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Review Date: April 2021
Review Lead: Lead Infection, Prevention and Control Nurse

Calderdale and Huddersfield
NHS Foundation Trust

Section J - Management of Patients with Multi Resistant Organisms:

Vancomycin-Resistant Enterococci (VRE)
Penicillin-Resistant Pneumococci (PRP)
Extended Spectrum Beta-Lactamase producing micro-organisms (ESBL)
Candida Auris
Staphylococcus Capitis

Version 5

Important: This document can only be considered valid when viewed on the Trust's Intranet. If this document has been printed or saved to another location, you must check that the version number on your copy matches that of the document online.

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Document Summary Table		
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Does this document map to other Regulator requirements?	
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Document Version Control	
Version 5	The policy has been adjusted to reflect changes due to EPR. The Candida *auris* content has been developed to provide more comprehensive information and guidance. Staphylococcus capitis information has been added CPE has been removed from this policy and a new policy for CPE produced.
Version 4	Candida auris has been added to the policy.
Version 3	Isolation details for VRE and ESBLs have been added to the policy.
Version 2	Minor changes have been made to Version 2 of this policy, including and Inter-transfer form (Appendix 7) and a revised enhanced surveillance data collection sheet for CPE in Yorkshire and Humber.
Version 1	This is a new policy focusing on the management of multi resistant organisms including: Carbapenemase-Producing Enterobacteriaceae (CPE) Vancomycin-Resistant Enterococci (VRE) Penicillin-Resistant Pneumococci (PRP) Extended Spectrum Beta-Lactamase producing micro-organisms (ESBLs) Candida auris

Contents

1. Introduction

The identification and management of patients who are colonised with or have an infection caused by a multi-resistant organism other than MRSA (see Section T, Infection Control policies and guidelines) will be outlined in this policy and include:

- Vancomycin-Resistant Enterococci (VRE)
- Extended-spectrum Beta-Lactamase producing micro-organisms (ESBLs)
- Penicillin- Resistant Pneumococci PRP)
- Candida auris

1.1 Key Points

- What these organisms are
- Who, when and how to screen for these organisms
- Treatment and management

2. Purpose

Public Health England (PHE, 2015) acknowledge antimicrobial resistance as an increasing concern in the UK, with a rapid increase in the incidence of infection and colonisation by multi-drug resistant Carbapenemase-Producing organisms and Candida auris. It is also considered there is a high risk of this problem becoming widespread unless there is early and decisive action taken by trusts (PHE 2014, 2017). As part of the response to this problem, the English Surveillance Programme for Antimicrobial Utilisation and Resistance (ESPAUR) is developing and improving surveillance systems to measure antibiotic use and antibiotic resistance as well as measuring the impact of resistance of the safety of patients and the general public (PHE 2014).

The purpose of this policy is to ensure staff have access to information, consistent with national guidance regarding the screening, surveillance and management of patients who may be colonised or have an infection caused by any of the above multi-resistant organisms.

3. Scope

This policy applies to all health care workers working within the Trust and should be used in conjunction with other relevant policies and guidelines, including the following policies from **'Infection Control Policies & Guidelines'**.

- Standard precautions: Section C
- Decontamination and Disinfection policy: Section F
- Hand hygiene policy: Section H
- Isolation policy: Section K
- Specimen policy: Section R
- Bed management and movement of patients policy: Section W
- Antibiotic guidelines: **Medicines Code**

4. Duties (Roles and Responsibilities)

Chief Executive:
Has overall responsibility for ensuring there are effective arrangements for Infection Prevention and Control (IPC) within the Trust to meet all statutory requirements.

Director of Infection Prevention & Control (DIPC):
Will provide assurance to the Trust Board that effective systems are in place to manage the stated multi-resistant organisms.

The Infection Prevention & Control Team (IPCT):
Is responsible for undertaking surveillance of multi-resistant organisms and will provide expert advice on relevant infection prevention and control (IPC) measures; the Microbiologists will advise regarding the clinical management of cases.

The Infection Control Doctor (ICD)/DIPC:
Will initiate an outbreak meeting in the event of an outbreak or cluster of cases.

The microbiology laboratory:
Will ensure screening and isolation of these multi-resistant organisms is in accordance with National Standard methods.

All Staff:
All staff that have patient contact are required to adhere to this policy.

5. Definitions:

Candida auris: Candida *auris* is a multi – resistant fungus that has recently emerged as a global threat. It is highly transmittable within healthcare settings and outbreaks due to Candida auris have been reported from hospitals around the world. The organism is capable of causing invasive infections in hospitalised patients which are difficult to treat.

Carbapenemases: enzymes that destroy carbapenems e.g. meropenem, ertapenem, imipenem.

Close contact: a person living in the same house, sharing the same sleeping space (room or hospital bay), or a sexual partner.

Colonisation: the presence of micro-organisms living harmlessly on the skin or within the bowel and causing no signs or symptoms of infection.

Enterobacteriaceae: a family of Gram negative bacteria commonly found in the human gastrointestinal tract. Sometimes, these bacteria can spread outside the gut and have the potential to cause serious infections such as urinary tract infections, bloodstream infections, wound infections and pneumonia. They include *E. coli* and *Klebsiella* spp. They are often referred to as coliforms.

Extended Spectrum Beta-lactamase (ESBL):
An enzyme capable of conferring resistance to most Beta-lactam antibiotics, including penicillins and cephalosporins. Carbapenems usually retain activity against ESBLs.

Glycopeptide-resistant enterococci (GRE) / Vancomycin resistant enterococci (VRE) are organisms that have developed resistance to the class of antibiotics known as glycopeptides, such as vancomycin and teicoplanin. They are commonly found in the gastro-intestinal tract, in urine and faeces specimens and can also be found in the environment: in water, soil, on the hands of healthcare workers (HCWs) and equipment used in healthcare settings. There are very limited antibiotic options available to treat them.

Penicillin Resistant Pneumococci (PRP): *Streptococcus pneumoniae*, also known as the pneumococcus is a bacterium that can be found in the noses and throats of healthy children and adults, usually without causing any harm. It is the most common cause of community acquired bacterial respiratory tract infections. However, there is an increasing prevalence of resistance to penicillin amongst pneumococci, particularly in Spain, Romania and Bulgaria.

Source isolation is the physical separation of one patient from another in order to prevent spread of infection.

6. IPC Management – VRE screen positive patients or awaiting results

Source Isolation: Side room isolation precautions are required (with en-suite facilities), door closure and a standard precaution sign displayed on the door for the duration of hospitalisation or until screening results are known. If the side room has pressure facilities, this must be in negative pressure, unless neutropenic, when a neutral pressure room is advised. Fans are not advised within the isolation room. Only designated staff involved in the patient's care should access the isolation room.

VRE Guidance: All patients who are found to be positive for VRE must have a daily checklist completed by the nurse in charge of an area / matron, including weekly joint completion with an IPCN. Refer to appendix 9.

Hand Hygiene: To prevent the risk of bacterial cross transmission, strict adherence to the hand hygiene policy is advised. Alcohol gel is also effective and can be used if hands are not visibly soiled.

Patients should be advised about the need for a high standard of hand hygiene, after using the toilet, before mealtime, or handling continence products e.g. pads, urinary catheters and equipment. and especially if they develop loose stools or diarrhoea. Assistance must be provided to enable this.

Personal Protective Equipment (PPE): All staff that have direct contact with the patient, their immediate environment or blood / body fluids must wear single-use plastic aprons and gloves. PPE must be removed and discarded after each use and before leaving the room, with the exception of removing items to the sluice. In such

instances, be aware of contact points that may become contaminated, and will require cleaning following removal of PPE. Where any part of the uniform, not protected by a plastic apron, is expected to come into contact with the patient, a long sleeve thumb loop gown is required e.g when assisting movement for a dependant patient.

Linen: All linen must be considered infectious and managed in accordance with CHFT linen policy.

Waste Management: All isolation rooms must have a domestic bin and an orange infectious waste bin, in accordance with CHFT waste policy.

ANTT: Scrupulous ANTT and infection prevention and control, practices are particularly important when using and caring for any invasive medical device such as intravenous lines, urinary catheters, enteral feeding equipment, colostomy / ileostomy to ensure optimum patient safety. Remove any devices that are no longer required**.**

Cleaning/Decontamination

Patient Environment: Scrupulous cleaning and disinfection of all surfaces is required. Cleaning services must be informed that the patient's room requires thorough cleaning with a chlorine-based disinfectant (such as Tristal) twice daily paying particular attention to those that may have had patient or staff hand contact e.g. door handles, touch plates, light switches.

A RED clean is required on patient transfer/discharge – this includes a full terminal clean with Tristal followed by HPV room decontamination.

Patient Equipment: All the equipment and room furniture must be decontaminated daily. Any equipment required for patient management should be single patient use only or dedicated to that patient only and cleaned thoroughly after use.
Commodes must be decontaminated **after every use with** chlorine-based disinfectant, for example Tristel.
Blood pressure cuffs should be single-patient use only
Endoscopes - there are no extra decontamination requirements for endoscopes above the usual organisational procedures. Any attached cameras / equipment which cannot be steam sterilised, should be protected using a single-use covering and thoroughly chemically disinfected between patients after removal.
Single use items - keep minimal stock in the isolation room to avoid contamination; otherwise these would need discarding ie unused wrapped single-use. Single use items such as cleansing foam must be disposed on patient discharge.
Mattresses - conventional mattresses should be checked by unzipping the cover to check for breaches; covers must be cleaned and disinfected. If any breaches are apparent, the mattress must be condemned. Refer to the intranet for specialist mattress cleaning:

Clinical investigations: Patients with VRE can undergo departmental investigations, provided the department has been informed in advance. It is recommended that patients are seen last on the list where possible **(**unless clinical need is a priority**)** and

are dealt with promptly to minimise delay within the department. Decontamination of all equipment should be undertaken with Tristel.

Transfers to other wards or health settings: transfers can occur **only if clinical need dictates.** The receiving area **must** be informed in advance of the VRE status to ensure that the appropriate facilities are available and the required precautions are applied. Movement for non-clinical reasons is not advised.

In conjunction with full discharge / transfer planning, a transfer form (Appendix 8) requires completion to notify of an individual carrying or infected with VRE or other multidrug-resistant organisms.

Transporting by Hospital Transport: If clinically well, patients with VRE can be transported with other patients as long as any open wounds are covered, they are continent of urine and faeces and the ambulance crew maintains standard infection control precautions

Visitors: are not required to wear PPE unless involved in the patient's personal care. Decontaminate of hands is required immediately prior to leaving an isolation room and are advised not to wander around the ward or visit other patients. A contact advisory leaflet is available in appendix 7.

Outpatients: Known VRE positive patients should be planned at the end of the clinic list if possible, to enable thorough environmental cleaning to be undertaken following the appointment. For all patients - If admission is being planned, the risk assessment questions (page 7) must be completed and the receiving ward/department notified so that isolation precautions and screening can be initiated on admission.

7. Communication

Communication is vital and required when a suspected/confirmed case is identified: This includes communication with:

- The patient
- Microbiologists/IPCT
- Clinical team and nursing staff (including visiting staff)
- Laboratory personnel
- The patient's GP plus any other relevant care provider
- Cleaning services
- Clinical departments as required.
- PHE (appendix 4)

IPC will also add an infection risk alert to the patient's EPR

8. Vancomycin-resistant Enterococci (VRE)

VRE (may also be referred to as Glycopeptide-resistant enterococci) and have become a problem in healthcare premises in many parts of the world, particularly in

larger hospitals where the glycopeptides antibiotics (vancomycin, teicolplanin) have been heavily used. Reporting of all cases of VRE/GRE is mandatory in England and Wales. The term VRE, will be used in the remainder of this document.

Further information on VRE is available prom Public Health England at: https://www.gov.uk/guidance/enterococcus-species-and-glycopeptide-resistant-enterococci-gre

Transmission: Within a healthcare setting, this can be by direct or indirect contact i.e. by the hands of HCWs which may not have been adequately decontaminated following contact with an affected patient, their immediate environment or equipment.

Screening: There is currently no programme for systematic routine screening for VRE, however, there may be a need to screen patients admitted from other hospitals where VRE is endemic or there is an on-going outbreak. This will be considered by the IPCT on a case-by-case basis.

Decolonisation of colonised patients: The principal site of colonisation with VRE is in the gut. Although attempts have been made to eradicate gastrointestinal carriage using non-absorbable agents, evidence is inconclusive and decolonisation of patients is not currently recommended.

Prophylaxis or surgical procedures: Patients colonised / infected with VRE may require prophylaxis with antimicrobial agents active against the organisms prior to some surgical procedures, particularly those which involve the insertion of prosthetic devices or materials. **Please liaise with a Consultant Microbiologist for advice.**

IPC Management: Refer to page 11 for generic IPC management.

Extended-spectrum Beta-lactamase producing micro-organisms (ESBLs)

What are ESBLs?
ESBLs are one of a group of enzymes produced by certain bacteria, most commonly *Escherichia coli* and *Klebsiella* species, which are also referred to as coliforms. These enzymes break down antibiotics belonging to the beta-lactam group, making them ineffective. Bacteria that produce ESBLs are resistant to all 'beta-lactam' antibiotics e.g. Penicillins, Co-amoxiclav and Cephalosporins. These bacteria are also commonly resistant to other non beta-lactam antibiotics e.g. Trimethoprim, Ciprofloxacin and Gentamicin (Health Protection Agency (HPA) 2014).

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Background and risk factors:
ESBLs were first described in the mid1980s and mostly found in hospital patients. However, since 2000, they have been increasingly found in patients in the community with no previous links with hospital (Woodford et al, 2004) and in patients who have been hospitalised abroad.

The following are risk factors for infection with ESBL:

- Previous history of ESBL colonisation or infection
- Repeated courses of antibiotics particularly for urinary tract infections
- Recent broad spectrum antibiotics such as Cephalosporins or Quinolones
- Previous hospitalisation particularly involving specialist or intensive care
- Contact with areas of the world where there is a higher prevalence of ESBL organisms (e.g. Indian sub-continent, Southern Europe)
- Presence of a device that breaches the skins normal line of defense i.e. urinary catheters and intravenous cannulae (HPA 2014)

Screening: There is currently no programme for systematic routine screening.

Transmission: It is thought ESBLs are mostly spread person to person by faecal contamination of the hands (including from the hands of health care workers) or transfer from an environmental source or contaminated equipment (Bloomfield et al 2005).

Treatment: If the patient is colonised with the bacteria and does not display any signs/symptoms of infection, it is unlikely that s/he will require antibiotic treatment. However, if signs/symptoms of infection are present, antibiotic treatment should be considered, with Microbiologist involvement as required.

IPC Management: Refer to page 11 for generic IPC management with the exception of cleaning where the patient's room requires thorough cleaning with a chlorine-based disinfectant (such as Tristel) twice daily paying particular attention to those that may have had patient or staff hand contact e.g. door handles, touch plates, light switches, and an AMBER clean on patient transfer/discharge.

Patient Information: A patient information leaflet is available on the intranet in the patient leaflet repository.

9. Penicillin-resistant Pneumococci (PRP)

Streptococcus pneumoniae (bacteria also known as pneumococci) commonly colonise the human nasopharynx, especially in young children. Transmission occurs when there is extensive close contact with cases or carriers and is usually by droplet spread although it may also be via direct oral contact or by contact with an article soiled by respiratory discharges. In the hospital environment, spread is usually limited to patients in the next one to two beds.

The risk of infection is higher in those with splenic dysfunction (including sickle cell and coeliac disease) and immunodeficiency e.g. due to chemotherapy, diabetes and HIV (Hawker, p 190).

The following procedures are considered likely to be aerosol generating procedures (AGP's) that are capable of transmitting respiratory pathogens when undertaken on patients with a respiratory tract infection (RTI):

- Cardiopulmonary resuscitation
- Bronchoscopy
- Surgery and post mortem procedures in which high-speed devices are used
- Non-invasive ventilation (NIV) e.g. Bilevel Positive Airway Pressure Ventilation (BiPAP) and Continuous Positive Airway Pressure (CPAP)
- High Frequency Oscillatory Ventilation (HFOV)
- Induction of sputum

Other procedures / equipment may generate aerosol from material other than patients' secretions but are **NOT** considered to represent a significant infectious risk. These include:

- Administration of pressurised humidified oxygen
- Administration of medication via nebulisation

Treatment - Appropriate antibiotic therapy is required according to the patient's clinical condition and liaison with Consultant Microbiologist as necessary.

10. IPC Management (PRP)

Source Isolation - Side room isolation with respiratory isolation precautions until 48 hours of appropriate antibiotics have been given. Door closure is essential and a respiratory precaution sign should be displayed on the door. Ensure tissues are provided and that these are safely disposed of into the hazardous (orange) waste stream.

Hand Hygiene – To prevent the risk of bacterial cross transmission, strict adherence to the hand hygiene policy is advised. Alcohol gel is also effective and can be used if hands are not visibly soiled.

Personal Protective Equipment:
FFP3 respirator, fluid repellent gown, gloves and eye protection e.g. goggles or full face visor should be worn for all AGPs. Any HCW required to wear an FFP3 respirator should have undertaken FFP3 respirator fit testing prior to using it.

Aerosol Generating Procedures:
AGPs should only be carried out when essential. Where possible, they should be carried out in well-ventilated single rooms with the doors closed. Only HCWs needed to undertake the procedure should be present. Staff undertaking the procedure and those within the room should wear PPE as specified above.

Linen:
All linen must be considered infectious and managed in accordance with CHFT linen policy.

Waste Management:
All isolation rooms must have a domestic bin and an orange infectious waste bin, in accordance with CHFT waste policy.

Cleaning/Decontamination:
Patient Environment: Scrupulous cleaning and disinfection of all surfaces is required. Cleaning services must be informed the patient's room requires thorough cleaning with a chlorine-based disinfectant (such as Tristel) twice daily paying particular attention to those that may have had patient or staff hand contact e.g. door handles, touch plates, light switches.
An AMBER clean with Tristel is required on patient transfer/discharge.
N.B. If the patient has been discharged from a bed space within a ward/bay area, a terminal clean of the bed space with a chlorine-releasing agent must be carried out, including a curtain change.
Patient Equipment: All the equipment and room furniture must be decontaminated daily. Any equipment required for patient management should be single patient use only or dedicated to that patient only and cleaned thoroughly after use.

Visitor information:
- Hand hygiene prior to entry and after leaving the isolation room is required
- Cuts / grazes should be covered with a waterproof dressing
- Gloves and aprons are not required unless visitors are providing care such as help with washing and dressing
- Visitors to patients ventilated with NIV or HFOV may be exposed to potentially infectious aerosols. The number of visitors should be limited where possible; they should be informed of the risks and offered PPE as recommended for staff

11. Candida auris (C. auris)

PHE (2017) have recently produced guidance for the laboratory investigation, management and infection prevention and control for cases of Candida auris via link below:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/637685/Updated_Candida_auris_Guidance_v2.pdf

What is Candida auris:
Candida are a large family of fungi that lives on human skin and inside the body. Candida auris is a species of candida; it is less common than other types of Candida but highly transmittable and resistant to treatment (PHE 2017).

Background:
PHE (2017) report that Candida *auris* is a recently identified *Candida* species that has been associated with infection and outbreaks in healthcare settings on five continents. It has been isolated from a range of body sites, including skin (very common), urogenital tract (common), and respiratory tract (occasional), and resulted in invasive infections, such as candidaemia, pericarditis, urinary tract infections and pneumonia. Candida *auris* affects both paediatric and adult populations and has predominantly been identified in critically unwell patients in high dependency settings. Significantly, all *C. auris* isolates from the UK have demonstrated reduced susceptibility to the first line antifungal therapy, fluconazole, and variable susceptibility to other antifungal agents.

Approximately one quarter of reported Candida *auris* detections are clinical infections. So far there have been three large nosocomial intensive care unit outbreaks in England, which despite intensive infection prevention and control measures have been difficult to control.

Difficulties with identification of this organism in the laboratory and uncertainty about routes of transmission have impacted significantly on outbreak detection and management. By the end of July 2017, there have been over 200 patients with *C. auris* initially detected in 20 NHS Trusts and independent healthcare providers (first detection only), and over 35 additional hospitals in the UK have received patients with a known *C. auris* detection.

Transmissibility:
Candida auris is considered to be highly transmissible between patients and from contaminated environments with several affected hospitals reporting time from initial exposure to colonisation as low as within four hours (PHE 2017), stressing the importance of instituting effective IPC practices to prevent cross transmission. Hand hygiene is vital. Transmission directly from fomites (such as blood) and equipment such as pressure cuffs, stethoscopes and any other equipment in contact with the patient is also of significance (PHE 2017).

Laboratory Responsibility:
The Microbiology laboratory identifies all Candida isolates from ICU, Haematology unit and oncology patients; using the MALDI-TOF Biotyper..
Any isolation of Candida auris or suspected Candida auris will be telephoned immediately to the duty consultant microbiologist and Infection control. The result will also be sent to ICNet.
In the case of a suspected outbreak any screening swabs will be sent to Microbiology for testing. Any positives will be telephoned to the microbiologist on call and infection control.
These isolates will be sent to the reference laboratory for confirmation and typing (when applicable).

Treatment:
This is a multi-resistant Candida species. If treatment is clinically indicated, this must be discussed with the on-call microbiologist.

Colonisation:
If the patient is colonised with the fungi and does not display any signs / symptoms of infection, it is unlikely they will require antifungal treatment. Clinical experience to date has shown that colonisation tends to persist and is difficult to eradicate, making IPC strategies particularly important. However, it is still recommended that strategies to prevent and/or treat colonisation include:

- Strict adherence to central and peripheral catheter care bundles, urinary catheter care bundle and care of the tracheostomy site
- Prompt removal of venous cannulas if there is any sign of infection
- High standards of aseptic technique when undertaking wound care

- Skin decontamination with chlorhexidine washes in critically ill patients.

Screening:
According to PHE (2017) Screening is recommended as follows:

- Any novel detection in a Trust should be an indicator to screen close contacts
- If the patient has been isolated during admission on a ward other than an intensive care setting, Trusts are advised to speciate all candida isolates from the same unit to the species level, using an appropriate method that will detect *C. auris* for the subsequent four weeks
- In all cases, in the four weeks prior to diagnosis in the index patient, hospitals should look back to see if there has been an increase in detection of *Candida* spp in the same intensive care setting or ward as this may represent unrecognised transmission
- If the index patient was not isolated, close contacts who have been in the same bay with an affected patient in the 48 hours prior to first identification should be isolated or co-horted with other contacts and cared for with enhanced infection prevention and control measures as detailed below for cases. Close contacts can be de-isolated after three consecutive negative screens at least 24 hours apart

Screens can be obtained with routine swabs. Suggested screening sites, based on the predilection of *Candida* spp to colonise the skin and mucosal surfaces i.e. genitourinary tract, gastrointestinal, mouth and respiratory tract, are:

- groin and axilla (the most persistently positive in Trusts that have conducted screening)
- urine (there have been several cases of persistent urinary colonisation in catheterised patients)
- nose and throat
- perineal swab
- rectal swab or stool sample

Other sites that may be considered if clinically indicated are:

- low vaginal swab
- sputum / endotracheal secretions
- drain fluid (abdominal/pelvic/mediastinal)
- cannula entry sites
- wounds

Reporting positive results to PHE
All newly positive screens or clinical samples from patients unknown to be colonised should be reported to the local PHE Centre Health Protection Team (HPT) – a detailed Standardised Operating Procedure has been developed for HPTs to utilise which details

specifics of cases definitions, isolation of cases and contacts, and ward screening for both single sporadic cases and potential outbreak scenarios.

IPC Management – Candida auris screen positive patients or awaiting results

Source Isolation:
Side room isolation precautions are required (with en-suite facilities), door closure and a standard precaution sign displayed on the door for the duration of hospitalisation if a patient is either colonised or infected with the organism, or if a patient has been transferred from an affected UK hospital or a hospital abroad until screening results are available. Only designated staff involved in the patient's care should access the isolation room.

Hand Hygiene - To prevent the risk of cross transmission, strict adherence to the hand hygiene policy is advised. PLEASE NOTE - hand hygiene using soap and water MUST be followed by alcohol hand rub on dry hands

Patients should also be advised about the need for a high standard of hand hygiene, after using the toilet, before mealtime, or handling continence products e.g. pads, urinary catheters and equipment. Assistance must be provided to enable this.

PPE – All staff that have direct contact with the patient, their immediate environment or blood / body fluids must wear single-use plastic aprons and gloves (or gowns if there is a high risk of soiling with blood or body fluids, or likely physical contact with patient's skin). These should be donned after hand washing and before entering the room and removed and discarded in the room, followed by thorough hand wash and application of alcohol hand rub on dry hands before exit. (with the exception of removing items to the sluice. In such instances, be aware of contact points that may become contaminated, and will require cleaning following removal of PPE). Visors and masks are not routinely required and should be worn only if there is a procedural risk of spillage or splashes

Linen:
All linen must be considered infectious and managed in accordance with CHFT linen policy.

Waste Management:
All isolation rooms must have a domestic bin and an orange infectious waste bin, in accordance with CHFT waste policy.

ANTT:
Scrupulous ANTT and IPC practices are particularly important when using and caring for any invasive medical device such as intravenous lines, urinary catheters, enteral feeding equipment, colostomy / ileostomy to ensure optimum patient safety. Remove any devices that are no longer required.

Single use equipment:
Is advised for all infected/colonised patients.

Cleaning / Decontamination
Cleaning with a chlorine-releasing agent (e.g. Tristel) must be carried out during the admission and followed by a RED clean with HPV on discharged/ transfer. If the patient has been discharged from a bed space within a ward/bay area, a terminal clean of the bed space with Tristel must be undertaken, including curtain change.

Particular attention must be paid to cleaning of multiple-use equipment (eg. BP cuffs, thermometers, computers on wheels, ultrasound machines) from the bed space of an infected/colonised patient. Stock of single use items in the immediate patient environment should be discarded.

Clinical investigations:
Patients with Candida auris can undergo departmental investigations, provided the department has been informed in advance. It is recommended that patients are seen last on the list where possible **(**unless clinical need is a priority**),** and are dealt with promptly to minimise delay within the department. Decontamination of the environment and of all equipment should be thoroughly undertaken with Tristel.

Discharge/Transfers to other wards or health settings:
Transfers can occur **only if clinical need dictates.** Direct communication with the receiving area and the IPC representatives (if a hospital transfer) must occur to ensure that the appropriate facilities are available and the required precautions are applied. Movement for non-clinical reasons is not advised.

Information should also be included on the EPR discharge summary and if positive results become available after discharge/transfer, information should be relayed to the receiving hospital/GP to inform the patient and for relevant public health action.

Readmissions of known colonised patients:
All known positive patients will be flagged as an IPC risk on EPR by the IPCT. Isolation and rescreening of patients known to be previously colonised is recommended on readmission as there is not enough evidence yet to exclude lifelong colonisation.

Communication for patients and visitors:
If infected or colonised patients need to be briefed about the infection; including the need for robust hand hygiene and use of protective aprons (visitors). An information leaflet is available via the hyperlink below:

http://www.cht.nhs.uk/patient-leaflet-repository/uploads/728/pate0039%20v1%20June20%20Candida%20Auris%20A4.pdf?time=1530541346

12. Staphylococcus capitis (S. capitis)

Staphylococcus capitis is a coagulase-negative Staphylococcus (CoNS) It owes its pathogenic success to two major factors – its natural environment; human skin, thus resulting in ready access to any device inserted in the skin, and its ability to adhere to

biomaterials and form a biofilm. It can also survive on fabric and surfaces from weeks to several months (Mandell et al 2015).

Background:
Sepsis involving *S. capitis* occurs frequently in neonatal intensive care units globally and is especially prevalent in very low birthweight preterm infants. In the last couple of years a single multidrug-resistant clone of *S. capitis*, designated as the NRCS-A clone and characterized by a specific molecular type has been detected in several neonatal intensive care units in UK, France, Belgium and Australia. The NRCS-A isolates exhibited a decreased susceptibility to all of the antimicrobial agents frequently used in NICUs, namely β-lactams, aminoglycosides, and vancomycin / teicoplanin.

Furthermore, a recent study showed that *S. capitis* NRCS-A–associated sepsis constitutes an independent risk factor for severe illness in neonates. It should be noted that *S. capitis* sepsis can (and has) occurred in neonates in the absence of indwelling prosthetic devices.

Transmissibility: This is via direct or indirect contact with an infected person or their environment

Treatment: This is a multi-resistant species. If treatment is clinically indicated, this must be discussed with the on-call microbiologist.

IPC Management:

Source Isolation:
Side room isolation precautions are required, door closure and a standard precaution sign displayed on the door for the duration of hospitalisation. Only designated staff involved in the patient's care should access the isolation room.

Hand Hygiene - To prevent the risk of cross transmission, strict adherence to the hand hygiene policy is advised.

PPE – All staff that have direct contact with the patient, their immediate environment or blood / body fluids must wear single-use plastic aprons and gloves These should be donned after hand washing and before entering the room and removed and discarded in the room, followed by thorough hand hygiene with either soap and water or alcohol gel.

Linen:
All linen must be considered infectious and managed in accordance with CHFT linen policy.

Waste Management:
All isolation rooms must have a domestic bin and an orange infectious waste bin, in accordance with CHFT waste policy.

ANTT:
Scrupulous ANTT and IPC practices are particularly important when using and caring for any invasive medical device. Ensure devices are removed promptly when no longer required.

Cleaning
Environment:
Scrupulous cleaning and disinfection of all surfaces is required. Cleaning services must be informed that the patient's room requires thorough cleaning with a chlorine based disinfectant (such as Tristal) twice daily paying particular attention to those that may have had patient or staff hand contact e.g. door handles, touch plates, light switches.

An AMBER clean with Tristel is required on patient transfer/discharge.

Equipment:
All the equipment and room furniture must be decontaminated daily. Any equipment required for patient management should be single patient use only or dedicated to that patient only and cleaned thoroughly after use.
Single use items – is advised for all infected patients. Keep minimal stock in the isolation room to avoid contamination; otherwise these would need discarding ie unused wrapped single-use.

Clinical investigations:
Patients with Staphylococcus capitis can undergo departmental investigations, provided the department has been informed in advance. It is recommended that patients are seen last on the list where possible **(**unless clinical need is a priority**),** and are dealt with promptly to minimise delay within the department. Decontamination of the environment and of all equipment should be thoroughly undertaken with Tristel.

Discharge/Transfers to other wards or health settings:

Transfers can occur **only if clinical need dictates.** Direct communication with the receiving area and the IPC representatives (if a hospital transfer) must occur to ensure that the appropriate facilities are available and the required precautions are applied. Movement for non-clinical reasons is not advised.

Information should also be included on the EPR discharge summary and if positive results become available after discharge/transfer, information should be relayed to the receiving hospital/GP to inform the patient and for relevant public health action.

Readmissions of known colonised patients:
All known positive patients will be flagged as an IPC risk on EPR by the IPCT. Isolation and rescreening of patients known to be previously colonised is recommended on readmission as there is not enough evidence yet to exclude lifelong colonisation.

Communication for patients and visitors:
If infected or colonised patients need to be briefed about the infection; including the need for robust hand hygiene and use of protective aprons (visitors).

13. Training and Implementation

The policy will be available on the Trust intranet and communicated through existing clinical forums, senior managers' briefings, divisions, induction and mandatory training. The IPCT will also carry out ad hoc training sessions as required.

14. Trust Equalities Statement

Calderdale and Huddersfield NHS Foundation Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are placed at a disadvantage over others. We therefore aim to ensure that in both employment and services no individual is discriminated against by reason of their gender, gender reassignment, race, disability, age, sexual orientation, religion or religious/philosophical belief, marital status or civil partnerships.

This policy has been through the Trust's EQUIP (Equality Impact Assessment Process) to assess the effects that it is likely to have on people from different protected groups, as defined in the Equality Act 2010.

15. Monitoring Compliance with Procedural Document

Compliance will be monitored via the ward assurance monthly dashboard and reported to the Executive Boards. Monitoring of compliance will also include the weekly Frontline Ownership Audit (FLO) process.

16. References and Bibliography

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World Health Organisation: *Antimicrobial Resistance: Global Report on Surveillance: 2014 Summary.* Available at: http://www.who.int.drugresistance/en/

APPENDIX 1

IPC Guidance for VRE Colonisation or Infection

Patient Placement	**Isolation:** Side room (SR) isolation with ensuite facilities (or a dedicated commode, cleaned with Tristel after each use). Door to remain closed with a contact precaution sign displayed. If unable to isolate, inform the site co/night matron immediately to escalate this urgent requirement.
	Transfer from a bay: If a patient is moved from a bay to a SR, the whole bay will require terminally cleaning with Tristel, including horizontal surfaces and all curtains changed in the bay
Infection Prevention & Control Measures	**Hand Hygiene**: Hand wash basin and alcohol hand gel must be available in the SR. All staff/visitors **must** perform hand hygiene with alcohol hand rub prior to entry and before leaving the SR. **Note**: if staff / visitors' hands are visibly soiled soap and water must be used. Patients are advised to maintain high standards of hand hygiene at all times and hand wipes should be provided to enable this where required.
	PPE: All staff must be bare below the elbow and decontaminate hands as above prior to applying gloves and aprons for direct contact with patient or their environment. These must be removed after attending a patient and hand decontamination repeated. Where any part of staff uniform is not protected by an apron and is expected to come into contact with the patient, a long sleeves disposable gown should be used.
	ANTT: Observe devices for signs of inflammation/infection and record daily on EPR. Remove any devices no longer required and ensure scrupulous ANTT for all activity involving invasive devices/wound management.
	Equipment: Single use or dedicated patient equipment must be used where possible and keep the amount of equipment in the SR. Remove fans or other equipment that could exacerbate any environmental contamination. The EPR trolley must not enter the SR.
	Waste: All waste in the SR must be disposed of in the infectious orange waste stream
	Linen: All linen must be considered infectious and discarded as such. Bedding must be changed daily.
	Cleaning: The SR requires Tristel cleaning twice daily and a RED clean on discharge. All equipment requires cleaning with Tristel, keeping clutter to a minimum. The ward environment also requires daily Tristel cleaning.
	Transfers: to other wards/healthcare settings should only occur if clinical need dictates.
	Clinical Investigations: communicate with the department involved and plan the procedure last on the list. Avoid delay within the department and clean all equipment and the environment with Tristel afterwards.

Information and Treatment	The patient should be informed of result and an information leaflet provided and discussed, with the inclusion of the family if the patient consents to this. Document on EPR.
	Antibiotic therapy must be reviewed by the patient's clinical team and the duty Microbiologist
	Staff Education at ward level will be given by the IPCT reinforced by written information leaflets

IPC guidance for VRE Colonisation or Infection

Patient:
MRN:

Date	Daily Evaluation of Care	Name	Signature