

Infection Prevention and Control Policy Manual

Section 2 - Practical Guide to Infection Prevention and Control

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EQUALITY IMPACT

The Trust strives to ensure equality of opportunity for all both as a major employer and as a provider of health care. This Policy Document has therefore been equality impact assessed by the Infection Prevention and Control Committee to ensure fairness and consistency for all those covered by it regardless of their individual differences, and the results are shown in Appendix A.

Dissemination of policy or procedural documents must be conducted as detailed in Appendix B.

VERSION CONTROL SCHEDULE

Version number	Issue Date	Revisions from previous issue	Date of approval by Committee
V1.00	01/09/07	Bi-annual update	22/08/09
V1.1	19/11/08	Amendments required	22/10/09
V2.00	16/12/09	All policies reviewed in line with the Health Act (2008), national guidance and incorporating recommendations following legal review	16/12/09

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POLICY FOR THE COLLECTION OF SPECIMENS

The quality of laboratory results is dependent on the examination of a high quality and appropriate sample, which should be labelled clearly and accompanied by a completed request form. To ensure that the sender receives accurate and timely results it is important to provide the laboratory with a set of essential details. This will help the laboratory to assign the correct results to the right patient and will prevent misleading results being reported.

	ACTION	RATIONALE
2.1.1	Select appropriate container. Wear appropriate personal protective equipment (PPE) (see personal protective equipment policy)	To protect personnel involved in the collection, transport and further handling of specimens.
	Do not soil the outside of the container whilst filling it. Securely close the lid and do not overfill.	To limit the risk of cross infection. To prevent the risk of spillages
	Avoid contaminating the specimen.	To avoid getting inaccurate results.
2.1.2	Urine	
	Collect the mid stream sample	To reduce risk of contamination from the perineum/skin.

POLICY FOR THE COLLECTION OF SPECIMENS

	ACTION	RATIONALE
	If specimen is to be taken from a urinary catheter withdraw urine from designated sampling sleeve. Clean the sleeve prior to aspiration with 70% alcohol and 2% chlorhexidine and wait to dry. Use a sterile needle and syringe, dispose of as per sharps policy (policy manual, section 3)	Urine obtained from the bag may provide misleading results as bacteria can multiply in stagnant urine.
	Do not disconnect the bag from the catheter to obtain a specimen.	Breaking the circuit will increase the risk of infection.
	Transfer to laboratory within 2 hours or the specimen can be refrigerated for up to 24 hours if collected out of normal laboratory working hours.	Specimens stored at room temperature may provide misleading results as urine specimens easily support the growth of bacteria.
2.1.3	Sputum	
	Ensure the specimen is mucoid or mucopurulent.	Specimens of saliva are of no value.
	Transfer to laboratory immediately.	Respiratory pathogens will not survive for prolonged periods.
	If testing for tuberculosis 3 separate specimens should be sent (where possible, they should be early morning specimens).	To increase the chance of detection as the number of bacteria in the sputum may be quite low.

POLICY FOR THE COLLECTION OF SPECIMENS

	ACTION	RATIONALE
2.1.4	Faeces	
	<p>Faecal specimens should be transferred to the laboratory within 12 hours.</p> <p>Specimen of diarrhoea should be sent to microbiology immediately. Do not refrigerate. If parasites are suspected, a fresh, warm stool is required.</p>	For accurate diagnosis.
	A walnut sized piece of stool is required, or in the case of diarrhoea 10 -15 mls.	
	Rectal swabs can be obtained if faeces cannot be passed but the swabs must be well stained with faeces.	
2.1.5	Wounds	
	<p>A sample is preferable to a swab when possible.</p> <p>If pus is present it can be drawn up in a sterile syringe and transferred to a sterile container. Send as large a quantity as is available.</p> <p>Take any wound swabs prior to cleaning procedure</p>	<p>It is preferable to send pus, if it is present, rather than a swab to aid identification of the micro-organism.</p> <p>For accurate diagnosis.</p>

POLICY FOR THE COLLECTION OF SPECIMENS

	ACTION	RATIONALE
	It is extremely important to label the wound swab accurately and fill in as much information as possible in the microbiology request form.	To help the laboratory predict the type of micro organisms.
2.1.6	Other Swabs	
	Nose	
	Moisten a swab in transport medium or some sterile saline/ sterile water and then rub inside the anterior nares of both nostrils.	To improve the efficiency of sampling and to detect carriage of potential pathogenic bacteria e.g. MRSA.
	Throat	
	Depress the tongue and gently rub a swab over the pillars of the follicles. Avoid touching other parts of the mouth.	To ensure maximum visibility To prevent contamination with other bacteria.
	Groin	
	Moisten a swab in transport medium or some sterile saline/sterile water and then swab both groin areas.	To improve the efficiency of sampling.

POLICY FOR THE COLLECTION OF SPECIMENS

	ACTION	RATIONALE
2.1.7	Virus	
	Swabs for the detection of virus in skin lesions should be broken off into a phial of special transport medium.	To enable accurate detection.
2.1.8	Blood Culture Specimens	
	See policy for taking blood culture specimens (policy manual, section 2.10)	
2.1.9	Blood Samples	
	<p>If patient known or suspected to be infected with blood borne viruses e.g., Hepatitis B, HIV:-</p> <p>a) Circle 'Y' on the form - has the patient been exposed to blood borne pathogens?</p>	To alert laboratory staff of health and safety requirements.
2.1.10	IV Cannulae / IV Catheter Tips	
	Use aseptic technique, clean site before removal, cut last 2.5 cm of cannula off with sterile scissors and place in appropriate sterile container.	To avoid contamination of sample by skin flora.

NB

For microbiological samples please indicate on the form whether the patient has recently (within last 6 weeks) returned from foreign travel and/or has a pyrexia of unknown origin.

POLICY FOR THE COLLECTION OF SPECIMENS

Reference:

Department of Health Revised Edition (2007) saving Lives Reducing Infection clean and safe care.

National Patient Safety Agency Newslines (2004) - **NPSA acts to minimise mismatching of care.** September edition

Royal Marsden Manual of clinical Nursing Procedures Sixth edition.

South Manchester Pathology 'Pathways' Newsletter (2005) – **Labelling Your Specimens Correctly Matters.** Issue 11

POLICY FOR THE TRANSPORT OF MICROBIOLOGICAL SPECIMENS

All specimens must be safely contained and transported from the patient to the laboratory.

ACTION	RATIONALE
<p>Designated trays or boxes to transport specimens must be:</p> <ul style="list-style-type: none"> • Metal or plastic with fastenable lids • Carried upright, or individually enclosed in self sealing plastic bags which must not be reused 	<p>To prevent spillage and allow cleaning. To prevent spillage or contamination.</p>
<p>Transmission of specimens by post is governed by Post Office regulations which must be observed. Briefly, specimens to be sent by post must be:</p> <ul style="list-style-type: none"> • In a sealed container • Surrounded by sufficient absorbent packing material • Sealed in a plastic bag and placed in an approved outer container • The package must be clearly marked 'Fragile with Care – Pathological Specimen' and sent by 1st class letter post. <p>Specimens sent by public transport should be packed as if they were to be posted. (Local bylaws may prohibit transmission of specimens or cultures by public transport).</p>	<p>To prevent spillage and contamination.</p> <p>To take up any leakage in the event of damage during transit.</p>

Further advice on transmission of specimens by post can be obtained by contacting the microbiology laboratory.

POLICY FOR THE TRANSPORT OF MICROBIOLOGICAL SPECIMENS

References:

Philpott-Howard, J. and Casewell, M. (1994) Hospital Infection Control – Policies and Practical Polycys. W.B. Saunders: London

Wilson, J. (1999), Infection Control in Clinical Practice. London: Balliere Tindall

POLICIES FOR FOOD HANDLING & HYGIENE

	ACTION	RATIONALE
2.3.1	<p>Food Handling/Serving Patients Meals</p> <p>Wash and dry hands thoroughly before handling/serving food or drinks.</p> <p>Put on clean, disposable green apron.</p> <p>Any member of staff or patient suffering from diarrhoea and vomiting, skin infections or sore throats, must not prepare, cook or serve food.</p>	<p>To prevent contamination of food and prevent cross infection.</p>
2.3.2	<p>Ward Fridges</p> <p>Record temperature of fridge daily (Sodexo staff).</p> <p>Temperature to be maintained below 5°C. Any food items that are stored in fridge should be covered and labelled with the date and patient's name. Contents should be checked daily and food discarded after 24 hours unless a manufacturer's seal is unbroken and the use by date is valid.</p> <p>Ice cream should not be stored in the refrigerator.</p> <p>The ward fridge needs to be cleaned weekly - switch off the machine, remove contents and wipe out using neutral general-purpose detergent. Blood samples or specimens must NOT be stored in the food refrigerator.</p>	<p>To prevent contamination of food. HSG (96) 20.</p>

POLICIES FOR FOOD HANDLING & HYGIENE

	ACTION	RATIONALE
2.3.3	<p>Klix Machines</p> <p>The cup holders must be washed after each use.</p> <p>The water tank must be emptied and cleaned weekly or when an interruption of the electrical supply (including accidental switch off) for more than 5 hours occurs</p> <p>The trolley must be cleaned daily and as spillages occur.</p>	<p>To prevent contamination of food/drinks and prevent cross infection.</p>
2.3.4	<p>Crockery/Cutlery Washing</p> <p>Chipped or cracked crockery should be discarded.</p> <p>All crockery and cutlery used by patients must be washed in a dishwasher.</p> <p>Hand washing of crockery and cutlery must be in hot water with detergent, rinsed in hot water and then dried with disposable paper towel. Protective rubber gloves must be worn.</p> <p>Disposable cups, plates and cutlery are NOT required for patients being barrier nursed unless advised by the Infection Prevention and Control Nurse.</p> <p>Cutlery/Crockery from barrier rooms should be removed after use and washed/dried as for all patients.</p>	<p>To prevent contamination of food/drinks and prevent cross infection.</p> <p>Cloth towels could re-contaminate cleaned crockery and cutlery.</p>

POLICIES FOR FOOD HANDLING & HYGIENE

	ACTION	RATIONALE
2.3.5	<p>Food Brought in by Patients/Visitors</p> <p>Visitors and patients should be discouraged from bringing food onto the ward.</p> <p>If brought in, food must be wrapped/labelled with the patients name; date received and must not be shared with other patients.</p> <p>If perishable it must be stored in the ward refrigerator, but not for longer than 24 hours (unless in a manufacturers sealed container with a use by date, e.g. yoghurt).</p>	<p>Food brought in from outside is an unknown quantity particularly food that may have been prepared sometime earlier and/or may require re-heating.</p>
2.3.6	<p>Microwaves</p> <p>Microwaves must not be used to re-heat food sent to the ward/department from the kitchen.</p> <p>In some situations microwaves may be used to heat food for consumption by patients. ADVICE MUST BE SOUGHT FROM THE CATERING MANAGER.</p> <p>Arrangements must be made by the departmental manager for cleaning the oven regularly.</p> <p>Staff should be trained and printed instructions must be provided for operation information, e.g. cooking times and safety instructions.</p>	<p>To ensure staff safety.</p> <p>Reduce the risk of food poisoning.</p>

POLICIES FOR FOOD HANDLING & HYGIENE

	ACTION	RATIONALE
2.3.7	<p>Icemakers</p> <p>Ice from these machines must only be used for:</p> <ol style="list-style-type: none"> 1. Cooling equipment 2. Cooling specimens 3. Topical application to intact skin areas <p>MUST NOT be used for patient consumption.</p> <p>Daily care</p> <ul style="list-style-type: none"> • Hands must be washed or decontaminated before ice is collected. • No items must be stored in the ice collecting reservoir. • The collection scoop must be washed and dried daily • The collection "device" must be stored outside the reservoir when not in use. 	<p>To prevent the contamination of ice from ice making machines in accordance with MDD Hazard Notice (93) 42.</p>
	<p>Weekly care</p> <ul style="list-style-type: none"> • Switch off the machine. Remove and discard all the ice cubes. • Clean the ice collecting reservoir weekly using neutral detergent and disposable cloth. Rinse with fresh water and then dry. • Keep a signed record of this weekly cleaning. <p>Maintenance and servicing</p> <p>The Estates department have set up a planned maintenance schedule for these machines, in accordance with manufacturer's recommendations, with W.S. Atkins. W.S. Atkins will keep appropriate services records.</p>	

References

Ayliffe, G.A.J., Fraise, A.P., Geddes, A.M. and Mitchell, K. (2000). Control of Hospital Infection: A practical handbook. 4th Edition. London: Arnold.

Department of Health (1996), Management of Food Hygiene and Food Services in the NHS – HSG (96) 20

Wilson, J. (1999), Infection Control in Clinical Practice. London: Balliere Tindall

POLICY FOR LINEN

	ACTION	RATIONALE
2.4.1	<p>Wear personal protective equipment (PPE) when handling used linen</p> <p>Used linen must be placed <u>directly</u> into linen bag (on holder/carrier) at point of use.</p> <p>Used linen must NOT be dropped on floor or carried next to uniform.</p>	<p>Prevents contamination of front of uniform/hands</p> <p>The floor is NOT usually implicated in cross infection unless items are dropped and retrieved from the floor.</p>
2.4.2	<p>Linen used with 'infected' patients, being barrier nursed in side rooms or on main ward areas must be placed directly into pink water-soluble bags with tape tied securely, prior to placing in cloth linen bag for transporting to the laundry.</p>	<p>Provides protection for laundry workers and reduces cross infection.</p>
2.4.3	<p>Linen bags should be checked before use for rips and tears.</p> <p>Linen bags must not be filled more than 3/4 full before being sealed.</p>	<p>Torn or overfilled bags may spill their contents and become a hazard for portering staff.</p>
2.4.4	<p>Clean linen items that are found to be 'unusable' on return from the laundry - due to tears or unsightly stains should be put in the orange linen bag provided by the laundry and returned.</p>	<p>Provides quality control measure for service from laundry.</p>

**POLICY FOR PATIENTS/VISITORS
PROVISION OF LINEN**

(check) Whenever possible patients should be encouraged to bring into hospital their own nightwear and towels for their personal use. Items of nightwear/towels can be taken home and washed in the usual way according to manufacturer's recommendations.

Sometimes items of personal laundry may become soiled or contaminated. In such circumstances these items of laundry will be placed into a clear plastic bag and left in the patient's locker for visitors/relatives to collect. Such items may have been rinsed through by the nursing staff to remove heavy soiling. These items of laundry must be washed separately in a washing machine on the highest temperature recommended according to manufacturer's instructions.

The infection prevention and control team recommends that in the rare and unusual circumstances of patient's linen becoming grossly contaminated or soiled that such items are sent for incineration. **HOWEVER, PERMISSION FROM THE PATIENT/NEXT OF KIN WILL BE SOUGHT PRIOR TO SUCH ACTION BEING TAKEN.**

In those circumstances, where patients are unable to provide their own nightwear and towels the nursing staff will provide these items.

GUIDELINES FOR THE USE OF LINEN IN WARD/DEPARTMENT AREAS

Please note these guidelines should be used in conjunction with the Trust infection prevention and control policy for linen (Trust infection control policy manual section 2).

ACTION	RATIONALE
Beds must be made up with clean fresh linen for each new admission.	To reduce the risk of cross infection.
Beds that have been prepared for a new admission must not be covered with a white sheet between discharge/admission of patients.	Covering sheet may become contaminated/wet increasing the risk of cross infection.
Beds must be remade daily, particularly for patients who spend a lot of time in bed.	Skin scales shear off into bed linen and may be a source of cross contamination.
Sheets do not need to be routinely changed daily. Sheets/pillowcases/blankets/counterpanes should be changed when visibly soiled for patients who do not have MRSA.	Changing bed linen is time consuming and expensive.
Sheets and pillowcases for patients with MRSA must be changed daily.	To reduce risks of cross infection.
Items of clean/dirty laundry must not be used to mop up spillages. Paper towel roll must be used instead and follow the management of spillages policy (see policy manual, section 4.7).	To reduce risk of cross infection. To reduce the cost of laundry.
Patients should be encouraged to bring their own nightwear and towels into hospital.	

GUIDELINES FOR THE USE OF LINEN IN WARD/DEPARTMENT AREAS

ACTION	RATIONALE
<p>Patients own soiled laundry should be rinsed through, placed in a clear plastic bag and left in the patient's locker for relatives to take home and launder.</p>	<p>Individual patient laundry cannot be processed through the hospital laundry.</p> <p>Domestic washing machines are not recommended in the clinical area. Infection prevention and control policy manual guidelines for domestic washing machines in clinical areas (section 2).</p>

POLICY FOR THE DECONTAMINATION OF PILLOWS

ACTION	RATIONALE
Pillows provided by the Trust must be covered with a sealed intact wipeable outer covering.	To reduce the risk of cross infection.
Between each patient use, pillows must be cleaned. Pillows may be disinfected (for cleaning and disinfection of pillows please see policy for decontamination of foam mattresses (section 4.2)).	To reduce the risk of cross infection.
Pillows that are not covered in an intact, sealed wipeable cover must be discarded in a yellow clinical waste bag and not returned to laundry.	Pillows cannot be re-covered and are unsuitable for laundering.

GUIDELINES FOR DOMESTIC WASHING MACHINES IN CLINICAL AREAS

Domestic Washing Machines in Clinical Areas

Recommendations for Use

- Domestic washing machines must not be used for cleaning items of equipment/clothing that are used by patients for example hoist slings
- Patients may use domestic machines for washing personal laundry only
- Each load must be from separate patients
- The ward manager is responsible for ensuring that equipment is regularly maintained
- Before purchasing a domestic washing machine to be used in the clinical area consult a member of the Infection Prevention and Control team

References

Ayliffe, G.A.J., Fraise, A.P., Geddes, A.M. and Mitchell, K. (2000). Control of Hospital Infection: A practical handbook. 4th Edition. London: Arnold.

Department of Health (1995), Hospital Laundry Arrangements for Used and Infected Linen—HSG (95) 18

Wilson, J. (1999), Infection Control in Clinical Practice. London: Balliere Tindall

POLICY FOR RETURNING USED INSTRUMENTS AND EQUIPMENT TO STERILE SUPPLIES PROVIDER (SSP) (Synergy)

ACTION	RATIONALE
Returning any instrument to SSP	
Instruments should be placed in blue plastic boxes provided from the SSP.	To protect staff in Sterile Supply Department. To reduce the handling of instruments by the SSP staff.
In theatre, instruments should be returned on the appropriate tray.	Instruments will be kept together for returning to the theatre and instruments on each tray can be traced back to individual trays.
Any 'special' instrument specific to a ward or department should be put in the blue plastic box. Do not try to label the item with tape etc. Note: The blue plastic boxes are marked with the unit/ward name.	'Sticky' labels or tape on instruments affects the cleaning and sterilisation process. Instruments can be returned to the appropriate ward or department.

It is no longer necessary to label trays or instruments as high risk. All instruments are to be treated the same.

The blue plastic boxes are washed by the SSP as part of reprocessing; they can if necessary be sterilised. The boxes can be obtained from the SSP on both sites.

The only instruments that will be treated differently will be instruments used on a patient known to have CJD or new variant CJD.

For guidance on how to deal with instruments used on a patient known to have CJD or new variant (vCJD) see policy manual section 5.9 and contact the Infection Prevention and Control Doctor or Infection Prevention and Control Nurse.

**POLICY FOR RETURNING USED INSTRUMENTS AND EQUIPMENT TO STERILE
SUPPLIES DEPARTMENT**

Reference

Institute of Sterile Services Management (2000) – **Standards and Practice - Standard 1** –
Handling, collection and transportation of soiled materials

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF SHORT-TERM INDWELLING URETHRAL CATHETERS

Background

There is consistent evidence that a significant number of hospital acquired infections are related to urinary catheterisation. The risk of infection is associated with the method and duration of catheterisation, the quality of catheter care and patient susceptibility. Between 20 to 30% of catheterised patients develop bacteriuria, of which 2 to 6% develop symptoms of urinary tract infection (UTI). The risk of acquiring bacteriuria is approximately 5% for each day of catheterisation. Of patients with a UTI, 1 to 4% develop bacteraemia and, of these, 13 to 30% patients die.

ACTION	RATIONALE
Indwelling catheters should be used on assessment of patient need. Where appropriate alternative they should be avoided and methods of management should be considered.	Urethral catheterisation is associated with a significant number of hospital acquired infections.
The patient's clinical need for continuing urinary catheterisation must be reviewed regularly and the catheter removed as soon as possible.	The longer the catheter is in place the higher the incidence of urinary tract infection.
Insert catheter label in patient's medical notes. Document catheter insertion and care.	Legal requirement. Allows accurate record keeping and provides data on duration of catheter use, type of catheter used, its maintenance and date of removal.
Select the smallest gauge catheter that will allow free urinary drainage. A catheter with a 10ml balloon should be used. Appropriate use of silver alloy catheters significantly reduces the incidence of asymptomatic bacteriuria . NB Urological patients may require larger gauge sizes and balloons.	To minimise urethral trauma, mucosal irritation and residual urine in the bladder, which all predispose to catheter associated infection.

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF SHORT-TERM INDWELLING URETHRAL CATHETERS

ACTION	RATIONALE
<p>Catheterisation is an aseptic procedure. Ensure hands are decontaminated using the correct technique (see section 1.1) and the correct PPE is used: sterile gloves and apron. This procedure should be undertaken by a trained / competent health professional.</p>	<p>To minimise risk of infection and ensure the procedure is undertaken correctly.</p>
<p>Use an appropriate lubricant / anaesthetic gel from a single use container.</p>	<p>To minimise trauma and infection.</p>
<p>Connect indwelling catheters to sterile closed urinary drainage system. Ensure the connection between the catheter and urinary drainage system is not broken except for “good” clinical reasons (e.g. changing the bag in line with the manufacturer’s recommendation.) Decontaminate hands using correct hand hygiene technique following the procedure.</p>	<p>Maintaining closed system of drainage is central to preventing catheter associated infections.</p>
<p><u>Ongoing care</u> Wash your hands and wear a new pair of clean, non-sterile gloves before manipulating a patient’s catheter and wash your hands after removing the gloves.</p>	<p>Hand washing is the most effective measure in reducing cross infection. Gloves will reduce contamination of hands.</p>
<p>Obtain urine samples from the sampling port using an aseptic technique (see section 2.1 on sampling).</p>	<p>Does not break closed system of drainage.</p>
<p>Position urinary drainage bags below the level of the bladder on a stand that prevents contact with the floor.</p>	<p>Reflux / backflow of urine is associated with infection.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF SHORT-TERM INDWELLING URETHRAL CATHETERS

ACTION	RATIONALE
<p>Leg bags should be attached appropriately and securely.</p> <p>Catheter valves are an alternative to a drainage bag and could be appropriate after assessment for use by certain patients.</p>	<p>To ensure closed system of drainage is maintained in order to prevent catheter associated infections.</p>
<p>Empty the urinary drainage bag frequently enough to maintain urine flow and prevent reflux. Wash your hands according to correct hand hygiene procedure (see section 1.1), put on clean, non-sterile gloves and disposable apron. Use a separate and clean container for each patient and avoid contact between the urinary drainage tap and container.</p>	<p>To reduce the risk of cross infection.</p>
<p>Do not add antiseptic or anti microbial solutions into urinary drainage bag.</p>	<p>There is no demonstrated reduction in the incidence of bacteriuria following the addition of chlorhexidine or hydrogen peroxide to urinary drainage bags.</p>
<p>Routine personal hygiene is all that is necessary to maintain meatal hygiene.</p>	<p>There is no evidence of reduction in bacteriuria when using antiseptic / antimicrobial agents for meatal cleansing compared with routine soap and water washing, bathing or showering.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF SHORT-TERM INDWELLING URETHRAL CATHETERS

ACTION	RATIONALE
Bladder instillation of antiseptics or anti microbials does not prevent catheter-associated infections.	There is no evidence that antiseptic and / or anti microbials for bladder instillation prevent infection.

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF SHORT-TERM INDWELLING URETHRAL CATHETERS

References

Banfield, K. (2000). In J. McCulloch (ed.) Infection Control: Science, management and practice. London: Whurr

Department of Health. (2007) Saving lives: reducing infection, delivering clean and safe care.

Pellowe CN, Pratt RJ, Loveday HP, Harper P, Robinson N, Jones SRLJ, (2004) Updating the evidence- based guidelines for preventing healthcare-associated infections in NHS hospitals in England: a report with recommendations. British Journal of Infection Control. Vol 5 No 6

The Royal Marsden Hospital Manual of Clinical Policies, Fifth Edition, p. 600 to 614.

Wilson, J. (1999), Infection Control in Clinical Practice. London: Balliere Tindall

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

These guidelines focus on providing evidence based recommendations for preventing hospital acquired infections associated with the use of central venous catheters (CVCs) in patients who are 4 years of age or older.

They are intended as a guide and can be adapted for local use provided practice is safe and evidence based. More detailed information and policies are available in the Marsden Manual (The Royal Marsden NHS Trust – Manual of Clinical Nursing Policys).

Please note: CR.BSI = catheter related blood stream infection
 CR Infection = catheter related infection
 TPN = total parenteral nutrition
 CVC = central venous catheter
 PICC = peripherally inserted central catheter

ACTION	RATIONALE
Selection of Catheter Type	
Use a single lumen catheter unless multiple ports are essential for the management of the patient.	Multi-lumen catheters are associated with a higher risk of infection than single lumen catheters.
If total parenteral nutrition (TPN) is being administered, use one lumen exclusively for that purpose. (see UHSM 'A Practical Guide to Enteral and Parenteral Nutrition' for more information).	<p>TPN is very readily contaminated and would easily support the growth of micro-organisms due to its high nutrient content.</p> <p>Other drugs/solutions may react adversely with the TPN fluid if given via the same lumen.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
<p>Use a tunnelled catheter or an implantable vascular access device (e.g. Port-a-Cath) for patients in whom long term (>30 days) vascular access is anticipated.</p>	<p>These devices are associated with a lower rate of infection. (Totally implantable devices have the lowest reported rate of infection compared to either tunnelled or non-tunnelled CVC).</p>
<p>Consider the use of an antimicrobial impregnated CVC for adult patients who require short term (<10 days) central venous catheterisation and who are at high risk for catheter related blood stream infection (CR-BSI).</p> <p>(A high risk patient in this analysis refers to patients in the Intensive Care Unit and those receiving TPN).</p>	<p>Antimicrobial impregnated/coated CVC can favourably influence the incidence of catheter colonisation and CR-BSI in some situations. (<i>epic</i> Guidelines, 2004)</p>
<p>Selection of Catheter Insertion Site</p>	
<p>In selecting an appropriate insertion site, assess the risks for infection against the risks of mechanical complications. Consider the following:-</p> <ul style="list-style-type: none"> i) Patient specific factors (e.g. pre-existing catheters, mobility, anatomic deformity, bleeding, diathesis, ventilation modes) ii) Relative risk of mechanical complications (e.g. bleeding diathesis, pneumothorax, thrombosis, air embolism) iii) The risk of infection (at entry site, tunnel, CR-BSI and endocarditis) 	<p>Infection is the most commonly reported complication associated with intravenous therapy.</p> <p>CR infections are associated with increased morbidity, prolonged hospitalisation and increased medical costs.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
<p>Unless medically contra-indicated, use the subclavian in preference to the jugular, in preference to the femoral site, for non tunnelled catheter placement.</p>	<p>The subclavian veins generally show the lowest risk of infection.</p> <p>Colonisation of the catheter is most frequent in femoral placements.</p>
<p>Consider the use of peripherally inserted catheters (PICC) as an alternative to subclavian or jugular vein catheterisation.</p>	<p>PICCs are inserted into the superior vena cava by way of the cephalic and basilar veins of the antecubital space. They are less expensive, associated with fewer mechanical complications and easier to maintain than short peripheral venous catheters.</p> <p>PICCs are also associated with a lower rate of infection than that associated with other non-tunnelled CVCs.</p>
<p>Technique During Catheter Insertion</p>	
<p>Decontaminate hands using correct hand hygiene procedure (see section 1.1). For planned catheter insertions use maximal sterile barrier precautions. This involves wearing sterile gloves and gown and the use of a large sterile drape during insertion. Eye/face protection is indicated if there is a risk of splashing with blood or body fluids.</p> <p>Consider early replacement of a catheter inserted under sub-optimal conditions, for example in an emergency.</p>	<p>Central venous catheterisation carries a significantly greater risk of infection than peripheral venous catheterisation.</p> <p>The risk of infection depends largely on adherence to maximal sterile barrier precautions during catheter insertion rather than the environment in which it is inserted.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

CVC and PICC insertion, manipulation and removal will be undertaken by trained and competent staff using a strict aseptic non- touch technique.

ACTION	RATIONALE
Preparation of Site	
<p>The patient's skin, if not visibly clean, should be cleaned with soap and water.</p> <p>The skin should then be disinfected with 2% chlorhexidine in 70% alcohol eg chloroprepp, ensuring the patient has no previous sensitivity reaction to the solution used. If patient has sensitivity, single use povidone iodine should be used.</p>	<p>Skin cleansing/antiseptis of the insertion site is one of the most important measures for preventing CR- infection. An alcoholic solution of chlorhexidine combines the benefits of rapid action and excellent residual activity.</p>
<p>Allow the antiseptic to dry before inserting the catheter.</p> <p>Wipe off any excess and do not allow it to pool.</p>	<p>For maximum efficacy and to prevent unnecessary pain or infusion of the solution used.</p> <p>Also to prevent potential damage to the catheter (may be incompatible with antiseptic solution) see manufacturer's recommendations or risk of fire/burns.</p>
<p>Shaving of the skin should be avoided, hair should be clipped.</p>	<p>Clipping is preferable to shaving as it reduces the microscopic abrasions that disrupt the skin integrity.</p>
<p>Do not apply organic solvents e.g. acetone to the skin before catheter insertion.</p>	<p>There is no evidence to show that these agents either confer additional protection against skin colonisation or significantly decrease the incidence of CR- infection. Additionally, their use could greatly increase local inflammation and patient discomfort.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
<p>Do not routinely apply antimicrobial ointment to the catheter placement site prior to insertion.</p> <p>Use a sterile transparent dressing to cover catheter site.</p>	<p>Reported efficacy in preventing CR-infections by this practice yielded contradictory findings. Polyantibiotic ointments that are not fungicidal could significantly increase the rate of colonisation of the catheter by Candida species.</p> <p>To allow observation of the site.</p>
<p>Take sharps bin to patient's side and dispose of sharps immediately.</p>	<p>To prevent incidence of needlestick injury.</p>
<p>General Catheter Site Care</p>	
<p>Keep the number of line manipulations to a minimum.</p> <p>Decontaminate hands before touching intravenous lines.</p> <p>Use an 'aseptic non-touch technique' (ANTT).</p> <p>Ensure equipment marked single use is only used once.</p> <p>Before accessing the system, disinfect the external surfaces of the catheter hub and connection ports using a 2% chlorhexidine in 70% alcohol wipe eg sanicloth unless contraindicated by the manufacturer.</p>	<p>To reduce the risk of any part becoming contaminated from external sources.</p> <p>Contamination of the catheter hub is an important contributor to intraluminal microbial colonisation of catheters. Therefore, hubs and sampling ports should be disinfected before they are accessed. However some catheter materials e.g. silicone may be incompatible with alcohol and the manufacturers recommendations must be complied with.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
Dressing	
<p>Use either a sterile gauze or transparent dressing to cover the catheter site.</p> <p>After 21 days tunnelled CVCs do not necessarily require a dressing if the site is dry and clean.</p>	<p>The dressing prevents trauma, secures the catheter and prevents extrinsic contamination.</p> <p>By 21 days the tissues should have fibrosed around the cuff.</p>
<p>The transparent dressing used should be permeable to water vapour and complete occlusion must be obtained.</p> <p>Dressings should always be changed when they become soiled, loosened, damp or the insertion site can not be viewed.</p>	<p>If not permeable to water vapour these dressings can trap moisture on the skin and provide an ideal environment for the rapid growth of local microflora.</p>
<p>When cleaning occurs it should be carried out using 2% chlorhexidine in 70% alcohol.</p> <p>Loose blood, exudate or other debris should be gently removed in the same manner.</p> <p>Hands should be washed prior to and after this is carried out using correct technique (see section 1.1).</p>	<p>To remove foreign bodies or debris.</p> <p>Antiseptics should not be used indiscriminately as they may impair wound healing and encourage resistant organisms.</p> <p>A 'Single-swipe' motion is used to avoid transferring bacteria to the exit site.</p>
<p>The exit site should be allowed to air dry or may be dried gently using sterile gauze before applying a fresh dressing.</p>	<p>To discourage microbial growth at the exit site.</p>
<p>Do not use antimicrobial ointment to CVC insertion site as part of routine catheter care.</p>	<p>This practice appears to have no effect on CR infection rates.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
<p>Flushing</p>	
<p>It is important at all times for the patency of the device to be maintained.</p> <p>If the device is not in continuous use via an infusion, intermittent flushing will be required. Prior to flushing the hub/port should be cleaned with 2% chlorhexidine in 70% alcohol.</p> <p>Hands should be decontaminated using the correct technique (see section 1) prior to and following the procedure.</p>	<p>Blockage predisposes to device damage, infection, inconvenience to patients and disruption to drug delivery.</p>
<p>1. Solution to be used for flushing: 0.9% Sodium Chloride solution is used to flush the lines before, after or between other infusions – use 5-10mls. (Flushing with heparin at doses of 10iu/ml is no more beneficial than flushing with normal saline)</p>	<p>To flush the internal diameter of the device.</p>
<p>Heparinised saline is used to flush the lines after flushing with saline, prior to capping off.</p> <p>The concentration of heparin required should be defined locally and prescribed by a Doctor.</p>	<p>To prevent the build up of fibrin and clots and maintain patency of catheter.</p>
<p>2. Syringe to be used <i>Only 10ml syringes or larger should be used when attempting the first flush or to unblock a catheter.</i></p> <p><i>If there is no pressure or occlusion, it is then safe to use a small syringe.</i></p>	<p>Smaller syringes appear to create a greater pressure of pounds per square inch which could result in rupture of the catheter and/or clots being forced into the venous system.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
<p>3. Technique</p> <p><i>For flushing with heparin solutions it is important to use a pulsatile (push-pause) method, irrespective of the amount of solution used.</i></p>	<p>To create a turbulent flow and maintain the patency of the line.</p>
<p>Administer the solution 1ml at a time and complete the procedure using a positive pressure technique.</p> <p>This is accomplished by clamping the catheter or extension set while flushing before the syringe completely empties.</p> <p>Alternatively, pressure can be maintained on the plunger of the syringe while withdrawing the syringe from the injection cap.</p>	<p>The positive pressure technique also helps prevent the backflow of blood into the line.</p> <p>Prevents reflux of blood into the tip of the device and helps prevent clotting and blockage.</p>
<p>4. Frequency</p> <ul style="list-style-type: none"> • Always follow manufacturers guidance • PICCs non tunnelled and tunnelled CVCs should be flushed at least once per week • Implanted catheters should be flushed at least monthly 	<p>Different makes and types of CVCs have different requirements for frequency of flushing.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
Replacement Strategies	
<p>If there is no clinical indication or sign of infection do not routinely replace non-tunnelled CVCs.</p> <p>If a catheter is malfunctioning or has a blocked lumen use guide wire assisted catheter exchange to replace it, so long as there is no evidence of infection at the site or proven CR – BSI.</p> <p>If CR infection is suspected, but there is no evidence of infection at the catheter site, remove the existing catheter and insert a new catheter over a guide wire. (Provided there are no medical contraindications to replacement).</p> <p>If patients have a CR infection and/or there is evidence of infection at the catheter site, the catheter should be removed and, if still required, a new catheter inserted at a different site.</p>	<p>The daily risk of infection remains constant, routine replacement does not reduce the rate of catheter colonisation or CR – BSI.</p> <p>This is associated with less discomfort and a significantly lower rate of mechanical complications than those percutaneously inserted at a new site.</p> <p>If there is no evidence of infection at the catheter site there is less risk associated with this method than using a new site.</p>
<p>Renew all tubing when the vascular device is replaced.</p>	<p>To avoid contamination of the new line.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
IV Giving Sets	
<p>If used for blood, blood products or lipid emulsions the giving set should be renewed at the end of the infusion or within 24 hours of initiating the infusion.</p> <p>If used for clear fluids they should be replaced no more frequently than at 72 hour intervals unless clinically indicated.</p> <p>If used for TPN – replace after 24hours (or 72 hours if no lipid)</p>	<p>Blood, blood products and lipid emulsions are more likely to support microbial growth if contaminated so more frequent replacement of IV tubing is required.</p>
<p>IV fluids should be renewed every 24 hours and whenever the administration set and or catheter is changed. Giving sets should not be routinely run through in advance.</p>	<p>To prevent the build up of microbial growth.</p>
3 way taps and needle-less connections	
<ul style="list-style-type: none"> • Avoid using 3 way taps if possible • If 3 way taps are used they should be changed when the giving set is changed • The use of needle-less systems to prevent CR – infection is not recommended 	<ul style="list-style-type: none"> • 3 way taps increase the risk of infection • 3 way taps readily harbour bacteria which can quickly increase in number over time <p>There is no conclusive evidence so far to support the case that needle-less intravenous devices reduce the incidence of infection</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

ACTION	RATIONALE
Antibiotic Prophylaxis	
Do not administer systemic antimicrobials routinely before insertion or during use of a CVC to prevent catheter colonisation or bloodstream infection. Individuals can discuss exceptions to this with a microbiologist.	The evidence for this is inconclusive. There is also concern that such prophylaxis may select for resistant microorganisms.
Removal	
Upon removal of a non-implantable central venous catheter, carefully cut off the tip (approximately 5cm) of the catheter using sterile scissors and place it in a sterile container for microbiological investigation.	To detect any infection related to the catheter, and thus assist the provision of any necessary treatment.

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND THE MAINTENANCE OF CENTRAL VENOUS CATHETERS

action	RATIONALE
Documentation	
<p>Accurate records of IV access and management must be maintained for each patient.</p> <p>The following should always be recorded:</p> <p>Date of device insertion Type of device inserted Type of insertion (e.g. <i>new site, guide wire</i>) Site of insertion Name of person inserting the device Date of device removal Name of person removing the device Reason for removal</p> <p>Culture Results</p> <p>Daily inspection of the insertion site for:</p> <ul style="list-style-type: none"> Patency Leakage/bleeding Signs of infection Dressing changes 	<p>For delivery of a high standard of care and accountability</p> <p>Accurate documentation essential</p>

**POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH THE INSERTION AND
THE MAINTENANCE OF CENTRAL VENOUS CATHETERS**

References

Department of Health (DOH) (2003). *Winning Ways: Working together to reduce Healthcare Associated Infection in England*. London: DOH Publications.

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POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL INTRAVENOUS CATHETERS

These guidelines are intended as a guide and can be adapted for local use provided practice is safe and evidence based.

More detailed information and policies are available in the Marsden Manual (The Royal Marsden NHS Trust – Manual of Clinical Nursing Policys).

ACTION	RATIONALE
Selection of Device	
Select the correct cannula size for the purpose and length of infusion.	Large gauge cannulae increase the incidence of vascular complications.
The material of the device should be radio opaque.	To allow for radiographic visualisation in the event of catheter embolus.
Choose a cannula made of teflon or polyurethane.	They are associated with fewer infectious complications than cannulae made of PVC or polyethylene.
Consider the use of central venous catheters when the duration of IV therapy is expected to be for a prolonged period.	Midline catheters are associated with reduced risk of infection and can be left in longer than short peripheral catheters.

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL INTRAVENOUS CATHETERS

ACTION	RATIONALE
Selection of Insertion Site	
Wash hands and/or use an alcohol hand rub using correct hand washing technique (see section 1.1) before and after palpating the skin.	To maintain asepsis.
Unless medically contra-indicated:- <ul style="list-style-type: none"> • Select the upper extremities as opposed to the lower extremities. • In adults, select hand veins as opposed to the upper arm or wrist veins. 	The hand veins in the upper extremities are associated with a lower risk of phlebitis.
Preparation of Site	
The patient's skin, if not visibly clean, should be washed with soap and water. The skin should then be thoroughly cleaned using 2% chlorhexidine in 70% alcohol e.g. chloroprepp sepp.	Skin cleansing/antiseptis of the insertion site is one of the most important measures for preventing infection. A cursory wipe with an alcohol swab disturbs the skin flora and does more harm than no cleaning at all.
Allow to air dry for a minimum of 30 seconds.	This allows time for the alcohol to destroy the bacteria and the skin to dry. If alcohol is still present on the skin when the catheter is inserted it will sting.

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL INTRAVENOUS CATHETERS

ACTION	RATIONALE
Once the skin is disinfected it must not be touched or repalpated. If it is necessary to repalpate, then the cleaning regimen should be repeated.	To maintain asepsis.
If hair removal is necessary use clippers with disposable blades, as opposed to shaving.	Shaving the area prior to cannulation may cause microabrasions and result in microbial growth.
Catheter Insertion	
The health care worker should wear clean non-sterile latex/nitrile gloves and an apron for insertion and use an ANTT technique (see section 2.9)	To help protect the health care worker from skin contamination with blood.
Take a sharps bin to the patient's side and dispose of any sharps immediately.	To prevent incidence of needle stick injury.
Once sited, the cannula should be flushed using 0.9% sodium chloride.	This will maintain patency without increasing the risk of phlebitis.

**POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL
 INTRAVENOUS CATHETERS**

ACTION	RATIONALE
Catheter and Catheter Care Site Care	
General Care	
<p>Keep the number of line manipulations to a minimum. Decontaminate hands fully before touching intravenous lines.</p> <p>Use an aseptic non-touch technique.</p> <p>Ensure equipment marked 'single use' is only used once.</p>	<p>To reduce the risk of any part becoming contaminated from external sources.</p>
<p>Observe at least daily to ensure the device has not become dislodged, and for signs of infection and extravasation.</p> <p>Signs of infection include:</p> <p>Erythema, tracking oedema, heat, pain and purulent drainage.</p>	<p>To detect problems at the earliest opportunity.</p> <p>If the device appears infected it should be removed soon as possible.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL INTRAVENOUS CATHETERS

ACTION	RATIONALE
Dressing	
Use a sterile semi-permeable transparent dressing to cover the catheter site.	The dressing prevents trauma, secures the catheter and prevents extrinsic contamination. Allows observation of catheter site to be undertaken.
If a transparent dressing is used it must be permeable to water vapour and complete occlusion must be obtained (IV 3,000 or Tegaderm as recommended by the Ward Consumables Group). Dressings should always be changed when they become soiled, loosened, damp or the insertion site can not be viewed.	If not permeable to water vapour these dressings can trap moisture on the skin and provide an ideal environment for the rapid growth of local microflora.
When cleaning occurs it should be carried out using sterile gauze and sterile 0.9% saline with an outward 'single-swipe' motion per swab. Loose blood, exudate or other debris should be gently removed in the same manner.	To remove foreign bodies or debris. Antiseptics should not be used indiscriminately as they may impair wound healing and encourage resistant organisms. A 'Single-swipe' motion is used to avoid transferring bacteria to the exit site.
The exit site should be allowed to air dry or may be dried gently using sterile gauze before applying a fresh dressing.	To discourage microbial growth at the exit site.
Do not use antimicrobial ointment on insertion site as part of routine catheter care.	This practice appears to have no effect on infection rates.

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL INTRAVENOUS CATHETERS

ACTION	RATIONALE
Flushing	
<p>It is important at all times for the patency of the device to be maintained. Always check for patency before each use.</p> <p>If the device is not in continuous use via an infusion, intermittent flushing will be required (daily at least). Always decontaminate hands prior to and following this procedure using correct technique (see section 1.1) Clean hub/port with 2% chlorhexidine in 70% alcohol single use wipe prior to accessing device.</p>	<p>Blockage predisposes to device damage, infection, inconvenience to patients and disruption to drug delivery.</p> <p>To prevent contamination of the catheter hub and reduce microbial colonisation.</p>
<p>It is important at all times for the patency of the device to be maintained. Always check for patency before each use.</p> <p>If the device is not in continuous use via an infusion, intermittent flushing will be required (daily at least).</p>	<p>Blockage predisposes to device damage, infection, inconvenience to patients and disruption to drug delivery.</p>
<p>1. Solution to use 0.9% Sodium Chloride solution is used to flush the lines before, after or between other infusions – use 2-5mls.</p>	<p>To flush the internal diameter of the device.</p>
<p>2. Technique Use ANTT technique (see section 2.9) When flushing it is important to use a pulsatile (push-pause) method, irrespective of the amount of solution used. Only 10ml syringes or larger should be used.</p>	<p>To create a turbulent flow and maintain the patency of the line and prevent damage to the vessel.</p>
<p>Administer the solution 1ml at a time and complete the policy using a positive pressure technique.</p> <p>This is accomplished by clamping the catheter or extension set while flushing before the syringe completely empties.</p> <p>Alternatively, pressure can be maintained on the plunger of the syringe while withdrawing the syringe from the injection cap.</p>	<p>The positive pressure technique helps prevent the backflow of blood into the line.</p> <p>Prevents reflux of blood into the tip of the device and helps prevent clotting and blockage.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL INTRAVENOUS CATHETERS

ACTION	RATIONALE
Replacement Strategies and Removal	
Peripheral devices should be resited every 72 – 96 hours or earlier if indicated.	There is evidence to indicate that devices may remain in up to 96 hours with no significant complications.
If possible replace devices inserted under an emergency basis within 24 hours.	Devices inserted without sterile precautions are more likely to become infected.
Removal of IV devices should be an aseptic policy. The device should be removed carefully using a slow, steady movement and pressure should be applied for at least one minute.	To avoid contamination of the site on removal and prevent formation of haematoma and pain.
Check to ensure the complete device has been removed.	To ensure cannula integrity.
The site should be inspected and covered with a sterile dressing.	To ensure any bleeding has ceased and prevent entry of micro-organisms through the wound site.

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL INTRAVENOUS CATHETERS

ACTION	RATIONALE
IV Giving Sets	
<p>If used for blood, blood products or lipid emulsions the giving set should be renewed at the end of the infusion or within 24 hours of initiating the infusion.</p> <p>If used for clear fluids they should be replaced no more frequently than at 72 hour intervals unless clinically indicated.</p>	<p>Blood, blood products and lipid emulsions are more likely to support microbial growth if contaminated so more frequent replacement of IV tubing is required.</p>
<p>IV fluids should be renewed every 24 hours and whenever the administration set and or cannula is changed. Giving sets should not be routinely run through in advance.</p>	<p>To prevent the build up of microbial growth.</p>
3 way taps and needle-less connections	
<p>Avoid using 3 way taps if possible.</p> <p>If 3 way taps are used they should be changed when the giving set is changed if it is safe to do so.</p> <p>The use of needle-less systems to prevent infection is not recommended.</p>	<p>3 way taps increase the risk of infection.</p> <p>3 way taps readily harbour bacteria which can quickly increase in number over time.</p> <p>There is no conclusive evidence so far to support the case that needle-less intravenous devices reduce the incidence of infection.</p>

POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL INTRAVENOUS CATHETERS

ACTION	RATIONALE
<p>Documentation</p>	
<p>Accurate records of IV access and management must be maintained for each patient eg peripheral cannula observation tool/HII.</p> <p>The following should always be recorded:</p> <ul style="list-style-type: none"> Date of device insertion Type of device inserted Site of insertion Name of person inserting the device Date of device removal Name of person removing the device Reason for removal <p>Culture Results</p> <p>Daily inspection of the insertion site for:</p> <ul style="list-style-type: none"> Patency Leakage/bleeding Signs of infection Dressing changes 	<p>For delivery of a high standard of care and accountability</p> <p>Accurate documentation essential.</p>

**POLICY FOR PREVENTING INFECTIONS ASSOCIATED WITH PERIPHERAL
INTRAVENOUS CATHETERS**

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ANTT (ASEPTIC NON TOUCH TECHNIQUE) POLICY

Background

Asepsis is the prevention of microbial contamination of living tissue/fluid or sterile materials by excluding, removing or killing micro-organisms

The technique was researched and developed at Great Ormond Street Hospital and University College London Hospitals and has been adopted by many Trusts across the United Kingdom.

The use of ANTT aims to standardise aseptic practice across the trust.

ANTT is flexible and can be adapted to any procedure requiring an aseptic technique eg taking blood cultures, administering fluids through intravenous cannulae, urinary catheterisation and wound dressings.

Scope of the policy

This document is designed to instruct all Trust staff who undertakes clinical practice on the use of ANTT.

It will identify when ANTT should be used and will outline how ANTT can be adapted for any procedure requiring an aseptic technique.

Policy Statement

The corporate approach to the use of ANTT ensures that the Trust can offer assurances that it can achieve its duty of care for its patients through application of best practice.

It is a requirement that excellent standards of practice apply when undertaking aseptic technique during any procedure for all patients within the trust.

It is the responsibility of every member of staff who is involved in clinical practice to ensure that they are trained in ANTT and maintain their competency.

Using ANTT

There are 4 key principles in ANTT:

1. Always wash hands effectively (see diagram on next page)
2. Non touch technique is used at all times to protect key parts.
3. Touch non key parts with confidence.
4. Take appropriate infection control precautions.

ANTT (ASEPTIC NON TOUCH TECHNIQUE) POLICY

University Hospital of South Manchester **NHS**
NHS Foundation Trust

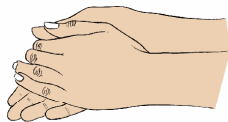
Hand hygiene

Hand hygiene, using a good technique, is the most effective method of preventing cross infection

Hand washing sequence

(Note that the number of “strokes” in each step is 5)

- 1** Wet hands under running water.



- 2** Apply soap, rub palm to palm.



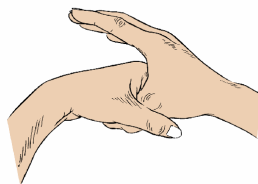
- 3** Rub right hand over back of left hand. Change hands and repeat.



- 4** Interlace the fingers to get soap between the fingers.



- 5** Rub right finger tips into palm of left hand. Change hands and repeat.



- 6** Rub right thumb with left hand. Change hands and repeat.



- 7** Rub left wrist with right hand. Change hands and repeat.

- 8** Rinse hands thoroughly under running water.

- 9** Dry hands thoroughly with paper towels.




Application of alcohol hand gel

(For hands that are not visibly dirty)


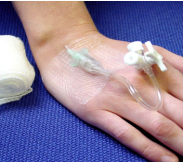
Apply the gel on dry hands as for step 2 and work through to step 7

ANTT (ASEPTIC NON TOUCH TECHNIQUE) POLICY




The following guideline describes the administration of an IV drug using ANTT, but it must be remembered that, as has been previously stated, ANTT can be adapted for any policy requiring an aseptic technique.

<p>1</p> 	<p>Wash hands with soap and water using correct hand hygiene procedure (see section 1.1), or apply alcohol gel if hands are clean. Clean aseptic field (tray). Whilst drying, gather equipment, drugs etc.</p>	
	<p>Action Choose aseptic field Clean field with a single use alcohol wipe. Allow surface to dry before use</p>	<p>Rationale A large, flat, aseptic field with high sides that can be easily cleaned is preferred, however alternatives may be utilised e.g. dressing trolley To establish a clean working surface Allows alcohol to become effective</p>
<p>2</p> 	<p>Clean hands with alcohol hand rub or soap & water.</p>	
	<p>Action Clean hands using correct hand hygiene technique with either alcohol hand rub or soap and water If soap and water are used, dry hands thoroughly with paper towels</p>	<p>Rationale Effective hand hygiene is vital to reduce the risk of contaminating key-parts/sites Bacteria can re establish quickly on moist hands. Pat-drying prevents skin damage</p>
<p>3</p> 	<p>Put on non sterile gloves.</p>	
	<p>Action Put on non-sterile gloves</p>	<p>Rationale Non-sterile gloves and a non-touch technique maintain asepsis of key-parts/sites</p>

ANTT (ASEPTIC NON TOUCH TECHNIQUE) POLICY

<p>4</p>		<p>Prepare drugs & equipment & protect key-parts at all times using a non-touch-technique.</p>	
		<p>Action Identify key-parts/sites and remove equipment from packaging carefully (without dropping onto tray or ripping packaging) Assemble equipment and arrange in an orderly manner in aseptic field Ensure key-parts are protected at all times (syringe tips covered with a needle etc.) Handle non key-parts with confidence Remove gloves and wash hand with soap and water/alcohol gel.</p>	<p>Rationale Prevent s contamination of key-part/sites during removal from packaging An orderly aseptic field decreases chance of contaminating key-parts. Exposed key-parts increases risk of contaminating key-parts. A non-touch technique protects key-parts/sites Alcohol gel may be used at this stage as hands will be washed with soap and water at the end of the procedure.</p>
<p>5</p>		<p>Prepare the patient & gain free access to the IV line.</p>	
		<p>Action Gain access to the IV line – eg remove clothing/obstructions to patients IV port.</p>	<p>Rationale Ensure IV access is patent and to avoid contamination via contact during procedure.</p>

ANTT (ASEPTIC NON TOUCH TECHNIQUE) POLICY

<p>6</p>		<p>Clean hands and re-glove.(If hands are still aseptic and pts IV port is accessible continue to drug administration stage.)</p>	<p>Action Clean hands using effective hand hygiene technique(see section 1.1) with either alcohol hand rub or soap and water If soap and water are used, dry hands thoroughly with paper towels. Apply non-sterile gloves.</p>	<p>Rationale Hands may become contaminated by handling equipment, door handles etc.</p>
<p>7</p>		<p>Drug administration: Clean key-parts & WAIT for them to dry.</p>	<p>Action Scrub ports/injection sites with 2% chlorhexidine in 70% alcohol single use wipe eg sanicloth, (start cleaning from the tip moving outwards using different parts of the wipe) Wait at least 20-30 seconds to dry Administer infusion/medication using non-touch technique Ensure sharps are disposed of at the point of use as per UHSM policy (see section 3-3.5)</p>	<p>Rationale Effective against bacteria, fungal and viral organisms Drying of any cleaning solution is vital for asepsis to be achieved. Reduces risk of sharps injury.</p>
<p>8</p>		<p>Remove gloves and wash hands with soap & water.</p>	<p>Action Remove non-sterile gloves Clean tray and allow to dry before putting away. Clean hands using effective hand hygiene technique (see section 1.1) with soap and water.</p>	<p>Rationale Gloves must only be used for a single procedure Hands must be washed after glove removal as organisms thrive in the warm, moist environment beneath gloves, soap and water must be used to remove any residual latex protein from skin.</p>

ANTT (ASEPTIC NON TOUCH TECHNIQUE) POLICY

Audit of compliance

An audit of compliance will be undertaken across the trust on an annual basis.

Associated policies

Trust Infection Control Policy Manual:

Section 1 – 1.1 (ii) Handwashing

1.3 (iii) Glove policy

Section 2 – 2.7 (vii) Policy for preventing infections associated with the insertion and maintenance of short term indwelling urinary catheters.

2.8 (viii) Policy for preventing infections associated with the insertion and maintenance of central venous catheters.

2.9 (ix) Policy for preventing infections associated with the insertion and maintenance of peripheral IV catheters

Section 3 – 3.5 Safe Handling and Disposal of Sharps

ANTT (ASEPTIC NON TOUCH TECHNIQUE) POLICY

References

Banfield, K. (2000). In J. McCulloch (ed.) Infection Control: Science, management and practice. London: Whurr

Department of Health (DOH)(2003). Winning Ways: Working together to reduce Healthcare Associated Infection in England. London: DOH Publications

Pellowe CN, Pratt RJ, Loveday HP, Harper P, Robinson N, Jones SRLJ, (2004) Updating the evidence-based guidelines for preventing healthcare-associated infections in NHS hospitals in England: a report with recommendations. British Journal of Infection Control. Vol 5 No 6

Pratt, R.J., Pellowe, C., Loveday, H.P., Robinson, N., Smith, G.W., Barrett, S., Davey, P., Harper, P., Loveday, C., McDougall, C., Mullwall, A., Privett, S., Smales, C., Taylor, L., Weller, B. and Wilcox, M. (2001) The *epic* Project: Developing National Evidence-based Guidelines for Preventing Healthcare associated Infections. *Journal of Hospital Infection*, 47 (Supplement): S3-S4.

Wilson, J. (1999), *Infection Control in Clinical Practice*. London: Balliere Tindall

2.10

POLICY FOR TAKING BLOOD CULTURES

1.1 INTRODUCTION

Blood culture is the microbiological culture of blood. It is employed to detect infections that are present in the bloodstream (bacteraemia). Microorganisms are present on the skin surface and these can result in contamination of blood culture specimens. Contamination can cause difficulty in determining if a positive blood culture is due to genuine bacteraemia or if it is a false positive result caused by contamination.

It is imperative that blood cultures are taken correctly in order to minimise the risk of this contamination occurring. This policy details the correct blood culture technique.

The aim is that blood cultures should be taken:

1. Only when there is an appropriate indication.
2. At the correct time.
3. Using the correct technique.

The 'Saving Lives' programme (DoH, 2007) to reduce healthcare-associated infections includes guidance on taking blood cultures. This policy is based on that guidance.

Sampling

1. Venous or arterial blood samples should be collected by venepuncture or from intravenous or arterial catheter devices.
2. More than one blood culture should be sent in patients with severe infection.
3. For adolescents and adults 10 - 20 mL of blood is the minimum volume per set (i.e. aerobic and anaerobic bottle) and 1 -2 mL for neonates and young children (use the paediatric blood culture bottle).

1.2 APPROPRIATE INDICATIONS FOR TAKING BLOOD CULTURES

Blood cultures should only be taken when there is a reason to suspect infection. They should not be taken for routine assessment.

There are many signs and symptoms in a patient which may suggest bacteraemia and clinical judgement is required, but the following indicators should be taken into account when assessing a patient for signs of bacteraemia or sepsis:

- Core temperature is outside of the normal range;
- Focal signs of infection;
- Abnormal heart rate (raised) blood pressure (low or raised) or respiratory rate (raised);
- Chills or rigours;
- Raised or very low white blood cell count; and
- New or worsening confusion.

NB: Signs of sepsis may be minimal or absent in the very young and the elderly.

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POLICY FOR TAKING BLOOD CULTURES

Not all patients with the above symptoms will require blood cultures (eg low grade fever within 24 hours of surgery is not very specific for bacteraemia). Conversely this list is not exclusive and blood cultures will be required in some patients who do not have any of the above symptoms.

The decision to take blood cultures should always be made by a qualified doctor. However it is not necessary for the procedure of taking blood cultures to be performed by a doctor. This can be performed by any staff member who has been trained to do so and who is competent in performing the procedure.

1.3 TECHNIQUE FOR TAKING BLOOD CULTURES: Blood cultures should be taken using a new venepuncture site. Blood cultures should not be taken from existing central or peripheral venous cannula. The only exception to this is if it is believed that a central line may be the source of bacteraemia. It is then appropriate to take blood from both the central cannula and from the peripheral vein. The peripheral vein sample should be collected first. Blood cultures should not be taken from veins which are immediately proximal to existing venous cannula. Blood cultures should not be taken from the femoral vein as it is very difficult to disinfect the skin adequately, so there is a high risk of contamination. The Technique for Taking Blood Cultures should be followed in this policy (Appendix 1). The Blood Culture Documentation Sticker 2) should be inserted into the patient's case notes at this time. Blood cultures should always be collected by a member of staff who is trained in this procedure and Aseptic Non Touch Technique (see section 2.9)

1.4 MRSA BACTERAEMIAS: A proportion of bacteraemias in all types of hospital are **preventable**. UHSM has targets to meet in regard to MRSA bacteraemia rates and aims to lower blood culture contamination rates overall. The intention is to apply good practice with an aim to reduce our rates. The importance of healthcare associated infections (HCAs) as a cause of preventable illness and death has been recognised increasingly in recent years, and the prevention and control of these infections has become a priority. In the event of an MRSA Bacteraemia a **root cause analysis** will be instigated by the clinicians involved in the patient's care. This clinical review team will undertake an investigation to identify how the bacteraemia occurred. This policy goes some way in helping this process. It is therefore imperative that clinicians states why the blood culture was taken and records this information in the patient's case notes.

NB: For guidance on labelling, transporting and reporting of blood cultures See UHSM Pathology Handbook on the first page of Anglia Ice computer reporting system.

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POLICY FOR TAKING BLOOD CULTURES

References

Department of Health (2007). Saving lives: reducing infection, delivering clean and safe care. DoH, 2007. <http://www.clean-safecare.nhs.uk>

Rowley S (2001) Aseptic-Non-Touch-Technique. NursingTimes. Infection Control supplement. 15th February 97(7) pVI-VIII.

POLICY FOR TAKING BLOOD CULTURES
APPENDIX 1

Technique for Taking Blood Cultures

Step one: Kit Preparation

- All clinicians should be trained in and use the **Aseptic Non Touch Technique (ANTT)** when taking blood cultures
- Label bottles with appropriate patient information. Ensure that barcodes on the bottles are not covered by additional labels and that any tear off barcode labels are not removed.
- Clean the tops of the culture bottles with a **Sanicloth** (70% Alcohol 2% Chlorhexidine) and allow to dry

Step two: Skin Preparation

- Wash your hands with soap and water and then dry.
- Clean any visibly soiled skin on the patient with soap and water then dry.
- Apply tourniquet and palpate to identify vein
- Clean skin with 2% Chlorhexidine in 70% Alcohol and allow to dry.
- If a culture is being collected from a central venous catheter, disinfect the access port with a **Sanicloth** (70% Alcohol 2% Chlorhexidine) and allow to dry

Step 3: Sample collection – use either method A or B as outlined below

B: WINGED BLOOD COLLECTION METHOD

- Wash and dry hands again or use alcohol hand rub and apply gloves (sterile gloves are not necessary)
- Attach winged blood collection set to blood collection adapter cap.
- Insert needle into prepared site. Do not palpate again after cleaning.
- Place adapter cap over blood collection bottle and pierce septum
- Hold bottle upright and use bottle graduation lines to accurately gauge sample volume and collect sample: inoculate aerobic culture first
- If blood is being collected for other tests always collect the blood culture first.
- Cover the puncture site with an appropriate dressing.
- Discard winged blood collection set in a sharp's container
- Wash hands after removing gloves
- Record the procedure with indication for culture, time, site of venepuncture and any complications in the patient's notes.

A: NEEDLE AND SYRINGE METHOD

- Wash and dry hands again or use alcohol hand rub and apply gloves (sterile gloves are not necessary)
- Insert needle. Do not palpate again after cleaning.
- Collect sample and release tourniquet.
- Cover the puncture site with an appropriate dressing
- If blood is being collected for other tests, always inoculate the blood culture bottles first.
- Inoculate blood into blood culture bottles: do not change the needle between sample collection and inoculations; inoculate anaerobic culture first
- Discard needle and syringe into a sharps container
- Wash hands after removing gloves
- Record the procedure with indication for culture, time, site of venepuncture and any complications in the patient's notes.

POLICY FOR TAKING BLOOD CULTURES

APPENDIX 2

Blood Culture Documentation Sticker

<u>Blood Culture Documentation Sticker</u>	
Patient's name _____	
Date of Birth _____	
Hospital number RM2 _____	
Taken by (Print name) _____ Bleep _____	
Designation _____	

Undertaken using ANTT (aseptic non-touch technique) using 2% Chlorhexidine in 70% alcohol (ChloraPrep Frepp)	
Yes – Signature.....No (Reason).....	

Indications for Culture: _____	
Site _____	
Date: _____ Time taken: _____	
Comments _____	

Appendix A

Equality Impact Assessment Tool

To be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	Does the policy/guidance affect one group less or more favourably than another on the basis of:		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
	• Disability	No	
2.	Is there any evidence that some groups are affected differently?	No	
3.	If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?	No	
4.	Is the impact of the policy/guidance likely to be negative?	No	
5.	If so can the impact be avoided?	N/a	
6.	What alternatives are there to achieving the policy/guidance without the impact?	N/a	
7.	Can we reduce the impact by taking different action?	N/a	

If you have identified a potential discriminatory impact of this procedural document, please refer it to the Infection Prevention and Control Nurses ext 2630 together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact the Infection Prevention and Control Nurses ext 2630.

Appendix B

Plan for Dissemination of Policy or Procedural Documents

To be completed and attached to any document which guides practice when submitted to the appropriate committee for consideration and approval.

Title of document:	UHSM Infection Prevention and Control Policy Manual Index		
Date finalised:	December 2009	Dissemination lead: Print name and contact details	Head of Nursing, Infection Prevention and Control (X 2630)
Previous document already being used?	Yes		
If yes, in what format and where?	Electronic on Trust Policy Website		
Proposed action to retrieve out-of-date copies of the document:	Remove from Trust Policy Website and upload new document		
To be disseminated to:	How will it be disseminated, who will do it and when?	Paper or Electronic	Comments
Clinical Managers	Series of awareness campaigns throughout December (e.g. Newsletters, Team Brief).		Policy will be accessible via the FT intranet only from December 2009
Non-clinical Managers			
Consultants	Disseminated at the Trust Infection Prevention and Control Committee		
Executive Directors			
Senior Nurses			
Long term partners	Disseminated at Divisional IPC subcommittee meetings		

Dissemination Record - to be used once document is approved.

Date put on register / library of policy or procedural documents	December 2009	Date due to be reviewed	December 2011
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Disseminated to: (either directly or via meetings, etc)	Format (i.e. paper or electronic)	Date Disseminated	No. of Copies distributed	Contact Details / Comments
Awareness campaigns and via relevant meetings	Electronic and paper	Various throughout December 2009	Approx 150	