Summary

Recognition of deteriorating sick or injured child
Medical, nursing or parental concern that patients condition clinically deteriorating beyond Level 1 care

**Action: within 30 minutes**
Consultant Paediatric to Consultant Critical Care referral
In emergency registrar to registrar referral.
Inform Critical Care Outreach team
Consider discussion/advice from WATCH team at earliest opportunity

Does patient require level 2 or 3 care AND admission to critical care?

**NO**
Patient remain/transferred from ED Resus to child health ward or PHDU

**YES**

**Action: within 1 hour**
Liaise with Critical Care nurse in charge
Ascertain critical care bed status
Bed space prepared for paediatric admission
Discussion with parents/guardian
Prepare for intra-hospital transfer

**Action: within 4 hours**
Stabilisation of child prior to transfer
Safe transfer to Critical Care
Nursing handover
Establish required level 2/3 care
Inform WATCH retrieval team

Retrieval to Bristol PICU by WATCH retrieval team
If no capacity in Bristol PICU then WATCH to find alternative PICU bed
**Action: times dependant on WATCH workload**

Single system failure or likely reversible cause within 24 hours?
-consider remaining in RCHT Critical Care
Liaison and shared decision making with WATCH team.
1. **Aim/Purpose of this Guideline**

   1.1. The aim of the guideline is to provide information on the key actions to take when caring for and managing a critically ill child to Critical Care within RCHT.

   1.2. This version (V2.0 May 2019) supersedes any previous versions of this document.

   1.3. **Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation**

       The Trust has a duty under the DPA18 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed and documented. We can’t rely on Opt out, it must be Opt in.

       DPA18 is applicable to all staff; this includes those working as contractors and providers of services.

       For more information about your obligations under the DPA18 please see the ‘information use framework policy’, or contact the Information Governance Team rch-tr.infogov@nhs.net

2. **The Guidance**

2.1. **Recognition.**

    Recognition of the seriously or ill or injured child will follow Advanced Life Support Group ALSG protocols. Hospital-Wide protocols should be in use, including and not limited to:

    - Alerting the Paediatric Emergency Response Team (PERT) via 4444
    - Arrangements for accessing support for difficult airway management
    - Stabilisation and ongoing care
    - Care of parents during the care of their critically ill child

    ALSG ([www.alsg.org](http://www.alsg.org)) promote the ACCEPT approach to intra-and inter hospital transfers. Having a standardized model ensures ‘the right patient is taken at the right time, by the right people, to the right place [critical care] and receives the right care throughout’. This will follow the following ACCEPT structure:

    A: Assessment
    C: Control
    C: Communication
    E: Evaluate
    P: Preparation
    T: Transport.
2.2. **Assessment:**

2.2.1. In the first instance Child Health Staff will comply with Clinical Guideline for escalation criteria of critically ill children admitted to Child Health V3.0 Nov 2017. RCHT Policy.

2.2.1.1. Senior input preferably Consultant delivered, but in an emergency Child Health Registrar or Senior Anaesthetics Trainee (SAT) is required.

2.2.1.2. Clinical assessment is a dynamic process and should be focused on two key areas. First, an assessment of the patient determines their level of dependency, resuscitation, stabilisation and the risks to them associated with transport, and the mitigation including identification of accompanying staff. Secondly, there is identification of risks associated with the team and logistics including equipment, safety, health, and both critical care and paediatric high dependency capacity.

2.2.2. Patient early warning scores (PEWS) are embedded in hospital practice and offer an ideal validated tool for identifying and tracking physiological challenges. PEWS provides early warning of deterioration of children and should be in use. The system should cover observation, monitoring and escalation of care. Staff should respond promptly to children whose PEW score is high or increasing and where there are other concerns about the clinical status, following the escalation advice on the reverse of the chart. The likelihood of deterioration during transfer should also be assessed together with the potential for requiring additional interventions.

2.2.3. Staff with clinical concerns about a child should not however allow themselves to be falsely reassured by a low score.

2.2.4. The policy for Patient Observation and Monitoring - Paediatrics and Neonatal Unit V4.0 October 2018 should be used.

2.2.5. Critical Care admission is mandatory for children likely to require advanced respiratory support (i.e. acute or medium term mechanical ventilation), but children should also be referred for Critical Care at the appropriate level as described in Appendix 3 if they:

- are highly likely to require an intensive care dependent procedure
- have symptoms or evidence of shock, respiratory distress or respiratory depression
- have the potential to develop airway compromise
- have an unexplained deteriorating level of consciousness
- have required resuscitation or who are requiring some form of continuous resuscitation
- have received a significant injury
- have had prolonged surgery or any surgical procedure that is medium or high risk, or of a specialist nature – even if elective
- have potential or actual severe metabolic derangement, fluid or electrolyte imbalance
- have acute organ (or organ system) failure
- have established chronic disease (or organ system failure) and who experience a severe acute clinical deterioration, or secondary failure in another organ system
- require one-to-one or one to two nursing due to the severity of an acute or acute-on-chronic illness
Level 3 critical care can be provided in the short term in a designated area suitable for children in a DGH such as RCHT Critical Care Unit during liaison and stabilisation in discussion with Tertiary referral centre.

2.3. Control:

Leadership during the stabilization and transfer is vital to ensure safety and efficiency. Presence of Consultants in Child Health and Critical Care will ensure clear leadership, decision making and oversight of the clinical teams.

2.4. Communication:

2.4.1. The stabilization and transport of children involves multiple individuals working in teams across hospital sites, including but not limited to Critical Care, Outreach, Child Health, Anaesthesia and Surgery.

2.4.2. Structured communication, for example, Situation, Background, Assessment, Recommendation (SBAR) is encouraged for clarity and consistency.

2.4.3. Early communication with the WATCH (Wales and West Acute Transport for Children Service) team for clinical advice for ongoing management and potential for inter-hospital retrieval or transfer is encouraged. Call 0300 0300 789.

2.4.4. Early communication within the clinical teams and regional tertiary support is required should there be extenuating circumstances resulting in deviation from this guidance e.g. no capacity in PHDU (level 1, 2) or General Critical Care (level 2, 3) or tertiary centre (Level 3, 4 PICU care)

2.4.5. In the event of no capacity at nearest PICU (Bristol Royal Childrens Hospital) the WATCH team will undertake to find and transfer to the nearest alternative PICU bed.

2.5. Evaluation:

2.5.1. A final decision about the appropriateness of the transfer needs will be a joint decision agreed by the Paediatric Consultant and Anaesthetic/ITU Consultant/Registrar following a patient assessment undertaken immediately prior to transfer.

2.5.2. Practical decisions must be made about how and when the transfer will take place between Child Health area and Critical Care Unit and will be decided by the team leader.

2.6. Preparation:

Critical Care Outreach Team (CCOT) undertake daily checks of intra- and inter-hospital paediatric transfer equipment giving assurance that there is appropriate equipment for stabilising and transferring children when required. The dedicated transport trolley is ideal when utilized with weight-specific harnesses for children. Monitoring during transfer should follow the national published Association of anaesthetists of Great Britain and Ireland AAGBI Standards 2015.
2.7. Transport:

The PICS Standards 5th ed. (2015) regarding staff, training, & equipment are expected of teams transporting patients to the Critical Care Unit.

2.8.

2.8.1. Critical care Unit is the most appropriate place for the management of an acutely unwell child requiring escalating levels of care.

2.8.2. If the child is <5kg the neonatal Unit may have the capacity to manage infants admitted from the community. If infants are ventilated using NICU equipment, a nurse from NICU would work alongside the Critical Care nurse caring for the child, subject to capacity

2.8.3. Co-operative working on a case-by-case basis between NICU, Critical Care and acute paediatrics, alongside advice from the regional PICU represented by WATCH, is essential, regardless of where the care is taking place

2.8.4. Critical Care Unit should only provide ongoing care for children with single system failure, or those for whom ventilation is likely to be for a short (<48h) period.

2.8.5. All other children should be stabilised and retrieval discussed with regional PICU via WATCH.

2.8.6. Time-critical. Under certain conditions (e.g. expanding intra-cranial bleeding, blocked Ventriculo-Peritoneal shunt, penetrating trauma, intussception, volvulus) the best outcome is achieved by time-critical transfer of the child to Bristol Childrens Hospital PICU by RCHT senior anaesthetic or intensive care staff. A separate SOP/guideline is available and should be followed.

2.9. STAFF ACTING OUTSIDE THEIR AREA OF COMPETENCE

Staff may sometimes be required to act outside their area of competence or manage conditions in an emergency situation that they would not usually manage. This should only occur when it is in the best interest of the child. Examples of exceptional circumstances when this may occur include laparotomy for a small child where delay pending transfer to Bristol increases risk of death or serious harm, undertaking advanced intensive care procedures where circumstances prevent normal transfer e.g. severe weather, influenza pandemic etc.

2.9.1. The most senior/suitable clinicians should be involved. Consultants from each specialty involved should be informed and will attend the child unless time pressures require a more rapid action. Consultants should consider discussing with colleagues including the WATCH team /Tertiary Specialists unless this delay would increase risk of death or serious harm.

2.9.2. Discussion should take place with patient/parents/guardian and the balance of risk/benefit for the proposed course of action explained.

2.9.3. Full documentation should be made in the clinical record detailing reasons for taking the course of action.

2.9.4. The event should be reported as a clinical incident.

2.9.5. Staff will be supported by the trust and their directorates.
3. Monitoring compliance and effectiveness

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Implementation and performance of evidence based guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>The Paediatric Critical Care Group</td>
</tr>
<tr>
<td>Tool</td>
<td>PICAnet.org.uk and network-wide audits, South West Audit of Critically Ill Children, Peer review</td>
</tr>
<tr>
<td>Frequency</td>
<td>Annually and as agreed by PICA and SWACIC</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>Paediatric Critical Care Group</td>
</tr>
<tr>
<td>Acting on recommendations and Lead(s)</td>
<td>Child Health audit and Guidelines group</td>
</tr>
<tr>
<td>Change in practice and lessons to be shared</td>
<td>Paediatric Business and Governance meeting</td>
</tr>
<tr>
<td></td>
<td>Required changes to practice will be identified and actioned within identified time frame. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders</td>
</tr>
</tbody>
</table>

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Inclusion & Human Rights Policy' or the Equality and Diversity website.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.
Appendix 1. Governance Information

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Escalation and Management of Critically Ill Children from Child Health to Critical Care Clinical Guideline V1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td>04.04.19</td>
</tr>
<tr>
<td>Date Valid From:</td>
<td>29 May 2019</td>
</tr>
<tr>
<td>Date Valid To:</td>
<td>29 May 2022</td>
</tr>
<tr>
<td>Directorate / Department responsible (author/owner):</td>
<td>Dr Julian Berry Consultant Critical Care</td>
</tr>
<tr>
<td>Contact details:</td>
<td>01872 258197</td>
</tr>
<tr>
<td>Brief summary of contents</td>
<td>This guideline provides information on the key actions to take when caring for and managing a critically ill child from child health to critical care</td>
</tr>
<tr>
<td>Suggested Keywords:</td>
<td>Paediatrics Critical Care</td>
</tr>
<tr>
<td>Target Audience</td>
<td>RCHT</td>
</tr>
<tr>
<td>Executive Director responsible for Policy:</td>
<td>Medical Director</td>
</tr>
<tr>
<td>Date revised:</td>
<td>New issue</td>
</tr>
<tr>
<td>This document replaces (exact title of previous version):</td>
<td>New issue</td>
</tr>
</tbody>
</table>
| Approval route (names of committees)/consultation: | Paediatric Business and Governance meeting  
Critical Care Governance meeting  
Quality Assurance Committee |
| Care Group General Manager confirming approval processes | Debra Shields                                                                                           |
| Name and Post Title of additional signatories | Not Required                                                                                           |
| Name and Signature of Care Group/Directorate Governance Lead confirming approval by specialty and care group management meetings | {Original Copy Signed}  
Name: Caroline Amukusana                                                                 |
| Signature of Executive Director giving approval | {Original Copy Signed}                                                                                  |
| Publication Location (refer to Policy on Policies – Approvals and Ratification): | Internet & Intranet | ✓ Intranet Only |
### Related Documents:

2. Recommendations for standards of monitoring during anaesthesia and recovery AAGBI 2015
7. WATCH Wales and West Acute Transport for Children Service www.watch.nhs.uk

### Training Need Identified?

No

### Version Control Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
</tr>
</thead>
<tbody>
<tr>
<td>04.04.19</td>
<td>V1.0</td>
<td>Initial Issue</td>
<td>Dr Julian Berry Consultant Critical Care</td>
</tr>
</tbody>
</table>

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**All or part of this document can be released under the Freedom of Information Act 2000**

**This document is to be retained for 10 years from the date of expiry.**

**This document is only valid on the day of printing**

### Controlled Document

This document has been created following the Royal Cornwall Hospitals NHS Trust Policy for the Development and Management of Knowledge, Procedural and Web Documents (The Policy on Policies). It should not be altered in any way without the express permission of the author or their Line Manager.
### Appendix 2. Initial Equality Impact Assessment Form

<table>
<thead>
<tr>
<th>Name of the strategy / policy / proposal / service function to be assessed</th>
<th>Escalation and Management of Critically Ill Children from Child Health to Critical Care Clinical Guideline V1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Directorate and service area:</strong></td>
<td><strong>New or existing document:</strong></td>
</tr>
<tr>
<td>Women Children and Sexual Health services</td>
<td>New</td>
</tr>
<tr>
<td><strong>Name of individual completing assessment:</strong></td>
<td><strong>Telephone:</strong></td>
</tr>
<tr>
<td>Mary Baulch</td>
<td>01872 252685</td>
</tr>
</tbody>
</table>

1. **Policy Aim**
   Who is the strategy / policy / proposal / service function aimed at?
   The aim of the guideline is to provide information on the key actions to take when caring for and managing a critically ill child from child health to critical Care.

2. **Policy Objectives**
   To recognise critically ill child
   To safely transfer the critically ill child to critical care

3. **Policy – intended Outcomes**
   Prompt recognition of the critically ill child and safe transfer to critical care

4. **How will you measure the outcome?**
   Ongoing national audit

5. **Who is intended to benefit from the policy?**
   Children, their parents and staff

6a. **Who did you consult with**
<table>
<thead>
<tr>
<th>Workforce</th>
<th>Patients</th>
<th>Local groups</th>
<th>External organisations</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b). Please identify the groups who have been consulted about this procedure.

**Please record specific names of groups**
- Critical Care Clinical Governance January 2019
- Child Health Directorate Business meeting March 2019

What was the outcome of the consultation?
Guideline approved
7. The Impact
Please complete the following table. If you are unsure/don’t know if there is a negative impact you need to repeat the consultation step.

<table>
<thead>
<tr>
<th>Equality Strands:</th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
<th>Rationale for Assessment / Existing Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>x</td>
<td></td>
<td></td>
<td>This guideline is specifically for children</td>
</tr>
<tr>
<td>Sex (male, female, trans-gender / gender reassignment)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race / Ethnic communities /groups</td>
<td>x</td>
<td></td>
<td></td>
<td>Any information provided should be in an accessible format for the parent/carer/patient’s needs – i.e. available in different languages if required/access to an interpreter if required</td>
</tr>
<tr>
<td>Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.</td>
<td>x</td>
<td></td>
<td></td>
<td>Those parent/carer/patients with any identified additional needs will be referred for additional support as appropriate - i.e to the Liaison team or for specialised equipment. Written information will be provided in a format to meet the family’s needs e.g. easy read, audio etc</td>
</tr>
<tr>
<td>Religion / other beliefs</td>
<td>x</td>
<td></td>
<td></td>
<td>All staff should be aware of any beliefs that may impact on the decision to treat</td>
</tr>
<tr>
<td>Marriage and Civil partnership</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnancy and maternity</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:
- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation- this **excludes** any policies which have been identified as not requiring consultation. or
- Major this relates to service redesign or development

8. Please indicate if a full equality analysis is recommended.  
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

9. If you are **not** recommending a Full Impact assessment please explain why.

   This is a specific paediatric policy and does not affect adults
This EIA will not be uploaded to the Trust website without the approval of the Policy Review Group.

A summary of the results will be published on the Trust’s web site.
Appendix 3. Classification of Paediatric Critical Care (PCC)

Excerpt taken from ‘High Dependency Care for Children – Time to move on’
2014 Royal College Paediatrics and Child Health

3. Levels of care
3.1 It is proposed that two levels of CC (Level 1 and Level 2) be used to describe activities which would have previously been described as High Dependency Care (HDU).

3.2 Level 1 CC will be used to describe activities which should be delivered in any hospital which admits acutely ill children and will focus on the commoner acute presentations and clinical scenarios that require an enhanced level of observation, monitoring and intervention than can be safely delivered on a normal ward. Level 2 CC will be used to describe more complex activities and interventions which are undertaken less frequently, to children with a higher level of critical illness, and demand the supervision by competent medical and nursing staff who have undergone additional training.

This list is for guidance only, Consultants in Paediatrics and Intensive Care may decide that children should be managed on intensive care even if this list does not classify them as intensive care.

3.3 Level 1 examples:

AIRWAY
Upper airway obstruction requiring nebulised adrenaline

BREATHING
Oxygen therapy AND pulse oximetry AND ECG monitoring
Apnoea
Severe Asthma requiring intravenous bronchodilator therapy
Nasal High Flow Oxygen Therapy

CIRCULATION
Intravenous fluid resuscitation >10ml/kg, <30ml/kg
Arrhythmia requiring intravenous anti-arrhythmic
Cardiac arrhythmia which has responded to first line of therapy (other than cardioversion)

DISABILITY (NEUROLOGICAL)
Reduced consciousness level (Glasgow Coma Scale (GCS) 12 or below) AND hourly (or more frequent) GCS monitoring
Diabetic Ketoacidosis requiring continuous infusion of insulin
Bacterial meningitis
Prolonged or recurrent convulsions
Glasgow coma score 8 to 12
Depressed conscious level after Traumatic Brain Injury (discuss with Regional Neurosurgical unit)
Cerebral Space Occupying Lesion without depressed conscious level (potential for deterioration)

OTHER
Patient with pain which is difficult to control
Meningococcal septicaemia – stable state
Continuous intravenous drug infusion (except analgesia alone)
Poisoning/substance misuse with potential for significant problems
After/during sedation for procedure
Pre or post-operative patients with complex fluid management, analgesia, bleeding, complex surgery

Escalation and Management of Critically Ill Children from Child Health to Critical Care Clinical Guideline V1.0
Burns (discuss with the Regional Burns unit)
Skin loss conditions
Toxic Shock Syndrome
Patients requiring more detailed observation/monitoring than can safely be provided on a general ward
Patients who no longer need intensive care but are not well enough for a general ward
Patients resuscitated following cardiac arrest

3.2 **Level 2 CC** examples
The child requiring acute non-invasive ventilator support for respiratory failure, the child with diabetic ketoacidosis with an arterial line in situ to facilitate regular blood sample monitoring of acid base and blood glucose, the child who is ventilated at home via a tracheostomy who requires admission for intravenous antibiotics for an infection, or the child who has undergone complex elective surgery and requires advanced monitoring and pain relief techniques post-operatively.

**AIRWAY**
Nasopharyngeal airway
Care of tracheostomy (first 7 days of admission)

**BREATHING**
Acute non-invasive ventilation, including continuous positive airway pressure (CPAP) and bi-level positive airway pressure (BIPAP)
NB. There has been regional acceptance that CPAP may continue to be provided in Level 1 units with case by case discussion with WATCH.
Invasive ventilation of the Long Term Ventilated Child via a tracheostomy

**CIRCULATION**
Acute cardiac pacing
Inotropic / vasopressor treatment
>80 mls/kg fluid bolus in 24 hours
Cardiopulmonary resuscitation (CPR) in past 24 hours
Arterial line
Central venous pressure monitoring

**DISABILITY (NEUROLOGICAL)**
Status epilepticus requiring continuous intravenous infusion (eg midazolam)
ICP (intracranial pressure) monitoring or EVD (external ventricular drain)

**OTHER**
Any Level 1 care where there is a failure to respond to treatment as expected and/or the requirement for intervention persists for > 24 hours
Intravenous thrombolysis
Exchange transfusion
Plasma exchange

**3.1.7 Level 3 CC** will be used to describe activities that should only be undertaken within PICUs or for short periods of time bridging until retrieval or transfer to a tertiary PICU.

End.