

September 2002

Guidance on Comprehensive Critical Care for Adults in Independent Sector Acute Hospitals



INDEPENDENT
HEALTHCARE
ASSOCIATION



[FOREWORD AND CONTENTS]

For the past two years the Intensive Care Society has been engaged in a dialogue with representatives from the Independent Healthcare Association (IHA) to implement the recommendations of the Department of Health's publication 'Comprehensive Critical Care'.

This collaboration has resulted in the comprehensive standards herein.

The Society is pleased to have been associated with this development and recommends that its members take heed of the contents of this document when working with IHA hospitals to raise the standard of critical care service provision.

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1 Introduction

This document has been produced by an Independent Healthcare Association Working Group made up of representatives from large corporate hospital groups, smaller groups and individual hospitals. It is intended as guidance to drive good practice and to provide a basis for local policy development within networks, the objective being for providers and commissioners to work together to meet the needs of all critically ill patients and their families and friends in their geographical area (DoH, 2000a).

The Department of Health document 'For the Benefit of Patients' (DoH 2000b) presents the opportunity for independent healthcare providers to contribute fully to comprehensive adult critical care services and to move towards a more collaborative and pro-active approach to long term capacity planning involving both independent and national health care service resources. This document must therefore facilitate that process. IHA member organisations that are offering critical care services must assess their policies for the delivery of care against this guidance.

2 Executive Summary

- This document is intended as guidance to drive good practice within IHA acute member hospitals and to provide a basis for local policy development within critical care networks.
- The document describes the classification of critical care patients. Specifically, all hospitals carrying out acute elective surgery are expected to be able to provide level 2 care as a minimum while transfer for longer term level 2 care is arranged. Formal written arrangements must be in place for transfer to level 2 and 3 care should the need arise.
- The document recommends that independent hospitals convene a Critical Care Delivery group whose membership reflects all services within the hospital that have day to day involvement in critical care.
- Independent hospitals should also make contact with the Critical Care Network Manager to initiate a dialogue about their inclusion in their relevant geographical network. Inclusion will be contingent on their meeting the minimum standards required for provision of critical care services to their stated level.
- The document recommends that independent hospitals implement an early warning system as described in Guidelines for Outreach (Intensive Care Society 2002).
- Competency standards are being developed within critical care networks and it is recommended that independent hospitals are involved and incorporate these into their professional development plans and orientation programmes.
- Access to competence based high dependency care training for registered nurse staff to level 1 critical care must be provided; targets set in the guidance document are 50% of the workforce by March 2002 and 100% by March 2004, but these have been reviewed in light of the feasibility of such a programme and independent hospitals will seek to match the ongoing training programme.
- For hospitals providing substantive level 2 care or above, the following services must be available on a 24 hour, 7 day basis: a physiotherapist experienced in critical care, a radiographic team capable of providing mobile X-rays and ultrasound imaging and echocardiography services to support critical care areas. Access to a dietician or clinical nutrition team must be available on a daily basis and pharmacists must be considered part of the critical care team.

- A hospital that provides care at levels 1 and 2 would not require the full time attention of a fully trained and practising intensivist. There must however be a named lead consultant who has training and ongoing experience in critical care medicine with responsibility for advice on standards, clinical policies and audit.
- All hospitals providing level 3 critical care must have a lead consultant with training in critical care medicine and with daily involvement in the care of patients in a level 3 critical care unit.
- All hospitals providing care up to level 2 must have dedicated 24 hour on-site cover by a Resident Medical Officer with current Advanced Life Support certification (UK Resuscitation Council standard or equivalent). For level 3 and level 2 requiring elective post-operative ventilation, the RMO must in addition be of specialist registrar grade, preferably in anaesthetics or critical care medicine and appropriately skilled and experienced in endotracheal intubation and must be available at all times to attend critically ill patients as the first priority.
- It is recommended that a minimum of a registered nurse or Operating Department Practitioner (ODP) with current Adult Advanced Life Support skills or Immediate Life Support skills, Resuscitation Council accredited or equivalent must be on duty at all times within the hospital irrespective of level of critical care.
- Data collection and analysis must be recognised as an integral part of the delivery of critical care and be seen as a legitimate part of the cost of its provision. There must also be participation in a recognised audit programme, whether local, regional or national for units providing level 2 & 3 care.

- This guidance has been prepared to support the ongoing provision of critical care services within the independent healthcare sector. The document supports the excellent standards of service offered in a variety of locations and provides a common framework to ensure linkage with local networks.

3 Background

Critical care medicine evolved in parallel with advances in anaesthesia and in invasive surgical and medical procedures. The physical development of intensive care units can be traced from the need to concentrate resources in one area during polio epidemics, and the development of respiratory care units, to the post-operative recovery unit, shock and trauma units and finally to units that provide comprehensive support for medical and surgical patients with immediate life-threatening crisis (Noc, M 1996).

In March 1999, the Department of Health established a review of adult critical care services and invited an Expert Group to develop a framework for the future organisation and delivery of critical care. The report produced by the Expert Group is called *Comprehensive Critical Care: A review of adult critical services* (DoH 2000a).

This is not simply a new name for intensive care but is a new approach based on the level of care required.

3.1 Classification of Critical Care Patients

The report recommended that the existing divisions into high dependency and intensive care based on beds be replaced by a classification that focuses on the level of care that individual patients need, regardless of the physical location of those beds.

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

There are very few independent hospitals that can provide the full means to care for a patient in multiple organ failure e.g. renal replacement therapy. However, many will still be able to provide elective postoperative ventilation as long as they have the right number of appropriately trained nurses, on-site trainees and suitable equipment. Such care may be provided in a so-called 'High Dependency Unit' or in the recovery area in an operating department if it is for short-term post-operative recovery, or for treatment prior to transfer to a more suitable environment.

A supplementary classification is proposed in order to identify those patients requiring specialist investigation and treatment such as is usually provided at tertiary referral hospitals. Where patients are cared for by specialist services, one additional letter (reflecting the most significant disorder) must be applied to a patient's level of acuity as follows:

- N** patients requiring neurosurgical care
- C** patients requiring cardiac surgical care
- T** patients requiring thoracic surgical care
- B** patients requiring burns or plastic surgery care

- S** patients requiring spinal unit care
- R** patients requiring renal care
- L** patients requiring liver care
- A** patients requiring other specialist care

All hospitals carrying out acute elective surgery are expected to be able to provide level 2 care as a minimum while transfer for longer term level 2 care is arranged. Formal written arrangements must be in place for transfer to level 3 care should the need arise.

Expanded guidance on levels of care (from the Intensive Care Society) has now been produced.

General principles

The appropriate level of care can be determined from the tables based on the following factors.

<p>Physiological reserve</p> <p>Abnormal physiological values</p> <p>Underlying condition /Surgery</p> <p>Interventions or monitoring required</p>	<p>Proxies for this include: Age Chronic health status</p> <p>The most important probably are: -respiratory rate -heart rate -oxygenation (SpO₂) -level of consciousness</p> <p>Malignancy Cardiorespiratory dysfunction Complex surgery</p> <p>Physiological monitoring Regional analgesia Body cavity drainage</p>
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- Clinical judgement should be used to determine which level of care would be most appropriate based on the criteria below as guidance.
- Current ACP (augmented care period) definitions are applicable to level 2 and level 3 patients.
- 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. 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 provide these patients with a lower level of critical care than indicated; however their palliative care requirements may increase.
- IHA member hospitals should assign a level of care by referring to the headline statements in the left hand column of the table below.
- If a patient does not clearly meet the criteria for a particular level, clinical judgement should be used to determine the most appropriate classification. If doubt remains, the higher level should be chosen.
- The examples in the right hand column are provided to assist comprehension and are not intended to be exhaustive or prescriptive.
- ACP organ support definitions used in the following tables are included in Appendix 6 for ease of reference.

Level 0 criteria	Examples
<p>Requires hospitalisation – needs can be met through normal ward care</p>	<p>Oral medication Bolus i.v. medication Patient Controlled Analgesia (PCA) Observations required less frequently than 4 hourly</p>

Level 1 criteria	Examples
<p>Patients recently discharged from a higher level of care</p>	<p>Observations required at least 4 hourly</p>
<p>Patients in need of additional monitoring, clinical input or advice</p>	<p>Physiotherapy or airway suctioning required at least 6 hourly, but not more often than 2 hourly</p>
<p>Patients requiring critical care outreach service support</p>	<p>Abnormal vital signs but not requiring a higher level of critical care</p>
<p>Patients requiring staff with special expertise and/or additional facilities for at least one aspect of critical care delivered in a general ward environment.</p>	<p>Renal replacement therapy Epidural analgesia Tracheostomy care</p>

Level 2 criteria	Examples
<p>Patients needing single organ system monitoring and support</p> <p>[ACP definitions for patients already in receipt of single organ support are applicable to this group].</p> <p>[Patients in need of advanced respiratory support as the only major organ system supported due to an acute illness would normally satisfy the criteria for level 3].</p>	<p>Respiratory</p> <p>Needing more than 50% inspired oxygen Within 24 hours of tracheostomy insertion Requiring non-invasive ventilation or CPAP Requiring physiotherapy or suctioning at least every 2 hours</p> <p>Cardiovascular</p> <p>Unstable, requiring continuous ECG and invasive pressure monitoring Haemodynamic instability due to hypovolaemia / haemorrhage / sepsis Requiring single infusion of vasoactive drug with appropriate monitoring</p> <hr/> <p>Central nervous system</p> <p>CNS depression sufficient to prejudice airway and protective reflexes Invasive neurological monitoring</p> <p>continued overleaf</p>

Level 2 criteria continued	Examples
<p>Patients needing pre-operative optimisation Requiring invasive monitoring and treatment to improve organ function prior to surgery.</p>	<p>Other Acute impairment of renal, electrolyte or metabolic function</p> <p>Haemodynamic / respiratory resuscitation or optimisation Insertion of invasive monitoring</p>
<p>Patients needing extended postoperative care Extended post-operative observation is required either because of the nature of the procedure and/or the patient's condition.</p> <p>Included in this group would be patients needing short term, i.e. less than 24 hours, routine post-operative ventilation who are otherwise well with no other organ dysfunction, e.g. fast track cardiac surgery patients.</p>	<p>Procedure Major elective surgery Emergency surgery in unstable or high-risk patient Increased risk of postoperative complications/interventions/monitoring</p> <hr/> <p>Patient Intermediate surgery in patient >70 years or ASA III or IV (severe systemic disease with functional limitation or worse)</p>
<p>Patients needing a greater degree of observation and monitoring.</p>	<p>Observation and monitoring that cannot be safely provided at level 1 or below, judged on the basis of clinical circumstances and ward resources.</p>
<p>Patients moving to step-down care.</p>	<p>No longer need level 3 but not well enough to be classified as level 1 or 0</p>
<p>Patients with major uncorrected physiological abnormalities. These physiological abnormalities, if uncorrected, are likely to indicate a patient requiring at least level 2 care. Patients with a lesser degree of abnormality or other physiological abnormalities may also require level 2 or 3 care.</p>	<p>Respiratory rate > 40 breaths/min or > 30 breaths/min for > 6 hours Heart rate > 120 beats/min Temperature < 35° C for > 1 hour Hypotension, e.g. systolic blood pressure < 80 mmHg for > 1 hour Glasgow Coma Score (GCS) <10 and at risk of acute deterioration</p>

Level 3 criteria	Examples
<p>Patients needing advanced respiratory system monitoring and support.</p> <p>Excluded from this group would be patients needing short term, i.e. less than 24 hours, routine post-operative ventilation who are otherwise well with no other organ dysfunction, e.g. fast track cardiac surgery patients. If ventilatory support exceeds 24 hours or other significant organ dysfunction develops, these patients now need level 3 care.</p> <p>[ACP definitions for patients already in receipt of advanced respiratory support are applicable to this group].</p>	<p>Respiratory failure from any cause that requires invasive, positive pressure mechanical ventilatory support.</p> <p>BIPAP via any form of tracheal tube</p> <p>Extracorporeal respiratory support</p>
<p>Patient needing monitoring and support for two or more organ systems, one of which may be basic or advanced respiratory support.</p> <p>(Note that this clarifies the apparent inconsistency between the suggested levels criteria in Comprehensive Critical Care1 and existing ACP definitions).</p> <p>[ACP definitions for patients already in receipt of multiple organ support are applicable to this group].</p>	<p>SIMV or CMV and continuous intravenous vasoactive drugs</p> <p>SIMV or CMV and haemofiltration</p> <p>Balloon counter-pulsation and haemofiltration</p> <p>High risk patients undergoing major surgery who are likely to require advanced respiratory support and monitoring/support of other organ systems.</p> <p>Continuous intravenous medication to control seizures and supplementary oxygen / airway monitoring.</p>
<p>Patients with chronic impairment of one or more organ systems sufficient to restrict daily activities (co-morbidity) and who require support for an acute reversible failure of another organ system.</p> <p>[ACP definitions for patients already in receipt of single organ support are applicable to this group].</p>	<p>Severe ischaemic heart disease and major peri-operative haemorrhage.</p> <p>COPD requiring home oxygen presenting with sepsis related to immunosuppression.</p> <p>Angina on mild exercise and bronchopneumonia requiring CPAP.</p>

4 Critical Care Networks

The review states that no individual NHS trust can meet all peaks in demand or have the expertise to meet every need for specialist care. It recommends the formation of hospital networks with providers and commissioners working together to meet the needs of all critically ill patients in their geographical area including independent providers of critical care services. This concept is reinforced in 'The NHS Plan' (DoH 2000c) and 'For the Benefit of Patients (DoH 2000b).

Each network will be responsible for agreeing common standards and protocols and the means for undertaking comparative audit. Protocol development for admissions and discharges and transfers is a priority and is intended to reduce the number of long distance transfers. Transfers out of hospitals must be routinely reported as part of the risk management framework within a hospital or reported within the networks. Additionally, transfers out of network will be regarded as adverse incidents and be reported as such.

Comprehensive Critical Care places a requirement on Trusts to set up a Critical Care Delivery Group (CCDG) to oversee the provision of critical care services throughout the trust and review its position within networks. To mirror this independent hospitals should convene such a group whose membership should reflect all services within the hospital that have day to day involvement in critical care. The purpose of this group is to oversee service planning, review and implementation of critical care. To ensure seamless communication at local and regional levels the staff member who links with the local network must at least be a member of this group but preferably be the chair.

Independent hospital providers should make contact with the Critical Care Network Manager to initiate a dialogue

about their inclusion in their relevant geographical network. Inclusion will be contingent on their meeting the minimum standards required for provision of critical care services to their stated level.

Consideration must be given to the possible requirement for critical care even in hospitals whose usual case-mix would suggest this to be a low probability. It is recommended that hospitals not having this capability must have in place explicit arrangements with another independent hospital or NHS trust to provide this within a written agreement. The ability of an individual hospital to provide appropriate critical care services must be explicitly reviewed when undertaking work as a part of NHS contracts. Clear guidelines for the transport of the critically ill patient must be in place - see Appendix 1.

It is the responsibility of the independent hospital to audit all transfer arrangements including the ambulance service to ensure the ambulance arranged for transfer has the required equipment and appropriately trained staff.

5 Risk Assessment for Admission and Surgery

Acute independent hospitals must only admit those patients for whom they have the critical care resources to support. Though outcomes are not always predictable, a formal clinical risk assessment process may identify patients for whom admission is inappropriate. There is no universally accepted risk scoring system to recommend.

Local protocols should be developed, as a minimum using patient age and American Society of Anaesthesiologists (ASA) grade to inform the process and must be adapted to the level of support that the hospital can provide. ASA Physical status classification (adapted from Dripps et al 1961) is as follows

ASA 1 Normal healthy patient

ASA 2 Patient with mild systemic condition e.g. well controlled diabetes, old age

ASA 3 Patient with systemic disease that limits activity but is not incapacitating e.g. angina, COPD

ASA 4 Patient with an incapacitating disease that is a threat to life e.g. advanced cardiac or pulmonary disease

ASA 5 Patient moribund not expected to survive 24 hours even with an operation.

All cases where care requirements escalate beyond that predicted must be reviewed to identify shortfalls in the assessment process.

Outreach Services

A key component of the review is the recommendation for a critical care outreach service in NHS Trusts which identifies patients who are deteriorating and seeks to avert admissions to designated critical care beds or ensures timely admission to such beds. Ongoing risk assessment of 'at risk' patients is an essential part of this process. It is recommended that independent hospitals implement an early warning system as described in Guidelines for Outreach: A Guideline for the introduction of Outreach Services (Intensive Care Society 2002). This must continue in the ward/floor area following discharge from level 2 or 3 care. Implementation will require significant training. An example of an Early Warning System which independent sector hospitals are encouraged to use is in Appendix 4. Its usage has been piloted by a member of the working group.

6 Facilities

All critical care beds should where possible be co-located and long term planning should take this into account.

Appropriate use of theatre recovery areas should be available for extended post-operative care and for resuscitation and stabilisation prior to transfer in the absence of other facilities. The potential need for the use of this facility must be taken into consideration in relation to overall staffing and equipment in the recovery area.

Emergency equipment must meet the standards laid down by the Intensive Care Society (1997).

7 Human Resources

7.1 Nursing Staff

Evidence has shown that, even where there is physical capacity to provide critical care beds, a shortage in the supply of experienced and trained critical care nurses has led to difficulties in delivering services across the country (DoH 2000a). The Review of Adult Critical Care Nursing (DoH 2000d) concluded that each critically ill patient wherever they are located in the hospital should have skilled critical care nursing available either to care directly for them or to advise on the care required to meet their needs.

Every patient with level 2 or 3 needs must have access to a nurse with specialist training in critical care. There must also be appropriate systems in place to supervise registered nurses looking after critically ill patients who have not yet completed specialist training. Registered nurses who are regularly looking after critically ill patients must have access to competency based training and be on an educational pathway which will enable them to develop the competencies required of a specialist nurse in critical care.

Nurse Dependency Levels

Staffing in Critical Care Units should be based on patient dependency rather than bed numbers (DoH 2000a). It is recommended that this issue is kept under review and developed in conjunction with current evidence based practice. Units should conduct their own action research to complement this evidence and introduce local validity. This will give more flexibility and efficient use of resources than traditional 1:1 ratio for level 3 care and 1:2 for level 2 though the requirements are unlikely to fall below 1:2 in any critical care area (British Association of Critical Care Nurses recommendations 2001 www.baccn.org.uk)

Criticisms of all current workload assessment tools are that they only take account of the bedside nursing time; no account is taken of the nursing time required to develop the service. (Hogan, 2000) Overall staffing levels must be determined by the sound clinical judgment of a nominated senior nurse and reflect individual patient dependency.

Professional Practice Development

All staff must meet continuing professional education requirements and allowances must be made for this in the overall staffing complement. Training packages should be designed that enhance core skills and competencies. Formal links between independent hospitals and/or local NHS Trusts may be forged to increase individual staff members' exposure to a wider case mix and to provide extended learning opportunities. Active participation in critical care networks should facilitate this.

Independent participation would be welcomed on the ALERT™ (Acute Life threatening Events – Recognition and Treatment) training which was introduced in February 2000 and was designed to teach pre-registration house officers and ward nurses a range of knowledge, skills and attitudes for managing critical illness

and detecting 'at risk' patients. Further information regarding ALERT™ can be obtained from the Postgraduate Medical Centre Supervisor, Portsmouth Hospitals (023 9228 6000 ext 5831).

Competency Development

Concerns about the persistence of a theory/practice gap in nursing combined with the degree of technological mastery required in critical care nursing in particular (Little 2000) have led to renewed interest in competency based training in this field. The challenge is to demonstrate clinical competence whilst using theoretically sound approaches to nursing care and to apply creative problem solving skills to evolving professional demands.

Competency has been defined as 'the ability to perform the task with desired outcomes under the varied circumstances of the real world' (Benner 1982). Competency standards are being developed within critical care networks and it is recommended that members are involved in this and incorporate these into their professional development plans and orientation programmes.

A modular continuous framework of courses must be developed based on the continuum of critical care provision (Department of Health [2000a]). This should include modules on level 1 critical care for all ward staff working in acute hospitals as well as an incremental programme of development towards higher levels of critical care practice. Competence based high dependency care training for ward staff must be provided; targets set in the report are 50% of the workforce by March 2002 and 100% by March 2004 but these have been reviewed in light of the feasibility of such a programme and independent hospitals will seek to match the ongoing training programme.

Sample competencies are documented in Appendix 5.

OTHER STAFF

7.2 Support Staff

The increasing complexity of equipment in use within critical care areas makes it essential that maintenance and servicing is carried out by appropriate technical or biomedical staff, as part of a documented plan. Robust out of hours arrangements must be in place for essential equipment such as blood gas analysers and suitable contingency plans must be made in the event of failure. Education of nursing and medical staff in user care and operation of equipment e.g. syringe drivers, non-invasive blood pressure devices, must follow recommendations laid down in the Clothier Report (1994).

Consideration should be given to provide secretarial and administrative staff to support clinical staff as and when required.

The need for the provision of an interpreter, bereavement support and occupational therapy should be taken into consideration where appropriate.

7.3 Allied Health Professions

Physiotherapy

A physiotherapist experienced in critical care must be available on a 24 hour, 7 day basis. It is recommended that with future developments in competency based modular training (DoH 2000d) and the breakdown of barriers between professions (DoH 2000a), this training should encompass physiotherapy and other therapy professions as appropriate.

Radiography

The services of a radiographic team capable of providing mobile X-rays and ultrasound imaging must be available on a 24 hour, 7 day basis. Explicit arrangements must be made for CT/MRI scanning where no on-site availability exists.

Echocardiography

Echocardiography services to support critical care areas must be available on a 24 hour 7 day basis.

Dietetics

Access to a dietician or clinical nutrition team must be available on a daily basis.

Pharmacy

Pharmacists must be considered part of the critical care team and play an integral part in the planning and delivery of critical care. A pharmacist must be available continuously and visit the unit on a daily basis.

7.4 Infection Control

Infection control is crucial and clear policies must be developed by appropriate nursing and medical staff with the infection control team. These must include aseptic precautions, cleaning and antibiotic use, admission precautions and facilities. An on-call service of a Consultant Microbiologist must be available on a 24 hour 7 day basis.

7.5 Pathology

There must be a range of appropriate pathology services available on a 24 hour basis.

7.6 Medical Staff

The Audit Commission in its report Critical To Success (1999) concluded that the medical workforce requirements for critical care are currently unclear and the progressive increase in the size of units will lead to the need for additional manpower.

It is recommended however that the defined level of service provided determines the level of medical leadership. A hospital which provides care at levels 1 and 2 would not require the full time



attention of a fully trained and practising intensivist. There must however be a named lead consultant who has training and ongoing experience in critical care medicine with responsibility for advice on standards, clinical policies and audit.

All hospitals providing level 3 critical care must have a lead consultant with training in critical care medicine and with daily involvement in the care of patients in a level 3 critical care unit. This must be validated by the consultant having obtained practising privileges in the hospital as a critical care consultant separate from practising privileges under his/her 'parent' speciality.

The responsibilities of doctors providing medical care of individual patients within the critical care environment must be clearly specified in a detailed admission policy. A functioning roster of consultants meeting the criteria for level 3 care must be in operation giving 24 hour 7 day cover.

Admitting consultants must be made aware of the appropriate care arrangements within the hospital and the method of referral should a patient's dependency increase beyond the defined service provision. Shared care between the admitting speciality consultant and the rostered consultant in critical care must be encouraged to enable seamless transfer of the care of the patient to a critical care specialist and critical care team, where a patient's condition deteriorates requiring level 3 care. Local policy must be in place for patients who require level 3 management.

Realisation of seamless management plans between different levels of care can be enhanced by the establishment of systems such as a Patient At Risk Team (PART) (Goldhill DR) or the Modified Early Warning System (MEWS) (Coates S).

On Site Medical Cover

All hospitals providing care up to level 2 must have dedicated 24 hour on-site cover by a resident medical officer with current Advanced Life Support certification (UK Resuscitation Council standard or equivalent). For level 3 and level 2 patients requiring elective post-operative ventilation, the RMO must in addition be of specialist registrar grade, preferably in anaesthetics or critical care medicine and appropriately skilled and experienced in endotracheal intubation and must be available at all times to attend critically ill patients as the first priority.

8 Resuscitation Standards

It is recommended that a minimum of a registered nurse or ODP with current Adult Advanced Life Support skills or Immediate Life Support skills must be on duty at all times. The hospital RMO must also be trained in accredited Adult Advanced Life Support and be part of the cardiac arrest team. All hospital clinical staff must have a minimum of basic life support training with annual update. A training log must be maintained to evidence training received. There must always be a certificated person on the crash team.

Simulation exercises must be carried out regularly to familiarise all staff with emergency care.

9 Care Pathways

Care pathways are increasingly being used in the UK as a tool for managing clinical processes and patient outcomes. A care pathway determines locally agreed, multi-disciplinary practice based on guidelines and evidence where available for a specific patient/client group. It forms all, or part of, the clinical record, documents the care given and facilitates the evaluation of outcomes for continuous quality improvement (National Pathways Association 1998). They present an overview of the entire multidisciplinary

plan of care and contribute to multidisciplinary functioning. Variance analysis can be a useful tool in informing clinical audit and can contribute to an organisation's quality improvement programme.

It is recommended that care pathways development is encouraged and that the evidence from National Service Frameworks and the National Institute for Clinical Excellence is incorporated within them.

10 Audit Requirements

Intensive care medicine has a strong history of comparative audit with the establishment of the Intensive Care National Audit & Research Centre (ICNARC) and its Case Mix Programme. Data collection and analysis must be recognised as an integral part of the delivery of critical care and be seen as a legitimate part of the cost of its provision. It will also form an important part of a risk management programme. Its cost, however, particularly for smaller units can be prohibitive and it is suggested that individual hospitals should explore the feasibility of sharing this cost with other independent hospitals or NHS Trusts.

It is recommended as a minimum requirement that for the purposes of case management and audit, units should use a recognised generic scoring system (e.g. SAPSII or APACHE). There must also be participation in a recognised audit programme, whether local, regional or national for units providing level 2 and 3 care. For level 1 and above a CMA Medical Data register (www.cmamedicaldata.com.uk) or equivalent must be maintained.

11 Standards and Guidelines

It is recommended that guidelines, standards and protocols be developed in conjunction with the local network, drawing on standard guidance provided by

the Department of Health and organisations like the Intensive Care Society, the Association of Anaesthetists of Great Britain and Ireland, the Royal College of Nursing and the NMC.

The guidelines should support the establishment of multi-disciplinary clinical governance meetings as part of the audit process.

Priorities for guidelines and protocols should be:

- Transfer of a Critically Ill Adult to another hospital - Appendix 1
- Critical Care (Level 2) Admission – Appendix 2
- Critical Care (Level 3) Admission – Appendix 3
- Early Warning Scoring System – Appendix 4
- Sample competencies – Appendix 5
- Information for patients, relatives and friends
- Directions for resuscitation status
- Treatment limitation
- Organ System Support Definitions from the Users Manual for the Augmented Care Period (ACP) Dataset (ICS) – Appendix 6
- Bereavement care – See ICS guidelines, May 1998
- Organ Donation Sample Policy – Appendix 7

12 Organ Donation

Advances in all aspects of transplantation continue to increase the demand for donor organs. It is therefore important that the independent sector where appropriate takes this into consideration. It is considered important to remain vigilant to ensure that the highest ethical standards are maintained and that these remain in tune with the contemporary moral climate.

Protocols for organ donation must be guided by the publications such as Guidance on Microbiological Safety of Human Organs, Tissues and Cells Use in Transplantation, Department of Health August 2000, Retrieval of Organs for Transplantation (RCN 1995), the Human Tissue Act 1961, the Human Organ Transplants Act 1989 (c31) and the ICS publications.

It is recommended that a resource folder is maintained on all units by the senior nurse and its contents checked with the regional transplant co-coordinator. A sample organ donation protocol is attached in Appendix 6.

See Donation of Organs for Transplantation – ICS, June 1999

13 Conclusion

This guidance has been prepared to support the ongoing provision of critical care services within the independent health care sector. The document supports the excellent standards of service offered in a variety of locations and provides a common framework to ensure linkage with local networks.

It has been developed after wide consultation with professional bodies and interested parties and stipulates the requirements for provision of critical care services in the independent sector. It should therefore promote a firm basis for further development of critical care services in conjunction with the NHS, as supported by the recent Concordat (October 2000).

For this partnership to be successful it will need locally agreed protocols for referral, admission and discharge into and out of NHS and independent healthcare provider facilities. It is recommended that IHA members play a full part in network development.

14 Appendix 1

Guidelines for the Transfer of a Critically Ill Adult to another Hospital

Aim

In certain situations critically ill patients will need to be transferred from the hospital to more specialist units. The aim of safe transport is to undertake the transfer with continuing medical treatment whilst minimising detrimental effects to the patient. The goal as far as possible must be to move the critical care environment with the patient. This must be achieved by following 'ICS Transport Standard' (ICS 2002).

Transfer Decisions

- Transfer decisions must be made by the lead consultant after full assessment of the patient and discussion between appropriate medical staff in referring and receiving hospitals.
- The basis of a decision to transfer is an assessment of the risks, benefit and urgency associated with each individual patient.
- The transfer process is the joint responsibility of the referring consultant, receiving consultant and transfer personnel. Final authority to accept the referral rests with the ICU consultant in the receiving unit.

Transfer Arrangement

- It is recommended by the Intensive Care Society (2002) that transfer be undertaken by staff from the receiving hospital but this will depend on the clinical urgency, experience of staff, equipment available and any extra delay involved in mobilising a transfer team.
- Selection of transfer mode - road and air - must take into account the nature of the illness, urgency of transfer, quality of transfer environment, mobilisation time, geographical factors, weather, and traffic conditions and be appropriate in

terms of resource. It is important that a paramedical ambulance is used. Details of Transfer Courses may be available through the networks.

Accompanying Personnel

- In addition to the transfer vehicle crew a critically ill patient must be accompanied by a minimum of two attendants.
- One must be an experienced medical practitioner competent in resuscitation, airway management, ventilation and other organ support. They must have training in critical care and have had involvement in previous transfers.
- This person must be accompanied and assisted by another experienced person, usually a nurse or ODP familiar with critical care procedures and transfer equipment.

Equipment

- Equipment must be robust, durable, and lightweight and if electrical, battery powered.
- A monitored oxygen supply to last the maximum duration of the transfer, plus a reserve of 1-2 hours, is essential for all patients.
- Standard equipment for establishing and maintaining a secure airway must be available.
- A portable mechanical ventilator with disconnection and high pressure alarms, a means for providing PEEP and facilities for variable FiO₂, I/E ratio, respiratory rate and tidal volume.
- A portable monitor, battery powered, with a clear illuminated display is required to record ECG, oxygen saturation, non-invasive blood pressure, invasive pressures, end-tidal carbon dioxide and temperature. Preferably the monitor will have a recording facility and visible and audible alarms

- Portable suction and a defibrillator must be available. These may be provided with the vehicle.
- Appropriate drugs and a number of syringe pumps with long battery life must be available.
- A suitable means of communication must be available.
- All transfer equipment must be identified in a written protocol, checked and such checks formally audited.

Preparation for transfer

- Meticulous resuscitation and stabilisation must take place before transfer
- Appropriate respiratory support must be established - consider intubation prior to transfer.
- Ensure adequate venous access.
- All notes, X-rays etc. must be checked and their presence assured.
- Contact must be made with a named person at the receiving unit and the method of future contact established.

Inter-hospital Management

- Monitoring and therapy must be continuous throughout the transfer. All monitors and syringe drivers must be visible to accompanying staff.
- The patient must be well covered to ensure they stay warm
- A written record of clinical events, monitoring and therapy during transfer must be made.
- Relatives must be informed of expected time of arrival to the new location.
- A full verbal and written handover must be given to the receiving staff.

**Source: ICS Transport Standard,
Intensive Care Society (2002)**

15 Appendix 2

Critical Care (Level 2) Admission - Sample Policy

Aim

- The hospital will provide the highest standard of level 2 critical care. To achieve this the admission and management policy will be guided by Standards for Intensive Care Units (Intensive Care Society 1997), Comprehensive Critical Care (DoH 2000) and Guidelines on Admission to and Discharge from Intensive Care and High Dependency Units (DoH 1996)
- Level 2 will be the minimum level of care required for all hospitals carrying out elective surgery.

All patients will have continuous consultant cover from either the admitting speciality or a consultant intensivist/anaesthetist rota

- Shared care between the admitting specialist consultant and a rostered consultant intensivist/anaesthetist is encouraged so that a seamless and prompt management plan can be implemented if a patient's condition deteriorates requiring a higher level of care. The admission policies of all critical care areas must complement each other.
- Refer to Nursing staffing needs 6.1
- Refer to Medical cover needs 6.6

Criteria for Admission

- Patients requiring more detailed observation or intervention including support for a single failing organ system or post-operative care and those "stepping down" from higher levels of care.
- Patients fulfilling the criteria for level 3 critical care whilst being stabilised prior to transfer. These may be cardiac or neurological intensive care units and

those specialist units dedicated to the provision of care for a narrow and easily recognised range of illnesses on the basis of pathology and clinical circumstances rather than severity of illness.

Admission Process

- All patients will be under the care of a consultant from the appropriate speciality e.g. general surgery, orthopaedics, etc.
- The responsible consultant shall arrange admission to level 2 care and shall personally hand over the patient to the responsible nurse. He/she must discuss the patient care with the designated RMO.
- The admitting consultant and anaesthetist if involved shall visit the patient at least once daily. Involvement of a consultant intensivist is at the discretion of the admitting consultant and is encouraged.
- In their absence, it is the admitting consultant's responsibility to arrange suitable cover from another consultant in the same speciality, as per local policy in the hospital and to communicate this to the nursing staff.
- Planned admissions to the unit must be booked at the earliest possible time.
- Elective surgery requiring postoperative care in the unit must not be undertaken if a bed is not available.
- If a patient deteriorates or otherwise fulfils the criteria for level 3 critical care then the admissions policy for level 3 must immediately apply.

Direct Admissions from outside the Hospital

- No consultant shall accept a patient from outside the hospital who is expected to fulfil the admission criteria for level 2 critical care without receiving confirmation that a bed is available.

(This assumes that medical and nursing staff and appropriate facilities are available).

- The consultant must ensure full compliance with the admission policy of the hospital before accepting the patient.
- The admitting consultant who accepts the patient must be able to review any notes or other correspondence in advance. Wherever possible the patient must be admitted at a time when the intensivist/anaesthetist and admitting consultant can both be present.

Hospital Inpatient

- Where an inpatient's condition deteriorates requiring level 2 critical care and the admitting consultant's caseload does not normally involve that care, then the admitting consultant must personally refer the patient to a consultant from the appropriate specialty and who has practicing privileges in the hospital.

Medical Management

- If no bed is available in an emergency the admitting consultant for the patient will contact the on call intensivist /anaesthetist who may contact the admitting consultants for other patients to consider an earlier discharge from the unit. If no facility can then be provided, it remains the responsibility of the admitting consultant to refer the patient to another hospital and to ensure that the patient is transferred following the ICS guidelines (ICS 1997).
- On discharge from the unit the responsible consultant must write a discharge summary. A copy must be sent to each consultant who has been involved in the patient care and a further copy must be placed in the hospital notes.

16 Appendix 3

Critical Care (Level 3) Admission – Sample Policy

Aim

- The hospital will provide the highest standard of level 3 critical care. To achieve this the admission and management policy will be guided by Standards for Intensive Care Units (Intensive Care Society 1997), Comprehensive Critical Care (DoH 2000) and Guidelines on Admission to and Discharge from Intensive Care and High Dependency Units (DoH 1996).
- A rota organised according to local policy providing 24hr consultant intensivist/anaesthetist cover will be available.
- Shared care between the admitting speciality consultant and the consultant intensivist/anaesthetist will be provided for the patient. The intensivist/anaesthetist will be responsible for co-ordinating the critical care requirements for the patient with the admitting specialist consultant.
- Refer to Nursing staffing needs 6.1
- Refer to Medical cover needs 6.6

Criteria for Admission

- Patients requiring complex support and/or basic respiratory support together with support of at least two organ systems.
- Patients with chronic impairment of one or more organ systems sufficient to restrict daily activities and who require support for an acute reversible failure of another organ system.
- Any patient referred for critical care and accepted for critical care level 3 will be referred to the intensivist/anaesthetist on the rota or intensivist/anaesthetist on call.

- Level 3 critical care beds may be used as appropriate or necessary for other levels of care.

Admission Process

- All patients admitted to critical care will be cared for by a consultant intensivist/anaesthetist. Free and open access will be available to all consultants involved in the patient care.
- No consultant shall accept a patient from outside the hospital who is expected to fulfil the admission criteria without personally referring the patient to an intensivist/anaesthetist.
- The intensivist/anaesthetist on the rota who accepts the patient must be able to review any notes or other correspondence in advance. Wherever possible the patient must be admitted at a time when the intensivist/anaesthetist and admitting consultant can both be present.
- The admitting consultant must ensure full compliance with the admission policy of the hospital prior to the acceptance of any patient.

Hospital Inpatient

- Where an inpatient's condition deteriorates requiring level 3 critical care, the responsible consultant shall refer the patient personally to an intensivist/anaesthetist. The responsible consultant shall be available to ICU until such time as shared care is established.

Medical Management

- When a surgical patient is admitted to a level 3 unit post-operatively the anaesthetist must consider early referral of the patient to a recognised intensivist. Where admission post-operatively is pre-planned then referral must take place at the earliest possible time as per local policy.

- The hospital reserves the right to insist that shared care will be adhered to.
- If no level 3 bed is available then it remains the responsibility of the admitting consultant to refer the patient to another hospital and to ensure that the patient is transferred following the guidelines for ICS Transport Standard (ICS 2002).
- Shared care means that all critical care patients shall be visited at least once daily by the consultant intensivist/ anaesthetist and the admitting consultant. Visits must be arranged together and include any other consultants involved in the patient care. A management plan for the following 24hrs must be written in the notes daily and this made clear to the responsible nurse.
- In accordance with local policy the dedicated critical care RMO will be advised of the admission by the responsible consultant intensivist and their involvement in care will be under the direction of that consultant and within the scope of the agreed working conditions.
- The general RMO shall not be expected to provide more than a resuscitation service for ICU patients.
- Following a resuscitation of a non-ICU patient the general RMO may transfer a patient to the critical care area but shall immediately inform the admitting consultant whose responsibilities are as above. This should be included in the local admission policy.
- On discharge from his/her care the consultant intensivist/anaesthetist must write a comprehensive discharge summary. He shall send a copy to each consultant who has been involved in the patient care and a further copy is placed in the hospital notes.

17 Appendix 4

CLINICAL EARLY WARNING SCORE SYSTEM

PATIENT ASSESSMENT PROTOCOL

Applicable to all adult patients throughout the hospital.

The aim of this Early Warning Score system (EWS) is to enable nurses to recognise a deteriorating patient and promote objective guidelines for calling for medical review.

EWS will be an integral part of all patients' vital signs observation and documentation.

The patient's vital parameters are scored against a chart and a score of 4 or more prompts the nurse to initiate step 1 of the systematic scoring guide.

It is hoped that by use of such a system many patients who progressively deteriorate can be prevented from entering the category of the pre - or actual cardiac or respiratory arrest phase. (See score system form, observation & fluid balance chart)

The EWS consists of:

- a) General assessment
- b) Systematic scoring

A General Assessment

Patient assessment whose condition changes

For patients who appear 'unwell' - not seriously so, but it is felt that 'PAR' scoring is not appropriate, a few observational checks are recommended to guide practitioners to a better, more structured response and is likely to give an attending doctor a clearer insight to the condition of the patient.

Patient assessment will consist of:

- **Airway** -
look: is the mouth dry through excess effort of breathing, are the nostrils flared, is there any risk of obstruction by the tongue or food or vomitus?
- **Breathing** -
present: noisy, too fast or slow, laboured or involving accessory muscles, can the patient speak and complete a sentence?
- **Circulation** -
check for central and then peripheral pulses, check the blood pressure, look for central or peripheral cyanosis, look at peripheral capillary refill time (≤ 2 seconds is normal), check central versus peripheral temperatures (by touch is quick and informative).
- **Neurological** -
is the patient Alert and responsive, or responding only to Verbal stimulus, or responding only to Painful stimulus, or Unresponsive? (The 'AVPU' scale)

Further to this rapid assessment and recording of the patient's condition, it may be concluded that the patient needs medical review by the RMO. If any one of the above assessments is observed as a cause for concern, observe patient and record score one hourly. If score >4 , call the doctor.

See Clinical Early Warning Score observation and fluid balance chart for systematic scoring.



CLINICAL EARLY WARNING SYSTEM

Observation and fluid balance chart

This is to be used for all adult patients

Mandatory twice daily recordings on a daily basis

Addressograph

Date: _____

PATIENT'S NORMAL BLOOD PRESSURE

	200	190	180	170	160	150	140	130	120	110	100	90	80
200	0	0	0	1	1	2	2	2	3	3	4	5	5
190	0	0	0	0	1	1	1	2	2	3	3	4	5
180	0	0	0	0	0	0	1	1	2	2	3	3	4
170	1	1	0	0	0	0	1	1	2	2	3	3	4
160	1	1	1	0	0	0	0	0	1	1	2	2	3
150	1	1	1	1	0	0	0	0	0	1	1	2	2
140	2	2	1	1	1	0	0	0	0	0	1	1	2
130	2	2	2	1	1	0	0	0	0	0	0	1	1
120	2	2	2	2	1	1	0	0	0	0	0	0	1
110	3	3	2	2	2	1	1	0	0	0	0	0	0
100	3	3	3	3	2	2	2	1	1	0	0	0	0
90	4	4	3	3	3	2	2	2	1	0	0	0	0
80	4	4	4	4	3	3	3	2	2	1	1	0	0
70	4	4	4	4	4	3	3	3	2	2	2	1	0
60	4	4	4	4	4	4	4	4	3	3	3	2	1
50	5	5	5	5	5	5	5	5	4	4	4	3	2
40	6	6	6	6	6	6	6	6	5	5	5	4	3

Normal blood pressure		(100+Age) if available					
Estimated weight		MEDICATION					
Minimum urine output/hr		Humidified O ₂	Yes	No			
DATE							
Time						Time	
BP						Temp	
240							
230							
220							
210							
200						41.5	
190						41.0	
180						40.0	
170						39.5	
160						39.0	
150						38.5	
140						38.0	
130						37.5	
120						37.0	
110						36.5	
100						36.0	
90						35.5	
80						35.0	
70						34.5	
60							
50							
FIO2						FIO2	
SATS						SATS	
HR						HR	
RR						RR	
Please enter early warning scoring below							
HR						HR	
BP						BP	
RR						RR	
TEMP						TEMP	
NEURO						NEURO	
URINE						URINE	
TOTAL SCORE						TOTAL SCORE	
	3	2	1	0	1	2	3
HR		<40	40-50	51-100	101-110	111-129	>=130
RR		<+8		9-14	15-20	21-19	>=30
TEMP		<=35.0		35.0-38.4		>=38.5	
NEURO				ALERT	VOICE	PAIN	UNCONS
URINE	NIL U/O	<1ml/kg /2hrs	<1ml/kg /1hr		<3ml/kg /2hrs		



[APPENDIX 4]

1							4				
2							5				
3							6				
DATE	INTAKE						OUTPUT				
TIME	1	2	3	4	5	6	Total In	Urine	Vomit Bowels Aspirate	Drainage	Total Out
0800											
0900											
1000											
1100											
1200											
1300											
1400											
1500											
1600											
1700											
1800											
1900											
12HR TOTAL											
2000											
2100											
2200											
2300											
2400											
0100											
0200											
0300											
0400											
0500											
0600											
0700											
TOTAL											
Balance											
24HR TOTAL							IN:			OUT:	

SYSTEMATIC SCORING

1 The patient's vital signs are observed and scored according to the EWS system.

2 A score of 4 or more on the EWS, initiate Step 1.

This does not necessarily mean that a patient requires level 2 or level 3 at this stage.

Step 1

If the patient scores **4 or more** then the RMO/Anaesthetist will be contacted to assess the patient within 15 minutes. The RMO will assess the patient and implement "MOVE" (monitor, oxygen, venous access and ECG). The patient's observations will be monitored at appropriate intervals for the next two hours. The patient's admitting consultant will be informed of any change in the patient's condition.

Step 2

If the appropriate observations (basic minimum half hourly rate) continue scoring **4 or more** the RMO must be contacted again and further management discussed.

Step 3

The consultant will, where appropriate, seek the advice of an Intensivist.

Should a patient require transfer to level 3 an appropriate intensivist/anaesthetist will be required to manage the patient's care whilst in the unit.

Adapted from Queen's Hospital Clinical Early Warning Score System

© 1/5/2000 Intensive Care Unit Queen's Hospital Burton-on-Trent

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18 Appendix 5 –
Sample Competencies

CLINICAL CARE

Key skills competency document



Name: _____ Date: _____ Alternative source: _____ Date: _____

Theory Input: _____

Key Skill: Respiratory Management

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Discuss the early recognition of respiratory dysfunction			
1	Discuss the application, strengths & limitations of pulse oximetry			
1	Discuss oxygen therapy in relation to respiratory dysfunction			
1	Discuss the management and maintenance of humidified oxygen			
1	Demonstrate the technique of oral & naso-pharyngeal suction			
1	Demonstrate basic chest physiotherapy technique			
2	Demonstrate appropriate application of CPAP			
2	Demonstrate safe management of CPAP			
2	Demonstrate the technique of tracheostomy suction			

Notes: **Assessor/Assessee**

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name: _____

Theory Input: _____ Date: _____ Alternative source: _____ Date: _____

Key Skill: **Chest Drain Management**

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
2	Discuss the indications for chest drains			
2	Describe the physiological principles and management of underwater-seal drainage			
2	Describe the complications of chest drain insertion and drainage			
2	Compare and contrast pneumothorax and haemothorax			
2	Removal of a chest drain			

Notes: **Assessor/Assessee**

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name:

Theory Input:

Date:

Alternative source:

Date:

Key Skill: **Cardiovascular Management**
Rhythm Recognition, Basic Physiology & Myocardial Ischaemia

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Describe a clear knowledge of the cardiac conduction system			
1	Describe the basic cardiac anatomy & physiology			
1	Discuss the application of continuous ECG monitoring			
1	Demonstrate the skill required to perform a 12 lead ECG			
1	Identify patterns of myocardial ischaemia & acute infarction			
1	Recognise: Sinus Rhythm			
1	Recognise and describe the treatment of : Sinus Bradycardia			
1	Recognise and describe the treatment of : Sinus Tachycardia			
1	Recognise and describe the treatment of : Atrial Fibrillation			
1	Recognise and describe the treatment of : Atrial Flutter			
1	Recognise and describe the treatment of : Ventricular Tachycardia			
1	Recognise and describe the treatment of : Ventricular Fibrillation			
1	Recognise and describe the treatment of : Pulseless Electrical Activity (PEA)			
1	Recognise and describe the treatment of : Asystole			
1	Describe the principles of DC cardioversion & pacing			

Notes: **Assessor/Assessee**

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name: _____

Theory Input: _____ Date: _____ Alternative source: _____ Date: _____

Key skill: **Basic Blood Gas Analysis, Arterial Blood Sampling/Pressure Monitoring**

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Discuss the indications for blood gas analysis			
1	Discuss normal values			
1	Discuss the complications of arterial stabs			
2	Demonstrate the ability to set up for arterial line insertion			
2	Demonstrate arterial blood pressure monitoring and sampling			
1	Discuss the risks associated with arterial lines			
2	Discuss the reasons/remedies for poor arterial line trace			
2	Demonstrate the ability to change an arterial line site dressing			

Notes: **Assessor/Assessee**

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name: _____ Date: _____ Alternative source: _____ Date: _____

Key Skill: Nutrition Management

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Appreciate the implications of patient dependency with regards to their nutritional needs			
1	Discuss accurate completion of documentation of dietary intake			
1	Discuss the use of NG and PEG feeding			
1	Discuss the use of TPN feeding			
1	Outline the correct protocol for management of TPN			

Notes: Assessor/Assessee

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name: _____

Theory Input: _____ Date: _____ Alternative source: _____ Date: _____

Key Skill: Fluid Balance/Fluid Management

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Discuss the concepts of accurate fluid balance			
1	Recognise the early signs and causation of renal failure			
1	Demonstrate accurate fluid balance considering all forms of fluid loss			
1	Understand the difference between crystalloid and colloid solutions			
1	Discuss the effects of fluid overload			
2	Discuss appropriate treatment and management of renal failure			
2	Discuss the implications of giving and losing large volumes of fluid			

Notes: Assessor/Assessee

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name: _____ Date: _____ Alternative source: _____ Date: _____

Theory Input: _____ Date: _____ Alternative source: _____ Date: _____

Key Skill: Pain Management & Epidural Anaesthesia

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Demonstrate and understand pain/sedation scoring			
1	Demonstrate a knowledge of analgesic methods and their complications			
1	Recognise and manage narcotic overdose			
1	Manage an epidural infusion			
1	Have knowledge of popular epidural infusion devices			
1	Discuss, maintain and secure a patent system of epidural catheter and equipment			
1	Demonstrate knowledge of the effects of block			

Notes: **Assessor/Assessee**

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name: _____

Theory Input: _____ Date: _____ Alternative source: _____ Date: _____

Key Skill: Tissue Viability & Wound Management

Components of key skill

Discuss the vulnerability of critically ill patients with regards tissue viability

L	Dates of Assessment			Final assessment by assessor
	Initial Self Assessment	Assessor	Assessor	
1				

Notes: **Assessor/Assessee**

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name:

Theory Input:

Date:

Alternative source:

Date:

Key Skill: Haemodynamic Monitoring

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Show an understanding of the importance of CVP and arterial pressure monitoring			
1	Discuss the technique for CVP and arterial pressure monitoring			
1	Interpret haemodynamic monitoring and measurement			
2	Demonstrate an ability to set up the equipment for and manage CVP monitoring			
2	Demonstrate the use of central line for infusions and drugs			
2	Demonstrate the ability to take venous samples from CVP lines			
2	Discuss the complications of CVP and arterial lines			

Notes: Assessor/Assessee

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name:

Theory Input:

Date:

Alternative source:

Date:

Key Skill: Neurosurgical Assessment

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Discuss the importance of neurological assessment and demonstrate ability to use the Glasgow coma score			
1	Demonstrate effective management of the unconscious patient and review/revise that care appropriately			
1	Discuss the effect of drugs on neurological status			
2	Understand the physiology of intracranial pressure and the immediate management of patients with increased pressure			
2	Discuss the effects of drugs on patients with a neurological deficit			

Notes: Assessor/Assessee

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name: _____

Theory Input: _____ Date: _____ Alternative source: _____

Date: _____

Key Skill: Psychological Aspects of Critical Care

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Discuss the implications of communication between multi-professional teams			
1	Recognise stress and burnout in self and colleagues			
1	Discuss the use of appropriate counselling interventions to support patients and relatives			
2	Discuss the effects of sleep deprivation and the use of sedatives in critical care			
2	Discuss the effects of stress before, during and after a critical care situation			

Notes: **Assessor/Assessee**

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------



Name: _____

Theory Input: _____

Date: _____

Alternative source: _____

Date: _____

Key Skill: Management of Patient Transfer (ICU/HDU)

L	Initial Self Assessment	Dates of Assessment		Final assessment by assessor
		Assessor	Assessor	
1	Discuss the nursing management of patient transfer			
1	Discuss relevant guidelines for transfer of critically ill patients			
1	Participate in an internal patient transfer			
1	Participate in an external patient transfer			
1	Discuss transfer documentation			
1	Discuss nursing communication with patient, relatives and staff at receiving ward, department, hospital			

Notes: **Assessor/Assessee**

Achieved	Not Achieved	Signature of Assessor
-----------------	---------------------	------------------------------

19 Appendix 6

Organ System Support Definitions from the Users Manual for the Augmented Care Period (ACP) Dataset, Intensive Care Society

1 Advanced respiratory system monitoring/support is indicated by one or more of the following:

- Mechanical ventilatory support (excluding mask CPAP) or non-invasive methods e.g. mask ventilation).
- Extracorporeal respiratory support.

2 Basic respiratory system monitoring/support is indicated by one or more of the following:

- More than 50% oxygen by fixed performance mask.
- The potential for deterioration to the point of needing advanced respiratory support.
- Physiotherapy to clear secretions at least two hourly, whether via a tracheostomy, mini-tracheostomy, or in the absence of an artificial airway.
- Patients recently extubated after a prolonged period of intubation and mechanical ventilation.
- Mask CPAP or non-invasive ventilation.
- Patients who are intubated to protect the airway but needing no ventilatory support and who are otherwise stable

3 Circulatory system monitoring/support is indicated by one or more of the following:

- Vasoactive drugs used to support arterial pressure or cardiac output.
- Circulatory instability due to hypovolaemia from any cause.
- Patients resuscitated following cardiac arrest where intensive care is considered clinically appropriate.
- Intra aortic balloon pumping.

4 Neurological system monitoring/support is indicated by one or more of the following:

- Central nervous system depression, from whatever cause, sufficient to prejudice the airway and protective reflexes.
- Invasive neurological monitoring, e.g. ICP, jugular bulb sampling.

5 Renal system monitoring/support is indicated by:

- Acute renal replacement therapy (haemodialysis, haemofiltration etc.).

20 Appendix 7

Sample Organ Donation Policy

Introduction

Organ transplantation depends on the altruistic nature of people to help their fellow human beings. Donation provides the donor family with a means to assist others, and also to alleviate their grief in the loss of a loved one.

Independent hospitals are rarely in a position of admitting trauma victims, therefore, should a death occur in the hospital, it may well be unexpected and would probably be a result of unforeseen surgical complications.

Realistically, the majority of the patients treated within an independent hospital will not be multi-organ donors due to the lack of trauma admissions and nature of their illness. Even so, most can be potential corneal donors. Whatever the "gift", the relatives have the right to choose.

It has been shown that a significant impediment to organ and tissue retrieval is the lack of an established system in independent hospitals for identifying and referring potential donors. Effective and efficient mechanisms are essential if potential donors are to be identified, and organs and tissue retrieved in a timely and dignified fashion and then transported to places in which they can be used appropriately.

Donor identification and referral

Any health care professional can identify a potential donor. All potential donors should be discussed with the local donor transplant co-ordinator who is always available. No potential donor should be deemed "unsuitable" until the local transplant co-ordinator has been consulted, unless the donor is HIV positive or has known or suspected CJD.

If a post mortem is being held, then it should be noted that heart valves can be retrieved for up to 48 hours after death, provided permission is sought from the relatives.

Declaration of brain stem death

Death can be confirmed if irreversible cessation of the functions of the brain stem, or of respiration and circulation are identified.

Brain stem death means the clinical absence of brain stem function, defined as profound coma, apnoea and the absence of brain stem reflexes. Brain stem death signifies the death of a patient, but respiration and circulation can be supported to maintain organs until removal for transplantation.

The diagnosis of brain stem death should be made by at least two medical practitioners who have been registered for more than five years, are competent in this field and are not members of the transplant team, at least one of the doctors should be a consultant.

The Coroner may have to be consulted, particularly with patients who died within 24 hours of having surgery, in order to gain permission for organ/tissue donation. He, or his assistant, the Coroner's Officer, may be contacted via the Police Station on an emergency basis. This contact can only be made after consultation and approval from the consultant in charge of the patient.

Role of the senior nurse manager

The Senior Nurse Manager will contact the consultant in charge of the patient to seek his/her approval to approach the family.

He/she will co-ordinate the approach to the family in conjunction with the Donor Transplant Co-ordinator. He/she will liaise with the nursing and medical staff

regarding the donor maintenance and care, prior to removal of organs. In the case of kidneys, he/she will directly contact the regional co-ordinator to make him/her aware of the situation. He/she will enlist the help of the regional co-ordinator in the case of multi-organ donor to contact the team concerned, to retrieve these organs, i.e. heart, lung and liver.

Approaching the family about donation

Families of patients in this country may be approached provided the consultant's approval has been obtained. If the family spontaneously ask or request donation, then the consultant must be informed of their decision before the co-ordinator can proceed.

Foreign nationals dying in hospital can be considered as potential donors but consideration needs to be given to the differing cultural backgrounds and the possible problem of misinterpreting the hospitals motives for seeking organ donation by the patients' families or the Embassy sponsoring them.

Although the Human Tissue Act does not require written consent, it is good practice to do so, but it is necessary for the consultant in charge or the co-ordinator, on his/her instructions, to confirm in the patient's notes, in writing, that consent has been clearly given.

Donor support

The objective of donor support is to maintain stable cardiac and respiratory function until the organs are removed. This requires collaboration with nursing and medical staff. Guidelines and advice can be obtained from the Donor Transplant Co-ordinators and there should be protocols and guidelines in the units

Certain blood tests will need to be completed on all organ and tissue donors,

namely HIV and syphilis testing and hepatitis B surface antigen, hepatitis C, hepatitis B core Ab (for liver donors) testing. Donor families are always informed that these tests are carried out. The co-ordinator will arrange these tests having spoken to the family.

Organ removal

Perfusible organs must be removed in the operating theatre. The transplant co-ordinator will be on hand to assist, as necessary, and will co-ordinate the various surgical teams in and out of the theatres as smoothly as possible. The liver teams will normally bring their own scrub nurse, the kidney retrieval teams do not bring their own scrub nurse, but some cardiac teams do.

This surgery is considered in the emergency class, and as such must be given priority. The availability of a minor theatre will avoid disruption of major procedures taking place in other theatres.

The ventilator must be disconnected by a clinician or the co-ordinator, on his/her instructions.

Tissue donation can be facilitated after the patient has died and tissue can be removed up to 24 hours after death. The transplant co-ordinator will organise this after speaking to the unit staff and family.

Organ sharing and distribution

Organs removed from patients in the independent sector should be offered in line with the nationally agreed sharing schemes.



Cost of procurement

The total cost incurred in the procurement of organs will be incurred by the independent hospital. In the case of multi-organ donors, this will include the cost of donor maintenance in ICU following declaration of brain stem death, as well as the cost of any necessary investigations to reach that decision.

In the case of organs being used for private patients at the independent hospital, the cost of procurement of these organs may be passed onto to the recipient without any profit to the hospital.

All Independent Hospitals must have available, within the critical care area, the following papers: a resource folder supplied by the local co-ordinator and a Code of Practice for the Diagnosis of Brain Stem Death (which includes guidelines for the Identification and Management of Potential Organ and Tissue Donors) from the Department of Health.

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**22 Details of the IHA Critical Care Working Group Members**

Name	Title	Organisation
Pat McCann (Chair)	Chief Executive Officer	Aspen Healthcare
Dr Chris Dark (Medical Advice)	Director of Clinical Services	BUPA Hospitals
Catriona Calvert	Director of Nursing	BMI Clementine Churchill Hospital
Una Palmer	Director of Nursing	BMI The London Independent Hospital
Yvonne Ferguson	ICU Sister	Cromwell Hospital
Aileen Hogan	Matron	The Yorkshire Clinic Capio Healthcare UK
Carol Horner/ Geraldine Owtram	Deputy Director of Nursing/ICU Sister	London Bridge Hospital – HCA International
John Sharpe	Executive Director	BMI The Priory Hospital
Sally Taber	Head of Operational Policy	Independent Healthcare Association
Judy Tito	Critical Care Manager	King Edward VII Sister Agnes
Jo Townsend	Critical Care Adviser	Capio Healthcare UK
Su Tyman	Clinical Risk Manager	Nuffield Hospitals
Gail Webster	Risk and Quality Manager /ICU Manager	The London Clinic

Endorsement

The Association of British Insurers (ABI) members fund a significant proportion of private acute care delivered within the UK independent sector. ABI members are keen to ensure that the highest quality of care is delivered to customers. The ABI is, therefore, very supportive of all initiatives to improve quality.

The advent of the National Care Standards Commission and the introduction of comprehensive statutory regulation is a significant step in the right direction. We look forward to working in conjunction with providers of independent healthcare, with the National Care Standards Commission and its successor to improve all aspects of the quality of care for patients.

We recognise that the hospital industry body, the Independent Healthcare Association (IHA), has a major role to play. The IHA has a significant opportunity to develop quality guidance and promote it with its members. In this light the ABI supports the Guidance on Comprehensive Critical Care for Adults in Independent Sector Acute Hospitals

Association of British Insurers

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