ANTT Theoretical Framework
For Clinical Practice

Rationale and supporting evidence
Definitions

**Aseptic technique** defines the infection control method and precautions taken during invasive clinical procedures to prevent the transfer of micro-organisms from the healthcare worker, procedure equipment or the immediate environment to the patient. It is achieved by ensuring the asepsis of key-parts and key-sites.

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

**Aseptic field**
A designated aseptic working area that contains and protects the procedure equipment from environmental contact contamination by micro-organisms.

- **General aseptic field**
  An aseptic field that promotes asepsis during procedures and does not require critical management (i.e. non-aseptic as well as aseptic items may come into contact with it).

- **Critical aseptic field**
  An aseptic field that requires critical management. (i.e. only aseptic key-parts may come into contact with it).

- **Micro critical aseptic field**
  A small critical aseptic field used to protect a specific key-part, e.g. a syringe cap or needle cover.

**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 direct route for the transmission of pathogens onto or into the patient.

**Key-parts (Inactive)**
A key-part attached to a medical device but not in active use. (When key-parts such as closed IV ports are not active, it is not necessary to maintain them as aseptic).

**Key-site**
Open wounds, including insertion and puncture sites.
The ANTT Model for reducing Health Care Associated Infection (HCAI)

This document provides a summary of the ANTT Theoretical Framework for Clinical Practice. The framework forms the first part of a three part model for standardising and improving aseptic technique and subsequently reducing HCAI.

ANTT is a unique contemporary practice framework for aseptic technique. By demand, it has become the de facto standard aseptic technique in the UK National Health Service (Rowley & Clare 2009) and is used widely internationally. It is endorsed by Epic2 (Pratt et al 2007) and the Australian Guidelines for the Prevention and Control of Infection in Healthcare (ACSQUH 2010).

The ANTT model for reducing HCAI:

1. **Theoretical Framework for Clinical Practice**
   - Practice Principles (Staff are educated)

2. **ANTT Clinical Guidelines**
   - ANTT Clinical Guidelines (Staff trained, practice standardised)

3. **Implementation Process**
   - Implementation Process (Compliance is established)

The framework contains the foundation principles of ANTT aseptic practice. These principles are intended for all clinical procedures...‘From the Operating Theatre to the Community’ ANTT Clinical Guidelines translate these foundation principles into practice via simple practice prompts which are displayed in clinical areas.

ANTT Clinical Guidelines translate these 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 ensure health care organisations provide high quality, standardised aseptic practice that conforms to an evidence base reflecting national infection control guidance. Each guideline is supported by a comprehensive technical rational and evidence base document.

Compliance to the guidelines is established across large health care organisations by the ANTT ‘Board to Ward’ Implementation Audit Cycle.

**ANTT Theoretical Framework for Clinical Practice**
The framework was first originated in 1995 and has been published in various stages since. This Version 2 represents a significant evolution and update.
The need for ANTT

Hospital acquired infection is a worldwide phenomenon and the causes are multi-factorial. Infection control interventions have been wide ranging, from improved hospital cleaning to more disciplined antibiotic prescribing; however, with the ongoing development and increasing use of root-cause analysis, the most significant problem area has focussed upon clinical behaviour. It is well accepted that variability in standards of aseptic technique have contributed significantly to HCAI (DOH 2003). This is not surprising, as the healthcare worker (HCW) is inherently and unavoidably the main potential vector of microorganism transmission during invasive clinical procedures and the maintenance of invasive systems; moreover, in most hospitals, such invasive interactions between patient and HCW occur many thousands of times every day. Considering that a typical hospital employs between 1000-5000 clinical staff, protecting patients by managing the quality of aseptic technique during invasive procedures is a pre-requisite to reducing HCAI and an ongoing concern for any health care organisation.

Aseptic technique is therefore a vital clinical competency used to protect patients from contamination and infection during invasive clinical procedures. It is essential that HCWs are properly educated and trained in an effective aseptic technique. Surprisingly, this has been far from the practice reality. Poor standards in aseptic technique have been reinforced by the myth that something as ‘established’ as aseptic technique was naturally well defined and all HCWs are comprehensively educated and competency assessed in it. This has not been the case. Typically, and further compounding the myth, it is common for key health care guidance to instruct clinical staff to perform aseptic technique, but fail to define what aseptic technique is and how it is actually practiced.

On the face of it, aseptic technique appears simple and straightforward. In practice, it is complex and often left to the subjective interpretation of individual HCWs leading to wide variability in technique and consequently variability in standards. Surprisingly, ANTT was essentially the first comprehensive theoretical framework for aseptic technique, and certainly the first to be adopted so widely. It provides a logical and standard set of principles or rules that clinical staff need to understand in order to apply safe aseptic technique to a wide range of clinical procedures. In addition, it provides health care organisations with a robust practice framework to ensure good clinical governance.

Different countries have tackled the shared problem of poor aseptic technique differently. In the UK, the Department of Health Savings Lives Programme promotes safe aseptic technique for a range of clinical procedures. The regulatory body, The Care Quality Commission, then demands evidence of a standardised aseptic technique – in line with the Statutory requirement of the Health and Social Care Act 2008 (Updated 2010): Code of Practice and control of infections and related guidance (DH 2008).

Where aseptic procedures are performed:

- **Clinical procedures should be carried out in a manner that maintains and promotes the principles of asepsis**
- **Education, training and assessment in the aseptic technique should be provided to all persons undertaking such procedures**
- **The technique should be standardise across the organisation**
- **An audit should be undertaken to monitor compliance with the technique**

To keep HCAI under control it is essential that progress in standardising aseptic technique with ANTT is consolidated and further developed. Due to the high rates of HCAI at the time of ANTT’s initial development, many hospitals improved practice by mandatory enforcement and surveillance of ANTT guidelines. It is now prudent that this approach is reinforced with education of the practice framework that the ANTT guidelines are based upon. This will ensure HCWs are able to apply safe principles of aseptic practice to any clinical procedure and in any care environment.
Basic concepts relevant to ANTT

An epidemiological approach
The ANTT Model is based on an epidemiological approach that a better understanding of the elements involved in the transmission of infection will facilitate safer standards of clinical care and ultimately reduce HCAI. To this end, the original ANTT Theoretical Framework (1995) deconstructed aseptic technique, then focussing on the relationship between host, environment organism and health care worker, originated a more relevant and novel practice framework based on accurate and original terminology. Most importantly, it highlighted a fundamental principle; that it is the successful identification and protection of the key-parts and key-sites of any clinical procedure from microorganisms that should form the absolute core of any practice framework and set of rules for aseptic technique (Rowley 2001). As a result, ANTT is a practice framework that doesn’t just instruct HCWs to perform aseptic technique; it explains in detail how to perform it.

Poor aseptic technique causes HCAI
The actual contamination of patients with microorganisms during invasive clinical procedures is of course an invisible process. However, a broad range of research subjects provide clear evidence for an indirect and direct causal relationship between failed aseptic technique (namely contamination of key-parts) and HCAI. Failure in aseptic technique refers to either introduction of microorganisms as a result of HCW handling failure e.g. failed non-touch technique, or failure of the HCW to establish asepsis of a key-part, usually a result of ineffective cleaning and/or disinfection or shortfalls in environmental management immediate to the procedure.

For example, Worthington et al, (2001) and Calop et al, (2000), demonstrated that approximately 8% of manually prepared saline flushes are contaminated prior to patient administration due to breaks in aseptic technique. A wide range of studies demonstrate contamination of intravenous hubs and 3-way taps etc as a result of failed aseptic technique. For example, Bouza et al (2003), Kaler and Chinn (2007). Perhaps best demonstrating the causal relationship between failed aseptic technique and procedure and/or patient contamination is the common problem of blood culture contamination (Weinstein 2003). During this process, failed aseptic technique commonly leads to contamination of the blood sample as a result of HCW contamination or ineffective disinfection of the sample bottles injectable seal.

Definitions of aseptic technique
Aseptic technique defines the infection control method and precautions taken during invasive clinical procedures to prevent the transfer of microorganisms from the health care worker, procedure equipment or the immediate environment to the patient. It is achieved by ensuring the asepsis of key-parts and key-sites.

Cleaning, disinfection, sterilization
During ANTT, key-parts are either pre-sterilised and then protected, or already in situ, such as an IV lumen port, and prior to use must be made aseptic by cleaning and disinfection:

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

Hand hygiene/cleaning
Hand hygiene is accepted as the single most important measure to prevent transmission of infection in healthcare settings. (APIC 2009, WHO 2009).
The 10 foundation principles of ANTT

The ANTT Theoretical Framework for Clinical Practice provides HCWs and Healthcare organisations with a set of foundation principles for safe and efficient aseptic technique. Understanding these principles will help HCWs determine the type of aseptic technique and the level of infective precautions required for different clinical procedures.

**CLINICAL PRACTICE**

**Principle 1**
The main infection risk to the patient is the health care worker

**Principle 2**
HCW's must understand what asepsis is and how to establish and maintain it

**Principle 3**
Identifying and protecting key-parts and key-sites is paramount

**Principle 4**
Asepsis is maintained with either Standard or Surgical ANTT

**Principle 5**
Clinical procedures should be risk assessed to determine the need for Standard or Surgical ANTT

**Principle 6**
Aseptic fields are important. Standard and Surgical-ANTT require different aseptic field management.

**Principle 7**
Non-touch technique is the most important component of Surgical and Standard-ANTT

**Principle 8**
Appropriate infective precautions help promote and ensure asepsis

**CLINICAL AND ORGANISATIONAL MANAGEMENT**

**Principle 9**
Aseptic practice should be standardised

**Principle 10**
Safe aseptic technique is reliant upon effective staff training in infection control, safe environments and equipment that is fit for purpose.
Principle 1

_In aseptic technique the main infection risk to the patient is the health care professional._

It is widely, if not universally recognised that poor standards of aseptic practice lie at the majority of healthcare-associated infection. However, there remains a significant gap between this realization and changes in clinical behaviour. It is therefore essential that healthcare organisations and HCWs understand the risk they pose to the patient and take the appropriate steps to minimise infection risk during clinical procedures. It is widely accepted that health care organisations must standardise aseptic practice and monitor standards.

Principle 2

_Healthcare workers (HCW) must understand what asepsis is and how to establish it and maintain it._

Historically, the hierarchy of terms; sterile technique, aseptic technique, clean technique and non-touch technique have been used to describe practice. A review of the literature demonstrates that these terms have been applied subjectively and inconsistently (Gilmour 2000). This has no doubt contributed to applications and standards of aseptic technique being highly variable and confused (Aziz 2009).

‘Sterile’ - Sterile technique
The term sterile is generally defined as meaning ‘Free from all living microorganisms’ (APIC 2009). By definition, sterile techniques are not possible to achieve in typical health care settings because it is impossible to maintain sterility of sterilised equipment once exposed to the air environment.

‘Clean’ - Clean technique
ANTT adopts the position that in the context of invasive procedures, differentiation between ‘clean’ and ‘aseptic’ technique is confusing and should be avoided; and that all invasive clinical procedures warrant aseptic technique. In other words, although the act of cleaning is a significant component of rendering a key-part aseptic, it is not a satisfactory standard per se for invasive clinical procedures.

‘Asepsis/Aseptic’ - technique
The term aseptic means, ‘Free from pathogenic micro-organisms’ (Merriam-Webster, 2010). Or, the process for keeping away disease producing micro-organisms (APIC 2009). By definition, and importantly, asepsis is actually achievable in clinical practice.

Non-touch technique
Non-touch is not a measurable standard. It is however, an integral component in achieving aseptic technique and should always be applied where practically possible.

Taking into account these basic definitions and the realities of clinical practice, the infection control aim of all clinical procedures is asepsis…achieved through aseptic technique.

Aseptic Non Touch Technique (ANTT)
Reflecting this, ANTT is an umbrella term for an aseptic practice framework intended to be used for all clinical procedures – ‘From the operating theatre to the community’.

Principle 3

_ Identifying and protecting key-parts and key-sites is paramount._

Key-sites are open wounds, including insertion and puncture sites. Key-parts are the parts of the procedure equipment that come into direct or indirect contact with any liquid infusion or key-sites and with any active key-parts connected to the patient. If contaminated they present a high risk of infection to the patient.
The fundamental principle, or rule of ANTT is that, ‘Active aseptic key-parts must only come into contact with other aseptic key-parts, or key-sites’. To achieve this, the HCW must first identify and then protect at all times the key-parts and key-sites of any procedure. Key-parts and key-site are protected by a non-touch technique (Principle 7), aseptic field management (Principle 6) and a range of infective precautions such as hand cleaning (Principle 8).

Often, key-parts such as IV ports must be cleaned prior to use in order to render them aseptic. However, despite accepted and well published evidence (Kaler & Chin 2007), cleaning of key-parts often carries a failure rate of up to 80% (Rowley and Clare, 2009).

**Principle 4**

*Asepsis is maintained with either Standard or Surgical-ANTT.*

**Standard-ANTT**

Standard-ANTT is the technique of choice when procedures meet all of the following criteria: They are technically simple, short in duration (approximately < 20 minutes), involve small key-sites and key-parts and minimal numbers of key-parts. Consequently, the main aseptic field does not need to be managed critically. Typically, Standard-ANTT will employ a ‘General Aseptic Field’, non-sterile gloves and the essential use of micro critical aseptic fields and non-touch technique to protect key-parts. (See Principle 6 for aseptic fields).

**Surgical-ANTT**

Surgical-ANTT is demanded when procedures meet one or more of the following criteria: They are technically complex, involve extended procedure time (approx >20 mins), involve a large open key-site(s), large or numerous key-parts. Consequently, the main aseptic field needs to be managed ‘critically’. (i.e. *Only sterilized and aseptic equipment can come into contact with the aseptic field*). Surgical-ANTT will employ a ‘Critical Aseptic Field’, sterile gloves and often full barrier precautions. NB: Where practical to do so, Surgical-ANTT should still utilise micro critical aseptic fields and non-touch technique. (See Principle 6 for aseptic fields).

**Principle 5**

*Clinical procedures should be risk assessed to determine the need for Standard or Surgical-ANTT*

Clinical procedures vary in their technical difficulty and subsequent clinical risk. For an aseptic technique to be safe and efficient, the HCW must assess every procedure for the level of aseptic technique and infective precautions required to maintain asepsis. Historically, risk assessment for aseptic technique has been confused by ambiguous criteria such as the patients’ age or diagnosis. The ANTT practice framework uses a simple and standard risk assessment to identify and protect key-parts and key-sites.

This assessment considers the technical challenge of the clinical intervention, the competency of the HCP and the environment in which a procedure is performed. With these factors in mind, the HCW asks;

‘*Using Standard ANTT, can I ensure that aseptic key-parts only come into contact with other aseptic key-parts or key-sites?*’

This simple risk assessment determines whether the clinical procedure requires a ‘Standard’ or ‘Surgical’ approach to ANTT (Principle 5). Having established the type of ANTT the HCW asks;

‘*Can I perform this procedure without touching key-parts or key-sites directly?’*

This simple risk assessment will determine whether sterile or non-sterile gloves are required to maintain the asepsis of key-parts and/or key-sites.
Principle 6

Aseptic fields are important. Standard and Surgical-ANTT require different aseptic field management.

By default, typical health care environments (especially hospitals) are ‘dirty’, busy and dynamic care environments exposed to unusual antibiotic resistant organisms and concentrated cohorts of patients with infection. Therefore, during clinical procedures, the use of aseptic fields is important in controlling the procedure environment and protecting key-parts and key-sites. ANTT employs two types of aseptic field that require different management depending on whether their primary purpose is to promote or ensure asepsis.

1. **General aseptic fields (Promoting asepsis)**
   General aseptic fields are used for Standard ANTT when key-parts can easily and efficiently be protected by micro critical aseptic fields and a non-touch technique (and other basic infection control measures). The main general aseptic field does not have to be managed critically as it is promoting rather than ensuring asepsis of key-parts and key-sites. Subsequently, aseptic technique is considerably simplified and typically involves non-sterile gloves.

2. **Critical aseptic fields (Ensuring asepsis)**
   Critical aseptic fields are used when due to their size or quantity, key-parts and key-sites cannot easily be protected at all times with covers and caps, or handled at all times by a non-touch technique (For example, Surgical-ANTT for peripherally inserted central catheter (PICC) line placement when particularly open and invasive procedures demand large aseptic working areas for extended lengths of time (e.g. in the operating room). In such circumstances, to maintain asepsis of key-parts the main critical aseptic field must be managed critically, i.e. only equipment that has been sterilised and is aseptic can be introduced onto the critical aseptic field. As a result, management of the aseptic field is more complicated, as in effect, the whole field must be managed as a key-part (i.e. the whole surface area can only come into contact with other aseptic equipment).

**Micro critical aseptic fields (Ensuring asepsis)**
Micro critical aseptic fields are a sub-type of critical aseptic field is the micro critical aseptic field. Micro critical aseptic fields are created when key-parts are protected by syringe caps, needles, covers and packaging etc. This often understated approach is given new emphasis in ANTT, because the inside of such caps and covers have been sterilised and typically provide an optimum all encompassing aseptic field for key-parts.

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*Fig 1. (Left) In Standard ANTT the main aseptic field does not have to be managed critically and is thus termed a general aseptic field - because the key-parts can be protected within micro critical aseptic fields.*

*Fig 2 (Right). In Surgical ANTT the main aseptic field must be managed critically and is termed a critical aseptic field.*

It is important that whatever type of aseptic field is employed that it must be fit for purpose. In ANTT, aseptic fields are increased in size and sterilised drapes added on the basis of procedure complexity (e.g. PICC insertion). In IV therapy, ‘mobile’ aseptic fields, serving as general aseptic fields, such as plastic trays should be large enough and with high sides to provide an adequate working space to contain equipment, sharps and spillages.
<table>
<thead>
<tr>
<th>Type of ANTT</th>
<th>Type of aseptic field</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical</td>
<td>A main critical aseptic field. With or without the utilisation of micro critical aseptic fields and non-touch technique (NTT).</td>
<td>Critical aseptic fields ensure the asepsis of key-parts.</td>
</tr>
<tr>
<td>Standard</td>
<td>A main general aseptic field. Mandatory utilisation of micro critical aseptic fields and NTT.</td>
<td>General aseptic fields promote asepsis of key-parts. The micro critical aseptic fields and NTT ensure it. This is a quicker and more efficient technique.</td>
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</tbody>
</table>

**Principle 7**

*Non-touch technique is the most important component of Standard and Surgical ANTT.*

It is known that hand cleaning is often poor and that even correct hand cleaning cannot always remove all pathogenic organisms. Therefore, a non-touch technique, the skill of being able to identify 'key-parts' and not touch them directly or indirectly, is a vital component of achieving asepsis. In other words, the safest way to protect a key-part is simply not to touch it.

Non-touch technique means, ‘Not touching key-parts either directly or indirectly’. In Standard ANTT a non-touch technique is critical because the asepsis of key-parts and key-sites are maintained by the use of micro critical aseptic fields (caps and covers etc) and usually, non-sterile gloves. In other words, if the HCWs gloved hands were to come into contact with key-parts and key-sites, practice would not meet Principle 3, (Key-parts must only come into contact with other aseptic key-parts and key-sites) and asepsis would be compromised. In Surgical-ANTT a non-touch technique is less critical because the asepsis of key-parts is maintained by the use of a large main critical aseptic field and sterile gloves. (This is still effectively a non-touch technique due to the protection afforded to key-parts and key-sites by sterilised gloves). In other words, the HCWs hands may come into contact with key-parts and key-sites, because in theory, sterilised gloves are aseptic key-parts. However, in practice, the sterility of equipment once exposed to the working environment cannot be guaranteed. Therefore, HCWs should still employ a non-touch technique when handling key-parts and key-sites whenever it is practical to do so.

**Principle 8**

*Appropriate infective precautions help promote and ensure asepsis.*

The HCW can significantly reduce the risks they themselves pose to the patient by routinely employing basic, but essential infective precautions.

**Hand cleaning**

Effective hand cleaning performed at the correct time is an essential component of safe aseptic technique. In Standard ANTT, hand decontamination should reflect the sequenced techniques set out by the WHO (2009) (Appendix for hand cleaning with soap and water or alcohol hand rub). In Surgical ANTT, a surgical hand scrub is required as defined by the ICNA (2002) and APIC (2009).

**Glove use**

Gloves are single use items. If it is necessary to employ Surgical ANTT or touch key-parts or key-sites directly during Standard ANTT, then sterile gloves are used to minimise the risk of contamination. Otherwise, non-sterile gloves are typically the glove of choice.

**Other protective clothing**

The need for further protective clothing is dependant upon clinical need and user assessment. This is typically prescribed by local policy. Typically, aprons and/or gloves are utilised for close patient care contact and certainly when managing body fluids. Full barrier clothing/precautions are employed for particularly invasive procedures such as central line insertion or other surgery to address the increased risks of environmentally transmitted infection.
Managing the immediate procedure environment
Prior to undertaking aseptic procedures, HCWs must take steps to limit the immediate environmental risks such as bed making or patients using commodes etc. This will help reduce airborne micro-organisms to a minimum. (There is increasing acknowledgement of the airborne transmission of bacteria such as staph aureus, MRSA and even clostridium difficile (Cotterill 1996, Roberts et al, 2008)).

The ‘5-Moments of Hand Hygiene’
The patients immediate care environment or ‘zone’ (typically a bed space) should be managed at all times according to the World Health Organisations model, The ‘5 moments of hand hygiene’ (Sax et al 2007). The model is designed to protect the patient and the patients zone by effective and timely hand cleaning which will help keep micro-organisms to an irreducible minimum at all times; thus reducing the potential for environmentally influenced contamination of invasive aseptic procedures.

Principle 9
Aseptic technique should be standardised.
Aseptic technique should be standardised across, and between, health care organisations. Where no such standard exists, the adverse effects on HCAI are well documented (DOH 2003). ANTT standardises practice in four ways:

1. It provides a common ‘practice language’ and set of principles which direct and standardise decision making in aseptic practice.
2. It provides a collection of hospital and community clinical guidelines for aseptic technique for the most common clinical procedures. (The guidelines are designed collaboratively and peer-reviewed nationally).
3. Implementation of ANTT is standardised through a defined audit cycle based process.
4. This approach has reduced variability in clinical practice, raised standards of practice and subsequently helped reduce HCAI (Pike et al 2009, Rowley & Clare 2009).

Using ANTT:
• Promotes a standard approach to aseptic technique
• Reduces variation in practice
• Facilitates a consistent structure for I.N.S.E.R.T.
• Provides a framework for auditing guideline adherence & evaluating practice

“The consistent and correct use of ANTT will maximise the incorporation of best evidence of effectiveness into infection prevention and control practice which will enhance patient safety”

(Pratt 2010)
**Principle 10**

*Safe aseptic technique is reliant upon effective ‘aseptic management’ e.g. staff training, safe care environments and fit for purpose equipment.*

Effective aseptic management is the responsibility of individual HCWs and importantly the healthcare organisation. For example, aseptic management includes the following measures:

- HCWs must be effectively trained in ANTT and assessed as competent and competency should be re-evaluated periodically.
- Standards and compliance to ANTT should be monitored.
- Equipment used in aseptic technique must be fit for purpose.
- The care environment should be well maintained and cleaned effectively.
- Basic systems should be employed to ensure sterilised and other procedure equipment is not compromised during storage.
**Applying ANTT in practice**

Practice example:

**Standard ANTT - Preparation and administration of intravenous medications.**

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*NB; This demonstration of the guideline below is not a teaching tool. It’s a shortened version used to illustrate aspects of the ANTT Theoretical Framework for Clinical Practice in this document.*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1</td>
<td>Assess the procedure environment for any avoidable environmental risks.</td>
</tr>
<tr>
<td>2</td>
<td>Establish clear access to the patients IV port.</td>
</tr>
<tr>
<td>3</td>
<td>Assess the procedure and determine whether Standard or Surgical ANTT is required.</td>
</tr>
<tr>
<td>4</td>
<td>With clean hands disinfect the tray to establish a General aseptic field</td>
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<tr>
<td></td>
<td>A General aseptic field is not managed critically but does promote asepsis in care giving environments.</td>
</tr>
<tr>
<td>5</td>
<td>Whilst drying gather all procedure equipment and place easy to hand.</td>
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<tr>
<td></td>
<td>Gathering all equipment at this point, minimises HCW interaction with the environment during aseptic preparation</td>
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<tr>
<td></td>
<td>Clean hands using alcohol hand rub.</td>
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<tr>
<td>7</td>
<td>Select and apply gloves according to ANTT glove assessment (Probably non-sterile for IV therapy).</td>
</tr>
<tr>
<td></td>
<td>Glove Risk Assessment</td>
</tr>
<tr>
<td></td>
<td>‘Can I perform this procedure without touching key-parts directly’</td>
</tr>
<tr>
<td>8</td>
<td>Assemble all equipment taking care to identify and then protect all the key-parts using non-touch technique (NTT).</td>
</tr>
<tr>
<td></td>
<td>Key-parts protected by …</td>
</tr>
<tr>
<td></td>
<td>non-touch technique</td>
</tr>
<tr>
<td>9</td>
<td>Protect all key-parts with dedicated caps and covers.</td>
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<tr>
<td></td>
<td>Critical micro aseptic fields provide an optimum environment for key-parts</td>
</tr>
<tr>
<td>10</td>
<td>Draw up medications.</td>
</tr>
<tr>
<td></td>
<td>Identify key-parts and use non-touch technique at all times</td>
</tr>
<tr>
<td>11</td>
<td>Proceed directly to the patient. If gloves are contaminated by the journey from prep room to patients zone remove gloves, decontaminate ‘hands, apply fresh gloves.</td>
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</tbody>
</table>
| 12 | **Scrub the tip of the IV port for 20 seconds using a 2%/70% alcohol wipe. Then wipe clean away from the tip using NTT.**<br>[Image](image1.png)  
The wipe is utilised using non-touch technique. |
| 13 | **Administer medications**<br>[Image](image2.png)  
Ensure the key-parts dry before use.  
Use non-touch technique to protect key-parts. |
| 14 | **Discard sharps and equipment in a decontamination zone.** |
| 15 | **Clean the tray.** |
| 16 | **Remove gloves** |
| 17 | **Clean hands immediately.** |
References


Nightingale F (1898).


Appendices

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

**Hand Hygiene Technique with Soap and Water**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Wet hands with water;</td>
</tr>
<tr>
<td>1</td>
<td>Apply enough soap to cover all hand surfaces;</td>
</tr>
<tr>
<td>2</td>
<td>Rub hands palm to palm;</td>
</tr>
<tr>
<td>3</td>
<td>Right palm over left dorsum with interlaced fingers and vice versa;</td>
</tr>
<tr>
<td>4</td>
<td>Palm to palm with fingers interlaced;</td>
</tr>
<tr>
<td>5</td>
<td>Backs of fingers to opposing palms with fingers interlocked;</td>
</tr>
<tr>
<td>6</td>
<td>Rotational rubbing of left thumb clenched in right palm and vice versa;</td>
</tr>
<tr>
<td>7</td>
<td>Rotational rubbing, backwards and forwards with clenched fingers of right hand in left palm and vice versa;</td>
</tr>
<tr>
<td>8</td>
<td>Rinse hands with water;</td>
</tr>
<tr>
<td>9</td>
<td>Dry hands thoroughly with a single use towel;</td>
</tr>
<tr>
<td>10</td>
<td>Use towel to turn off faucet;</td>
</tr>
<tr>
<td>11</td>
<td>Your hands are now safe.</td>
</tr>
</tbody>
</table>

Duration of the entire procedure: 40-60 seconds
2. Effective hand cleaning technique: For alcohol hand rubs (WHO, 2009).

**Hand Hygiene Technique with Alcohol-Based Formulation**

- **Duration of the entire procedure:** 20-30 seconds

1. **Apply a painful of the product in a cupped hand, covering all surfaces:**
2. **Rub hands palm to palm:**
3. **Right palm over left dorsum with interfaced fingers and vice versa:**
4. **Palm to palm with fingers interlaced:**
5. **Sacks of fingers to opposing palms with fingers interlocked:**
6. **Rotational rubbing of left thumb clasped in right palm and vice versa:**
7. **Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa:**
8. **Once dry, your hands are safe.**