INFECTION PREVENTION & CONTROL PRIMARY CARE GENERAL PRACTICE POLICIES AND SAFE PRACTICE GUIDANCE

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1.1. Introduction

The Health and Social Care Act 2008 (Regulated Activities) Regulations 2014 requires all providers of a regulated service to be registered with the Care Quality Commission (CQC). A service is regulated if it appears in a list of activities described in legislation. This includes the delivery of primary care to service users in registered primary care facilities including those providing Out of Hours services.

The Health and Social Care Act 2008 (Regulated Activities) Regulations 2014 came into force in April 2015 for all providers and includes the following regulations:

Regulation 12: Safe Care and treatment:

- *(2)(h) assessing the risk of, and preventing, detecting and controlling the spread of infections, including those that are healthcare associated……'*

And

'Regulation 15: Premises and equipment':

- *15 (1) All premises and equipment used by the service provider must be clean……'*

These regulations introduce the fundamental standards of quality and safety that all healthcare providers must comply with to prevent service users from receiving unsafe care and treatment and in order to prevent any risk of harm. The CQC will monitor organisations for the characteristics of 'good care'; against these fundamental standards; to ensure services provided do not fall below acceptable levels. The CQC will use key lines of enquiry (KLOEs) to assess these fundamental standards and check whether the services provided are: safe, effective, caring, responsive and well-led.

In relation to implementation of these regulations the provider should be able to demonstrate compliance with the recently updated 10 Criteria of The Health and Social Care Act 2008 *Code of Practice on the prevention and control of infections and related guidance (DH) 2015.* The Code contains statutory guidance about compliance with the registration requirement relating to infection control (regulation 12 (2) (h) of the Health and Social Care Act 2008 (Regulated Activities) Regulations 2014.

The law states that the Code must be considered by the CQC when it makes decisions about registration against the infection prevention requirement 12(h). Likewise, providers must have regard for the Code when deciding how they will comply with registration requirements. By following the Code, registered providers will be able to show that they meet the regulation on cleanliness and infection prevention. However, they do not by law have to comply with the Code. They may be able to demonstrate a different way (equivalent or better) of compliance from that described in the Code.

The revised and updated Code of Practice does not make any new requirements of providers of services. However, it provides more explicit guidance on some elements of infection prevention and cleanliness with regard to recent changes in the evidence base as well as keeping pace with recent organizational changes and priorities. In particular, there is an additional requirement in relation to antimicrobial prescribing which is discussed in section 4 of this manual.

This section of the infection prevention and control (IPC) manual describes how IPC is managed within the organisation in accordance with the legislation and expert guidance as above.

1.2. Purpose

The purpose of infection prevention and control is to limit the acquisition and spread of pathogenic micro-organisms, by using scientifically based knowledge and through planning, surveillance, education and research as part of the overall policy of achieving high quality health and social care services.

The organisation supports the principle that infections should be prevented wherever possible and that effective arrangements for the surveillance, prevention and control of infection are provided throughout the organisation.

It is the organisation's policy to encourage the individual responsibility of every member of staff to participate in the prevention and control of infection and to comply with Health and Safety, COSHH and other legislation and regulations applying to the safe provision of health and social care.

This policy and guidance apply to all members of staff employed in the practice and includes agency, locum and bank workers as well as volunteers.

All adjustments to infection prevention and control arrangements and policy must be approved and assessed by the IPC lead.

1.3. The risks of not having this policy in place

Failure to comply with this policy may result in the following risks arising:

- The CCG may not achieve its statutory obligations.
- The CCG may be unable to demonstrate that safe and effective Infection Prevention and Control Standards are in place wherever the CCG commissions.
- Risk of cross infection or contamination due to lack of clarity around measures staff should take to minimise the risk of infection to themselves and their clients.

1.4. Definitions

Included under section 5 is a list and description of the meaning of the terms used in the context of the policy, procedures and guidance.

1.5. Principles

Infection prevention and control has a key role to play in the clinical governance framework of any health and care organisation. This comprehensive range of guidance documents have been developed to help with CQC requirements and to achieve compliance with the Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance.

1.6. Roles and responsibilities

Chief Nurse, Barnsley CCG – Lead Officer Assistant
Director IPC - Operational
Root Cause Analysis Group – reports to:
Post Infection Review Group – BMBC, SWYPT, BHNFT & BCCG reports to:
Quality & Patient Safety Committee, BCCG reports to: Governing Body, BCCG

1.7. Procedures

Training

Infection prevention and control training is a mandatory requirement at induction for all staff groups and as part of mandatory updates for all staff involved in service users' care. Training attendance records must be maintained and reported through internal governance frameworks. All training delivered should be evaluated by delegates.

The Code of Practice does not specify the frequency of update training. However, the UK wide Core Skills Training Framework (www.skillsforhealth.org.uk) specifies a frequency of annual training for mandatory core subjects, which includes infection prevention and control for staff having patient contact.

All IPC leads, or nominated persons are invited to attend the IPC Champion forum. These meeting presently are running quarterly via Microsoft teams. However, may be moving to face to face sessions after consultations with the IPC champions. Please contact IPCT to be invited to the forums.

Governance

Infection prevention and control has a key role to play in the clinical governance framework of any health and care organisation.

The following activities should be considered an essential element of local IPC activity:

- Development of annual IPC programme and annual statement
- the implementation and monitoring of policies
- the education of all staff
- surveillance and reporting of occurrences of infection

Practices are required to have a nominated Infection Prevention & Control lead who will outline activities required to be undertaken to provide assurance under the Code of Practice.

The IPC lead may be the registered manager. If someone else takes this lead role they should report directly to the registered manager in this regard and produce an annual statement outlining the IPC arrangements and activities including policy compliance information.

Specialist advice on IPC should be available to all staff. This may be through the infection prevention and control team or other providers of expertise e.g. United Kingdom Health Security Agency (UKHSA).

Information sharing

The Code of Practice requires primary care medical practices to share information on IPC activities and outcomes with patients. Involvement of patient liaison groups is recommended.

Practices are also required to share patient information as appropriate with other health and care providers having due regard to patient confidentiality requirements.

Uniform and Dress code

The organisation supports the view that staff clothing should be such that it minimises risks

of the transmission of infection. It is a requirement of the Code of Practice that all organisations have a written uniform and dress code policy. Compliance with this policy should form part of the annual audit programme.

In particular clothing must facilitate good hand hygiene practice. Staff must adhere to Bare Below the Elbow (BBE). Stoned rings and wrist jewellery should not be worn when performing clinical tasks. Nails should be short and nail polish and nail extensions should not be worn. Long sleeves, if worn, should be rolled to the elbow for hand washing and clinical tasks.

1.8. Monitoring the compliance and effectiveness of this policy

The Lead Officer is responsible for ensuring the compliance and effectiveness of the policy.

Contact monitoring is undertaken quarterly.

A rolling audit programme is prepared annually by the IPC team with clear timescales for completion and progress and is monitored through governance frameworks.

The Infection Prevention Society audit tool is used by the community IPC team to audit GP practices and care homes.

The process for reviewing results and ensuring improvements is undertaken by the CCG and BMBC.

The monitoring of key performance indicators is undertaken by Contract monitoring.

Surveillance and data collection is a requirement of the Code of Practice but a specific policy on this is not required in primary care. However, it is recommended that a local system for monitoring infections is implemented. In particular post procedure surgical site surveillance is strongly recommended where minor operative procedures are undertaken.

Mandatory reporting of infections to UKHSA is a requirement for MRSA bacteraemia, *Clostridioides difficile* toxin, MSSA bacteraemia and Gram-negative bacteraemia. Annual trajectories are set by the Department of Health to reduce the number of cases of MRSA bacteraemia, toxin positive cases of *C. difficile* diarrhoea and Gram-negative bacteraemia. Trajectories are set for all acute.

NHS Trusts and also (since 2011/12) for all Primary Care Organisations and for all Clinical Commissioning Groups (CCGs). Breaching trajectories carries financial penalties for the organisations concerned. Providers of primary health care services may be involved in the review of individual cases of these infections as part of the mandatory processes expected to be undertaken. Reviews are the responsibility of the acute Trust or CCG (depending on timing of positive specimen) and GPs / Practice Managers responsible for individual patients' will be informed if their participation is required on a case by case basis.

Monitoring of mandatory reporting of key infections is routinely undertaken by local commissioners of health care.

1.9. Reference

The references in relation to this policy will be reviewed two yearly.

1.10. Review of policy

The review will be three years from the date of approval of this policy.

Individual processes and guidelines will be updated as required, in response to new evidence, expert guidance or regulation.

2. POLICIES

2.1. Notifiable diseases

Notifiable diseases

Some infectious diseases may spread easily in a community or may cause serious diseases in individuals. The requirement to notify some infectious diseases is contained within the Public Health (Control of Disease) Act 1984, amended 2020. Additional guidance and the list of notifiable diseases are contained in the Health Protection Legislation (England) Guidance 2021. Notifiable diseases and causative organisms and how to report can be found on:

https://www.gov.uk/guidance/notifiable-diseases-and-causative-organisms-how-to-report

It is the responsibility of Registered Medical Practitioners (RMPs) to notify any suspected or confirmed instance of notifiable disease to the local authority and / or local health protection teams (local arrangements will vary).

Additionally, RMPs are required to notify instances of infection which, in the view of the clinician presents, or could present, significant risk to human health and this should include new or emerging infections.

The regulations concern only single incidents of infection or suspected infection. The guidance however does advise that RMPs continue to voluntarily notify clusters of cases of infection whether the disease in question is notifiable or not. This includes, for example, outbreaks of diarrhoea / vomiting.

Notification by clinicians should be to the 'Proper Officer' within the local authority or health protection team. This may in some cases be deemed urgent (see table below) in which case notification by telephone is required. In all cases notification should also be made on a written form within 3 days. Such written notification may be made by secure email. Notification forms can be acquired from the local authority health protection team or UKHSA. Local arrangements for health protection teams in your region can be found at:

https://www.gov.uk/government/organisations/public-health-england
(PHE is now UKHSA)

Notification of clusters of infection

Although not Notifiable, clusters of infection (even single cases) can have significant public health implications. Such infections should be reported to the local Public Health team or proper officer (local authority) promptly. Examples include:

Notifiable diseases	Definition / comment	Likely to be Urgent?
Acute encephalitis		No
Acute meningitis	Viral and bacterial.	Yes, if suspected bacterial infection.
Acute poliomyelitis		Yes
Acute infectious hepatitis	Close contact of acute hepatitis A and B cases need rapid prophylaxis. Urgent notification will facilitate prompt laboratory testing. Hepatitis C cases known to be acute need to be followed up rapidly as this may signify recent transmission from a source that could be controlled.	Yes
Anthrax		Yes
Botulism		Yes
Brucellosis		No – unless thought to be UK – acquired
Covid -19		Yes
Cholera		Yes
Diptheria		Yes
Enteric fever (typhoid or paratyphoid fever)	Clinical diagnosis of a case before microbiological confirmation (e.g. case with fever, constipation, rose spots and travel history) would be an appropriate trigger for initial public health measures, such as exclusion of cases and contacts in high risk groups (e.g. food handlers)	Yes
Food poisoning	Any disease of infectious or toxic nature caused by, or thought to be caused by consumption of food or water (definition of the advisory committee on the Microbiological Safety of Food).	Clusters and outbreaks, yes for specific organisms see Table 2
Haemolytic uraemic syndrome (HUS)		Yes
Infectious bloody diarrhoea	See also HUS in Schedule 1 and VTEC in schedule 2.	Yes
Invasive Group A streptococcal disease and scarlet fever		Yes, if IGAS. No if scarlet fever
Legionnaires' disease		Yes
Leprosy		No
Malaria		No, unless thought to be UK- acquired
Measles		Yes
Meningococcal septicaemia		Yes

Mumps	Post-exposure immunization (MMR of HNIG) does not provide protection for contacts.	No
Plague		Yes
Rabies	A person bitten by suspected rabid animal should be reported and managed urgently, but if a patient is diagnosed with symptoms of rabies, they will not pose a risk to human health.	Yes
Rubella	Post-exposure immunisation (MMR or HNIG) does not provide protection for contacts.	No
SARS		Yes
Scarlet Fever		Yes
Smallpox		Yes
Tetanus		No, unless associated with injection drug use
Tuberculosis		No, unless healthcare worker or suspected cluster or multi drug resistance
Typhus		No
Viral haemorrhagic fever (VHF)		Yes
Whooping cough		Yes, if diagnosed during acute phase

List of notifiable organisms (causative agents)
Causative agents notifiable to UKHSA under the Health Protection (Notification) Regulations 2010:

- Bacillus anthracis
- Bacillus cereus (only if associated with food poisoning)
- Bordetella pertussis
- Borrelia spp
- Brucella spp
- Burkholderia mallei
- Burkholderia pseudomallei
- Campylobacter spp
- Carbapenemase-producing Gram-negative bacteria
- Chikungunya virus
- Chlamydophila psittaci
- Clostridium botulinum
- Clostridium perfringens (only if associated with food poisoning)
- Clostridium tetani
- Corynebacterium diphtheriae
- Corynebacterium ulcerans
- Coxiella burnetii
- Crimean-Congo haemorrhagic fever virus
- Cryptosporidium spp
- Dengue virus
- Ebola virus
- Entamoeba histolytica

- Francisella tularensis
- Giardia lamblia
- Guanarito virus
- Hemophilus influenzae (invasive)
- Hanta virus
- Hepatitis A, B, C, delta, and E viruses
- Influenza virus
- Junin virus
- Kyasanur Forest disease virus
- Lassa virus
- Legionella spp
- Leptospira interrogans
- Listeria monocytogenes
- Machupo virus
- Marburg virus
- Measles virus
- Mumps virus
- Mycobacterium tuberculosis complex
- Neisseria meningitidis
- Omsk haemorrhagic fever virus
- Plasmodium falciparum, vivax, ovale, malariae, knowlesi
- Polio virus (wild or vaccine types)
- Rabies virus (classical rabies and rabies-related lyssaviruses)
- Rickettsia spp
- Rift Valley fever virus
- Rubella virus
- Sabia virus
- Salmonella spp
- SARS-COV-2
- Shigella spp
- Streptococcus pneumoniae (invasive)
- Streptococcus pyogenes (invasive)
- Varicella zoster virus
- Variola virus
- Verocytotoxigenic Escherichia coli (including E.coli O157)
- Vibrio cholerae
- West Nile Virus
- Yellow fever virus
- Yersinia pestis

REPORTING OF SARS-COV-2 TEST RESULTS TO UKHSA

Background

All laboratories in England performing a primary diagnostic role must notify UKHSA of specified causative agents (organisms), in accordance with the Health Protection (Notification) Regulations 2010. SARS-COV-2 is the notifiable causative agent for COVID-19. All registered medical practitioners in England must notify the proper officer of the relevant local authority or the local UKHSA health protection team of specified infectious diseases, in accordance with the Public Health (Control of Disease) Act 1984 and the Health Protection (Notification) Regulations 2010. All proper officers must disclose the entire notification to UKHSA. COVID-19 is a notifiable infectious disease.

UKHSA is an executive agency, sponsored by the Department of Health and Social Care (DHSC). It fulfils the Secretary of State's statutory duties to protect health and address health inequalities and executes the Secretary of State's power to promote the health and wellbeing of the nation. UKHSA's annual remit letter from the Parliamentary Under Secretary of State for Prevention, Public Health and Primary Care sets out its responsibility to protect the public's health from infectious diseases and other public health hazards.

UKHSA has approval from the Secretary of State to process confidential information associated with notifiable causative agents and notifiable infectious diseases without patient consent under Regulation 3 of the Health Service (Control of Patient Information) Regulations 2002.

Specification for new data feeds

To support the reporting of the required infectious diseases, UKHSA has developed the Second-Generation Surveillance System (SGSS). This is the national surveillance system that holds all test results. To enable receipt of the data, the following fields are required:

- first name
- surname
- date of birth
- gender
- postcode
- contact telephone number (preferably mobile)
- contact email
- ethnicity
- sample taken date
- sample number
- sample type
- test method (for example PCR)
- result (such as COVID-19 +ve/-ve)
- result date
- name of laboratory
- other - please detail if other fields are available.

Transfer method

The preferred method of receiving the data is as a CSV file via sftp. In order to set up a sftp account, UKHSA needs to have a named contact and a public ssh key.

To establish a new reporting feed to UKHSA, contact SGSS.Helpdesk@phe.gov.uk.

Subscribe to reports

UKHSA publishes reports on the numbers of laboratory notifications received. UKHSA's Information management section collates the returns of registered medical practitioner (RMP) notifications and laboratory causative agents nationally and publishes analyses of local and national trends weekly.

2.2. Recognition and management of an outbreak infection

INTRODUCTION

An outbreak of communicable disease/infection can be defined as the incidence of disease above that normally expected. Usually this means that there are two or more linked cases with the same illness/symptoms. In some instances, only one case may be sufficient to instigate investigation as an Incident, e.g. meningococcal meningitis. Outbreaks in community care settings where primary care medical practices may be involved will be similar to those experienced in acute hospital settings e.g. viral gastro-enteritis, respiratory viruses, e.g. influenza, Covid -19, parasitic infections etc.

Outbreaks of infection may vary in extent and severity, ranging from a few cases of infestation to a large number of food poisoning cases, affecting hundreds of people. Recognition of an outbreak in the early stages may be difficult, therefore medical and nursing/care staff must remain vigilant.

The Consultant in Communicable Disease Control (CCDC) at the UKHSA has overall responsibility for outbreaks of infection in all health and social care provider settings (both NHS and independent sector) and the designated infection control advisor / senior manager on call in the provider setting must inform the UKHSA of any suspected outbreak of infection. An on-call service is provided by UKHSA out-of-hours and at weekends.

STAFF RESPONSIBILITIES

Primary Care Medical practice staff should be able to recognise a potential outbreak of infection or food poisoning.

Outbreaks in community residential settings should be managed by the organisation providing the care with advice and support from the Infection Control and Prevention Team (IPCT) and/or UKHSA/local PH. It is recommended that Primary Care Medical practice staff responsible for an individual's care within that setting assure themselves that outbreaks are reported to IPCT and that processes to manage the outbreak are in place.

Practice staff should be aware of contact telephone numbers for IPCT and UKHSA/ PH and of local arrangements for managing outbreaks in community settings.

2.3. Management of an outbreak of viral gastro-intestinal illness in residential/nursing homes

This guidance is provided for information to GPs to assist them when providing support and guidance to care home managers and staff.

The management of outbreaks of viral gastro-enteritis in primary care settings can be a significant challenge to staff. General Practitioners play an important role in supporting managers and staff during such outbreaks whilst also maintaining responsibility for those residents that are registered with their practice. In addition, the role of the IPCT for Community and UKHSA in advising in the early detection and management of infective diarrhoea/Norovirus outbreaks is crucial to the success of local control measures.

Prompt identification of possible cases of infective diarrhoea/ norovirus is crucial so that early interventions aimed at limiting spread can be implemented.

Norovirus is responsible for causing a high incidence of viral gastro-intestinal illness.

Norovirus is a highly contagious gastro-intestinal virus that can be spread by a number of different routes:

- By direct contact with an affected individual.
- By aerosol droplets of virus particles in faces; and in particular when vomiting occurs.
- By aerosol droplets (from vomit/faeces) landing onto surfaces and equipment and then being transferred onto hands and then into the mouth.
- Food-borne either from contaminated food or water or by food handlers that are symptomatic;

Norovirus causes a short illness (24 – 48 hours) associated with nausea, profuse vomiting – often projectile, diarrhoea and abdominal pain. Infection is self-limiting but can cause dehydration and deterioration in the very young and elderly.

CRITERIA FOR SUSPECTING NOROVIRUS OUTBREAK

- Vomiting in > 50% of cases (although sometimes diarrhoea is the prominent symptom)
- Duration of illness 24 - 48hrs
- Patients AND staff affected (this is a critical criteria)
- Cases often occur in clusters up to 48 hours apart due to incubation period of 24– 48 hours.

REPORTING / RECORDING AN OUTBREAK OF VIRAL GASTRO-ENTERITIS

As soon as an outbreak is suspected, it is essential to report cases through the local incident reporting mechanism. The IPCT should be contacted to log the details of the outbreak and provide further guidance. In addition, clinicians including GPs must be made aware. It is essential that the local UKHSA and Environmental Health is notified of the existence of a gastro-enteritis outbreak, irrespective of whether this is deemed to be trivial. UKHSA have a responsibility to be notified of all outbreaks of infection in the independent sector and to be actively involved in outbreaks occurring in the NHS. UKHSA provide 24hr cover over the weekend and Bank holidays if urgent advice is required.

It is essential that the IPCT are involved at the earliest opportunity so that they can communicate promptly and effectively with other healthcare providers (and ambulance personnel) to minimise the risk of spread and service disruption.

DOCUMENTATION

It is advised that staff accurately complete a DAILY outbreak record sheet to assist in managing the outbreak and for documentation purposes. It is essential to include sick staff details on the record sheets as well as service users. An outbreak toolkit can be found at the end of this section and can be modified and photocopied for local use. A Bristol stool chart is also included.

INVESTIGATION OF SPECIMENS

Faecal specimens should be taken from symptomatic service users as soon as possible after symptoms develop. Assess the normal stool type of a resident and whether there are any further reasons for loose stools prior to sending samples, e, g change in medications, commencement of antibiotics, regular laxatives. An increased incidence of type 5-7 stools with no underlying reason, should be suspected as infectious diarrhoea. The IPCN will visit 24-48 hrs of a suspected outbreak, and can provide three sample pots for quick diagnosis. These can be sent via the GP, or hand delivered directly to Pathology at Barnsley Hospital, under IPCT/Microbiology arrangements. Further samples if required should be sent via UKHSA Ideally, staff should also submit faecal samples via their own GP. Only a small sample is required, but ensure the pot is ¾ full to ensure all enteric infections can be tested. Formed stools may not be tested as it is unlikely to be an infected diarrhoea if the stool is formed. It is acceptable to obtain a specimen from a bedpan that also contains urine, as this will not affect results. Request forms should be sent for both C&S **and** virology, and must include Norovirus. Microbiology labs will not routinely test for Norovirus unless there is an increased incidence. Forms should be marked “outbreak”. Remember to send specimens PROMPTLY for investigation as virus particles deteriorate rapidly leading to difficulty in detection. Unless specifically requested, do NOT send samples of vomit for investigation as these are not required.

OUTBREAK MANAGEMENT

The most important aspects of outbreak control are (a) outbreak recognition and reporting and (b) implementation of strict enteric precautions to minimise spread.

Please note early recognition of an outbreak by sending samples as soon as an outbreak is suspected, facilitates appropriate management of the outbreak and can often result in a prompt return to normal service

ENTERIC PRECAUTIONS

The three most important actions during an outbreak of diarrhoea and vomiting are:

- Effective hand washing
- Isolation of affected patients, restriction of movement of staff, service users and visitors and exclusion of affected staff
- Enhanced cleaning of the environment and equipment.

EFFECTIVE HAND HYGIENE

Effective hand hygiene is vital to prevent transmission of infection and must be actively encouraged. Managers must ensure that staff are properly trained in hand washing technique and that they have easy access to hand hygiene facilities including warm water, liquid soap and disposable paper towels. Liquid soap is adequate; antiseptic agents e.g. ‘Hibiscrub’ are not required for routine hand hygiene even during an outbreak.

- Hands should always be cleaned:
- Before patient contact.
- Before donning PPE

- After doffing PPE
- When in contact with blood or body fluids.
- Before and after performing an aseptic/clean ANTT technique
- After patient contact, or contact with the service user's environment.
- Before preparing food.
- Before serving food.

Remember to always provide service users with adequate hand-washing facilities i.e. washing hands at a sink with liquid soap, or an antibacterial/ detergent wipe if service user is not able to use a sink.

Please note: Alcohol-based products e.g. alcohol gel should **NOT** be used as a primary means of hand decontamination as this has been found to be less effective in viral outbreaks of gastro-enteritis. Liquid soap and water should always be used initially and can be supplemented by the use of alcohol if required afterwards.

MANAGEMENT OF RESIDENTS (ISOLATION)

It is necessary to isolate residents with symptoms of diarrhoea and/ or vomiting immediately they become symptomatic. This means they have to remain in their own room, i.e. away from others who are well (asymptomatic), and with their own toilet facilities and designated cleaning equipment. If en-suite facilities are not available, specific toilet areas should be designated for their use only, or a commode allocated for individual symptomatic residents only.

All en-suite toilets / commodes must be cleaned after use with a chlorine cleaning product (1,000 parts per million) to reduce the risk of environmental contamination. It is very important that strict isolation procedures are implemented by staff e.g. hand washing, environmental cleaning, and safe handling of infected linen/ waste etc. for the duration of the illness. Patients must remain isolated for at least 48 hours after normal bowel habits have returned and/ or vomiting has stopped. Residents rooms should have a full chlorine clean (1,000 per million) whilst barrier precautions remain in place and after completion of isolation.

All unnecessary items of equipment should be removed from rooms, to minimise the risk of contamination. This includes medical equipment and foodstuff such as fruit, biscuits and snacks.

Segregation (co-horting) may be necessary in an outbreak when single rooms may not be available for all affected persons, or the resident cannot be isolated due to dementia, or being at risk of falls. In general, however, it is important that symptomatic people are kept apart from those that are asymptomatic. In practice, this means nursing affected residents in the same area together and not admitting / transferring into empty beds in affected units, unless the resident (being transferred) is already symptomatic or has recovered from symptoms. Staff caring for affected residents should, where possible not care for asymptomatic patients and should be allocated workload by rooms where staff numbers allow. Seriously ill patients may be particularly vulnerable to acquiring norovirus, which may worsen their underlying medical condition. In such cases it is advisable to isolate these vulnerable patients in their rooms (in effect, putting them into protective isolation) in order to minimise risk as much as possible.

MOVEMENT OF SERVICE USERS IN AFFECTED AREAS

During an outbreak, service users should NOT leave the home to visit other areas unless it is essential for their clinical management. This includes attending day care facilities, rehabilitation etc. However, a resident may require transferring to an acute hospital for further management of their condition. It is important that the receiving healthcare facility and transport is aware that the resident is infective and this information should be relayed prior to transfer. This will enable receiving hospitals to adequately isolate the resident on arrival thus minimising the risk of spread further.

TRANSFERS OUT OF AN AFFECTED HOME

TRANSFER TO OTHER HOSPITALS

The transfer of service users to hospital during an outbreak of diarrhoea and vomiting should be avoided other than in a medical emergency, and ideally the clinician caring for the patient should agree such transfers. In such instances, staff MUST inform the receiving hospital and also the local ambulance Trust that they are transferring a resident from an area affected by diarrhoea and vomiting. This will allow ambulance personnel to take appropriate precautions and the receiving hospital to adequately isolate the resident on arrival thus minimising the risk of further spread.

TRANSFER TO OTHER CARE HOMES

No service users should be transferred out to other care homes during an outbreak unless they have been symptomatic and subsequently symptom-free for a minimum of 48 hours. If transfer is considered, it should be with medical approval only and in the full knowledge of the receiving care home manager. Service users that have not been affected should NOT be transferred as they may be incubating the virus and could easily spread this to other healthcare settings. Occasionally, when beds are limited and an agreement has been made to receive a service user, it is advised that the service user remains in their room for the first 48hrs. Staff should use strict standard IPC precautions, with this person, during this time. This must ONLY be in exceptional circumstances and the Care Home manager must agree to the transfer. Please ensure that IPCT are aware of the transfer to allow support and advice to be given to the receiving care home.

DISCHARGES

DISCHARGE TO SERVICE USERS OWN HOME

Service users affected during an outbreak should not be discharged home until clear of symptoms for 48 hours. Those that have not been affected should ONLY be discharged home if the individual's carer(s) are fully aware of the likelihood of him / her becoming symptomatic and feel able to cope in such a situation. Any community care providers e.g. district nursing team, domiciliary carers should be fully informed that the individual has been discharged from an affected facility so that they can make suitable arrangements to minimise the risk of spread.

CARE HOME QUARANTINE / CLOSURE

If an outbreak is suspected/confirmed, then a decision may be made to close the home, or the affected floor, to new admissions. This must be communicated to relevant external agencies.

At such times, restrictions on movement of staff, service users and visitors are of paramount importance in order to limit spread. Staff should be allocated to asymptomatic OR symptomatic patients Catering staff, domestics and laundry staff should not be moving from affected/ unaffected floors, to reduce the risk of spread. Unaffected residents should receive their meals and have their rooms cleaned before symptomatic residents.

Care homes must remain closed for at least 48 hours after the detection of the last new case and the decision to re-open a home will be made by the IPCT and / or the UKHSA. No home will be re- opened to admissions until thorough chlorine based clean of the entire affected areas has taken place, including the changing of curtains, steam cleaning of carpets and thorough cleaning of service users' furniture and equipment especially seating, commodes, moving and handling equipment etc.

STAFF MOVEMENT

Certain groups of staff move between healthcare environments i.e. allied medical professionals, district nurses, agency nurses and medical staff. Such staff should be reminded of the importance of hand washing, both before and after care and should consider visiting affected homes / service users AFTER visiting non-affected facilities and service users. Uniforms should be changed DAILY and laundered at 60 ^{0}C or as per manufacturer's instructions. In particular, agencies providing staff should be notified of outbreaks of viral gastro-intestinal infection. This will enable them to take necessary actions to ensure their personnel do not inadvertently transmit infection to other facilities.

EXCLUSION OF AFFECTED STAFF

Exclusion is vital for any symptomatic staff member who should be sent home immediately they become affected. They should not return to work until 48 hours after symptoms have resolved. This includes bank and agency staff as well as visiting staff. It is the responsibility of the individual to ensure that they are fit to work. Staff should be advised to go to own GP and send a sample.

EXCLUSION OF VISITORS

It is important that visitors to homes during an outbreak are advised of the fact by displaying notices to all doors. If visiting more than one clinical area e.g. visiting clergy, they should be advised to visit affected areas at the end of their visit to avoid unnecessary transmission to unaffected areas / service users. In addition, visitors should be advised that if they (or members of their household) have symptoms of diarrhoea and / or vomiting they should not visit the home until 48hours after symptoms have resolved.

In certain circumstances it may be advisable to restrict / cancel all but essential visiting. This decision will be made on a case by case basis by the care homes in conjunction with UKHSA and IPCT. Visitors who insist on visiting must be advised and reminded to wash hands on entry to the building and wash their hands when exiting the resident's room. Gloves and aprons will only be required if they are providing direct care.

CARE HOME CLEANING

Cleaning / housekeeping staff should be made fully aware of the outbreak situation and supervisory staff / managers notified immediately there is the suspicion of an outbreak, to ensure that they are able to respond to the increased demand for cleaning in the affected areas and for additional demand for cleaning supplies etc. Cleaning should be increased to twice daily in all areas, especially paying attention to high touch areas and high-risk areas, e.g. toilets taps, door handles. A standard clean using detergent should be undertaken. This should be followed by a further clean of all areas using a hypochlorite solution (Chlorine product) 1,000 parts per million, or equivalent. Alternatively, a combined detergent / chlorine-based disinfectant solution such as Chlorclean/ SoChlor can be used. This is more effective as only one full clean is required, and different products are not being mixed. All chlorine products should be made up as manufacturer's instructions. The majority of products can be made up once and lasts for 24hrs. Usually one tablet to 1,000 litre of water makes up 1,000 parts per million of chlorine. The chlorine solution should be made up in a designated container which is clearly labelled. Do not

decant into an old bottle. The product requires to be securely locked away from vulnerable residents. Please always refer to manufacturer's instructions. Contact times may vary depending on the type of product used.

- Staff must be aware of and comply with COSHH regulations when using a chlorine-based product
- All cleaning cloths must be disposable and discarded after each use. Strict attention should be paid to correct colour-coding of cleaning equipment. If possible, yellow equipment should be used in those rooms deemed to be isolation areas.
- Do NOT use the same cleaning equipment in rooms of both symptomatic and non-symptomatic residents/service users. A separate cloth, mop-head and bucket should be used for each area and every resident's room.
- Mop heads must be changed and laundered, or discarded after each room.
- Where service users are isolated or in communal areas, these areas must be cleaned LAST at the end of the cleaning schedule, and cloths disposed of in the infectious waste bin in that room / area.
- Hand hygiene should be performed, aprons and gloves should be worn and removed in each room. Hand washing should be performed on removal of PPE. For symptomatic patients. Apron and gloves must be disposed of in the infectious waste bin in that room when removed. Please note it is highly recommended that all services have access to an ad hoc infectious waste stream. For services that do not, waste should be place in an offensive waste stream and the waste should be stored for 72hrs prior to placing in external cart for collection.

SPILLAGES (Also see spillages section)
Spillages should be dealt with immediately. Please follow manufacturer's instructions depending on the type of spill kit/ spill matt you have access to. Please ensure that you use the correct kit for the correct spillage. There are different types of kits for blood and for urine spillages. Chlorine fumes may be released if using hypochlorite. Protective clothing (gloves and apron) should be worn whilst cleaning spills, and discarded immediately afterwards as clinical waste. (Risk assess if goggles and masks are required.)

DECONTAMINATION OF MEDICAL EQUIPMENT
(**Also see Decontamination of Medical Equipment section**)
Where possible, all medical equipment should be dedicated for use by individual service users (or bays of affected residents) during an outbreak. Any shared equipment MUST be adequately decontaminated between patients. After use, with detergent and water. This should be followed by a chlorine-based disinfectant solution or a 2 in 1 product, then thoroughly dried with paper towels,

This is of particular importance for equipment such as commodes, wheelchairs, moving and handling equipment, pressure cushions etc. that may come into contact with contaminated body fluids. Such items of equipment must be routinely decontaminated **after each and every use during an outbreak of gastro-intestinal infection.**

QUICK REFERENCE GUIDE FOR CARE STAFF DURING VIRAL GASTRO-ENTERITIS OUTBREAKS

- Ensure thorough and frequent washing of hands with liquid soap and water between all care activities and after contact with service user's immediate environment.
- Wear gloves and aprons for service user contact and environmental / equipment

cleaning. Ensure hands are washed prior to putting gloves and aprons on and after removing them.

- Change gloves and aprons between service users / tasks, performing hand hygiene in between.
- Clean up and disinfect spillages of vomit and faeces immediately.
- Pay particular attention to the cleaning of commodes, moving and handling equipment, seat raisers etc.
- Increase the frequency of routine bathroom and toilet cleaning and also cleaning of frequently touched areas (door handles, phones etc.) This also includes the dirty utility area.
- Disinfect surfaces and equipment using freshly prepared 0.1% (1000ppm) chlorine-releasing agent after cleaning with neutral detergent Alternatively use a combined detergent/chlorine-based disinfectant e.g. Chlorclean/ Sochlor for surfaces and equipment.
- Ensure offensive waste, clinical/Infectious waste and infected laundry are handled with care wearing protective clothing and removed promptly. Ensure hands are washed before and after glove use. Alginate bags to be used for fouled laundry
- Keep outbreak record sheet up-to-date on a daily basis.
- Isolate symptomatic service users or cohort nurse groups of affected residents in the same area.
- Avoid movement of staff between affected and unaffected areas
- Exclude affected staff immediately and until asymptomatic for 48 hours
- Exclude non-essential personnel
- Avoid transfer of service users to other facilities Inc. day centres, rehabilitation etc. unless medically indicated and after consultation
- Do not re-open care home to admissions until agreed with IPCT/ UKHSA - usually 48 hours after last new case.
- Please note that if samples are sent and all negative, the home may be able to open to admissions sooner.
- Communicate effectively and regularly to all who need to know including visitors. Provide notices indicating restrictions at entrance doors
- If in doubt, contact IPCT/ UKHSA for guidance and support.

3. SAFE PRACTICE GUIDANCE: GENERAL

3.1. Infection Control Principles

The spread of infection

The spread of infection requires three elements:

- a source of infecting organisms (bacteria, viruses, fungi)
- a susceptible host
- a route of transmission of the organism from one person / site to another.

Source

The source may be service users, staff or visitors and may include persons with an obvious/ unobvious symptomatic illness, or those who are asymptomatic or colonized by the infectious agent. Another source may be the service user's own microbial flora. Other potential sources are objects within the environment that have become contaminated, including health care equipment.

Susceptible Host (the individual service user, staff member, visitor)

It is important to remember that it is not only service users that may be susceptible to infection but also staff members and also visitors to the facility.

An individual's resistance to pathogenic micro-organisms can vary greatly. Some individuals may be immune to or able to resist colonization by an infectious agent, others may simply be colonised and become asymptomatic carriers, whereas others will develop a clinical disease. Persons with underlying disease such as diabetes, lymphoma, leukaemia, etc. or treated with certain antimicrobial agents, corticosteroids, irradiation or immunosuppressive agents are particularly prone to infection. Extremes of age, chronic debilitating disease, shock, coma, traumatic injury or surgical procedures and the presence of invasive devices can also make an individual more susceptible to infection.

Transmission

Micro-organisms can be transmitted by a variety of routes and the same micro- organism may be transmitted by more than one route. For example, the *Varicella zoster* virus which causes chickenpox can spread via the airborne route as well as by direct contact and gastro-intestinal infections e.g. norovirus can spread by both indirect contact (with contaminated equipment and surfaces e.g. commodes and horizontal surfaces) as well as via the airborne route where virus particles are propelled through the air (and inhaled) and then drop onto surfaces where they contaminate hands and are then ingested.

There are four main routes of transmission:

- contact
- droplet/airborne
- infected food and water
- vectors

Contact transmission:

The most important and frequent means of transmission of infection can be divided into two main subgroups:

- **Direct contact:** Involves direct physical transfer of the micro-organism from person to person e.g. sexually transmitted diseases or from one site to another in the same individual e.g. bowel flora contaminating the urinary tract.
- **Indirect contact:** This is the most significant route of spread in healthcare and

involves contact with a contaminated object such as bed linen, instruments, equipment, dressings, etc. It is also the route by which the hands of healthcare workers transmit micro-organisms during service user care.

Airborne /droplet transmission:

- **Droplet transmission:** by large droplets during coughing, sneezing, talking and during procedures which may generate droplets such as suctioning. The droplets are propelled only a short distance through the air.
- **Airborne transmission:** caused by dispersal of smaller micro- organisms, e.g. viruses, contaminated water particles or airborne dust particles containing the infectious agent. These organisms can be widely dispersed by air currents before being inhaled or deposited on the susceptible host; by aerosolisation of water particles which are then inhaled e.g. in shower heads and in the case of dust particles, by airborne spread onto horizontal surfaces, equipment etc.

Food and water transmission:

Infection can occur via contaminated food or water supplies. Organisms can be transmitted via the food chain e.g. salmonella in eggs or by inappropriate handling of contaminated raw food or inadequate cooking. Secondary spread (cross- infection) can then occur if surfaces are contaminated by food-stuff e.g. chopping board used to cut contaminated poultry then used to chop salad vegetables. Additionally, infected food handlers can transfer micro-organisms on their hands to food.

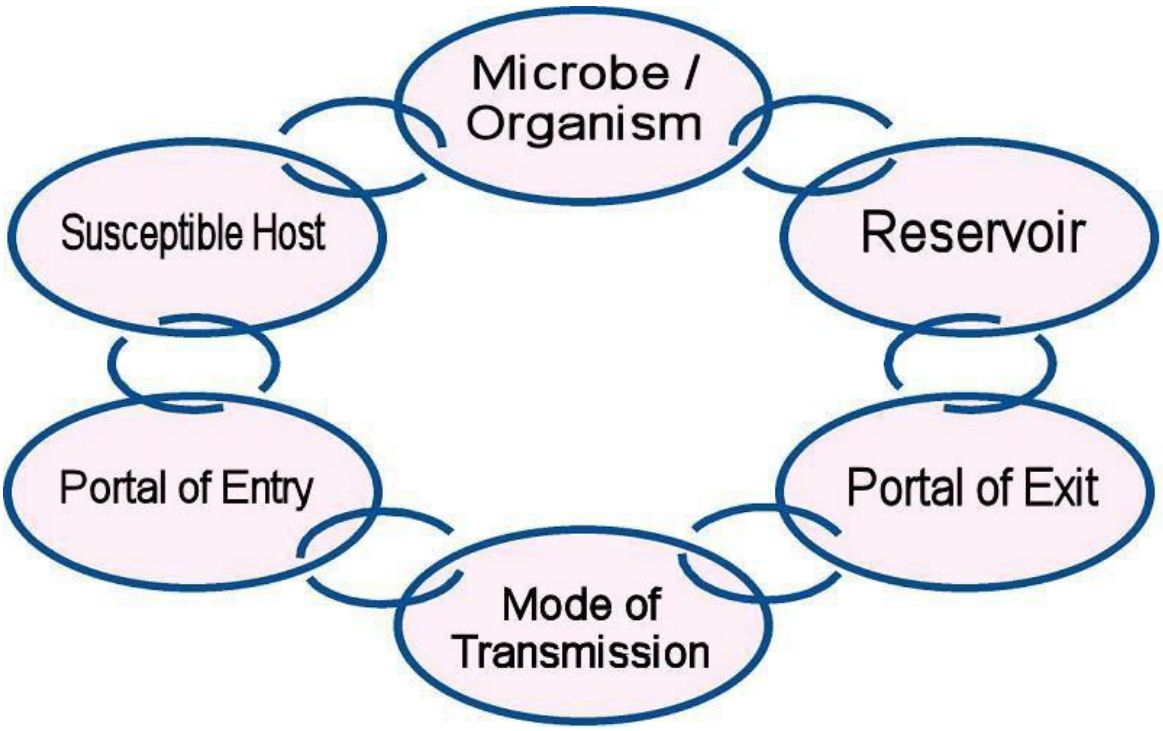
Water provides an ideal breeding ground for some micro- organisms, which can then be colonized if the water supply has not been appropriately treated. In the case of Legionella pneumophila the bacteria form a biofilm in pipes / shower-heads etc. and can then be dispersed in water particles and inhaled.

Vector borne transmission:

This occurs when vectors such as flies, mosquitoes, rats and other pests transmit infection. This route of transmission is rare in healthcare in the UK although it is a route of spread requiring containment in food preparation areas.

Breaking the chain of infection

The spread of micro-organisms from their source to a susceptible host is frequently referred to as the chain of infection.



The principles of infection control relate to the implementation of a series of basic control measures whose aim is to break the links in the chain thus reducing the likelihood of spread. These control measures are referred to as standard infection control precautions.

In the prevention of spread via the **direct or indirect contact** route, the following measures apply:

- Effective hand hygiene is the single most important measure in the prevention of the spread of infection.
- Healthcare staff should wear suitable gloves, aprons and other protective clothing whenever there is any possibility of direct contact with infected blood, body fluids or contaminated material.
- Strict adherence to the principles of aseptic technique will minimise the likelihood of contamination during the insertion and management of invasive devices and other clinical procedures such as wound care.
- Effective environmental cleaning and good housekeeping techniques together with appropriate cleaning, disinfection and sterilisation of medical equipment.
- Appropriate segregation and disposal of healthcare waste and contaminated laundry.

In the prevention of infection by **food and water** the following additional measures are important:

- Provision of adequate hand washing facilities, especially when handling or preparing food.
- Strict adherence to food hygiene regulations. All staff who handle food should have undertaken food hygiene training.
- Healthcare environments are subject to strict flushing regime controls to minimise the risk of *Legionella pneumophila.*
- Food handlers suffering from septic conditions of the skin or gastro-intestinal infections MUST be excluded from work until proven to be microbiologically free from infection.

In the prevention of spread of infection by the **airborne** route the following additional measures are important:

- Adequate un-crowded housing
- Segregation of infected service users to minimise the risk of cross-infection. This is usually achieved by either physical segregation in a single room or by measures such as keeping affected service users together (cohort nursing)
- Vaccination/immunization programmes where appropriate.

In the prevention of infection by **vectors** the following information is relevant.

Whilst most people readily associate rats and mice with risks to health, the part played by cockroaches, flies and other insects is not always appreciated. They have been implicated in the transmission of infection in food stores and food preparation areas as well as in medical supplies and in the home.

3.2 Standard Infection Control Precautions

There is often no way of knowing which service users / clients are contaminated or infected with a transmissible micro-organism. It is essential that Standard Infection Control Precautions (SICPs) are used for all service users on every contact.

SICPs, often referred to as 'universal or standard precautions', are a single set of activities used by all staff for all service users at all times, in order to reduce the transmission of micro- organisms from both recognised and unrecognised sources of infection.

In many instances, pathogenic (disease-producing) organisms have already spread prior to the confirmation of a diagnosis. Furthermore, pathogenic organisms are frequently carried by individuals in their blood or body fluids or on the skin without signs of clinical infection – known as "colonisation". Therefore, it is important to apply appropriate precautions at all times, for all service users, rather than wait for confirmation of a diagnosis when it may be too late to prevent the spread of infection.

SICPs apply to the care of all service users regardless of diagnosis or presumed infection status, where there is possible contact with:

- blood
- all other body fluids
- secretions and excretions except sweat
- non-intact skin
- mucous membranes (conjunctivae, mouth, nose, vagina, rectum)

Standard IPC precautions include:

- Effective hand hygiene
- Wearing appropriate protective clothing - Apron, Gloves, Face Masks and Goggles if risk assessment deems required.
- Safe disposal of sharps and other healthcare waste
- Safe management of spillages.
- Prevention and treatment of sharps injuries.
- Adequate and appropriate decontamination of the healthcare environment and service user-related equipment.
- Protecting cuts and abrasions on staff skin with an impermeable dressing, e.g. plaster and ensuring appropriate immunizations are up-to-date by means of routine pre-employment screening.

Additional precautions

Additional precautions may be required in certain circumstances and are used in addition to SICPs. For example, service users with Pulmonary TB, Influenza, or Covid-19 may pose a risk of airborne transmission requiring respiratory precautions. Guidance on implementing additional precautions is given throughout this document in the relevant sections. Please contact the IPCT for further advice. During the Covid – pandemic much of present guidance is constantly under review. For most recent updated guidance in relation to Covid-19, please see updated guidance on UKHSA website:
https://www.gov.uk/government/organisations/uk-health-security-agency

3.3 Hand hygiene

Effective hand hygiene is the single most important measure in reducing the risk of transmission of micro-organisms from one person to another or from one site to another on the same person. Decontaminating hands as per six step techniques between service user contacts and after contact with blood, body fluids, secretions, excretions and contaminated equipment/articles is essential in order to minimise the risk of cross-infection.

Hands are contaminated with both transient and resident flora:

- **Transient** flora are those micro-organisms that are not resident on the skin but are acquired by day-to-day activity including direct contact with service users, contaminated equipment and environmental surfaces. It is these micro-organisms that are responsible for the majority of episodes of cross infection. Transient flora includes the vast majority of bacteria, viruses and other pathogenic micro- organisms that our hands come into contact with during the course of daily living. This includes organisms such as *Staphylococcus aureus, Clostridium difficile*, gram negative bacilli and Noro- viruses. Transient flora are loosely attached to the skin and are readily removed by the mechanical action of washing, rinsing and drying hands using liquid soap and water. Alcohol hand rub should not be used on hands that are contaminated, as it is ineffective. Alcohol hand rub can be used once hands have been washed as an extra precaution.
- **Resident flora** are those micro-organisms that live on the skin and provide a protective function. In the vast majority of instances this flora does not cause cross-infection and it is unnecessary to eradicate them from hands during most healthcare activities. However, in certain circumstances resident flora can pose a risk to susceptible individuals. They are a particular risk during surgery and the insertion of some invasive devices such as central venous cannula etc. Resident flora are not easily removed by mechanical methods and require the application of skin antiseptics e.g. chlorhexidine or povidone iodine to reduce their numbers to acceptable levels. Thus, the use of skin antiseptics is standard practice prior to surgical procedures and the insertion of some invasive devices

Basic hand care

To keep hands in good condition and to perform effective hand hygiene, staff should perform some basic hand care.

Use an emollient hand-cream twice a day. Use before and after shifts to help replace the skin's oils that can be lost through frequent hand hygiene. Hand creams should be for individual use or dispensed from either a wall-mounted container or from a pump dispenser. Pots / tubes of cream should not be used by groups of staff as they can be easily contaminated.

Observe the hands for any signs of damage to the skin as this can provide a portal for micro- organisms to enter the body. Cover with a waterproof plaster or dressing before the shift begins and replace if necessary. If cracks or breaks do not heal, then occupational health advice should be sought. Dermatitis can be caused by sensitivity to ingredients in hand cleansers. Always rinse thoroughly. Seek guidance from occupational health or local GP if skin problems on hands do not clear.

All staff should be bare below the elbow when in clinical practice. Hand and wrist jewellery (including wrist watches) should not be worn by staff undertaking direct care. Rings containing stones or mounts should not be worn by care staff as micro-organisms are

known to readily colonise such items providing an on-going source of potential pathogenic micro-organisms. Plain wedding bands are acceptable. Wrist watches are easily contaminated and can prevent thorough hand washing of wrists.

Nails should be kept short at all times to reduce the accumulation of micro- organisms. False nails nail extensions and nail jewellery should NOT be worn by care staff as they too are recognised sources of potential pathogenic micro- organisms and discourage staff from thorough hand decontamination.

Long sleeves should not be worn by staff undertaking direct care. In the event that long sleeves are worn, they must be rolled up above the elbows prior to hand washing and service user contact.

Types of hand hygiene/decontamination
Current research advocates a variety of processes to ensure effective hand hygiene and these are described below. The most appropriate of these processes must be used by healthcare workers depending on the work that is being undertaken.

General / clinical / social hand wash
This involves the use of liquid soap products, warm running water and disposable paper towels. This activity mechanically removes transient micro-organisms from the hands and is perfectly acceptable for the vast majority of healthcare interventions.

Alcohol-based general / clinical / social hand decontamination
Alternatively, an alcohol-based product can be used for general hand decontamination in the place of a hand-wash but only if hands are visibly clean and not soiled, or contaminated – see below. In residential care settings.

Surgical / antiseptic scrub
This is an extended hand decontamination procedure using hand wash products containing antiseptic skin cleansers e.g. chlorhexidine or povidone-iodine. Alternatively, alcohol-based products can also be used. This type of hand wash is only required when removal of resident micro-organisms is required e.g. prior to surgical procedures and certain high-risk invasive procedures.

Types of hand decontamination products

<u>Liquid soap products</u>
These products are used for the vast majority of hand decontamination interventions that require the removal of transient micro-organisms. Products should be purchased from an approved supplier of medical products e.g. NHS Supply Chain as these products have been independently evaluated and economies of scale will be achieved with regards to cost. Liquid soap should come in a single cartridge dispenser. Bar soap should not be used for hand decontamination by healthcare staff as it can harbour micro-organisms.

Soap impregnated/ antibacterial wipes should **not** be routinely used by health care workers who require a more thorough hand decontamination that is best provided by the use of liquid soap and running water. Soap impregnated wipes are useful in, for example, in care homes for service users, prior to meals and after using toilet facilities and in other circumstances where access to a hand wash basin is impaired.

Liquid soap products containing antibacterial agents (as are widely available in supermarkets) are not necessary for routine hand decontamination and should be avoided in health care environments.

Some soap formulations are also available as foams. These are acceptable.

Alcohol hand rub/gel

Alcohol based hand products – usually rubs or gels are currently recognised as being a known method of hand decontamination for most healthcare interventions where rapid hand decontamination is required at the point of use. However, this is not effective if hands are dirty/contaminated. In this case hands must be washed to remove transient micro-organisms. Hand wipes are also useful where adequate facilities are not available, e.g. when caring for service users in their own homes.

There is a common misconception that hands should be washed after every four or five applications of **alcohol-based hand rub**. There is no evidence to support this. (WHO 2009) The risk of contamination should be assessed.

Alcohol-based products should be purchased from an approved supplier of medical products e.g. NHS Supply Chain; thus, ensuring that an appropriate product suitable for healthcare activities is supplied and of the required strength (usually 60-70%) and type (usually isopropanol). Alcohol products should be used from wall- mounted dispensers (see below) or can be provided for individual staff use in bottles that can be attached to uniforms thus ensuring that the product is available at the point of care.

Be mindful on the placement of alcohol-based hand rub products in public areas and of the type of dispenser. Risk assessments should be undertaken to minimise the risk of accidental/intentional ingestion of the product.

Alcohol is not as effective as soap and water in removing *Clostridioides difficile* spores or some viruses including Norovirus and must therefore not be used whilst caring for service users with diarrhoeal illness.

Antiseptic detergent products (e.g. Chlorhexidine, povidone iodine)

These products are designed for use when a higher level of antimicrobial kill is required e.g. when it is necessary to remove / reduce resident as well as transient micro-organisms. This is usually only necessary prior to surgical procedures and certain high-risk invasive procedures.

In primary care facilities e.g. GP surgeries, health centres etc. antiseptic detergent products should be available where minor surgical procedures and / or Minimal Access Interventions (MAIs) are undertaken.

Hand wash facilities:

Soap and alcohol containers / dispensers

All soap and alcohol products should be dispensed from a sealed container, which delivers a measured amount of product. The nozzle must be cleaned regularly to prevent clogging and contamination. Open containers and refillable containers must not be used as they can become contaminated with micro-organisms.

Ideally, containers should be wall mounted with a pump-action and operated with heel of hand or wrist, not fingers.

Alcohol dispensers should be available at the point of care and wall mounted, but not adjacent to the sink

Paper towels
Good quality, absorbent paper towels should be available for use at all hand wash basins. Towels should be dispensed from wall-mounted dispensers to avoid contamination.

Hand cream
Hand cream should be available for staff use. Ideally, it should be provided in wall-mounted dispensers or from a pump-action container. Tubes or jars of hand cream must be avoided as they are easily contaminated. Nozzles must be cleaned regularly to prevent clogging and contamination.

Equipment required for effective hand hygiene in clinical settings
All hand wash basins and taps in clinical areas should conform to the requirements of Health Building Note (HBN) 00-10 (2013) *Part C Sanitary ware assemblies* which outlines the minimum requirements for such equipment. This includes the need for:

- elbow / wrist / automatically operated lever taps
- mixer taps ensuring that water is delivered at an appropriate temperature
- basins without plugs or overflows
- taps that are situated so that water does not flow directly into the waste outlet but are off-set
- taps without swan necks to minimise the potential for Legionella spp. biofilm formation in pipe-work

In primary care environments, the provision of adequate clinical hand wash basins is often overlooked. As a general rule, where-ever clinical care is provided e.g. in a clinical, treatment or consulting room as well as in dirty utility or decontamination rooms then a clinical hand wash basin should be fitted.

The following basic principles apply:
- A clinical hand wash basin compliant with HBN 00-10 should be available where- ever clinical activity takes place
- Clinical hand wash basins should be used for hand washing only and not for other purposes e.g. decontamination of equipment, disposal of body fluids including specimens or crockery/utensil cleaning.
- Clinical hand wash basins must be equipped with warm running water from a mixer tap. Separate taps are not acceptable as they do not allow for water to be delivered at the correct temperature
- Hand wash basins in clinical areas should be equipped with lever (wrist or elbow-operated) taps
- Disposable paper hand towels and liquid hand soap in wall mounted dispensers must be available at each clinical hand wash basin
- Alcohol hand gel should also be available in wall-mounted dispensers and/or as an individual container for personal carriage by each staff member
- A foot operated pedal bin should be available at each hand wash basin for the hygienic disposal of paper hand towels. (Used towels do not need to be disposed of as clinical waste unless contaminated by blood or body fluids)
- A hand washing poster demonstrating an effective hand washing technique should be displayed near hand wash basins in each clinical area

Equipment required for effective hand hygiene in domiciliary/home care settings

Many primary care interventions take place outside healthcare facilities e.g. in the patient's own home. Resources available for hand decontamination will vary significantly and should not be relied upon. Providing staff with personal alcohol gel dispensers or hand wipes, facilitates hand decontamination at the bedside or in other locations where there is limited / no access to a hand wash basin. For nursing staff working primarily in patients own homes e.g. district / community nurses then a range of hand decontamination equipment should be available in portable form e.g. pouches or small cases which hold dispensers of liquid soap and alcohol gel together with disposable paper towels. Moisturisers are also an important part of hand hygiene process

Hand hygiene methods

To ensure all surfaces of the hands are adequately decontaminated, it is helpful to use a standardised technique. To wash all surfaces thoroughly should take 20-30 seconds.

Some areas of the hands are more frequently missed than others during hand decontamination.

It is important to pay attention to all areas of the hands, whilst washing, but paying particular attention to the finger tips and nail area. These are the area's most in contact with the service user and can be heavily contaminated with micro-organisms.

Application of alcohol gel /rub

- ensure hands are not soiled – if necessary wash with soap and water beforehand
- dispense a measured dose of the gel / rub into the palm of one hand
- rub vigorously into all surfaces of the hand up to the wrist, using the same six step technique for hand washing, until the product has dried,

Application of liquid soap

- Wet hands under running water
- Apply the recommended amount of hand cleanser
- Rub hands together vigorously to make a lather covering all surfaces up to the wrist. Follow the 6-step technique
- Rinse hands thoroughly under running water
- Dry hands thoroughly with clean paper towels
- Turn off taps using elbows or clean paper towels to prevent recontamination
- Discard paper towels into a foot operated pedal bin. Do not lift up the lid of the bin with hands as this will re-contaminate them
- If in service user's home, dispose of towels into domestic waste

Applying hand hygiene principles in clinical practice:

WHO "My five moments for hand hygiene" initiative

The World Health Organisation (WHO) concept of "5 moments for hand hygiene" has been adopted internationally as a means of providing a user- and patient- centred approach to hand decontamination with minimal complexity and across a wide range of health care settings and professions.

The concept of "5 moments" is intended to make it easier to understand the occasions (moments) when there is a risk of micro-organism transmission via the hands, to memorise these "5 moments" and to assimilate them into healthcare activities. The

concept does not define specific and multiple procedures and care situations but helps focus on essential moments embedded within the care sequence that are essential for hand hygiene.

Applying the “5 moments for hand hygiene” in primary care

The need for hand hygiene is closely connected with the activities of healthcare workers within the immediate-healthcare environment surrounding the patient. This can be divided into two areas – the *patient zone* and the *healthcare zone.*

The *patient zone* includes the patient and his / her immediate surroundings e.g. all surfaces that are touched by or in direct physical contact with the patient e.g. chair arms, walking aids, medical devices etc. It also includes all surfaces frequently touched by staff whilst caring for the service user e.g. monitors, knobs and buttons, chair handles, computer keyboards, telephones etc. The patient zone is not static – it changes as the service user is moved from place to place and the zone accompanies the individual where-ever he / she goes e.g. from the chair to examination couch etc.

The *health-care zone* corresponds to all surfaces in the health-care setting outside the patient zone i.e. other patients and their zones and the wider health-care environment. This environment still poses a risk – particularly from staff who may acquire micro-organisms within the wider health-care environment that are then transferred to service users when the staff member enters the patient zone to provide direct care. Examples include: dirty utility areas, treatment rooms, toilets, waste disposal areas etc.

In the primary care environment there are a number of occasions when clinical care is delivered in settings that are not deemed to be *health care zones* e.g. in the patient’s own home. These environments cannot be controlled. However, hand hygiene CAN be controlled and should be used as the first line of defence against micro-organism transmission in ANY environment where clinical care is delivered.

WHO 5 moments for Hand Hygiene.

5 Moments	**Examples of care activity**
1 Before touching a patient	• Before any **direct** contact with the patient
2 Before clean / aseptic procedure	• Before applying disposable gloves • Before examining a patient • Before undertaking an aseptic or clean wound dressing • Before handling / inserting an invasive device • If moving from a contaminated body site to another body site during examination / treatment of the same patient
3 After body fluid exposure risk	• After contact with body fluids, excretions, mucous membrane, non-intact skin or wound dressings • If moving from a contaminated body site to another body site during examination / treatment of the same patient • After removing gloves
4 After touching a patient	• After any **direct** contact with the patient • After removing gloves
5 After touching patient surroundings	• After contact with inanimate surfaces and medical equipment in the immediate vicinity of the patient • i.e. within patient zone

As these examples show, hand hygiene is required both **before** and **after** contact or procedure. Decontaminating hands **before** contact or procedure, will protect the patient. Decontaminating hands **after** contact or procedure will protect the HCW and subsequent contamination of the healthcare environment.

Hand hygiene should be performed before putting gloves on and after removing them.

3.4 Personal Protective Equipment (PPE)

Personal protective equipment is designed to protect the healthcare worker from coming into contact with potentially infectious body fluids. It may also protect the service user from the healthcare workers own microbial flora. Personal protective clothing includes:

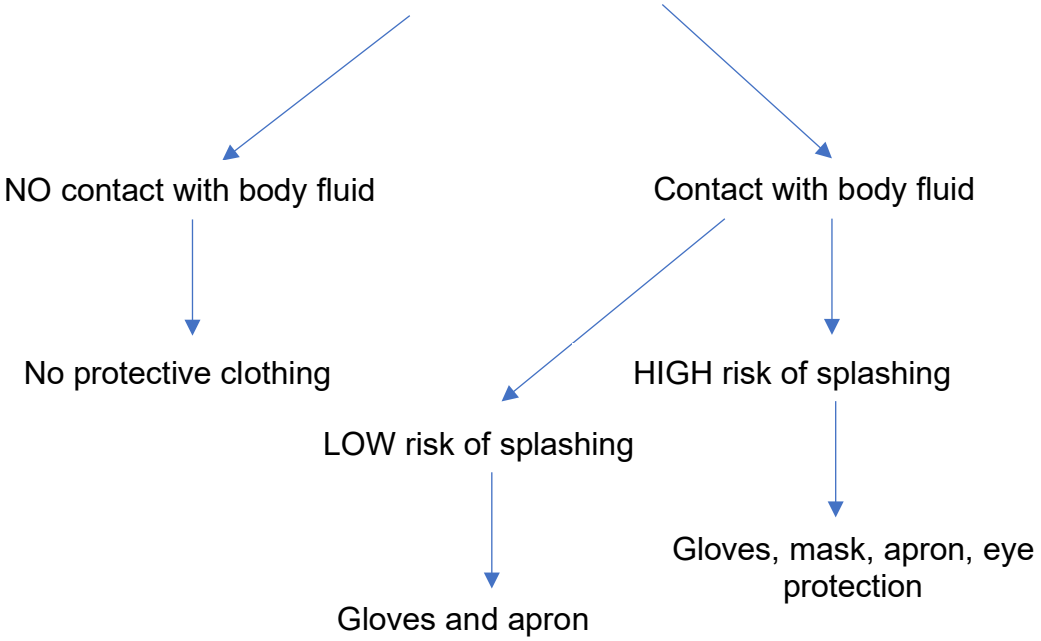
- gloves
- water repellent aprons / gowns
- masks
- eye protection

Personal protective equipment is governed by Health and Safety Legislation including the Personal Protective Equipment Regulations and should only be used when risks cannot be averted by other work practices.

Risk assessment for PPE

The choice of PPE selected depends on the activity and the anticipated risk of exposure to body fluids. Many activities pose no risk of exposure to body fluids therefore there will be no need for any PPE. Risk assessment forms an integral part of Health and Safety legislation.

Assess risk of activity



Disposable Gloves

It must always be remembered that staff have a duty of care to protect their service users from risk as well as a responsibility to protect themselves. Gloves need to be changed between service users and hand hygiene should be performed before applying and after removal of gloves; Also, between tasks on the same service user to ensure that risk of transmission/cross infection is reduced.

The use of latex-containing products ,e.g disposable gloves are not recommended. All healthcare providers should undertake a risk assessment relating to the provision of latex-

free products to minimise the risk of inadvertent allergic reactions in those service users and staff known to be sensitive to latex and to prevent the acquisition of a sensitivity reaction in at-risk individuals e.g. those with known skin conditions such as eczema, dermatitis etc.

In addition to effective hand hygiene, disposable gloves of the recommended type play an important role in reducing the risks of transmission of micro-organisms; however, can increase the risk of transmission of microorganisms if worn inappropriately. Gloves should not be used in the place of hand hygiene.

Gloves are worn to:

- reduce the likelihood of micro-organisms being transmitted to service users during invasive or other care activities
- reduce the likelihood that hands of personnel contaminated with micro- organisms from a service user or equipment can transmit these organisms to another service user
- provide a protective barrier and to prevent gross contamination of the hands when anticipating contact with blood, body fluids, secretions, excretions, mucous membranes and non-intact skin
- protect staff from potentially harmful organisms

Glove use

Hand hygiene should be performed prior to donning gloves

Non-sterile, disposable gloves e.g. nitrile and vinyl gloves should be worn whenever contact with body fluids, contaminated equipment, non-intact skin or mucous membranes is anticipated.

Sterile, non-powdered, synthetic latex e.g. nitrile gloves which provide greater dexterity and tactility are available for surgical and other invasive procedures requiring sterile gloves. These are supplied in a range of sizes for accurate fit.

For the majority of routine clinical tasks vinyl gloves provide adequate protection and should be the glove product of choice

Gloves are not required when handling unsoiled articles or for contact with intact skin in the absence of body fluids.

Gloves must be removed at the end of each individual procedure/healthcare activity, and hands washed thoroughly.

It is essential to keep the time of wearing gloves to a minimum to avoid skin sensitisation. Staff experiencing skin conditions which may be exacerbated by glove wearing should contact Occupational Health departments, or their GP for further advice / assessment.

Disposable plastic aprons
Plastic aprons should be worn to protect staff uniform/clothing when contamination with body fluids is possible during healthcare procedures. This may include:

- Testing urine specimens
- Undertaking wound dressings
- Ear syringing
- Undertaking minor investigation procedures, e.g. cervical screening, spirometry.

In addition, a plastic apron should be worn during the following activities to minimise microbial contamination of clothing:

- During environmental cleaning or decontaminating/cleaning equipment
- When handling used/soiled linen.
- When handling waste

Always remove the apron at the end of each care-giving procedure and discard into a waste bag, and wash and dry hands to reduce the likelihood of transferring organisms to another site.

Water repellent (sterile) surgical gowns
During Minimal Access Interventions (MAIs) and *some* minor surgical procedures (where a sterile device is being implanted) or when there is a risk of significant post- procedure infection then it is recommended that a sterile (water repellent) gown is worn to minimise the risk of surgical site contamination (Humphreys H., Coia J.E. et al (2012) *Guidelines on the facilities required for minor surgical procedures and minimal access interventions* Journal of Hospital Infection 80 103 – 109)

Face masks / eye protection
These are worn when there is a possibility of splashing of blood or body fluids or chemical/detergents into the eyes and/or mucous membranes. Face masks, goggles, safety glasses or shield masks are all suitable products and the most appropriate should be chosen and should be readily available for staff. If these products are disposable they should be disposed of as clinical waste or if non- disposable, cleaned as recommended in the disinfection policy/manufacturer's recommendations, usually with detergent and warm water. Managers should ensure that appropriate masks and eye protection are available for staff use.

Face masks are not usually required during minor surgical procedures except when a sterile device is being implanted or when there are other issues predisposing to infection.

In certain circumstances, respiratory masks may need to be of increased efficiency in order to minimise the risk of transmission of highly infectious micro-organisms. Currently this includes COVID-19, pandemic influenza; some cases of sputum-positive pulmonary TB e.g. MDRTB.

Current guidance recommends the use of FFP3 respiratory masks which provide 99% particle filtration efficiency. These must conform to European Standard EN149 2001 (box is CE marked) and must be worn when exposed (within 2 metres of a service user). These masks are single use only. The Health and Safety Executive stipulates that staff who are required to wear FFP3 masks are fit tested to ensure that masks adequately fit the individuals' face thus minimising the likelihood of infected respiratory droplets leaking through or around the facemask.

Influenza - FFP3 Masks are only required when performing aerosol generated procedures on a suspected/ confirmed airborne infection, e, g Influenza (Flu), Covid-19, For direct care/ close contact with suspected or confirmed flu, within one metre, a surgical face mask will suffice. Staff who are immunocompromised and/or have not had a flu vaccination will need to seek further information.
COVID-19 – Up to date guidance on PPE requirements can be found on the Government website.

https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control

Storage of PPE
All personal protective equipment (PPE) should be stored appropriately to minimise the risk of contamination prior to use.

Wall-mounted dispensers are available for the hygienic storage and dispensing of both disposable gloves and plastic aprons. These are recommended for use in primary care facilities where routine clinical interventions are undertaken for example examination, consulting or treatment rooms.

Hands should be washed before removing PPE from the dispenser and care should be taken when removing disposable gloves from boxes in order to minimise the risk of contaminating the contents with unwashed hands.

3.5 Safe use and disposal of sharps

See also section 3.6 – Management of Healthcare Waste.

Many sharps injuries are preventable providing staff are informed of the appropriate procedures which will minimise the risks associated with handling sharps. The following practices should be taught to all staff likely to handle sharps, at induction/orientation and regularly thereafter.

Non-compliance with these guidelines may carry medico-legal or health and safety implications.

DEFINITIONS

Clean / used sharp describes a sharp that has been used for a "clean" procedure such as drawing up injections. Such a sharp will not have had contact with a service user's blood or body fluids and poses less of a risk to the HCW should a sharps injury occur, although from a Health and Safety perspective such injuries are still of significance.

Contaminated / dirty sharp describes a sharp that has been used invasively and has had contact with a service user's blood or tissues thus posing a higher risk of potential cross-infection with a blood-borne virus should a sharps injury occur.

COLOUR-CODING OF SHARPS CONTAINERS

Sharps containers are colour coded to indicate their contents and the route for final disposal by incineration. In brief, the colours of sharps container lids show, by means of colour coding, the contents of the container and which waste stream they are required to enter for final disposal by incineration. Three colour-coded sharps waste streams apply:

- Yellow sharps container with a yellow lid. Sharps for incineration - partially discharged sharps including those contaminated with medicines other than cytotoxic and cytostatic, or where a mix of sharps is likely.
- Yellow sharps container with an orange lid. Sharps for incineration or alternative treatment.
  - Sharps not contaminated with medicinal products, or cytotoxic residues. Contaminated with blood or saline / dextrose products e.g. in phlebotomy then an orange lidded container can be used.
- Yellow sharps container with a purple lid. Sharps for incineration Sharps including those contaminated with cytotoxic and cytostatic medicines.

At local level this requires providers of healthcare to assess the sharps that they generate and to ensure that appropriate colour-coded containers are used. This will usually be undertaken at a strategic (organisation-wide) level in discussion with the registered waste contractor responsible for the collection and ultimate disposal of clinical waste.

The rationale for colour coded lids relates to the fact that POMs and cytotoxic / cytostatic medicines are classed as hazardous waste and require separate licensing, transportation and final disposal arrangements.

*Many users are unaware of the wide range of cytostatic medicines currently in use. A comprehensive list of common drugs can be found in HTM 07-01 page 167.

ASSEMBLY OF SHARPS CONTAINERS

Only approved sharps containers must be used which comply with current standards. (BS 7320:1990, UN 3292)

Ensure that the sharps container is correctly assembled and that the lid is securely fitted. Follow the manufacturer's recommendations for assembly, as all containers differ. Label the sharps container with the date of assembly, the name of the member of staff who assembled it and location e.g. GP practice name.

PROVISION AND LOCATION OF SHARPS CONTAINERS

Adequate sharps containers must be available in all healthcare facilities where sharps are in use. Ideally, they should be available in all places of regular use i.e. at the point of use such as treatment and consulting rooms.

Containers should be available in a range of sizes appropriate to the number of sharps generated and where they will be used. For example, small containers (designed for disposal of needles only) are available for portable use at the bedside or for home care. Many can be fitted to sharps trays specifically for this purpose. Large containers should only be used when a high volume of sharps is generated e.g. phlebotomy. For smaller volumes of sharps, it is more cost effective for services to use smaller bins, as bins should be permanently closed and disposed of after 3 months

All sharps containers must be stored out of the reach of children and others who may be at risk.

Sharps containers must never be stored on the floor or above shoulder level. They should be ergonomically positioned between waist and shoulder height to allow ease of access and to ensure the lid of the container can be seen to avoid sharps injuries from over-full containers.

Sharps containers should be placed on a secure, stable surface and away from the edge of work surfaces. Most manufacturers can supply brackets to mount them on the wall or trolleys for ease of movement e.g. in minor surgical procedure rooms.

Wherever possible, sharps containers must be taken to the point of use to ensure immediate disposal. Small, portable containers, ideally mounted on trays provide a suitable mechanism for such use.

The temporary closure mechanism should be activated when sharps bins are left unattended and whenever a sharps bin is transported.

SAFE DISPOSAL OF USED SHARPS

It is the responsibility of the individual who has used the sharp equipment, to safely dispose of it in an approved container. Sharps must not be left for others to clear away.

Place all disposable sharps into an approved (BS 7320:1990, UN 3292) puncture proof sharps container immediately at the point of use. Always ensure you have a bin ready to use prior to using a sharp. All containers have a temporary closure, which should be activated between uses

Re-sheathing sharps should NEVER occur – Health and Safety (Sharp Instruments in Healthcare) Regulations 2013.

Do not attempt to remove the needle from the syringe. Discard the needle and syringe as a single unit, into an approved sharps container.

Fill sharps containers to the 'fill' line only. Do not overfill any sharps container, as this is a significant risk to both you and others.

When full to the "fill" line or the bin has been opened for 3 months the permanent locking mechanism should be activated and the container then labelled with the date, name of the person disposing of the full container and the location details e.g. GP practice name.

Full sharps containers should be kept in a dedicated, lockable, area. Full containers must NOT be placed inside clinical waste bags.

(HSE Health and Safety (Sharp Instruments in Healthcare) Regulations 2013. Guidance for employers and employees)
https://www.hse.gov.uk/pubns/hsis7.pdf

SERVICE USERS OWN SHARPS

Many service users self-administer medications e.g. diabetics. A variety of administration and monitoring systems are available including pens as well as needles, lancets and syringes. All systems involving the use of sharps have the potential to cause injury if handled inappropriately.

Service users self-administering medication must be supervised and trained in safe practices prior to being allowed to self-medicate.

Appropriate equipment must be provided for the service user either by their GP or hospital consultant / nurse specialist (now on prescription). Small portable sharps boxes complying with relevant standards should be used. These must be returned to the service user's GP practice / pharmacy if distributed from there for disposal as hazardous waste or arrangements for collection should be made by the GP responsible for the patient. Care must be taken to ensure returned sharps boxes are transported appropriately by the service user to minimise risk to the individual and members of the public.

Service user's own sharps must never be disposed of into the household waste stream. This includes lancets used for blood glucose analysis.

Care must be taken by staff using self-administration systems on behalf of service users. An assessment of risk must be undertaken especially regarding needle disposal.

TRANSPORTING SHARPS CONTAINERS

Healthcare workers producing sharps waste in non-NHS environments e.g. in the patients' own home may be required to transport the sharps waste back to base in some circumstances (e.g. where such interventions are temporary and the householder does not have a waste collection arrangement in place).

Healthcare staff who travel in the community and carry sharps (used or unused) in the course of their work should follow a safe system of working at all times**,** in line with clinical and waste disposal policies. Sharps should always be stored safely and securely.

Sharps waste must be transported in suitable UN-approved rigid sharps containers (as

would be used in healthcare environments). 0.6litre bins should be used with a temporary mechanism that clips into place. The bin should be carried in a sturdy transport container. Sharps bins should be taken into the house to allow disposal of the sharp at the point of care. These must be provided by the healthcare provider. If the healthcare worker is travelling by public transport (or bicycle) then arrangements must be made to collect such sharps boxes from a suitable location. They should not be transported by such means.

Staff should ensure they check the container at the end of each shift to ensure no sharps have been dropped or spilled in the vehicle. If sharps have been spilled, do not use the affected area and, if necessary, the whole vehicle until made safe.

Contaminated vehicles should be cleared as soon as possible without compromising safety, e.g. using a torch, a special tool / device to avoid hand contact, and Personal Protective Equipment (PPE), being wary of sharps hidden in crevices and fabrics.

Healthcare organisations should review their procedures for the provision, use and return of leased cars for staff who travel and carry sharps.

Consideration should be given to marking leased vehicles to indicate to service departments that the vehicles are used by staff who carry sharps. This should be agreed with lease / service / valeting companies so that procedures can be set up to deal with vehicles received at any site. For security reasons, such a mark should not be identifiable from outside the vehicle during normal use.

If seats or other fittings require to be removed to complete checks properly, the service department must be told the reason for the work and the precautions required.

Healthcare organisations should work with staff who use their own vehicles to ensure the same standard of risk control.

(EFA/2013/001 Issued:21st January 2013. Gateway reference: 18655)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/213303/Estates-and-facilities-alert-2013-001.pdf

PROTECTIVE CLOTHING AND VENEPUNCTURE
Gloves must be worn when handling or using sharps.

Gloves cannot prevent needle-stick injuries but they may reduce the likelihood of infection by reducing the volume of blood inoculated during the incident.

Some individuals highly experienced in venepuncture may prefer not to wear gloves because of a perceived reduction in manual dexterity. However, all experienced staff and new trainees, including doctors, should be trained and advised to wear gloves whilst taking blood in line with expert guidance.

The following is advised:

- Gloves must always be available for venepuncture. Hands should be cleaned prior to putting gloves on, and after removing gloves, after each patient
- All staff should receive education to wear gloves from the beginning of their training.
- If staff have cuts, abrasions or skin lesions on their hands which cannot be covered by waterproof dressings they should be referred to occupational health.
- Gloves should also be worn if the service user is uncooperative or restless.

See Page 12 of World Health Organisations guidance for drawing bloods 2019 at: https://www.euro.who.int/__data/assets/pdf_file/0005/268790/WHO-guidelines-on-drawing-blood-best-practices-in-phlebotomy-Eng.pdf

Health and Safety legislation requires healthcare providers to undertake a risk assessment of all situations where there is injury, blood or other potentially infectious material. This includes measures designed to eliminate exposure risks and the consideration of possible alternative systems (Health and Safety (Sharp Instruments in Healthcare) Regulations 2013).

With regard to sharps use, there is a requirement to eliminate unnecessary use of sharps and, if risk assessment identifies that risks exist, then the provision of medical devices incorporating safety engineered protection mechanisms must be considered. These include:

- Needleless intravenous systems
- Syringes with advanceable needle guards or retractable needles
- Self-sheathing trocars etc.

3.6 Management of Healthcare waste -summary

INTRODUCTION

This waste summary has been written to provide guidance on managing waste in health and social care environments. Guidance is taken from Health Technical Memorandum (HTM) 07-01: *Safe management of healthcare waste (2013).* (updated 2021 to acknowledge no longer EU legislation):

https://www.england.nhs.uk/publication/management-and-disposal-of-healthcare-waste-htm-07-01/

This guidance provides changes designed to introduce cost savings, safer working practices and a reduction in carbon emissions related to managing waste. Relevant changes include:

- Updates to legislation, specifically for environmental permitting and transport/carriage regulations;
- A focus on the waste hierarchy through procurement practices, and the elimination, minimisation, recycling and recovery of waste;
- A drive to address the carbon impact related to waste through resource efficiency, transport impacts and disposal arrangements;
- The integration of new sector guides on GPs and dental practices as well as incorporating HTM 07-06: Disposal of pharmaceutical waste in community pharmacies as a sector guide
- A focus on practical advice and examples for classifying waste, in particular the infectious and offensive waste streams, including case studies to highlight best practice;
- A review of the terminology used for healthcare, clinical and non-clinical wastes.

This protocol is intended to provide organisations and their staff with insight into the legislation and regulation that applies to waste management and in particular provides guidance on infection control related elements of clinical waste management. **This document is NOT intended as a waste management policy.**

Organisations/independent contractors should produce a Waste Policy and Strategy which will ensure compliance with the requirements outlined below.

Good waste management is important for the following reasons:

- To reduce the health and safety risk to staff, service users and visitors from waste;
- To manage waste disposal costs and reduce where appropriate;
- To ensure compliance with environmental legislation which includes the reduction of carbon impacts of managing waste.

LEGISLATION AND REGULATION

To effectively manage waste generated, those responsible for the management of the waste should understand and comply with the requirements of different regulatory regimes:

- Health and Safety
- Environment and waste;
- Medicines Management;
- Infection Prevention & Control;
- Transport.

The management of healthcare waste is directed by statute and regulation from the United Kingdom parliaments and devolved national parliaments. Such legislation and regulation are regularly reviewed and re-issued. For waste management practices to comply with these requirements, appropriate waste management services need to be procured. Organisations procuring such services should be aware that, under the Environmental Protection (Duty of Care) Regulations (England Scotland and Wales) contained within the Environmental Protection Act 1970, they have a duty of care for the safe management of waste "from cradle to grave" and not just within their own premises.

Organisations that produce waste are required to register with the Environment Agency as a waste producer. This registration process should commence with an assessment of the types of waste to be produced and audit of same (pre- acceptance audit). Specialist advisors (Dangerous Goods Safety Advisors, DGSA) may be required depending on the volumes and types of waste generated.

It is recommended that a Waste Manager is identified to lead the production of a Waste Policy and Strategy which will include sourcing appropriate advice. Guidance on policy production can be found in HTM 07-01 - *Safe Management of Healthcare Waste section 6: Managing Compliance.*

RESPONSIBILITIES OF THE GENERAL PRACTICE

This section is reprinted directly from: Health Technical Memorandum (HTM) 07-01: Safe management of healthcare waste - sector guide: General Practices and Health Centres 141-151.

General medical practices have a statutory duty of care. This applies to everyone in the waste management chain from producer to disposer. It requires the practice to manage the waste and to take all reasonable measures to ensure that the waste is dealt with appropriately from the point of production to the point of final disposal. The general practice's responsibilities do not end when it hands its waste to a waste collector.

The practice is solely responsible for ensuring that waste is:

- Correctly segregated;
- Appropriately labelled;
- Packaged appropriately for transport;
- Stored safely and in a secure place away from areas of public access within the premises (that is, taking all reasonable precautions to prevent waste escaping and to prevent the public getting access to it – this could be a fenced, locked compound);
- Described accurately and fully on the accompanying documentation when removed;
- Transferred to an authorised person for transport to an authorised waste site.

In addition, the general practice should ensure that:

- Each of its premises is registered as a hazardous waste producer (unless exempt from registration); and
- It keeps a register of the necessary records and returns in the appropriate location (normally the practice's premises)
- The practice manager should also ensure that staff are trained and aware of the local waste procedures.

The waste management contractor should be willing to provide advice on fulfilling the requirements for the above responsibilities. However:

- **It remains the legal responsibility of the practice,** not the waste contractor, to ensure full compliance; and
- the waste contractor will have less knowledge than the practice about what is in the waste.

HEALTH AND SOCIAL CARE ACT (2008) and CODE OF PRACTICE

The Code of Practice for the prevention and control of infections and related guidance (2015) applies to the safe handling and disposal of waste (criteria 2 and 9). This can be achieved by the following:

1. Risks from waste disposal are properly controlled by:

    - Assessing risk
    - Developing appropriate policies
    - Putting arrangements in place to manage risks
    - Monitoring, auditing and reviewing the way in which arrangements work
    - Being aware of statutory requirements, legislative change and managing compliance

2. Precautions should be in place when handling waste including:

    - Training and information for all staff
    - Personal hygiene; immunisation and PPE
    - Segregation and storage of waste
    - Appropriate procedures for handling waste
    - Appropriate packaging and labelling
    - Suitable transport on-site and off-site
    - Clear procedures for accidents, incidents and spills and
    - Appropriate treatment and disposal of waste

3. Systems should be in place to ensure that the risks to service users from exposure to infections caused by waste present in the environment are properly managed, and that duties under environmental law are discharged. The most important of these are:

    - Duty of care in the management of waste
    - Duty to control polluting emissions to the air
    - Duty to control discharges to sewers
    - Obligations of waste managers
    - Collection of data and obligations to complete and retain documentation including record keeping
    - Requirement to provide contingency plans and have emergency procedures in place.

There is a unified methodology and definitions that will allow everyone who handles waste to determine whether the waste fits in to one of the following defined categories;

- Infectious clinical waste
- Non-infectious clinical waste
- Hazardous waste
- Offensive/hygiene waste
- Waste that is dangerous for carriage

This unified approach has been developed to enable those involved with waste management to comply with waste regulations. While it is not mandatory to comply with this unified approach it is considered best practice.

SEGREGATION OF WASTE

Segregation of waste into separate streams ensures appropriate and safe disposal in order to reduce costs and treat waste appropriately.

It is essential that all staff are aware of and comply with safe methods of disposal which should be clearly documented in local procedures.

Segregation can be easily achieved by careful use of the correct receptacles (bags and bins), together with appropriate storage prior to collection.

It is the responsibility of the person who disposes of an item to ensure that it enters the waste stream in the correct receptacle.

DEFINITIONS OF WASTE

Clinical and Hazardous Waste

The definition of clinical waste (as defined by the Controlled Waste Regulations – issued under the Environmental Protection Act) is:

1. Any waste which consists wholly or partly of:

   - Human or animal tissue
   - Blood or other body fluids, excretions
   - Drugs or other pharmaceutical products
   - Swabs or dressings
   - Syringes, needles or other sharp instruments

   …being waste which unless rendered safe may prove hazardous to any person coming into contact with it; **AND**

2. …any other waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practice, investigation, treatment, care …being waste which may cause infection to any person coming into contact with it."

Clinical waste can be divided into three broad categories of materials:

- any healthcare waste which poses a risk of infection (and thus by definition possesses a hazardous property categorised as H9 infectious)
- certain healthcare wastes which pose a chemical hazard
- medicines and medicinally contaminated waste containing a pharmaceutically active agent

Offensive/hygiene waste describes waste that is non-infectious and which does not require any specialist form of treatment or disposal. In the past this has been described as Human Hygiene or Sanitary/ Tiger Waste. Offensive/hygiene waste is healthcare waste (or similar from municipal sources) which meets the following criteria.

- It is not clinical infectious waste
- It is not dangerous for carriage
- The producer has identified, after segregation at source, that it is suitable for disposal at a non-hazardous landfill site without further treatment
- It may cause offense to those coming into contact with it

Items that are considered to be offensive/hygiene waste are;

- incontinence and other waste produced from human hygiene
- sanitary waste
- disposable medical consumables that do not pose a risk of infection, including PPE (that is items that are not in contact with an infectious source)
- nappies

Such waste must be assessed for medicinal, chemical or infectious properties before being assigned to this category.

Sharp waste is defined as any item that could pierce the skin. This includes: needles, broken crockery and glass, scalpels.

Items that may explode on incineration must not be disposed of as clinical waste, but must be decontaminated before disposal as per local authority guidance. This includes aerosol cans (even if empty) and batteries.

Other Waste streams
There are other waste streams which do not carry infection risks but are covered by regulation. These streams should be defined in the organisations Waste Policy.

National colour-coding approach
Segregation of waste at the point of production into suitable colour-coded packaging is vital to good waste management. Health and Safety, carriage and waste regulations require that waste is handled, transported and disposed of in a safe and effective manner. The following colour- coded waste segregation guide represents best practice and ensures, at minimum, compliance with current regulations.

Proper segregation of different types of waste is critical to safe management of healthcare waste and helps control management costs. The use of colour-coded receptacles is an essential element of good segregation practice.

The national waste colour-coded segregation system identifies and segregates waste on the basis of waste classification and suitability of treatment/disposal options.

Appendix A summarises the colour-coding system currently in use.

Waste Minimisation and Carbon impact

The guidance on which this chapter is based stresses the importance and need to minimise both the volume of waste produced and also the carbon impact of waste disposal methods used. Thus, consigning all waste as clinical for incineration is not considered acceptable. Waste assessments and strategies should be devised to allow minimisation of both waste quantities and carbon impact. This potentially benefits the organisation in cost savings as well as the environment.

Further guidance on achieving this can be found in the source document (HTM 07-01 - Safe Management of Healthcare Waste section 5). Additionally, advice may be sought from the Waste Contractor.

APPENDIX A - WASTE STREAMS – INTERPRETATION

Anatomical Waste – yellow stream.
Anatomical waste – Yellow stream requires disposal by incineration in a suitably licensed or permitted facility. This waste stream includes anatomical waste and may include other types of waste which require incineration to comply with national or regional policy, including un-autoclaved waste from clinical laboratories. This waste stream also includes waste that is, or may be contaminated with infectious micro- organisms *but which also has an additional characteristic that means it must be incinerated.* For example: anatomical waste; medicinally- contaminated infectious waste etc. **This waste stream should NOT be used solely for known/suspected infectious waste. Such waste should be treated as infectious waste and placed into orange bags**

Yellow-stream infectious waste is hazardous waste and is subject to the controls of the Hazardous Waste Regulations.

Anatomical Waste – red-lidded receptacles.
Waste which contains recognisable body parts should be incinerated in suitably licensed premises. Containers for such waste are yellow with red lids.

Infectious Waste – orange stream
Infectious waste – orange stream may be treated to render it safe prior to final disposal to landfill. Treatment may only take place in a suitably licensed facility. I Orange-stream infectious waste is known or suspected to contain pathogens and is hazardous waste subject to the controls of the Hazardous Waste Regulations. ***The orange clinical waste stream should NOT contain waste that is non-infectious*** e.g. offensive and domestic waste or that has additional characteristics that require incineration e.g. medicinal, chemical, anatomical characteristics.

Under the Landfill Regulations it is prohibited to send infectious waste direct to landfill for disposal without prior treatment.

Infectious Liquid Waste – yellow or orange receptacles
Infectious liquid waste should be contained in rigid receptacles for disposal. Some contractors require such waste to be solidified before removal.

Offensive / Hygiene Waste
Offensive/hygiene waste is disposed of by deep landfill. Such waste is collected in yellow / black striped bags – so-called “tiger stripe” bags.

Sharps Waste
Sharps are items that could cause cuts or puncture wounds including needles, syringes with needles attached, broken glass ampoules, scalpels and other blades and infusions sets. Sharp items such as needles attached to syringes that contain, or may potentially contain residues of Prescription Only Medicines (POMs) are also subject to classification under the Special Waste Regulations as Pharmaceutical waste (see below) and must be discarded into appropriate sharps bins with colour- coded lids. See Safe Management of Sharps section of this Manual.

Domestic (household) Waste
Domestic waste is waste that is similar to the waste generated at home. It should not contain any infectious materials, sharps or medical products and may be placed in either black or clear bags for disposal.

Pharmaceutical Waste
Pharmaceutical waste is described as waste containing a pharmaceutically active agent. This may include expired or unused medicinal product, and discarded items associated with medicines e.g. bottles, connecting tubing, syringes etc.

Pharmaceutical waste is further divided into Cytotoxic/Cytostatic waste and non-Cytotoxic/Cytostatic waste.

All pharmaceutical waste must be disposed of into an appropriately coloured pharmaceutical waste container. This is blue for non-Cytotoxic / Cytostatic waste and Purple for Cytotoxic / Cytostatic waste.

WASTE RISK ASSESSMENT AND SEGREGATION
In England and Wales, mixing of waste is prohibited by law. This means that waste MUST be segregated into appropriate waste streams prior to disposal. This requires waste to be risk assessed *on a case by case basis* and thus requires a waste provider to ensure that a full range of waste streams is available for use when required.

On a daily basis this means that it is not acceptable to dispose of all clinical waste into an orange waste stream or into a yellow/black offensive waste stream but that both streams must be available for use. Both streams are acceptable for the disposal of waste contaminated with body fluids BUT the orange stream should only be used *if the body fluids are suspected / known to be infectious.*

This aspect of waste disposal is the most commonly misunderstood element of the waste cycle and requires a comprehensive understanding of waste management by those responsible for waste policy, together with easily understood local protocols supported by staff training.

Comprehensive guidance and further explanations can be found in HTM 07-01 – Safe management of healthcare waste: sector guide on General Practices and Health Centres page 141.

EFFECTIVE DISPOSAL OF WASTE
For effective disposal of waste, it is important for consideration to be given to the placement of waste receptacles. Waste must be disposed of as close to source as possible and bins must be positioned where they are easily accessible to staff. Clinical waste bins should not be placed where visitors/service users may use them for the disposal of domestic waste.

Bins should be colour-coded or clearly labelled, fire retardant and fully enclosed with lids which must be foot-operated. All bins should be in good working order.

When bins are two-thirds full the bags must be removed, securely tied and labelled in accordance with the legal requirements for transporting and packaging waste (to ensure traceability) and removed to a designated waste storage area or bin. In healthcare facilities clinical waste bags should be secured with a tie and not by knotting.

The storage area or external bin must be lockable (for clinical waste) and free from access to the public, pests or vermin. Waste streams should be clearly segregated in storage areas.

Domestic waste bags must also be changed when two-thirds full, secured and stored in a designated area separate from clinical waste.

Sharps bins, when full, must be closed securely and labelling completed prior to disposal. Sharps

bins must NOT be placed inside yellow / orange bags but should be stored in a locked storage area.

When handling any waste bag, the bag must only ever be held by the neck.

STAFF PROTECTION
When handling clinical or hazardous waste staff should always wear appropriate protective clothing i.e. apron/overalls and gloves.

When such waste handling is complete protective clothing must be disposed of into the clinical waste stream.

Hands must be thoroughly washed and dried after protective clothing has been removed. All staff handling clinical waste must be offered a programme of vaccinations for Hepatitis B, Hepatitis A and Tetanus.

All staff must be aware of the policy for exposure to blood-borne viruses and take the appropriate action after an incident. (See section - Management of Occupational Exposure to Blood Borne Viruses)

SPILLAGE
All spillage must be regarded as potentially hazardous and dealt with immediately.

Under no circumstances should service users or members of the public be allowed to assist, or be involved in any way in the clearing or cleaning up of spillage.

When dealing with spillage, protective clothing (gloves, apron, eye protection) must be worn.

If it is possible, ask another member of staff to assist in keeping unauthorised persons away, until the area can be barricaded off.

If dealing with a broken or split bag, re-bag the contents and ensure that the area is free of waste.

If sharps are present, puncture proof gloves/gauntlets must be worn. A pair should be available in all areas where clinical waste is handled. If this is not possible a waste collection device should be used.

If the area has been contaminated with blood or body fluids clean the area well with a solution of detergent and warm water, followed by a hypochlorite (Chlorine) based disinfectant. (See section Spillages of Blood and Body Fluids).

After any spillage always thoroughly wash and dry your hands.
Spillages of clinical/hazardous waste should be reported using the organisation's incident reporting processes with an investigation being undertaken to identify risks and allow risk reduction actions to be implemented.

AUDIT AND MONITORING
The Code of Practice on the prevention and control of infections (2010) requires a programme of audit to demonstrate and ensure compliance with policies. Waste management guidance also requires an audit programme of waste segregation and storage arrangements. This should include quarterly observation of waste containers (without handling the waste itself) as a minimum. Additional and more detailed audits of container contents are advised at intervals determined by the volume and types of waste produced. Such audits require careful risk

assessment and the application of control measures to ensure the safety of auditors. Such control measures will include, but not be limited to, the use of Personal Protective Equipment.

TRAINING
All staff having contact with waste whether through the production of waste or disposal must have training in safe management of waste and local policies. Staff should be trained at induction and regularly thereafter.

RECORD KEEPING
The manager with designated responsibility for waste disposal must keep records that include details of the waste disposal contract and records of all clinical waste collections from the healthcare premises. Waste transfer and consignments notes for hazardous waste should be retained for 3 year.

3.7 Environmental Cleaning

INTRODUCTION

All staff have a responsibility to promote and safeguard the wellbeing and interests of service users. A dirty cluttered environment is not a standard on which any health care organisation wishes to be judged.

Cleaning is necessary to maintain the appearance, structure and efficient function of the environment and equipment. It is also required to control the microbial population and to prevent the transfer of certain micro-organisms. Cleaning, when performed effectively and regularly, is often all that is necessary to minimise the risk of cross- infection.

Standards of environmental cleaning services should be audited monthly to ensure compliance with local schedules and processes as laid down in the *National Standards of Healthcare Cleanliness 2021*

Where environmental cleaning services are out-sourced to a third-party contractor, local arrangements for regular audit against the contract should be undertaken by the healthcare provider. Where primary care services are undertaken in third party shared/ rented premises i.e. within health centres the Practice should satisfy itself that appropriate standards are being maintained in accordance with relevant national specifications (*National Standards of Healthcare Cleanliness 2021)*

STAFF PERSONAL HYGIENE

Personal hygiene is important. Hands should be washed frequently and especially after each cleaning operation, to ensure that harmful organisms are not spread.

It is important that domestic staff report to their line manager any infections which they have or have come into contact with. (See section: Management of Infections in Staff).

Adequate and appropriate protective clothing must be available for domestic staff at all times including household gloves and plastic aprons. Staff should be trained in the use of PPE and the frequency for change of equipment.

GENERAL HYGIENE

Regular cleaning and attention to cleaning processes does more to remove environmental bacteria than any other activity, including the type of cleaning agent used.

Stained, dusty or unhygienic surroundings combine to produce an unattractive and sometimes high-risk health care environment.

Cleaning equipment should be cleaned thoroughly after use and stored dry in a clean secure place. Mops should not be left soaking as the water acts as a reservoir for micro-organisms. Mops must be disposable or changed after each use a fresh mop should be stored head uppermost ideally using wall-mounted brackets. Mop heads should be either disposable or laundered regularly dependent on local risk assessment.

Appropriate protective clothing should be worn when carrying out cleaning processes, appropriate gloves (powder-free) and plastic aprons. Face protection should be available to staff handling disinfectants in compliance with Health and Safety and COSHH regulations.

COLOUR CODING OF EQUIPMENT

The aim of colour coding is to ensure that cross-infection does not occur when cleaning equipment is used in more than one type of area. Using a cloth in a consulting / treatment room following its use in the toilet would provide considerable risk of cross- contamination on environmental surfaces.

Colour coding should be applied to all housekeeping equipment in all areas of the organisation. All staff, especially domestic and healthcare staff should be familiar with the colour coding in use. Posters demonstrating this should be available for staff as a reference tool. Ideally, colour coding of housekeeping equipment should reflect the guidance issued by the National Healthcare standards 2021. A chart is provided at the end of this section.

USE OF DISINFECTANTS

Disinfectant solutions must only be used by staff that have been trained in their use and are aware of how to prepare the solution (including dilution), how to use the solution, what protective clothing must be worn and how to dispose of the solution after use. They must be aware of the COSHH regulations for the disinfectants used and have access to data sheets which are available from the product manufacturer. A folder containing COSHH data sheets must be kept in all areas and be available for staff to refer to at all times.

Research has shown that efficient routine cleaning using a general-purpose liquid detergent will remove a high proportion of micro-organisms, and in most situations thorough cleaning will be adequate. Chemical disinfectants are not cleaning agents and to use them as such is unnecessary and wasteful as well as potentially harmful. Chemical disinfectants would be used in an outbreak or cluster situation or to clean high-risk/contaminated equipment.

All disinfectants must be adequately labelled with the active ingredients in case of accident/splash/ingestion in accordance with COSHH regulations.

Gloves and plastic aprons must always be worn when handling disinfectants. Eye protection must also be available.

A decision should be made by the facility to use the same disinfectant preparations throughout the building to ensure consistency and economies of scale. Decisions relating to the use of disinfectant solutions should be made in collaboration with the local IPCT to ensure use is appropriate.

Preparations should be available in the correct concentration. designated containers should be labelled accordingly. A Hypochlorite concentration of 10,000 ppm (parts per million) is necessary for use on blood and body fluid spillages. A weaker concentration of 1,000 ppm is used for environmental disinfection (where appropriate).

Usually, the type of disinfectant solution required to deal with high risk situations can be restricted to a specific chlorine-releasing agent that is highly effective against bacteria, bacterial spores, viruses and other relevant pathogens.

Where Microfibre systems are used there should be protocols in place. These should include,

as a minimum: -

- Colour coding of cloths/mop heads
- Frequency of change of cloths/mop heads i.e. per room/bed space
- Maximum time of use/reprocessing of cloths/mop heads
- Method of laundering of cloths/mop heads
- Management of Microfibre laundry facilities

Microfibre systems should not be used during an outbreak situation, as the evidence is still not conclusive

CONTACT TIME
A disinfectant must be in contact with a surface for a specified time and the surface must remain wet for that time. Staff must know the contact times for the products used.

DIRECTION OF CLEANING
To minimise recontamination of the area and transfer of micro-organisms, clean from

- Top to bottom
- Clean to dirty

Dusting techniques should not disperse the dust (i.e. use damp dusting/dusting devices). High horizontal surfaces should be cleaned first.

Floors should be cleaned last, with adequate signage placed while floors are cleaned and dry to prevent slips, trips and falls on wet floors.

MANUAL CLEANING ACTION
Large and flat surfaces should be cleaned using am ‘S’ shape motion, starting at the point furthest away, then overlapping slightly without going back over the area to avoid recontamination.

FREQUENT TOUCH POINTS
Frequent touch points in patient care and procedural areas; such as door handles, light switches, should be cleaned more frequently than other surfaces.

STORAGE OF CLEANING EQUIPMENT
Cleaning equipment kept on site should be stored in a separate, lockable area ideally with a slop hopper and hand wash basin. If a separate area is not available then cleaning equipment may be located in dirty utility / sluice facilities. Ensure they are clearly segregated, where they are not at risk of environmental contamination. Under no circumstances should cleaning equipment be stored in clinical areas which are used for patient care, examination or treatment. The service should have arrangements in place for access to equipment in case of spillage of blood or body fluids whilst ever the service is open.

FREQUENCY OF CLEANING / CLEANING SCHEDULES

Environmental cleaning should be undertaken at a clearly defined frequency dependent on the risks associated with the specific environment. For example, clinical/treatment rooms require more frequent cleaning than office areas. (National standards of healthcare cleanliness 2021) contains comprehensive guidance on cleaning frequencies and provide schedules for local modification and use. Cleaning schedules should be available for both domestic service staff and healthcare staff. Both different staff groups should be aware of who is responsible for which task. The schedule should clearly define which items require cleaning, who is responsible and what product is used. A log should accompany the schedule for staff to complete when the said task is completed. Audit should give assurances that effective cleaning has taken place. Cleaning schedules should be available for public/service user inspection. This enhances public/service user confidence and is a requirement of the Hygiene Code of Practice and National standards of healthcare cleanliness 2021. NHS England » National Standards of Healthcare Cleanliness 2021

RISK CATEGORIES AND STANDARDS FOR FUNCTIONAL AREAS

All functional areas must be assessed and assigned to one of six functional risk categories, see National standards of healthcare cleanliness 2021.

Once identified, a 'cleaning specification' with more detailed information on how cleaning will be carried out must be produced. This should include:

- Cleaning elements – list of items that require cleaning
- Performance parameters – expected standard of each item after cleaning
- Cleaning frequencies – how often each item should be cleaned

AUDIT

Healthcare providers need to provide assurance at all levels that their establishments are meeting and maintaining safe standards of cleanliness, and be able to demonstrate to patients, staff and the public that cleanliness meets the required standards.

This helps to ensure patients; staff and the public are confident that the use of both visual and efficacy audits provides the assurance that safe standards of cleaning are met.

Auditing should provide clear evidence that cleanliness standards are being met safely and responsibly, and where they are not, detail any service deficiencies and areas for improvement.

- Technical audit: checks and scores cleanliness outcomes against the safe standard
- Efficacy audit: checks the efficacy of the cleaning process at the point of service delivery, i.e. the correct use of colour coding, equipment, materials, methodology, as well as supporting policies and procedures
- External audit: provides quality assurance and checks both the technical audit and the efficacy audit.

STAFF TRAINING

Those staff undertaking audits should receive regular training to ensure that they are proficient in making technical assessments of each functional area. This training should be documented.

It is essential that all housekeeping staff receive a fully documented induction and orientation programme including:

- Cleaning methods;
- Cleaning products and their safe use and storage;
- Use of appropriate protective clothing;
- Disposal of waste, including bagging, labelling and storage;
- Sharps safety;
- Cleaning of equipment, including care and storage;
- Personal and environmental COSHH safety;
- Hand Hygiene
- Food hygiene, if necessary;
- Incident/accident and illness reporting.

3.8 Spillages of blood and body fluids

Blood and body fluid spillages must be dealt with immediately. In clinical areas this is usually a healthcare worker responsibility. In public access areas, e.g. corridors, lifts, public toilets, this is usually a domestic staff responsibility. However, in premises without domestic staff on site during working hours, this responsibility must be clearly defined. The registered provider should ensure that local staff are aware of their responsibilities which should be included in staff induction and infection control training.

Adequate and appropriate cleaning equipment, disinfectant preparations, protective clothing and clinical waste bags must be readily available. Floor signs indicating danger of slippage must be used where appropriate.

Spillages of blood and other high-risk body fluids, e.g. faeces, should be dealt with immediately using a chlorine releasing agent e.g. sodium hypochlorite or one containing Na DCC (Sodium Dichloroisocyanurate). These are available as solutions and tablets (which require diluting to reach the correct concentration) or as powders and granules which contain an appropriate concentration. Powders and granules are available as spillage kits which often contain all the equipment required for the spill including yellow bags and card/scoop for removal of spill. Blood and body fluid spill kits are also available containing absorbent mats containing peracetic acid which can be used safely on all types of body fluid spillage but are not suitable for use on carpeted areas.

Urine and vomit spills should not be treated with chlorine-releasing products as these body substances are usually acidic (with a low pH) and can react with chlorine releasing noxious gases which may be inhaled (particularly in confined spaces such as toilets).

Liquid preparations should be available in the correct concentration. A hypochlorite concentration of 10,000 ppm (parts per million) is necessary for use on blood and body fluid spillages.

Preparations must be diluted immediately before use and any unused liquid must be discarded. Do NOT store reconstituted solution as it rapidly loses its efficacy.

WHY MANAGE BLOOD AND BODY FLUID SPILLAGES?

- Exposure to blood and other body fluids, such as faeces, vomit, pus and urine, poses a potential risk for transmission of infection to those providing care.
- Exposure to viruses such as HIV, hepatitis B and hepatitis C through blood or other body fluids can have severe consequences.
- Therefore, quick and effective management of spillages, regardless of the setting, is essential for the health and safety of all.

MANAGEMENT OF BLOOD AND BODY FLUID SPILLAGES

- All necessary equipment to deal with a spillage must first be gathered (see below)
- All items used during a spillage must be disposed of appropriately.
- Hand Hygiene must be performed following management of spillages.

- Control of Substances Hazardous to Health (COSHH) sheets and product data sheets should also be referred to so as to ensure safe management of spillages. Disinfectant must be used in accordance with manufacturer's instructions, for storage, contact times and expiry dates refer to COSHH sheets.
- Wear PPE in accordance with manufacturer's instructions for cleaning solutions/wipes and ensure adequate ventilation

- Wear disposable gloves, apron and eye protection when making up chlorine solutions and ensure adequate ventilation

Items to manage the spillage:
- Blood and/or body fluid spillage kit/spill mat or disposable absorbent paper towels and a solution of chlorine made up to 10,000ppm
- Disposable apron and gloves
- Face/eye protection if splashing is likely and/or cleaning with chlorine solution above waist height
- Clinical waste bag
- Wet floor signage as necessary

INCIDENT REPORTING

Consider local incident reporting of spillages to ensure future incidents or exposures to blood and other body fluids from spillages can be avoided and appropriate measures can be put in place.

Who should manage spillages?
- Those trained in the safe and effective management of blood and other body fluid spillages.
- All those working in health or social care who may be exposed to spillages of blood or other body fluids must receive training, e.g. through induction, information updates to ensure they are safe and effective in the management of such spillages. Training records must be held to reflect this.
- Responsibilities for the cleaning of blood and body fluid spillages should be clear within each area/care setting.

3.9 Pest Control

There are a number of animals that can be considered pests within the health care setting and have the potential to cause disease or harm. These can range from mammals, such as cats, foxes, mice, rats and squirrels; insects such as ants, Pharaoh ants, cockroaches, beetles, wasps and spiders; parasites such as bedbugs, mites, lice and some birds, including pigeons.

Apart from the possibility of disease transmission, food may be tainted and spoiled, fabric and building structure damaged. Furthermore, Pharaoh's ants have been responsible for the penetration of sterile packs.

Pest control is a specialist problem, which requires immediate attention. The registered provider should have a contract in place for the routine management of pest control. Alternatively, the local council (pest control officer) may provide guidance.

All pest control work should be carried out in accordance with the Code of Practice of the British Pest Control Association. All pesticides used shall conform to BS1831 and shall be used in accordance with the Control of Pesticides Regulations, COSHH Regulations and HSE guidance note no. 5096.

Reporting and responsibilities

All staff sighting a pest within the healthcare practice should report the incident immediately by referring to the local protocol for pest control (which should be located with estates management policies). The information required will include:

- the location including, where possible the room number
- the type of pest if known
- the possible numbers and frequency of sighting
- the name of the person reporting
- If feasible, insects etc. can be captured and kept in a clean container, e.g. specimens' pots.

It may be possible to take a picture using a digital camera for identification purposes.

If the infestation is noted in a clinical or food area, then it should not be used until further assessment and an appropriate inspection has been undertaken. Any food stuffs must be disposed of.

General control measures

- Food should be covered or stored in pest proof containers.
- Spillages should be promptly removed.
- Waste should be stored in a manner suitable to prevent access by pests. Waste storage areas should be well maintained and secure to minimise the likelihood of access by pests especially foxes, rats and pigeons. Clinical, household and food waste in particular will attract pests and should be stored off the ground in rigid, covered containers and, in the case of clinical / hazardous waste kept locked. Regular waste collections must be in place.
- Accumulation of static/stagnant water should be avoided.
- Buildings should be of sound structure and well maintained, drains should be covered, and leaking pipe-work repaired and damaged surfaces made good. Defects should be reported to the relevant Estates Department.
- Cracks in plaster and woodwork, unsealed areas around pipe-work, damaged tiles, badly fitted equipment and kitchen units are all likely to provide excellent harbourage and should be maintained in a suitable condition.

- Close fitting windows and doors, fly screens and bird netting all help to reduce pest access. Where fitted fly screens should always be closed when windows are open.
- Doors to food preparation areas should be kept closed.
- Do NOT feed pigeons, wild cats etc. with leftover food as this encourages pests and results in soilage from droppings.

Treatment with insecticides and rodenticides, by themselves, is rarely enough and it is essential that attention be paid to good general hygiene and structural maintenance.

3.10 Estates and facilities management

Increases in the incidence of Healthcare associated infections, and rising public concern, has highlighted the importance of appropriate management of healthcare environments.

Research has consistently shown that the environment can be a secondary reservoir for organisms with the potential for infecting patients. Good standards of basic hygiene, cleaning and regular planned maintenance can assist in preventing healthcare associated infections. This is more easily achieved if the built environment supports best practice.

The Code of Practice requires organisations delivering care to "provide and maintain a clean and appropriate environment in managed premises that facilitate the prevention and control of infection". Criterion 2 of the guidance states: -

"Premises and facilities should be provided in accordance with best practice guidance. The development of local policies should take account of infection prevention and control advice given by relevant expert or advisory bodies or by the IPCT, and this should include provision for liaison between the members of any IPCT and the persons with overall responsibility for the management of the service user's environment. Policies should address but not be restricted to: -

- Cleaning services
- Building and refurbishment, including air handling system
- Waste management
- Laundry arrangements for used and infected linen
- Planned preventative maintenance
- Pest control
- Management of drinkable (potable) and non-drinkable (non-potable) water supplies
- Minimising the risk of Legionella by adhering to national guidance
- Food services, including food hygiene and food brought into the care setting by service users, staff and visitors."
- Ventilation

Information and guidance are provided in sections of this Manual on some of these matters. This section offers guidance on the built environment (build and refurbishment work); planned preventative maintenance and water safety.

Local policies concerning waste management, food hygiene, environmental cleaning, provision of laundry and other facilities matters must include the requirement for liaison with Infection Prevention & Control specialists when service arrangements are made or changed.

Building & Refurbishment works

Technical guidance is produced by the Department of Health for healthcare building projects covering a range of health and social care provision. These include Health Building Notes (HBNs) and Health Technical Memoranda (HTMs). A key document covering IPC aspects of buildings is HBN 00-09, *Infection Control in the Built Environment* (2013). Planning guidance for primary and community care facilities is also available (see Bibliography)

When planning builds or refurbishment of primary care facilities, or when planning additional clinical services, the appropriate guidance must be consulted and IPC advice sought.

Areas or rooms where clinical activities are to be undertaken (e.g. wound dressings, insertion of urinary catheters, or other invasive procedures) or where medical consumables are to be

stored should incorporate IPC requirements. If the disposal of blood and body fluids is likely to be undertaken in primary care then a dirty utility facility (sluice), is required. Consideration should be given to providing a suitable area for the testing and disposal of urine samples. Samples should never be disposed of into a hand wash sink. Ventilation requirements should also be taken into consideration, particularly in high use areas e.g. waiting rooms and in rooms where respiratory investigations are undertaken.

Carpets are not acceptable in areas where clinical procedures are undertaken.

If enhanced services are provided consideration must be given to the suitability of the environment in which these will be conducted. Local Commissioners policies detailing this must be sourced and followed. If no such policy is available advice should be sought from IPC specialists. Details of requirements will depend on what type, or levels of procedures are to be undertaken. Minimal Access Interventions (MAIs) and ophthalmic procedures for example require mechanical ventilation systems whilst minor procedures can be conducted in a naturally ventilated room. Windows, if opened, must be protected with mesh screens.

Clinical services may be provided in sites managed by other organisations. In such situations the organisation must assure itself that the environment is appropriate for the care being delivered and is managed in accordance with the principles outlined in this policy and with published guidance.

Water Safety

Legionella spp. which causes Legionnaires' disease is found naturally in water supplies. If appropriate control measures are not in place, the bacterium may multiply to a pathogenic level and outbreaks may follow. HTM 2040, HTM 04-01 and the Health & Safety Commission Approved Code of Practice (L8) give detail on the required management arrangements to reduce this risk.

Processes should include routine, and repeated, risk assessment and the adoption of advice from suitably qualified specialists. There should be local policies detailing this. As stated above, if the facility is managed by a host organisation, the practice should seek assurance that water safety is appropriately managed.

Legionella risks increase where water outlets are used infrequently and thus Legionella can multiply. Staff should monitor the use of water outlets, all staff should report infrequently used outlets i.e. those not used daily, and these should be documented. Identified low use outlets should be subject to regular (usually weekly) flushing regimes. These should also be routinely documented using a simple log.

Guidance for reducing risks of Pseudomonas infections from tap water can be found in the HTM 04-01 updated 2016. This is of particular relevance to Augmented Care Units (renal, burns, critical care, haematology, neonatal units) however all health care providers are asked to assess the risks to their patient groups; Advice should be sought from the water advisor or from the organisation managing the facility as to whether a formal Water Safety Group is required and established and what measures practice staff should take to protect patients.

Planned Preventative Maintenance (PPM)
Most equipment used in health and social care carries PPM requirements as recommended by manufacturers. Good equipment management can prolong the life of the equipment, prevent costly breakdown, and ensure the equipment is fit for purpose. Failure of some equipment in healthcare may pose IPC risks. This would include, but is not limited to: -

- Bed Pan Washers/macerators
- Laundry equipment e.g. washers/dryers
- Vaccine/specimen Fridges
- Catering equipment e.g. fridges/dishwashers
- ICE making machines

Policies or processes should be in place to ensure this equipment is maintained in line with manufacturer's instructions and this maintenance should be documented.

4 SAFE PRACTICE GUIDANCE - CLINICAL

4.1 Decontamination of medical equipment

INTRODUCTION

Decontamination requires the implementation of a number of processes, from purchasing equipment through to delivery and use, cleaning and disinfecting, packing, sterilising, repair and disposal. To be effective it needs standards to be set for all elements of the device life cycle.

DEFINITION OF A MEDICAL DEVICE

According to the Medical Devices Regulations 2002 (SI 2002 No 618, as amended) (UK MDR 2002), a medical device is described as any instrument, apparatus, appliance, software, material or other article, whether used alone or in combination, together with any accessories, including the software intended by its manufacturer to be used specifically for diagnosis or therapeutic purposes or both and necessary for its proper application, which is intended by the manufacturer to be used for human beings for the purpose of:

- diagnosis, prevention, monitoring, treatment or alleviation of disease
- diagnosis, monitoring, treatment, alleviation of or compensation for an injury or handicap
- investigation, replacement or modification of the anatomy or of a physiological process, or
- control of conception

DUTIES

It is the responsibility of healthcare staff to ensure that all medical devices used in patient care are appropriately decontaminated and fit for purpose. Duties of key personnel are clearly defined in HTM 01-01 (2016).

DECONTAMINATION OF RE-USABLE MEDICAL DEVICES

The re-processing of medical devices required to be sterilised prior to re-use (either at point of use or prior to storage) is subject to stringent process controls. Since 2007 there has been a requirement for all such devices e.g. surgical instruments to be re-processed in a registered facility. It is no longer acceptable for local re- processing to be undertaken in any provider service *with the current exception of primary dental decontamination which is subject to the requirements of HTM 01-05.*

Primary care practices have a duty to ensure that re-usable medical devices required to be sterilized have arrangements in place to ensure that they:

- Use a decontamination service registered with MHRA who are compliant with the Medical Device Regulations (2002) and who use a Notified Body as their third-party auditor or:
- Use a decontamination service which is subject to Care Quality Commission (CQC) audit, or:
- Use CE marked single use medical devices or:
- Employ a strategy featuring a combination of the above

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RISK ASSESSMENT

Medical equipment is categorised according to the risk that particular procedures pose to patients and by assessing the microbial status of the body area being manipulated during the procedure. For example, items that come into contact with intact mucous membranes are classified as intermediate risk and require disinfection between each use as a minimum standard. Items that enter normally sterile body areas, or items that come into contact with broken mucous membranes, are classified as high risk and must be sterile before use.

Risk Assessment for Decontamination of Equipment

Risk	Application of Item	Minimum Standard
Low	•In contact with healthy skin e.g. furniture, mattresses, surfaces, or no contact	Clean
Intermediate	•In contact with **intact** mucous membranes •Contaminated with virulent or readily transmissible organisms (body fluids) e.g. commode pans / bed pans •For use on immuno-compromised patients	Disinfect, or single use
High	In contact with **broken** skin or mucous membrane •For introduction into sterile body areas	Sterilize, or single use

Adapted from Medical Devices Agency, Part 2 (1996) now MHRA

DECONTAMINATION - DEFINITIONS

Decontamination of Re-Usable Devices
Decontamination is the term widely used to collectively describe the combination of processes of cleaning, disinfection and sterilisation to make a re-usable device safe for further use on patients and safe for the user. The effective decontamination of re–usable devices is essential to reduce these infection risks. Decontamination methods used will depend on the nature of the micro- organisms present and the infection risk associated with the surface, equipment, device or procedure.

Cleaning
Cleaning is a process which physically removes contamination but does not necessarily destroy micro-organisms. The reduction of microbial contamination will depend upon many factors including the efficiency of the cleaning process and the initial contamination. A further reduction will occur on drying, as some micro- organisms cannot multiply on a clean dry surface. Cleaning is the first step in the decontamination process. It must be carried out before disinfection and sterilisation to make these processes effective. Thorough cleaning is extremely important in reducing the possible transmission of all micro-organisms, including the prion protein that causes VCJD.

Liquid detergent and warm water is an effective cleaning agent. Hot water should not be used, as it will coagulate proteins (body fluids) making it more difficult to remove from the equipment. Hard surface detergent wipes are also available for equipment cleaning.

Disinfection
Disinfection is defined as a process used to kill or remove pathogenic micro- organisms but which cannot usually kill bacterial spores (Lawrence and May, 2003). Disinfection processes, if used appropriately will reduce micro-organism counts to safe levels.

Disinfection processes can be used on both equipment and environmental surfaces and usually involves the use of either a disinfectant solution or a structured process using equipment such as bed-pan washer-disinfectors, dishwashers and washing machines where temperature of water or steam provides the disinfection process.

Disinfection using antiseptic solutions is the process used to reduce microbial contamination of the skin, mucous membranes and other body tissues and cavities.

Sterilisation
Sterilisation is a range of processes used to render the device free from viable micro-organisms, including spores. Processes include moist and dry heat using autoclaves and / or hot air ovens; low temperature steam and formaldehyde; ethylene oxide and gas plasma.

In healthcare, sterilisation processes are usually confined to the application of moist heat using autoclaves.

DECONTAMINATION ADVICE FOR HEALTHCARE STAFF
If the method of decontamination is in doubt, then advice may be sought from:

- The device supplier and/or manufacturer of the equipment
- Local decontamination lead and / or infection control lead

CLEANING AND DECONTAMINATION SOLUTIONS
The following products are suitable for the decontamination of the majority of health care equipment and surfaces. Specialised equipment should be decontaminated following manufacturers' instructions.

Neutral detergent (washing-up liquid) – a mild detergent that is adequate for most cleaning of equipment and surfaces and will mechanically remove (by cleaning) the majority of micro-organisms contaminating equipment. Refer to bottle before use, but usually 5ml in 1 litre of warm water is sufficient.

Hard surface wipes - General hard surface cleaning wipes contains a detergent, a disinfectant, or can be a 2 in1 product. Wipes are cheap and effective and are portable (in drums/packs) and require no access to water. They can also be used on large items of equipment. Detergent wipes can be used instead of detergent and water. Alcohol wipes can be used for asepsis, disinfectants of dressing trolleys, or as manfacteurers instructions for some medical equipment. Where gross soilage/contamination is present a detergent/ disinfectant wipe is preferable as alcohol is inactive in the presence of dirt. When using alcohol wipes it is important to remember that the item must be cleaned with a detergent based product first.

Chlorine-releasing agents – These contain a chlorine-releasing agent and are often referred to as bleach solutions or hypochlorite. They are used for spillages of blood and high-risk body fluids such as faeces and can be used to disinfect service user contact surfaces in an isolation room and also during outbreaks of infection diarrhoea and vomiting for cleaning of both the environment and equipment such as commodes. Staff using such products must be familiar with COSHH regulations. Aprons, gloves and facial protection must be worn for preparation and use. The product must the mixed in a well-ventilated area. Refer to bottle for correct dilution.

Non-abrasive cream cleaner – Mild cleaner for general hard surface use e.g. sinks

Toilet cleanser/sanitizer – cleanser which can contain bleach and/or lime-scale remover

Thermal washer/disinfector e.g. bedpan washer/dishwasher – designated machinery for thermal (heat) disinfection of articles where a higher temperature and controlled method of cleaning are required e.g. bedpans and / or cutlery / crockery.

Decontamination of equipment prior to loan, servicing or repair

It is the responsibility of the person/department using the equipment to ensure that it is visibly clean and free of surface contamination with blood and/or body fluids if being sent for service, maintenance or repair either on or off site (MHRA, Managing Medical Devices. Guidance for health and social care organisations. January 2021).

A decontamination notice must be attached to the equipment to warn others of the type of contamination it may have been exposed to and whether it has been possible to decontaminate it. Many manufacturers provide their own decontamination certificates with their equipment and will not accept returned equipment without an accompanying certificate. This is appropriate practice and should also apply to equipment being repaired or serviced on-site.

MEDICAL DEVICE CLEANING PROCESSES – GUIDANCE NOTES

Comprehensive guidance on cleaning of both medical devices and other patient specific equipment is available - *National Standards of Healthcare Cleanliness 2021.*

- Cleaning of medical devices and other patient specific equipment should be subject to regular, on-going monitoring of the standard of cleaning
- Cleaning schedules specifying the frequency of cleaning should be devised incorporating all medical devices / equipment used locally. These schedules should be available for all staff and a simple check-list should be devised for staff to sign after completion of cleaning
- Re-usable medical devices must be decontaminated between each patient use.
- Frequency of cleaning must be decided in line with its Functional Risk category (see *National standards of healthcare cleanliness 2021*, appendices).
- The user of the device is responsible for ensuring that it is visibly clean and free from contamination with blood and/or body fluids following each procedure or care episode and prior to sending for service or repair internally and externally.
- Dirty equipment awaiting cleaning, should be stored separate from clean items and should be cleaned as soon as possible after use and then stored appropriately.
- Once clean, equipment must be identified as so.
- Cleaning of equipment should take place in a designated area e.g. dirty utility or away from clean items that could become contaminated during the cleaning process
- Personal protective equipment (PPE) should be worn when cleaning medical devices. Disposable gloves (or household gloves) together with a plastic apron should be worn to protect hands and clothing. Please note that facial protection is required when using some products; please refer to manufacturer's guidance.

A to Z and decontamination of patient equipment and medical devices

Device	Cleaning method	Method for contaminated/infected equipment	Frequency
Airways	Single use only	N/A	N/A
Arm rests	Wash with neutral detergent, rinse and dry	Wash with chlorine-based product or approved disinfectant, rinse and dry	On discharge of if visibly soiled
Audiometer headphones	Wipe with neutral detergent and dry		After each use
Auroscope and ear pieces	Wash ear pieces with neutral detergent. Wipe scope with detergent wipe	Consider disposal or wash with chlorine approved disinfectant Ensure ear piece is free of wax, particularly down the lumen. Do not immerse the Auroscope.	After each use
Baby changing mats	Wipe with neutral detergent, rinse and dry.	Wash with chlorine-based product or approved disinfectant	After each use
Baby Scales	Wipe with neutral detergent, rinse and dry	Wash with chlorine-based product or approved disinfectant rinse and dry	After each use
Blood pressure cuffs	Clean with a detergent wipe	Single patient use cuff for infectious patients	After each use
Blood pressure machine	Clean with detergent wipe	If not able to use dedicated equipment for infectious patients, clean after each use with chlorine-based product or appropriate detergent	
Crockery and cutlery	Dishwasher or hand wash using hot water and detergent	Dishwasher only	After each use.
Dressing trolley	Clean with neutral detergent and dry. Clean from top to bottom using an 'S' shape motion.		Before and after each use
Electronic devices e.g. IPad	Clean with a disinfectant wipe, or use commercial wipes for electronic equipment. Keyboards – cover with wipeable cover or use soap and water. Dry with a paper towel.		After each use
Examination couch	Clean with neutral detergent, rinse and dry. Use paper couch roll and change between each patient use.	Wash with chlorine-based product or appropriate disinfectant, rinse and dry	Daily or if visibly dirty
Fans	Clean with neutral detergent.	Wipe with chlorine-based product or appropriate disinfectant rinse and dry	After each use or if visibly dirty
Furniture and fittings	Damp dust with detergent solution	Clean where possible with chlorine-based product	
Hair brushes	Single resident/client use	N/A	N/A
Medicine Pots	Single use/reusable	N/A/Cleaned in a dishwasher	N/A
Medicine trolley/cupboard	Clean with neutral detergent, rinse and dry		Weekly or if visibly soiled
Mops	Disposable mops Reusable	N/A Laundered	After each use After each use

Device	Cleaning method	Method for contaminated/infected equipment	Frequency
Nebuliser compressor	Clean with a universal detergent/2 in 1 wipe		After each use
Oxygen masks	Single patient use.	N/A	Weekly or if soiled
PCs, printers and keyboards	Wipe with detergent wipe		Daily
Peak flow meters	Wipe with detergent wipe. Mouth pieces single use.	Wipe with disinfectant wipe	After each use
Pillows	Cover with impermeable cover	Decontaminate after use	After each use
Pulse oximeter units	Wipe with detergent wipe	Wipe with chlorine-based product or approved disinfectant	After each use
Pulse oximeter probes	Wipe with detergent wipe	Wipe with chlorine-based product or approved disinfectant	After each use
Shaving brushes	Residents own. Not to be used for clinical shaving	N/A	N/A
Resuscitation trolley	Clean with neutral detergent, rinse and dry.	Clean with chlorine-based product or appropriate disinfectant rinse and dry	Weekly or if visibly soiled
Sputum container	Disposable only	N/A	N/A
Stethoscopes	Wipe with detergent wipe	Wipe with chlorine-based product or approved disinfectant	After each use
Suction equipment	Clean and dry containers with neutral detergent. Use disposable liners	Clean with Wipe with chlorine-based product or approved disinfectant or approved disinfectant rinse and dry	After each use
Therapy equipment	Wipe with detergent wipe	Wipe with Wipe with chlorine-based product or approved disinfectant or approved disinfectant	After each use
Thermometers	Use disposable probe cover Wipe monitor with detergent wipe	Clean monitor with disinfectant wipe	After each use
Tympanic thermometers	Use disposable ear piece Wipe monitor with detergent wipe	Clean monitor with disinfectant wipe	After each use
Toys and play equipment	Wash with neutral detergent, rinse and dry. Do not soak soft toys.	Clean with Wipe with chlorine-based product or approved disinfectant or approved disinfectant. Heavily contaminated soft toys may have to be destroyed.	After each use
Walking aids	Wash with neutral detergent, rinse and dry	Clean with Wipe with chlorine-based product or approved disinfectant or appropriate disinfectant, rinse and dry	After each use
Wheel chairs	Clean with neutral detergent	Clean with chlorine-based product or approved disinfectant rinse and dry or use disinfectant wipe	After each use
Weighing scales	Clean with neutral detergent or use detergent wipe	Clean with Wipe with chlorine-based product or approved disinfectant, rinse and dry or use disinfectant wipe	After each use
Bed pans, commode pans, urinals	Disposable or clean in washer/disinfector		After each use

Device	Cleaning method	Method for contaminated/infected equipment	Frequency
Bed pan shells (holders for disposable bed pans	Wash in warm detergent and water, rinse and dry with paper towels		After each use
Buckets (used to soak dressings)	Ideally use disposable liner and change after each patient. Always wash after removal of liner.	Wash with neutral detergent and warm water, rinse and dry thoroughly. Store inverted and separated	

This list contains common use equipment only and is not exhaustive.

4.2 Single use and single patient use medical devices

Single use medical devices are manufactured to be used on a single occasion and then discarded. They are not designed or manufactured for re-use even on the same service user. The re-use of single use devices is dangerous and has legal implications under the Medical Devices Regulations (2002) and Medical Devices (Amendment) Regulations (2008).

The Medicines and Healthcare products Regulatory Agency (MHRA) guidance 2018 – *DB2006*

(04) Single-use Medical Devices: Implications and Consequences of Reuse.
The MHRA state that "to reuse a single-use medical device without considering the consequences could expose the patient and staff to risks which outweigh the perceived benefits of using the devices".

The MHRA advises against the reuse of any single-use medical device. MHRA Key points:

- A device designated for 'single-use' must not be reused. It should only be used on an individual patient during a single procedure and then discarded. It is not intended to be reprocessed and used again, even on the same patient.
- The reuse of a single-use device can affect their safety, performance and effectiveness, exposing patients and staff to unnecessary risk.
- The reuse of single-use devices has legal implications:
    - Anyone who reprocesses or reuses a device intended by the manufacturer for use on a single occasion, bears full responsibility for its safety and effectiveness;
    - Anyone who reprocesses a single-use device and passes it to a separate legal entity for use has the same legal obligations under the Medical Device Regulations as the original manufacturer of the device.

Manufacturers are required to clearly identify single-use devices by displaying a "do not reprocess" symbol as shown below.

Figure 1: "Do not reprocess" symbol

TECHNICAL ISSUES
Reprocessing single-use devices may affect the capabilities and/or the materials from which the device is made. Many single use devices are unable to withstand the decontamination and sterilization processes used in health care.

The manufacturer will provide a warranty for a medical device made for reuse if the recommended reprocessing is carried out. If a single use item is reprocessed, the manufacturer's warranty will not apply and the re-processor will take on this responsibility.

PROBLEMS ASSOCIATED WITH RE-PROCESSING

Inadequate cleaning and decontamination - the cleaning process must be able to access all parts of the device to enable complete decontamination, the cleaning agents must be completely removed at the end of the process and this process must be validated by the processor. Many single-use devices have inaccessible angles and narrow lumens making cleaning and validation impossible

Material alteration - Exposure to chemicals and other processes may cause corrosion or alteration of the device materials making it unsafe to use e.g. plastics may become brittle and break during subsequent use.

Mechanical failure - Some devices if repeatedly processed may over time become stressed and fail or break in use e.g. single-use drills, burrs and blades, etc.

Potential for cross infection – Cross infection is a major risk associated with the re-use of single-use items due to failure to clean, decontaminate, disinfect or sterilise adequately.

Reactions to endotoxins - These are residues of bacteria which withstand exposure to heat and chemicals and may remain after re-processing and sterilization. The sterilization process may not inactivate the toxins even when cleaning and sterilization is effective in killing the bacteria.

Residues from chemical decontamination agents - Some materials used in the device's manufacture may absorb the chemicals used in the decontamination process resulting in chemical burns or sensitization of the patient.

Reprocessing a medical device designed or designated as single use requires the device to undergo an extensive validation process to ensure that it is safe to reuse. The majority of organisations do not have the finances or the facilities to carry out this process as the re-use of these devices is likely to carry a significant risk.

Prion disease (including CJD)

The abnormal proteins associated with prion diseases are highly resistant to conventional methods of decontamination and sterilisation. It is therefore an even greater risk to reprocess equipment that may have been exposed to patients known or suspected of being infected with this agent. (See section – Infections with Specific Alert Mechanisms for further information).

CONCLUSION

To re-use a single-use device without considering the consequences to the organisation, the professional and the patient could expose each or all of these individuals to significant levels of risk both personal and financial.

MEDICINES

Medicines, including topical medical products must be considered as single use items unless the label and / or supporting manufacturers' guidelines clearly state they the item has been prepared as a multi-dose item.

A risk assessment must be carried out (in conjunction with Medicines Management) for each individual product.

THE USE AND RE-PROCESSING OF SINGLE PATIENT USE DEVICES

There are a number of medical devices that are manufactured for limited re-use by the individual to whom they are initially supplied. The majority of these devices are non-invasive and do not require sophisticated reprocessing to ensure they are safe for re-use.

It is essential that when these devices are re-used there are written manufacturer's guidelines available for their use, cleaning, decontamination and disposal. All staff should have access to manufacturer's guidelines which must be retained in a suitable folder / location.

Professional staff who use or supply these devices to patients must understand the requirements for safe use, decontamination between uses and disposal.

TYPES OF SINGLE PATIENT USE DEVICES

Patient self-administered intermittent urinary catheters

These are issued to an individual patient for their own use. They should be washed under running water after each use and stored clean and dry. Each catheter should be replaced according to the manufacturer's instructions or at least once a week, sooner if damaged. If used by a healthcare professional on behalf of the patient they must be treated as single use items and disposed of after a single use.

Face masks for oxygen administration

These items should be kept with the individual patient, particularly if the oxygen cylinder is shared. The facemask should be washed daily, and if soiled, with warm water and detergent, dried and stored dry. The mask should be replaced weekly. Tubing must also be single patient use, changed if wet and replaced weekly.

Feeding syringes for patient with well-established PEG feeding tubes

Specific oral syringes are manufactured for use with PEG feeding tubes e.g. Baxa syringes. They are supplied as a clean not sterile product. Manufacturers' guidelines for re-use must be followed. Alternatively, they should be thoroughly cleaned after each use with warm water and detergent, rinsed in running water, shaken to remove water particles from the barrel of the syringe and dried externally with disposable paper towels prior to storing in a dry, covered container e.g. plastic food container with lid. These are for use by an individual patient, and must be replaced daily (or in accordance with manufacturers' instructions). Please note that single use syringes must not be re-used, even on the same patient.

Newly inserted PEG feeding tubes are classed as surgical wounds and thus feeding syringes should be used once only and discarded after single use until such times as the stoma is healed.

Nebulisers

These items should be kept with the individual patient. The nebuliser should be rinsed after each use with warm water ONLY (no detergent), shaken to remove water particles and drug residues and then dried with disposable paper towels and stored dry in a clean, dry, covered container.

The nebuliser should be replaced weekly provided it maintains its efficacy or as per manufacturer's instructions. A label can be attached to the storage container indicating the date for change. Masks (if used) should be decontaminated as above.

Placebo inhalers (for prescribed inhaled therapy)
Currently there is no evidence upon which to base local protocols for decontamination of these devices, when a mouthpiece cannot be used, therefore manufacturer's instructions must be followed. Ideally, devices that can be fitted with a disposable mouthpiece should be used.

Where these products are in use, guidance should be sought from the local respiratory nurse or clinician who prescribed the device. As a minimum, patients with a known or suspected respiratory infection should not use communal inhalers.

Appropriate methods of decontamination (in the absence of manufacturer's guidance) include: thorough washing with liquid detergent and warm water followed by shaking to remove water particles and drying with paper towels. In addition, disinfecting in a freshly prepared solution of sodium hypochlorite (1,000 ppm) followed by rinsing under running water, shaking to remove water particles and then drying with paper towels can be undertaken after initial washing in detergent.

Other items
There may be other items that can be designated single patient use. Each of these must have written guidelines for use, decontamination and frequency of replacement, preferably supplied by the manufacturer.

4.3 Aseptic Technique (A: care of invasive devices)

INTRODUCTION

The following section provides guidance for the most commonly performed nursing procedures and clinical practices in relation to the control of infection. The following advice reflects current expert opinion and guidance incorporating relevant research and best practice recommendations.

Expert advice should always be sought should staff require it. Further guidance can be obtained from the following specialists:

- Nutritional Support Team
- Tissue Viability/Wound Management Nurse Specialist
- Respiratory Nurse Specialist
- Continence Advisor

PRINCIPLES OF ASEPSIS

Asepsis means “without micro-organisms” thus an aseptic technique is a method used to prevent contamination of wounds and other susceptible body sites or invasive device insertion sites by potentially pathogenic organisms which may lead to infection. This can be achieved by ensuring that clinical staff understand the principles, follow the recommended practices and that only sterile equipment is used during invasive procedures.

All staff performing invasive procedures or managing wounds should receive appropriate training.

INFECTION RISKS IN IMMUNOCOMPROMISED PATIENTS

Infection is caused by micro-organisms which invade the host’s immunological defence mechanisms, although susceptibility to infection may vary from person to person. The risk of infection is increased if the patient is immunocompromised by:

- Age – neonates and the elderly are more at risk due to less efficient immune systems
- Underlying disease – for example those patients with a severe debilitating or malignant disease or conditions such as diabetes
- Prior drug therapy – for example immunosuppressive drugs, steroids or broad-spectrum antimicrobials
- Patients undergoing surgery

In addition, the following factors should be considered when undertaking aseptic procedures on immunocompromised patients:

- Classic signs and symptoms of infection are often absent
- Untreated infection may disseminate rapidly
- Infections may be caused by unusual organisms or organisms which, in most circumstances are non-pathogenic i.e. do not cause disease
- Some antibiotics are less effective in immunocompromised patients
- Repeated infections may be caused by the same organism
- Super-infections, where a patient acquires a more pathogenic organism (of the same or a different species) than the one already causing infection, require nursing care of the highest standard, including strict adherence to aseptic technique to prevent such infection.

WHEN TO USE AN ASEPTIC/NON-TOUCH (ANTT) TECHNIQUE

An aseptic technique should be used during any invasive procedure which breaches the body's natural defences e.g. the skin, mucous membranes, or when handling equipment which will enter a normally sterile area. The principles of asepsis should be applied to:

- Wound dressings
- Insertion *and manipulation* of invasive devices e.g. urinary catheters, all intravenous devices, PEG tubes etc.

THE PRINCIPLES OF ASEPSIS

Action	Rationale
Hand hygiene	Hand washing is the single most important procedure for preventing cross infection. Transient bacteria can be almost completely removed by effective hand hygiene techniques. In addition, resident bacteria (which can cause infections following highly invasive procedures) can be reduced by the use of an antiseptic detergent or the application of an alcohol hand gel following a social handwash. Hands should always be washed before and after contact with susceptible sites. Hand Hygiene may be required several times during a procedure.
Gloves	Gloves should be worn for all contact with mucous membranes and invasive devices e.g. urinary catheters. Sterile gloves should be worn for the insertion of invasive devices and minor surgical procedures. Clean, non-sterile gloves are acceptable for most wound care procedures and on-going device-related care.
Protective clothing	Water repellent plastic aprons will need to be worn to prevent staff clothing from becoming contaminated with bacteria from wounds or invasive devices. It will also protect the wound/invasive device from bacteria that may be present on staff uniform/clothing. Sterile impermeable gowns may be required for some minor surgical procedures.
Non-touch technique	The susceptible site should not come into contact with any item that is not sterile.
Equipment	All instruments, fluids and materials that come into contact with a wound, surgical site or during the insertion/manipulation of an invasive device, must be sterile to reduce the risk of contamination. This includes not only products used during the procedure but any final dressing (s). The sterility of the device/fluids/materials must be protected from contamination.
Dressing trolley	The trolley should be cleaned with detergent and water if it becomes physically contaminated. Alcohol wipes may be used between uses if necessary. The sterile field will normally protect the trolley from contamination. Ensure sticky tape residues are removed from the trolley rails. (Ideally these trolleys should not be used for other purposes). Alternatively, for some procedures, plastic trays may be used. These must be cleaned before and after each use.

CHRONIC WOUND MANAGEMENT

This section is written using the following guidance documents:

1. Department of Health (2011*) High Impact Intervention – reducing the risk of infection in chronic wounds care bundle*
2. Dougherty L and Lister S (editors) (2020) *The Royal Marsden Hospital Manual of Clinical Nursing Procedures 10th Edition*

Comprehensive advice on the management of wounds should be sought from specialist tissue viability nurses as this is a complex and constantly evolving practice. This section refers to those aspects of chronic wound care that may contribute to infection / cross-infection.

A chronic would in defined as a wound that does not heal within an expected time frame i.e. 6 weeks despite optimal correction of any underlying pathological processes interfering with the body's normal process of wound healing. The majority of chronic wounds are:

2.1. Venous ulcers
2.2. Pressure ulcers
2.3. Diabetic ulcers

Other types of chronic wounds include arterial leg ulcers and wounds from fungating carcinoma. Acute wounds may also become chronic.

In chronic wounds there is a clear increase in colonisation, bacterial burden and infection caused by micro-organisms, including MRSA. Chronic wounds colonised with MRSA are at increased risk for both wound infection and systemic infection (especially blood stream infections) particularly if another acute illness occurs requiring hospitalisation. Patients with MRSA- colonised wounds present an increased cross-infection risk to others and the environment.

Early referral of patients with chronic wounds to specialist health professionals e.g. tissue viability teams and, in the case of diabetic foot ulcers, urgent referral to a multidisciplinary foot care team, is indicated to promote healing and reduce the risk of infection.

PREVENTING CONTAMINATION AND CROSS INFECTION

Wound care should only be carried out by those who are deemed competent to do so and have received training in the principles of asepsis and appropriate wound management. The principles of asepsis should be applied to all wounds irrespective of causation or type e.g. surgical wound, trauma wound, chronic wound etc.

Personal protective equipment – disposable apron and gloves – must be worn and changed between each patient

Wounds must be assessed as per local policy at every dressing change

The wound must be dressed creating an optimum wound healing environment according to the local wound management formulary

The use of systemic antibiotics is considered, as per local formulary, for non-healing or progressive ulcers with clinical signs of localised and / or systemic infection

Dressing type and frequency of change, wound assessment and next wound review date must be routinely documented

There must be clear communication – between team members and with other health or social care providers – of those service users known to be infected or colonised with pathogenic micro- organisms including MRSA.

Service users with pressure ulcers must be placed on appropriate pressure relieving / reducing mattresses and cushions

Pressure is offloaded in service users with diabetic foot ulcers, including provision of appropriate footwear and insoles

In addition, the following may help to reduce wound contamination/cross-infection:

- Wound dressings are best performed in a designated treatment room, which is subject to regular cleaning
- Dirty dressings should be placed immediately into a clinical / offensive waste bag for disposal
- Wounds and any sterile equipment should be exposed for the shortest possible time. Wound temperature can fall by 12°C if the procedure is prolonged or the cleansing lotion is cold. It can take 3 hours or longer for the wound to return to normal temperature during which time cellular activity is reduced and therefore the healing process slowed. During exposure of the wound there is a much higher risk of environmental contamination of tissues particularly if wound care is undertaken in a well ventilated, draughty or high activity area
- Sodium chloride 0.9% (normal saline) is a physiologically balanced solution that is compatible with human tissue it dilutes bacteria is nontoxic to tissue and used at body temperature it is the safest and best cleaning solution for non-contaminated wounds
- Evidence has demonstrated there is no significant difference in the healing and infection rates in wounds irrigated with tap water or 0.9% sodium chloride and that although swabbing wounds may be effective in removing foreign bodies from the surface of a wound, irrigation is far less harmful to wound tissue. However, even if using tap water, the principles of asepsis still apply.
- That tap water can be used for cleaning chronic wounds e.g. leg ulcers and pressure sores. However, even if using tap water, the principles of asepsis still apply.
- Wound dressings should be kept dry at all times when in situ. Leakage from wounds e.g. leg ulcers will be contaminated with bacteria even if not clinically infected. “Strike through” can contaminate surfaces and hands leading to cross- infection.

INFLAMMATION AND INFECTION OR BACTERIAL BURDEN

All chronic wounds are known to harbour a variety of bacteria to some degree and this can range from contamination through colonization to infection. When a wound becomes infected it will display the characteristic signs of heat, redness, swelling, pain, heavy exudate and malodour. The patient may also develop generalized pyrexia. However, immunosuppressed patients, diabetic patients or those on systemic steroid therapy may not present with the classic signs of infection. Instead they may experience delayed healing, breakdown of the wound, presence of friable granulation tissue that bleeds easily, formation of an epithelial tissue bridge over the wound, increased production of exudate and malodour and increased pain. Careful wound assessment is essential to identify potential sites for infection, although routine swabbing is not considered beneficial. Methods available for the management of wound infection or to decrease the bacterial burden in the wound include debridement, antimicrobial dressings e.g. those containing iodine or silver, topical negative pressure therapy and antibiotic therapy. Honey and essential oils have also been used. Appropriate antibiotic treatment of the infection should be determined from a positive wound swab.

WOUND SWABS

Routine wound swabs are not recommended unless there are clinical signs of infection or when non-healing persists. Many chronic wounds will be colonised with a variety of bacteria, the presence of which may not be clinically significant. Swabs, if indicated, should be taken from the base or margin of the wound following the removal of dressing residues and slough if present.

URINARY CATHETER MANAGEMENT – long-term urinary catheters

This section has been written taking account of the evidence base for practice published by the National Institute for Clinical Excellence (NICE) *Prevention of Healthcare-associated Infection in Primary and Community Care (2012 updated 2017).* Where relevant, references to this guidance have been included in this text.

Urinary tract infections (UTI) account for approximately 23% of all Healthcare Associated Infections (HCAI). Most are associated with the use of an indwelling urinary catheter. Catheter- associated urinary tract infections (CAUTI) are a common complication occurring in over 90% of patients within 4 weeks of catheterization. The risk of catheter-associated bacteriuria (the presence of bacteria in the urine but not necessarily infection) increases by 5-8% a day during catheterisation and is inevitable in long-term catheterised patients *but does not necessarily require antibiotic treatment.*

Residents / patients in community and primary healthcare settings e.g. care homes, hospices or domiciliary care may require either short- or longer-term catheterisation. Long term catheterisation is defined as > 28 days. Infection prevention and control aspects of catheter management will be similar for both short- and long-term urinary catheterisation.

CAUTIs are caused by microbial contamination which is acquired by one of two routes – from urine becoming contaminated within the drainage system e.g. from the drainage bag (back-tracking up the system) or when the closed system is interrupted by disconnecting components of the system e.g. disconnecting the catheter from the bag; or via the space between the catheter and the urethral mucosa (which can occur during catheterisation or subsequently as a result of poor management of the indwelling catheter / poor meatal care). In other words, bacteria travel up into the bladder along the inside or the outside of the catheter. Once bacteria invade one part of the system, all other areas are at risk.

CAUTIs are difficult to treat as bacteria adhere to the surface of the catheter in the form of a

biofilm. Whilst antimicrobials may successfully kill bacteria in the urine, bacteria in the biofilm are generally less susceptible to these agents; consequently, they may still persist following treatment and potentially restart the cycle of infection.

As yet there is no catheter material that resists biofilm formation in the clinical setting; however, all-silicone catheters have been found to take longer to become encrusted than the silicone coated and Teflon catheters.

Practices to prevent infection e.g. asepsis should be applied to the insertion of the catheter, the management of the urinary drainage system and the care of the urethral meatus.

EDUCATION OF SERVICE USERS AND CARERS (Intervention 1.2.1 NICE)
If appropriate, teaching service users or family members to care for their own urinary catheters can minimise the risk of cross-infection. Education should include advice on careful hand hygiene, perineal cleansing and positioning of the drainage bag (and other catheter management issues of relevance).

EDUCATION OF HEALTH AND CARE PERSONNEL (Intervention 1.2.1 NICE)
Community and primary health and care personnel must be trained in catheter insertion, including suprapubic catheter replacement and catheter maintenance.

ASSESSING THE NEED FOR CATHETERISATION (Intervention 1.2.2 NICE)
Indwelling urinary catheters should be used only after alternative methods of management have been considered e.g. penile sheath.

The service user's need for catheterisation should be reviewed regularly and documented in the care plan / service user's notes and the urinary catheter removed as soon as possible.

Catheter insertion, changes and care should be documented.

CATHETER DRAINAGE OPTIONS (Intervention 1.2.3 NICE)
Following assessment, the best approach to catheterisation that takes account of clinical need, anticipated duration of catheterisation, patient preference and risk of infection should be selected. This may be indwelling (urethral or supra-pubic); intermittent catheterisation or a penile sheath. Intermittent catheterisation should be used in preference to an indwelling catheter if it is clinically appropriate and a practical option for the service user. A choice of either single-use hydrophilic or gel reservoir catheter should be offered to those patients for whom intermittent self-catheterisation is the preferred option.

For indwelling urinary catheters, the type and gauge will depend on an assessment of the patient's individual characteristics including: age; allergy or sensitivity to catheter materials; gender; history of symptomatic urinary tract infection; patient preference and comfort; previous catheter history and reason for catheterisation. In patients for whom it is appropriate, a catheter valve can be used as an alternative to a drainage bag. Consideration needs to be given to mental acuity, manual dexterity, clothing preferences and use of night drainage bags when considering the use of catheter valves. Smaller gauge urinary catheters (12-14 Ch) with a 10 ml balloon (3-5 ml in children) inflated with sterile water minimise urethral trauma, mucosal irritation and residual urine in the bladder which are all factors which predispose to CAUTI.

NB manufacturers' instructions for inflation should always be followed as a priority.

URINARY CATHETER INSERTION – IPC aspects – (Intervention 1.2.4 NICE)
Catheters should only be inserted by staff that have been trained and assessed as competent to undertake this procedure.
All catheterisations should be aseptic non-touch (ANTT) procedures.
The urethral meatus should be cleaned with sterile water or saline (or in accordance with local policy) before inserting the catheter
Instil single-use lubricating gel into the urethra prior to insertion to minimise urethral trauma and infection

Insertion technique:

- Hand should be cleaned and apron used to prepare the patient for catheterisation.
- Any gross contamination of the perineal area should be removed using soap and water prior to meatal cleaning.
- Hands should be washed and a plastic apron and sterile gloves should be replaced prior to catheterisation.
- Cleaning from front to back to avoid transference of bowel flora to the urethral area particularly in female service users
- Catheter insertion, changes and care should be documented in the service user's notes

CATHETER MAINTENANCE – leave the closed system alone! – (Intervention 1.2.5 NICE)
Indwelling urinary catheters should be connected to a sterile closed urinary drainage system or catheter valve.

Staff should ensure that the connection between the catheter and the urinary drainage system is not broken except for good clinical reasons e.g. changing the bag every 5 – 7 days (or in line with manufacturers' recommendations)

Disconnecting any part of the closed system can contribute to contamination and cross-infection. The use of drainage systems without a drainage port should be avoided where possible as this requires the bag to be changed daily.

Staff must decontaminate their hands and wear a new pair of clean, non-sterile gloves before manipulating a patient's catheter, and must decontaminate their hands after removing gloves. *A new pair of gloves must be used for each task on a patient.*

Urine samples should be obtained from a sampling port using an aseptic technique.

Using a drainage system without a sampling port requires disconnection of the system to obtain a specimen of urine which increases the likelihood of contamination/infection. The alternative is to collect directly from a clean drainage bag which is an inaccurate method which may lead to false results.

Urinary drainage bags should be positioned below the level of the bladder, and should not be in contact with the floor i.e. should be hung on an appropriate stand. If the bag is raised above bladder height *even temporarily such as during moving and handling* this can result in backflow and increased risk of infection.

A link system should be used to facilitate overnight drainage, to keep the original system intact the urinary drainage bag should be emptied frequently enough to maintain urine flow and prevent reflux, and should be changed in line with manufacturers' recommendations.

Overnight drainage bags connected to a leg bag should be single use. The washing out/reuse of bags is unacceptable practice.

Drain the bag either into the toilet or receptacle / jug. If using a receptacle / jug ensure it is either disposable or kept for that individual and decontaminated in a bed pan washer *after each use*.

When opening and closing the drainage tap ensure there is no spillage of urine, dry the tap outlet to prevent this and clean with an alcohol wipe. Avoid contact between the drainage tap and the receptacle / jug as this can increase the risk of contamination.

Bags that are non-drainable should be used **once** e.g. overnight and emptied before disposal. Meatal cleansing is no longer recommended. However, it is advisable to keep the urethral meatus clean and free from debris. The use of soap and water once or twice a day is recommended. This can usually be undertaken whilst showering or bathing.

Catheters should be changed only when clinically necessary or according to the manufacturer's current recommendations.

To minimise the risk of blockages, encrustations and catheter-associated infections for patients with a long-term indwelling urinary catheter: a patient-specific care regimen should be developed; consider approaches such as reviewing the frequency of planned catheter changes and increasing fluid intake; document catheter blockages.

Bladder instillations or washouts must not be used to prevent catheter-associated infections. When changing catheters in patients with a long-term indwelling urinary catheter: do not offer antibiotic prophylaxis routinely; consider antibiotic prophylaxis for patients who have a history of symptomatic urinary tract infection after catheter changes OR experience trauma* during catheterisation. Patients should always be assessed for signs of infection before a catheter change

*Defined as frank haematuria after catheterisation or two or more attempts of catheterisation.

MANAGEMENT OF VASCULAR ACCESS DEVICES

INTRODUCTION

This section has been written taking account of evidence-based practice contained in the following:

- Department of Health (2009) High Impact Intervention 2: *peripheral intravenous cannula care*
- Dougherty L, Lister S (editors) (2015) *The Royal Marsden Hospital Manual of Clinical Nursing Procedures Ch. 45: vascular access devices: insertion and management*
- National Institute for Clinical Excellence (NICE) *Prevention of Healthcare- associated Infection in Primary and Community Care (2012 Updated 2017).*
- MANAGEMENT OF VASCULAR ACCESS DEVICES (NICE) guidelines updated 15 February 2017
- Care and maintenance of a peripheral intravenous cannula (2019) Clinical Skills Limited.

Intravenous cannula (IVCs) pose a risk of direct microbial entry to the bloodstream. Cannula can become contaminated at the insertion site by skin micro-organisms (that can gain access to the bloodstream by migrating down the body of the device) or by other micro-organisms

via the cannula hub or injection port.

EDUCATION
Healthcare workers caring for a patient with a vascular access device should be trained, and assessed as competent, in using and consistently adhering to evidence-based guidelines. It is recommended that competency is re-assessed regularly at defined intervals. This assessment should be documented.

Patients and their carers should be taught any techniques they may need to use to prevention infection and safely manage a vascular access device prior to discharge from hospital. They should also have access to follow-up training and support.

ASEPTIC -NON-TOUCH (ANTT) TECHNIQUE
An aseptic non-touch (ANTT) technique must be used for vascular access device catheter site care and when accessing the system. This will include:

- Insertion / cannulation
- IV drug / fluid administration
- Changing of administration set / extension tubing
- Securing of site and dressing the technique used should ensure:
- Hands are decontaminated before accessing or dressing a vascular access device.
- Equipment used is effectively decontaminated e.g. procedure trays
- Key parts of sterile equipment are not touched to avoid contamination
- Access points (e.g. cannula ports) are effectively decontaminated before accessing.

SITE CARE
The principles of care for any invasive device are to:
- Prevent infection
- Maintain a 'closed' system with as few connections as possible to reduce the risk of contamination
- Keep the device patent
- Prevent damage to the device and any attachments

- Decontaminate the skin at the insertion site with chlorhexidine gluconate in 70% alcohol prior to insertion. A combined chlorhexidine with alcohol preparation has the advantage of residual activity for 4 – 6 hours following application. Solutions should be applied with friction for up to 1 minute and allowed to air dry for 30 – 60 seconds. It is essential to allow time for drying in order for disinfection to be completed. Use a sterile transparent semi-permeable membrane dressing to cover the device insertion site.

- Consider using a sterile gauze dressing covered with a sterile transparent semi-permeable membrane dressing **only** if the patient has profuse perspiration or if the insertion site is bleeding or oozing. If used, a gauze dressing must be changed every 24 hours (or sooner if soiled) **and** its use discontinued as soon as possible and replaced with a sterile transparent semi-permeable membrane dressing.

- Leave the transparent semipermeable membrane dressing applied to a peripheral cannula insertion site in situ for the life of the cannula, provided that the integrity of the dressing is retained and it remains clean and dry.

- Change the transparent semipermeable membrane dressing covering a central venous access device insertion site every 7 days, or sooner if the dressing is no longer intact or

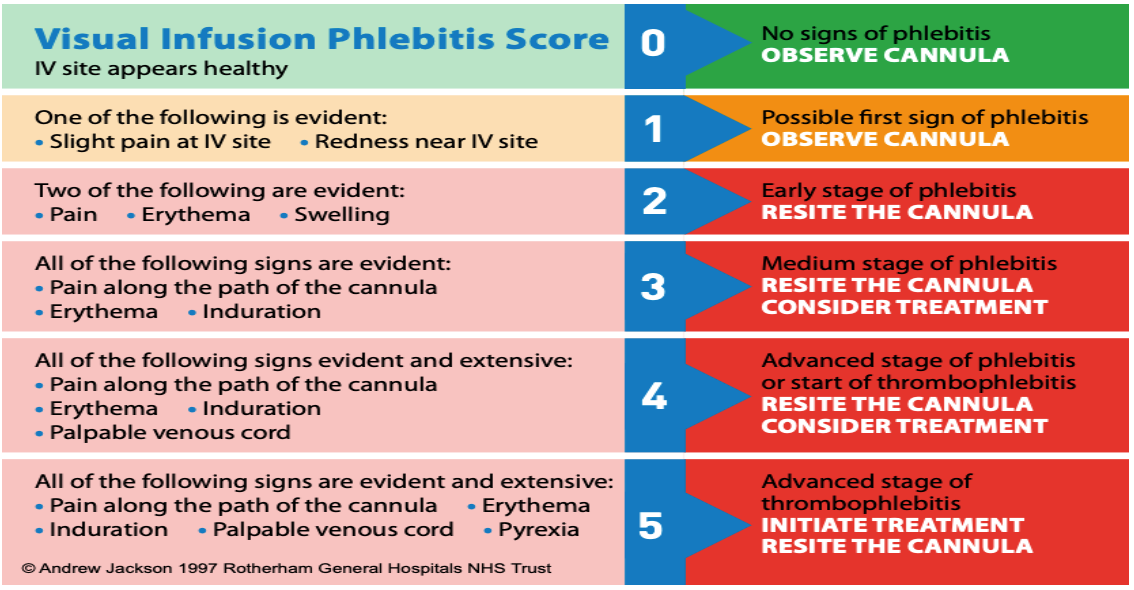
moisture collects under it.

- If required, individual sachets of antiseptic solution or impregnated swabs or wipes should be used to disinfect the dressing site.

- The insertion site should be checked regularly – at least twice a day - for signs of phlebitis (erythema, pain and / swelling) or for signs of infection. The inspections should be routinely documented. Ideally, a standardised system should be used.

- A peripheral IV cannula can become occluded if not flushed regularly. The Royal College of Nursing (2016) recommends flushing the cannula before and after administering medicines and/or solutions. If the patient is not receiving medicines via this route, the cannula should be flushed at least daily using the correct techniques, such as pulsatile flush and positive pressure; follow local policy. Flushing is normally carried out with 5–10 mL of 0.9% sodium chloride (NICE, 2017; Loveday et al., 2014; NPSA, 2008).

Staff should monitor and document the device regular, to monitor the site using the visual infusion phlebitis score. (See chart).



GENERAL PRINCIPLES FOR MANAGING DEVICES

- Decontaminate the infection port or catheter hub before and after accessing the system using chlorhexidine gluconate in 70% alcohol. Consider using an aqueous solution of chlorhexidine gluconate if the manufacturer's recommendations prohibit the use of alcohol with their catheter.

- If needleless devices are used, the manufacturer's recommendations for changing the components should be followed.

- When needleless devices are used, healthcare workers should ensure that all components of the system are compatible and secured, to minimise leaks and breaks in the system.

- When needleless devices are used, the risk of contamination should be minimised by decontaminating the access port with either alcohol or an alcoholic solution of chlorhexidine gluconate before and after using it to access the system.

- Avoid the use of multidose vials in order to prevent the contamination of infusions. The correct methods for the dilution of drugs should be readily available to staff, e.g. via the Medusa injectable medicines database.

REPLACEMENT OF CANNULAE / ADMINISTRATION SETS
The need for intravenous access devices should be reviewed regularly and devices removed as soon as possible. Cannula/dressing labels are recommended to record the date of review/replacement. Use the VIP scoring to assess the cannula.

Peripheral cannula should be replaced every 72 – 96 hours. If this is not possible due to lack of access to veins then this should be recorded together with documentation relating to the condition of the site e.g. no inflammation noted. In general, administration sets in continuous use need not be replaced more frequently than at 72-hour intervals unless they become disconnected or a catheter- related infection is suspected or documented.

Administration sets for blood and blood components should be changed every 12 hours, or according to the manufacturer's recommendations.

AUDIT
Regular audit of the management of intravenous devices should be undertaken using Dept. Of Health High Impact Intervention tools available at www.hcai.dh.gov.uk

MANAGEMENT OF RESPIRATORY EQUIPMENT INTRODUCTION
Respiratory equipment such as nebulisers and humidifiers may act as potential sources of infection. Bacteria may colonise respiratory equipment and deliver contaminated air directly into the lungs leading to respiratory tract infection or may be transmitted to other residents on the hands of staff. It is essential that all respiratory equipment is appropriately managed and decontaminated in order to prevent this.

This chapter does not give guidance on the management of invasive ventilation or tracheostomy tube management. If invasive ventilation / tracheostomy care is undertaken there should be local policies on this which should include the prevention of ventilator associated infections. Guidance should be sought from the local respiratory specialist team. For further information on respiratory equipment refer to Section – Single Use / Single Patient Use Devices

NEBULISERS
The majority of nebuliser systems are used to deliver drugs, which open up the lungs and improve breathing. The nebuliser converts the solution of a drug into an aerosol for inhalation. It is used to deliver higher doses of drug to the airways than is usual with standard inhalers. The type of nebuliser and / or drug used depends on the service user's needs; the choice should be based on the medication to be administered and the ease of use by staff and/or service users.

Nebuliser mask and tubing may be single use or single patient use. Manufacturer's instructions must be followed.

Nebulisation should be complete within 5-10 minutes of starting. There will always be a small amount of fluid left in the chamber. Ensure that the nebuliser mask and chamber are rinsed with sterile water, between doses, when administering more than one type of medication via

the nebuliser.

To reduce the risk of the nebuliser jet becoming blocked. Replacing the equipment reduces the potential for the nebuliser pots to become reservoirs for legionella and pseudomonas bacteria (MHRA, 2004)

using re-usable nebulizers has the potential Legionella risk this is associated with poor drying of equipment after cleaning.

The action recommended by the MHRA is to follow the manufacturers' instructions for cleaning and thorough drying, ensuring that there are no droplets of water remain in the nebulizer before it is re-used, it the nebulizer is single please discharge after use. Please follow the manufactures guild for clean and drying to reduce infection risks.

HUMIDIFIERS
Humidifiers saturate inspired air with water, in order to prevent drying of the airways during oxygen therapy. Either heated or unheated humidifiers can achieve this.

RISK FACTORS FOR THE CONTAMINATION OF RESPIRATORY EQUIPMENT
- Fluid residues left in the nebuliser after use can provide an ideal medium for the multiplication of bacteria
- Shared use of equipment between service users can lead to cross- infection
- Non-sterile fluids cannot be guaranteed to be free of contamination from harmful micro-organisms
- Condensation accumulating in the tubing may become colonised with harmful bacteria

MINIMISING THE RISK OF INFECTION
- Staff must wash their hands before and after handling respiratory-therapy equipment. Gloves should also be worn if contamination with respiratory secretions is anticipated.
- Only sterile single-dose fluids / medications are recommended for nebuliser therapy. If vials of multi-dose medication are used, handle, dispense and store according to the manufacturer's recommendations
- Only sterile water should be used to fill humidifiers. They should be emptied daily, washed, dried and re-filled.
- Nebulisers must be washed in warm water (without detergent) and dried thoroughly after each treatment. They should be stored covered after use.
- Nebulisers should be routinely changed as per manufacturer's instructions.

Humidifier tubing should be changed regularly in accordance with manufacturer's recommendations and local guidelines

This section has been written taking account of evidence-based practice contained in the following:

- Medical and Healthcare Products Regulatory Agency Medical Device ALERT: reusable nebulisers. MDA/2004/020. Medical and Healthcare Products Regulatory Agency, London 2004.
- Department of Health Decontamination of medical devices. Health Service Circular HSC 2000/032. Department of Health, London 2000.

MANAGEMENT OF ENTERAL FEEDING / ESTABLISHED PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG)

INTRODUCTION

This section has been written taking account of the evidence base for practice contained in:

- Department of Health (2011) High Impact Intervention: Enteral feeding care
- National Institute for Clinical Excellence (NICE) Prevention of Healthcare- associated Infection in Primary and Community Care (2012 updated 2017)
- Department of Health and Health Protection Agency (2013) Prevention and control of infection in care homes – an information resource MGP Ltd (January 2019) Medication management of patients with nasogastric (NG), percutaneous endoscopic gastrostomy (PEG), or other enteral feeding tubes.
- Community Infection Prevention and Control Policy for Care Home settings (June 2019).

Enteral tube feeding is an accepted method for the provision of nutrition in individuals who are not able to take any foods orally or whose daily oral intake is not sufficient to meet their nutritional requirements.

The majority of individuals receiving an enteral feed have the product administered directly into their stomach via a gastrostomy or percutaneous endoscopic gastrostomy (PEG) tube or via a naso-gastric tube (NGT). Enteral feeding is the preferred and most physiologically normal method of artificial feeding, however, the risks of bacterial contamination of the feed and the possible risks of infection around a PEG site can lead to complications and need to be considered and addressed.

AUDITS

It is recommended that regular audits are undertaken. An audit tool is available to download at www.infectionpreventioncontrol.co.uk.

Contamination of feeds is a key concern in long term feeding / home enteral tube feeding as it has been found that more than 30% of feeds in hospital and home are contaminated with a variety of micro-organisms, largely due to the preparation or administration of feeds, and this has been linked to serious clinical infection. The elderly are particularly vulnerable to the effects of food poisoning. Therefore, it is essential to have robust policies and procedures to minimise the risk of food poisoning as a result of enteral feeding and to meet the requirements of current Food Hygiene Regulations.

All staff who handle enteral feeding systems should be trained in feed delivery and management of the administration system. Training should be documented, all residents receiving enteral tube feeding should be supported by the multidisciplinary team (MDT) and an individualised care plan should be in place for each resident receiving enteral tube feeding.

MICROBIAL HAZARDS OF ENTERAL TUBE FEEDING

Infection associated with enteral feeding has been reported on numerous occasions. Enteral infections have been reported e.g. Salmonellosis but of greater concern is the incidence of pneumonia and bacteraemia associated with contaminated enteral feeds. If there is pain on feeding or external leakage of stomach contents, or fresh bleeding, stop any feed immediately and urgently contact your local Hospital Emergency Department. Expert guidance reinforces the need for rigorous infection control procedures in the handling and delivery of enteral tube

feeds. It is important that preparation for eternal feeds is an aseptic technique.

SELECTION OF EQUIPMENT / SYSTEMS TO REDUCE HAZARDS

When selecting an enteral feeding system, it is important that the possible risks of introducing bacterial contamination are considered. The following issues should be considered when selecting equipment:

- Pre-packaged, ready-to-use feeds, to which a giving set can be directly attached, are preferable to those that need decanting, reconstitution or dilution
- The system selected should require minimal handling to assemble and be compatible with the service user's enteral feeding tube
- The feed container should have a lid that can be removed without hands touching the neck of the container to which the set will be attached
- A system that requires a minimum number of connections is recommended; 3-way taps should be avoided
- Feeds which come in collapsible bags and, therefore, are non-air dependent are preferable as they reduce the risk of airborne contamination
- Pre-filled containers with larger volumes, e.g. 1000ml or 1500ml, reduce the number of container changes and therefore reduce the risk of handling-associated contamination
- Enteral feeding pumps with flush panels are easier to wipe clean than pumps with lots of grooves and knobs

FEED PREPARATION

When decanting, reconstituting or diluting feeds a clean, dry working area should be prepared and equipment dedicated for enteral feed use only should be used. Feeds to be attached to feed equipment should be taken to the patient using either a clean trolley or tray, ensure that the surface has been cleaned prior to setting up equipment. Items should NOT be placed on beds or other surfaces which are not capable of being cleaned with detergent prior to use.

Always decontaminate hands thoroughly either with soap and warm running water or the application of alcohol hand rub before commencing preparation of feed.

An effective handwashing technique can prevent infections, handwashing involves three stages: preparation, washing and rinsing, and drying. Preparation requires wetting hands under tepid running water before applying liquid soap or an antimicrobial preparation. The handwash solution must come into contact with all of the surfaces of the hand. The hands must be rubbed together vigorously for a minimum of 10–15 seconds, paying particular attention to the tips of the fingers, the thumbs and the areas between the fingers. Hands should be rinsed thoroughly before drying with good quality paper towels.

Raw foods such as meat, fish, eggs and vegetables should never be handled in close proximity to enteral feeding solutions or equipment. Pets should not be allowed near the feeding solutions or feeding equipment.

Bottle openers should be decontaminated prior to use (e.g. in a dishwasher). If scissors are required, they should be sterile prior to first use. Bottle openers and scissors used for opening sterile feeds should be dedicated for use with enteral feeding products only. They should be decontaminated after use, preferably in a dishwasher or by washing with hot water and detergent, rinsed, dried and stored covered.

Feeds should be mixed using cooled *freshly boiled* water or freshly opened sterile water and

a no-touch technique with minimal handling of all component parts. Water should NOT be stored but should be discarded after each use

ASSEMBLY OF FEEDS

- Always wash and dry the hands thoroughly before and after touching the feed, equipment or the stoma site.
- Do not hang sterile feeds for more than 24 hours or non-sterile feeds for more than 4 hours
- Do not touch the inside of the feed container, the foil seal or the inside of the giving set cap with your hands.
- Do not keep leftover feed and use it the following day.
- Change the giving set every 24 hours if a sterile feed or every 4 hours if a decanted feed
- Do not re-use feed containers.
- Do not wash out empty feed bottles and use them to give water.
- Do not dilute enteral feeds.
- Change the syringes in line with manufacturer's guidance.

Check all dates on packaging and feeds for expiry dates, damage to the packaging or containers.

There are three methods of assembling an enteral feed system:

- Ready-to-use sterile feeds
- Decanting sterile feeds
- Special or Modified feeds

Each requires a slightly different set of handling procedures and hanging times:

READY-TO-USE STERILE FEEDS

Prior to use, store feeds in a clean, dry environment according to the manufacturers' instructions and where applicable, food hygiene safety. The temperature in the storage area should not drop below 5^{o}C or rise above 25^{o}C.

Do not add any water, medication or other substances directly to the feed unless prescribed for this purpose.

Sterile feeds that have been opened, but not immediately connected to a sterile giving set can be resealed and stored on the top shelf in the body of a refrigerator labelled with date and time of storage. The feed must be stored at below 5^{o} C and only for up to 24 hours (the fridge temperature should be checked regularly with a fridge thermometer). Once a sterile feed has been opened it must be used within 24 hours or discarded.

Feeds should never be stored near or below products such as raw or thawing meat or fish because cross contamination may occur.

DECANTING STERILE FEEDS

The feed container/ bottle should be labelled with the resident's name, the date and time the feed was commenced and by whom.

Follow the above guidelines on ready-to-use sterile feeds AND consider the following additional points.

Sterile feeds should only be decanted when:

- The feed cannot be directly attached to a giving set, e.g. when using ring- pull cans or when there is no suitable ready-to use preparation in the size/volume required, e.g. for overnight feeding
- It is necessary to make additions to a sterile feed (see special or modified feeds)
- The feed is going to be given as a bolus via a syringe. (Feeds given as a bolus should be administered at room temperature. Therefore, if a feed has been stored in the fridge it should be taken out 30 minutes prior to administration and allowed to warm up. Keep the feed in its resealed container until it is poured into the syringe.)
- The following should be considered if decanting sterile feeds:
- Sterile feeds should be decanted into a sterile container.
- Sterile feeds that have been decanted into a sterile container can hang for a maximum of 24 hours before being discarded.
- If decanting, decant the full volume required for the 24 hours. Do not top up the reservoir, do not exceed the 24hours.
- Decanting should be undertaken in a clean environment e.g. kitchen, medication room.
- When decanting feeds, use a non-touch technique. This means avoiding touching (with hands, objects or surfaces) any openings or connecting parts of the feed container or reservoir container, use the cap lock on the line when decanting the feed so the feed is not lost and then purge the line prior to contacting to the patient.

The design of some feed containers causes the feed to come into contact with the outside of the container when it is being decanted, i.e. a ring-pull can. For this reason, wipe the outside of the feed container with a wipe impregnated with 70% isopropyl alcohol. Allow the alcohol time to dry before decanting.

ADMINISTRATION OF FEEDS

Use minimal handling and an aseptic technique to connect the administration system to the enteral feeding tube. Patients in the community should have individual care plans for their feeds and feed plans to ensure they are receiving the correct dietary needs and calorie intake.

Administration sets and feed containers are for single use and must be discarded after each feeding session.

MAXIMUM HANGING TIME FOR ENTERAL FEEDS

FEED TYPE	HANGING TIME
Modified or mixed feeds decanted into a sterile reservoir	4 Hours
Sterile, ready-to-use feeds, if not decanted	24 Hours
Sterile feeds decanted into a sterile reservoir	24 Hours

EQUIPMENT CARE

Re-usable medical equipment e.g. pumps and stands must be cleaned and serviced according to the manufacturer's instructions. Such equipment should be cleaned using hot water and detergent on a regular basis as part of routine equipment cleaning schedules.

Enteral feed solutions can be difficult to remove from equipment if left to dry after spillage so prompt cleaning is recommended.

Equipment requiring servicing or repair should be cleaned, decontaminated and have the necessary documentation accompanying it, (See Decontamination Policy).

PERSONAL PROTECTIVE CLOTHING

To reduce the risk of infection a new set of disposable non-sterile gloves should be used each time the enteral feeding system is handled. Disposable plastic aprons should be worn whenever the feeding system is handled.

CARE OF INSERTION SITE AND ENTERAL FEEDING TUBE

The stoma site should be inspected and washed daily with water and dried thoroughly. Dressings are not necessary once the stoma has healed (following its placement) which is usually after 10.

- 12 days. The tube should be rotated 360° regularly to avoid infections related to “buried bumper syndrome”.

To prevent blockage, At the end of a feed, slowly flush the feeding tube with a minimum of 30 mls of water - freshly drawn tap water for residents who are not immunosuppressed or sterile water from a freshly opened container for residents who are immunosuppressed. Tubing should be flushed between intermittent feeds. Do NOT store any water between uses even in the ‘fridge.

Single use syringes (discarded after single use) or single-patient use syringes should be used. The latter should be discarded according to manufacturer’s instructions. If used more than once, single patient use syringes should be washed after use with warm water and detergent (after removing plunger), rinsed thoroughly in clean, running water; shaken to remove excess water; dried as much as possible and stored in a covered container until next use. Replace plunger immediately prior to use – do not replace inside barrel as this will deter drying the inside.

4.4 Asepsis in minor surgical procedures

INTRODUCTION

This section has been written using the professional guidance issued by the Association for Perioperative Practice and contained in: Standards and Recommendations for Surgery in Primary Care AFPP 2016

Reference should be made to the general principles of aseptic technique listed in page 3 of section A (Aseptic Technique and Care of Invasive Devices). These principles, correctly applied, will help prevent contamination of an open wound (during surgical procedures) or sterile body cavity (e.g. for Joint Injections).

The basic principles of aseptic technique prevent contamination of the open wound, isolate the operative site from the surrounding non-sterile physical environment and create, maintain and promote a sterile field so that surgery can be performed safely.

This section is not intended to provide comprehensive guidance on minor surgical procedures. Its purpose is to highlight those practices that have an impact on the prevention and control of the development of post-operative wound infection.

Guidance on the minor surgery environment is available in section 14 Estates and Facilities Management.

GENERAL CONSIDERATIONS

All staff involved in the preparation and performance of surgical procedures must receive competency assessed training in aseptic surgical techniques. This should include surgical hand scrub and gown/glove donning procedures. The management and use of sterile instruments should also be taught and assessed, all information should be document and up to date.

Staff with infected lesions of the skin or bacterial infections of the upper respiratory tract should not participate in any aseptic technique.

The environment and all working surfaces must be cleaned in accordance with local policies prior to the commencement of any aseptic procedures.

If asepsis is compromised immediate action is required. Contaminated items should be removed and discarded. If the sterile field is compromised then a new field is required. Re-gloving and re- gowning may also be required.

Things to remember when setting up a sterile field:
Do not place sterile items near open windows or doors, only place sterile items and equipment within your aseptic field. Do not contaminate sterile items when opening, dispensing, or transferring them. When touching key parts ensure sterile gloves are being worn.

EQUIPMENT AND MEDICAL DEVICES

All pre-sterilised articles must be checked for evidence of sterilisation, damage, integrity of packaging and expiry date prior to use. Any packs found to be in an unsatisfactory condition must be discarded.

Single use medical devices are preferred. If reusable medical devices are used, then decontamination must take place in a fully compliant accredited Sterile Services Department (SSD).

Symbols and their meanings –
2023-07-30. Use by date, i.e. use by 30 July 2023.
2023-07. Date of manufacture, i.e. manufactured during July 2023..

Items used within a sterile field *must be sterile*. Any items that fall into an area of questionable cleanliness must be considered non-sterile. This is of particular importance where medical devices contain more than one component part which may involve a disposable element and a re-usable element e.g. diathermy forceps.

In procedures involving 'knife to skin' a sterile drape is required. This should be handled by the edges only, and applied from surgical site to periphery. Once in situ these should not be rearranged.

Sterile drapes should conform to EN 13795 (European Committee for Standardization 2002) and be used correctly to establish a sterile field.

Sterile drapes should be handled as little as possible. The drapes should be applied from the surgical site to the periphery, avoiding reaching over non-sterile areas. Once placed, drapes should not be repositioned in order to avoid contamination of the sterile field.

SCRUBBED PERSONNEL
Sterile gloves should be worn for all invasive procedures by the clinician undertaking the procedure and any scrub assistant who manipulates the sterile field or instruments.

Sterile Gowns should be worn for all 'knife to skin' procedures. These should comply with standard EN 13795. Care should be taken when donning gowns to avoid contaminating the front of the gown.

Scrubbed personnel should remain close to the sterile field and not leave the immediate area. If personnel leave the sterile field and exit the minor surgery area they must re-scrub before returning to the sterile field. Leaving the sterile field increases the risk for potential contamination.

Personnel participating in sterile procedures must stay within the sterile boundaries; a wide margin of safety should be given between scrubbed and non-scrubbed personnel.

When changing positions or moving between sterile areas, scrub personnel should turn back to back or face to face to avoid contamination.

Scrubbed personnel must keep their arms and hands within the sterile field at all times. Contamination may occur if hands are moved below the level of the sterile field.

Scrubbed personnel should only be seated when the operative procedure is to be performed at that level.

Circulating personnel should not walk between sterile fields (e.g. between a prepared patient and the instrument trolley) and should be aware of keeping an adequate distance from the sterile field.

SPECIAL CONSIDERATIONS

Dressings must be removed carefully from the wound to prevent scattering of micro-organisms into the air; it is recommended that this is carried out by an assistant wearing gloves and not a member of the scrubbed team. Used and soiled dressings should be discarded immediately and in accordance with local policy. To reduce the risk of airborne cross infection, talking, movement, opening and closing doors, exposure of wounds, disturbance of clothing and linen and number of personnel in the minor surgery area should be kept to a minimum. Special consideration must be taken to maintain the integrity of the sterile field at all times.

The sterile field should be constantly monitored and maintained, as sterility cannot be assured without direct observation. Any break in sterility must be reported and acted on to ensure patient safety.

Sterile fields should be prepared as close as possible to the time of use.

PROCEDURE TROLLEY

A designated area, which affords sufficient space to open packs whilst maintaining a sterile field, should be identified for this procedure. There should be minimal movement of personnel within this area during the preparation of the trolley.

A trolley of appropriate size is required for sterile instrumentation and products and this may be influenced by the type of procedure / surgery being carried out. This area, along with the wound site, comprises the sterile field. Fields should be protected from contamination by unsterile items or by non-scrubbed staff. Care must be taken when opening items onto the sterile field e.g. additional instruments/dressings/fluids, to ensure the field is not compromised.

All trolleys should adhere to the Medical Devices Directive 93/42/ EEC (incorporated into UK law in 2002) and be stable and robust enough for the intended job and in good condition (surfaces and trolley tops should be intact, seamless, easily washable and all joints must be sealed free of surface abrasions) and in sound working order. Ease of cleaning should be taken in to account when making product choice as should ease of movement and height. Trolleys should be included in a planned prevention maintenance programme. Particular attention to wheel mechanisms is required in order to allow free and smooth movement. Trolleys, mayo stands and bowl stands should be made of aluminium, stainless steel or mild steel covered in nylon.

Work surfaces should be designated according to clean or dirty tasks being performed.

Preparation of sterile trolleys in advance, with the use of sterile sheets to cover them, is not recommended. The trolleys are subject to contamination over time and removal of sheets without contamination cannot be guaranteed. In addition, unless trolleys are continuously monitored, there is a potential for sterility to be compromised

Scrubbed personnel should move draped sterile trolleys by placing hands on the horizontal surfaces only.

To maintain asepsis, it is essential that all staff are aware of the correct method of opening different sterile packages to avoid the contamination of contents. Circulating practitioners should open wrapped sterile supplies by opening the wrapper flap furthest away from them first. The nearest wrapper should be opened last. Outer wrappers should be secured when

presenting sterile items, to avoid contamination. The scrubbed person opens packs towards themselves first and then away, to avoid contamination of the sterile item.

Sterile items should be presented to the operating or scrubbed practitioner or placed securely on a specific area of the sterile field identified and managed by the operating or scrubbed practitioner. Items should not be tossed onto a sterile field as they may roll off or cause other items to be displaced.

Sharps and heavy items must be presented to avoid penetration of the sterile field. Sharps should be opened into a container to avoid sharps injury and damage to the sterile field. Needles and scalpel blades may pose a risk to staff during procedures if safe practices are not followed. Sharps items should never be passed from hand to hand, whether used or not. A 'neutral zone' should be identified.

If re-usable blade handles are used, the blade should be removed using a dedicated device to prevent injury to the operator.

When dispensing solutions, the solution vessel should be placed near the trolley edge or held by the operating or scrubbed practitioner. The solution should be poured slowly to avoid splashing which could cause strike-through and compromise the sterile field.

The edge of a container is considered contaminated after the cap is removed and therefore the sterility of its contents cannot be guaranteed if the cap is replaced.

Preparation of sterile trolleys in advance, with the use of sterile sheets to cover them, is not recommended. The trolleys are subject to contamination over time and removal of sheets without contamination cannot be guaranteed. In addition, unless trolleys are continuously monitored, there is a potential for sterility to be compromised.

Trolleys should be positioned close together to ensure that there are no breaks in the sterile field.

The disposal of all equipment, drapes and sharps must be carried out in accordance with local and national guidelines. The scrub person should be considered the person of choice to dispose of all contaminated materials whilst still gowned and gloved.

PATIENT SKIN PREPARATION IN THE REDUCTION OF SURGICAL SITE INFECTION

Skin preparation is the process by which the skin is cleansed to reduce the number of transient and resident skin bacteria before surgical incision. Transient bacteria do not normally colonise the skin and are easily removed, whereas resident bacteria grown on normal skin and are difficult to remove. Most wound infections are associated with the patient's own skin flora and thus skin must be prepared to reduce the risk of surgical site infection.

The purpose of skin preparation is to remove dirt and debris from the skin, reduce the number of micro-organisms, inhibit the re-growth of further micro-organisms and reduce the number of micro-organisms entering the wound site, thus reducing the potential for surgical site infection.

Skin preparation should not cause irritation to the skin.

HAIR REMOVAL

Hair removal is often a routine part of pre-operative preparation but staff and patients need to be aware of the evidence and rationale for this practice as research has shown that removal of hair is not always necessary and should only be undertaken after assessment of the individual patient. The removal of hair is only necessary if it will directly interfere with access to the incision site or if there is a risk it will contaminate the wound site. Systematic review (Tanner et al 2006) has shown no difference in surgical site infection rates among patients who have had hair removal prior to surgery and those who have not.

If hair removal is undertaken the following is recommended:

- Patient consent must be obtained with a full explanation of the method to be used and why it is necessary
- Method of hair removal should be decided between the patient and the clinician performing the procedure
- Patients should be advised not to shave themselves prior to surgery as shaving may increase their risk of developing an SSI
- Hair removal should take place as close to the time of surgery as possible to minimise the risk of bacterial contamination of the skin surface
- Hair removal should be carried out by an experienced practitioner in a clean area of the surgical suite with good lighting, affording patient privacy at all times
- Details including who performed the hair removal, the area from where the hair was removed and the method used should be documented.

METHODS OF HAIR REMOVAL

Depilatory creams also do not abrade the skin but are less practical as they need to be left in place for several minutes and have the potential to cause allergic reactions.

Clipping – using an electric or battery-powered clipper with a disposable or re- usable head (that can be disinfected) – cut the hair close to the skin without the blade actually touching it is a simple and less irritating method than shaving. they are also associated with the lowest risk of causing abrasions

Wet shaving causes the most trauma to skin and carries the highest risk of postoperative wound infection. Wet shaving should not be used unless other methods are not suitable.

SOLUTIONS USED FOR SKIN PREPARATION

Antiseptics have to be effective against transient and resident micro-organisms. They should have a broad spectrum of microbial activity with a fast and lasting effect against Gram negative and Gram-positive bacteria, as well as viruses and fungi. They should be resistant to inactivation by organic matter, be non-toxic and acceptable cosmetically.

Antiseptics should be supplied in ready-to-use, single use containers or sachets as sterility is not guaranteed once open and there is a risk of contamination from using multi-use containers.

Solutions must be licensed as a preparation suitable for skin disinfection prior to a surgical procedure. Skin preparation solutions should not be used past their expiry date.

Skin preparation fluid should not be kept on the sterile trolley following skin preparation. This supports good infection prevention principles and patient safety. Only solutions that are in labelled containers should remain on the sterile trolley (NHS England 2015).

Types of skin preparation include:

- Povidone-iodine alcoholic solution
- Povidone-iodine aqueous solution
- Chlorhexidine 0.5% in 70% industrial methylated spirit (IMS)
- Iodine 1% in IMS
- 70% iodine in spirit
- Chlorhexidine gluconate 0.015% and cetrimide solution
- 70% IMS

Alcohol solutions are deemed to be more efficient than aqueous solutions

Decisions regarding the preparation to be used should be influenced by the area which requires preparation, the condition of the skin and patient allergies.

Delicate areas, such as eyes and ears may require special or diluted solutions. Chlorhexidine is not recommended for facial prep and iodine may cause corneal damage if introduced into the eye. If solutions enter the inner ear they may cause sensorineural deafness. Chlorhexidine gluconate and alcohol or alcohol-based solutions should also be avoided on mucous membranes.

When using an alcohol-based solution, it is imperative that skin is allowed to dry completely after each application and before applying electrocautery or laser treatment. Spontaneous combustion can occur when flammable solutions are exposed to an ignition source when oxygen is present.

Skin solutions should be kept in a locked cupboard and particular attention should be paid to storage of flammable solutions according to the control of substances hazardous to health (COSHH) regulations 2002.

4.5 Isolation of infectious patients in general practice

INTRODUCTION

The aim of isolation is to contain and prevent the spread of potential or known pathogenic or epidemiologically important organisms in order to reduce the risk of transmission of infection to and from service users, visitors or staff.

Identifying patients with suspected infections in General Practice can be a challenge as many patients visiting the surgery will not be aware of their potentially infectious status or may not communicate this is advance to staff.

Patients visiting the practice with known infections (or colonisation with transmissible organisms such as MRSA) provide less of a challenge but consideration is still required to ensure that risks are reduced / avoided during their practice visit.

Patients being visited in their own homes (or in other community environments, such as care homes) also pose a risk to staff attending to provide care.

INDICATIONS FOR ISOLATION IN GENERAL PRACTICE

There are a number of circumstances in which suspected or known infections may present in general practice. These include (but are not limited to):

- Diarrhoea and / or vomiting e.g. norovirus; *C. difficile* diarrhoea; bacterial food- poisoning
- Suspected or clinically proven infection which may be transmitted through the respiratory / airborne route e.g. influenza, Covid, chickenpox, measles, TB, group A streptococcal sore throat, MRSA etc.
- Suspected or clinical proven infection which may be transmitted via the contact route e.g. MRSA, Group A streptococcal infection in wounds

COMMUNICATION

Informing patients of their responsibilities to limit the spread of infection is difficult. Posters and other visual means of identifying risks (Inc. translation into local languages) can help to inform patients of the need to communicate symptoms when they attend the practice.

Reception staff should be trained (at induction and during mandatory IPC training) to identify those symptoms which may indicate transmissible infections e.g. rash, diarrhoea, vomiting etc. when receiving calls from patients requesting appointments or visits. Reception staff are NOT expected to take any other action other than to notify medical or nursing staff if they are concerned about patients' symptoms so that effective arrangements can be put in place e.g. being placed in (and examined / treated) in a separate room.

Medical and nursing staff visiting patients in their own home or in residential care environments should be trained (as part of professional update training) to identify risks that may require additional precautions to be taken e.g. single room isolation in a care home for a resident with diarrhoea/vomiting).

All professional staff attending patients with suspected / known infections should be familiar with the route of spread (of infection) and standard infection prevention and control precautions to be used whilst providing care. Staff should also be familiar with additional interventions such as enhanced cleaning of equipment and the environment which may be required following care (and which may require additional time to undertake).

SEGREGATION OF PATIENTS IN GENERAL PRACTICE WHILST AWAITING APPOINTMENT

Patients with suspected / known infections *spread by the respiratory / airborne route* should be segregated whilst awaiting their appointment and ideally should be examined in the same room to minimise the risk of environmental spread to other clinical areas. A separate consulting room is ideal. Chlorine clean is required after the consultation to reduce the risk to other patients.

Patients with diarrhoea / vomiting should ideally not attend surgery. However, in such circumstance's patients should also be segregated as above. In addition, *where possible,* a separate toilet should be made available together with items such as disposable bowls and wipes. Patients should be examined at the earliest opportunity. Any toilet facilities used by symptomatic patients should be thoroughly cleaned with a solution of sodium hypochlorite (bleach) prior to being used by other patients.

Patients with suspected / known infections *spread by the contact route* e.g. those with colonised or infected wounds requiring dressing can wait in general waiting areas. Usually these patients will be returning for regular wound care. In such cases, nursing/ medical staff should be encouraged to provide appointments at the end of clinics to allow for additional cleaning of equipment / environment following care.

INTERVENTIONS TO REDUCE RISK

Standard infection prevention and control precautions should be used at all times with all patients. Strict attention to these precautions is necessary whilst examining/ treating patients with suspected / known infections in general practice:

- Strict Hand Hygiene.
- Appropriate use of PPE as per guidance.
- Disposal of infectious waste into orange bags.
- Thorough cleaning of ALL medical devices / equipment used.
- Use of single use, disposable medical devices where appropriate.
- Cleaning of all environmental surfaces in contact with the patient and their immediate environment – chair, couch, trolley, desk, horizontal surfaces etc.
- Ideally, non-essential items of equipment / furniture should be removed from the immediate environment during procedures such as wound dressings to minimise environmental contamination. This is of particular importance with wounds colonised / infected with MRSA which is spread by both contact and airborne route on skin scales as well as contaminated dressings.
- Prompt cleaning of any spillage of body fluids.

TRANSPORT OF SERVICE USERS TO OTHER HEALTHCARE ENVIRONMENTS

On occasions, general practice staff may be required to refer a patient for additional healthcare to another provider e.g. for admission to hospital.

Receiving hospital staff must be informed of the potential infection risks prior to the transfer. This should be done at the time of making the referral. Ambulance service staff must be informed of potential / known infection risks so that they can make appropriate arrangements for transportation. All infection risks should be documented in handover documentation.

4.6 Collection of microbiological specimens

Please read in conjunction with the Transport of specimens to the laboratory:
Transport of Specimens to the Laboratory - Pathology (barnsleyhospital.nhs.uk)

Sample Transport Procedures for the Community (found in the above link)

The document describes the procedure for transporting specimens to Barnsley and Rotherham Pathology Services from community premises or any other off-site location and is updated by Pathology Services.

INFORMATION REQUIRED
Label the specimen container with the following essential information:

- Patient's Name (first name & surname)
- Date of birth
- NHS number/Hospital number
- Date collected
- Location/ward

In addition, the form should include specific information about the individual service user, including:

Service user's condition: e.g. immuno-compromised; if unusual organisms are suspected; RELEVANT clinical conditions; if part of a suspected outbreak.

Current medication and treatments: current or recent antibiotics, steroids or other immune-suppressive drugs, etc.

Source of specimen: particular body site; type of body fluid including method of collection e.g. MSU, catheter specimen of urine (CSU) etc. Wound swabs must specify the body area from which the specimen is obtained.

Purpose of the specimen: order investigations specifically required and avoid unnecessary tests, which add to budget costs. Discuss with Infection Control Nurse or laboratory prior to collection if necessary.

CONFIDENTIALITY
It is essential that confidentiality is maintained at all times and local arrangements must be in place to ensure sensitive information is not revealed unnecessarily on request cards. This is of particular importance with Blood Borne Viruses (BBVs) and Sexually Transmitted Diseases (STDs).

COLLECTION OF SPECIMENS

All laboratory staff are required to reject specimens that appear to be poorly collected or are inadequately labelled as results may be unreliable and misleading. Poorly collected specimens cause delayed results, results of little or no clinical utility, service user inconvenience, wasted time and increased costs. When collecting specimens observe the following:

- Whenever possible always take specimen prior to commencing antibiotics. If a course of antibiotics has started the specimen should be taken immediately prior to next dose and the antibiotics being given should be documented on the request form
- Provide an adequate quantity of material for examination as this will increase the chances of isolating the causative micro-organism. For example, stool container must be two thirds full.
- Collect fresh materials as free from extraneous contamination as possible and take material only from the required site (not surrounding tissues).
- Use an aseptic technique to avoid inadvertent contamination of the site of the sample or the specimen
- Prior to taking swabs from a dry area the swab should be moistened in sterile normal saline to improve adherence of bacteria
- Ensure that appropriate specimen containers are used especially if containing a transport medium. Using the wrong container may invalidate the specimen. Seek laboratory guidance if uncertain
- Secure lids immediately, to avoid spillage and contamination during transport.
- Write details on container prior to filling.
- Do not overfill containers especially faecal and urine containers. Over filling can increase the risk of leakage.
- All specimens must be placed in a specimen bag with the request form in a separate pocket. An additional 'Danger of Infection' label must be attached to specimens and request forms for known or suspected “high risk” pathogens. (See below)
- Always follow standard infection control precautions when handling specimens e.g. ensure appropriate protective clothing is used and ensure safe disposal of sharps.

SPECIMEN CONTAINERS

No change in the type of containers purchased or used should be made without discussion with the local laboratory.

The individual sending the specimen must ensure that an appropriate container is used, that it is securely closed and not externally contaminated.

HIGH RISK “BIOHAZARD” SPECIMENS (DANGER OF INFECTION)

All high-risk specimens must have a danger of infection sticker attached to the request form and the sample.

If in doubt as to whether a specimen should be accompanied by a biohazard sticker, consult your local laboratory tel: 01226 432687 (Monday-Friday 08:30 – 20:00) or the Infection Prevention and Control Nurses tel: 01226 432825 (Monday-Friday 08:00 – 17:00).

High risk micro-organisms include:

Category 3	Category 4
Human Immuno-Deficiency Virus (HIV)	Viral haemorrhagic fevers
Hepatitis B Virus (HBV)	Rabies
Hepatitis C Virus (HCV)	Anthrax
Tuberculosis (TB)	CJD
Salmonella Typhimurium	

STORAGE OF SPECIMENS

Any fridge that is used for the storage of specimens MUST NOT be used for the storage of any food items or drugs including vaccines. The fridge should have a min/max thermometer and be regularly cleaned and serviced.

Urine should ideally be examined in the laboratory within two hours. Otherwise, urine may be stored in the fridge for up to 24 hours. Bacteria will multiply at room temperature giving misleading results.

Sputum should be sent to the laboratory immediately as respiratory pathogens will not survive for prolonged periods.

Stools should be examined within twelve hours unless parasites are suspected when a warm fresh stool is required. Rectal swabs are only of value if they show the presence of faeces but stool specimens are preferred whenever possible. Stools for viral culture e.g. during an outbreak of diarrhoea and vomiting should reach the laboratory as soon as possible after collection as viral particles are rapidly killed.

High vaginal swabs should reach the laboratory within four hours.

Wound swabs should ideally reach the laboratory on the day they are taken. However, they can be stored in a specimen fridge overnight if this is not possible. Wound swabs must be collected using an appropriate transport medium e.g. Stewarts medium.

Do not leave specimens over the weekend or bank holidays even in the fridge.

TRANSPORT OF SPECIMENS

Pathology specimens are potentially infectious and hazardous. Care must therefore be taken to package and transport specimens in compliance with the Carriage of Dangerous Goods by Road (ADR 2017) to minimise the risks to staff, couriers and the general public. Specimens must be transported in an adequate leak-proof primary container; a leak-proof secondary container and an outer box to comply with British Standards

The collection and transportation of specimens is also important in ensuring the quality of results. If there have been any temperature excursions or delays in the transportation of the samples, this should be reported to laboratory reception staff an arrival.

All specimens must be placed in a specimen bag with the request form in a separate pocket.

All specimens should be placed in a designated, secure collection area until ready for collection.

Larger specimens such as 24-hour urine collections should be placed in clear plastic sacks which are tied at the neck. The request form should be attached to the outside of the bag. DO NOT use pins or staples to attach the form to the bag.

Specimens to be sent by post to specialist laboratories MUST be sent in packaging that conforms to the current transportation of dangerous goods regulations. Usually this is undertaken by the local medical microbiology laboratory and it may be necessary to send specimens there for transportation. Staff should liaise with the local laboratory undertaking diagnostic medical microbiology for further guidance. Under no circumstances must specimens be posted in packaging which does not conform to current regulations.

SPECIMENS CONTAINING RADIOACTIVE MATERIAL
If sending specimens from service users receiving therapeutic doses of unsealed radioactive sources seek advice from the laboratory staff before collecting the specimens.

Specimens from service users who have received tracer doses of radio- pharmaceutical products constitute no radiation risk and no special precautions need to be taken.

SPECIMENS CONTAINING CYTOTOXIC DRUGS
Specimens from service users receiving cytotoxic drugs may contain some unchanged drug or active metabolites. Specimens and request forms should be appropriately labelled and advice should be sought from the clinician/specialist nurse prior to transportation.

SPECIMENS AND CONTAINERS CONTAINING HAZARDOUS REAGENTS
If there is a hazardous reagent (e.g. liquid acid preservatives) present in the container, a hazard label should be attached by the laboratory.

RECEPTION OF SPECIMENS BY LABORATORY
If an unlabelled specimen is sent it will be discarded.

If damaged or unlabelled specimens are received by local laboratories, the recipient should, where possible, inform the sender that specimens have been discarded and should request further specimens are sent.

ACCIDENTS AND SPILLAGE
A bio-hazard spill kit will normally contain appropriate equipment and guidance for dealing with specimen spillage. These kits should be carried in vehicles used to transport specimens on a regular basis.

COLLECTION OF SPECIMENS – REFERENCE GUIDE (MARSDEN MANUAL OF CLINICAL NURSING PROCEDURES 10TH EDITION)

SITE	ACTION
Nose (anterior nares)	Relates to specimens for MRSA carriage. Prior to taking swabs from the nose, moisten with sterile water. One swab should be rotated around just inside both nostrils (do not swab further back into the nose).
Throat	One swab should contact one tonsil (or tonsillar fossa). The service user should stick out their tongue whilst the swab is guided down the side of the throat to contact the tonsil. A tongue depressor may be required. Do not contact any other area of mouth or tongue as this may cause contamination with other organisms.
Perineum	One swab should be rolled over the area between the genitalia and the anus (from front to back). Hygienic cleaning of the area should be undertaken if required prior to swabbing.
Groin	One swab should be rolled along the area of skin on the inner part of the thighs closest to the genitalia. Moisten with sterile saline beforehand.
Eye swabs	The exudate from the eye can be swabbed to identify some bacteria but others need to be identified by conjunctival scrapings which should be taken in an eye clinic. Hold swab parallel to the cornea and gently rub the conjunctiva in the lower eyelid from the nasal side outwards. If both eyes are to be swabbed a separate swab must be used for each eye.
Ear swabs	Ensure no antibiotics or other therapeutic drops have been used in the aural region 3 hours before taking the swab, Place the swab at the entrance of the auditory meatus. Rotate gently once.
Wounds/skin lesions	One swab should be rolled over the area. The wound may be irrigated with saline to remove surface debris before taking the swab if remnants of dressing remain. For large wounds, roll swab in a zig-zag motion to include all wound surface. If the wound is dry, moisten with 0.9% sodium chloride.
Catheter specimen of urine (CSU) 5-10 mls is required	Clamp tubing below rubber cuff (of catheter) to allow urine to collect. Urine specimens should only be taken from the sampling port using a sterile syringe +/- sterile needle (most manufacturers provide needle-less ports). Please note, using a needle increases the risk of sharps injury. Needles should not be used if it is a needle less port. Swab with 70% alcohol and allow to air dry prior to sampling. Aspirate the required amount of urine and remove the needle/syringe. Urine specimens must not be taken from the catheter bag as misleading results will be obtained due to bacteria having multiplied in the previously drained urine.
Mid-stream specimen of urine (MSU) 5-10 mls is required	Male - clean skin around prepuce (after retracting) with soap/water or normal saline. Female – part labia and clean with soap/water or normal saline (from front to back). Use separate swab for each wipe. The first and last part of the urine stream should be discarded and the mid-stream specimen collected into a sterile receiver and poured into a sterile container.
Stool/faecal specimens	Using the integrated spoon, scoop enough faecal matter to fill 2 thirds of the specimen container. Stool specimens can be obtained from a bedpan containing urine. This does not affect results. Only liquid stools (Bristol Stool Chart 6/7) will be examined for *C. difficile* toxins.
Vaginal Swabs	A sterile vaginal speculum must be used in order to separate the vaginal walls. The swab must be taken from as high in the vagina as possible.
Indwelling devices e.g. PEG site	One swab to be rolled over the area of skin surrounding the device. Pre- moisten swab with sterile water if necessary.
Pus	Pus may be collected using a sterile syringe and transferred into a sterile specimen container.

4.7 Infection with specific alert organisms

INTRODUCTION

This section is designed for professional staff including. GPs who may provide healthcare to service users in residential care settings as well as in their own home and in local general practice facilities.

Safe Infection control practice requires knowledge of micro-organisms, the diseases they cause and how they spread between people.

To assist staff, the following list provides basic information on common infectious diseases; causative organism; mode of transmission and specific information relating to clinical care.

Staff should consult the following list to determine the risk posed to others and how to manage service users safely.

Some infections are caused by an individual's own micro-organisms. This is called Endogenous Infection.

Cross infection where micro-organisms have been transmitted between individuals are called Exogenous Infections.

Advice may be sought from the local IPC Team / clinician / GP / UKHSA on the management of service users or service users' household contacts with these infections.

NOTIFICATION OF INFECTIOUS DISEASES

UKHSA regulations require statutory notification of certain infectious diseases. Notification is the responsibility of a Registered Medical Practitioner. See section IPC Management Policy

INFECTIOUS (COMMUNICABLE) DISEASES - Standard Infection Control Precautions (SICP)

Disease	Mode of Transmission	Comments and Precautions
Candidiasis (thrush)	Endogenous spread	SICP. May indicate immunosuppression or recent antibiotic therapy.
Chickenpox (Varicella)	Respiratory droplets and direct contact with vesicle fluid	Incubation period 14 – 16 days Highly infectious until lesions are dry. Potentially harmful to non-immune pregnant women and the immunocompromised. Suspicion of Chicken Pox *in a member of staff* must be reported immediately to the CCDC (at local HPU) even at weekends. Respiratory isolation.
Chlamydiosis	Sexual transmission	No restrictions
Cholera	Ingestion of contaminated food or water	Incubation period 1- 3 days SICP
Clostridioides difficile See separate section	Faecal-Oral. This bacterium produces spores which can live in the environment for months or years and requires chlorine releasing disinfectants to destroy	Enteric Isolation (own toilet facilities) Environmental cleaning with chlorine releasing disinfectants. Do NOT use alcohol hand rub as less effective than soap and water. Service users with active *Clostridioides difficile* associated disease may be cared for in hospital but may present in general practice
Cold sores	Contact with vesicle fluid, saliva, sexual contact	SICP especially hand hygiene and glove use
Common cold	Respiratory droplets and contact spread	Incubation period 1-3-day SCIP
Covid-19	Droplet/Airborne spread	SICP, Respiratory precautions. PPE required. See link for latest guidance https://www.gov.uk/guidance/covid-19-information-and-advice-for-health-and-care-professionals
Cryptosporidiosis	Faecal-oral route	SICP
Cytomegalovirus	Direct contact,	SICP

Disease	Mode of Transmission	Comments and Precautions
Diarrhoea	Faecal-oral route, contact spread	SICP. Soap and water for hand hygiene (NOT alcohol rub). Environmental cleaning of toilet facilities after use with chlorine releasing disinfectant
Fifth disease (Erythema infectiosum)	Respiratory secretions (saliva, mucus) Also from infected blood	Also known as Slapped Cheek Syndrome Incubation period 4 – 21 days Infectious before rash appears Women in first trimester at risk of serious complication; also, those with sickle cell disease and the immunocompromised
Glandular fever (Infectious mononucleosis)	Contact spread with saliva	Incubation period 28 – 42 days Infection may be transmitted on hands of staff if contaminated with saliva. Good hand hygiene essential
Hand foot & mouth disease (Coxsackie A/ Enterovirus 71)	Direct contact with nose and throat secretions; faeces	Incubation period 3 – 7 days Strict attention to hand hygiene Immunocompromised at risk. Severe complications uncommon (neurological mainly) Outbreaks common in nurseries / schools
Hepatitis A	Faecal-oral route	SICP
Hepatitis B *See sub-section on Blood Borne Viruses (BBV)*	Direct contact with infected blood, sexually transmitted	SICP when in contact with blood- or blood-stained body fluids. Safe spillage management. Safe sharps management Immunization of all staff in contact with blood.
Hepatitis C *See sub-section on Blood Borne Viruses (BBV)*	As above	SICP when in contact with blood- or blood-stained body fluids Safe spillage management Safe sharps management Avoid contact with lesions
HIV Human Immunodeficiency Virus *See sub-section on Blood Borne Viruses (BBV)*	By direct contact with infected blood, sexual transmission and vertical transmission (mother to baby)	SICP when in contact with blood- or blood-stained body fluids. Safe spillage management Safe sharps management

Disease	Mode of Transmission	Comments and Precautions
Impetigo	Direct contact with lesions	Young children often highly susceptible Attention to hand hygiene essential Avoid contact with lesions
Infestations *See Sub Section below*	Body Lice, Hair Lice, Scabies	SICP
Influenza	Respiratory (droplet) and contact transmission	Incubation period is 1-4 days. Transmission risk continues for 3-7 days or until the patient is asymptomatic. At risk patient groups should be immunised according to published guidance – see separate vaccination section. Influenza can cause outbreaks in residential care settings, the HPA may request swabbing of affected residents and ant-viral treatment/prophylaxis. Advice should be sought from HPA. May cause mild self-limiting disease however unvaccinated at-risk patients may experience severe disease.
Legionnaires' disease	Inhalation of contaminated aerosols	Not spread from person-to-person.
Measles	Respiratory droplets	Incubation period 9 – 12 days Potentially hazardous to the very young (under 1 year), immune-compromised people or non-immune pregnant women. Respiratory isolation.
Measles	Respiratory droplets	Incubation period 9 – 12 days Potentially hazardous to the very young (under 1 year), immune-compromised people or non-immune pregnant women. Respiratory isolation.
MRSA *See sub-section on MRSA*	Contact spread	SICP, strict attention to hand hygiene and principles of asepsis when caring for invasive devices or wounds.

Disease	Mode of Transmission	Comments and Precautions
Mumps (pertussis)	Respiratory droplets, direct contact with saliva	Incubation period 7 – 14 days Infectious prior to onset of illness. SICP Respiratory isolation.
Norovirus	Spread via airborne and contact routes in vomit and faeces	Incubation period 1 – 2 days Usually self-limiting but can cause severe dehydration in infants / elderly Enteric / contact isolation SICPs
Poliomyelitis	Faecal-oral route, direct contact with nasal or oral secretions	Incubation period 7 – 14 days Strict attention to hand hygiene.
PVL *Staphylococcus aureus*	Contact transmission	Some strains of *Staphylococcus aureus* (both Meticillin resistant and sensitive) produce Panton Valentine Leukocidin, a toxin which is a virulence factor. Strains can cause skin and soft tissue infections which commonly recur. Rarely this causes severe invasive disease e.g. necrotising haemorrhagic pneumonia. PVL should be suspected in patients presenting with recurrent skin infections e.g. boils. Swabs should be taken and PVL suspicion noted on the request. Positive results should be notified to HPA. who will advise on contact tracing and
Resistant Organisms e.g. VRE, ESBLs/Gram negative enterococci	Many bacteria are developing resistance to antibiotics in addition to MRSA. These include some strains of normal gut flora which can be spread by direct or indirect contact	SICP and application of principles of asepsis.
Rubella (German measles)	Direct contact with respiratory secretions or droplets.	Incubation period 14 – 21 days Potentially hazardous to the very young (under 1 year), immune-compromised people or non-immune pregnant women. Respiratory isolation.

Disease	Mode of Transmission	Comments and Precautions
Salmonella	Food-borne – ingestion of contaminated food. Faecal-oral transmission.	Transmission can occur via food handling by infected individual. Enteric precautions (own toilet facilities).
Scabies See sub-section on Parasite infections	Prolonged skin-to-skin contact	Norwegian scabies highly infectious. Dermatology diagnosis recommended. SICP apply. Staff contacts may need treatment.
Shingles (Varicella Zoster)	Direct contact with lesion exudate	Shingles can occur in people who have had chicken pox when the virus reactivates in sensory nerve cells. People not immune to chicken pox can acquire this from individuals with shingles Keep lesions covered. Strict attention to hand hygiene and glove use when in contact with lesions. Infectious until lesions dry.
Tuberculosis *See sub-section on Tb*	Inhalation of airborne droplets	Pulmonary disease infectious until after 2 weeks of treatment. Infections at other sites are not normally infectious. Respiratory isolation for first two weeks of treatment.

MRSA PATHWAY FOR COMMUNITY SERVICES

Methicillin Resistant *Staphylococcus aureus* (MRSA) is a *S. aureus* bacterium that has developed resistance to all beta-lactams, penicillin's, cephalosporins and imipenem. It may colonise without any adverse effects or can cause various degrees of infection ranging from mild to life threatening, MRSA is known to be prevalent in hospitals, residential and nursing homes. Early identification of patients who are colonised with MRSA and appropriate management of these patients has shown to reduce the risk of transmission and infection including MRSA bacteraemia within the community.

People who live in the community may live quite normally with MRSA colonisation and may not have any signs and symptoms. However, people who fit in a high-risk criterion may be more susceptible to severe infection or/ and bacteraemia:

- A person with an Indwelling device, e, g Urinary Catheter, PEG, PICC, or Cannula.
- A person who is diabetic and had venous ulcers or deep wounds.
- IV drug user
- Patient who have long term chronic illnesses conditions
- Patients who are immunocompromised
- Patients with open wounds.
- Patient who has a Vac dressing.

COLONISATION VERSES INFECTION

Colonisation – means that MRSA is present on or in the body without causing an infection.
Infection – This can occur when the MRSA invades an opening or wound on the body and can then multiply causing clinical symptoms, e.g., fever, inflammation, confusion, rigors, redness, exudate to the wound.

Bacteraemia -If an infection is left untreated the patient may develop a blood stream infection which could lead to multi-organ failure and /or death. The Department of Health sets annual targets to reduce incidence of MRSA Bacteraemia.

MANAGEMENT OF PATIENTS WITHIN THE COMMUNITY SETTING

Swabbing

Bacterial swabs in the charcoal transport medium must be used. The tip of the swab should be moistened with 0.9% sodium chloride (sterile saline) when taking nose and skin swabs. When swabbing please swab:

- Nose - One swab for both nostrils
- Groin - One swab for both sides (moisten swab with sterile saline).
- Skin lesions, cuts or wounds - One swab for each site. Sites should be clearly labelled, e.g. site, type of wound, where the wound is on the body. Swab should be moistened with sterile saline and rubbed into the area.
- Umbilical sites - Only for neonates/babies.
- CSU – All patients with indwelling urinary or supra-pubic catheters should be swabbed at site and have a sample of urine aseptically taken, not from the Urine drainage bag.
- Throat swab if patient has dentures,
- All other invasive devices, - site swab, e, g PICC, PEG, Tracheostomies etc.

- Specimens must be labelled correctly with the patient's full name, NHS number, date of birth, correct site of the swab taken.

It is recommended that a full MRSA screen be completed, not just the wound as it is likely that other areas may be positive for MRSA.

NB Please ensure that an alert for MRSA is flagged permanently (for lifespan of patient) on the patient's records. We recommend permanent flagging because low level carriage (which may not be easily detectable) can persist even after decolonisation treatment. Flagging of records helps ensure that: Infection control precautions are adhered to, appropriate antibiotic choices are made for this patient in future, all relevant clinicians are aware of the patient's MRSA status prior to any healthcare intervention, including hospital admission/outpatient appointment.

NEW ISOLATES
It is recommended that a new result is always treated. This will reduce the risk of a long-term colonisation It is recommended that the patient is prescribed treatment as per formulary (see table below): The medicines management team can be contacted in the event of an alternative solution being required.

TREATMENT AND MANAGEMENT OF POSITIVE MRSA RESULTS IN COMMUNITY SETTING

Procedure	Product	Directions	Duration
Nasal decolonisation	Mupirocin cream 2% (Bactroban In the first 12 weeks of pregnancy use Naseptin cream **Naseptin is contra indicated if the patient has a peanut allergy.** Octenisan nasal gel (if the patient is receiving 02 therapy via nasal cannula)	Apply to both nostrils 3 times day	5 days
Daily shower/bath	2% Octenisan	Thoroughly apply product directly on to wet skin covering all areas then rinse after one minute	5 days
Hair wash	2% Octenisan	Wash hair with the product twice during this period	5 days
Throat positive	Corsodyl spray	Three times daily	5 days
If wound swab positive	Octenilin wound irrigation	Assess the wound for signs of infection. If infected systemic antibiotics may be needed	On wound assessment may continue for the duration of systemic antibiotics

Neonatal babies and children up to three years of age should be decolonised using Protoderm foam and nasal cream as per table below Contact IPC team if further advice is required.

Procedure	Product	Directions	Duration
Nasal Clearance	Prontaderm nasal gel	Apply to both nostrils 3 times day	**For 5 days**
Daily bath/bed bath	Prontaderm Foam	Following a bed bath /bath Apply prontaderm foam a golf ball sized amount for each area and rub in until dry	
Hair wash	Prontaderm Foam	Apply to hair with a disposable cloth and leave for 3-5 mins and then dry hair	
If wound swab positive	Prontasan wound irrigation to be used under direct consultant microbiology instruction and input from IPCN's only	If infected systemic antibiotics may be required.	

SCREENING POST TREATMENT

If the patient is deemed as high risk after completion of treatment a re-swab may be required to assess negative status. This would be on recommendation of the GP following patient assessment. Rescreening if required should be undertaken 48 hours after completion of treatment. To confirm a negative result 3 consecutive negative screens should be undertaken; waiting for results of one, prior to sending the next screen. All previous areas should be re-swabbed. If the patient continues to have a further positive swab, a further round of decolonisation may be required following discussion with the patients GP. Further advice can be discussed with the consultant microbiologists at Barnsley Hospital.

PATIENTS IN A CARE HOME/RESIDENTIAL SETTING

Patients who live in a care home are not required to isolate unless they are positive for MRSA in multiple site results, or are sputum positive. The risk of transmission within a care home environment is usually seen from:

- Direct spread via hands of staff or residents.
- Equipment that has not been appropriately cleaned and decontaminated when used on a positive patient.
- Contamination within the positive resident's environment

A risk assessment should be put in place for any resident with MRSA to ensure safe management within the home. This should be part of the care planning process. Staff should adhere to strict standard Infection control precautions at all times. For close contact staff should maintain scrupulous hand hygiene and wear apron and gloves for all close contacts.

Any infected sites should be covered with a prescribed dressing, and clothing to reduce the risk to other residents. Hands of the affected resident should be cleaned prior to leaving room to come into a communal area. When placing the affected resident, it is advised to place away from any other residents with invasive devices and open wounds.

ENHANCED CLEANING AND DECONTAMINATION

If a resident has a positive MRSA result, their environment can become contaminated. It is important that there is an enhanced cleaning regime in place to reduce microbial load and the risk of transmission to other residents. A plan should be in place for a regular daily enhanced clean. A detergent clean, followed by a disinfectant clean is recommended with a chlorine-based product that can be made up to 1,000 parts per million, or an equivalent product that is effective against MRSA. If a two in one product is used, then this will clean and decontaminate. Please ensure product is made up correctly and contact times are adhered to.

LINEN

All affected patients' clothes and linen should be treated as infected. Placed in a soluble bag and placed in a red bag (infectious waste) Laundry staff should have received training in laundering infected linen and the use of appropriate PPE. Infected linen should be washed as per instructions, noting manufacturers recommendation last and the Machine should require a sluice cycle after use.

WASTE

Any waste generated by the affected patient should be treated as infected waste. If the home does not have an Infectious waste stream, the waste requires storing in a secure place for 72hours prior to putting in outside bin.

4.8 Blood Borne Viruses

INTRODUCTION

Viruses transmitted by blood and blood-stained body fluids are of particular importance to healthcare workers who may be at risk of acquiring infection during the course of their work. The most significant route of spread (in occupational exposure) is via contaminated sharps.

The most important blood borne viruses are:

- Hepatitis B
- Hepatitis C
- HIV

This should be read in conjunction with other policies within this manual:

- Safe handling and disposal of sharps
- Management of Occupational Exposure to Blood Borne Viruses
- Decontamination of Medical Equipment
- Spillages of blood and body fluids

HEPATITIS B (HBV)

Most infections caused by this virus are mild, however in a few cases extensive liver damage and liver failure may prove fatal

Between 2-10% of those infected do not completely eliminate the virus and become chronic carriers.

Some groups are at increased risk of acquiring HBV; these include but are not restricted to:

- Service users receiving renal dialysis
- Haemophiliacs
- Intravenous drug users who share needles
- Families of chronic carriers
- Residents of institutions whose behaviour may facilitate transmission e.g. biting

HBV is transmitted by sexual intercourse, perinatally from mother to baby, via inoculation when infected body fluids are inoculated through the skin; on instruments, via damaged skin or through splashing contact with mucous membranes.

HBV has been isolated from almost all body fluids. However, the following body fluids are those most implicated in the transmission of the virus:

- Blood
- Semen
- Vaginal fluids

Healthcare workers are at risk of acquiring HBV from sharp injuries, scratches, bites and from body fluid splash incidents. The virus must have contact with the staff member's blood to cause infection. The virus can live outside on equipment, but only for a limited amount of time.

HEPATITIS C (HCV)
Primary symptoms of infection with HCV is often mild, asymptomatic and rarely associated with jaundice. 85 % of those infected become chronic carriers.

The infection has been transmitted by blood transfusion, although in developed countries this has been eliminated by the introduction of blood donor screening.

Transmission is also possible by the following routes:

- Intravenous drug users who share needles
- Sexual intercourse
- Perinatally from mother to baby

Healthcare workers are at risk of acquiring HCV from sharp injuries, scratches, bites and from body fluid splash incidents. The virus must have contact with the staff member's blood to cause infection. The virus can live outside on equipment, but only for a limited amount of time.

HUMAN IMMUNODEFICIENCY VIRUS (HIV)
Infection with HIV will persist indefinitely once seroconversion has occurred. Infection can be transmitted to others from an infected individual soon after they have acquired the infection (when the virus is replicating rapidly) but becomes more infectious as immunodeficiency decreases and the amount of virus in the blood increases.

HIV is transmitted via the following routes:

- Sexual intercourse
- By inoculation of infected body fluids
- Through damaged skin or on to mucous membranes e.g. conjunctivae, mouth
- By transfusion of contaminated blood
- Perinatally via the placenta, during delivery and from breast milk

The greatest concentration of virus is found in blood or body fluids containing visible blood.

Occupational transmission of HIV has been reported. Healthcare workers are at risk of acquiring HIV via the following exposures:

- Inoculation of infected blood / body fluid into body tissues by a needle or other sharp device.
- Splash incidents with infected blood / body fluids into the eyes or mouth or through damaged skin.

Service users are at risk of acquiring HIV via inadequately decontaminated medical devices. The virus must have contact with the staff member's blood to cause infection. The virus can live outside on equipment, but only for a limited amount of time.

MANAGING SERVICE USERS WITH BLOOD-BORNE VIRUSES

Service users with blood-borne viruses do not require any additional infection control precautions beyond standard infection control precautions.

Protective clothing is necessary only for direct contact with blood or body fluid. Specimens should be labelled as 'high risk' as per specimen collection policy.

With new treatments available, patients who are compliant with treatment can reduce microbial load significantly. This will reduce the risk of cross contamination, but only if the service user is compliant with treatment.

REDUCING THE RISK OF OCCUPATIONAL EXPOSURE

Injury with a contaminated sharp device / instrument is the most likely route of transmission to a care worker, therefore all staff should be aware of safe working practices when handling and disposing of used sharp instruments.

Staff should be made aware of the action to be followed in the event of accidental sharps injury or splash incidents. Staff are advised to wash it Bleed it, cover it and report it.

Staff should adopt standard infection control precautions for all service users regardless of the perceived risk of infection.

4.9 Transmissible spongiform encephalopathies

INTRODUCTION

Transmissible Spongiform Encephalopathies (TSE's) are rare, chronic fatal degenerative brain diseases of humans and certain other animal species, whose natural mode of transmission is unknown but is thought to be passed by inoculation and in some cases by ingestion of high-risk tissue.

The infecting agent is of virus size but is an unconventional protein known as a prion, which replicates extremely slowly with an extended incubation period. The infectious agent is thought to be restricted to the central nervous system and lymphoid tissue. There is now some suggestion that some cells in the blood may also be affected. There appears to be no antibody or other immune response to the infection making it difficult to detect. Diagnosis is by clinical signs and symptoms and characteristic changes in the brain.

These agents are very resistant to both heat and chemical disinfection and could therefore pose a potential risk to staff and service users via contaminated surgical instruments.
Stringent management arrangements are required for the re- processing of certain types of surgical instruments and other medical devices that may potentially have been contaminated with TSEs. Such instruments are unlikely to be used routinely in general practice. Some clinicians undertaking enhanced services (dependent on type of procedure) *may* need to take additional precautions with surgical instruments and should seek advice from local Trusts' Decontamination Lead.

There have been no confirmed cases of TSE in health care staff as a result of occupational exposure to an infected service user.

Standard infection control practice should be routinely followed as described in this infection control policy.

KNOWN OR SUSPECTED TSE SERVICE USERS

Includes those service users with:

- An established diagnosis of classical sporadic Creutzfeldt-Jakob Disease (CJD), variant CJD (vCJD), Gerstmann-Straussler-Scheinker Syndrome (GSS), Fatal Familial Insomnia (FFI) or Kuru.
- Service users suspected of having a TSE or a related disorder whose clinical symptoms are suggestive of TSE.

AT RISK SERVICE USERS

Rarely, asymptomatic service users may be identified as potentially at risk of developing TSE related disorders. This may be iatrogenic in origin and such patients will have been notified.

CARE OF KNOWN, SUSPECTED OR AT-RISK SERVICE USERS

In general practice Standard Infection Control Precautions are usually all that is required for the care of these service users. Specific advice on individual affected service users should seek advice from local clinicians or HPA.

Additional information on CJD risk assessment and management can be found at

https://www.gov.uk/government/publications/guidance-from-the-acdp-tse-risk-management-subgroup-formerly-tse-working-group

4.10 Tuberculosis introduction

INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by *mycobacterium spp.* There are a number of bacteria within the Mycobacteria family and these are widely distributed throughout the world but only a few species cause disease in man. The most common tuberculosis infections are caused by *Mycobacterium tuberculosis* although *Mycobacterium avium intracellulare* (or MAI or Mycobacterium complex) is commonly seen in immunocompromised service users.

The most common primary site of infection is the lungs (pulmonary tuberculosis), but bones, joints, the brain and meninges and other internal organs may be affected.

TB infections in sites other than the lung are not normally infectious. Some infections with TB remain dormant (and non-infective) for many years; this is called latent TB Infection. Such service users may develop active infection later in life, often following debilitating illness.

It is not easy to become infected with TB but risk is increased through prolonged close contact (a cumulative period of 8 hours is considered sufficient) with an infected case (e.g. household contact) and even then, only 30% of healthy people will become infected and those only 5-10% will develop active disease. Those more at risk of acquiring disease are:

- Household contacts
- Those living in unhealthy or overcrowded environments
- Prolonged exposure in a country with high incidence of TB
- The very young or elderly
- Immunosuppressed (such as with HIV)
- Those with a history of drug or alcohol misuse or detainment in prison
- The children of parents whose country of origin has a high incidence of TB

Casual contacts such as work colleagues and friends are not considered to be at increased risk. The TB specialist team will, however, make an informed decision on whether to screen work colleagues or friends depending on level of contact and level of infectiousness of the case.

Those affected with pulmonary TB most commonly present with a persistent cough, weight loss, severe night sweats, tiredness and some may present with haemoptysis.

Incubation is most commonly 4 to 12 weeks. For some people the infection will lay dormant (latent) but they may, however, develop active disease later in life if predisposed with another debilitating illness.

SPUTUM SPECIMENS

Three sputum specimens are required to determine the presence, or absence, of mycobacterial type organisms (AFBs). It is important to ensure the specimen consists of purulent secretions coughed up from the bronchi and is not merely saliva from the mouth. Suitable specimens are best collected during a bout of coughing soon after the service user wakes in the morning.

Care must always be taken with specimens to ensure that the lid of the container is secured tightly and there is no trace of the specimen on the outside of the container. A biohazard label must be attached to the specimen and the request form.

A positive AFB result indicates that someone has tuberculosis, but does not confirm active TB disease. A full culture and sensitivity testing is required which may take several weeks.

APPROPRIATE PRECAUTIONS TO PREVENT THE SPREAD OF INFECTION
Most service users with tuberculosis are treated at home; a few need hospital admission for severe illness, adverse effects of chemotherapy or social reasons.

Special precautions, other than care in disposal of infected exudates, are only required when the service user has confirmed or suspected open pulmonary tuberculosis i.e. AFB positive service users. Such service users should not attend general practice during the first 14 days of drug therapy unless segregated during their visit. See section 4.7.

CARE PROTOCOL FOR FIRST TWO WEEKS
Once a person has been commenced on treatment for suspected tuberculosis, they generally remain infectious only for the first two weeks of treatment unless there is a suspicion of a resistant or multi-resistant strain of tuberculosis or are non-compliant with treatment. In a healthcare environment they will require single room isolation with mechanical ventilation during this period.

The service user will usually remain at home as directed by the Chest Physician or TB Nurse Specialist with restricted visitors until confirmatory diagnosis and up to fourteen days of specific chemotherapy has been completed (advice will be given by the TB Nurse Specialist).

CARE PROTOCOL THROUGHOUT THE SERVICE USER'S ILLNESS
Encourage service user to cough into disposable tissues which are then disposed of immediately. If in a healthcare setting, they should be placed into a clinical waste bag.

Encourage the service user to expectorate into a sputum pot which is kept covered and disposed of on at least a daily basis. This must be disposed of with a secure lid. If in a clinical setting, it should be placed into a clinical waste bag.

NB Service users generating significant volumes of respiratory waste *may* require a clinical waste collection service setting up. See Section 10.

Ensure the service user turns their head away from others when coughing or expectorating.

Ensure the service user undertakes effective hand washing particularly before meals and after coughing.

There is no need for separate crockery or cutlery.

Well ventilated accommodation is preferable e.g. open windows when weather conditions allow.

Medication compliance is essential and will require supervision by the TB Nurse Specialist when the service user is cared for in the community. Early referral to the TB team is therefore essential. Failure to comply with treatment may cause complications and will encourage the development of MDRTB and increase infectivity. Service users in community settings undergoing treatment for TB will have their treatment monitored by the TB specialist team who will provide advice to carers on ensuring compliance.

If a service user dies with active tuberculosis the body should be placed in a cadaver bag, and clearly labelled as a risk of infection to alert the mortuary/undertakers staff to the risks.

For further information https://www.gov.uk/guidance/tuberculosis-screening

MULTI-DRUG RESISTANT TUBERCULOSIS (MDRTB)

There are now increasing numbers of service users being identified with a tuberculosis infection which is resistant to more than one of the usually prescribed drugs used for treatment. Once identified these service users are usually cared for in hospital until they are no longer infectious. However, it is possible that general practice staff may have had regular contact with the service user prior to admission. In such cases, guidance will be provided by the local Health Protection Unit in collaboration with the local Chest Physician / TB team and Trust Infection Control Advisor.

STAFF PROTECTION / CONTACT TRACING

Staff that are caring for service users with open pulmonary TB within the first two week of treatment are not usually required to wear masks. Close fitting FFP3 masks are required when undertaking sputum producing procedures. If masks are required for any other healthcare activity this would be directed by the TB Specialist team.

All close staff contacts of sputum smear positive (AFB positive) service users will be checked and followed up by the TB nurse specialist as appropriate. A contact list will be compiled in conjunction with the local Trust Infection Control Advisor and the local Health Protection Team

Any employee of the organisation who develops an illness suggestive of tuberculosis should seek medical advice from their own GP as soon as possible.

4.11 Lice ectoparasites

HEAD LICE, BODY LICE, PUBIC LICE AND THE SCABIES MITE
Lice live on the skin or inner layers of clothing. Once parted from their host, they soon die, although the nits or eggs may remain viable for long periods. Transmission is by contact either with the hair (head or pubic lice) or clothing (body lice) of the host.

HEAD LICE (PEDICULUS HUMANUS CAPITAS)
The adult louse is approximately 3mm long and lives for about 20 days. The female head louse produces on average 56 eggs after a single insemination, at the rate of approximately six eggs per day. It feeds on human blood. Bites cannot be felt but repeated bites lead to sensitisation and irritation (itching) of the scalp. Irritation to the scalp is also due to an allergic reaction to louse faeces. Once the infected person is sensitised to the bites the itch is continuous. The eggs, which are difficult to see, are glued to individual hairs just above the roots and are tear shaped and approximately 1mm long. They hatch after 7- 11 days and reach adult stage within 6-12 days. The empty egg shells (nits) are white and shiny and are harmless. As the hair grows the empty egg shells can be found further along the hair shaft.

The live lice are transmitted by prolonged head to head contact, which must be for at least 30 seconds. Lice cannot jump or fly but crawl quickly in dry hair from one head to another.

Diagnosis
Diagnosis is by identification of a live moving louse on the hair which is most effectively done by the wet combing method (described below). Children aged 4-11 years are the most frequently affected so it is important for control measures that families check their hair for infection regularly and treat appropriately.

Wet combing detection method
Wash the hair in the normal way.

Using a fine-toothed comb and lots of conditioner, firstly comb the tangles out of the hair over a pale surface or paper towel. Clean the comb between each stroke using a piece of tissue. Then repeat the process with a fine-toothed comb, combing a small section of hair from the roots to the end and cleaning the comb after each stroke. Examine the tissue after each combing for traces of lice or eggs. After completing the combing, rinse and dry the hair in the usual way.

If live lice are identified, then an appropriate eradication method should be used.

If lice are found then all other close contacts should be checked for infestation by use of the wet combing method and only those who are found to be affected should be treated.

Treatment - Insecticides
There are four main types of insecticide treatments available:

- Carbaryl
- Malathion
- Synthetic pyrethroids, phenothrin and permethrin
- Dimeticone which is not a chemical but works by immobilising the lice

Alcohol based treatments must not be used on babies or people with asthma, when a water-based treatment must be used.

Staff should wear a plastic apron and gloves while carrying out the treatment.

Apply lotion according to the instructions and rub gently into scalp, avoiding contact with the eyes. Repeat until hair is thoroughly wet. Allow hair to dry naturally.

After the recommended contact time wash hair with normal shampoo, rinse using lots of conditioner. While the hair is wet, comb with a fine-toothed comb, making sure that the teeth of the comb slot into the roots of the hair every time to remove lice and nits. Clear the comb after each stroke.

An insecticide treatment should be repeated seven days later. This is because the insecticide is not 100% effective at eradicating all the eggs which may then hatch during the following seven days. The second application ensures that the nymph stage lice (young lice) are eradicated before being able to lay eggs.

2 to 3 days after the second application of the insecticide the hair should be combed through with a detection comb. If any adult lice are found this is either due to treatment failure or re-infestation. In either case a second choice of insecticide should be chosen so as to prevent resistance to the treatment occurring. This is called the mosaic approach to treatment.

Wet-combing eradication method

Wet combing should be performed on days 1, 5, 9 and 13 over a fourteen-day period and should follow the same method as the eradication method described above. It is important that, between each stroke, lice are cleaned from the comb and that the entire head and length of hair is checked during the process.

Period of communicability Until case is treated Exclusion
None

BODY LICE
The adult body louse is larger than the head louse and also feeds on human blood. It is associated with poor living conditions, lack of cleanliness and lack of adequate nutrition. The presenting signs are pinpoint lesions, excoriation and pigmentation of the skin. Eggs are laid on the clothing of the host, in the lining, seams and underwear and occasionally on the body hairs. The body louse may be transferred by direct contact, but more often by wearing infested clothing or sleeping in infested bedding.

<u>Treatment</u>
Treatment does not usually require pesticides.

Body lice are seldom found on the skin after clothing has been removed. The louse only transfers in the dark therefore remove clothing in a well-lit room.

It is recommended that staff wear gloves and a plastic apron while assisting service users. Collect clothing and bed linen in water-soluble linen bags.

Clothes should be turned inside out and tumbled dried at 50^0 C for 30 minutes. This will be sufficient to kill both lice and eggs. Clothes can then be washed in the usual way. No special environmental measures are required.

CRAB LOUSE

The crab louse is generally found in the pubic and perineal region, but may also be in the armpits, hairy chests, beard, eyebrows and eyelashes. It is more firmly attached and less likely to transfer to healthcare staff. It is normally acquired by intimate contact. It feeds on human blood and can be seen as a dark red spot. Bites cannot be felt but irritation occurs and blue/grey skin lesions can be seen.

Treatment

Treatment is with Malathion or Carbaryl lotions or shampoo. An aqueous based lotion should be used on the genital or other areas as necessary.

Clothing should be washed and ironed.

Staff should wear gloves if required to carry out the treatment.

Sexual partners should be treated simultaneously whether infection is confirmed with them or not.

4.12 Scabies

Infection with the scabies mite is currently increasing and there have been a number of cases of resistance to the usual treatments. Extended direct contact (i.e. skin to skin for 3-5 minutes) is required for transmission of the mite.

Scabies is an infestation of the skin by the microscopic mite *Sarcoptes scabei,* which burrows into the skin. These burrows are often visible as a discoloured, raised line, which may be straight, tortuous or dotted on the wrists, back of the hands and between the fingers.

Infection with scabies presents with intense itching caused by an allergic reaction to the faeces of the mite. The burrowing itself may also cause itching. The mite tends to burrow into warm skin creases so elbows, armpits, beneath the breasts, waist, groin, genitalia, buttocks, knees and ankles are often affected.

Infection with the scabies mite is very difficult to detect until the infested individual becomes allergic to proteins in the excreta of the mite which takes from 2-6 weeks. This causes increasingly intensive itching particularly at night. There are two particular types of scabies to note:

- Classical scabies which presents in otherwise healthy individuals. There are few mites present and few associated complications.
- Norwegian scabies (also known as crusted scabies) which can occur in those with impaired immunity. Infestation is with large numbers of mites, reaching possibly thousands and affecting the entire body. Typical burrows may not be seen and the service user may present with a rash resembling a chronic dermatitis. The classical itch may be absent. This form of scabies is highly infectious and can cause environmental contamination.

Transmission of scabies infection occurs during very close skin-to-skin contact with an infected individual and spreads rapidly under crowded conditions where frequent skin-to- skin contact is unavoidable such as in hospitals, care homes and childcare facilities.

As many elderly people are affected by dry skin it is often extremely difficult to diagnose scabies infestation in the elderly. Referral to a dermatologist for confirmation of diagnosis is often the most effective method of determining an accurate diagnosis particularly if other treatment regimens have failed.

Treatment

Those diagnosed with scabies, as well as their sexual partners and any other close contacts that may have had close prolonged contact within the preceding 6 weeks should be treated. These treatments should be given concurrently on the same day.

A malathion or permethrin-based lotion are the current treatments of choice.

Instructions for treatment

- Always follow manufacturers' guidance which will be included in packaging.
- The lotion or cream should be applied from the chin downwards. All areas of the body, including genitalia, must be treated, except for the face and neck. It should be left on for the instructed length of time, after which the service user should bath or

shower.

- Any cream washed off during the course of treatment should be re-applied until the treatment time has elapsed.
- Those who are infected will need to receive a second treatment 3-5 days later. Unaffected contacts will only need to receive one treatment.
- All bed linen and clothing worn just before treatment must be washed on a high temperature. If items are not washable then they should be ironed with a hot iron.
- It is important to note that itching may persist for several weeks after treatment. Antihistamines may be recommended to reduce itching.
- Further medical attention should be sought if itching persists after 4 weeks.

The two most common causes for treatment failure are:

- Failure to treat all contacts simultaneously so the chances of re-infection are increased.
- Failure to re-apply the treatment during the treatment phase after washing hands.

A hot bath before treatment is NOT recommended. If the service user is dirty a cool bath may be given, and treatment should then be delayed for at least two hours following the bath. Bathing before treatment increases absorption of the lotion into the bloodstream and away from the skin area which requires treatment.

Staff should wear gloves and plastic aprons for direct contact during treatment.

Expert advice should be sought for the treatment of crusted (Norwegian) scabies as in some rare cases systemic treatments may be necessary.

<u>Recommendations</u>
Staff infected outside the healthcare environment should be excluded from work until 24 hours after completion of the treatment.

Staff infected as a result of occupational exposure from service users they are caring for may return to work after treatment but should not work elsewhere until 24 hours after treatment.

Visitors should be discouraged from close contact with the service user/client until 24 hours after completion of treatment.

Service users should not visit Day Units, Lunch Clubs, Occupational Therapy units etc. until treatment is completed.

<u>If an admission to hospital is required, the receiving department must be informed of the diagnosis and treatments already given.</u>

Seek guidance from UKHSA or IPCT, if there is the likelihood of more than one case of scabies i.e. an outbreak.

4.13 Management of *Clostridioides difficile* (*C.difficile*) diarrhoea

INTRODUCTION

Clostridioides difficile (C. difficile) (formerly known as *Clostridium difficile*) is a bacterium which produces spores that are resistant to air, drying and heat. The spores survive in the environment and are the main route of transmission of the bacterium.

C. difficile is present harmlessly in the gut (bowel) of up to 3% of healthy adults and 66% of babies as part of their normal gut flora. However, when antibiotics disturb the balance of bacteria in the gut, *C. difficile* can multiply rapidly producing toxins causing diarrhoea or colitis.

C. difficile produces two major toxins (A and B) that are linked to its pathogenicity (ability to cause disease). The presence or absence of these toxins is detected in the Laboratory as part of the *C. difficile* testing process.

The 027 strain of this organism is particularly virulent (hypertoxigenic) causing severe morbidity and mortality.

C. difficile has been associated with outbreaks in health and social care settings. It is, therefore, imperative that good infection prevention and control measures are instigated so that transmission does not occur in any health or social care setting.

***C. DIFFICILE* CONDITIONS**

There are two types of *C. difficile* conditions:
C. difficile colonisation – this means that the bacteria are present in the bowel, but not producing toxins. Symptoms, if present, are usually very mild and antibiotic treatment is not usually required. People who are colonised are often known as 'carriers'. Residents who are colonised are at high risk of progressing to infection.

C. difficile infection (CDI) – this means that the bacteria are present and producing toxins, causing symptoms which can be mild to severe, including life-threatening pseudomembranous colitis, toxic megacolon and even perforation of the bowel (see 'Severity of *C. difficile* infection' table) *C. difficile* is almost always associated with, and triggered by, the prior use of antibiotics prescribed as treatment for, or to prevent infection (prophylaxis).

SCOPE OF POLICY

These guidelines should be read and followed by all clinical staff in practices

SIGNS AND SYMPTOMS OF *CLOSTRIDIOIDES DIFFICILE* INFECTION

Symptoms range from mild diarrhoea to explosive severe watery diarrhoea with blood and mucus in the stool which may be green. The diarrhoea may be frequent (as many as 30 times per day) and commonly has a distinctive foul odour

Abdominal pain and fever due to the toxins causing fluid loss from the gut and cell damage

Dehydration which can be severe due to fluid loss

In the majority of people, the illness is mild and a full recovery is usual. Older persons often with underlying illnesses and CDI may, however, become seriously ill.

Occasionally, patients with CDI may develop a severe form of the infection called pseudomembranous colitis which can cause significant damage to the large bowel resulting in perforation, peritonitis and death.

PATIENT RISK FACTORS FOR *CLOSTRIDIOIDES DIFFICILE* DISEASE

The risk factors associated with acquiring *C. difficile* are:

Age – incidence is much higher in those aged over 65 years

Underlying disease – those with chronic renal disease, underlying gastrointestinal conditions and oncology residents

Antibiotic therapy – those who are receiving or who have recently received antibiotic treatment (within 3 months), especially broad-spectrum antibiotics such as cephalosporins, e.g. cefuroxime, quinolones, such as, ciprofloxacin, co-amoxiclav or clindamycin. *C. difficile* has been associated with oral, intramuscular and intravenous routes of administration of antibiotics

Recent hospital stay – those who are frequently in hospital or who have had a lengthy stay in hospital

Other medication – those receiving anti-ulcer medications, including antacids and proton pump inhibitors (PPIs), e.g. omeprazole, which are used for treating reflux (heartburn and indigestion)

Nasogastric tubes – those undergoing treatments requiring nasogastric tubes

Colonisation with *C. difficile* – they are at greater risk of developing *C. difficile* infection (CDI)

SAMPLING AND DIAGNOSIS

Expert guidance on sampling has been issued: Department of Health (2012)
Updated DH/ARHAI guidance on the diagnosis and reporting of C. difficile

It is difficult to diagnose *C. difficile* just by symptoms alone. Therefore, a diarrhoea sample should be sent to the microbiology laboratory and tested for the presence of *C. difficile.*

Patients presenting with watery diarrhoea should be assessed for indications of *C. difficile* disease. Normal bowel patterns and alternative causes of diarrhoea should also be considered. Cases may be identified where the bacteria is present as a colonising organism with diarrhoea from alternative causes.

If *C. difficile* disease is suspected a stool sample should be taken and sent to the microbiology laboratory. Only samples of Bristol Stool Grade 5-7 should be sent i.e. stools that take the shape of the container. The request should be for MC&S and *Clostridioides difficile* toxin. Samples contaminated with urine may be sent.

Diagnosis is usually made by detecting the presence of toxins using EIA. Secondary tests (GDH/NAAT/PCR) may also be undertaken.

RESULTS

Understanding stool results is an important part of diagnosis and management.
GDH antigen, this enzyme is produced by C. difficile. It is used as a laboratory screening test before proceeding to toxin assay test.

GDH positive but C. difficile toxin assay negative	Toxigenic strain of C. difficile bacteria present in the gut flora but may not be causing disease (carriage). However, these patients may have transmission potential and could be C. difficile excretor. Infection Control precautions for C. difficile must be applied Caution with antibiotic use Clinical correlation is required as may need treating as per C. difficile infection if patient has clinical syndrome compatible with C. difficile infection
GDH positive and C. difficile toxin assay positive	Toxigenic strain of C. difficile bacteria is present and producing toxin at detectable level. Treat as per severity of disease and apply infection control precautions
GDH antigen and C. difficile toxin assay negative	No evidence of carriage of toxigenic C. difficile strain. However, if symptoms persistent (after omitting laxative and medications that can cause diarrhoea) and the diagnosis of C. difficile infection remains a possibility (example recent use of antibiotics) consider retesting stool sample for C. difficile.

TREATMENT

The Expert Guidance for the Management and Treatment of *C.difficile* infection first published in 2013 was updated in July 2021 and the antimicrobial treatment recommendations in the existing Public Health England (PHE) *Clostridioides difficile*: How to deal with the problem (2013) have been superseded by the National Institute for Health and Care Excellence (NICE) guideline on Clostridioides difficile infection (CDI).

A full update to the current PHE CDI guidelines is planned for later this year. Please continue to refer to the current PHE guidance for:

- management of life-threatening disease
- guidance on diagnosis
- guidance on infection control

Severity of C. difficile Infection

Severity	Stool frequency per day	Stool type	Inflammatory markers	Vital signs	Other features
Mild	>3	5-7			
Moderate	3-5	5-7	WCC <15x10^9/L CRP <150		
Severe	Unreliable indicator		WCC >15x10^9/L acute rising serum creatinine >50% above baseline	Raised temp. >38.5.	Evidence of severe colitis
Life threatening	Unreliable indicator			Hypotension	Partial or complete ileus or toxic megacolon

Treatment algorithms are as advised in published guidance. Advice may be sought from the Consultant Microbiologist. In some cases, symptoms may continue despite treatment or patients may relapse after resolution of symptoms. The algorithm includes management of initial episodes and also for recurrent disease.

Wherever possible antibiotics prescribed for other infections should be stopped. Advice may be sought from the Community Medicines Management or Microbiologist if required. Where continuing antibiotic therapy is required this should be assessed on a daily basis. In some cases, stopping antibiotic therapy may leads to cessation of diarrhoea symptoms within 48 hrs.

Where diarrhoea is severe and frequent, particularly in the elderly patient, dehydration with electrolyte imbalance may follow. Supportive therapy and blood tests may be required.

Antimotility agents should not be prescribed and patients should be advised not to purchase these over the counter.

The use of PPIs should be reviewed and, if possible, discontinued. Surgical, gastroenterology and nutritional advice may be required.

Samples should not be sent to demonstrate clearance. Patients will commonly shed bacteria and toxins for many weeks. Laboratories will not test samples sent within 28 days of a positive result - in line with published guidance.

Where relapse is suspected it is not usually necessary to re-sample. Advice may be sought from the Consultant Microbiologist. Recurrence of CDI is common occurring in approximately 20% of cases after the first episode. A proportion of recurrences are re-infections (20-50%) as opposed to relapses due to the same strain. Relapses tend to occur in the 2 weeks after treatment stops. This increases to 50-60% after a second episode.

Studies have suggested that some of these relapses are in fact re-infection due to the person re-infecting themselves from spores in their environment, hence the need for thorough cleaning and disinfection of the environment,

PREVENTION OF SPREAD

Clostridioides difficile spores from diarrhoeal patients will contaminate the environment, equipment and the hands/clothing of healthcare workers. Therefore: -

- Hand Hygiene is essential after all contact with the patient and their environment. **Spores are not reliably killed by alcohol gel therefore hands must be washed with soap and water.**
- Aprons should be worn as appropriate to protect clothing. This would include handling of patient's body fluids and contact with the environment.
- Gloves should be worn for contact with patient's body fluids or contaminated equipment. Hands must always be washed after removal of gloves.
- Medical/Nursing equipment having contact with the patient/environment should ideally be dedicated for that person. Chlorine releasing disinfectants (1,000 parts per

million) are recommended for decontamination. (See Decontamination of Medical Equipment). Equipment returned to the Community Loan Store should be decontaminated according to the Loan Store instructions and the accompanying return form should state this is done.

- Where patients with *C. difficile* disease are cared for in a care home setting, primary care staff should satisfy themselves that staff are familiar with processes designed to prevent cross-infection/contamination. This will include environmental cleaning regimes, isolation requirements and the need for dedicated toilet facilities whilst the patient is symptomatic. Home staff should be reminded of the importance of hand hygiene with liquid soap and water.
- If a patient with known or suspected *C. difficile* disease is transferred to another care setting it is essential that the receiving facility is informed of the diagnosis in advance of transfer. Ambulance transport staff must also be informed when the transport is arranged.
- Carers of patients at home with *C. difficile* infection should be taught to wash their hands with liquid soap and water after contact. The patient should also practice, with help as required, good hand hygiene. Enhanced environmental cleaning too high-risk areas (toilets, door handles, light switches) with diluted household bleach
- continence waste should be discarded as infectious waste in orange (or yellow) bags.
- Once the patient has been asymptomatic for over 48 hours they are no longer deemed to be an infection risk

The following mnemonic protocol **(SIGHT**) should be applied when managing suspected potentially infectious diarrhoea.

SIGHT mnemonic (adapted from Clostridium difficile infection: How to deal with the problem).

S	suspect that a case may be infective where there is no clear alternative cause for diarrhoea
I	Isolate the patient in their own room
G	Gloves and aprons must be worn for all contact with the resident and their environment
H	Hand washing with liquid soap and warm running water before and after each contact with the resident and their environment
T	Test the stool for toxin by sending a specimen immediately

INVESTIGATION OF CASES

Cases of *Clostridium difficile* disease from all sources are reported through Public Health England Data Capture system (MESS) as required by DoH Mandatory Surveillance schemes.

Notes of patients diagnosed with *Clostridioides difficile* disease are reviewed as part of Root Cause Analysis (RCA) investigation by acute NHS Trusts and local CCGs. This may involve requests to GPs for information and, to participate in the RCA process. This activity assists in understanding causation and thus developing programmes to reduce the incidence of this disease. Further review may be required if a patient dies with *Clostridioides difficile* certified as a primary cause of death.

4.14 Multi drug resistant organisms within the community setting

The increase of MDRO within healthcare facilities is of great concern due to the risk of poor outcomes due to limited antimicrobial options and implications for safe placing of patients in health and social care facilities, when further care is required. Increasing spread of resistant organisms could possibly lead to a public health emergency. As patients are having reduced stays in acute care and may require long term care in the health and social care settings or support from Domiciliary care, it is advised that there is an understanding of the epidemiology of these MDRO and how they can be managed safely in the community. Contacts of a confirmed case may require screening. Please contact IPCT for further advice on screening.

CARBAPENEMASE-PRODUCING ENTEROBACTERALES (CPE)

Enterobacterales is a group of bacteria that normally live in the gut of humans and animals. They include species such as *Escherichia coli*, *Klebsiella* spp. and *Enterobacter* spp. However, these organisms are also some of the most common causes of infections, including urinary tract infections, intra-abdominal and bloodstream infections. Carbapenems are necessary and effective antibiotics which are reserved to treat the most serious infections. Carbapenemases are enzymes (chemicals) made by some types of bacteria, which allow them to destroy carbapenem antibiotics and thus become resistant. This makes any infection caused by CPE difficult to treat.

Patients are more at risk of developing CPE. if they have been admitted to a hospital abroad, or a hospital in UK which has a high incidence of CPE.

Early detection and screening are vital to reduce the risk of transmission to others. Please see link to UKHSA guidance and contact IPCT /UKHSA for further advice.

CANDIDA AURIS

Candida auris was identified in 2009 as a new strain of candida species that has been associated with infection and outbreaks in health care settings. It has been isolated from a range of body sites including skin and urogenital and respiratory tracts. It may result in invasive infections for example candidemia, pericarditis and pneumonia.

Candida auris has been predominately identified in high dependency areas. It appears highly transmissible between patients and contaminated environments

Candida auris demonstrates reduced sensitivities to the first line antifungal therapy, fluconazole, and variable susceptibility to other antifungal agents. Please seek further advice from Microbiology or clinical pharmacist.

Colonisation of patients has been reported from affected hospitals around the UK. Evidence supports that colonisation is difficult to eradicate and tends to persist, making infection prevention and control strategies particularly important, including after discharge from hospital.

VANCOMYCIN RESISTANT ENTEROCOCCI. (VRE OR GRE)

Enterococci are bacteria that usually live harmlessly in your gut. This is called colonisation (a person is said to be a 'carrier'). However, these can sometimes develop resistance to common antibiotics. If these resistant bacteria then move to a normally sterile part of the body, such as the bloodstream, they can cause an infection. Patients are more at risk of VRE, previously known as GRE if they have extended hospital stays, including admissions to critical care, prolonged treatments of antibiotics, contact with a VRE colonised or infected person or and are immunocompromised

INFECTION CONTROL PRECAUTIONS

Patients with carriage of multi resistant organisms can be managed safely in the community, GP practices, and Primary care settings should consider if symptomatic, seeing affected patient at the end of the allocated list.

In residential care, an asymptomatic, patient should not be required to isolate. Good standard Infection control precautions and strict environmental cleaning are required to reduce risk of transmission to others. Place away from any residents with open wounds or indwelling devices.

Uncontrolled faecal or Urine incontinence are at increased risk of transmission and should have their care activities undertaken in a single room with en-suite facilities. If an en-suite room is not available, the individual should be placed in a single room with a designated commode with easy access to hand washing facilities. Please contact IPCT for further advice and support.

4.15 Management of occupational exposure to blood-borne viruses

INTRODUCTION

Due to the need for prompt action following an exposure to blood or blood-stained body fluids, staff must be aware of the action to be taken. Training in relation to the management of a needle-stick injury or blood splash must be provided as a mandatory component of Health and Safety / Infection Control induction training and annual training updates.

This policy section deals with sharps/splash incidents which may result in occupational exposure to Blood Borne Viruses (BBVs).

BLOOD-BORNE VIRUSES (BBVS)

Blood-borne viruses include Hepatitis B and C and Human Immunodeficiency Virus (HIV)

All individuals infected with blood borne viruses may be capable of transmitting the virus to others irrespective of whether they are ill or apparently fit and healthy. Infectivity depends on a number of individual risk factors and will vary from individual to individual. Many individuals are unaware that they are infected and thus health care workers should always treat all blood and body substances as if they were infected. Body substances that have been shown to transmit BBVs include:

- cerebrospinal fluid
- peritoneal fluid
- pericardial fluid
- pleural fluid
- synovial fluid
- amniotic fluid
- human breast milk
- semen
- vaginal secretions
- saliva in association with dentistry
- any other body substance containing visible blood, e.g. faeces, urine, sputum
- unfixed tissues and organs
- exudate or other tissue fluid from burns or large skin lesions.

PREVALENCE OF BBVS

The risk to the healthcare worker for each virus is proportional to the prevalence of that infection in the population, the infectious status of the individual source (which may or may not be known) and the risk of a significant occupational exposure occurring during the procedure being undertaken.

Certain geographical areas of the world have a higher prevalence of blood-borne viruses than others. Such information is useful in certain situations e.g. when making epidemiological assessments of risk. However, on a day-to-day basis, ethnicity is not used as a determinant of risk.

TRANSMISSION OF BBVS
BBVs can be transmitted via:

- Sharps injury with contaminated sharp object
- bite, scratch or other skin puncture with contaminated blood or bloodstained body fluids
- exposure of non-intact skin / mucous membranes to blood / body fluids
- unprotected sexual intercourse with an infected person
- infected mother to baby either via the placenta or at the time of delivery, or through breast-feeding
- exposure prone procedures (when infected health care workers can infect service users)
- sharing contaminated sharps/" works" of injecting drug abusers
- contaminated blood or blood products (not usually a risk in the UK but may occur if receiving blood in other countries)

OCCUPATIONAL ACQUISITION OF BBVS
A number of factors are associated with an increased risk of occupationally acquired BBV infection:

- deep injury
- visible blood on the device which caused the injury
- injury with a needle which had been placed in an artery or vein
- high levels of circulating virus in the source – as in late stage AIDS or during sero-conversion in the early stages of infection

These factors will be taken into consideration when assessing the risk of BBV transmission following a sharps injury. Such an assessment will usually be undertaken by either the local Occupational Health provider or local ED / minor injury unit.

The risk of HIV transmission after percutaneous exposures involving larger volumes of blood, particularly if the source viral load is likely to be high, may exceed the average risk. This may occur if injury is sustained with a large hollow-bore needle when the needle contains a large volume of blood from either an artery or vein.

Risk of infection from cutaneous exposure from infected blood / or contaminated body fluids will depend on the infectivity of the material and the size of the exposed area e.g. people with large areas of psoriasis or eczema could be at higher risk of acquiring these infections if in contact with infectious material when splashed.

The highest risk of contamination from cutaneous exposure relates to splashes involving mucous membranes such as conjunctivae and mouth. Hence the requirement for staff to wear appropriate PPE when undertaking splash-inducing procedures

SHARPS/SPLASH INCIDENTS

There are three types of exposures in health care settings associated with significant risk. These are:

- percutaneous injury (from used needles, scalpel blades, lancets and other pointed instruments or equipment; bone fragments, significant bites which break the skin, etc)
- exposure of broken skin (abrasions, cuts, eczema, etc) to blood and/or blood-stained body fluids
- exposure of mucous membranes, including the eyes, nose and mouth, to splashes of blood and/or blood-stained body fluids

MANAGEMENT ARRANGEMENTS FOLLOWING OCCUPATIONAL EXPOSURE TO BBVS

It is essential that a risk assessment is undertaken at the earliest possible opportunity as delay in receiving prophylaxis (if required) could affect outcome i.e. the possibility of sero- conversion. This needs to be undertaken at the time of the injury NOT at the end of the shift. Current guidance states that HIV prophylaxis should be commenced within one hour of the incident, but can still be given after that time (up to 72 hours post-injury). Risk assessment should be carried out by a qualified and competent health care professional. This is usually either an occupational health professional or staff at local ED or Minor Injury Unit. Local GPs may be assumed to provide this service (as health care professionals) but the registered provider must confirm that this is the case and document that arrangement (see next paragraph).

All registered care providers must have a comprehensive policy in place that details the precise process for staff to follow when sustaining a sharps injury / significant splash with potentially contaminated blood or blood-stained body fluids. The policy should clearly state how staff can access prompt professional risk assessment and treatment. All organisations must have either 24-hour access to an Occupational Health Service and / or a Service Level Agreement in place with a local NHS Trust if local provision of risk assessment and treatment is not available or is only available during working hours i.e. if no out-of-hours occupational health service is available.

FIRST AID:

- Encourage bleeding from the wound. Do not suck.
- Wash the area thoroughly with warm running water and soap.
- Cover with water-proof dressing.
- Eyes or mouth - irrigate with copious amounts of saline or water.

REPORT

ALL sharps injuries and splash incidents must be reported to the senior nurse or manager on duty (dependent on place of work) as soon as possible, but do not delay seeking guidance on the need for prophylaxis if a manager cannot be contacted.

If the affected staff member has access to local Occupational Health services then contact should be made soon after injury. Alternatively, the local emergency department can be contacted by phone. If telephone support is not immediately available then the injured staff member should attend emergency department at the earliest opportunity for risk assessment.

RECORD DETAILS

Complete an accident and incident report form which must be provided by the registered provider

If the exposure is from a Hepatitis B, C or HIV positive source, RIDDOR form 2508 will be completed by the Occupational Health Physician once confirmation of the test results is known

Try to identify the source service user. This is not essential but can assist in assessing risk.

Complete the Checklist Form - following sharps/splash incident (Sample in Appendix C) to help with the risk assessment and take it to the nearest emergency department. / Occupational Health.

The Checklist will help to establish if the member of staff has had a significant exposure to a high-risk body fluid and provides guidance on the important questions that will be asked by the assessing clinician when undertaking risk assessment.

ATTENDING FOR RISK ASSESSMENT / TREATMENT

When attending for risk assessment, the staff member affected should take the completed Checklist to ensure that appropriate information is available to the clinician undertaking the risk assessment. The staff member may be required to have a blood sample taken and stored for further testing if necessary. *This blood is not routinely tested* but is stored for future testing should the HCW demonstrate possible evidence of infection. Blood will not be tested without the individual HCWs permission. Results of staff testing must be sent to either Occupational Health or the individual's GP. He/she may also be required – dependent on the risk assessment – to have medication or immunisation to reduce the likelihood of sero- conversion. Any concerns due to exposure, drug treatment or employment etc. can be discussed in confidence at this time.

If the source is identified the clinician undertaking the risk assessment will arrange for testing of that service user's blood via the service user's GP/clinician. No blood sample should ever be taken by the staff member or care provider.

The Occupational Health Department or emergency department will arrange the co-ordination of results and follow-up and determine whether further blood tests will be required at 3, 6 and 12 months. This will be undertaken the following working day after injury.

Post-exposure Prophylaxis (PEP)

Hepatitis B – vaccination/prophylaxis

All health care workers at risk of exposure to blood/body fluids as part of their work must be offered vaccination against Hepatitis B at the commencement of employment.

A primary course consists of 3 injections at 0, 1- and 6-month intervals followed by a blood test to determine antibody levels. Some people may not develop antibodies even after further doses of vaccination.

Following a significant exposure, Hepatitis B specific immunoglobulin may also be required within 24 hours of injury to prevent acquisition.

For staff that sustain an injury/exposure and have *not* received a primary course of HBV immunisation then an accelerated course of immunisation may be recommended. This consists of injections at 0, 1- and 2-month intervals.

HIV POST EXPOSURE PROPHYLAXIS (PEP)

Although there is no protective vaccine for exposure to HIV there are certain drugs which, if taken soon after exposure, offer some protection to the exposed individual. Ideally, this should be received within 1 – 2 hours of injury but can still be administered for up to 72 hours post-injury.

HEPATITIS C (HCV) PROPHYLAXIS

There is currently no vaccine available for the prevention of Hepatitis C infection. Specialist advice and management would be made available to staff at risk of HCV acquisition following exposure.

HEALTHCARE WORKERS INFECTED WITH A BBV

Please see:

Integrated guidance on health clearance of healthcare workers and the management of healthcare workers living with bloodborne viruses (hepatitis B, hepatitis C and HIV)

Guidance from the UK Advisory Panel for Healthcare Workers Infected with Bloodborne Viruses (UKAP). August 2020

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/909553/Integrated_guidance_for_management_of_BBV_in_HCW.pdf

NHS
Barnsley
Clinical Commissioning Group

APPENDIX A

CHECKLIST FOLLOWING SHARPS/SPLASH INJURY

To be completed by staff member who has sustained the sharps/splash injury and then taken to Emergency Department and/or Occupational Health.

Personal details	
Name:	Date of birth:
Post:	Place of work:
Telephone number: Home: Work:	Manager:
Date:	Time of accident/incident:

Details of the injury
Brief description of the incident. Is the patient known to have a BBV (please tick box if applicable)? **Sharps injury:** Needle/scalpel blade or other sharp instrument Scratch Bite Cut Bone Other **Skin exposure:** Abrasion Eczema Psoriasis Other **Exposure to mucous membrane** Eye Other
Which high risk body substance? Blood Blood stained body fluid Vaginal secretions Saliva (if visibly blood stained e.g. in association with dentistry) Other please specify ……

Local arrangements for risk assessment / management of injury
Occupational Health: During surgery hours please contact:
Accident and Emergency Department: Out of surgery hours please contact: Identify yourself as a Healthcare Worker who has sustained a sharps injury.

4.16 Management of infections in staff

INTRODUCTION
From time to time, health care staff may develop infections which could expose some service users and colleagues to the risk of infection.

Symptoms or signs of infection can appear trivial to staff who are usually fit and well, but can cause severe problems in vulnerable service users.

REPORTING
Early reporting and implementation of suitable control measures can prevent cross-infection and subsequent outbreaks of infection.

Confirmed or suspected transmissible infections in health care staff should be reported by the staff member to the Practice Manager or lead clinician. In addition, advice can be sought from the local Infection Control Advisor / HPU / Consultant Medical Microbiologist if there is concern regarding spread to other staff and/or service users.

TREATMENT
If necessary, treatment should only be undertaken by the Occupational Health provider (OH) or the individual's General Practitioner (GP), as appropriate.

EXCLUSION FROM WORK
The necessity for exclusion from work should be discussed with the lead clinician and in liaison with the UKHSA/ Consultant Medical Microbiologist / Environmental Health Officer (EHO) as necessary.

Staff with gastro-intestinal infections who handle or prepare food in the course of their work may be required to stay off work until their stool specimens are free of micro-organisms. Guidance must be sought from Occupational Health or the individual's GP who will make the decision regarding return to work after liaising with a medical microbiologist/CCDC where necessary.

Although not an exhaustive list, the following table summarises the risks to service users from staff with some infectious diseases

INFECTIOUS DISEASES AND ADVICE TO STAFF

INFECTION	SERVICE USER RISKS	ADVICE TO STAFF
BLOOD BORNE VIRUSES (BBV) including Hepatitis B Hepatitis C HIV	The risk of transmission of a blood borne virus from a HCW to a service user is extremely low. Not all staff will be aware of their possible infectious status therefore standard infection control practice should be applied at all times.	Staff should seek confidential advice from their GP or local clinician as soon as possible following diagnosis, or if concerned that they may have been exposed to a BBV. An assessment will be made regarding further clinical management, in consultation with the HPU. If a staff member is diagnosed with a BBV some modification of working practices may be necessary in some situations.
INFECTED SKIN LESIONS or skin conditions, i.e. psoriasis, eczema, impetigo etc.	A bacterial infection is the usual cause which can then be spread to service users. Particularly vulnerable service users are those with open lesions, surgical or traumatic wounds, the immuno-compromised or elderly.	Staff suffering with these infections may be required to remain off duty until the infection has resolved unless it can be covered by an occlusive dressing. Antibiotics are often required.
CHICKEN POX (varicella)	Non-immune and immune-suppressed service users may require active protection e.g. immunisation and guidance should be sought from the service users GP immediately exposure is confirmed or suspected.	Non-immune health care staff, i.e. those who have not had the disease or vaccination, should seek immediate medical advice and may be medically suspended from clinical work from day 8-21 post- exposure. Non-immune pregnant staff (particularly < 20 weeks pregnant or in last 3 weeks of pregnancy) must discuss with their Obstetrician urgently. Immune-suppressed staff who have had contact with an infectious case must discuss their exposure with their clinician and / or Occupational Health provider immediately. Immunisation against varicella (chickenpox) is now widely available for non-immune individuals. See section – Vaccination Programme for Staff
COLD SORES and GENITAL HERPES INFECTIONS	Caused by the herpes simplex virus, which may expose some service users who are immuno- compromised, neonates and pregnant women to particular risks. Viral encephalitis may ensue in these susceptible service users.	Depending on working environment staff may need to remain off duty until resolution of symptoms and lesions are dry. Seek medical guidance. Do not touch lesions, wash hands thoroughly.

INFECTION	SERVICE USER RISKS	ADVICE TO STAFF
DIARRHOEA and/or VOMITING	These may be symptoms of food poisoning or viral infection, which can result in cross infection causing outbreaks. Viral outbreaks spread rapidly & vulnerable service users are at particular risk especially babies and the elderly.	Staff must remain off duty until 48 hours after resolution of the symptoms. Notify the Practice Manager / lead clinician if more than 2 staff affected.
INFLUENZA	A viral infection which usually spreads to service users and other staff if prompt action is not taken. It can cause high morbidity and mortality rates, particularly in the elderly.	Staff should remain off duty until resolution of symptoms. Uptake of influenza vaccine is recommended for both care workers and vulnerable service users.
MEASLES, MUMPS and RUBELLA	Cases are highly infectious.	Non-immune staff must inform Practice Manager / lead clinician of exposure to an infectious source. Non-immune pregnant staff, i.e. those who have no history of disease and/or no positive antibody test must seek medical guidance especially in the first trimester of pregnancy.
SARS-CoV2	Risk varies depending on a number of factors such as vaccination status, underlying co-morbidities, duration of exposure, immunological status	Follow current government guidance https://www.gov.uk/coronavirus
SCABIES	Staff may be infected by skin to skin contact with service users. Scabies is often difficult to diagnose in the elderly. Service users remain contagious until 24hrs post-treatment. If > 1 service user affected, treatment will need to be undertaken simultaneously.	Staff contacts of infested service users may require treatment but this is unlikely to occur in General Practice. If staff member is affected, family contacts will also require treatment. Contact IC/HPU for further guidance. .
SORE THROATS	These may have many causes but are usually viral. Bacterial causes e.g. streptococcal infections can cause severe infections in vulnerable service users. simultaneously.	Staff should remain off duty until resolution of symptoms, if unwell and with a severe sore throat associated with pyrexia. Notify the Practice Manager / lead clinician if more than one member of staff is affected.

INFECTION	SERVICE USER RISKS	ADVICE TO STAFF
TUBERCULOSIS	Physical isolation is only required for those who are pulmonary smear positive for AFBs (acid fast bacilli). Isolation should continue until at least 14 days after commencing appropriate anti- tuberculosis therapy and/or until advised by TB specialist/team.	The necessity for exclusion of diagnosed staff members from work will require discussion by the lead clinician in conjunction with the TB specialist team. Contacts will be investigated by the TB nurse specialist and HPU
PARVOVIRUS (FIFTH DISEASE)	Mild, non-febrile viral disease characterized by erythema of cheeks. Most infectious prior to development of rash but not infectious thereafter.	Can cause foetal abnormality. Pregnant staff less than 20 weeks pregnant should seek advice from their obstetrician.

5 DEFINITIONS OF TERMINOLOGY

Asepsis-is recognised as the state of being free from pathogenic microorganisms

Aseptic technique- is defined as a means of preventing or minimising the risk of introducing harmful micro-organisms into sterile/key sites of the body when undertaking clinical procedures

Aseptic Non-Touch Technique (ANTT) is a specific type of aseptic technique. The overriding principle is that key sites e.g. wound, must not come into contact with any item (hand, equipment, solution) that is not sterile. Sterile gloves are not always required for standard ANTT. Each procedure must be risk assessed. Whether sterile or non-sterile gloves are worn depends if you can avoid touching the sterile parts of equipment which will come into contact with the service users' susceptible areas e.g. their wound

Clostridioides difficile **Infection (CDI) –**Anaerobic, gram positive spore forming bacillus. Theses spores are resistant to exposure to air, drying, heat and survive in the environment. Following antibiotic therapy, the intestinal flora is altered which allows any *C. difficile* bacteria to proliferate. The bacteria produce 2 toxins:

1. Toxin A which irritates the colon and causes what is commonly known as antibiotic associated diarrhoea
2. Toxin B which is predominately cytotoxic

Cross infection –The transmission of disease from one person to another because of a breach in barrier.

Decontamination-The process used to remove organic matter and micro-organisms from an item and render it safe for use. There are three levels of decontamination: cleaning, disinfection and sterilisation.

Hand decontamination-The physical removal of blood, body fluids and transient micro-organisms from the hands e.g. hand washing.

Hand Hygiene-A general term that applies to either: hand washing, antiseptic handwash, antiseptic hand rub or surgical antisepsis

Healthcare Associated Infection (HCAI) - Infections that occur as a result of contact with the healthcare system in its widest sense-in community and hospital settings

Healthcare Worker- Any person employed by the health service, social services authority or agency to provide care for sick, disabled or elderly people.

Infection Prevention and Control (IP&C) –To reduce to an acceptable minimum the risk of the acquisition of an infection amongst service users, healthcare workers and any others in the healthcare environment.

Infection Prevention and Control Team (IP&CT) - A specialist team employed by the organisation to provide expert reactive and proactive information and advice about the management of healthcare associated infections and incidents.

Methicillin Resistant *Staphylococcus aureus* (MRSA) - is a variant of *Staphylococcus aureus* which has developed resistance to commonly used antibiotics and is considered endemic in both hospitals and the community setting and may be more difficult to treat because of limited treatment options.

Personal Protective Equipment (PPE) - All equipment which is intended to be worn or held by a person to protect them from risks to health and safety whilst at work.
Examples of PPE include gloves, aprons and eye and face protection.

Resident Organisms - Micro-organisms that colonise the deeper crevices of the skin and hair follicles as they have adapted to the hostile environment. They are not readily transferred to other people or objects and are not easily removed by the mechanical actions of soap and water, but can be reduced in number with the use of an antiseptic solution.

Risk Assessment – Making a suitable and sufficient assessment of risks-this will involve identifying the hazards (something with the potential to do harm) and evaluating the extent of risks (the likelihood that the harm from a particular hazard is realised) and identifying measures needed to comply with legal requirements.

Sharps injury/ Incident - When intact skin is breached by a sharp object (needle instrument, or bone) This also includes human bites and scratches that break the skin.

Transient Organisms - Micro-organisms acquired on the skin through contact with surfaces. The hostile environment of the skin means that they can usually only survive for a short time, but they are readily transferred to other surfaces touched. They can be removed by washing with soap and water or inactivated by alcohol hand rub.

UKHSA (The **UK Health Security Agency**) is a government agency in the United Kingdom, responsible since April 2021 for UK-wide public health protection and infectious disease capability, and replacing Public Health England. It is an executive agency of the Department of Health and Social Care (DHSC).

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7 DOCUMENT CONTROL

DOCUMENT CONTROL

Version No	Type of Change	Date	Description of change
V1	New Policy	December 2015	
V1.1	3-year review	February 2020	Comprehensive rewrite to clarify purpose and scope of the policy and consider the following: • General Data Protection Regulations 2016 and: • The CCG's Policy on Policies issues in September 2017
V2	2-year review	June 2022	Minor changes to content. Not affecting policy. Addition of links to government websites. Updating of references. Removal of Antibiotic Prescribing Policy. Addition of information regarding risk assessing placement of alcohol-based hand rubs in public areas. Removal of vaccine management guidelines. Inclusion of advice relating to SARS-CoV2