

ALL WALES CRITICAL CARE ESCALATION GUIDANCE FOR THE MANAGEMENT OF LARGE UNPLANNED INCREASES IN DEMAND - December 2016

Guidance was first issued by the Welsh Government during the pandemic and winter flu outbreaks in 2009 and 2010 respectively, and updated interim guidance was issued in December 2014. These guidelines replace all previous versions of escalation and emergency planning guidance for critical care services issued by the Welsh Government. There are times when critical care services get over-stretched due to a major incident, infectious disease outbreak or other sustained increase in demand and this document provides guidance on how to respond on such occasions to optimise services and maintain equity of care.

The guidance aims to:

- a) prevent avoidable mortality and morbidity due to patients requiring critical care not accessing an appropriate level of care / organ support in time;
- b) maximise capacity in the critical care system in a range of scenarios through a coordinated escalation and de-escalation approach across geographical areas;
- c) avoid *triage by resource* (as opposed to *triage by clinical need*) until all potential escalation options have been exhausted.

The purpose of the guidance is to set out the requirements on NHS organisations in developing surge capacity to manage large unplanned increases in demand for critical care. Escalation may be required to respond to a local, regional, or national sustained surge in demand, major incident or emergency and to manage recovery. The term surge is used to describe pressure on the whole critical care system rather than referring to day to day peaks within individual units.

The guidance should be read alongside local escalation plans, regional/network plans and other national guidance such as NHS Wales Emergency Planning Core Guidance and Wales Framework for Managing Major Infectious Disease Emergencies.

At times it may be necessary to transfer patients between hospitals for non-clinical reasons. All transfers should be performed according to the *Welsh Guidelines for the Transfer of the critically ill Adult (2016)*, or *5th Edition of the Paediatric Intensive Care Society (PICS) Standards for the Care of Critically Ill Children (2015)*.

Planning for a major incident may be considered separate from planning for sustained surges such as a major infectious disease outbreak as the incident is likely to be localised and extra resources both from within and outside the Network should be available.

Under the Civil Contingencies Act 2004, all acute hospitals are designated as category 1 responders and as such must have in place a Major Incident Plan to cope with an increased demand for services. Although not all major incidents will involve critical care, it is necessary for critical care services to be able to respond both locally and across the network to a sudden increase in the demand for beds.

Should a major incident occur it is unlikely that one single hospital would be able to cope with a sudden dramatic increase in demand for beds. It is necessary therefore to plan for an increase in capacity within each individual hospital and across the network, including the major trauma centre and trauma network. A plan to deal with these increases in demand may be separate from the plan to deal with major infectious disease outbreaks as the incident should be localised and extra resources both from within and outside the network should be available.

Disease outbreaks are usually handled at a local level by the public health and local authority infrastructure for the prevention and control of infectious disease outbreaks, in accordance with the Communicable Disease Outbreak Plan for Wales. In a major infectious disease emergency all resources are likely to be fully stretched and the impact on health and social care is likely to be intense, sustained and nationwide. The scale of such an emergency will require national co-ordination. WG will implement the *Pan-Wales Response Plan*, which includes activating the Emergency Co-ordination Centre (Wales) (ECC(W)).

Depending on the severity of any outbreak the numbers of individuals requiring critical care will vary, those with underlying health conditions that make them more susceptible to serious illness are more likely to require critical care support.

As well as increasing capacity, preventing serious illness in the first place is a vital element in reducing demand for critical care beds. Our policy of offering treatment to all patients in high risk groups and prioritising these groups for vaccination should mean that fewer people will suffer severe symptoms and need critical care treatment in hospital. Staff immunisation campaigns for all frontline health staff, and hand hygiene measures, also contribute by reducing the risk of staff absence through illness.

Escalation levels

The following table suggests considering escalation within hospitals at four levels. This guidance primarily addresses statuses 2 and 3.

Normal Business Status 0 (Normal effect on services)	<ul style="list-style-type: none"> • 'Normal' working • Critical care unit/s within a hospital have capacity available • Elective/planned admissions requiring critical care continuing • Transfers accepted
Pre-surge Status 1 (Moderate effect on services)	<ul style="list-style-type: none"> • Early signs of difficulty / some specific short-term activity spikes requiring patient transfers and rescheduling of elective activity within specific hospital • 'Normal' critical care bed stock full (or nearing full within the health board); excluding delayed transfers. • Non-urgent surgery, requiring critical care, cancelled • Careful consideration required for urgent planned/elective surgery • No capacity for receiving transfers.
Local Surge and Escalation Status 2 (Severe effect on services)	<ul style="list-style-type: none"> • Severe/prolonged excess pressures requiring significant additional management • Continuing capacity issues at a specific unit requiring ongoing mutual aid from other critical care units in line with the Network critical care escalation plan • 'Normal' critical care bed stock full and into 'surge capacity' • Decision to proceed with urgent surgery taken on a health board basis • Careful consideration required for continuing (non-ICU) routine in-patient surgery in order to transfer resources to surge capacity
Wider Escalation Status 3	<ul style="list-style-type: none"> • Extreme pressures requiring immediate and significant actions

(Major Disruption to services)

- All surge beds and normal beds full (at 100% surge or beyond)
- Curtailing elective activity across a wider area
- No ventilation capacity available
- All ventilated admissions will require transfer out
- Submitting the escalation capacity SITREP in the manner and frequency prescribed by the Welsh Government

Action Required

Health Boards must demonstrate clearly that their arrangements for critical care escalation meet the requirements of this guidance. Each health board and critical care and trauma network region needs to assure themselves that they have plans in place to respond swiftly to such demand for services. Those plans need to take into account this guidance and major incident guidance, and include business continuity plans. In addition, health boards must ensure they have a robust plan in place for the resuscitation/ stabilisation of critically ill children and where necessary the provision of ongoing paediatric critical care whilst awaiting for arrival of the specialised transport service or where capacity issues mean a PICU bed is unavailable for a prolonged period.

Principles

- Regional or national responses are likely to be needed when surge capacity required
- Hospitals within Health Boards should surge together i.e. not have one hospital escalating but available capacity in another
- Health boards must plan for a 100% increase in level 3 adult and paediatric ITU (ventilated) critical care capacity, ensuring plans are realistic and sustainable
- Health boards must plan for an increase in level 3 neo-natal capacity in line with neo-natal network escalation plans
- Maintaining the optimum level of care/service where possible
- Equity of access to care (unless at status 3)
- Where possible, minimise non-clinical transfer of patients
- All efforts must be made to maximise the efficient use of critical care - minimise Delayed Transfers of Care (DToC) from critical care and avoid unnecessary admissions e.g. maximising vaccinations, providing public health advice. *Patients requiring discharge from a critical care facility must take precedence above all other patient flow requirements.*
- Keep information up to date – e.g. NHS Directory of Services (DoS) system every hours as a minimum during surge
- Regular reporting of escalation status and bed availability - daily status reports should be supported by at least twice daily teleconferences between hospital critical care units.
- Escalation policies should be well defined, clearly understood, and well tested.
- Clear thresholds and authorities for triggering, and standing down escalation plans should be established and communicated
- Difficult clinical decision-making and implementation of policies in relation to triage and futility of patient interventions should only be made after consultation with the wider critical care community, rather than on a purely physiological scoring system such as Sequential Organ Failure Assessment (SOFA).
- Adherence to the Severe Respiratory Failure guidelines

In situations of major disruption to services, it is highly unlikely that national clinical standards will be able to be maintained. Each health board needs to plan for care to be delivered outside of critical care and by non-critical care staff and ensure that such staff have received prior training and receive adequate supervision and support. Health boards should look to flex their own capacity before seeking to transfer to a neighbouring health board which is already utilising surge capacity (at status 2).

Impact on Elective Activity

In order to maximise critical care capacity outside of 'normal business' mutual aid arrangements, it may be necessary for a health board to uniformly suspend elective which will require critical care services post-operatively. Such temporary suspension of elective activity will be implemented (as clinically appropriate) on the following phased basis:

- a) Step 1 – temporary cancellation of all elective non-life threatening surgery (with the exception of major oncology, cardiothoracic vascular and neurosurgery), where it is expected the patient will require critical care service support in the immediate post-operative period;
- b) Step 2 – as step 1 but also the temporary cancellation of all elective non-life threatening *neuro, vascular and cardiothoracic surgery*, where it is expected the patient will require critical care service support in the immediate post-operative period;
- c) Step 3 – as step 1 and 2 but also the temporary cancellation of all *elective surgery including major oncology, cardiothoracic, vascular and neurosurgery* where it is expected the patient will require critical care service support post-operatively.

Managing capacity data about critical care services

Adult Critical Care Units should ensure they have systems and processes in place to update their current bed capacity availability, on the NHS Pathways DoS system, as part of their admission and discharge process. Where there is no change in the capacity available, critical care units should acknowledge this within the system *every four hours during surge*. Further details about the NHS Pathways DoS system, including the *Escalation Capacity SITREP* can be found in Appendix 2.

Paediatric Intensive Care

Services for children are likely to get overstretched before adult services and plans must be agreed with PICU in Cardiff and the North West (via NWTs) to manage such situations. PICU in Cardiff have reciprocal arrangements in place with Bristol. PICU should have the facility to double the ITU (ventilated) capacity with HDU patients cared for on general paediatric wards under the joint management of paediatric consultants and anaesthetists with PICU support. Tertiary Paediatric Services are primarily provided by Alder Hey Children's Hospital, Liverpool for North Wales however, where needed, also by Manchester Children's Hospital. Plans should be in place to escalate services to double ITU (ventilated) capacity if required.

Once all available (expanded) PICU capacity is full, and, where clinically appropriate and safe, this may require older children being cared for in local critical care units at hospitals with inpatient paediatric services, including paediatric medicine and paediatric anaesthetic experience, on site. Deciding which children should be cared for locally and which transferred to PICU should be agreed on a patient by patient basis with PICU. Health boards should have plans in place for the resuscitation/ stabilisation of critically ill children and where necessary the provision of ongoing paediatric critical care whilst awaiting for arrival of the specialised transport service or where capacity issues mean a PICU bed is unavailable for a prolonged period.

Neonatal critical care

Neo-natal Critical Care (NICU) capacity should also be developed to cope with potential demand; guidance can be obtained from the neo-natal network. Health boards should ensure they identify and have the appropriate numbers of skilled staff to care for the expected increased number of ill, low-birth-weight and preterm infants. Integral to this is up-skilling/training of nurses and midwives who can provide the right care under an agreed governance framework.

Care of ill pregnant women should be timely and aim to reduce maternal complications and preterm birth. Pregnant women who require critical care or whose baby is likely to require NICU Level 3 care should be cared for and delivered in a maternity unit with on-site access to adult critical care and Level 3 NICU facilities.

In the event of an infectious disease outbreak, priority should be to ensure vaccination of all pregnant women where an appropriate vaccination available.

Caring for patients of all ages with complex respiratory care problems

Critical care units need to work cooperatively to ensure that patients with complex respiratory problems are discussed with and / or managed in 'regional' critical care units (Cardiff and Swansea in South Wales; separate arrangements for patients who may require ECMO are in place through Glenfield, Leicester for North Wales) and that patients with lesser problems are managed in other units as far as possible.

Networks should have regional guidelines for managing patients with severe respiratory failure. If a patients' clinical condition deteriorates a discussion should be held with regional critical care units about appropriateness of High Frequency Oscillatory Ventilation (HFOV) and Nitric Oxide (NO), to a final tier of referral, guided by the Respiratory Centres, to centres for Extra Corporeal Membrane Oxygenation (ECMO). These discussions should take place between the referring consultant, a consultant in the respiratory centre and a consultant in the ECMO centre (if different from the respiratory centre). In certain circumstances, ECMO may be of value in the management of severely hypoxic patients but the numbers are small.

Annex 1 – Levels of critical care

There are five recognised levels of adult general critical care:

Level	Description
Level 0	Suitable for patients whose needs can be met through normal ward care in an acute hospital.
Level 1	Suitable for patients at risk of their condition deteriorating, those recently relocated from higher levels of care and those whose needs can be met on an acute ward with additional advice and support from the critical care team.
Level 2	Suitable for hospitalised patients requiring more detailed observation or intervention, including support for a single failing organ system, postoperative care and those stepping down from higher levels of care.
Level 3	Suitable for hospitalised patients requiring advanced respiratory support in addition to the above, but the duration of multi-organ support or ability to manage multiple patients might be limited by staffing or equipment constraints.
Level 3T	Organ support and monitoring for most body systems should be available at Level 3T and these facilities would normally be available to multiple patients simultaneously. This level is suitable for critically ill patients requiring prolonged support for multi-organ failure. Such units would have a significant teaching and training role.

Welsh Government (2013) Delivery Plan for the care of the critically ill
<http://gov.wales/docs/dhss/publications/130611deliveryen.pdf>

Levels of Care and Patient Dependency from the Paediatric Intensive Care Society Appendices to the Standards for the Care of Critically ill children, 4th Edition, June 2010:

Level	Description	Nursing Ratio
Level 1	High Dependency Patients Long term chronic ventilation (with tracheostomy) CPAP and Non-invasive ventilation	Nurse to patient ratio of 0.5:1
Level 2	Intensive Care Patients Intubated and ventilated	Nurse to patient ratio of 1:1
Level 3	Intubated and ventilated patients on vasoactive drugs and inotropic support or with multiple organ failure	Nurse to patient ratio of 1.5:1
Level 4	Intubated and ventilated with multi organ failure receiving ECMO or renal replacement therapy	Nurse to patient ratio of 2:1

5th Edition of the Paediatric Intensive Care Society (PICS) Standards for the Care of Critically Ill Children (2015)
http://picsociety.uk/wp-content/uploads/2016/05/PICS_standards_2015.pdf

The definition of neonatal intensive care is provided by the British Association of Perinatal Medicine (BAPM): *Categories of Care 2011* designations for units:

Level	Description
Level 1	<p>Level 1 units provide special care. Special care is provided for babies who require additional care delivered by the neonatal service but do not require either Intensive or high dependency care and requires any of the following:</p> <ul style="list-style-type: none"> o oxygen by nasal cannula o feeding by nasogastric, jejunal tube or gastrostomy o continuous physiological monitoring (excluding apnoea monitors only) o care of a stoma o presence of IV cannula o baby receiving phototherapy o special observation of physiological variables at least 4 hourly
Level 2	<p>Level 2 units provide High Dependency Care (HDC) for babies who require highly skilled staff but where the ratio of nurse to patient is less than intensive care. Any day where a baby does not fulfil the criteria for intensive care where any of the following apply:</p> <ul style="list-style-type: none"> • Any day where a baby receives any form of non invasive respiratory support (e.g. nasal CPAP, SIPAP, BIPAP, HHFNC) • Any day receiving any of the following: <ul style="list-style-type: none"> o parenteral nutrition o continuous infusion of drugs (except prostaglandin &/or insulin) o presence of a central venous or long line (PICC) o presence of a tracheostomy o presence of a urethral or suprapubic catheter
Level 3	<p>Level 3 units provide care provided for babies who are the most unwell or unstable and have the greatest needs in relation to staff skills and staff to patient ratios. Any day where a baby receives any form of mechanical respiratory support via a tracheal tube</p> <ul style="list-style-type: none"> • BOTH non-invasive ventilation (e.g. nasal CPAP, SIPAP, BIPAP, vapotherm) and PN • Day of surgery (including laser therapy for ROP) • Day of death • Any day receiving any of the following <ul style="list-style-type: none"> o Presence of an umbilical arterial line o Presence of an umbilical venous line o Presence of a peripheral arterial line o Insulin infusion o Presence of a chest drain o Exchange transfusion o Therapeutic hypothermia o Prostaglandin infusion o Presence of repleg tube o Presence of epidural catheter o Presence of silo for gastroschisis o Presence of external ventricular drain o Dialysis (any type)

Service Standards for hospitals providing neo-natal care 2010
www.bapm.org/.../guidelines/BAPM_Standards_Final_Aug2010.pdf

Annex 2 – Critical care bed capacity data

‘Normal Business’ Capacity Data

Adult Critical Care Bed Capacity is normally collected using **NHS Pathways DoS** – a data submission showing the number of Adult Critical Care Beds available throughout the day. Normally this information is submitted every six hours, seven days a week.

NHS Pathways DoS – Adult Critical Care Bed State Dataset

Column 1: Unit name	
Definition	Name of the hospital, unit to include Intensive Care Unit (Level 3)/High Dependency Unit (Level 2), specialty if appropriate i.e. Neurology, (please avoid using acronyms in isolation). (<i>NHS Pathways DoS includes a prefix centrally to facilitate a geographical search</i>)
Rationale	Unique identifier and location for beds and patient activity being recorded
Column 2: Level 3 beds empty and available	
Definition	Number of Level 3 beds that are available to take a Level 3 patient immediately, subject to referral and Consultant to Consultant level acceptance, i.e. not booked or awaiting a discharge/delayed discharge.
Rationale	Shows available Level 3 capacity to facilitate patient transfer for clinical/non-clinical reasons and/or for planning and escalation.
Column 3: Level 2 beds empty and available	
Definition	Number of Level 2 beds that are available to take a Level 2 patient immediately, subject to referral and Consultant to Consultant level acceptance, i.e. not booked or awaiting a discharge / delayed discharge.
Rationale	Shows available Level 2 capacity to facilitate patient transfer for clinical /non-clinical reasons and/or for planning and escalation.
Column 4: Total Level 3 / Level 2 mix	
Definition	Total funded Level 3 / Level 2 beds on the unit
Rationale	Provides a baseline of bed capacity against which escalation and patient need can be compared
Column 5: Level 3 Patients on Unit	
Definition	Number of Level 3 patients on the unit
Rationale	To demonstrate acuity of patients in mixed units and to inform on acuity across Networks and regions (and nationally) in times of surge. Will support potential escalation locally. Aggregated it will support escalation regionally and nationally.
Column 6: Level 2 Patients on Unit	
Definition	Number of Level 2 patients on the unit
Rationale	To demonstrate acuity of patients in mixed units and to inform on acuity across Networks and regions (and nationally) in times of surge. Will support potential escalation locally. Aggregated it will support escalation regionally and nationally

Column 7: Level 1 / Level 0 Patients on Unit	
Definition	Number of Level 1/Level 0 patients on the unit
Rationale	To show number of Level 1/Level 0 patients in units that are awaiting discharge from a Critical Care Unit and may indicate difficulty in accessing “patient step down” to appropriate ward level beds
Column 8: Level 3 Patients outside Unit	
Definition	The number of Level 3 patients being managed outside designated critical care beds (i.e. theatres, recovery, escalation areas). This is NOT to capture patients that have gone to theatre for surgery or to CT etc.
Rationale	To identify the potentially unmet patient need for critical care beds in i) normal working circumstances ii) in periods of surge. To support targeted escalation of response and/or support planning and commissioning of bed capacity
Column 9: Level 2 Patients outside Unit	
Definition	The number of Level 2 patients being managed outside designated critical care beds (i.e. theatres, recovery, escalation areas). This is NOT to capture patients that have gone to theatre for surgery or to CT etc
Rationale	To identify the potentially unmet patient need for critical care beds in i) normal working circumstances ii) in periods of surge. To support targeted escalation of response and/or support planning and commissioning of bed capacity.
Column 10: Beds Committed	
Definition	Total number of beds booked on the unit for any incoming patients, including repatriations.
Rationale	To ensure beds remain available for expected incoming patients.
Column 11: Service Notes	
This is a ‘free text’ box that permits the use of any text to provide further information. Different Adult Critical Care Units and Critical Care Units use different ‘local descriptions’ to outline capacity.	
Column 12: Function Buttons / Icons	

Escalation Capacity Data

During times of escalated capacity arrangements, outside of ‘normal business’, it may be necessary to introduce an additional data SITREP to assist with/inform NHS arrangements. Wherever possible existing data sources will be used, but the following additional information Health Boards will be informed about the method and frequency of data collection, should this additional escalation capacity data be collated.

Annex 3 – Links to relevant documents

Delivery Plan for the critically ill

<http://gov.wales/topics/health/nhswales/plans/delivery-plan/?lang=en>

Designed for Life: Guidelines for Transferring the Critically ill adult

<http://www.wales.nhs.uk/sites3/docmetadata.cfm?orgid=753&id=299607>

Guidelines for the Provision of Intensive Care Services (GPICS) – section 5.6 resilience planning

https://www.ficm.ac.uk/sites/default/files/GPICS%20-%20Ed.1%20%282015%29_0.pdf

Paediatric Intensive Care Society (PICU) quality standards for the care of critically ill children

<http://picsociety.uk/about-pics/pics-standards/>

Wales Critical Care and Trauma Network - North Wales guidelines

Emergency Planning Guidelines

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=753&pid=38483>

Escalation and Triage for Pandemic Flu

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=753&pid=41929>

Escalation Plan for Generic Surge Requirements

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=753&pid=55563>

Severe Respiratory Failure

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=753&pid=63736>

Wales Critical Care and Trauma Network - South Wales guidelines

Severe Respiratory Failure

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=962&pid=60471>

NHS England – Critical Care Services management of surge documents for adult and paediatric services

<https://www.england.nhs.uk/commissioning/ccs/>

Pan Wales Response Plan

<http://walesresilience.gov.uk/behindthescenes/walesresilience/panwalesresponseplan/?lang=en>

NHS Wales Emergency Planning Core Guidance

<https://wg.wales.nhs.uk/uniqueSIGf31510284af2ec6dcbf998c39315f7a88ce2223c1263895620e9f9605280df2/uniqueSIG0/sites3/page.cfm?orgId=331&pid=25292>

Major Infectious Disease Guidance (including Wales Pandemic Preparedness and Response Guidance

<https://howis.wales.nhs.uk/sites3/page.cfm?orgid=331&pid=53492>

Communicable Disease Outbreak Plan for Wales

<http://www.wales.nhs.uk/sitesplus/888/page/88948>

NHS Wales Governance e-manual – Supporting Guidance Standard 2.1

<http://www.wales.nhs.uk/governance-emanual/health-and-care-standards-supporting-gui-13/>