterial blood pressure
- Central venous pressure
- Temperature

- Sensory disturbances;
- Isolation from family;
- Loss of autonomy;
- Impaired communication;
- Fear for their life (Kiekkas et al, 2010).

It can lead to severe emotional distress and the development of delirium, anxiety, depression and post-traumatic stress disorder (PTSD) (Hatch et al, 2018) – all of which may persist long after the patient's physical recovery and discharge from hospital (Ewens et al, 2018).

Psychosocial care is often considered the touchstone to person-centred care and, in this setting, refers to supportive interventions that may mitigate the stressors associated with critical illness. Evidence-based measures that may all help include:

- Providing information and explanations;
- Regularly orientating the patient to date, time and place;
- Reassurance;
- Empathetic touch;
- Early mobilisation;
- Family visits;
- Maintaining clear night and day routines;
- Minimising noise (Bani Younis et al, 2021; Alaparathi et al, 2020; Parsons and Walters, 2019).

Delirium is of particular concern in patients who are critically ill, and has an incidence range of 45-87% (Cavallazzi et al, 2012). It is characterised by the acute onset of cerebral dysfunction, with a change or fluctuation in baseline mental status, inattention, disorganised thinking or an altered level of consciousness (NICE, 2019). Delirium is associated with significant increases in mortality, morbidity and hospital stay, as well as having long-term ramifications such as cognitive impairment, PTSD, anxiety and depression (Cavallazzi et al, 2012) so the prevention, early recognition and effective management of it is of

Box 2. Short clinical assessment

The following may indicate that the patient is at risk of physical/non-physical morbidity and needs further assessment:

Physical

- Unable to get out of bed independently
- Anticipated long duration of critical care stay
- Obvious significant physical or neurological injury
- Lack of cognitive functioning to continue exercise independently
- Unable to self-ventilate on 35% of oxygen or less
- Presence of pre-morbid respiratory or mobility problems
- Unable to mobilise independently over short distances

Non-physical

- Recurrent nightmares, particularly if the patient reports trying to stay awake to avoid them
- Intrusive memories of traumatic events that occurred before admission (for example, road traffic accidents) or during their critical care stay (for example, delusion experiences or flashbacks)
- New or recurrent anxiety or panic attacks
- Expressing a wish not to talk about their illness or changing the subject quickly

Box 3. Comprehensive clinical assessment

This assessment should be undertaken for all patients identified as being at risk of physical or non-physical morbidity.

Physical issues

- Physical
 - Fatigue
 - Breathlessness
 - Tracheostomy
 - Ventilated
 - Artificial airway
 - Swallowing issues
 - Poor nutritional state
- Activities of daily living
 - Minor assistance needed
 - Major assistance needed
 - Full assistance needed
- Sensory
 - Visual changes
 - Hearing changes
 - Altered sensations
 - Sedated/pain
- Communication
 - Difficulties in speech
 - Changes in voice quality
 - Difficulty writing
- Miscellaneous
 - Hair loss
 - Poor wound healing

Non-physical issues

- Anxiety or depression (new or recurrent symptoms)
 - Palpitations, irritability or sweating
 - Nightmares
 - Hallucinations, delusions
 - Flashbacks, withdrawal, traumatic memories of critical care
- Cognitive
 - Loss of memory
 - Attention deficit
 - Sequencing problems
 - Lack of organisational skills
 - Confusion
 - Disinhibition
- Miscellaneous
 - Low self-esteem
 - Low self-image
 - Relationship difficulties
 - Difficulty sleeping

Rehabilitation should be patient centred, involve the whole multidisciplinary team and occur throughout the patient pathway, with plans updated as the patient's condition changes (FICM, 2019). Physiotherapists, occupational therapists, dieticians, speech and language therapists,

paramount importance. The ABCDEF bundle of care may help:

- **A**ssessment, prevention and management of pain;
- **B**reathing trial;
- **C**hoice of sedation and analgesia;
- **D**elirium assessment, prevention and management;
- **E**arly mobilisation;
- **F**amily engagement (Marra et al, 2017).

Cultural and spiritual care

A patient's cultural and spiritual background influences many aspects of nursing in critical care, such as patient and family roles, communication, nutrition, values and beliefs towards health, care and treatments, and end-of-life care. Careful assessment of the patients' health beliefs, communication needs, social networks and family dynamics, dietary requirements, religious practices and values, is essential to plan and deliver culturally sensitive and spiritual care that contributes to the quality of life, care and satisfaction of patients as well as their families (Willemse et al, 2020).

Family care

Family members of patients who are critically ill can play an important part – often acting as surrogate decision makers – and be essential in providing emotional and social support. However, relatives may experience extreme stress, fear and anxiety, both during and after the patient's admission. Relatives are also vulnerable to ongoing psychological illnesses such as



PTSD, anxiety and depression (Johnson et al, 2019). Nurses need to develop a collaborative relationship with them to effectively identify and address their immediate needs, as well as prepare them to cope with their loved one's discharge and ongoing rehabilitation. Families need honest and timely information, assurance, proximity, comfort and support (Scott et al, 2019).

Rehabilitation

Critical illness can cause significant long-term physical and non-physical problems for patients, and rehabilitation is important to improve recovery. National guidelines, such as those by the FICM (2019) and the National Institute for Health and Care Excellence (2017), have supported this, with the aim of improving these patients' physical, psychological and cognitive outcomes.

Patients should be assessed at the following key stages:

- Within four days of admission to a critical care unit, or earlier if being discharged;
- Just before discharge to ward-based care;
- When receiving ward-based care;
- Before discharge to their home or community care;
- Two to three months after discharge from the critical care unit.

Clinical Practice Review

critical care nurses and doctors, as well as patients and their families, all have a role.

Short clinical assessments should be done with all patients in critical care to identify their risk of physical and non-physical morbidity. A short clinical assessment is applicable for patients who are expected to recover quickly, despite requiring initial level-3 care, and should assess a range of factors (Box 2). If the patient is deemed at risk, a comprehensive clinical assessment should be undertaken; this will also assess physical and non-physical risk (Box 3).

During the assessment of these patients, a range of tools may be used including the following:

- Hospital Anxiety and Depression Score (Zigmond and Snaith, 1983);
- Barthel Activities of Daily Living Index (Wade and Colin, 1988);
- Chelsea Critical Care Physical Assessment Tool (Corner et al, 2013).

Many critical care units provide follow-up services for patients after discharge, giving them access to a range of health professionals, including critical care nurses, to assess physical and non-physical recovery (NICE, 2017). If these are not available, patients can be directed to ICU Steps (www.icusteps.org), which can help to support patients and families affected by critical illness.

Conclusion

This article aims to provide an overview of critical care and the critical care nurse role. The following articles in this series will explore in more detail key issues relating to the management of patients who are critically ill. **NT**

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