MANAGEMENT OF CRITICALLY ILL CHILDREN IN UNIVERSITY HOSPITAL WISHAW

TARGET AUDIENCE	Paediatrics, Neonates, Emergency Department, Adult Critical Care, Theatres. (All medical and nursing staff)
PATIENT GROUP	Paediatric patients

Clinical Guidelines Summary

- **This document describes the management of critically ill paediatric patients in University Hospital Wishaw**
- **Recognises that multiple specialties are involved in the care of these patients**
- **Outlines roles and responsibilities**
- **Includes flowchart for management based on the corrected age of the patient and who to contact (and how to contact them)**
- **Outlines process/procedure for induction of anaesthesia in cases where this is required**
- **Agreement across specialties involved (paediatrics, neonates, ED, Adult Critical Care/Anaesthetics)**

BACKGROUND

University Hospital Wishaw is the regional centre for paediatric care within NHS Lanarkshire. Children may be critically unwell at the time of presentation to hospital or become more unwell during their stay. Some will ultimately require transfer to a paediatric intensive care unit (PICU). There are around 25-35 PICU transfers from UHW annually. Their management may involve multiple different teams with varying experience of managing critically ill children. It is therefore imperative that their **care is consultant delivered**, and that teams familiarise themselves with the roles and responsibilities outlined in this document

PERSONNEL

Working knowledge of this document is aimed at:

Medical staff	Nursing Staff	Others
Paediatrics	Wards 19 and 20	SCOTSTAR/ retrieval
Adult Intensive Care Medicine	Emergency Department	PICU
Neonatology, including ANNPs	Theatres (including anaesthetic nurses + ODPs)	
Emergency Medicine		

TEAM LEADERSHIP

Leadership and co-ordination of care will usually rest with the Consultant Paediatrician with clinical responsibility*. Roles include:

- Overall clinical management of the patient.
- Delegation within the multi-disciplinary team.
- Communication with SCOTSTAR/PICU.
- Communication with family.
- Documentation (**It is also expected that other specialties will also document anything relevant to their own involvement in the case**)

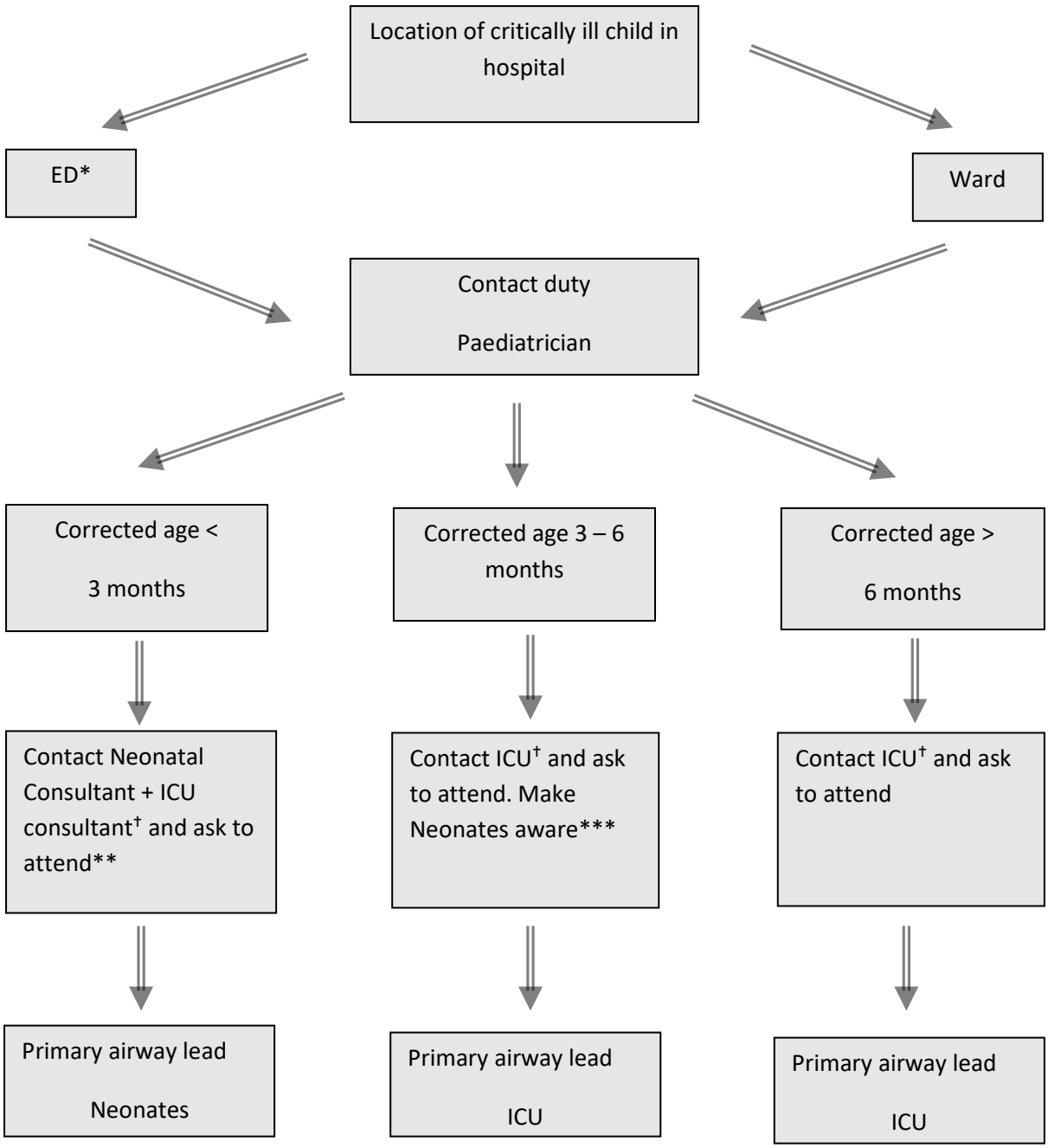
The decision to intubate a child will usually be made following discussions involving the paediatric consultant and consultants from other relevant specialties (ICU/Anaesthetics, PICU, Scotstar, neonates etc). In an emergency/time critical situation the decision to intubate may rest with the most experienced clinician available with the appropriate skills.

*Scenarios in ED resus will usually be led by the Emergency Medicine Consultant

LOCATION

The location for acute stabilisation of a child will depend on the clinical scenario. In time critical situations, this may be the child's current location (e.g.ward or ED). In a less urgent situation where transfer to another location is deemed safe, the location will be decided by the clinician with primary responsibility for securing the airway. This may be ward, ED or operating theatre. The primary airway lead should be established at the earliest opportunity.

FLOWCHART FOR PATIENT MANAGEMENT



*ED may decide that contacting the duty paediatrician occurs simultaneously with contacting ICU and/or Neonates.

** If immediate neonatal assistance is required a 2222 call should be placed first followed by call to Neonatal consultant

***ICU may request Neonates attend following assessment of the clinical situation.

†ICU registrar (dect 8657) will cascade to ICU consultant. ICU consultant can also be contacted directly (8681, or via switchboard if out of hours/unavailable)

HIGH FLOW NASAL OXYGEN THERAPY

This may be appropriate in certain situations and will be initiated under consultant supervison. In patients >3.5kg the F&P Optiflow device can be used with correctly sized paedatric cannulae (see local guideline for details/setup)
If appropriate, neonates < 3.5kg may have nasal high flow oxygen therapy instigated by the neonatology team using equipment/resources from the neonatal ward.

EMERGENCY ANAESTHESIA CHECKLIST

Use of an emergency anaesthesia checklist is strongly encouraged[1]. This has benefits for clarifying role allocation, ensuring appropriate/functioning equipment, and preparation for potential difficulties (e.g. failed intubation etc)
In locations out with theatre, ICU/anaesthetic team may request the presence of theatre anaesthetic nurse/ ODP (if available), along with paediatric airway trolley. These trolleys have checklist attached.

CHOICE OF INDUCTION AGENTS

It is acknowledged that there is variation in practice between Neonatal, PICU and Anaesthetic approaches to induction agents. For this group of patients standardisation of practice is recommended.

In line with SCOTSTAR/PICU recommendations[2] and unless contra-indicated, standard induction will be with IV fentanyl, ketamine and rocuronium. These will be weight based and appropriate for the clinical situation. At all times, they will be administered by ICU who will also be responsible for the management of any drug related side effects or complications. Where the primary airway lead is Neonatology, it should be communicated that the time to intubation with rocuronium is longer than suxamethonium (60 versus 30 seconds) and that hand ventilation will likely be required in the intervening period.

In the unlikely event of ICU being unable to attend a child with a corrected age of less than 3 months, choice of drug should default to the preference of Neonatology.

MONITORING

Monitoring should be in line with national guidelines[3]. In all cases this should include non-invasive blood pressure, oxygen saturation, continuous ECG and end tidal CO2. In circumstances where induction is taking place in ward 19/20, end tidal CO2 should be sourced. Intellivue X3 modules with linked battery for remote site end tidal CO2 monitoring are available in ACCU, Theatres and ED. The portable EMMA in-line capnograph is also available in ACCU.

References/Evidence

1. Saxena S et al. Anaesthesia-specific checklists: A systematic review of impact. Anaesthesia Critical Care & Pain Medicine. Volume 39, Issue 1, February 2020, Pages 65-73
2. SCOTSTAR paediatric guidelines. GC012 Paediatrics – Emergency Management of children by non specialist teams. https://www.snprs.scot.nhs.uk/wp-content/uploads//Paediatrics.pdf
3. Klein A et al. AAGBI Guideline. Recommendations for standards of monitoring during anaesthesia and recovery 2021. https://doi.org/10.1111/anae.15501

Appendices

1. Governance information for Guidance document

Lead Author(s):	P.Lucie, I. Lang
Endorsing Body:	CGGEG
Version Number:	2
Approval date	
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Responsible Person (if different from lead author)	

CONSULTATION AND DISTRIBUTION RECORD	
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Distribution	University Hospital Wishaw only

CHANGE RECORD			
Date	**Lead Author**	**Change**	**Version No.**
		e.g. Review, revise and update of policy in line with contemporary professional structures and practice	1
			2
			3
		.	4
			5

2.You can include additional appendices with complimentary information that doesn't fit into the main text of your guideline, but is crucial and supports its understanding.

e.g. supporting documents for implementation of guideline, patient information, specific monitoring requirements for secondary and primary care clinicians, dosing regimen/considerations according to weight and/or creatinine clearance