

## Yorkshire and Humber Neonatal ODN Clinical Guideline

### Infection Control Practices on Neonatal Units within the Yorkshire and Humber Neonatal ODN

**Author: Network Infection Control Group**

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This clinical guideline has been developed to ensure appropriate evidence based standards of care throughout the Yorkshire and Humber Neonatal ODN. The appropriate use and interpretation of this guideline in providing clinical care remains the responsibility of the individual clinician. If there is any doubt discuss with a senior colleague.

#### A. Summary page

There are 3 levels of infection control- red, amber and green. See full guideline for full details.

Green (infants with no known colonising organisms of concern)

These require standard infection control practices i.e. universal precautions

AMBER	RED	RED*
Moderate risk	High risk	Airborne pathogens
Barrier precautions	Barrier precautions	Barrier precautions
Nurse in incubator, can come out for breast feeding/kangaroo care	Nurse in isolation room with door closed <b>or</b> some organisms nurse in incubator with additional precautions (unit specific)	Nurse in incubator. Cannot come out for breast feeds/Kangaroo care or nurse in isolation room with door closed.
Amp C producing organisms (e.g. enterobacter)	Admission from outside neonatal network until reassured by screening swabs	Group A Streptococcus (until 48 hours treatment completed)
CPE low risk area	CPE colonisation	RSV/enterovirus/respiratory viruses (e.g. Influenza, SARS-CoV2)
CMV infection	CPE high risk area	Varicella virus infection (in baby)
HSV if skin/mouth lesions	Extended spectrum Beta lactamase producing organisms (ESBL)	
MRSA in parent	MRSA colonisation	
Listeria sp	PVL producing Staph aureus	
Other multi-resistant organisms	Readmission from home pending risk assessment regarding respiratory viruses/other screening	
Rotavirus	Resistant Pseudomonas aeruginosa (to 2 or more antibiotic classes)	
	VRE/GRE colonisation	
	Serratia sp	
Staphylococcus capitis		

## **B. Full guideline**

Control of infection is a crucial part of neonatal intensive care. The patients are more prone to infection and infections will contribute to their long term morbidity and mortality.

Hand hygiene is the single most important factor in minimising the transmission of organisms.

### **2. Aim**

To help standardise and ensure safe practice across the neonatal ODN while maintaining patient flow and therefore the function of the ODN.

To create pathway for communication of infection control concerns across the Y&H neonatal ODN.

### **3. Areas outside remit if applicable**

Management of infants infected with specific organisms

### **4. Core guideline**

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### **4.1 General Infection control measures**

Units should have local policies regarding the following:

- Hand hygiene (the 5 moments of hand hygiene, see appendix 1)<sup>1</sup>
- Care bundles for insertion and maintenance of central lines with early removal<sup>2</sup>
- Avoidance of antacids<sup>3</sup>
- Use of antifungals in high risk infants<sup>4</sup>
- Skin care bundle<sup>5</sup>
- Early use of expressed breast milk with oral/buccal use<sup>6</sup>
- Minimising use of antibiotics and use of narrowest spectrum<sup>7</sup>
- Environmental cleaning policies, awareness of high risk areas for cross contamination (e.g. milk kitchen) + regular audits to monitor compliance<sup>8</sup>
- Water outlet flushing<sup>9</sup>
- Cleaning of multiple use and shared equipment with suitable bactericidal/fungicidal agent<sup>8</sup>

Visitors, families and new staff (including visiting professionals) should be introduced to the policies and assisted in adhering to them.

## 4.2 Baby zone

Creation of the “baby zone” (also known as) “baby’s world” or “baby’s bubble” helps protect the infant further.

The area includes the infant’s incubator, monitor, observation chart and surrounding area (see photo for example of area covered). By decontaminating hands before and after entering this “zone” the spread of organisms is reduced. Note this is in addition to undertaking hand decontamination prior to touching the infant within their incubator.

There should be easy access to hand-gel / gloves within each area.

The area within the “baby zone” should be as clutter free as possible to allow ease of cleaning. General / shared items should not enter this area without adequate decontamination before and afterwards.

Ideally access to the “baby zone” should be restricted to essential personnel, i.e. minimise “passing traffic”

See appendix 2 for parent information leaflet/poster example.



*With Acknowledgement to Bradford Royal Infirmary Neonatal unit for providing the above picture.*

## 4.3 Communication regarding infection concerns

To aid the flow of infants within the neonatal network while maintaining safety units should notify the network team and Embrace if they have concerns regarding an infection/colonisation “outbreak”. This includes;

- Any infant colonised or infected with CPE
- 2 or more infants with the same pathogenic organism within a 2 week period (i.e. excluding coagulase negative staphylococcus unless unusual antibiotic resistance pattern seen).
- Any local infection control concern regarding an outbreak

Notification should be via the network email address [scn-tr.y\\_hneocots@nhs.net](mailto:scn-tr.y_hneocots@nhs.net)

The network team may then contact units for further details/cascade information depending on the infection/level of concern.

Embrace should be notified if after transfer any infant subsequently develops an infection/is colonised with an “organism of concern” to allow them to deep clean equipment and undertake contact tracing if necessary.

For infants known to be infected or colonised with an organism of concern, full information should be documented clearly within the “Badger” transfer letter. Embrace must also notified to allow the receiving unit to be aware and for Embrace to initiate the correct cleaning protocols.

Although it is important receiving units are fully aware of babies requiring “Red” or “Amber” measures this should not usually delay or prevent transfer. Adequate infection control can be achieved for amber, and some red via isolation within incubators and meticulous attention to the infection control practices outlined in this guidance

#### **4.4 Screening**

All infants should be screened for MRSA on admission and weekly.

Transfers from outside the Y&H neonatal network should have CPE swabs (see section 4.8).

Other swabs may be performed based on local advice/practice.

#### **4.5 Levels of concern;**

There are 3 levels of infection concern;

##### **4.5.1 Green**

This is for infants with no known colonising organisms of concern. It must be remembered that there may be organisms that have not yet been identified and therefore hand hygiene and universal precautions must be maintained.

##### **4.5.2 Amber**

This is for infants with known colonisation of organisms of moderate concern (see 4.6 for list).

While maintaining excellent hand hygiene should suffice as these pathogens are not airborne, the use of barrier precautions will help raise awareness and reduce the risk of spread of these organisms.

Some units may choose to treat all infants transferred into their trust as amber, despite no known concerning organisms. In this situation, an incubator will act as sufficient isolation- these infants do not require isolation within a side room. All laboratories within the network meet national standards therefore negative swab results from referring hospitals can be considered valid.

Amber precautions entail;

- Hand decontamination prior to touching anything in the “baby zone”
- Hand decontamination to elbow prior to touching patient
- Use of aprons and gloves when touching patient
- Hand decontamination after touching patient/baby zone
- Consider location in nursery which will minimise passing traffic
- Avoid moving patient around nursery where possible.

Notification should be displayed to alert staff/visitors of a baby within this category (see appendix 3 for example).

### **4.5.3 Red**

This is for infants colonised with high risk organisms. These are either multi-resistant organisms or those at high risk of spread and causing significant harm.

Some of these organisms, marked \* are airborne, therefore the baby should only be taken out of their incubator for breast feeds/kangaroo care if they are in an isolation room with the door closed.

Red precautions entail

- Isolation of baby in incubator or isolation room with closed door (depending on organism/local unit policy).
- Hand decontamination prior to touching anything in the “baby zone”
- Hand decontamination to elbow prior to touching patient  
Use of aprons/gowns and gloves when touching patient
- Consider use of FFP3 Mask and visor for respiratory pathogen’s if aerosol generating procedures
- Hand decontamination after touching patient/baby zone
- If there are a number of patients with the same organism, it may be appropriate to cohort nurse them together.
- Individual trolley with aprons/gowns /gloves/hand-gel outside isolation room / patient area.
- For infants with organisms marked \* (i.e. those at risk of airborne spread) to remain in their incubator or within an isolation room with the door closed

For infants being maintained within an incubator within the main nursery;

- Consider location in nursery which will minimize passing traffic
- Avoid moving patient around nursery where possible.

Notification should be displayed to prompt staff of a baby within this category (see appendix 3 for example).

## 4.6 Organisms

Note this list is not exhaustive and further advice may be required from the infection control team within trusts.

Green (infants with no known colonising organisms of concern)

These require standard infection control practices i.e. universal precautions

AMBER	RED	RED*
Moderate risk	High risk	Airborne pathogens
Barrier precautions	Barrier precautions	Barrier precautions
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CPE low risk area	CPE colonisation	RSV/enterovirus/respiratory viruses (e.g. Influenza, SARS-CoV2)
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Other multi-resistant organisms	Readmission from home pending risk assessment regarding respiratory viruses/other screening	
Rotavirus	Resistant Pseudomonas aeruginosa (to 2 or more antibiotic classes)	
	VRE/GRE colonisation	
	Serratia sp	
Staphylococcus Capitis (follow national guidance 2021)		

ESBL- there is a variety of resistance patterns seen within this category and it may be appropriate to “down grade” these to amber on local microbiology advice.

Units may decide to “stepdown” babies who were colonised with MRSA but who have had adequate decolonisation treatment and a sufficient number of negative swabs following this. This should be agreed locally.

Babies colonised with multi-resistant Gram negative organisms (CPE, ESBL and others) cannot be reliably decolonized and should remain in the same category for the duration of their neonatal stay.

Communicable illness within the infant's family need discussion with local infection control/microbiology teams (e.g. chicken pox, pulmonary TB, C difficile, respiratory viruses, gastroenteritis).

#### **4.7 MRSA in parents**

Parents colonised with MRSA can be viewed in the same way as "visitors" within a trust i.e. encouraged to observe careful hand hygiene for the benefit of both the neonatal unit as a whole but also their own infant who is at increased risk of obtaining MRSA colonisation throughout their stay on NNU.

Consider decolonizing parents (consult local infection control for further advice).

Parents with historical MRSA may be treated as "green" category; other local policies may deem them to be of "amber" category throughout their stay.

#### **4.8 Carbapenemase Producing Enterbacteriales (CPE)<sup>10</sup>**

These are gram negative organisms known to be resistant to carbapenemases (meropenem).

Currently the Yorkshire and Humber Neonatal ODN has no neonatal units that are endemic for these organisms, therefore transfers from units within the network can be viewed as coming from a low risk area (amber). If this situation changes, units will be notified via the network (see communication section).

It may be reasonable to request multiple negative CPE swabs if a baby is admitted from a unit with known CPE colonisation prior to transfer (this does not currently involve Y&H).

Babies who have been transferred from a high risk area or there is maternal colonization can be moved to "green" category once swabs for CPE deemed negative.

Infant's positive for CPE will be deemed red for their entire neonatal unit stay.

#### **4.9 SARS Co-V2**

This is a respiratory pathogen but not thought to cause significant neonatal illness. Infection control practices required vary depending on national and local prevalence. Follow national neonatal guidance (from RCPCH and BAPM: <https://www.bapm.org/pages/182-perinatal-covid-19-resources> <https://www.rcpch.ac.uk/resources/covid-19-guidance-paediatric-services> regarding isolation and PPE requirements when caring for babies born to infected mothers.

#### **4.10 Serratia sp**

This has recently been the cause of outbreaks in Y&H neonatal units and therefore it is prudent to consider these organisms "red".

#### **4.11 Staphylococcus capitis**

A type of coagulase negative staphylococcus that has been reported nationally as causing outbreaks in neonatal units. Further information is expected, but consider these organisms to be "Amber". Please follow national guidance when it is published.





#### 4.12 Readmission from home

In some instances it may be necessary to readmit a baby to the neonatal unit after discharge home. This should be minimised wherever possible due to the added risk of community infections, particularly respiratory viruses. These infants should be categorised as “red” until appropriate screening has been undertaken and is reassuring.

## 5.0 References

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1. Appendix 1- Leeds teaching hospitals neonatal unit
  2. Appendix 2 WHO
  3. Appendix 3- Jessop Wing Neonatal unit



## Acknowledgment to the Neonatal Infection Control Group

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Karen Mckie Sister Doncaster and Bassetlaw Teaching Hospitals

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"With circulation and contributions from all neonatal network hospitals and infection control teams in the Yorkshire and Humber Network".

## Baby's Bubble

### What is it?

Baby's Bubble is an invisible barrier around each babies space that ensures the baby is within a safe and clean space. This helps to prevent infection and protects your baby. This bubble includes everything in and around your baby's space including your baby's equipment and paper work.

### What can you as parents do to help?

- Always wash your hands with soap and water when you enter the 'bubble'
- Take outside coats off and leave them in the lockers provided
- Ensure all of your visitors wash their hands with soap and water
- Don't be afraid to challenge any member of staff if they haven't washed or gelled their hands appropriately

### Why is it so important to protect your baby's bubble?

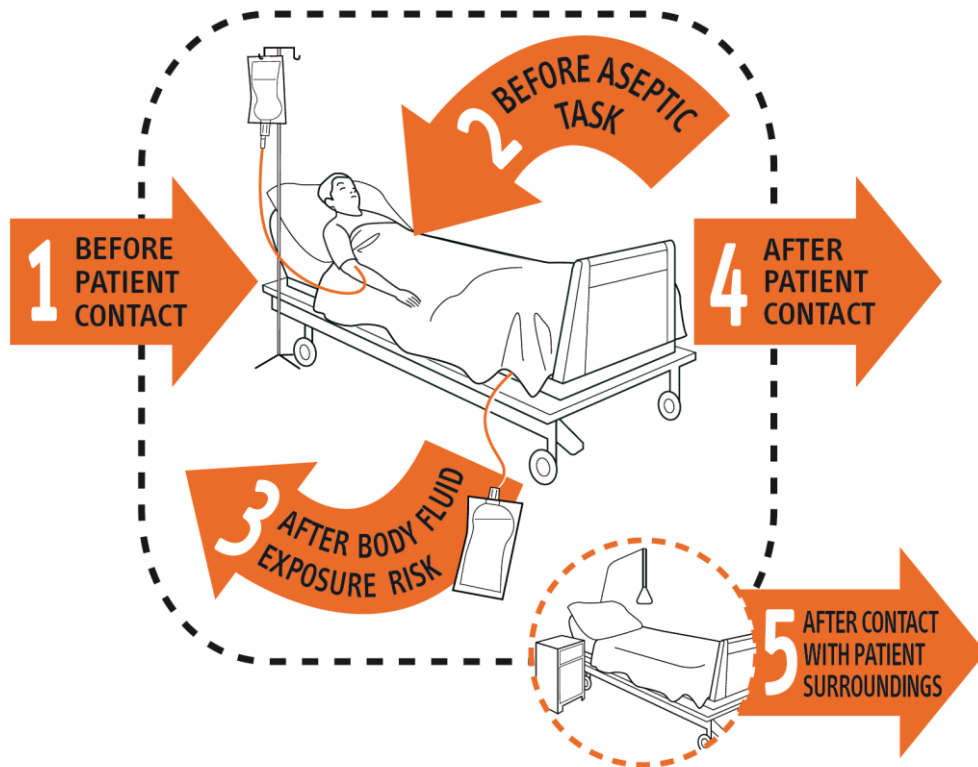
- Babies born too early and those who are sick are very fragile and vulnerable to infection
- Washing your hands effectively helps to prevent the spread of infection
- Babies who acquire infections have longer stays in hospital and need more antibiotics



*With Acknowledgement to Leeds Teaching Hospitals Neonatal unit for providing the above poster.*

# Your 5 moments for HAND HYGIENE

Design: macdonaldgill network



<b>1</b> BEFORE PATIENT CONTACT	<b>WHEN?</b> Clean your hands before touching a patient when approaching him or her <b>WHY?</b> To protect the patient against harmful germs carried on your hands
<b>2</b> BEFORE AN ASEPTIC TASK	<b>WHEN?</b> Clean your hands immediately before any aseptic task <b>WHY?</b> To protect the patient against harmful germs, including the patient's own germs, entering his or her body
<b>3</b> AFTER BODY FLUID EXPOSURE RISK	<b>WHEN?</b> Clean your hands immediately after an exposure risk to body fluids (and after glove removal) <b>WHY?</b> To protect yourself and the health-care environment from harmful patient germs
<b>4</b> AFTER PATIENT CONTACT	<b>WHEN?</b> Clean your hands after touching a patient and his or her immediate surroundings when leaving <b>WHY?</b> To protect yourself and the health-care environment from harmful patient germs
<b>5</b> AFTER CONTACT WITH PATIENT SURROUNDINGS	<b>WHEN?</b> Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving - even without touching the patient <b>WHY?</b> To protect yourself and the health-care environment from harmful patient germs



WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.



October 2006, version 1.

I am currently needing  
some extra care



Please contact my  
nurse **before**  
opening my  
incubator or  
touching my  
charts/equipment