Guideline for the Resuscitation of the Newborn Infant at Birth

University Hospitals of Leicester NHS Trust

Trust ref: B35/2008

Contents

1. Introduction and Who Guideline applies to

This guideline is aimed at all Health Care Professionals involved in the care of infants at the time of delivery.

Related UHL documents:

Meconium Stained Liquor at Delivery UHL Neonatal Guideline UHL C103/2008
Umbilical Cord Clamping UHL Neonatal Guideline UHL C56/2021
Persistent Pulmonary Hypertension of the Newborn UHL Neonatal Guideline UHL C162/2008
Mild Hypothermia - Initiation UHL Neonatal Guideline UHL C25/2009
Difficult Airway UHL Neonatal Guideline UHL C5/2014

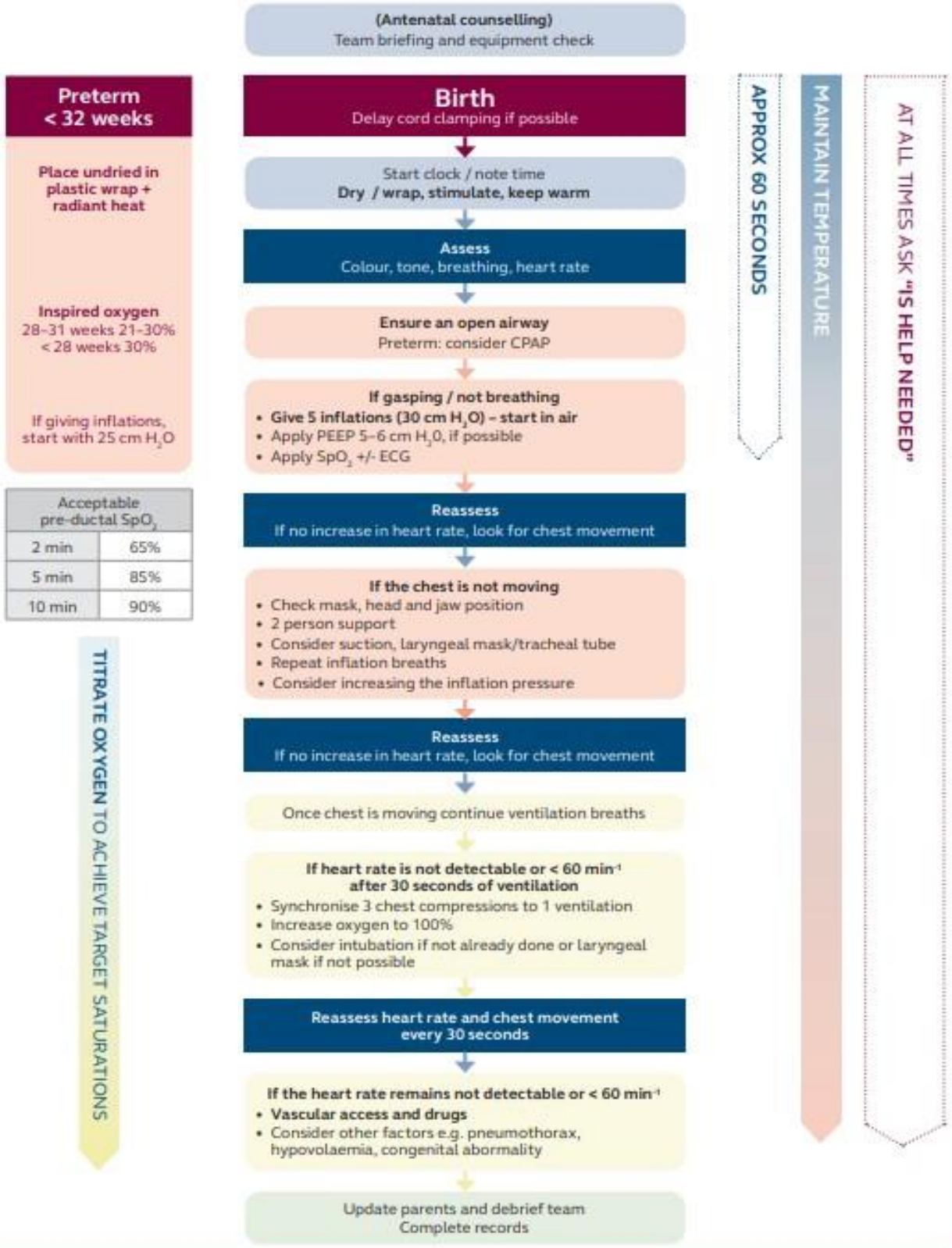
Key Points:

- All staff involved with the care of newborn babies should be able to commence neonatal resuscitation
- Resuscitation should be performed in line with the Resuscitation Council UK Newborn Life Support Guidelines 2021(1)
- All registered staff should be current NLS providers

Resuscitation Council UK

GUIDELINES 2021

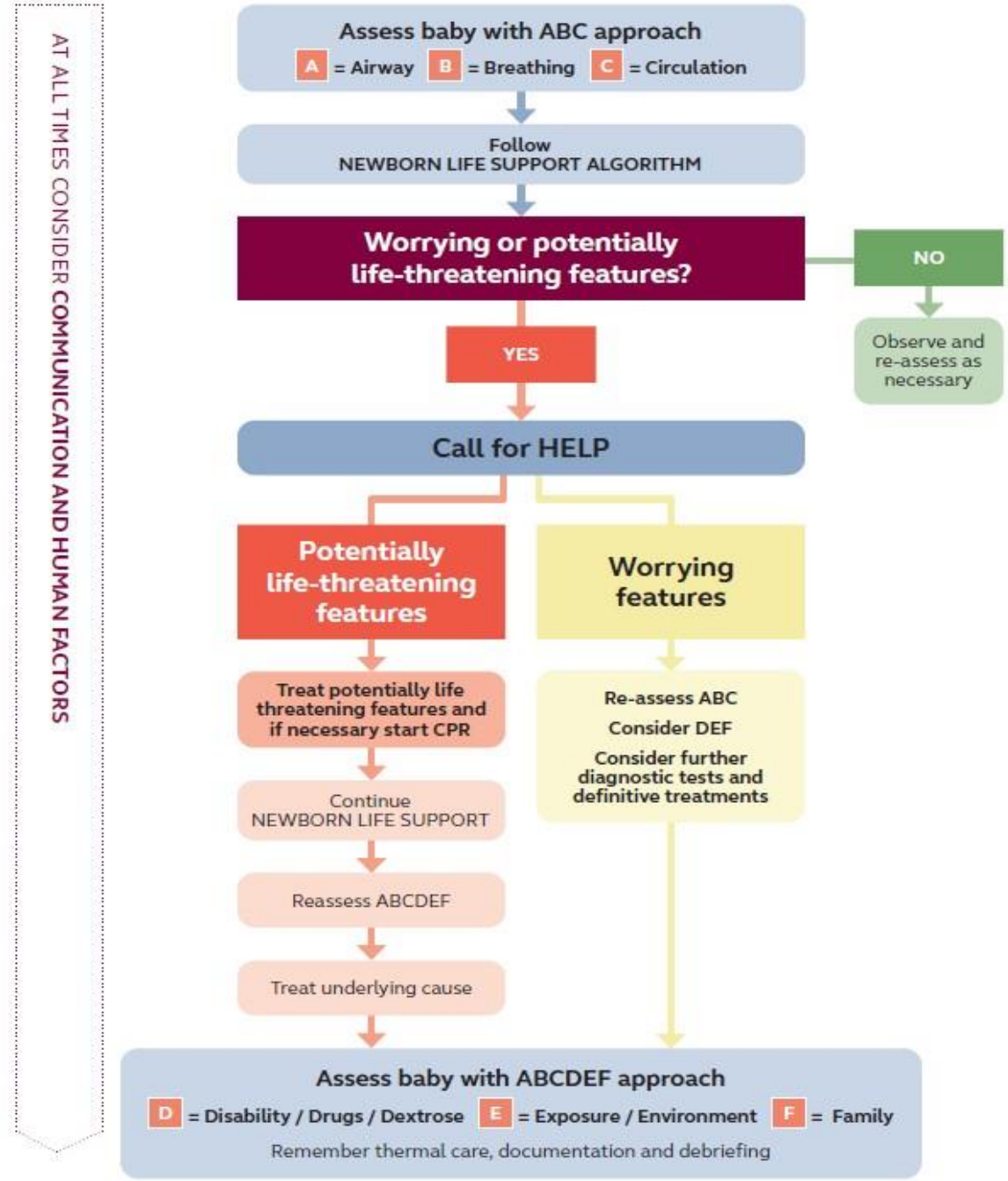
Newborn life support



Resuscitation Council UK

GUIDELINES 2021

Advanced resuscitation of the newborn infant



2. Indications for Neonatal Attendance at Delivery within the Hospital Setting

- Preterm delivery < 35 weeks completed gestation.
- Multiple pregnancy.
- Breech presentation.
- Known significant congenital abnormality (an abnormality which may cause difficulty at delivery or increase the likelihood of requirement for resuscitation.)
- Significant Ante Partum Haemorrhage
- Meconium-stained liquor
- Non-reassuring or pathological CTG
- Emergency Caesarean section.
- Instrumental deliveries for fetal distress
- Deliveries where there are midwifery or obstetric concerns about the health of the baby

2.1 Suggested Resuscitation Team

Infants > 32 weeks:
Midwife
F2, GP trainee or ST 1-3 doctor or Advanced Neonatal Nurse Practitioner

Preterm infants 29 - 32 weeks and Term infants with fetal compromise:
Midwife
F2, GP trainee or ST 1-3 doctor or Advanced Neonatal Nurse Practitioner
ST 4-8 or Advanced Neonatal Nurse Practitioner with appropriate skills
Neonatal Nurse with intensive care qualification

Preterm infants 22 - 28 completed week's gestation:
Midwife
F2, GP trainee or ST 1-3 doctor or Advanced Nurse Practitioner
ST4-8 or Advanced Nurse Practitioner with appropriate skills
Neonatal Nurse with intensive care qualification
The Neonatal Consultant should be made aware of the delivery; the team should be led by someone with advanced resuscitation skills. The consultant may attend depending on the experience of the available staff.

Resuscitation is not appropriate below 22 weeks gestation [(2)]. Babies between 22 weeks and 24 weeks are extremely high risk. An individual decision about the provision of life support at delivery should be made following senior discussion with the family taking into account the babies other risk factors and the family's views.

In an emergency, contact switchboard by dialling 2222 and ask for the Neonatal Team & state exact location. This will call the junior trainee, the senior trainee and a neonatal nurse.
A Consultant Neonatologist is available at all times by telephone: contact via switchboard.

2.2 Equipment

Appendices A-D list suggested equipment for deliveries within the hospital and community settings.

2.3 Deferred Cord Clamping

A delay in cord clamping of at least one minute from the complete delivery of the infant, is now recommended. The baby can be assessed during this time and if found to require resuscitation, then this becomes the priority[3]. Deferred cord clamping should be offered to both term and preterm infants who are stable. The plan for delayed cord clamping should be discussed with the midwifery and obstetric team prior to birth. Further details can be found in the Umbilical Cord Clamping UHL Neonatal Guideline.

2.4 Oxygen Saturation Monitoring

Current national guidelines [1] suggest commencing resuscitation in a term baby using room air. If a baby fails to respond to initial resuscitation consider using supplemental oxygen. Oxygen saturation monitoring should be used, and supplemental oxygen should be titrated according to response.
In babies < 28 weeks, start in 30% oxygen, in babies between 28 and 31 weeks, start using between 21% and 30% oxygen and adjust according to response.

Oxygen saturation should be measured in the right wrist:

Acceptable pre-ductal SpO_2	
2 min	65%
5 min	85%
10 min	90%

In a cardiac arrest situation or where there is severe circulatory compromise, oxygen saturation monitoring may become unreliable. Oxygen saturation monitors should not be relied upon to assess heart rate, a stethoscope should be used. Supplemental oxygen should be increased to 100% if chest compressions are commenced.

2.5 Deliveries Outside of the Hospital Setting

There should be two Midwives present at a planned birth that occurs in the community setting; one midwife to take responsibility for the mother and one to take responsibility for the baby.

It is the responsibility of the Midwife to check his/her own equipment regularly on a routine basis and prior to every planned community birth.
Deliveries outside of the hospital setting should be approached using the standard NLS guidelines outlined above.

Care should be taken to keep the baby warm. Preterm babies in a community setting should be dried and wrapped in a warm towel: plastic bags should not be used unless a radiant warmer is available.

Help should be called for babies that are in need of resuscitation outside of the hospital setting. An emergency ambulance should be requested by dialling 999, specify obstetric emergency. When present, community midwives must take the lead in cases of neonatal resuscitation taking place outside of the hospital setting and should not defer the lead role to the paramedic.
Ensure airway is secure and prepare neonate for immediate transfer to LRI as soon as possible when the ambulance arrives.

All neonatal intensive care is now performed at Leicester Royal Infirmary so any baby in need of resuscitation should be transferred to Leicester Royal Infirmary.

Delivery suite at the Royal Infirmary should be notified and the baby should be brought to the Delivery Suite at the Leicester Royal Infirmary.

2.6 Advanced Resuscitation and Special Cases

At all resuscitations, the priority is to manage the airway in line with Neonatal Life Support guidelines.
Advanced resuscitation should follow the Resus Council Advanced Resuscitation of the Newborn Infant Algorithm shown above.
The following special situations are considered:

Meconium stained liquor:
See also: Meconium Stained Liquor at Delivery UHL Neonatal Guideline

- All babies should be managed according to the standard NLS algorithm[4].
- If the baby is vigorous, the airway is not obstructed
- Most babies with meconium-stained liquor do not have an obstructed airway.
- In an apnoeic baby until you have attempted to inflate the lungs you do not know whether the airway is obstructed. There should not be a delay in administering inflation breaths.
- In an apnoeic baby born through meconium-stained liquor if the chest does not rise with inflation breaths reposition the airway and give 5 more inflation breaths. If this does not inflate the lungs then inspect under direct vision and suction any visible meconium.
- In an apnoeic baby born through meconium-stained liquor who has an obstructed airway, suction below the cords if you have the skills to do so.

Preterm babies <30 weeks gestation born in hospital:

- Delayed cord clamping has been shown to improve survival in preterm infants
- Do not perform cord milking in babies less than 28 weeks as this is associated with intraventricular haemorrhage.

- Babies should be placed in a plastic bag without drying and nursed under a radiant heater.[5]
- A trans warmer mattress can be used, if deemed necessary, but be aware it can cause hyperthermia when used in conjunction with an external heat source.
- A temperature probe should be used to monitor the baby's temperature during transfer to the neonatal intensive care.
- Inflation breaths should commence at a pressure of 25 cm H_20
- PEEP of 5-6 should be used and ventilation pressures should be adjusted according to response.
- Consider elective surfactant treatment on delivery suite for babies of ≤28 week's gestation who require ongoing respiratory support.

Babies at risk of Perinatal Asphyxia:

See also: Mild Hypothermia - Initiation UHL Neonatal Guideline

- Babies at risk of perinatal asphyxia may benefit from therapeutic hypothermia following resuscitation
- If there is a cord pH of <7.0 or a prolonged resuscitation consider passive cooling and seek expert senior advice.
- Therapeutic hypothermia is a treatment that should be implemented after the resuscitation phase and temperature should be closely monitored with a rectal temperature probe.

Babies who require intubation:

- Following intubation, confirm endotracheal tube position by auscultation
- Apply an end-tidal carbon dioxide sensor (e.g. Pedicap) and confirm the presence of CO_2.
- If there are any doubts about endotracheal tube position, remove the tube and recommence ventilation using a mask with additional airway techniques as required.
- Remember that colour change capnography is unreliable in babies with a poor cardiac output and in some small preterm babies. Capnography is a useful adjunct and should be used to confirm tube placement in conjunction with other clinical signs.

Babies who require drugs during resuscitation:

Medications should be given in line with NLS guidelines:

- Bicarbonate, glucose, adrenaline and volume can call be given via a UVC, or via an intraosseous line. Adrenaline can be given via a tracheal tube and doses are shown below:

Drugs

Drug	Dose	Preparation	Delivery	
Adrenaline	20 micrograms/kg	0.2 mL/kg of 1:10,000 adrenaline	IV/UVC or IO	Subsequent doses every 3-5 minutes if heart rate remains < 60/min
	100 micrograms/kg	1.0 mL/kg of 1:10,000 adrenaline	Intra-tracheal	
Sodium Bicarbonate	1–2 mmol/kg	2–4 mL/kg of 4.2% solution	IV/UVC	
Glucose	250 mg/kg bolus	2.5 mL/kg of 10% Dextrose	IV/UVC	
Volume	10 mL/kg: group O Rh-negative blood or isotonic crystalloid		IV/UVC	

Babies who fail to respond to resuscitation:

The prognosis is poor in babies who fail to respond to resuscitation at 10 minutes. After 10 minutes of resuscitation the team should consider whether all appropriate steps of the NLS algorithm have been completed. Reversible causes of failure to respond should be considered and any identified reversible causes dealt with. Remember some problems require additional equipment e.g., needle to drain a pneumothorax, O-ve blood for acute blood loss.

If there is no response after 20 minutes of good quality resuscitation, the prognosis is very poor and the team should discuss and stop resuscitation. A Consultant Neonatologist is always available by telephone for advice if needed and can be contacted via switchboard.

3. Education and Training

Neonatal resuscitation is mandatory annual training required to be completed by all UHL medical, nursing and midwifery staff working within the neonatal, obstetric and maternity settings.

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Availability and readiness for use of resuscitation equipment in all care settings	Audit of documentation	Head of Nursing responsible for Quality Metrics; matron for ED; Senior Midwife for Community	Monthly	Neonatal Governance Group Maternity Governance Group
Resuscitation equipment is checked, stocked and fit for use in all care settings	Audit of documentation	Senior Midwives for Intrapartum Services		
All registered staff attending neonatal resuscitation are trained in neonatal resuscitation techniques	Audit of records of resuscitation training for all registered staff attending neonatal resuscitation	Senior Midwives for Intrapartum Services		

5. Supporting References

Resuscitation Council UK: Newborn Life Support 5th Edition 2021
Perinatal Management of Extreme Preterm Birth before 27 weeks of gestation A Framework for Practice October 2019 by BAPM

2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. *Resuscitation* 2010; **81S:** e21-25

Vain NE et al. Oropharyngeal and nasopharyngeal suctioning of meconium – stained neonates before delivery of their shoulders: multicentre randomised controlled trial. Lancet 2004; 364: 597-602.

Vohra S et al. Heat Loss Prevention (HeLP) in the delivery room: A randomised controlled trial of polyethylene occlusive skin wrapping in very preterm infants. Pediatrics 2004; 145: 750-3.

Resuscitation Council UK: Advanced Resuscitation of the Newborn infant manual 2nd edition.

https://www.resus.org.uk/resuscitation-guidelines/

Meconium Stained Liquor at Delivery UHL Neonatal Guideline UHL C103/2008
Umbilical Cord Clamping UHL Neonatal Guideline UHL C56/2021

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Mild Hypothermia - Initiation UHL Neonatal Guideline UHL C25/2009
Difficult Airway UHL Neonatal Guideline UHL C5/2014

6. Key Words

Adrenaline, Airway, Cardiac arrest, Chest compressions, Inflation breaths, Intubation, Oxygen, Oxygen saturations, Respiratory rate, Sodium Bicarbonate, Ventilation

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The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.
As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

Contact and review details			
Guideline Lead (Name and Title) Sumit Mittal – Consultant Neonatal Guidelines Lead **Author:** Jonathan Cusack - Consultant			**Executive Lead** Chief Medical Officer
Details of Changes made during review:			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
17/03/2015	**2**	Neonatal Guidelines Meeting	
Dec 2016-Jan 2017	**3**	Neonatal Guidelines Meeting Neonatal Governance Meeting	New resuscitation algorithm
Dec 2019-Jan 2020	**4**	Neonatal Guidelines Meeting Neonatal Governance Meeting	
October 2021	**5**	Neonatal Governance Meeting	New resuscitation algorithm
May 2022	**5**	Maternity Governance	Added – Oxygen saturation monitors should not be relied upon to assess heart rate, a stethoscope should be used. When present, community midwives must take the lead in cases of neonatal resuscitation taking place outside of the hospital setting and should not defer the lead role to the paramedic Updated resus trolley equipment lists

Neonatal ITU
Cardiac Arrest Trolley Check List April 2022.

- **Your Neonatal Cardiac Arrest Trolley, oxygen and Portable Suction MUST be checked daily and after every use.**
- **All equipment MUST be present, in date and in working order.**
- **Please do not add any additional equipment to the Neonatal trolley. The standardised list is designed to make it easy to find essential items during an emergency.**
- **Restocking of the Arrest Trolley should be sourced from the clinical area if at all possible.**
- **After you have completed the Daily check of the Cardiac Arrest Trolley and resuscitation equipment, please sign the cardiac arrest equipment check book (pink Book) and document any issues and remedial actions taken.**

Neonatal ITU
Cardiac Arrest Trolley Check List April 2022

Neonatal Arrest Trolley on Neonatal Units

Top of Trolley.

ITEM	QUANTITY	NOTES
Check list/Signature book	1	
Sharps Bin	1	
Blood Glucose analyser with appropriate strips	1	Must be checked as per manufacturers guidelines

Drawer 1

ITEM	QUANTITY	NOTES
Combined Laryngoscope Handle and Miller Blade Size 00	2	
Combined Laryngoscope Handle and Miller Blade Size 0	2	
Combined Laryngoscope Handle and Miller Blade Size 1	2	
Guedel Airways size 000, 00, 0, 1	1 of each	
Stethoscope	1	
Magills forceps (paediatric)	1	
Igel Size 1	2	
Lubrication sachets for iGEL	2	
Artery Forceps	1	
Paediatric Yankeur Suckers	2	
Neostat Colour change Capnography	2	
Scissors	1	
Pen torch	1	
Infant Defibrillator Pads	1	

Neonatal ITU
Cardiac Arrest Trolley Check List April 2022

Drawer 2

ITEM	QUANTITY	NOTES
Enteral syringes 10ml and 20ml	2 of each	
Orange and purple blunt filter Needles	6 of each	
Dispensing Pins	2	
Leur lock Syringes sizes, 1ml, 3ml, 5ml, 10ml, 30ml, 50ml	4 of each	
Sodium Chloride 5ml ampoules	4	
24g Non ported IV cannula	4	
Splints, Premie, small and Large	1 of each	
Tegaderm cannula dressings, Teddy and plain	2 of each	
Mefix 2.5cm	1	
T pieces	2	
Safety Butterfly needle 21G	2	
Sterile water 100ml bottles	1	
White Bungs	4	
Stitch Cutter	2	
3 way taps	2	

Drawer 3

ITEM	QUANTITY	NOTES
ET Hats, Small, Medium and Large	1 of each	Spares to be kept in clinical area
ET Tubes, 2.0	1	
ET Tubes, 2.5, 3, 3.5, 4.	2 of each	
ET Tube Clamps, 2.0	1	Attached to ET Tube packet of same size
ET Tube Clamps 2.5, 3, 3.5, 4	2 of each	Attached to ET Tube packet of same size
Intubating Stylets 2mm	2	
Paediatric BVM	1	Oxygen tubing attached
Intersurgical Anatomical Face Masks sizes 0 and 1	1 of each	
Leurlock 3ml syringe	2	For use with anatomical masks
Fisher & Paykel Pre-Term masks, Sizes 35mm and 42mm	1 of each	
Meconium Aspirators	2	

Neonatal ITU
Cardiac Arrest Trolley Check List April 2022

Drawer 4

ITEM	QUANTITY	NOTES
Neonatal Drugs Box	2	
Adenosine 6mg ampoules	6	
Sodium Chloride 0.9% 500mls	1	
10% Dextrose 500mls	1	
Intraosseous Needles 18G	2	
Cotton ET Ties	1 roll	
Resuscitation Paperwork	4	
Emergency Drug/Intubation Drug Guide	2	
Spare Infant Defibrillators pads	1	

Neonatal Cardiac Arrest Trolley List
For use on Delivery Suite (LGH)
April 2022

- **Your Neonatal Cardiac Arrest Trolley, Oxygen and Portable Suction MUST be checked daily and after every use.**
- **All equipment MUST be present, in date and in working order.**
- **Please do not add any additional equipment to the Neonatal Trolley. The standardised list is designed to make it easy to find essential items during an emergency.**
- **Restocking of the Arrest Trolley should be sourced from the clinical area if at all possible.**
- **Any equipment that is not stocked in your clinical area can be sourced from the neonatal unit. (Please take completed stock requisition form when collecting equipment)**
- **After you have completed the Daily check of the Neonatal Cardiac Arrest Trolley and resuscitation equipment, please sign the check book and document any issues and remedial actions taken.**

As well as checking equipment is available and in working order also check:

Oxygen Cylinders present and working

Neonatal Arrest Trolley - Delivery Suite

Top of Trolley.

ITEM	QUANTITY	NOTES
Check list/Signature book,	1	
Sharps Bin	1	
Blood Glucose analyser with appropriate strips	1	Must be checked as per manufacturers guidelines
Pulse oxymeter	1	

Side of Trolley (in bag)

ITEM	QUANTITY	NOTES
Paediatric Bag Valve Mask device	1	
Intersurgical Anatomical Face Masks Sizes 0 & 1	1 of each	
Leurlock syringes 3ml	2	For use with Anatomical masks

Drawer 1 Basic Airway

ITEM	QUANTITY	NOTES
Oropharangeal Airway (Guedel) Size 000	2	
Oropharangeal Airway (Guedel) Size 00	2	
Oropharangeal Airway (Guedel) Size 0	2	
Oropharangeal Airway (Guedel) Size 1	2	
IGel Size 1	2	
Lubrication sachets for iGEL	2	
Suction Catheters Size 6	3	
Suction Catheters size 8	3	
Fisher and Paykel Pre-Term Masks sizes 35mm and 42mm	1 of each	
Paediatric Yankeur Sucker	2	
Meconium Aspirator	2	
Neonatal pulse oximeter adhesive sensor < 1kg	1	
Neonatal Pulse Oxymeter adhesive sensor <3kg	1	
Neonatal/Adult Pulse Oxymeter adhesive sensor >3kg	1	

Neonatal Cardiac Arrest Trolley List
Delivery Suite LGH
April 2022

Drawer 2 Advanced Airway and Breathing

ITEM	QUANTITY	NOTES
Single use Combined Laryngoscope Handle and Miller Blade size 00	1	The "light / bulb" no longer require a Daily / Weekly check. The expiry date as written on the packaging will determine the date when the laryngoscope needs replacing. If any packaging is noted to be torn or open, this should be replaced
Single use Combined Laryngoscope Handle and Miller Blade size 0	1	
Single use Combined Laryngoscope Handle and Miller Blade size 1	1	
Intubating Stylet (2mm)	2	
ET Tubes size 2	2	
ET Tubes size 2.5	2	
ET Tubes size 3.0	2	
ET Tubes size 3.5	2	
ET Tubes size 4.0	2	
ET Tube Clamps Size 2	2	Attached to ET Packet of same size
ET Tube Clamps Size 2.5	2	Attached to ET Packet of same size
ET Tube Clamps Size 3.0	2	Attached to ET Packet of same size
ET Tube Clamps Size 3.5	2	Attached to ET Packet of same size
ET Tube Clamps Size 4.0	2	Attached to ET Packet of same size
Artery Forceps	1	
Magills forceps (paediatric)	1	
ET Hats Small medium and large	1 of each	Ties attached
NG Tubes sizes 5f and 8f	2 of each	
Colour change Capnography	2	
Ph. Indicator strips	1 box	
Enteral Syringes 10ml	2	
Enteral Syringes 20ml	2	
Butterfly 21g	1	For use in needle thoracocentesis
Leurlock Syringe 10ml	1	
Three way Taps	1	

Neonatal Cardiac Arrest Trolley List
Delivery Suite LGH
April 2022

Drawer 3 - Circulation

ITEM	QUANTITY	NOTES
0.6mls Chlorhexidine ampoule	5	
Double Lumen Umbilical Vein catheters 4fr	3	
Neoflon	5	
Leurlock Syringes 1ml	5	
Leurlock Syringes 3ml	5	
Leurlock Syringes 5ml	5	
Leurlock Syringes 10ml	5	
Leurlock Syringes 30ml	5	
Leurlock Syringes 50ml	4	
Safety needles 21G	5	
Filter needles (purple)	5	
Safety Needles 25G	5	
Dispensing Pins	2	
Disposable scalpel	2	
Film cannula dressing	5	
Sutures (Silk) 3 O Curve needle	5	
Water for injection ampoules 10ml	5	
Sodium Chloride 0.9% ampoules 10ml	5	
Needle free cannula extension sets leurlock 10cm	2	
Scissors	1	
Mefix tape 2.5cm	1 roll	
Capillary Gas Tubes	5	
Sterile gauze swabs	1 pack	
IV Support Boards sml and lrg	1 of each	

Drawer 4

ITEM	QUANTITY	NOTES
Neonatal Drugs Box + Drugs Guide	2	
500ml Sodium Chloride 0.9%	1	
10% Dextrose 500ml	1	
Intraosseous needles 18G	2	

Drawer 5

ITEM	QUANTITY	NOTES
Umbilical Insertion Pack	1	
Transwarmers	2	
Resuscitation Paperwork	2	

Neonatal Cardiac Arrest Trolley List
Delivery Suite LGH
April 2022

Neonatal Cardiac Arrest Trolley List
For use on Delivery Suite (LRI)
April 2022.

- **Your Neonatal Cardiac Arrest Trolley, Oxygen and Portable Suction MUST be checked daily and after every use.**
- **All equipment MUST be present, in date and in working order.**
- **Please do not add any additional equipment to the Neonatal trolley. The standardised list is designed to make it easy to find essential items during an emergency.**
- **Restocking of the Arrest Trolley should be sourced from the clinical area if at all possible.**
- **Any equipment that is not stocked in your clinical area can be sourced from the neonatal unit. (Please take completed stock requisition form when collecting equipment)**
- **After you have completed the Daily check of the Neonatal Cardiac Arrest Trolley and resuscitation equipment, please sign the check book and document any issues and remedial actions taken.**

As well as checking equipment is available and in working order also check:

Oxygen Cylinders present and working

Top of Trolley.

ITEM	QUANTITY	NOTES
Check list/Signature book,	1	
Sharps Bin	1	
Blood Glucose analyser with appropriate strips	1	Must be checked as per manufacturers guidelines
Pulse oxymeter	1	

Side of Trolley (in bag)

ITEM	QUANTITY	NOTES
Paediatric Bag Valve Mask device	1	
Intersurgical Anatomical Face Masks Sizes 0 & 1	1 of each	
Leurlock syringes 3ml	2	For use with Anatomical masks

Drawer 1 Basic Airway

ITEM	QUANTITY	NOTES
Oropharangeal Airway (Guedel) Size 000	2	
Oropharangeal Airway (Guedel) Size 00	2	
Oropharangeal Airway (Guedel) Size 0	2	
Oropharangeal Airway (Guedel) Size 1	2	
IGel Size 1	2	
Lubrication sachets for iGEL	2	
Suction Catheters Size 6	3	
Suction Catheters size 8	3	
Fisher and Paykel Pre-Term Masks Sizes 35mm & 42mm	1 of each	
Paediatric Yankeur Sucker	2	
Meconium Aspirator	2	
Neonatal Pulse Oxymeter adhesive sensor < 1kg	1	
Neonatal Pulse Oxymeter adhesive sensor <3kg	1	
Neonatal/Adult Pulse Oxymeter adhesive sensor >3kg	1	

Neonatal Cardiac Arrest Trolley List
Delivery Suite LRI
April 2022

Drawer 2 Advanced Airway and Breathing

ITEM	QUANTITY	NOTES
Single Use Combined Laryngoscope Handle and Miller Blade size 00	1	The "light / bulb" no longer require a Daily / Weekly check. The expiry date as written on the packaging will determine the date when the laryngoscope needs replacing. If any packaging is noted to be torn or open, this should be replaced
Single Use Combined Laryngoscope Handle and Miller Blade size 0	1	
Single Use Combined Laryngoscope Handle and Miller Blade size 1	1	
Intubating Stylet (2mm)	2	
ET Tubes size 2	2	
ET Tubes size 2.5	2	
ET Tubes size 3.0	2	
ET Tubes size 3.5	2	
ET Tubes size 4.0	2	
ET Tube Clamps Size 2	2	Attached to ET Packet of same size
ET Tube Clamps Size 2.5	2	Attached to ET Packet of same size
ET Tube Clamps Size 3.0	2	Attached to ET Packet of same size
ET Tube Clamps Size 3.5	2	Attached to ET Packet of same size
ET Tube Clamps Size 4.0	2	Attached to ET Packet of same size
Artery Forceps	1	
Magills forceps (paediatric)	1	
ET Hats Small medium and large	1 of each	Ties attached
NG Tubes sizes 5f and 8f	2 of each	
Colour change Capnography	2	
Ph. Indicator strips	1 box	
Enteral Syringes 10ml	2	
Enteral Syringes 20ml	2	
Butterfly 21g	1	For use in needle thoracocentesis
Leurlock syringe 10ml	1	
Three way taps	1	

Neonatal Cardiac Arrest Trolley List
Delivery Suite LRI
April 2022

Drawer 3 - Circulation

ITEM	QUANTITY	NOTES
0.6mls Chlorhexidine ampoule	5	
Double Lumen Umbilical Vein catheters 4fr	3	
Neoflon	5	
Leurlock Syringes 1ml	5	
Leurlock Syringes 3ml	5	
Leurlock Syringes 5ml	5	
Leurlock Syringes 10ml	5	
Leurlock Syringes 30ml	5	
Leurlock Syringes 50ml	4	
Safety needles 21G	5	
Filter needles (purple)	5	
Safety Needles 25G	5	
Dispensing Pins	2	
Disposable scalpel	2	
Film cannula dressing	5	
Sutures (Silk) 3 O Curve needle	5	
Water for injection ampoules 10ml	5	
Sodium Chloride 0.9% ampoules 10ml	5	
Needle free cannula extension sets leurlock 10cm	2	
Scissors	1	
Mefix tape 2.5cm	1 roll	
Capillary Gas Tubes	5	
Sterile gauze swabs	1 pack	
IV Support Boards sml and lrg	1 of each	

Drawer 4

ITEM	QUANTITY	NOTES
Umbilical Insertion Pack	1	
Transwarmers	2	
Resuscitation Paperwork	2	

Drawer 5

ITEM	QUANTITY	NOTES
Neonatal Drugs Box + Drugs guide	2	
500ml Sodium Chloride 0.9%	1	
10% Dextrose 500ml	1	
Intraosseous needles 18G	2	

Neonatal Cardiac Arrest Trolley List
Delivery Suite LRI
April 2022

Resuscitaires
April 2022.

- **Your Resuscitaire, Oxygen and Portable Suction MUST be checked daily and after every use.**
- **All equipment MUST be present, in date and in working order.**
- **Please do not add any additional equipment to the Resuscitaire. The standardised list is designed to make it easy to find essential items during an emergency.**
- **Restocking of the Resuscitaire should be sourced from the clinical area if at all possible.**
- **Any equipment that is not stocked in your clinical area can be sourced from the neonatal unit. (Please take completed stock requisition form when collecting equipment)**
- **After you have completed the Daily check of the Resuscitaire, and resuscitation equipment, please sign the check book and document any issues and remedial actions taken.**

As well as checking equipment is available and in working order also check:

Oxygen and Air Cylinders present and working
Working heater
Working clock
Working suction
Working overhead light

Resuscitaire

ITEM	QUANTITY	NOTES
Warm Towels	3	Top of Resuscitaires
Gloves Small, Medium, Large	1 of each size	
Stethoscope	1	May be kept on back of Resuscitaires
Paediatric Yankeur Sucker	2	One attached to suction tubing another in Drawer
Suction Tubing	1	Attached to suction bottle
Suction Catheters 8F and 10F	1 of each size	NB: size 6 and spares kept on neonatal trolley
IGel Size 1	1	Spares kept on neonatal trolley
Lubrication sachet for iGEL	1	
Bag and Mask (500ml)	1	
T Piece	1	Connected to outlet
Intersurgical Anatomical Face Masks Sizes 0 and 1	1 of each	
Leurlock syringes 3ml	2	For use with anatomical masks
Fisher and Paykel Pre-Term Masks Sizes 35mm and 42mm	1 of each	
Combined laryngoscope handle and size 00 Miller blade	1	
Combined laryngoscope handle and size 0 Miller blade	1	
Combined laryngoscope handle and size 1 Miller blade	1	
ET Tube size 2.5	1	(spares kept on neonatal trolley)
ET Tube size 3.0	1	(spares kept on neonatal trolley)
ET Tube size 3.5	1	(spares kept on neonatal trolley)
ET Tube size 4.0	1	(spares kept on neonatal trolley)
Intubating ET stylet	1	(spares kept on neonatal trolley)
Meconium Aspirator	1	(spares kept on neonatal trolley)
ET Hats small, medium, large	1 of each	With tapes attached
ET Tube Clamps 2.5, 3.0, 3.5, 4.0	1 of each	Taped to ET tube packet of same size.
Neonatal pulse oximeter adhesive sensor <1kg	1	
Neonatal pulse oxymeter adhesive sensor <3kg	1	
Neonatal/adult pulse oxymeter adhesive sensor >3kg	1	
Plastic Bag	1	

Resuscitaires Delivery Suite and Post natal wards
April 2022

Special Care LRI (Pull down) Resuscitaires April 2022.

- **Your (pull down) Resuscitaires, Oxygen and Suction MUST be checked daily and after every use.**
- **All equipment MUST be present, in date and in working order.**
- **Please do not add any additional equipment to the(pull down) Resuscitairres. The standardised list is designed to make it easy to find essential items during an emergency.**
- **Restocking of the (pull down) Resuscitairres should be sourced from the clinical area if at all possible.**
- **After you have completed the Daily check of the (pull down) Resuscitairres, and resuscitation equipment, please sign the check book and document any issues and remedial actions taken.**

As well as checking equipment is available and in working order also check:

Oxygen and Air blender is working
Working heater
Working clock
Working suction
Working overhead light

(Pull down) Resuscitaire

ITEM	QUANTITY	NOTES
Towel	1	On mattress of Resuscitaire
Stethoscope	1	May be kept on back of Resuscitaire
Paediatric Yankeur Sucker	2	One attached to suction tubing another in Drawer
Suction Tubing	1	Attached to suction bottle
Suction Catheters 6f, 8F and 10F	1 of each size	Back of Resuscitaire
I-Gel Size 1	1	Spares kept on resus trolley
Lubrication sachet for iGEL	1	
T Piece	1	Connected to outlet
Intersurgical Anatomical Face Masks Sizes 0 and 1	1 of each	
Leurolock syringes 3ml	2	For use with Anatomical masks
Fisher Paykel Pre-Term Masks Sizes 35mm and 42mm	1 of each	
Combined laryngoscope handle and size 00 Miller blade	1	
Combined laryngoscope handle and size 0 Miller blade	1	
Combined laryngoscope handle and size 1 Miller blade	1	

Please do not overstock
If you need further equipment it is available on the Resus Trolley

Resuscitaires Special Care
April 2022.

Appendix B - Documentation for Neonatal Resuscitation;

Neonatal Resuscitation / Stabilisation Record

University Hospitals of Leicester NHS Trust
Caring at its best

Name			
Surname			
Date of Birth			
S Number			
Time of Birth			
Gestation		Estimated Weight	
Hospital		Location	

Staff present at resuscitation		
Role	Name	Arrival Time

Relevant Medical History (any fetal alert)
Significant intrapartum blood loss YES ☐ NO ☐

Optimal timing of cord clamping	YES ☐ NO ☐ Until ..... seconds

Initial assessment at birth			
Colour	Tone	Breathing	Heart Rate

Temperature Management (Tick)		
Radiant heater	Plastic bag	Woolly hat

1st gasp	min	HR > 100bpm	min	Regular breathing	min

Apgar Score				
	1min	5mins	10mins	20mins
Colour				
Tone				
Breathing				
Heart Rate				
Reflexes				
Total				

Survival	YES ☐	NO ☐

Newborn life support

(Antenatal counselling)
Team briefing and equipment check

Preterm < 32 weeks

Place undried in plastic wrap + radiant heat

Inspired oxygen
28–31 weeks 21–30%
< 28 weeks 30%

If giving inflations, start with 25 cm H_2O

Acceptable pre-ductal SpO2	
2 min	65%
5 min	85%
10 min	90%

Birth
Delay cord clamping if possible

TICK ☐ Start clock / note time
Dry / wrap, stimulate, keep warm

TICK ☐ **Assess**
Colour, tone, breathing, heart rate

TICK ☐ **Ensure an open airway**
Preterm: consider CPAP

TICK ☐ **If gasping / not breathing**
- Give 5 inflations (30 cm H_2O) – start in air
- Apply PEEP 5–6 cm H_2O, if possible
- Apply SpO2 +/- ECG

TICK ☐ **Reassess**
If no increase in heart rate, look for chest movement

TICK ☐ **If the chest is not moving**
- Check mask, head and jaw position
- 2 person support
- Consider suction, laryngeal mask/tracheal tube
- Repeat inflation breaths
- Consider increasing the inflation pressure

TICK ☐ **Reassess**
If no increase in heart rate, look for chest movement

TICK ☐ Once chest is moving continue ventilation breaths

TICK ☐ **If heart rate is not detectable or < 60 min^{-1} after 30 seconds of ventilation**
- Synchronise 3 chest compressions to 1 ventilation
- Increase oxygen to 100%
- Consider intubation if not already done or laryngeal mask if not possible

TICK ☐ **Reassess heart rate and chest movement every 30 seconds**

TICK ☐ **If the heart rate remains not detectable or < 60 min^{-1}**
- Vascular access and drugs
- Consider other factors e.g. pneumothorax, hypovolaemia, congenital abnormality

TICK ☐ Update parents and debrief team
Complete records

APPROX 60 SECONDS

MAINTAIN TEMPERATURE

AT ALL TIMES ASK "IS HELP NEEDED"

TITRATE OXYGEN TO ACHIEVE TARGET SATURATIONS

Page 1

Version 2 - November 2021

jw02262 Neonatal Resuscitation documentation November 2021.indd 1 12/11/2021 09:33

Title: Resuscitation of the Newborn infant at birth
V: 5 Approved by: UHL Neonatal Governance Committee, Maternity Governance Committee & UHL
Next Review: May 2026
Trust PGC: May 2022
Trust Ref No: B35/2008

Time (mins)	Dry (D) Hat (H) Bag (B)	Inflation breaths	Ventilation breaths	Two person jaw thrust/ laryngeal mask	Suction	Oxygen (%)	Delivery room NCPAP	Intubation	IPPV (PIP/ PEEP)	Chest compressions	UVC / other access	Needle thoracentesis	Chest drain	Oxygen Saturation	Heart Rate
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
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16															
17															
18															
19															
20															
21															
22															
23															
24															
25															
Temperature at the end of stabilisation									Admission Temperature						

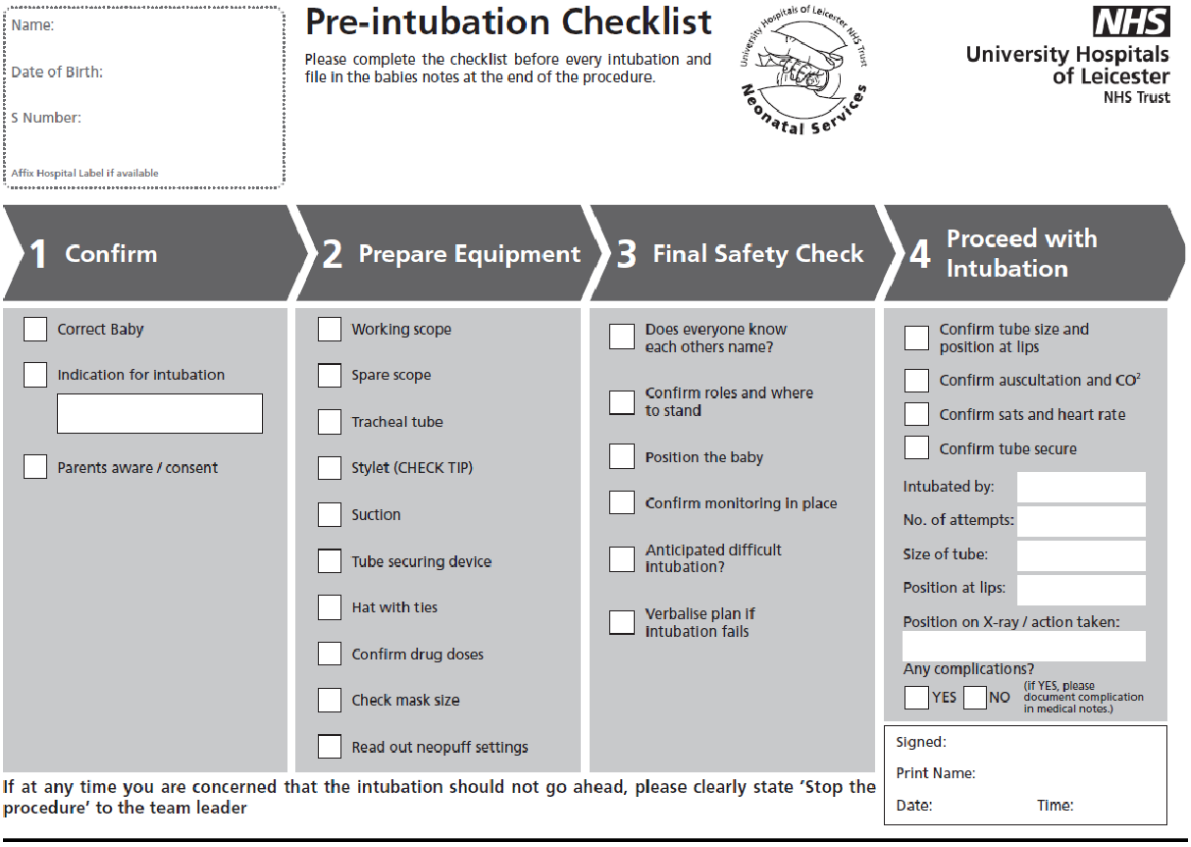
Drugs	Route	Dose	Tick	
Bicarbonate (4.2%)	IV/IO	2-4 ml/kg		
Adrenaline (1:10000)	IV/IO	0.2 ml/kg		
Dextrose (10%)	IV/IO	2.5 ml/kg		
Normal saline bolus	IV/IO	10 ml/kg		
Blood	IV/IO	10 ml/kg		
ETT Adrenaline (1:10000)	ETT	1 ml/kg		

Intubation Details	
ETT size	
ETT position	
Number of attempts	
Grade	

Curosurf	120 mg / 240 mg / ..... (circle)
Parents updated	YES / NO
Cord gases done / reviewed	YES / NO
Is there a need to send placenta	YES / NO
Admitted to NNU	YES / NO

ST 1-3		Consultant		Midwife	
ST 4+		Staff Nurse		Obstetrician / Anaesthetist	
Date:			Time:		

Appendix C - Intubation Checklist



Name:

Date of Birth:

S Number:

Affix Hospital Label if available

Pre-intubation Checklist

Please complete the checklist before every intubation and file in the babies notes at the end of the procedure.

University Hospitals of Leicester NHS Trust
Neonatal Services

NHS
University Hospitals of Leicester
NHS Trust

1 Confirm

- ☐ Correct Baby
- ☐ Indication for intubation
- ☐ Parents aware / consent

2 Prepare Equipment

- ☐ Working scope
- ☐ Spare scope
- ☐ Tracheal tube
- ☐ Stylet (CHECK TIP)
- ☐ Suction
- ☐ Tube securing device
- ☐ Hat with ties
- ☐ Confirm drug doses
- ☐ Check mask size
- ☐ Read out neopuff settings

3 Final Safety Check

- ☐ Does everyone know each others name?
- ☐ Confirm roles and where to stand
- ☐ Position the baby
- ☐ Confirm monitoring in place
- ☐ Anticipated difficult intubation?
- ☐ Verbalise plan if intubation fails

4 Proceed with Intubation

- ☐ Confirm tube size and position at lips
- ☐ Confirm auscultation and CO^2
- ☐ Confirm sats and heart rate
- ☐ Confirm tube secure

Intubated by:

No. of attempts:

Size of tube:

Position at lips:

Position on X-ray / action taken:

Any complications?

☐ YES ☐ NO (if YES, please document complication in medical notes.)

Signed:

Print Name:

Date: Time:

If at any time you are concerned that the intubation should not go ahead, please clearly state 'Stop the procedure' to the team leader

Appendix D- Resuscitation Debrief Record

Resuscitation Debrief Record

NHS
University Hospitals of Leicester
NHS Trust

Team present for debrief

Debrief led by:

What changes are recommended

-
-
-
-

What are the key events that happened during the resuscitation

-
-
-
-

What should have happened

-
-
-
-

Action plan

Completed by:

-
-
-
-

Datix needed?

Datix complete?

Please ensure team have had the opportunity to express their views and are appropriately supported with follow up discussions arranged if needed.

Please file in the folder kept in the consultant office at LRI / Doctors office at LGH. This form is not to be filed in the patient notes and is not intended to be part of the risk investigation process.