TRANSPORT INCUBATOR AND VENTILATOR - NEONATAL CLINICAL GUIDELINE.

1. Aim/Purpose of this Guideline

1.1. This guideline identifies the key equipment and testing requirements needed to ensure that the Neonatal Transport Incubator is safe and fit for use before and after any transfers take place.

1.2 The purpose of this document is to outline how to use the transport incubator, the importance of a regular systematic checking procedure and a working knowledge of the equipment to ensure safe and effective transfers.

1.3 This guideline will need to be acknowledged and followed by all staff that have any dealings with the transport incubator. This will include anyone who may be involved with moving the equipment around the hospital and outside of the hospital grounds.

2. The Guidance

2.1 Handling and using the incubator platform

The incubator platform is made of steel and therefore very heavy when fully loaded, Therefore, it should always be manoeuvred with at least two members of staff.

There are handles at each end of the stretcher for when it is moved. Please ensure the brakes are off before attempting to move the incubator.

The platform is equipped to provide intensive care for newborn infants and is configured to run with internal battery and bottled gas, or external power and external air and oxygen. The platform holds 4 size ‘E’ gas cylinders, 2 for Medical air and 2 for Oxygen.

There are a number of plug sockets (10 in total at either end of the incubator) which can be used when on mains or ambulance power supplies, however please ensure that the plug extension switches are on and a red light is on the switch. The energy converter has 2 leads, a red and black lead which needs to be hooked up to the ambulance in order to run off of the ambulances power supply (please see the transfer policy for more information on this).

2.2 Daily Checks

The transport incubator and all related equipment should be checked on a daily basis and before each use. The general hygiene of the incubator should be

maintained ensuring that it is clean and dust free. A separate checklist should be kept with the incubator which can be signed daily once checks are completed.

The following should be checked daily;
The incubator temperature is pre-set to 36°C and will heat to this temperature when on unless otherwise changed, please ensure this is correct in mains and battery mode and ensure the appropriate light is displayed on the front panel.

Check the power failure alarm – disconnect incubator from mains power and slide out battery tray, the power failure alarm should sound and controller light display.

The doors and portholes open and are not damaged in any way. The Iris port on the left end of the incubator is closed properly to avoid air leaks.

A humidity sponge is available for use

Check observation light is functional.

Ensure that there are a set of restraining straps, clean sheet is in place and appropriate bedding available.

The air filter should be changed every 3 months but should also be regularly checked for dirt build up and changed early if necessary. The date of last change should be documented on the filter.

Please refer to user manual for further information/troubleshooting. The Incubator should have a thorough clean with hot soapy water every month and after a transfer has taken place.

Any problems/damage/faults should be reported and the Nurse in Charge informed.

2.3 Fabian Ventilator

Fabian neonatal ventilator is an intensive care ventilator for premature babies and neonates. The ventilator can provide the following ventilation modes; IPPV, SIMV, SIPPV, PSV and CPAP.
It has an internal rechargeable battery which provides up to 2 hrs operation when no external electricity supply is available, therefore it must be plugged in at all times when external electricity is available in order to keep the battery fully charged.

A new complete disposable ventilator circuit should be connected at all times and the ventilators Exhalation block and Diaphragm (letters TOP facing outwards) in place, to ensure checks can then be carried out appropriately. A separate CPAP circuit should also be available for use.

The ventilator needs to have a basic check performed on a daily basis and before a transfer (please refer to the ventilator checklist), this includes calibrating the oxygen and flow sensors.

Cleaning- The whole ventilator should be cleaned with detergent wipes between uses, the ventilator tubing and flow sensor disposed. The exhalation block and membrane should be sent to CSSD and can be done so 25 times or until it is no longer intact.

2.4 Fisher Paykel Humidification Unit

The humidifier is used to warm and humidify gases delivered to patients requiring mechanical ventilation, positive pressure or breathing assistance.

The unit should be kept clean and dust free and be clamped onto the pole near to the ventilator at all times to ensure that a complete ventilator circuit can be maintained. Only bags of sterile water should be used with the humidification circuit.

The unit should have a new disposable set between every patient, the temperature probes and unit itself should be cleaned with warm soapy water between each use and on a regular basis. Whilst doing this the probes should also be checked for any damage and replaced if necessary to avoid injury or malfunction.

2.5 Laerdal Suction Unit (LSU)

The LSU is portable, electrically powered, medical suction equipment intended for field and transport use. It is intended for intermittent operation to remove secretions, blood or vomit from a patient's airway to allow ventilation. The machine should be kept on charge to allow optimum battery time when in use, the 4 battery lights will be lit when fully charged.

The machine has a disposable inner liner and tubing which should be new and in place for every patient or replaced when the canister is ¾ full. The canister and machine itself can be washed with warm soapy water between uses.

The machine integral test function should be performed on a daily basis. To do this the machine must be set to 500+ mmHG whilst holding the 'TEST' button, once the 2nd light on the battery bar has lit up, the suction catheter should be occluded until all 4 battery lights are alight and it returns to 1 light again, the machine should then be set back to 0 mmHg. If this all occurs the test is complete and the machine safe to use. Please refer to user manual for trouble shooting advice.

2.6 Propaq Encore Monitor

The monitor provides ECG, BP and saturation monitoring for the transport of any infant requiring observation. The monitor needs to be wiped clean with warm soapy water between uses and on a regular basis and all wires check for damage.

The monitor must be checked on a daily basis and ensured that it is on charge (a green light will be illuminated on the right hand side) and that all leads are present, clean and that a saturation wrap is present. The monitor should also be turned on to check functionality.

2.7 Tom Thumb Infant Resuscitator

The Tom Thumb resuscitator can deliver up to 15 litres per minute and has a dual flow meter so that infants can be resuscitated in air or variable amounts of oxygen. A pressure dial can be altered to provide a variable amount of PEEP as necessary and the visual pressure gauge displays this.

The resuscitator is compatible with single use ‘T piece’ circuits and the unit should be cleaned as per hospital policy using detergent wipes.

The resuscitator should be serviced every 12 months or if the gauge fails to read zero when not in use.

2.8 Alaris Intravenous Syringe Drivers

The transport unit is able to accommodate 2 Alaris syringe drivers clamped onto an adapted metal pole; these can then be plugged into the main bank of plugs. They must remain plugged in and on charge when not in use.

The pump can be used to deliver fluids and drugs via syringes above 5ml, using the relevant extension sets. Please ensure specific training has been received on general functions and alarms before using the driver in this setting.

2.9 Red and Yellow Transport bags

These bags should receive a full check for stock and expiry dates once a month and after they have been used. Once a check has been performed, a plastic cable tie with tag must be secured around the zip and dated and the relevant paperwork signed.

Please follow the appropriate checklist for equipment required within the bags.

3. Monitoring compliance and effectiveness

Element to be monitored	Key changes in practice
Lead	Paul Munyard. Consultant Paediatrician and Neonatologist.
Tool	Audit. To be included in the Neonatal Audit and Clinical audit Programme. Findings reported to the Child Health Directorate Audit and Neonatal Clinical Guidelines, Meetings
Frequency	As dictated by audit findings
Reporting arrangements	Child Health Directorate Audit and Neonatal Clinical Guidelines meetings
Acting on recommendations and Lead(s)	Paul Munyard. Consultant Paediatrician and Neonatologist.
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within 3 months. 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

4. Equality and Diversity

4.1 This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement.

4.2 Equality Impact Assessment
The initial Equality impact assessment screening form is at Appendix 2.

Appendix 1. Governance Information

Document Title	Use of the neonatal transport incubator and ventilator. Clinical guideline			
Date Issued/Approved:	12 May 2015			
Date Valid From:	07 July 2015			
Date Valid To:	07 July 2018			
Directorate / Department responsible (author/owner):	Jenna Julien. Staff nurse			
Contact details:	01872 252667			
Brief summary of contents	Document providing guidance on the use of the neonatal transport incubator and ventilator for internal or external patient transfers			
Suggested Keywords:	Neonatal. Transport incubator. Transfer.			
Target Audience	RCHT	PCH	CFT	KCCG
	✓			
Executive Director responsible for Policy:	Medical Director			
Date revised:	January 2015			
This document replaces (exact title of previous version):	New Document			
Approval route (names of committees)/consultation:	Neonatal Clinical Guidelines Group. Child Health Directorate Audit Consultant approval			
Divisional Manager confirming approval processes	Sheena Wallace			
Name and Post Title of additional signatories	Not Required			
Signature of Executive Director giving approval	{Original Copy Signed}			
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet & Intranet	✓	Intranet Only	
Document Library Folder/Sub Folder	Child Health. Neonatal. Clinical			

Links to key external standards	None
Related Documents:	Individual Instruction manuals
Training Need Identified?	In house training on incubator use.

Version Control Table

Date	Version No	Summary of Changes	Changes Made by *(Name and Job Title)*
10 Jun 10	V1.0	Initial Issue	
May 2015	V2.0	Document reviewed by author and approved by Neonatal Guidelines Group. Formatted	Author: Jenna Julien. Staff Nurse Formatter: Kim Smith. Staff Nurse

[Please complete all boxes and delete help notes in blue italics including this note]

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 on Document Production. 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

Name of the strategy / policy /proposal / service function to be assessed (hereafter referred to as *policy*) (Provide brief description): Transport Incubator and Ventilator. Neonatal Clinical Guideline	
Directorate and service area: Child Health Directorate. Neonatal	Is this a new or existing Policy? Existing
Name of individual completing assessment: Paul Munyard	Telephone: 01872 252667
1. Policy Aim* Who is the strategy / policy / proposal / service function aimed at?	This guideline is aimed at all staff responsible for using the neonatal transport incubator and ventilator.
2. Policy Objectives*	As above
3. Policy – intended Outcomes*	Audit
4. *How will you measure the outcome?	Audit
5. Who is intended to benefit from the policy?	All staff involved in the transfer of infants either internally or externally. Neonatal patients
6a) Is consultation required with the workforce, equality groups, local interest groups etc. around this policy? b) If yes, have these *groups been consulted? C). Please list any groups who have been consulted about this procedure.	No. Neonatal guideline group consultant approved guideline

7. The Impact
Please complete the following table.

Are there concerns that the policy **could** have differential impact on:

Equality Strands:	Yes	No	Rationale for Assessment / Existing Evidence
Age		**x**	

Sex (male, female, trans-gender / gender reassignment)		**x**	
Race / Ethnic communities /groups		**x**	
Disability – learning disability, physical disability, sensory impairment and mental health problems		**x**	
Religion / other beliefs		**x**	
Marriage and civil partnership		**x**	
Pregnancy and maternity		**x**	
Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian		**x**	

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 service redesign or development

8. Please indicate if a full equality analysis is recommended.		**No**

9. If you are not recommending a Full Impact assessment please explain why.
No area indicated

Signature of policy developer / lead manager / director Paul Munyard	Date of completion and submission 07:07:2015

Names and signatures of members carrying out the Screening Assessment	1. 2.	

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead, c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa, Truro, Cornwall, TR1 3HD

A summary of the results will be published on the Trust's web site.

Signed _____Kim smith_____

Date _____07:07:2015_____