ANTT Guidelines

The ANTT Clinical Guideline for Indwelling Urinary Catheterisation

Rationale and supporting evidence
Glossary

Please note: Historically, the terms below have been defined variously and often ambiguously in the medical literature. The definitions given here by The ASAP are intended to provide a related set of definitions that will support best practice by being accurate, achievable and logical.

Aseptic/Asepsis - Free from pathogenic organisms
Sterile - Free from microorganisms
Clean - Free from visible marks and stains

Asepsis / Aseptic technique
Describes the infection prevention aim and method adopted by health care professionals when undertaking invasive clinical procedures. Regardless of setting, or patient diagnosis, the aim is always to prevent the transfer of pathogenic microorganisms from the healthcare worker, procedure equipment or the immediate working environment into and onto the patient. In ANTT, it is achieved by ensuring Key-Parts and Key-Sites remain aseptic by a concept termed Key-Part and Key-Site-Protection.

Aseptic Non Touch Technique (ANTT)
A specific type of aseptic technique with a unique theory and practice framework (NICE 2012).

Aseptic field (Traditionally termed ‘Sterile’ field)
A designated aseptic working space that contains and protects the procedure equipment from direct and indirect environmental contact-contamination by microorganisms. See aseptic field types below.

Critical Aseptic Field
The main aseptic field that ensures asepsis during procedures by providing essential & primary protection from the procedure environment. Critical Aseptic Fields require ‘Critical Management’ (See below).

General Aseptic Field
The main aseptic field that promotes asepsis during procedures by providing basic protection from the procedure environment. General Aseptic Fields are used when the procedure Key-Parts are easily and primarily protected by Micro Critical Aseptic Fields (caps and covers). Therefore, General Aseptic Fields only require ‘General Aseptic Field Management’ (See below)*.

Micro Critical Aseptic Field (MCAF)
A small Critical Aseptic Field used to protect a Key-Part, e.g. a syringe cap or needle cover.

*Critical Aseptic Field Management (‘Critical Management’, ‘Critically Managed’, ‘Managed Critically’)
Only sterilized or aseptic equipment may come into contact with a Critical Aseptic Field. Sterilized gloves are required to maintain aseptic continuity.

**General Aseptic Field Management (‘General Management’, ‘Generally Managed’, ‘Managed Generally’)
Required equipment and covering which may not be technically aseptic are permitted in a General Aseptic Field because all Key-Parts are fully protected by Critical Micro Aseptic Fields.

Clean Technique
Describes the action and process of rendering an object or person free from visible marks and stains. (NB: ANTT does not recognize or use this term to describe or define aseptic technique.

Decontamination
A general term that refers to one or more of the processes below:

Cleaning: reduces the bio burden and removes foreign material. In healthcare it is typically performed with water, soap or detergent and material such as paper towels or impregnated wipes.
Disinfection: the destruction of pathogenic microorganisms, usually by thermal or chemical means.
Sterilization: A process by which all viable forms of microorganisms (including spores) are destroyed (APIC 2009).

Key-Part (Active)
Active Key-Parts are the critical parts of the procedure equipment that come into contact with Key-Sites, any liquid infusion, or with any other active Key-Parts connected to the patient via a medical device. If contaminated during a procedure, Key-Parts provide a route for the transmission of pathogens onto or into the patient, and present a significant infection risk.

Key-Parts (Inactive)
When Key-Parts such as closed IV ports are not active it is not practical to maintain them as aseptic. Inactive Key-Parts must be rendered aseptic prior to re-use by effective cleaning and disinfection.

Key-Site
Open wounds and insertion and puncture sites for invasive medical devices.

Key-Part/Site Protection
The protection of Key-Parts and/or Key-Sites from pathogenic microorganisms. During clinical procedures this is achieved by a range of methods including non touch technique, aseptic field management, basic infection precautions such as hand cleaning and glove usage etc. as defined in ANTT. In between clinical procedures, wounds and medical devices may have Sustained Key-Part Protection from medical equipment or supplies. E.g. A wound care dressing, a passive IV hub cap protector.

Sterile Technique
A historical term used interchangeably for aseptic technique. (NB: ANTT does not recognize or use this term because of the ever presence of microorganisms in air, it is virtually impossible to achieve in even the most specialist health care environment).
The ANTT Model for establishing safe aseptic technique

ANTT is a contemporary and unique Theoretical and Clinical Practice Framework for aseptic technique for all clinical procedures... ‘From surgery to community care’. It is endorsed or referenced as a best practice example of standardized aseptic technique by a number of organizations including, Epic2 (Pratt et al 2007), The National Institute for Clinical Excellence (NICE 2012), The Australian Guidelines for the Prevention and Control of Infection in Healthcare (ACSQH 2010) the Royal College of Nursing (RCN) Infusion Standards 2010, The American Vascular Access Society (AVA), the Health Protection Surveillance Centre – Ireland (2011).

The ANTT Clinical Practice Framework set out here, forms the first Part of a four Part model for improving standards of aseptic technique. As a result of widespread international demand and adoption, the standardization of aseptic technique with ANTT has become a major global initiative organized by the Association for Safe Aseptic Practice (ASAP).

Aseptic technique can be further standardized by using ANTT Clinical Guidelines to ‘prescribe out’ variability in practice for a range of common clinical procedures. The guidelines translate the ANTT foundation principles into practice via simple practice prompts which are displayed in clinical areas. The guidelines are designed by experts in each core competency and peer-reviewed nationally. The infection control steps in each guideline are risk evaluated and sequenced to ensure an efficient, logical and safe order. They provide health care organizations with a method to standardized aseptic practice according to evidence based practice and international infection control guidance, and a method to monitor performance. Each guideline is supported by a comprehensive technical rational and evidence base document.

Compliance to the guidelines is established across large health care organizations by the ANTT ‘Executive Board to Ward’ Implementation Audit Cycle.
The ANTT Clinical Guideline for Indwelling Urinary Catheterisation

ANTT Risk Assessment (To determine Surgical or Standard-ANTT)

During any invasive clinical procedure the aim of aseptic technique is to protect the patient from infection. In ANTT, this is achieved by ensuring the asepsis of Key-Parts and Key-Sites by protecting them from operator and environmental contamination.

Different clinical procedures present different levels of complexity. Therefore, in order to be efficient as well as safe, any practice framework for aseptic technique must define what type of aseptic technique and precautions are required for simple and complex procedures, and how to decide between the two approaches. To this end, the ANTT practice framework defines a Standard-ANTT and Surgical-ANTT approach to practice. It is important to note that while the two approaches differ to cater for different levels of procedure complexity, they still adhere to the same fundamental principles of ANTT.

Healthcare workers (HCW) are taught to decide correctly between Standard and Surgical-ANTT, by a simple and logical set of rules and a risk assessment. (See the ANTT Clinical Practice Framework).

ANTT Risk Assessment applied to Urinary Catheterisation

Urinary catheterisation (UC) is typically managed safely and most efficiently using Surgical-ANTT. The rationale for this is outlined below:

Standard or Surgical ANTT?

To determine the need for Standard or Surgical-ANTT for IV Therapy, the HCW first asks...

‘To maintain asepsis of Key-Parts and/or Key-Sites, does the main aseptic field require Critical Management?’

(i.e. Only sterilized and aseptic equipment can come into contact with the aseptic field).

To answer this question, the HCW considers that while some of the Key-Parts can easily be protected using Micro Critical Aseptic Fields (MCAF) and non-touch technique, the urinary catheter itself cannot. It is too large and difficult to manipulate without being touched by the HCW or the immediate working area; therefore, to protect the catheter, the HCW must manage the aseptic field critically. This represents a Surgical-ANTT approach to practice.

Glove Choice assessment

To determine the need for non-sterilised or sterilised gloves the HCW asks...

‘Can I perform this procedure without touching Key-Parts or Key-Sites directly?’

As this clinical procedure requires Surgical-ANTT, the use of sterilised gloves is essential in order to maintain asepsis of the critical aseptic field and the catheter.

Fig. An overview of the ANTT Risk Assessment and subsequent equipment and technique choices

ANTT Urinary Catheterisation Guideline v2.0 2013 The Association for Safe Aseptic Technique (ASAP) www.antt.org
### Preparation:
Consent patient, apply waterproof pad & ask patient to assist (if able) by lifting gown prior to step 9

<table>
<thead>
<tr>
<th>Action</th>
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<tbody>
<tr>
<td>1. Consent patient.</td>
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<td>2. Apply waterproof pad.</td>
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<td>3. Request patient assistance prior to step 9.</td>
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<table>
<thead>
<tr>
<th>Rationale</th>
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<tr>
<td>1. Patient consent is a fundamental component of patient safety, protection and satisfaction.</td>
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<td>2. Applying a waterproof pad protects the patient and bed from urine splashes, promoting patient comfort and reduces the risk of skin compromise or environmental contamination.</td>
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<tr>
<td>3. If patient is able and willing to assist staff during the procedure their privacy and dignity can be better managed by limiting the number of staff present and staff can be utilised more efficiently.</td>
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<th>Notes</th>
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<tr>
<td>• During this preparation the HCW should prepare the environment immediately surrounding the patient; making sure that the patient’s privacy and dignity can be maintained during the procedure; screens and curtains may be used were appropriate.</td>
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<tr>
<td>• The immediate environment around the patient should be safe for the procedure and the area uncluttered.</td>
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<th>Evidence</th>
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| 1 Department of Health: Health Service Circular (1999):  
A patient has the right under common law to give or withhold consent to medical examination or treatment. This is one of the basic principles of health care. Patients are entitled to receive sufficient information in a way that they can understand about the proposed treatments, the possible alternatives and any substantial risk or risks which may be special in kind or magnitude or special to the patient, so that they can make a balanced judgement. |  |
| Department of Health: Referencing Guide to Consent for Examination or Treatment (2009):  
"It is a general legal and ethical principle that valid consent must be obtained before starting treatment or physical investigation, or providing personal care, for a person." |  |
| 2 RCN 2008:  
"You must treat people as individuals and respect their dignity." |  |
**Step 1**
*Clean Hands with alcohol hand rub or soap & water*

### Action
1. Clean hands at this stage.
2. Using effective hand cleaning technique (Appendices 1, 2) with either alcohol hand rub or soap and water.
3. If soap and water are used, pat hands dry with a paper towel.

### Rationale
1. This hand clean is placed here to help break any potential transmission of infection from the clinical ward environment to the clean preparation area/room.
2. Effective hand cleaning is vital to reduce the risk of contaminating Key-Parts and Key-Sites. The same technique of hand cleaning (covering all surfaces of the hand) should be used when both soap and water or alcohol gel is being used.
3. Wet hands more easily transport bacteria. Pat drying prevents skin degradation and damage.

### Notes
- ANTT always aims to minimise hand-cleaning frequency in order to increase compliance; this is always a risk-assessed balance between clinical effectiveness and staff compliance.
- Soap & water and alcohol hand rub are interchangeable at any stage and should be chosen according to the clinical situation.

### Evidence
1. **ICNA (IPS) Hand Decontamination Guidelines (2002):**
   ‘Hands readily pick up and transfer microorganisms and should be decontaminated between any activity that will result in more than superficial contact. Expert consensus groups agree that effective hand decontamination results in significant reduction in the carriage of potential pathogens on hands’

2. **Epic2 Guidelines (2007):**
   ‘Current evidence-based guidelines conclude that in both outbreak and non-outbreak situations contaminated hands are responsible for cross-transmission of microorganisms and that effective hand decontamination can significantly reduce both cross-transmission and cross-infection rates for the majority of HCAI in all healthcare settings’

3. **Department of Health, Winning Ways (2003):**
   Action Area Four ‘Each clinical team will demonstrate consistently high levels of compliance with hand washing and hand disinfection protocols’

4. **WHO Guidelines on Hand Hygiene in Health Care (2009):**
   ‘Use an alcohol-based hand rub as the preferred means for routine hand antisepsis.’

5. **WHO Guidelines on Hand Hygiene in Health Care (2009):**
   ‘If exposure to potential spore-forming pathogens is strongly suspected or proven, including outbreaks of clostridium Difficile, hand washing with soap and water is the preferred means’

   ‘A good technique covering all surfaces of the hands at the right time is more important than the agent used or the length of time taken to perform it’

7. **WHO Guidelines on Hand Hygiene in Health Care (2009):**
   Part II, 1, B ‘Rinse hands with water and dry thoroughly with a single-use towel. Dry hands thoroughly using a method that does not re-contaminate hands’

8. **WHO Guidelines on Hand Hygiene in Health Care (2009):**
   11.1.5 ‘Because wet hands can more easily acquire and spread microorganisms, the proper drying of hands is an integral Part of routine hand washing’
Step 2
Clean Trolley according to local policy

Action
1. Use a trolley as a general aseptic field.  
2. Clean the trolley with 70% alcohol or according to local policy.  
3. Allow surface to dry before use.

Rationale
1. Such a working area provides a sufficiently large and robust space to perform controlled aseptic practice.  
2. Effective cleaning will render the surface aseptic.  
3. It’s not aseptic until it’s dry; while wet the alcoholic solution is disinfecting the surface, interruption of this process could reduce the effectiveness of the cleaning product. Typically, drying time is 30 seconds. It is important to confirm the length of time a particular product needs to produce an acceptable bactericidal effect. The product mentioned below (3) was tested and noted to be effective at 30 seconds – other manufacturers may have different times to effectiveness (for example, the EN 1276 test uses a contact time of 5 minutes).

Notes
• Equipment surface decontamination should be risk assessed in the light of specific infection risks within a given population or location and appropriate cleaning products and techniques used as per local policies and procedures.

Evidence
   “aseptic fields are important in providing a controlled aseptic working space to help promote or ensure the integrity of asepsis during clinical procedures”

2. CDC (2008):
   ‘Medical equipment surfaces can become contaminated with infectious agents and contribute to the spread of healthcare associated infections’

Principles of asepsis ‘Prepare the area, including decontamination of the surface to be used with detergent and water followed by drying. They can then be disinfected using a wipe containing 70% alcohol’

3. Hospital Infection Research Laboratory (2006):***
Allowing the surface to dry ensures the disinfectant agent has been given enough time to kill micro-organisms. When tested in accordance with EN 1276* a solution of 70% isopropyl alcohol (IPA) in a PDI® branded wipe (Sani-Cloth 70®) gave a >5 log_{10} (99.999%) reduction all four of the test organisms** after 30 seconds, under clean (0.03% albumin) and dirty (0.3% albumin) conditions.

*** 70% IPA as a surface cleaner for medical devices has demonstrated effectiveness at 30 seconds post application
* European test standard maintained by the European Committee for Standardization
** Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli, Enterococcus hirae
### Step 3
Gather equipment
position of the bottom shelf

**Action**

1. Gather equipment and place on the bottom of the trolley.¹

**Rational**

1. Hands are potentially contaminated when gathering equipment from storage cupboards etc. (Cupboard handles are high risk vectors of infection). It’s important therefore to gather all equipment before the next hand clean. Gathering equipment at this point allows the tray time to dry and saves a little time.

**Notes**

- Equipment should be safely stored in a regularly cleaned environment and be easily accessible to staff.
- Effective stock rotation should be employed to monitor expiration dates of equipment and promote the integrity of packaging.

**Evidence**


> ‘The core steps that must be taken during an aseptic technique, for whatever procedure, including preparation to ensure: that all appropriate sterile items are available, and that the setting is prepared’

### Step 4
Apply disposable apron
(clean hands if contaminated between steps 3 & 4)

**Action**

1. Apply a plastic apron.¹

**Rational**

1. A disposable apron is worn in accordance with Universal Precautions.²

**Notes**

- Aprons add protection for the HCW from urine splashes and help reduce the risk of microbial transmission from uniforms to bedclothes during invasive clinical procedures.

**Evidence**

¹ RCN Catheter Care Guidance for Nurses (2008):

> Protective clothing should be worn for performing aseptic technique to place a urinary catheter (aprons and sterile gloves)

² Epic2 Guidelines (2007):

> SP27 ‘Disposable plastic aprons must be worn when close contact with the patient, materials or equipment are anticipated and when there is a risk that clothing may become contaminated with pathogenic microorganisms or blood, body fluids, secretions or excretions’


> ‘All health-care workers should routinely use appropriate barrier precautions to prevent skin and mucous-membrane exposure when contact with blood or other body fluids of any patient is anticipated.’
## Step 5
### Open catheter pack

**Action**

1. Open catheter pack and arrange contents using a NTT (utilising the inside of the provided waste bag as a glove).<sup>1</sup>
2. Position waste bag.<sup>2</sup>

**Rational**

1. Opening the pack will let staff confirm the contents of the pack, making sure everything needed is present.
2. A waste bag should be appropriately positioned so that used components of the pack are not moved across the exposed area of the aseptic field, risking potential contamination of the Critical Aseptic Field.

**Notes**

- Use a non-touch technique to ensure that the inside of the sterilized pack or its contents are not compromised during the setup procedure; this is most efficiently achieved by using finger tips to open the flaps of the pack (keeping fingers on the reverse side of the packs flaps) and, once open, the inside of the waste bag provided in the pack to move the pack contents around the field.
- Disposal of clinical waste should conform to local policies and procedures.

**Evidence**

   ‘The core steps that must be taken during an aseptic technique, for whatever procedure, including preparation to ensure: that all appropriate sterile items are available, and that the setting is prepared’

2. Royal Marsden (2008):
   “Dispose of equipment in a yellow plastic clinical waste bag and seal the bag before moving the trolley.”
# Step 6
## Open Equipment
### Onto critical aseptic field using NTT

<table>
<thead>
<tr>
<th>Action</th>
<th>1. Open sterilised equipment.</th>
<th>2. Orientate equipment onto critical aseptic field using a non-touch technique.</th>
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<thead>
<tr>
<th>Rationale</th>
<th>1. Sterilised equipment should be managed critically on the opened aseptic field.</th>
<th>2. Using a non-touch technique will protect equipment from direct physical HCW contamination and maintain asepsis.</th>
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<tr>
<th>Notes</th>
<th>Sterilised equipment should be considered aseptic after opening and managed critically.</th>
<th>It is fundamental to ANTT that HCWs identify the Key-Parts of a procedure and maintain the asepsis of these Key-Parts throughout a clinical intervention.</th>
<th>Equipment should be appropriate for its intended purpose and stored in clean surrounds that protect the integrity of sterile packaging.</th>
</tr>
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</table>

| Evidence | 1. RCN Catheter Care Guidance for Nurses (2008): Sterile equipment (e.g. catheters) should be used for urinary catheterisation | 2. CDC HICPAC (2009): “In the acute hospital setting, insert urinary catheters using aseptic technique and sterile equipment.” | 3. RCN Catheter Care Guidance for Nurses (2008): “Store catheter care equipment appropriately to maintain sterility and ensure it is fit for purpose” |
**Step 7**
**Clean hands**
with alcohol hand rub or soap and water & apply non-sterilised gloves

**Action**

1. Clean hands.  
2. Using effective hand cleaning technique (Appendix 1 & 2) with either alcohol hand rub or soap and water.  
3. Ensure hands are dry before re-gloving. If soap and water are used, pat hands dry with a paper towel.  
4. Apply non-sterilized gloves.

**Rationale**

1. Hands are cleaned at this point because they have come into direct contact with surfaces and personal protective equipment (PPE) and thus should be considered as contaminated with some level of microbial activity.  
2. For hand cleaning to be effective it must consistently and effectively decontaminate all areas of the hand.  
3. Hand hygiene compliance is likely to be compromised to some degree if HCWs experience skin breakdown, soreness or discomfort upon repeated hand decontamination.  
4. Non-sterilized gloves are used on the basis of the ANTT risk assessment, reflecting that hands should not come into direct contact with the Key-Site and a non-touch technique (NTT) will be employed for cleaning.

**Notes**

- ANTT always aims to minimise hand cleaning frequency in order to increase compliance; this is always a risk assessed balance between clinical effectiveness and staff compliance.  
- NB: Many urinary catheterisation packs will come with two pairs of (sterilised) gloves simplifying the process and negating the need for an ANTT risk assessment at this stage.  
- The use of gloves is indicated due to the potential exposure to blood and body fluids.  
- This Part of the process is essentially a decontamination stage which can be managed using a NTT.

**Evidence**

1. **ICNA (IPS) Hand Decontamination Guidelines (2002):**  
   ‘Hands readily pick up and transfer microorganisms and should be decontaminated between any activity that will result in more than superficial contact. Expert consensus groups agree that effective hand decontamination results in significant reduction in the carriage of potential pathogens on hands’

2. **WHO Guidelines on Hand Hygiene in Health Care (2009):**  
   ‘Use an alcohol-based hand rub as the preferred means for routine hand antisepsis.’

3. **WHO Guidelines on Hand Hygiene in Health Care (2009):**  
   ‘Rinse hands with water and dry thoroughly with a single-use towel. Dry hands thoroughly using a method that does not re-contaminate hands’

   ‘A good technique covering all surfaces of the hands at the right time is more important than the agent used or the length of time taken to perform it’

5. **WHO Guidelines on Hand Hygiene in Health Care (2009):**  
   Part II, 1, B ‘ If exposure to potential spore-forming pathogens is strongly suspected or proven, including outbreaks of clostridium Difficile, hand washing with soap and water is the preferred means’

   11.1.5 ‘Because wet hands can more easily acquire and spread microorganisms, the proper drying of hands is an integral Part of routine hand washing’

7. **Epic2 Guidelines (2007):**  
   ‘Having decided that gloves should be used for healthcare activity, the HCW must make a choice between the use of sterile or non-sterile gloves, based on contact with susceptible Sites or clinical devices.’
### Step 8
**Prepare equipment using NTT**

**Action**
1. Prepare equipment using a non-touch technique.\(^1\)

**Rationale**
1. A non-touch technique will help ensure that Key-Parts and Key-Sites are not physically contaminated by the HCW.

**Notes**
- The aseptic field created by the catheter pack should be managed critically at all times during both preparation and insertion.
- Even though sterilised gloves are being utilised the HCW should still effectively manage risk and control variability by using a non-touch technique throughout the procedure.

**Evidence**

1. **CDC – HICPAC Guideline for Preventing CAUTI (2009):**
   "Use sterile gloves, drape, sponges, an appropriate sterile solution for periurethral cleaning, and a single use packet of lubricating jelly for insertion"

1. **ICNA (IPS) Asepsis: Preventing Healthcare Associated Infection (2003):**
   "The core steps that must be taken during an aseptic technique, for whatever procedure, including preparation to ensure: that all appropriate sterile items are available, and that the setting is prepared"

### Step 9
**Apply aseptic field drapes over genitals & between legs**

**Action**
1. Apply aseptic field drapes over genitals and between lower extremities.\(^1\)

**Rationale**
1. The two sterilized drapes isolate the catheter insertion Site from potential physical contact from the immediate environment of the patients’ bed and clothing. The aseptic field adds a layer of protection during Key-Part manipulation.

**Notes**
- It is important that two drapes are used due to the size of the catheter, i.e. the catheter is a large Key-Part which needs a large critical aseptic field to protect it from contamination from the environment.

**Evidence**

1. **CDC – HICPAC Guideline for Preventing CAUTI (2009):**
   "Sterile drapes indicated for aseptic urinary catheterization"

1. **Department of Health Saving Lives: High Impact Intervention No6, Urinary catheter care bundle (2007):**
   "Gown, gloves and drapes should be used for the insertion of invasive devices."
**Step 10**
**Clean urethral orifice with normal saline and gauze**

**Action**
1. Clean urethral orifice with normal saline and gauze using a NTT.

**Rational**
1. The urethral orifice should be cleaned with a sterile saline solution and low-lint swabs to effectively clean the area prior to catheterization without leaving fiber contaminants that could be inserted into the urethra during catheterization.

**Notes**
- Expert opinion reported in both Epic2 and the HICPAC Guideline for Prevention of Catheter-Associated Urinary Tract Infections (2009) indicates that there is no advantage to using antiseptic cleaning solutions.
- NTT can be promoted by the use of sterilised gauze to hold open the urethral canal.

**Evidence**
1. Department of Health Saving Lives: High Impact Intervention No6, Urinary catheter care bundle (2007): “Clean the urethral meatus prior to insertion of catheter, with sterile normal saline”
2. Epic2 Guidelines (2007): “Expert opinion indicates that there is no advantage in using antiseptic preparations for cleansing the urethral meatus prior to catheter insertion.”
3. CDC HICPAC (2009): “Further research is needed on the use of antiseptic solutions vs. sterile water or saline for periurethral cleaning prior to catheter insertion.”

**Step 11**
**Insert lubricating gel**

**Action**
1. Insert sterile lubricating gel.

**Rationale**
1. The use of a sterile lubricating gel will help to minimise urethral trauma, be more comfortable for the patient and physically improve insertion for the HCW.

**Notes**
- It is important that HCWs are fully and appropriately trained and competent in urinary catheterisation to reduce the risk of trauma, discomfort and potential for catheter associated urinary tract infections (CAUTI).

**Evidence**
1. Epic2 Guidelines (2007): “Use an appropriate lubricant from a sterile single use container to minimise urethral trauma and infection.”
### Step 12
Dispose of gloves, clean hands and apply sterilized gloves

**Action**

1. Dispose of gloves.¹
2. Clean hands.²
3. Apply sterilized gloves.³

**Rational**

1. Gloves have been contaminated during the process of cleaning and using them further in the procedure would compromise Key-Parts and the critical management of the aseptic field.
2. Hands must be cleaned after any glove removal and prior to commencing aseptic procedures.
3. Sterilized gloves are indicated for the aseptic insertion of urinary catheters.

**Notes**

- The Key-Part(s) and aseptic field(s) of this procedure must be managed critically and the only method of successfully achieving this goal is to use sterilized gloves to physically touch Key-Parts and Key-Sites.

**Evidence**

¹ WHO Guidelines on Hand Hygiene in Health Care (2009):
Part II, 6, D ‘When wearing gloves, change or remove gloves during patient care if moving from a contaminated body Site to either another body Site (including non-intact skin, mucous membrane or medical device) within the same patient or environment’

‘The dynamics of hand contamination are similar on gloved versus ungloved hands; gloves reduce hand contamination, but do not fully protect from acquisition of bacteria during patient care. Therefore, the glove surface is contaminated, making cross-transmission through contaminated gloved hands likely’

² WHO Guidelines on Hand Hygiene in Health Care (2009):
Part II, 6, A ‘The use of gloves does not replace the need for hand hygiene by either hand rubbing or hand washing’

³ RCN Catheter Care Guidance for Nurses (2008):
‘protective clothing (aprons and sterile gloves) noted as components of an aseptic technique for urinary catheter placement, removal and care’
## Step 13
Insert catheter using NTT
by touching only the plastic wrapping

**Action**

1. Insert catheter using NTT *(see notes below).*

**Rational**

1. The catheter is a Key-Part and the urethral canal is a Key-Site and as such both need to be protected by a combination of infective precautions and a non-touch technique.

**Notes**

- Leaving the urinary catheter in the sterilized plastic protective wrapping until the time of insertion protects the device from potential physical and environmental contamination by using a micro critical aseptic field (the wrapper).
- The catheter should be inserted directly from the sterilized packaging, adding a further layer of physical protection for the duration of the insertion procedure.
- HCWs should consider using the smallest bore catheter possible unless clinically contraindicated.

**Evidence**

   “Catheterisation is an aseptic procedure.”

2. CDC – HICPAC Guideline for Preventing CAUTI (2009):
   ‘In the acute hospital setting, insert urinary catheters using aseptic technique and sterile equipment’

RCN Catheter Care Guidance for Nurses (2008):
Catheter insertion requires an aseptic technique and a non-touch technique.

   “Select the smallest gauge catheter that will allow free urinary outflow.”
### Action

1. Inflate catheter balloon using NTT.

### Rational

1. Using a non-touch technique will help protect Key-Parts from physical contamination.

### Notes

- Make sure that appropriate catheter choice is made with the correct size balloon.

### Evidence

1. **RCN Catheter Care Guidance for Nurses (2008):**
   - Catheter insertion requires an aseptic technique and a non-touch technique.

2. **NICE Prevention of HCAI in Primary and Community Care (2003):**
   - UC10: "In general, the catheter balloon should be inflated with 10 ml of sterile water in adults and 3-5 ml in children"

3. **Epic2 Guidelines (2007):**
   - "A catheter with a 10ml balloon should be used in adults. Urological patients may require larger gauge sizes and balloons."
Step 15
Attach collection bag using NTT

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<tr>
<td>1. Attach the urine collection bag using NTT.</td>
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<td>2. Secure catheter appropriately to the patient.</td>
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<tbody>
<tr>
<td>1. Attaching a collection bag will allow urine drainage and collection.</td>
</tr>
<tr>
<td>2. A properly secured catheter will help prevent trauma associated with physical movement of the catheter and reduce the risk of accidental traumatic removal.</td>
</tr>
</tbody>
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<td>• Once connected the catheter and drainage bag should be considered a closed system with bag changes kept to a minimum.</td>
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<tr>
<td>• Secure catheter and drainage system according with manufacturer’s instructions and in accordance with local policy.</td>
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<tr>
<td>2. CDC – HICPAC Guideline for Preventing CAUTI (2009): “Properly secure indwelling catheters after insertion to prevent movement and urethral traction”</td>
</tr>
<tr>
<td>3. Epic2 Guidelines (2007): “Ensure that the connection between the catheter and the urinary drainage system is not broken except for good clinical reasons, e.g. changing the bag in line with manufacturer’s instructions.”</td>
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</table>
### Step 16
Dispose of waste & gloves

**Action**

1. Dispose of clinical waste safely and appropriately.\(^1\)
2. Remove and dispose of gloves.\(^2\)

**Rational**

1. Gloves must only be used for one patient and one procedure. Removing gloves will reduce the chance of cross infection or a chain of infection developing.

**Notes**

- Waste should be disposed of in accordance with local policy.

**Evidence**

1. **Royal Marsden (2008):**
   "Dispose of equipment in a yellow plastic clinical waste bag and seal the bag before moving the trolley."

2. **WHO Guidelines on Hand Hygiene in Health Care (2009):**
   Part II, 6, C "Remove gloves after caring for a patient. Do not wear the same pair of gloves for the care of more than one patient"

3. **Epic2 Guidelines (2007):**
   SP23 "Gloves must be disposed of as clinical waste and hands decontaminated, ideally by washing with liquid soap and water after the gloves have been removed"
Step 17
Clean hands with alcohol hand rub or soap and water

Action

1. It is essential that the post procedure hand clean is performed immediately after glove removal before contact with the environment.¹
2. Using effective hand cleaning technique (Appendices 1,2) with either alcohol hand rub or soap and water.²
3. Ensure hands are dry before re-gloving. If soap and water are used, pat-dry hands with a paper towel.³

Rationale

1. This hand clean is placed here because the hands will have sweated deep and low-lying organisms to the surface of the skin. This will help in breaking any chain of infection.
2. Effective hand cleaning is vital to reduce the risk of contaminating Key-Parts and Key-Sites.
3. Bacteria can re-establish quickly on moist hands. Pat drying prevents skin degradation and damage.

Notes

- Soap & water and alcohol hand rub are interchangeable at any stage and should be chosen according to the clinical situation.

Evidence

¹ Epic2 Guidelines (2007):
SP6 ‘Hands must be decontaminated immediately before each and every episode of direct patient contact/care and after any activity or contact that potentially results in hands becoming contaminated

‘Hands readily pick up and transfer microorganisms and should be decontaminated between any activity that will result in more than superficial contact. Expert consensus groups agree that effective hand decontamination results in significant reduction in the carriage of potential pathogens on hands’

Epic2 Guidelines (2007):
‘Current evidence-based guidelines conclude that in both outbreak and non-outbreak situations contaminated hands are responsible for cross-transmission of microorganisms and that effective hand decontamination can significantly reduce both cross-transmission and cross-infection rates for the majority of HCAI in all healthcare settings’

Department of Health, Winning Ways (2003):
Action Area Four ‘Each clinical team will demonstrate consistently high levels of compliance with hand washing and hand disinfection protocols’

‘A good technique covering all surfaces of the hands at the right time is more important than the agent used or the length of time taken to perform it. The ideal technique should be quick, reduce hand contamination to the lowest possible level and be free from notable side-effects to the skin’

‘Use an alcohol-based hand rub as the preferred means for routine hand antisepsis.’

‘To achieve a high rate of hand hygiene adherence, healthcare workers need education, clear guidelines, some understanding of infectious disease risk, and acceptable hand hygiene products’ Part II, 1, B ‘If exposure to potential spore-forming pathogens is strongly suspected or proven, including outbreaks of clostridium Difficile, hand washing with soap and water is the preferred means’

‘Effective drying of hands after washing is important because wet surfaces transfer micro-organisms more effectively than dry ones’

11.1.5 ‘Because wet hands can more easily acquire and spread microorganisms, the proper drying of hands is an integral Part of routine hand washing’
## Step 18
### Clean Trolley according to local policy

**Action**

1. Clean the trolley with 70% alcohol or according to local policy.¹
2. Allow surface to dry before use.²

**Rationale**

1. Effective decontamination will reduce the risk of cross infection.
2. While wet the alcoholic solution is disinfecting the surface, interruption of this process could reduce the effectiveness of the cleaning product. Typically, drying time is 30 seconds. It is important to confirm the length of time a particular product needs to produce an acceptable bactericidal effect. The product mentioned below (3) was tested and noted to be effective at 30 seconds — other manufacturers may have different times to effectiveness (for example, the EN 1276 test uses a contact time of 5 minutes).

**Notes**

- Equipment surface decontamination should be risk assessed in the light of specific infection risks within a given population or location and appropriate cleaning products and techniques used as per local policies and procedures.
- Physical contamination with blood and/or body fluids will require decontamination with an appropriate detergent and water.

**Evidence**

¹ Guideline for Disinfection and Sterilization in Healthcare Facilities (2008): ‘Medical equipment surfaces can become contaminated with infectious agents and contribute to the spread of healthcare associated infections’


Principles of asepsis ‘Prepare the area, including decontamination of the surface to be used with detergent and water followed by drying. They can then be disinfected using a wipe containing 70% alcohol’

² Hospital Infection Research Laboratory (2006):***

Allowing the surface to dry ensures the disinfectant agent has been given enough time to kill micro-organisms. When tested in accordance with EN 1276* a solution of 70% isopropyl alcohol (IPA) in a PDI® branded wipe (Sani-Cloth 70®) gave a >5 log₁₀ (99.999%) reduction all four of the test organisms** after 30 seconds, under clean (0.03% albumin) and dirty (0.3% albumin) conditions.

*** 70% IPA as a surface cleaner for medical devices has demonstrated effectiveness at 30 seconds post application
* European test standard maintained by the European Committee for Standardization
** Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli, Enterococcus hirae

ANTT Urinary Catheterisation Guideline v2.0 2013 The Association for Safe Aseptic Technique (ASAP) www.antt.org
### Step 19
**Clean hands**
with alcohol hand rub or soap and water

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1. Effective hand cleaning technique: For soap and water (WHO, 2009).

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### Hand Hygiene Technique with Soap and Water

1. **Duration of the entire procedure:** 40-60 seconds

2. **Wet hands with water:**

3. **Rub hands palm to palm:**

4. **Apply enough soap to cover all hand surfaces:**

5. **Palm to palm with fingers interlaced:**

6. **Flight palm over left dorsum with interlaced fingers and vice versa:**

7. **Backs of fingers to opposing palms with fingers interlocked:**

8. **Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa:**

9. **Dry hands thoroughly with a single use towel:**

10. **Use towel to turn off faucet:**

11. **Your hands are now safe:**
2. Effective hand cleaning technique: For alcohol hand rubs (WHO, 2009).
References


