



Infection Prevention and Control Guidance and Procedures

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FOREWORD

This Infection Prevention and Control (IPC) Guidance and Procedure Document has been re-written following the review and amalgamation of the following documents relating to IPC:

- Infection Prevention & Control Guidance & Procedures
- Infection Prevention & Control in the Pre Hospital Environment

Please read in conjunction with WAST Occupational Exposure Management, including needlestick (or sharps) injuries, Policy and Procedure (2013)

It supports the Framework of actions recommended by the Welsh Government (WG) '*Commitment to Purpose: Eliminating preventable healthcare associated infections, 2011*) and emphasizes the scale of the change required in that a **zero tolerance** approach to Healthcare Associated Infections (HCAI's) which must be adopted.

The aim is to provide staff with an easy to access reference guide which will support the Trust's ongoing commitment to promote optimal standards of hygiene and Infection Prevention and Control (IPC)

The Document encompasses updated procedures that have been specifically designed to support staff in minimising the risks associated with IPC. It must be emphasised that every member of staff has a responsibility to reduce such risks, and adherence to the procedures contained in this document will help ensure a safer environment for all concerned.

Introduction

The subject of IPC is broad and complex, the Welsh Government (WG) has developed a Framework for actions (*Commitment to Purpose: Eliminating preventable healthcare associated infections, 2011*) This emphasizes the scale of the change required in that a **zero tolerance** approach to Healthcare Associated Infections (HCAI's) must be adopted.

All WAST staff including Community First Responders (CFR's), Volunteer Car Service, Health Courier Service (HCS) are responsible for maintaining a high standard of hygiene and cleanliness in their personal presentation, area of work and service they provide. This can be achieved by using Standard Infection Control Precautions (SICP's):

- Hand Hygiene
- Personal Protective Equipment (PPE)
- Prevention of occupational exposure to blood/body fluids
- Management of blood/body fluid spillage
- Decontamination of equipment
- Cleanliness of the environment
- Safe handling of linen
- Safe disposal of waste
- Patient placement/isolation

Utilising these principles at all times follow the underlying assumption that all patients may be carrying an infection, or may have reduced immunity and be susceptible to infections. This in itself minimises a large area of risk from cross infection between patients and protection of staff, as the status of the vast majority of patients we convey is unknown.

This document has been designed to allow for easy update, enabling the insertion of new information or procedural changes as required. Any such changes will be notified via the routine Comms bulletin system.

2. Basic Microbiology

Micro organisms and their Properties

The term micro organism, or microbe, is used to describe any organism, which is too small to be seen with the naked eye. Many micro organisms live independently of man and those that are dependent exist in a host-organism relationship that is generally harmless and may even be mutually beneficial. Of the vast array of organisms, only about 50 or so species do, in fact, cause harm to humans. Micro organisms capable of causing disease are referred to as Pathogens. Infection is a pathological process, which involves the damaging of body tissues by pathogens, or by the toxic substances produced by these pathogens. They generally thrive and multiply in darkness, warmth and moisture, and infection is usually accompanied by signs and symptoms in the patient, E.g. pain, swelling and/or fever. Pathogenic micro organisms may be classified as follows:

Bacteria are minute organisms about one-thousandth to five-thousandths of a millimetre across. They are susceptible to a greater or lesser extent to antibiotics.

Viruses are much smaller than bacteria and although they may survive outside the body for a time, they can only grow inside body cells. Viruses are not susceptible to antibiotics, but there are a few anti-viral drugs available which are active against a limited number of viruses.

Pathogenic fungi can be either moulds or yeasts. An example of a mould that causes infection in humans is ringworm, which can also infect nails. A common yeast infection is thrush, caused by an organism *Candida albicans*. Immuno-suppressed individuals may develop systemic infections affecting the whole body; one example is aspergillus, which is usually an opportunistic organism taking advantage of the persons lowered immune response.

Protozoa are microscopic organisms, but are larger than bacteria. Those that cause disease in humans include *Cryptosporidium parvum*, which causes diarrhoeal illness, and the malaria parasite.

Worms are not always microscopic in size, but pathogenic worms do cause infection and some can spread from person to person. Examples include threadworm and tapeworm.

Prions are thought to be found in the central nervous system and also in other tissues such as the lymph glands particularly the tonsils. Intensive research into prions continues: they are thought to be the cause of transmissible spongiform encephalopathies (TSE). During the 1980's new types of prion evolved in the UK, including bovine spongiform encephalopathy (BSE) in cattle and variant Creutzfeldt-Jakob disease (vCJD) in humans.

3. The Spread of Infection

Modes of Spread of Infection

An infectious disease can be transmitted by:

- Direct Contact
Direct spread of infection occurs when one person infects the next person by direct contact. ie via the skin, mucous membranes or personal contact with contaminated body secretions/excretions. Sexually transmitted diseases are also examples of this mode of spread.
- Indirect Contact
Indirect spread of infection is said to occur when an intermediate carrier is involved in the spread of pathogenic microbes from the source of infection to another person e.g. hands.
- Inhalation
Inhalation spread occurs when microbes exhaled or discharged into the atmosphere by an infected person are inhaled by and infect another person. The common cold and influenza are often cited as examples, but it is likely that hands and fomites (inanimate objects) are also important in the spread of respiratory viruses.
- Ingestion
Infection can occur when organisms capable of infecting the gastrointestinal tract are ingested. When these organisms are excreted faecally by an infected person, faecal-oral spread is said to occur. Organisms may be carried on fomites, hands or in food and drink e.g. Hepatitis A, Salmonella, Campylobacter.
- Inoculation
Inoculation infection can occur following a “sharps” injury when blood contaminated with, for example, Hepatitis B virus, is directly inoculated into the blood stream of the victim, thereby causing an infection. Bites from humans can also spread infection by the inoculation mode.
- Fomite
A fomite is defined as an object which becomes contaminated with infected organisms and which subsequently transmits those organisms to another person. Examples of potential fomites in the ambulance are resuscitation equipment, aspirators, splints or practically any inanimate article.

- Hands
The hands of ambulance staff and others who handle patients are probably the most important vehicles of cross-infection. Remember, the hands of patients can also carry microbes to other body sites, equipment and staff.
- Air
Droplet spread of infection causes inhalation spread of infectious diseases e.g. Chickenpox, Mumps and Measles.
- Vectors
A vector is an animal, usually an insect that passively transmits pathogenic microbes. The common housefly is the most prevalent of these in the UK.
- The chain of infection
This refers to the process by which infection can be spread from one susceptible host to another, and can be thought of as a continuous chain. If the chain is allowed to remain intact, then infection can be transmitted to another individual.
- The Causative Organisms
To break the chain of infection, the causative organisms must be destroyed or rendered harmless. In the ambulance setting, many infection control measures are aimed at removing this link, eg the use of disposable equipment, or maintain effective cleaning and disinfection procedures.
- The Reservoir
In the ambulance, dust may act as a reservoir, although close attention to cleaning procedures will help reduce this link. A member of staff or a patient may also act as a reservoir of infection.

The Portals of Exit and Entry

The route by which a pathogen leaves its host is called the portal of exit, and the route by which it enters is called the portal of entry. The main portals of entry are:

- The Respiratory Tract through inhalation of organisms.eg. tuberculosis, diphtheria and mumps
- The Alimentary Tract through ingestion of contaminated food or water. (E.g. *salmonellosis* and dysentery)
- The Skin and Mucosa either by the passage of organisms through damaged skin as with infected wounds, or by the inoculation of organisms. (E.g. Hepatitis B transferred from contaminated needles)
- The Placenta Via transfer of organisms from the maternal circulation to the foetal circulation (E.g. rubella, cytomegalovirus and syphilis)

There are a number of routes by which infectious agents can leave their host. The exit route may be the same as that of entry, eg, the respiratory tract in tuberculosis, or a different route, as in salmonella infections where the entry route is usually via the mouth the exit route is in the faeces.

Susceptible host

For infection to occur once an organism has reached its target, the host must be susceptible. The competence of the body's innate and acquired defense mechanisms will affect whether or not illness occurs and the chain of infection may be broken at this point. The most susceptible hosts are:

- Elderly
- Very young
- Immuno-compromised
- Chronic illness
- Receiving certain medications e.g. steroids
- Anyone with a breach in the body's defences e.g. surgical wounds, in-dwelling devices such as I.V.I and catheters.

4. Rationale for Standard Infection Control Precautions

Effective control and prevention of HCAI's should be imbedded into everyday practice and applied consistently by everyone.

In the pre-hospital environment there are three high risk areas for the transfer of infection to patients:

- Direct transfer through the hands of clinical practitioners or contaminated equipment.
- Invasive devices e.g Intravenous cannulation
- The emergency environment.

In addition, ambulance staff who come into contact with patient's blood/body fluids may be exposed to occupational risk from blood borne viral infections. The most likely means of transmission of these viruses to ambulance staff is by a sharps injury, scratches/bites or by blood splashing onto broken skin or mucous membranes.

Most blood exposure in health settings are preventable. All blood and body fluids are potentially infectious and therefore SICP's are necessary to prevent exposure to them. Decisions regarding the level of precautions to use should be proportionate to the possible risk based on the nature of the procedure and not on the actual or assumed infection status of the patient.

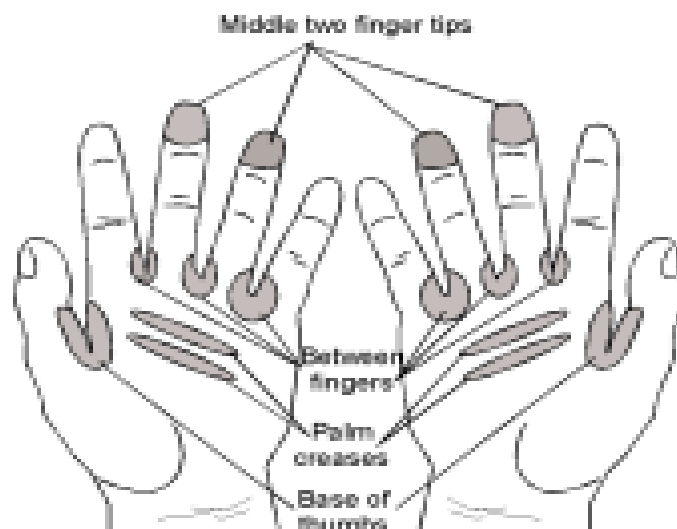
5. Standard Infection Control Precautions (SICP's)

Personal/Hand Hygiene

One of the key precautions of effective SICP's is for staff to practice good standards of hygiene. High standards of personal hygiene must be maintained at all times. As this also promotes a competent and efficient image of the service.

Hand washing is the single most important factor in preventing cross infection. This procedure must include thorough washing of all surfaces of the hands, using soap and warm running water, rinsing carefully and thoroughly drying them, preferably with paper towels.

The purpose of hand washing is to remove dirt and to remove or reduce the levels of micro-organisms present on the hands. The diagram below shows the areas of skin that are commonly missed during poor hand washing.



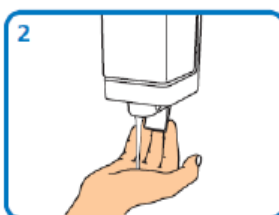
Where facilities exist, handwashing **must** be performed:

- Before and after duty periods
- Before eating and drinking.
- After going to the toilet, blowing nose or covering a sneeze
- Before and after direct contact with a patient
- After carrying out any cleaning procedure
- After handling dirty linen or waste
- When hands are visibly dirty
- After cleaning up spills
- When gloves are removed

How to Handwash



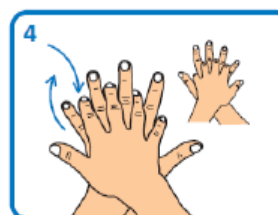
1 Wet hands with water



2 Apply enough soap to cover all hand surfaces



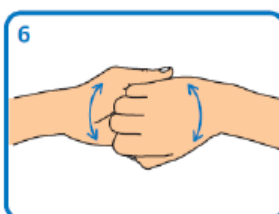
3 Rub hands palm to palm



4 Rub back of each hand with palm of other hand with fingers interlaced



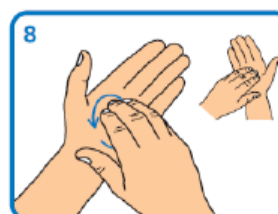
5 Rub palm to palm with fingers interlaced



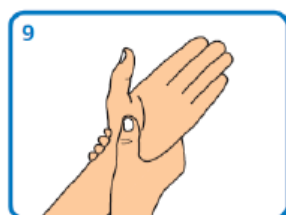
6 Rub with back of fingers to opposing palms with fingers interlocked



7 Rub each thumb clasped in opposite hand using a rotational movement



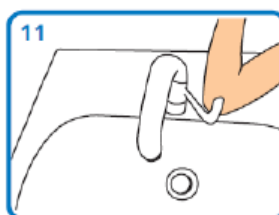
8 Rub tips of fingers in opposite palm in a circular motion



9 Rub each wrist with opposite hand



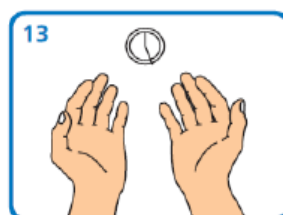
10 Rinse hands with water



11 Use elbow to turn off tap



12 Dry thoroughly with a single-use towel



13 Hand washing should take 15–30 seconds



It should be noted that the wearing of gloves does not preclude the need for regular hand washing.

When staff are unable to access hand washing facilities hands should be cleaned with detergent wipes first, followed by thorough drying either by paper

towels or with air drying. The alcohol disinfectant gel should be utilised. It is important to note that alcohol gel should only be used to decontaminate visibly clean hands and can be ineffective if hands are soiled.

Gloves

Gloves should be worn in the following circumstances;

For contact with blood and body fluids, non intact skin and mucous membranes, and sharps or contaminated instruments. These can also be worn to protect the practitioners hands from organic contamination, but should be changed for clean gloves before any invasive technique is performed on a patient.

Their choice in selecting the most appropriate size should be based on a comfortable fit that is not too tight to become restrictive, but equally not too loose as to compromise grip and/or increase the risk of puncture. For occasions where the risk of puncture is increased i.e. RTC the crew should consider wearing **two** pairs of gloves as an additional precaution.

Remember that under the principles of SICP's the purpose of wearing gloves is to prevent the spread of infection in **either** direction, i.e. staff to patient, patient to staff.

Gloves **should not** be worn unnecessarily; there should be an assessment of the task to be carried out and the risks to both the patient and the healthcare worker before the decision is made to wear gloves.

Before putting on gloves and after removing them, hand hygiene rules should be applied; washing with soap and water whenever possible or using detergent wipes and alcohol gel if no washing facilities are available.

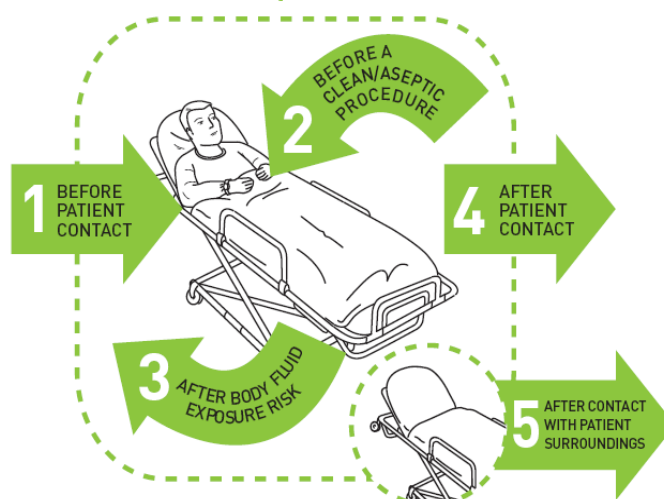
Gloves should also:

- Only be put on immediately before patient contact
- Be changed between each patient task
- Be changed between caring for different patients
- Be changed as soon as they are contaminated ; and
- Be discarded as **clinical waste**.

Gloves must not be worn whilst driving to and from a scene; or for longer than necessary.

Adherence to the 5 moments principles is essential

Your 5 moments for hand hygiene at the point of care



1 BEFORE PATIENT CONTACT	WHEN? Clean your hands before touching a patient when approaching him/her WHY? To protect the patient against harmful germs carried on your hands
2 BEFORE A CLEAN/ASEPTIC PROCEDURE	WHEN? Clean your hands immediately before any clean/aseptic procedure WHY? To protect the patient against harmful germs, including the patient's own, from entering his/her body
3 AFTER BODY FLUID EXPOSURE RISK	WHEN? Clean your hands immediately after an exposure risk to body fluids (and after glove removal) WHY? To protect yourself and the healthcare environment from harmful patient germs
4 AFTER PATIENT CONTACT	WHEN? Clean your hands after touching a patient and her/his immediate surroundings when leaving the patient's side WHY? To protect yourself and the healthcare environment from harmful patient germs
5 AFTER CONTACT WITH PATIENT SURROUNDINGS	WHEN? Clean your hands after touching any object or furniture in the patient's immediate surroundings when leaving - even if the patient has not been touched WHY? To protect yourself and the healthcare environment from harmful patient germs

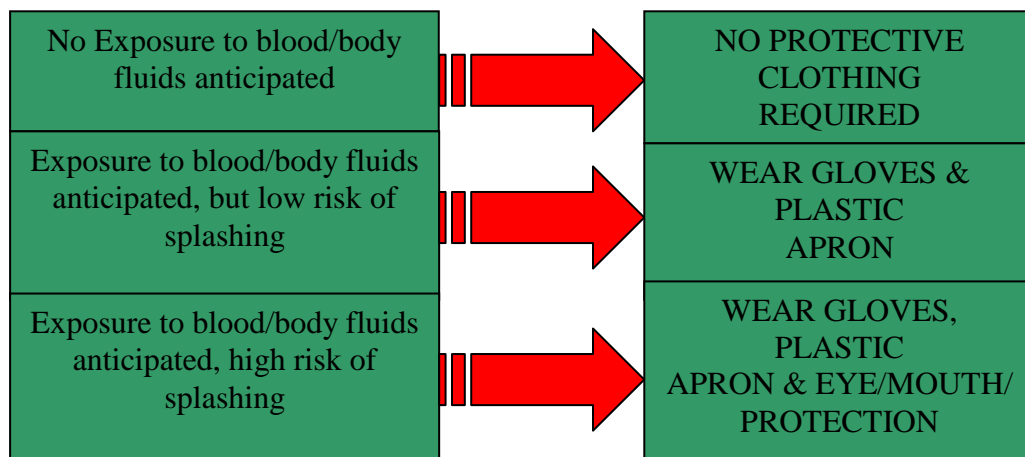
Based on WHO poster 'Your 5 moments for hand hygiene' and reproduced with their kind permission



Any member of staff who develops a skin irritation on their hands should seek advice from Occupational Health for further assessment.

Personal Protective Equipment

The choice of protective clothing selected depends on the anticipated risk of exposure to body fluid during the particular activity. Many clinical activities involve no direct contact with body fluids and therefore do not require the use of any protective clothing, however the staff must use their judgement in determining the likely requirements in each case.



Disposable Gloves

Please refer to Hand hygiene section above.

Disposable plastic aprons should be worn:

- For single use
- For any cleaning procedure
- When there is any possibility of contaminating your uniform
- When handling any patient who is vomiting bleeding or incontinent
- When dealing with any patient with a suspected infection/infectious disease

Visors/Eye Protection

These are worn when a particular procedure is likely to cause splashing of body fluids, particularly blood or tissue, into the eyes or face. Eye protection is also recommended when caring for patients suspected to be suffering from Severe Acute Respiratory Syndrome (SARS). Following use, eye protection should be washed in hot soapy water, dried and stored ready for re-use.

Face Masks

The use of disposable single use face masks is recommended during procedures when there is likely to be splash of blood or tissue into the mouth, if the patient is prone to episodes of coughing or sneezing, or confirmed or suspected cases of Pulmonary Tuberculosis (TB they should be given a mask to wear if appropriate. They should be disposed of as clinical waste.

FFP3 Masks

(see appendix F)

Prevention of occupational exposure to blood/body fluids

Sharps/Blood Splash Injuries

Under the principles of SICP's, all blood and body fluids must be regarded as infectious, so any exposure should be viewed as a potential hazard to ambulance staff. It is therefore imperative that any inoculation incident that involves contact with blood or body fluids is treated with the utmost care, and close attention to the following procedure: (also see Appendix E).

Incidents involving risk of blood-borne infection include:

- Needle stick, razor or other sharp object
- Contamination of broken skin with blood/body fluid
- Contamination of broken skin with blood/body fluid soaked clothing or linen.
- Blood/body fluid splashes to mucous membranes, e.g. eyes/mouth.
- Oral contact with a person's blood, vomit or mucous, e.g. after performing mouth to mouth resuscitation.
- Human, Animal bites or scratches (where skin is broken)

Action by member of Staff if any of the above incidents occur:

- Encourage free bleeding from the wound, but do not suck.
- The wound should be washed immediately with soap and water or wipe with hand wipes and alcohol gel if unable to access conventional hand washing facilities,
- The wound should then be covered with a waterproof dressing.
- Treat blood or body fluid splashes to the eyes with ample irrigation of water or saline and those to the mouth with copious amounts of water, do not swallow the water. Wash the face thoroughly with soap and water.
- **Attend the Accident and Emergency Department immediately.**
- Under certain circumstances it may be desirable to offer post exposure prophylaxis (PEP) against HIV or Hepatitis B, but this treatment must be started quickly if it is to be effective, it is therefore important that **all** such injuries are reported promptly and appropriate action is taken.
- The Member of staff should inform their Locality Manager, Line Manager or Clinical Team Leader (CTL) during normal office hours and the Duty Control Manger or Bronze on call during out of hours.
- Secure offending sharp if appropriate for inspection.
- Complete an on-line Datix form and document description of events, remedial steps followed and advice given after this.
- Any treatment given by A & E should be communicated to the respective OH Department in order for health records to be updated.

Action by Line Manager of Staff if any of the above incidents occur

- Speak to member of staff as soon as possible to ensure the relevant actions as above have been followed by the member of staff.
- Give support to the member of staff concerned and assist in completion of Datix if required.
- Ensure all relevant information is documented on Datix
- Ensure the OH Dept is informed to update health records
- Address any educational needs if appropriate.

ALSO SEE APPENDIX D & WAST OCCUPATIONAL EXPOSURE MANAGEMENT, INCLUDING NEEDLESTICK (OR SHARPS) INJURIES POLICY & PROCEDURE (2013)

Management of Sharps

The safe handling of sharps is a critical factor in the successful control of infection. Inoculation injuries arising from exposure to contaminated sharps represents a recognised route of infection spread and subsequent risk to ambulance staff. It is therefore imperative that all staff adhere closely to the following precautions and procedures in order to minimise the risks associated with the use of sharps.

The term 'sharps' applies to a wide range of individual ambulance and hospital equipment and may be broadly classified as :

- Needles
- Syringes with an integral needle
- Cannulae
- Drug ampoules/containers
- Razors
- Scalpels/Blades
- Spikes from giving sets
- Magills forceps

All sharps are for single patient use and must be stored at all times in their designated containers or storage compartment in the vehicle. Staff must ensure that disposable gloves are worn as a minimum when handling sharps. All sharps must be disposed of as clinical waste, into designated sharps containers.

Vial opening devices **must** be used when opening glass ampoules and vials. This will reduce the risk of injury, they are easy and simple to use which will reduce the risk of sharps injuries. Order code:-

Ampoule cutter	BUNZL	UN970
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Cannulation and other procedures involving the use of sharps should only be attempted in the ambulance when it is stationary. The needle should only be removed from its sheath once the puncture site has been prepared. Under no circumstances are needles or razors to be re-sheathed at any time, including during disposal.

Safe Disposal of Sharps

Staff should familiarise themselves with the assembly instructions and locking devices on each of the sharps containers used within the Trust.

All used needles and sharps must be disposed of immediately after use and placed directly into the sharps container by the person who used the item.

The sharps container should be changed when it becomes two thirds full, or when filled up to the full line on side of box.

The sharps box must not be held in the hand when disposing of the sharp, but standing on a flat, hard level surface.

Staff must never attempt to decant the contents from one container to another, e.g. from a small to a large sharps box.

Sharps containers must be sealed, tagged with a numerated tie and routinely disposed, the date opened and closed must be completed and signed prior to placing in the designated clinical waste bin on station.

Sharps boxes must never be placed in yellow clinical waste bags.

Management of blood/body fluid spillage

The effective management of blood and body fluid spillage is a crucial factor in the successful control of infection. Exposure to any such fluid presents a risk to the health of all persons involved with the working environment of the ambulance service. However, adhering to the SICP's minimises the risk of spreading infection in addition to maintaining a routine approach to simple cleaning and disinfection procedures. It is of course essential that all blood and body fluid spillages are cleaned and disinfected as soon as possible.

Spillage management

The risk of exposure to blood and body fluid spillage can be minimised by dealing promptly with the spillage using appropriate cleaning and disinfection methods.

In general, the volumes of most blood or body fluid spills that occur are not excessive, e.g. blood smeared on a sharps box. They can be managed by wiping with a disinfectant wipe.

In the event of a larger spill where this method would not be sufficient, the use of absorbent powder from a spillage kit should be used.

The spillage kit should always be kept in a designated, easily accessible place. It should comprise of:

- Non-sterile gloves
- Disposable plastic apron
- Disposable paper towels
- Clinical waste bag
- Granules
- Scoop & scraper to deal with broken glass/sharps

Method of Application

Appropriate PPE should firstly be worn. Sprinkle the granules/powder over the spillage and wait for the fluid to congeal. The bulk of the spill can now be removed using the scoop and scraper and putting it into a clinical waste bag. The area can then be disinfected with an appropriate cleaning product.

Decontamination of Equipment

As all items of ambulance equipment can potentially become a source of cross-infection, it is of particular importance that close attention is given to their respective cleaning and disinfection procedures.

Under the principles of SICP's it is important that ambulance equipment is maintained in a clean and hygienic condition at all times. This highlights the need to regularly check and clean equipment, with any shortfalls being addressed as soon as operational demands allows. In particular, it is vital that any equipment contaminated with blood/body fluids is cleaned and disinfected at the earliest opportunity.

Decontamination methods must conform to local policies. (Decontamination Certificate Appendix A) In most instances equipment can be decontaminated by thorough cleaning in detergent and hot water. Because many microorganisms thrive in a moist or wet environment, the most important part of the cleaning process is thorough drying

Care of Equipment

All equipment must be handled and used in accordance with manufacturer guidelines and following training instruction procedures.

Disposable Equipment

Disposable equipment is usually marked by a 2 in a circle with a line through it.



Use once and dispose of in a yellow plastic clinical waste bag, seal and dispose.

Cleanliness of the Environment

Vehicle Interior Cleaning

All staff have an individual responsibility to keep the Ambulance clean and thus to reduce the risk of cross infection to themselves, their colleagues and their patients.

As the microorganisms that cause infection thrive in soiled, moist dusty environments, it is therefore of particular importance to maintain clean and hygienic conditions at all times.

In adopting the SICP's, all patients who enter the vehicle should be regarded as a potential biohazard. This recognises the fact that it is impossible to determine which patients are carriers of infection, from the multitude of those who are conveyed on a daily basis..

The key source for the spread of infection emanates from contact with blood/body fluids, it follows that the potential risks from such contact can be successfully minimised by paying specific attention to the actual areas that have become contaminated. .

During each shift and also in between patients all interior surfaces that become directly contaminated and all patient contact areas should be cleaned as soon as possible. This process must include the use of sanitising wipes, currently **Clinell** wipes are used as the primary cleaning agent, it acts as a cleaning agent that also maximises the effectiveness of the disinfection process. Staff should wear appropriate PPE All areas and patient contact areas should be cleaned with the sanitising wipes and then discarded as Clinical Waste.

For very contaminated areas or where mopping is required ie ambulance floor, **Actichlor Plus** solution is to be made up and used. This solution disinfects and cleans in one easy step.

The disinfectant should be made up and applied according to instructions. Instructions are available on every station and on the Intranet

The ambulance floor must be mopped clean utilising the red bucket and mop head to be disposed of immediately after use in a clinical waste bag.

RED
AMBULANCE



YELLOW
TOILETS



BLUE
KITCHEN



GREEN
GARAGE



Fig 1

Mop bucket to be rinsed and dried following use.

It is acceptable that operational demands are likely to restrict opportunities for cleaning to be undertaken as a singular activity at a designated time. The factor is further complicated by local shift patterns and vehicle resourcing issues, which ultimately determine that vehicle cleaning arrangements must be devised and agreed. This must be monitored and reviewed at regular intervals.

Cleaning chemicals in use within the Welsh Ambulance Service

- Actichlor Plus solution
- Clinell Wipes

- Gojo Alcohol Hand Gel

Vehicle Exterior Cleaning

The exterior surfaces of all ambulance service vehicles should be maintained in a consistently clean and hygienic condition. Vehicle wash facilities on stations should be utilised as necessary. Careful attention should be paid to all aspects of safety, including adherence to any locally applied instructions.

The use of PPE should also be considered whenever it is deemed necessary. This would ordinarily include eye protection and disposable aprons, particularly when using manually operated vehicle wash systems. Hand protection is important and rubber household gloves, or heavy-duty 'debris' gloves should be worn.

If pressures of operational requirements prevent a thorough cleaning of the vehicle exterior, attention should be prioritised to the relevant safety and legal requirements i.e. windscreen, windows, lights, indicators, reflectors, mirrors and number plates. In addition cleaning should pay particular attention to any areas where dirt is likely to be transferred to the crew's hands e.g. door handles.

The usual detergent based cleaning agents are satisfactory for general exterior vehicle cleaning; however, if the exterior has become contaminated with blood or body fluids, the detergent clean should be followed by disinfection to eradicate the potential source of infection. PPE (disposable gloves and apron) should be worn in this case and these items must be disposed of into the yellow clinical waste bag.

Domestic Cleaning

The role of Good House-keeping on WAST premises in the main is the responsibility of an external contractor. In many cases this system has failed, therefore, all staff still retain responsibilities for the Health and Safety of their working environment, and this of course includes supporting the cleaning arrangements and procedures on stations. As with ambulance vehicles, it must be remembered that **dust, dirt and moisture** are the three factors that favour the survival and growth of microorganisms. Good cleaning techniques should be focused around removing dust and dirt, as opposed to redistribution, which is a consequence of dry dusting and sweeping. Hot water and a weak solution of Actichlor is suitable for routine domestic cleaning activities in and around the station. Drying too, is equally important, and therefore surfaces or items which have been cleaned with fluids should be allowed to dry as thoroughly as possible before being reused.. Remember to make full use of hazard signs to indicate wet floors, or any other hazard that may arise during the cleaning process.

The use of PPE should again be fully considered for any cleaning activity on station

Station Cleaning Equipment and Procedures

Mops & Mop Buckets

Separate colour coded buckets will be provided for specific areas within ambulance stations (see fig 1 above).

Fresh water/ Actichlor solution should be made up for each occasion that the mop is utilised, after which the bucket should be emptied, rinsed and dried.

Safe Handling of Linen

In general the term 'Linen' refers to all materials that require laundering. As most linens have the potential to harbour microorganisms, it is vital that all linen is appropriately managed to minimise any risk from cross infection.

Particular attention should be directed at those items which come into direct contact with patients. i.e. blankets, pillow cases, sheets.

The segregation of linen must be complied with:

- **Used Linen**
Linen which has become soiled by general use but has not been contaminated by blood or body fluids.
- **Contaminated Linen**
Linen which has become contaminated by blood/body fluids, or which has been used in the care of a patient with a known infectious disease or infestation.
- **Disposal of Linen**
Used linen may be disposed of with the patient in A &E in a white linen bag.

Contaminated linen may be disposed of with the patient in A&E in a red linen bag or water soluble bag.

Used linen which has been returned to the station must be disposed of as per station policy.

Safe Disposal of Waste

All members of WAST have a legal responsibility for the safe and proper segregation and disposal of waste.

Different types of waste require different procedures to ensure their safe and appropriate disposal. It is therefore essential that waste is correctly identified

and segregated at source, in order to remove all avoidable risk during subsequent handling, storage and transportation.

Types of Waste

Domestic Waste

All household waste, including glass, aerosols and batteries, but excluding any item generated from a clinically related activity.

Clinical waste:

This refers to any waste which consists wholly or partly of human or animal tissue, blood or other body fluids, excretions, drugs or other pharmaceutical products, soiled swabs or dressings, or syringes, needles or other sharp instruments, being waste which, unless rendered safe, may prove to be hazardous to any person coming into contact with it and any other waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practice, investigation, treatment, care, teaching or research, or the collection of blood for transfusion, being waste which may cause infection to any other person coming into contact with it.

When handling clinical waste all staff must use PPE the minimum being gloves. Aprons should be considered if leakage is anticipated. All items of PPE become clinical waste once used. Ensure that cuts or abrasions are covered with an impermeable waterproof dressing before handling clinical waste.

Any spillage or contamination resulting from the movement of clinical waste must be thoroughly cleaned at the earliest opportunity.

Clinical waste should be placed in a yellow bag (minimum gauge 225mm/UN approved) at all times.

It is appropriate for clinical waste to be disposed of for each Individual patient and after each patient journey to hospital. The clinical waste bag should be sealed using numerated ties and disposed of in the hospital clinical waste system and not stored or returned to station.

There may be occasions when Clinical waste cannot be disposed of at Hospital, and therefore will need to be taken back to the station, however this should be minimal.

Segregation of Waste

Receptacle	Waste Type Procedures	Procedures
Black Plastic Bags	All domestic waste, but excluding glass, aerosols, batteries and any item generated from a clinically related activity	Ensure that bags are not overfilled prior to sealing securely. Handle bags by the neck only, and place in secure site according to local collection arrangements
Cardboard Boxes (designated for purpose)	All glass bottles, broken domestic glass and crockery, used aerosol cans and batteries	Care must be taken to prevent overfilling prior to disposal via local refuse/recycling collection
Yellow Clinical Waste Bags	All non sharp clinical waste, eg. Used gloves, aprons, masks, dressings, swabs, sanitary items, incontinence pads, airways, empty infusion bags etc.	Seal securely when max $\frac{3}{4}$ full, or at end of shift. Attach ID tag. Consider double bagging if the integrity of bag is in doubt. Handle bags by the neck only. Dispose of with patient in Hospital, in other circumstances store at station in designated locked container.
Plastic Sharps Boxes	All SHARP clinical waste, e.g. needles, syringes, cannula, glass ampoules, razors, scalpel blades, Spikes from IV giving sets, broken glass items and any other used disposable 'sharp' item. ie laryngoscope handles and blades excluding the battery.	Please refer to section 5- Prevention of blood/body fluids-management of sharps.
Clinical Waste Storage Bins on Stations	All SEALED clinical waste bags and sharps boxes	All clinical waste to be placed in designated lockable containers on stations. All waste must have an ID tag.

Patient Placement/isolation

It is expected that where a diagnosis of a patient's infection is known, staff should be given this information. However, staff are expected to use SICP's **AT ALL TIMES** as more often than not the infection status of patients is unknown.

In general it will be seen that only in specific circumstances will any special procedures or action by ambulance staff be required, other than closely following SICP's. Equally, the majority of patients do not require the provision

of special travel arrangements, as these are normally only necessary in Category '3' cases

The medical staff requesting transfer of a patient are responsible for deciding if the patient should be transported singly and this information needs to be made clear at the time of booking.

6. Specific Infections

Category 1

Conditions requiring as per usual SICP's include:

Erysipelas	Malaria
Glandular Fever	MRSA
Influenza	Ophthalmia Neonatorum
Legionnaires' Disease	Scabies
Leptospirosis (Weil's Disease)	Tetanus
Leprosy	Whooping Cough
Anthrax	HIV/AIDS
Chickenpox (Varicella)	Infestations (e.g. fleas, lice)
Cholera	Measles
Diphtheria	Meningitis and Septicaemia
Dysentery	Mumps
Encephalitis	Poliomyelitis
Enteric Fever (Typhoid, Paratyphoid)	Rubella (German Measles)
Food Poisoning	Shingles
Gastro-enteritis	Tuberculosis
Hepatitis B	Typhus

(see Appendix B)

Common Specific Infections

Methicillin Resistant Staphylococcus Aureus (MRSA)

Methicillin Resistant *Staphylococcus Aureus* is a strain of **the same** *Staphylococcus aureus* organism that lives harmlessly in the noses, throats and on the skin of about 30% of the population. However, like many organisms it can cause infection if transferred into a wound or into the body via a drip or catheter.

MRSA is a strain of *Staphylococcus aureus* that has become resistant to many antibiotics. This therefore limits the choice of antibiotic available to treat infections caused by MRSA.

Those most at risk from MRSA infections are hospitalised patients, who have undergone surgery, and as a consequence have breaks in their skin. These patients may have already have weakened defence mechanisms as a result of their condition, and this leaves them particularly vulnerable to infection. It is therefore essential to ensure that all patients have any wounds covered at the earliest opportunity, prior to transportation.

There is no evidence to suggest that MRSA presents a risk to ambulance staff or their families, although It is possible for staff to become a risk to patients by cross-infection.

From an ambulance service perspective, the best defence measures that can be adopted to prevent staff becoming a cross infection risk are essentially SICP's.

Patients with MRSA do not normally require any special travel arrangements and therefore do not require a dedicated A&E or PTS vehicle for their journey. MRSA patients may be conveyed with other patients in the vehicle providing that all wounds are covered. If unsure discuss with ward manager.

The only exception will generally involve those patients with open skin lesions that are unable to be covered by an impermeable dressing. For any such patients, the advice of the Hospital Infection Control Team should be sought. This will require the crew to provide details of the intended journey plan, together with an account of any other patients who are due to be conveyed during the same journey.

Tuberculosis (TB)

TB is a bacterium that can affect any part of the body, although it has particular significance when present in the lungs. It is generally spread by the airborne (droplet) rout, although it may be destroyed by the recipients own defence mechanism and thereby prevent any illness occurring.

As with other illnesses, the best defence against TB is by the adoption of SICP's, staffs own immunity will in itself form a first line of defence. The avoidance of breathing whilst in close proximity to a patient's face and their exhaled air should be maintained wherever possible.

Patients who cough or sneeze should be encouraged to do so into a paper tissue, while turning their head away from others. Any tissues used for such purposes must be carefully disposed off as clinical waste, followed by careful attention to hand washing procedures.

The use of the disposable face mask should also be considered for these patients particularly if a diagnosis of TB is known or suspected.

If a patient has been prone to episodes of unprotected coughing and sneezing whilst in the ambulance, it would be wise to conduct localised cleaning and disinfection. This should include wiping over those areas that have been in close proximity to the patient using Cleaning System 1 and Disinfection System 2.

Clostridium Difficile

Clostridium difficile is the major cause of antibiotic associated diarrhoea and colitis, an infection of the intestines. It is an anaerobic bacterium and its usual habitat is the large intestine, where there is very little oxygen. It produces spores that can survive for a long time in the environment, and most commonly affects elderly patients with other underlying diseases.

From an ambulance staff perspective, the use of SICP's, including gloves and aprons, and strict hand hygiene technique should be adopted to prevent the risk of cross infection. Ambulance staff should not solely rely on alcohol gel as this does not kill off the *C difficile* spores.

Close attention should be paid to cleaning the environment with chlorine based disinfectant. However, there is no restriction on the transfer of patients who have had *C difficile* associated diarrhoea and are now clinically asymptomatic, i.e. they no longer have diarrhoea. Once someone has recovered clinically they are not a risk to others even if they continue to carry *C difficile* in their stool.

A patient with a formed stool who is continent is not considered to present a risk for environmental contamination or cross infection.

A compendium of Diseases can be viewed at the end of this document (Appendix E).

Meningitis

Meningitis is an illness that involves the inflammation of the membrane covering the brain and spinal cord. It can be caused by a variety of different organisms, including bacteria and viruses. Viral meningitis is the more common disease and despite the fact that it cannot be treated by antibiotics, is rarely serious and the patient recovers after a few days.

However bacterial meningitis is a serious illness which requires urgent treatment with antibiotics. The bacteria which causes this form of meningitis include the meningococcus and haemophilus influenza type b (Hib) Besides meningitis, these bacteria can also cause septicaemia, thereby adding to a further serious complication to this illness.

Other than SICP's, there are no special precautions required for the management of meningitis cases. Staff who have been in contact with meningitis patients need to be assessed at the nearest A& E department.

Hepatitis B (HBV)

Hepatitis B is found in all of the body fluids of an infected person, including blood, semen, vaginal fluid, saliva, breast milk and urine. For this reason, the virus can be transmitted through sexual contact, injection or puncture of the skin with contaminated sharps. It can also be transmitted through open cuts, sores and mucus membranes, as well as from mother to baby during child birth.

Strict SICP's are required and also Hep B vaccination screening prior to commencing employment.

Hepatitis C (HCV)

Previously known as non-A, non-B hepatitis, Hepatitis C is a parenterally (any route other than oral) ingestion transmitted virus. It is generally a mild illness, with a vague onset. It is spread by blood to blood contact, very common among drug users who share needles.

SICP's are required to manage conveyance of patients.

Norovirus

Norovirus was first discovered in the early 1970s, they are a group of viruses that cause gastroenteritis (stomach bugs). In the past, Noroviruses have also been called 'winter vomiting viruses'.

The symptoms of a norovirus infection will begin around 12 to 48 hours after becoming infected. The illness is self-limiting and the symptoms will last for 12 to 60 hours. They will start with the sudden onset of nausea followed by projectile vomiting and watery diarrhoea. Some people may have a raised temperature, headaches and aching limbs. Most people make a full recovery within 1-2 days, however some people (usually the very young or elderly) may become very dehydrated and require hospital treatment.

Norovirus often causes outbreaks because it is easily spread from one person to another and the virus is able to survive in the environment for many days. Because there are many different strains of Norovirus, and immunity is short-lived, outbreaks tend to affect more than 50% of susceptible people. Outbreaks usually tend to affect people who are in semi-closed environments such as hospitals, nursing homes, schools and on cruise ships.

Ambulance staff (including office and admin) can protect themselves and others by following basic principles within the work environment.

- Wash hands with soap and water whenever available using good hand washing techniques (posters are displayed next to hand washing sinks), this will not kill the virus but will help dislodge it from the hands.
- Remove long sleeved clothing and watches to wash hands effectively

- Carry WAST personal issue alcohol gel at all times, these are effective against Norovirus if they are in contact with hands for 30 seconds – always use enough gel so that hands are wet for this amount of time

One for one exchange of all linen at hospital sites, to ensure clean linen is used for every patient

Stretcher cleaned thoroughly after every patient including mattress and frame.

ALL patient touch items **MUST** be cleaned between every patient – this could include hand rails, carry chair, side seat and arm rests, ECG leads, spinal boards and ambulance wall by side of stretcher

Office and Control staff to wipe keyboards, desks and telephones every time they leave and return to their desks, with disinfectant wipes which should be available at all times

In most cases appropriate PPE should be put on after verbal and or visual patient assessment, ambulance staff should not routinely wear PPE before entering a patient's house. In hospital and under guidance PPE may be donned before entering the patient area.

As the current outbreak progresses the level of PPE required may change. The latest advice on the Public Health or HPA web-site should be frequently checked. However, during an outbreak the Trust will issue regular briefings on the latest advice.

Apron and gloves should be worn for close patient contact.

The Patient should be encouraged to use a vomit bowl to minimise droplet dispersal. Also, good respiratory hygiene should be encouraged, for example some paper roll or tissue can be offered to hold against their mouth to 'catch' secretions or for the patient to wear a surgical mask.

Category 3 Diseases

Infectious diseases that are classified as Category 3 are:

Smallpox	Rabies
Plague: Bubonic & Zoonic	Yellow Fever
Viral Haemorrhagic Fevers:	Lassa Fever, Marburg Disease, Ebola, Crimean/Congo Haemorrhagic Fever

The transportation of a patient with a Category 3 infectious disease requires special precautions and procedures which are detailed in the IHCD Ambulance Service Basic Training Manual.

General Information reference Category 3 Diseases

In the UK, most patients who could have a Category 3 disease are likely to present to Accident and Emergency Departments either directly or via their GP. The patient will present with pyrexia (fever) of unknown origin (PUO) shortly after having returned from abroad but these early symptoms could indicate any number of far less serious conditions and a positive diagnosis can only be made following extensive tests.

It is therefore likely that A&E crews may already have had contact with such patients before their illness is formally diagnosed.

The Advisory Committee on Dangerous Pathogens (ACDP) have issued guidance that most pre-diagnosis Category 3 patients can be safely managed by following SICP's and the safe disposal of clinical waste. Any resuscitation regime must include the use of either the Bag & Mask, or resuscitation pack. Under no circumstances should any form of direct oral resuscitation be carried out.

However, should a Category 3 disease be subsequently diagnosed, the attending ambulance crew will be required to undergo surveillance for a period of 21 days from the last possible date of exposure to infection.

There need be no restriction on work or movement within the UK, surveillance will simply be the daily monitoring of body temperature and the reporting of any suspicious symptoms. During surveillance those suffering any rise of temperature above 38°C will be kept under surveillance at home and, if fever persists for more than 24 hours, advice sought from a consultant in infectious or tropical diseases.

6. Aseptic Non Touch Technique (ANTT)

Asepsis is defined as the absence of pathogenic organisms and is extremely challenging to achieve in the pre-hospital environment. ANTT is a method used by clinicians to keep wounds, instruments and other sterile equipment free of microbial contamination by adopting a non touch technique. This plays a vital role in preventing the transmission of infection.

Aseptic technique should include;

- Keeping the exposure of susceptible sites to a minimum
- Ensuring appropriate hand decontamination 'Five Moments'
- Appropriate use of hand gel
- Changing of gloves at appropriate times
- Ensure sterile packs are not tampered with or broken
- Ensure sterile items are placed in a sterile field
- Not reusing single use items
- Handling sterile items appropriately and not touching *key parts

*Key parts

Needle shaft

Cannula Tubes

Tip of syringe

Spike of infusion set

Any part of dressing that come into direct contact with damaged skin/puncture site

Peripheral Vascular Cannulation

The circumstances in which an intravenous cannula should be used are set out in the Institute of Health and Care Development (IHCD) paramedic training manual, which emphasises that only patients who need immediate treatment with drugs or fluid should be cannulated before arrival at a hospital site.

The member of staff should insert the cannula aseptically in line with IHCD paramedic training manual.

- Ensure all items for PVC insertion are available and ready for use
- Decontaminate hands (hand hygiene)
- Select IV insertion site
- Apply the tourniquet
- Palpate the vein
- Decontaminate hands (hand hygiene) using alcohol hand gel and don gloves.
- Clean the site for venepuncture using 70% isopropyl alcohol for 30 seconds – **do not re- palpate the vein.**
- Leave skin to dry for 30 seconds.
- Insert the cannula according to IHCD guidelines, ensuring that the insertion site is not touched. If insertion attempt is not successful, the same cannula should not be used again.
- Use a sterile, semi-permeable, transparent dressing to secure the cannula.
- Dispose of any items used in the appropriate waste receptacles.
- Remove gloves and decontaminate hands with alcohol hand gel.
- Record the date and time of cannula insertion on the Patient Clinical Record.

Always ensure that the giving set and any syringes used for administering drugs through the cannula are handled aseptically. For certain procedures, for example administering diazemuls slowly, titrated to response, or atropine for symptomatic bradycardia (following Joint Royal Colleges Ambulance Liaison Committee guidelines), maintain a sterile field to hold the syringe(s) between doses.

“The use of Interosseous (IO) cannulation presents the same level of risk as IV but, IO is performed purely as an emergency technique The same general

safeguards and considerations should be employed as with any invasive technique.”

Urinary catheter insertion and catheter care

Sterile packs, sterile gloves and aprons should be available for use by all staff trained to insert catheters **(Advanced Paramedic Practitioner and Specialist Paramedic only)**.

Aseptic technique should be applied throughout the procedure.

A sterile field must be maintained throughout the procedure

To ensure that hand hygiene is maintained, liquid soap and paper towels need to be carried by staff for use in patient homes.

All staff need to be aware of the risk of infection for the patient if catheter bags are not cared for correctly when transporting patients.

Urinary catheter drainage bags:

- must not be placed on the floor; and
- must be kept below the bladder at all times to prevent backflow.

Wounds – suturing and gluing

Sterile packs, sterile gloves and aprons should be available for all staff qualified in suturing and gluing **(Advanced Paramedic Practitioner and Specialist Paramedic only)**.

Aseptic technique must be applied throughout these procedures.

A sterile field must be maintained throughout the procedure.

Hand hygiene must be maintained. If running water is not available, detergent wipes should be used, then alcohol gel, before putting on gloves and after removing them.

Airway maintenance

Equipment used for airway maintenance – for example endotracheal tubes and laryngeal masks – should remain in sterile packaging until the point of use.

These items should be removed from the packaging and inserted immediately. They must not come into contact with other items before use.

Appendix A

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WELSH AMBULANCE SERVICES NHS TRUST

Sequential Page No:

CONTAMINATION STATUS CERTIFICATE

ASSET ID: SERIAL/REGISTRATION NO :
MANUFACTURER:.....
TYPE / MODEL:

Contamination Status:

This equipment / item has / has not * been used in an invasive procedure, or has / has not * been in contact with blood or body fluids, respired gases (e.g. breathing circuits) or pathological samples (e.g. body tissue). (* Delete as applicable)

If the equipment / item has not been used in such a way, ensure that the item / equipment is cleaned as per the 'Cleaning and Disinfection Guidelines' and sign the bottom of the form. If not:

The equipment / item has been decontaminated using the procedure (s) below:

PROCEDURE	TICK	DESCRIPTION
Cleaned Only		
Disinfected		
Unable to Decontaminate		
Nature of Defect		

In the event that a sealed unit within the equipment / item cannot be cleaned or decontaminated (i.e. Battery in suction unit, pulse oximeter, defibrillator) then please give a brief reason in the box below to indicate the degree of risk – e.g. possible internal contamination.

Note: Equipment that has not been decontaminated must not be presented to anyone who is not fully aware of the risks involved (e.g. Company Reps etc.) and the appropriate action to take.

I declare that I have taken all reasonable steps to ensure the accuracy of the above information.

Authorised Signature: Job Title:.....

Name (Printed): Dept/Station:.....

Date:

Appendix B- Diseases

INFECTION	Mode of Transmission	Incubation period	Required PPE	Additional Advice	Cleaning Required
Acinetobacter	Can live harmlessly on the skin of healthy people, highest risk is to immune compromised and those who have invasive procedures or injuries and hospitalized patients. Poor hygiene and IP&C procedures can spread the infection	Usually poses no risk to healthy people. Can be colonized on the skin without an infection. Infection occurs when the bacteria enters a injury or cut	Gloves changed regularly. Apron should be worn if the infected wound is open	Acinetobacter Baumani is a strain that has become resistant to many ant-biotics, and is often found in patients returning from abroad - MRAB	All patient touch items, flat surfaces and wall by patient wiped clean using sanitizing wipes. Change all used linen. For blood and body fluid spills use the 'Spill Pack'
Anthrax Release can be a deliberate act Contact with any visible powder must be avoided.	Inhalation, ingestion or direct contact with infected soil and animal products such as bone meal and untreated leather. Person to person airborne transmission does NOT occur – airborne transmission can be by breathing in the spores for instance in the tanning industry. Direct contact with a lesion – skin to skin – can cause transmission though is rare	With inhalation Anthrax, symptoms usually develop within 48 hours With other types of Anthrax symptoms may not appear for up to a week Can be treated with antibiotics if successfully recognized early enough.	PPE must be worn where there is potential for splashes or inoculation injuries. Gloves changed regularly and Apron as a minimum. Avoid any powder – wear mask if necessary.	<u>Cutaneous</u> – skin lesion, starts as small bump, then goes into an ulcer with black centre, untreated can cause blood poisoning. <u>Inhalation</u> – Flu like illness – respiratory difficulties, then shock after 2-6 days <u>Injection</u> – Recently some drug users from contaminated heroin <u>Intestinal</u> – from eating contaminated meat (ie. animal has died from anthrax)	All patient touch items, flat surfaces and wall by patient wiped clean using sanitizing wipes. Change all used linen. For blood and body fluid spills use the 'Spill Pack'.
Botulism	Eating or breathing in the toxin produced by the organism Clostridium botulinum – spores found in soil. There is also 'wound' botulism	Usually 12-36 hours after exposure to the toxin	Cover wounds with waterproof dressing. Wear gloves if performing invasive procedures.	Symptoms are blurred vision, difficulty swallowing, speaking, diarrhoea, vomiting and can lead to paralysis	All patient touch items and change all used linen. For blood and body fluid spills use 'Spill pack'
Campylobacter	Eating raw or undercooked meat, especially poultry, unpasteurised milk, untreated water, domestic pets with watery diarrhoea, person to person if	1 to 11 days (usually 2 to 5 days)	Gloves changed on a regular basis and apron to protect uniform if necessary.	Symptoms are abdominal pain, profuse diarrhoea, malaise. (vomiting is uncommon)	All patient touch items and change all used linen. For faecal contamination use a 'Spill pack' if appropriate or use

INFECTION	Mode of Transmission	Incubation period	Required PPE	Additional Advice	Cleaning Required
	hygiene is poor				sanitizer wipes to clean followed by disinfectant as per cleaning procedures
Chickenpox Varicella Zoster	Direct person to person contact, airborne droplets and contact with infected articles such as clothing or bedding. NB. Can be caught from someone with shingles NB. Staff should know their own immune status to Chicken Pox – vaccination is recommended for non-immune Healthcare workers	10 to 21 days after contact Infectious 2 days before the lesions appear and until the lesions have crusted over (usually 5 to 6 days after they have appeared)	Gloves changed regularly, apron to protect uniform and face mask if patient has cold symptoms if immune status is not known or negative	Symptoms may initially begin with cold like symptoms, followed by high temperature and intensely itchy rash High risk groups for complications are immunocompromised, adults, neonates and pregnant women, who can develop pneumonia, secondary infections and encephalitis	All patient touch items, flat surfaces and wall by patient wiped using sanitizer wipes. Change all used linen.
Clostridium difficile	Spores can be passed from infected people into the environment, which are then ingested – faecal oral route. Infectious only when patient is symptomatic See appendix Six for further information	Depends on strain and health of patient.	Gloves changed on a regular basis and apron and sleeve protectors to protect uniform if necessary. NB. Alcohol gel does not kill the spores, use soap and water or wipes and gel	The spores do not always cause infection, those at risk are hospitalized, immune compromised, elderly, recent antibiotics and taking PPI's (eg. omeprazole)	Thorough cleaning of the environment is required, preferably using detergent and water. Sanitizing wipes can be used if water is not available, followed by a sporicidal agent or chlorine based disinfectant. Change all used linen.
Coronavirus	Respiratory virus, incubation period up to 10 days. Need to be managed in strict isolation	Up to 10 days and close contacts should self isolate in a case of confirmed coronavirus	Full PPE and FFP3 mask for any contact with suspect or confirmed cases	Symptoms can range from a common cold to pneumonia and acute respiratory distress syndrome	Clean area wearing Tyvek suit, gloves, all areas to be cleaned with Actichlor. Uniform placed in alginate bag and washed at 60 degrees

INFECTION	Mode of Transmission	Incubation period	Required PPE	Additional Advice	Cleaning Required
Creutzfeldt-Jakob Encephalopathy	Brain, blood, nervous tissue or pituitary extracts from infected people, by transfusion, transplant or contaminated medical equipment. Eating beef or beef products from BSE infected cattle is thought the most likely cause of CJD	Many years – not fully known	Gloves if performing invasive procedures – changed on a regular basis	Seek advice from receiving hospital re any additional measures required	All patient touch items, flat surfaces and wall by patient wiped. Change all used linen. Dispose of any metal surgical items used eg. Laryngoscope blades in designated Yellow container for surgical items.
Diarrhoea Infections	Mainly Ingestion by faecal oral route. Some are from infected meat, water or seafood Can be airborne – generally if patient also suffering from projectile vomiting C.diff is an anaerobic bacterium – see appendix Six for further information	Can be within a few hours depending on the micro-organism causing the infection, usually between 6 and 48 hours. For suspected infectious Diarrhoea and vomiting staff must be advised they have to be 48 hours free of symptoms before returning to work.	Apron, sleeve protectors and gloves should be worn where there is a potential for contamination of uniform by faecal matter or vomit. Wear face mask with eye protection for close contact with patient who is actively vomiting.	Good hand hygiene is required using soap and water when available – NB. Alcohol does not work on diarrhoeal infections, use wipes followed by gel if soap and water are not available	All patient touch items, flat surfaces and wall by patient wiped thoroughly with sanitizing wipes. Change all used linen. For any body fluid spillage, first clean, then disinfect with chlorine releasing agent.
Diphtheria	Respiratory droplets or direct contact with respiratory discharge or skin lesions – very close contact. If you have been fully vaccinated, you are protected from the bacteria, but could be a carrier of the bacteria	May develop up to 7 days after contact with the bacteria	Gloves for any invasive procedures, changed on a regular basis. Apron if necessary. If patient is actively coughing, wear a face mask with eye protection	Majority of population are immunized. Usually begins with sore throat and fever and can quickly develop into severe breathing problems, it can also damage the heart and nervous system.	All patient touch items, flat surfaces and wall by patient thoroughly wiped with sanitizing wipes. Change all used linen.
Dengue Fever	Mosquito-borne infection that causes a flu like infection It is not spread from person to person	Approximately 5 to 8 days from the bite, though could be sooner.	Gloves for invasive procedures	Symptoms include fever and headache, flu like symptoms. Can have complications that lead to dengue haemorrhagic fever and dengue shock syndrome	Standard precautions – clean all patient touch items and change all linen
Escherichia coli – Including Extended Spectrum Beta Lactamase (ESBL)	Ingestion of contaminated food or water (can cause travellers diarrhoea). Person to person transmission is by faecal – oral route	Depends on site of infection	Gloves for invasive procedures, changed on a regular basis. Apron should be worn if there is a risk of contamination from body fluid.	E coli causes urinary tract infections, gastric infections and can cause bacteraemia. Good hand hygiene is required to avoid spread, especially on farms – also avoid under cooked meat and unpasteurised milk, and drink safe water when abroad	All patient touch items, flat surfaces and wall by patient thoroughly wiped with sanitizer wipes and change all used linen Blood spills use ‘Spill pack’, use absorbent cloth for urine spills followed by chlorine based disinfectant

INFECTION	Mode of Transmission	Incubation period	Required PPE	Additional Advice	Cleaning Required
Hepatitis A	Faecal/oral, contaminated food and water	Around 28 days (15-50 days)	Gloves for invasive procedures, changed on a regular basis.	Majority of staff are inoculated against Hep B	All patient touch items, flat surfaces and wall by patient wiped Blood and body product spill - use the spill pack Good hand hygiene procedures are required to prevent spread
Hepatitis B	Blood borne, sexual contact and vertical transmission from infected mother to baby	40 to 160 days	Apron should be worn if there is a risk of contamination from body fluids		
Hepatitis C	Blood borne, vertical transmission from infected mother to baby, small risk of sexual transmission	In many cases, infection will not be apparent for many years.			
Human Immunodeficiency virus (HIV)	Sexually transmitted and exposure to blood and body fluids	Long silent period without any symptoms	Gloves for invasive procedures, changed at regular intervals. Wear an apron if there is a risk of contamination to uniform from blood and body products	Following sharps injury or blood contamination of member of staff, post exposure prophylaxis needs to be started within 24 hours of the contamination with anti-viral drugs	Clean all patient touch items, flat surfaces and wall by patient thoroughly wiped clean with sanitizing wipes. Change all used linen Use 'Spill pack' for blood and body fluid spills
Impetigo	Highly infectious by direct contact or by using items touched by someone infected – such as a towel or face cloth	Healthcare workers with Impetigo must be referred to Occupational Health – generally they can return to work following 48 hours of treatment.	Gloves for invasive procedures, changed at regular intervals. Do not touch the rash.	Bacterial skin infection – caused by same bacteria that causes sore throats (Group A streptococci or pyogenes) and also by Staphylococcus aureus). Infection occurs when bacteria enters a break in the skin through such as a cut or bite	Clean all patient touch items with sanitizing wipes. Change all used linen.
Influenza	Transmitted easily from person to person via respiratory droplets from coughs and sneezes – which can be either airborne or by touching items that have been contaminated by respiratory droplets	Infection to illness approximately 2 days. Sudden onset of high fever, dry cough, headache, muscle and joint pain, severe malaise, sore throat and runny nose – which lasts approximately 1 to 2 weeks and can lead to complications.	Wear gloves for invasive procedures, changed at regular intervals. If patient is unable to use a tissue to catch respiratory droplets, request they wear a mask, if that is not possible or they refuse, staff should wear a mask	Staff immunization is recommended. Some specific strains eg. Swine and Avian require FFP3 masks to be worn -especially if the patient is actively coughing and sneezing and unable to wear a mask or use a tissue themselves	Clean all patient touch items, flat surfaces and wall by patient thoroughly wiped clean with sanitizing wipes Change all used linen

Legionnaires Disease	By inhaling aerosolised bacteria from a contaminated water source It cannot be passed from person to person	2 to 19 days from exposure, (normally around 6 to 7 days)	Gloves for any invasive procedure, changed on a regular basis. Wear an apron if there is a risk of blood or body fluid contamination to the uniform	Legionnaires disease a severe pneumonia – symptoms include flu like illness and fever which leads to pneumonia, diarrhoea and confusion can also occur. A less severe disease caused by the same bacteria is Pontiac disease	Standard precautions clean all patient touch items using sanitizer wipes. Change all used linen.
Leptospirosis (Weills disease)	Direct or indirect contact with infected animal urine (usually rats and cattle in the UK), the bacteria mainly enter the body through cuts or damaged skin and mucous membranes, but can also pass through intact mucous membrane and the eyes. Person to person spread extremely rare.	Symptoms usually appear 7 to 21 days after exposure, though have been reported as short as 2 or 3 days or as long as 30 days.	Gloves for any invasive procedure changed on a regular basis. Wear an apron if there is a risk of blood or body fluid contamination to uniform.	Can cause a flu like illness, or severe illness which is called Weills disease with jaundice and kidney failure. Sometimes has a two phases – flu like, followed by remission and relapse with a return of fever and jaundice. Can take up to 3 months to recover.	Standard precautions clean all patient touch items using sanitizer wipes. Change all used linen.
Leprosy	Not highly infectious, requires prolonged close contact with an untreated person suffering from an infectious form, combined with an inherent immunological susceptibility	Often in excess of 5 years – it can take as long as 20 years for symptoms to appear	Gloves for any invasive procedure changed on a regular basis. Wear an apron if there is a risk of blood of body fluid contamination to uniform	Affects the skin, peripheral nerves, respiratory mucosa and eyes.	Standard precautions clean all patient touch items using sanitizer wipes. Change all used linen.
Malaria	Caused by the protozoan parasite, transmitted by bite of a female Anopheles mosquito		Gloves for any invasive procedure changed on a regular basis	Not spread from person to person	Standard precautions – clean all touch items and change all used linen
Measles (Notifiable disease)	Respiratory from airborne droplets and touching items that have been contaminated. Significant contact = in same room for 15 minutes or longer Highly contagious MMR vaccination can be given as Post Exposure Prophylaxis within 72 hours of exposure	Contagious from 5 days after contracting the infection Symptoms of respiratory type illness usually starts from day 6 to 14 and can last 4 days before onset of the rash – patient remains infectious for 4 days after rash has appeared Infection has been known to incubate for 21 days before rash appears	Gloves for any invasive procedure changed on a regular basis. Wear an apron if there is a risk of blood or body fluid contamination to uniform If patient is coughing and/or sneezing and unable to tolerate a mask themselves or use a tissue to catch the droplets, staff should wear face mask	Staff should know their own immunity – either by 2 x MMR vaccination or have had measles in the past and blood test positive. Contact tracing is required, with a priority to trace all immunocompromised pregnant, infants, and healthcare workers. Exposed Healthcare workers without definite evidence of immunity should be excluded from work from day 5 of exposure – urgent referral to Occupational Health required	Clean all patient touch items, flat surfaces and wall by side of stretcher using sanitizer wipes. Change all used linen.
Meningitis – Meningococcal Disease (Bacterial)	From person to person by inhaling respiratory secretions from the mouth or throat or by direct contact (kissing) – Close contact. The bacteria do not live long outside the body	Usually 3 to 5 days	Gloves for any invasive procedures changed on a regular basis. Wear an apron if there is a risk of blood or body fluid contamination of uniform.	If mouth to mouth resuscitation has taken place, member of staff must be referred immediately to Occupational Health for risk assessment regarding need for Post Exposure Prophylaxis Occupational Health can also advise regarding vaccination if appropriate	Standard precautions – clean all patient touch items using sanitizer wipes and change all used linen

	HPA can advise regarding required actions		Do not perform mouth to mouth		
INFECTION	Mode of Transmission	Incubation period	Required PPE	Additional Advice	Cleaning Required
Methicillin Resistant Staphylococcus Aureus (MRSA)	Staphylococcus aureus colonizes healthy skin – infections occur when bacteria enters the body through for example broken skin or a medical procedure MRSA is no more virulent or pathogenic than sensitive strains, but may be more difficult to treat	4-10 days and person remains infectious to others as long as infection or carrier status persists	Gloves for any invasive procedures changed on a regular basis. Wear an apron if there is a risk of blood or body fluid contamination of uniform.	MRSA is a strain of Staph aureus that has become resistant to certain anti-biotics Strict adherence to hand hygiene procedures is required and the use of alcohol hand gel. See also Staph aureus and PVL	Clean all patient touch items with sanitizing wipes. Change all used linen
Mumps (Notifiable)	Direct contact with saliva or droplets of saliva from an infected person	14 to 21 days and person is contagious for several days before the swelling appears to several days after. None immunized exposed staff should be considered infectious from day 12 to 25 days after exposure	Gloves for any invasive procedures changed on a regular basis. Wear an apron if there is a risk of blood or body fluid contamination of uniform. Wear a mask if patient is actively coughing/sneezing and unable to wear one themselves	As many as 30% of cases of Mumps do not have any symptoms Illness starts with headache and a fever for a few days, followed by swollen parotid glands Urgent Occupational Health referral required for non immunized exposed staff	Standard precautions – clean all patient touch items with sanitizing wipes Change all used linen
Pertussis (Whooping Cough) (Notifiable)	Respiratory spread by droplets of saliva from the infected person	Incubation period 7-10 days. Infectious from 7 days to three weeks – can last for up to 3 months	Gloves for any invasive procedures changed on a regular basis. Wear an apron if appropriate	Staff should be appropriately vaccinated - may still develop disease but may reduce severity. Wear a mask if patient is actively coughing	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen
Pneumococcal Pneumonia	Respiratory infection, usually caused by patients own flora. Not usually passed person to person	Not applicable	Gloves for any invasive procedures changed on a regular basis. Wear an apron if appropriate	Streptococcus pneumonia causes diseases such as pneumonia, meningitis and bacteraemia Wear a mask if patient is actively coughing	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen
Poliomyelitis	Faecal oral route and respiratory droplets (Staff should ensure they are up to date with vaccination)	3 to 35 days Highly infectious virus – Now rarely seen due to effective vaccination programme	Gloves for any invasive procedures changed on a regular basis. Wear an apron if appropriate	Virus enters the blood stream and central nervous system and can lead to muscle weakness and paralysis. 90-95% of cases do not have any symptoms	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen

PVL Staphylococcus aureus	Pantene-Valentine leukocidin (PVL) is a toxic substance produced by some strains of Staph Aureus and is associated with an increased ability to cause disease. Can be MSSA or MRSA strain	4-10 days and person remains infectious to others as long as infection or carrier status persists	Gloves for any invasive procedures changed on a regular basis Wear an apron if there is a risk of blood or body fluid contamination of uniform	Strict adherence to hand hygiene procedures is required and the use of alcohol hand gel.	Clean all patient touch items with sanitising wipes Change all used linen
Rabies	Saliva from the bite of an infected animal	Two to twelve weeks	Gloves for any invasive procedures changed on a regular basis. Wear an apron if appropriate	No incidents of rabies occurred in the UK in 2010 Bat bites – patient may require Post exposure vaccination – contact HPA	Clean all patient touch items, flat surfaces , walls stretcher using sanitizing wipes. Change all used linen
INFECTION	Mode of Transmission	Incubation period	Required PPE	Additional Advice	Cleaning Required
Rubella (Notifiable)	Direct contact and respiratory droplet spread	2 to 3 weeks from contact with the infection Contagious 1 week before rash appears up to 6 days after rash	Gloves for any invasive procedures changed on a regular basis. Wear an apron if appropriate	Advise to avoid pregnant women. Normally fit patients with Rubella do not need medical attention Wear a mask if patient is actively coughing	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen
Scarlet Fever (Notifiable)	Caused by Group A Streptococci bacteria – commonly found on the skin or in the throat (also causes impetigo) Spread by coughing, sneezing – respiratory droplets	Usually 2 to 5 days, but can be 1 day to 1 week	Wear gloves and apron – changed at regular intervals Strict hand hygiene procedures are required	First symptoms are fever, sore throat, headache, nausea, vomiting, 12 to 48 hours later a fine ‘sand paper’ red rash appears	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen
Shingles	Can spread Chicken Pox to non immune person/s Chicken pox can be caught by direct contact with the fluid from the spots	Can be many years – Chicken pox virus lays dormant and is re-activated	Wear gloves for any invasive procedures, which must be changed at regular intervals Wear an apron if appropriate.	Re-activation of the Chicken Pox virus (Herpes zoster) in someone who has had chicken pox in the past	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen

INFECTION	Mode of Transmission	Incubation period	Required PPE	Additional Advice	Cleaning Required
Shigella	Bacillary dysentery – acquired by drinking water contaminated by human faeces or eating food washed with contaminated water	Between 12 and 96 hours	Wear gloves for any invasive procedures, which must be changed at regular intervals Wear an apron if appropriate.	Shigella may survive for up to 20 days in the environment, so strict adherence to hand hygiene and cleanliness is required	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen
Staphylococcus aureus (MSSA)	Staph aureus is a bacterium that commonly colonises human skin and mucosa (inside the nose), without causing any problems. It causes disease if there is an opportunity for the bacteria to enter the body, for example through broken skin or a medical procedure	Approximately 2 to 10 days depending on the site of infection Food poisoning 2 to 6 hours	Gloves for any invasive procedures changed on a regular basis. Wear an apron if there is a risk of blood or body fluid contamination of uniform	Strict adherence to hand hygiene procedures is required and the use of alcohol hand gel.	Clean all patient touch items with sanitising wipes Change all used linen
Tetanus	Not passed from person to person Spores are widespread in the environment. Transmission occurs when the spores are introduced into the body via a wound	Usually between 3 and 21 days, though could be from 1 day to several months	Wear gloves for any invasive procedures, which must be changed at regular intervals Wear an apron if appropriate.	Ensure your protection is up to date. First symptoms are stiff muscles by the injury site, followed by stiffening of other muscles until ‘lock jaw’ occurs	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen
Tuberculosis (TB)	Respiratory – coughing respiratory droplets. Prolonged close contact with an infected case (8 hours plus) – only infectious in ‘open’ or ‘sputum smear positive’ cases Bovine TB mainly transmitted via ingestion of untreated milk	Varied depending on different factors. A small number of people contract primary disease usually within 8 weeks of exposure, this can go unnoticed and they do not get full infection for many years – diagnosed by xray as a scar	Wear gloves for any invasive procedures, which must be changed at regular intervals Wear an apron if appropriate. Wear a mask if patient is actively coughing and unable to wear one themselves	Contact Occupational Health. Staff should have had vaccination and be immune to most types. Resistant strains have emerged. These are more difficult to treat. Strict adherence to IPC precautions.	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen

Typhoid Fever	Contaminated food and water and faecal oral route	7 to 14 days but can be longer or shorter depending on number of bacteria ingested	Wear gloves for any invasive procedures, which must be changed at regular intervals Wear an apron if appropriate.	The bacteria are passed in the urine and faeces of infected people – who then handle food without adequate hygiene, or by drinking water contaminated by sewerage	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen
Infestations:-					
Scabies	Very close person to person contact, for example holding hands for a length of time Very slight risk from bedding - transfer will only occur on bed linen or clothing if they have been contaminated immediately before contact as the mites can not live for long away from their host	Up to 8 weeks after infection	Wear gloves for close personal contact and for any invasive procedures, which must be changed at regular intervals Wear an apron if appropriate.	Caused by the mite <i>Sarcoptes scabiei</i> . <i>Sarcoptes scabiei</i> mites die very soon after they leave the skin, they do not survive well in the environment Once treatment has been completed for scabies, there is no risk of spread	Clean all patient touch items, flat surfaces and wall by stretcher using sanitizing wipes. Change all used linen
Norwegian or Crusted Scabies	Highly contagious and can be spread through minimal contact with a person with the crusted areas. There is an increased risk of spread of crusted scabies on bed linen and clothing	Can be up to 8 weeks after infection	Wear gloves and apron for any contact. Strict hygiene practices required.	Caught the same way as normal scabies. The crusting is linked to the hosts immune response. Others acquiring infection from a case of Norwegian will develop normal scabies	Clean all patient touch areas and flat surfaces. Change all used linen.
INFECTION	Mode of Transmission	Incubation period	Required PPE	Additional Advice	Cleaning Required

Flea's	Jump from animal to human or human to human. Animal fleas will feed on humans but live on the animal host. They can also live for example in carpets, soft furnishings and pet bedding	Flea bites are often not felt until a short time later, when the area goes red and itches	Very difficult to protect against if patient visibly has them – use hair protector, coveralls and gloves if appropriate	Household flea spray can be used to stop and prevent further infestations for a length of time. Fleas can lay dormant for up to 2 years Human fleas are extremely rare – infestation usually due to cat fleas	Specialist clean if infestation confirmed. Clean all items that can be removed from the vehicle, and dispose of used linen as contaminated.
Lice - Head	Head to head contact	Eggs are pinhead size, normally found by scalp, take 7 to 10 days to hatch (called Nits). They then feed by biting the scalp and sucking the blood, they are fully grown after 6 to 8 days, they can now breed, lay more eggs and move from head to head.	Keep long hair tied back, do not let hair drop on to or touch anyone else's hair. Wear relevant PPE for patients with any underlying medical condition	Head lice crawl from head to head – They do not jump or fly	Avoid head to head contact where possible Standard precautions – clean all patient touch items. Change all used linen.
Ticks	Opportunistic - they attach themselves to skin, can be from leaning on a tree or walking in long grass or many other scenario's	Larvae, nymph and adult, feed on blood – they can carry disease, which is spread when they bite – incubation of the disease depends on what they are carrying	Be aware if walking through undergrowth and keep skin covered. Check afterwards for small black dots	Useful document on the Lyme disease website: www.lymediseaseaction.org.uk	Standard precautions – clean all patient touch items. Change all used linen.
Viral Haemorrhagic Fever (VHF)	CAT 3 Disease, ISOLATION		Enhanced PPE required. FFP3, double glove if patient bruising, bleeding, diarrhoea or vomiting.	Inform Public Health	Deep Clean

APPENDIX C NOROVIRUS INFORMATION LEAFLET



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WELSH AMBULANCE SERVICES NHS TRUST

NHS Direct Wales
Galw IECHYD Cymru

NOROVIRUS

What WAST staff need to know

Norovirus was first discovered in the early 1970s, they are a group of viruses that cause gastroenteritis (stomach bugs). In the past, Noroviruses have also been called 'winter vomiting viruses'.

The symptoms of a norovirus infection will begin around 12 to 48 hours after becoming infected. The illness is self-limiting and the symptoms will last for 12 to 60 hours. They will start with the sudden onset of nausea followed by projectile vomiting and watery diarrhoea. Some people may have a raised temperature, headaches and aching limbs. Most people make a full recovery within 1-2 days, however some people (usually the very young or elderly) may become very dehydrated and require hospital treatment.

Norovirus often causes outbreaks because it is easily spread from one person to another and the virus is able to survive in the environment for many days. Because there are many different strains of Norovirus, and immunity is short-lived, outbreaks tend to affect more than 50% of susceptible people. Outbreaks usually tend to affect people who are in semi-closed environments such as hospitals, nursing homes, schools and on cruise ships.

Noro-Virus how is it transmitted?

Primary transmission is faecal and infected vomit transferred to the oral route, that is the virus is picked up from droplet secretions containing the virus expelled from an infected person followed by hands that come into contact with these secretions (gloved or not) these will pick up the virus and carry it to other surfaces.

To summarize : the potential risk is from large droplet spread (to a range of approx 1 metre) and through direct contact or indirect contact with commonly touched vehicle or household surfaces.

Clinical Information

Incubation period:

Usually 24 to 48 hours.

The symptoms of noro virus infection will begin around 12 to 48 hours after becoming infected. The illness is self-limiting and the symptoms will last for 12 to 60 hours. They will start with the sudden onset of nausea followed by projectile vomiting and watery diarrhoea. Some people may have a raised temperature, headaches and aching limbs. Most people make a full recovery within 1-2 days, however some

people (usually the very young or elderly) may become very dehydrated and require hospital treatment.

Staff who have been off work with Norovirus must have two full days of being symptom free before returning to work.

Infection Control

Hand hygiene:

In regards to hand washing the approach depends on the intensity of contact with the patient or equipment, the degree of contamination likely to occur with that contact, the susceptibility of the patient to infection and the procedure to be performed, assessment and hand hygiene must take place before undertaking a care procedure. The trust supplies Alcohol hand sanitizer in vehicles as well as personal hand sanitizers as part of Trust uniform. In the absence of soap and water staff may use Disinfectant wipes if hands are visibly soiled. Hands are to be dried using paper towels or blue roll after which hand sanitizer can then be applied.

Good hygiene

Good hygiene is very important in preventing others from becoming infected as Healthcare settings tend to be particularly affected by outbreaks of norovirus.

A recent study done by the HPA (Health Protection Agency) shows that outbreaks are shortened when control measures at healthcare settings are implemented quickly.

Ambulance staff (including office and admin) can protect themselves and others by following basic principles within the work environment.

- Wash hands with soap and water whenever available using good hand washing techniques (posters are displayed next to hand washing sinks), this will not kill the virus but will help dislodge it from the hands.
- Remove long sleeved clothing and watches to wash hands effectively
- Carry WAST personal issue alcohol gel at all times, these are effective against Norovirus if they are in contact with hands for 30 seconds – always use enough gel so that hands are wet for this amount of time

One for one exchange of all linen at hospital sites, to ensure clean linen is used for every patient

Stretcher cleaned thoroughly after every patient including mattress and frame.

ALL patient touch items MUST be cleaned between every patient – this could include hand rails, carry chair, side seat and arm rests, ECG leads, spinal boards and ambulance wall by side of stretcher

Office and Control staff to wipe keyboards, desks and telephones every time they leave and return to their desks, with disinfectant wipes which should be available at all times

Infection Control Precautions

Key points

Standard infection control precautions and precautions must be taken for patients with or suspected of having NoroVirus.

The use of PPE should be proportional to the risk of contact with secretions and other body fluids, and should depend on the type of work/procedure being undertaken and the infection status of the patient. Staff, patients and any escorts should practice good hand hygiene and respiratory hygiene at all times for the protection of all parties.

Standard Infection Control Precautions

These are a set of broad principles of good practice to minimise exposure to and transmission of infection and should be applied to the care of **all** patients **all** of the time. Standard infection control precautions include hand hygiene, environmental cleaning, blood and body fluid spillages, sharps, waste, linen and PPE.

Droplet precautions

Droplet precautions are required to prevent transmission of infection from aerosols of projectile vomit. Droplet transmission occurs as a result of droplets being expelled from an infected individual directly onto a mucosal surface (or conjunctivae) of another individual .e.g. during projectile vomit.. When expelled, because of their relatively large size, droplets generally travel only short distances (typically less than a metre) before settling on surfaces.

Droplet precautions for patients during transport

When transporting a possible, probable or confirmed case of NoroVirus, the patient should be encouraged to use a vomit bowl to minimise droplet dispersal. This should be used throughout the period of transport.

If the patient can, good respiratory hygiene should be encouraged, for example some paper roll or tissue can be offered to hold against their mouth and nose to 'catch' secretions from coughing, sneezing or blowing their nose.

Patients suspected of having NoroVirus should not be transported with other patients who do not have NoroVirus.

Personal Protective Equipment

Any PPE removal must be followed by hand hygiene. All used PPE must be disposed of as clinical waste.

In most cases appropriate PPE should be put on after verbal and or visual patient assessment, ambulance staff should not routinely wear PPE before entering a patient's house. In hospital and under guidance PPE may be donned before entering the patient area.

As the current outbreak progresses the level of PPE required may change. The latest advice on the Public Health or HPA web-site should be frequently

checked. However, during an outbreak the Trust will issue regular briefings on the latest advice.

Apron and gloves should be worn for close patient contact.

The Patient should be encouraged to use a vomit bowl to minimise droplet dispersal. Also, good respiratory hygiene should be encouraged, for example some paper roll or tissue can be offered to hold against their mouth to 'catch' secretions or for the patient to wear a surgical mask.

Eye protection

Eye protection should be considered when there is a risk of contamination of the eyes by splashes and droplets, for example by blood, body fluids, secretions (including respiratory secretions) or excretions.

There should be an individual risk assessment at the time of providing care.

Eye protection should always be worn during aerosol-generating procedures. Disposable, single-use eye protection is recommended

Wearing and removing personal protective equipment

PPE should be removed in an order that minimises the potential for cross-contamination:

1. Gloves

Grasp the outside of the glove with the opposite gloved hand; peel off.

Hold the removed glove in gloved hand.

Slide the fingers of the ungloved hand under the remaining glove at the wrist.

Peel the second glove off over the first glove and discard appropriately.

2. Apron

Unfasten ties.

Pull /apron away from the neck and shoulders, touching the inside of the apron only.

Turn the apron inside out, fold or roll into a bundle and discard.

3. Goggles or face shield

To remove, handle by headband or earpieces and discard appropriately.

To minimise cross-contamination, the order outlined above should be applied even if not all items of PPE have been used.

Clean hands thoroughly immediately after removing all PPE.

Vehicle Cleaning

All vehicles that have been used to transport a potential or confirmed case of Noro virus must be thoroughly cleaned before being used to transport further patients.

The following advice applies to all vehicles used for patient transport.

After transporting a patient with confirmed or suspected case of Norovirus the vehicle must be fully cleaned and sanitised using Clinell and Actichlor. PPE must be used including gloves, aprons and goggles if appropriate.

A comprehensive clean must be carried out including, all equipment that has had contact with the patient, all surfaces in the vehicle paying particular attention to the stretcher and floor. You must remember that droplets can be spread up to a metre from the patient in an aerosol form.

The stretcher should be cleaned including the mattress and frame, as well as any other transportation device used to move the patient.

New linen must be used for each patient. Any contaminated linen must be placed into an alginate bag before it is laundered.

All metal surfaces must be thoroughly cleaned with disinfectant or alcohol wipes.

Routine cleaning should be undertaken after each patient journey as well as when opportunity presents during the shift. A solution of Actichlor and Clinell wipes should be used and particular attention paid to areas within about 1 metre of the patient as surfaces within this distance from the patient are more likely to have been contaminated by droplets. Stretcher cots, mattresses and horizontal surfaces in the ambulance, as well as fixtures and fittings (including cab area) that are frequently handled should be cleaned and allowed to air dry. Appropriate PPE must be worn for cleaning i.e. gloves and a plastic apron. Sufficient supplies of PPE should be carried in vehicles and checked pre-shift. However excess supplies of other equipment should not be carried - this keeps items at risk of contamination to a minimum and reduces cleaning workload.

Surfaces contaminated by **blood or other body fluid spillages** should be cleaned as soon as possible using Actichlor the primary cleaning agent. PPE must be used as appropriate. Disposable items that have been in contact with blood or body fluids are to be discarded as clinical waste. Equipment such as monitors and suction devices that have become contaminated should be removed for cleaning and manufacturers' guidelines (WAST procedures) should be followed.

Floors (hard) must be cleaned regularly (at least once during each shift) using Actichlor disinfectant. If contaminated with blood or body fluids, WAST procedures for contaminated surfaces should be followed.

Good environmental cleaning is important throughout the Trust which, in addition to transport, includes ambulance control rooms, stations, offices and workshops. Ambulance staff (including office and admin) can protect themselves and others by following basic principles within the work environment.

Wash hands with soap and water whenever available using the six stage technique, this will not kill the virus but will help dislodge it from the hands. Hand wash posters can be found near to each hand wash sink.

Remove long sleeved clothing and watches to wash hands effectively
Carry WAST personal issue alcohol gel at all times, these are effective against Norovirus if they are in contact with hands for 30 seconds – always use enough gel so that hands are wet for this amount of time

One for one exchange of all linen at hospital sites, to ensure clean linen is used for every patient

Stretcher cleaned thoroughly after every patient (Alcohol and disinfectant wipes)

All items that the patient has touched **MUST** be cleaned between every patient – this could include hand rails, carry chair, side seat and arm rests, ECG leads, spinal boards and ambulance wall by side of stretcher – using alcohol wipes

Office and Control staff to wipe keyboards, desks and telephones every time they leave and return to their desks using alcohol wipes

Good environmental cleaning is important throughout Trusts which, in addition to transport, includes ambulance control rooms, stations, offices and workshops.

Linen

Fresh linen must be used for every patient regardless of appearance in accordance with DH Ambulance Guidelines (2008).

If the linen appears to be visibly contaminated then it should be treated as potentially infected and should be placed into a red alginate bag and laundered as to trust procedures.

Staff uniforms

Operational Staff are reminded that they should change into and out of their uniforms at the workplace if facilities exist rather than travel in uniform.

Used uniforms should be transported home in a water soluble bag and laundered separately from other linen in a domestic washing machine, washed at the hottest temperature suitable for the fabric, then ironed or tumble-dried.

Occupational Health

Ambulance trust staff with symptoms of NoroVirus should not come to work and should report such illness to their line manager promptly.

If staff are infected with NoroVirus they should return to work when they are well and symptom free (48 hours after last illness).

For up to date guidance on the management of outbreaks of vomiting and/or diarrhoea in hospitals and community health and social care settings, including nursing and residential homes :-

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317131647275

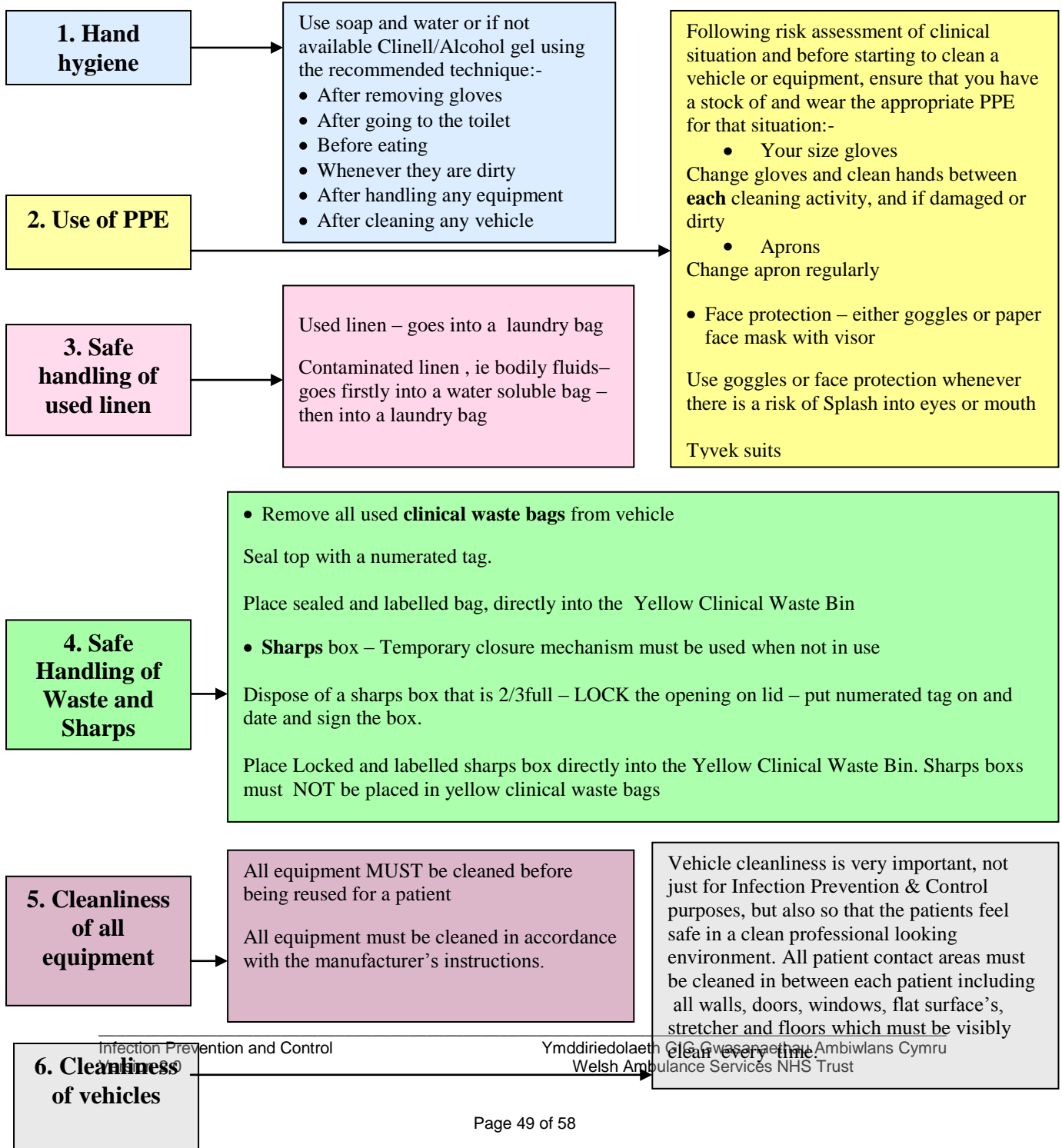


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NHS Direct Wales
Galw Iechyd Cymru

STANDARD INFECTION CONTROL PRECAUTIONS (SICP's

Standard Infection Control Precautions are a set of procedures that must be followed EVERY TIME to minimise the risk of spread of infection to yourself, your family, colleagues and to patients.

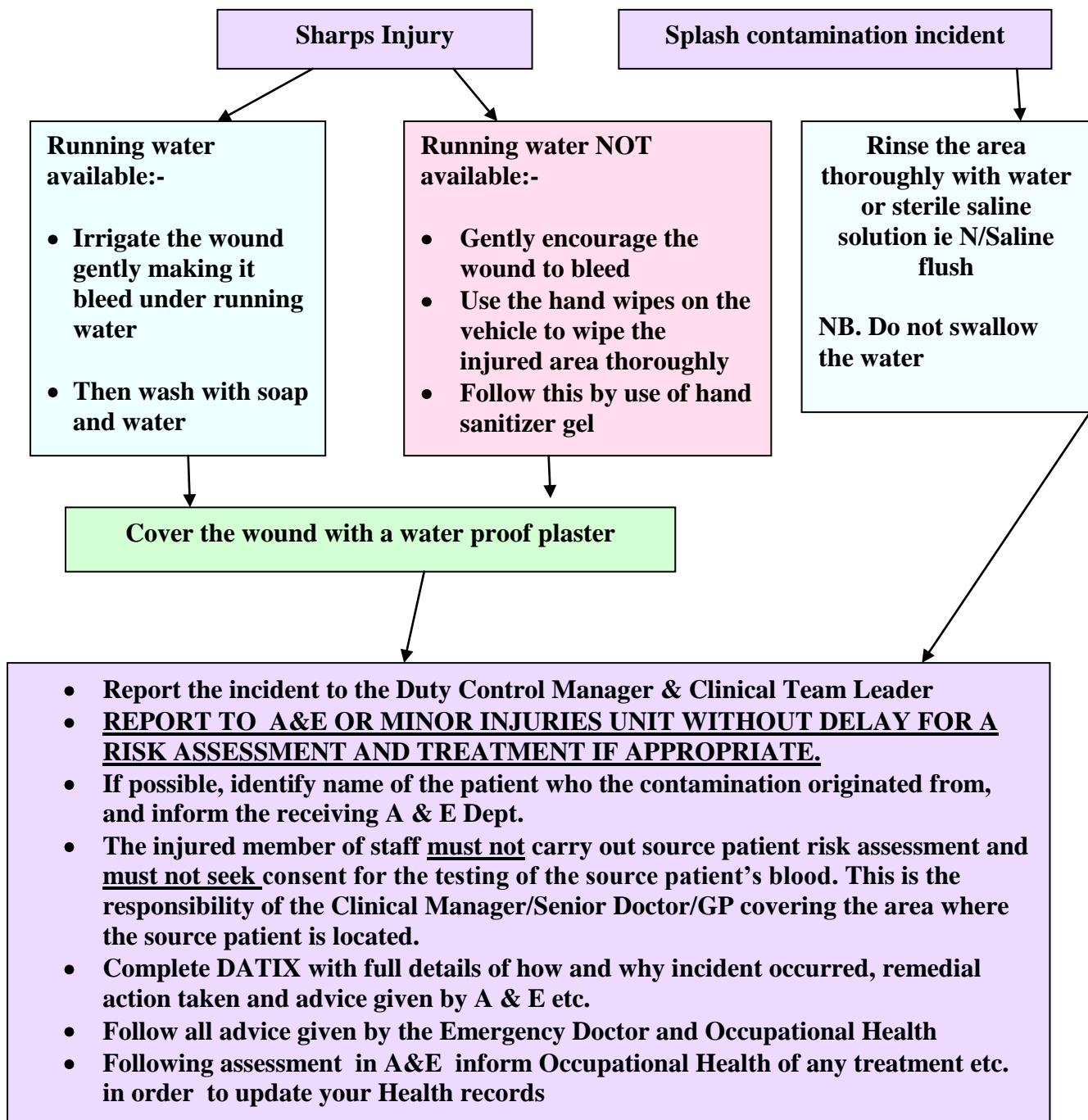


APPENDIX E

Actions for staff following Inoculation or Splash contamination incident

Definition of inoculation or splash contamination incident:-

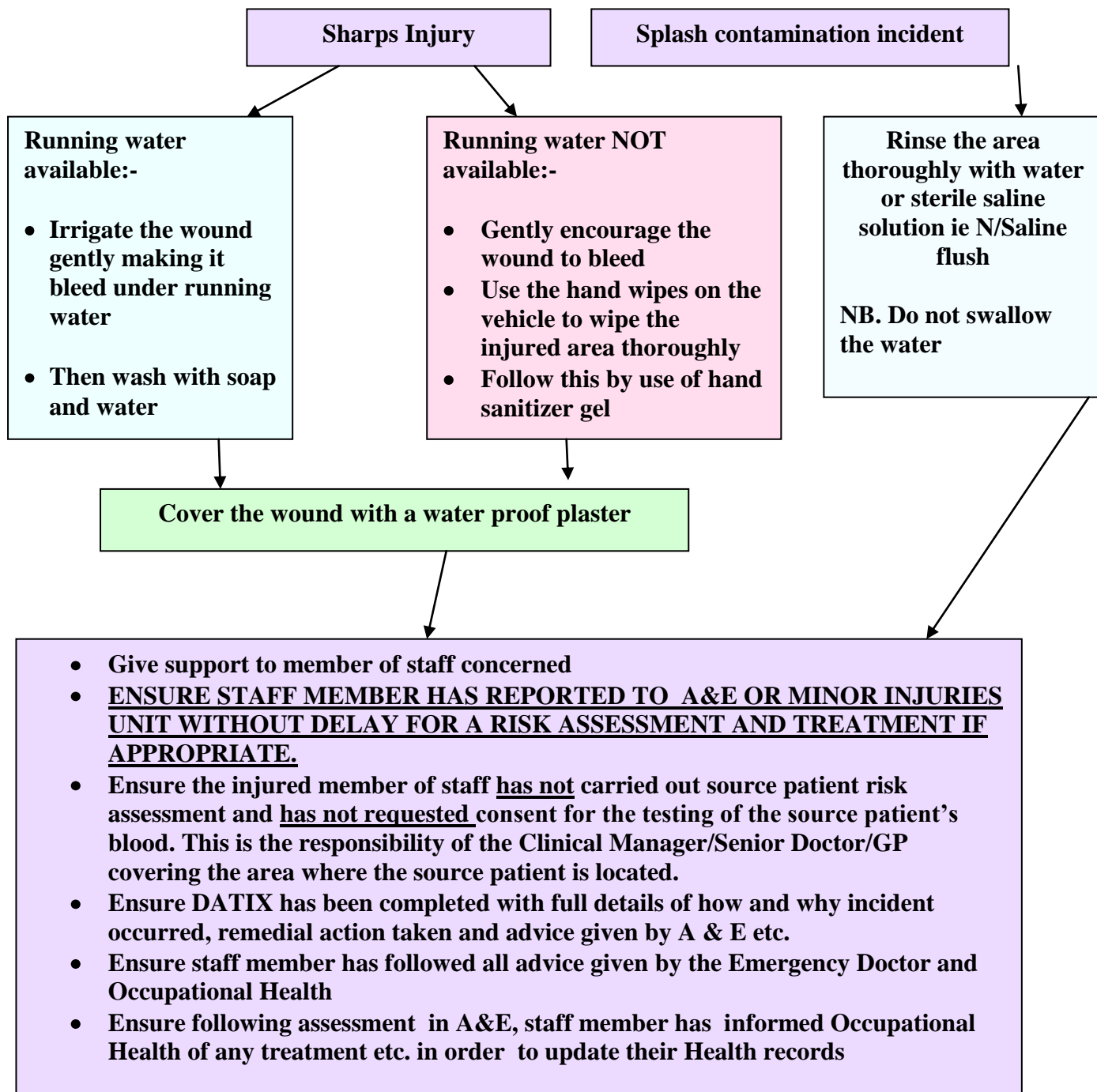
Any incident where blood or body fluid from another person/patient enters mucous membranes ie. mouth, eyes, nose, or any recent cut or injury to the skin – this could be by means of a sharp or splash incident



**Line Managers Actions following the report of an Inoculation or
Splash contamination incident involving a member of staff**

Definition of inoculation or splash contamination incident:-

Any incident where blood or body fluid from another person/patient enters mucous membranes ie. mouth, eyes, nose, or any recent cut or injury to the skin – this could be by means of a sharp or splash incident



APPENDIX F



Ymddiriedolaeth GIG Gwasanaethau Ambiwllans Cymru Welsh Ambulance Services NHS Trust

RESPIRATORY PROTECTIVE EQUIPMENT (RPE) PROCEDURE

FFP3

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PROCEDURE STATEMENT

- 1.1 The principles of measures taken to minimise the transmission of pandemic influenza are based on the premise that pandemic influenza has similar properties to seasonal influenza.
- 1.2 It is well established that influenza is transmitted through close contact with a coughing or sneezing person, however aerosol transmission may also occur in certain clinical procedures such as:
 - Intubation
 - Insertion of laryngeal masks
 - Cardio Pulmonary Resuscitation
 - Manual Ventilation/Open suctioning
- 1.3 Ambulance staff that perform Aerosol Generated Procedures (AGP's) (within 1 meter) are at greater risk of exposure to the influenza virus in a pandemic situation.
- 1.4 Respiratory protective equipment (RPE) is used in such procedural circumstances as a control measure under Health & Safety Legislation (COSHH, 2002), it is vital that the selected RPE is adequate and suitable and Fit testing will help ensure that the equipment selected is suitable for the wearer.
- 1.5 This policy will clarify the procedures that the Welsh Ambulance Service Trust (WAST) will employ to protect its staff who come into contact with infectious micro-organisms such as influenza virus during the course of their work when carrying out Aerosol Generating Procedures (AGP's) on potentially infectious patients.

2. SCOPE

2.1 This procedure applies to all staff working in WAST involved in the direct care and management of patients with known or suspected influenza with pandemic potential and involved in AGP's and pertains to the wearing of a Filtered Face Piece mask (FFP3)

2.2 Probable or confirmed cases of novel coronavirus should be managed in strict respiratory isolation and all staff providing caring for these cases must wear full PPE including a FFP3 mask
For further information see link below.

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1317136202637>

3 AIM

3.1 The purpose of this document is to ensure that:

- Staff are aware of the implications of respiratory viruses.
- Staff are aware of the what action is required when it is identified that a patient has a known or suspected viral respiratory infection.
- Staff have been Fit Tested and Re-Tested as appropriate.

4. ROLES AND RESPONSIBILITIES

4.1 WAST has a responsibility to ensure that all employees who may need to wear FFP3 masks have access to the product and have been trained efficiently in its use.

4.2 Chief Executive

The Chief Executive has the ultimate responsibility for the safety of staff and patients within WAST.

4.3 Director of Finance

The Director of Finance is responsible for ensuring adequate resources are made available for the purchase of FFP3 masks in the event of a pandemic.

4.4 Heads of Service/Locality Managers

4.4.1 Manager's have a responsibility to identify the staff within their division that perform aerosol generating procedures with the need to use FFP3 masks in the course of their workload, this is to be undertaken by the completion of a risk assessment.

4.4.2 All staff identified by their managers to use FFP3 masks must undergo a fit test as part of their training. Evidence of successful completion of the fit test must be held on training records by the Competent Trainer/Training department to show compliance.

4.5 Clinical Team Leaders

4.5.1 A cohort of Clinical Team Leaders will be trained by 3M, they will then cascade training to their Clinical Team Leader colleagues which will enable them to Fit test their own teams.

4.5.2 Fit testing should be conducted by a competent person. (HSE, 2012)
This requires the person to have adequate knowledge, and have received adequate instruction and training in the following area.

- The purpose of the fit test exercise

- Selection of adequate and suitable FFP3
- Preparation of FFP3 for Fit testing
- Ability to identify poorly maintained FFP3
- Ability to correctly fit a FFP3 mask and perform pre-use fit checks
- Ability to recognise a poorly fitting FFP3
- Ability to prevent and correct problems during Fit testing
- Interpretation of Fit test results

4.5.3 Documented evidence must be kept on a Central database by the Clinical Team Leaders as to the compliance with this process.

4.6 Employee

4.6.1 All staff who have been identified by their manager that their work may involve using aerosol generating procedures on suspected or confirmed patients within a pandemic situation have a responsibility to ensure that they have been Fit tested, familiar with this policy and act in accordance with this at all times.

4.6.2 All staff whom have been Fit tested have a responsibility to inform their Line Manager about any facial appearance changes which may require a Re-Test for the individual.

5. **FFP3 MASKS**

5.1 **The use of FFP3 is essential when dealing with potential influenza/pandemic patients alongside appropriate Personal Protective Equipment (PPE)- gown, gloves and eye protection.**

5.2 FFP3 masks should be fitted with care to ensure that they fit as well as possible onto the face especially around the nose and mouth particularly taking account of the manufacturer's instructions.

5.2.1 Fit Testing

Fit tests are conducted to determine that the FFP3 mask / respirator fits the user adequately and that a good seal can be obtained and must be conducted by a 'competent person'.

5.2.2 Inadequate fit will significantly reduce the protection provided to the wearer which potentially could put the wearer's life in danger or may lead to immediate or long-term ill health therefore correct fitting of the FFP3 mask / respirator at all times is vital to prevent exposure.

5.2.3 It is important to note that a fit test is not a substitute for correct and careful day-to-day fitting of the FFP3 mask / respirator.

5.2.4 A good fit can be achieved only if the area where the respirator seals

against the skin is clean shaven. Beards, long moustaches, and stubble may cause leaks around the respirator.

5.2.5 Re-Testing

Fit testing should be repeated:

- If previous fit testing has been unsuccessful or the wearer loses or gains weight;
- If staff member has undergone any substantial dental work;
- If staff member develops any facial changes (scars, moles, facial hair etc) around the face seal

SAFETY NOTE

FFP3 masks / respirators are single use items and therefore should only be worn once and then discarded as Clinical Waste.

References

ABMU (2010) *Policy for the Management of Respiratory Viruses in Hospital*

COSHH (2002) *Control of Substances Hazardous to Health Regulations*

DOH (2009) *Pandemic (H1N1)2009 Influenza) : Summary infection control guidance for ambulance services during an influenza pandemic.*

HSE (2012) *Fit Testing of Respiratory Protective Equipment Face pieces*
OC 282/28

www.hse.gov.uk

3M (2006) *Fit Test Kit User Guide*

North Somerset NHS (2009) *Fit Testing Policy*

Welsh Government (2009) *Occupational Exposure Management, including needlestick (or sharps) injuries Policy and Procedure*