



The Impact of Healthcare Associated Infection (HCAI)

- ▶ HCAs affect on average 1 in 20 people in the acute healthcare setting, (HIQA 2017).
- ▶ Increased length of stay.
- ▶ Financial cost.
- ▶ Human cost.

The extent of the problem related to IV therapy

- PPS in Ireland (2017) 57% of patients had IV access present on day of study (49% PVC, 8% CVAD)
- Incidence of blood stream infections (BSIs) associated with IV Lines is 42% of all BSIs.
- Catheter related Blood stream infections (CRBSI) represent 10–20% of all HCAI, (SARI 2009).
- CRBSI should not be seen as inevitable.

Quality and Safety Directorate
 – Suggests that up to 70% of line associated infection is preventable.

The Humble 'drip'

Peripheral Venous cannula (PVC)

- ▶ Insertion of PVC not seen as critical event.
- ▶ Maintenance of lines may be poor.
- ▶ May be left in too long.
- ▶ Left in when not required.
- ▶ Documentation incomplete, often absent.

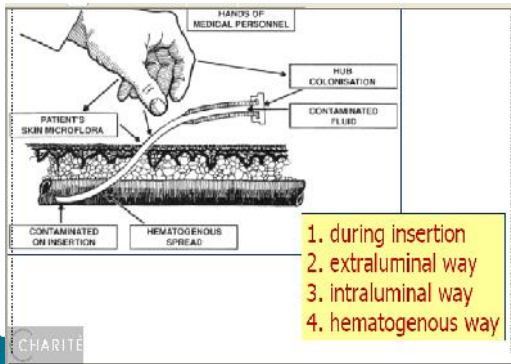
Case study

- ▶ Day 1, 50 year old with past Hx of mitral valve replacement admitted with acute coronary syndrome.
- ▶ IV cannula inserted.
- ▶ Day 4 patient discharged on oral Antibiotics for phlebitis.
- ▶ Day 13 patient readmitted with infective endocarditis.
- ▶ Patient required repeat mitral valve replacement surgery.
- ▶ Outcome patient has severe heart failure affecting his function and longevity.

Case study

- ▶ Patient quality of life severely compromised unable to work. May need heart transplant in the future.
- ▶ Patient took as case against the hospital Trust.
- ▶ Settlement with the Trust for £325,000.

How do lines get infected?

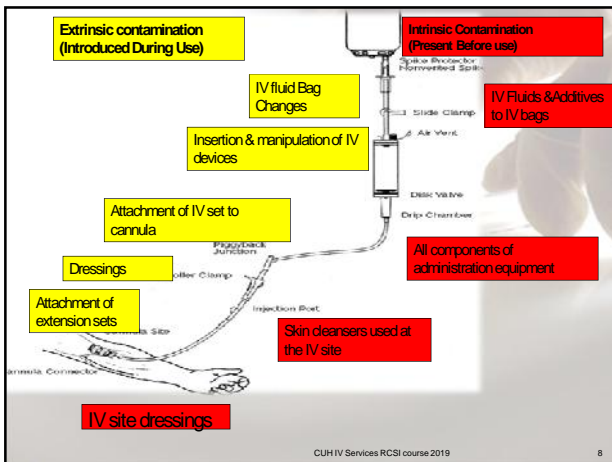


1. during insertion
2. extraluminal way
3. intraluminal way
4. hematogenous way

CHARITÉ

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Prevention of infection in IV Therapy

- Remove lines not in use
- Clean clutter free environment to prepare IV therapy.
- Use disinfected IV tray e.g. with 70% Alcohol wipes.
- Prefilled Saline syringes are single use!!!
- Use sterile needle and syringe to draw up Saline flush if prefilled not available

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Prevention of infection in IV Therapy

- Aseptic Non Touch Technique (ANTT®) to prepare IVs and when administering IVs.
- Hand Hygiene before preparing IVs and when administering IVs, i.e. Aseptic procedure.
- Minimum intervention -----Maintain a closed system (zero tolerance!)
- “Scrub the hub” (for 15 seconds) before use, Allow disinfectant to air dry
- Change dressing if site moist or dressing compromised

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Dressings

- Purpose:
 - Maintain aseptic state.
 - Provide securement.
 - Allow visualisation of IV site.
- Aseptic Non Touch Technique (ANTT®).
- Catheter specific transparent semi-permeable dressing.
- Transparent dressings changed as needed and/or at a minimum weekly if not compromised.
- **NB if collection of fluid under dressing it will need to be changed more often**
- Gauze dressing will need to be changed more frequently, to facilitate assessment the exit site.

Consider Chlorhexidine impregnated dressings and skin barrier solution??

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IV Cannula Dressing Clean Dry and Intact?



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Central Line Dressing Clean Dry and Intact?



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SCRUB THE HUB



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Small Sterets™ are too small to clean Key-Parts safely.



Use a **LARGE** skin disinfectant **wipe** containing 2% chlorhexidine and 70% alcohol.

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National guidelines on Prevention of Catheter Related Infection

- Epic 3, National Evidence Based Guidelines for Preventing Healthcare Associated Infections in NHS Hospitals in England (2014).
- SARI, Prevention of Intravascular Catheter Related Infection in Ireland (2014).

Aseptic technique should be used in procedures that breach the body's natural defenses and staff should be trained and competent in aseptic technique"

CPR training is mandatory every 2 years

Why not Aseptic technique??

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Examples of failures in asepsis during aseptic technique observed in acute hospitals in England (2006-2010).



Contamination of Key-Parts

Poor cannulation site care

Poor hand cleaning



Poor aseptic field management

Poor Key-Part disinfection

- Confused terminology
- Highly variable practice
- Inappropriate equipment
- Non conducive environments

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Terminology

Clean - 'Free from marks and stains'

This is not a satisfactory standard for invasive clinical procedures or maintenance of clinical devices.

Sterile: 'Free from all microorganisms'

This is not achievable in typical healthcare settings

Asepsis - 'Free from pathogenic organisms in sufficient numbers to cause infection'

This is achievable in typical healthcare settings

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Aseptic Technique

- Although the causes of healthcare associated infection are wide ranging, poor standards of aseptic technique may be the biggest cause of preventable HCAI.
- During invasive clinical procedures patients depend on healthcare professionals to protect them from harmful invisible microorganisms (www.antt.org).

“FIRST DO NO HARM”

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Aseptic Non Touch Technique (ANTT®)

- ANTT® is an umbrella term for a standard for safe and effective aseptic practice that can be applied to all aseptic procedures.
- ANTT® is a critical clinical competency (approach) which aims to ensure essential actions of aseptic technique occur every time (www.antt.org).

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Underlying Principles

- A**lways wash hands effectively.
- N**ever contaminate Key-Parts/Key-Sites
- T**ouch non Key-Parts with confidence
- T**ake appropriate infection prevention and control measures

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Key-Sites / Key-Parts

- **Key-Sites** – insertion site
- **Key-Parts** – the critical, aseptic parts of equipment that if contaminated are likely to contaminate the patient. Aseptic Key-Parts must only touch other aseptic Key-Parts.

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Key-Part / Key-Site Protection

'Key-Part and Key-Site Protection' is the fundamental concept of ANTT. No matter where procedures are undertaken and in what circumstances, asepsis is possible if Key-Parts and Key-Sites are protected from microbiological contamination.

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Identify Key-Parts



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Choose Appropriate Aseptic Field




Use Appropriate trays to create a 'General Aseptic Field'



•Use plastic tray disinfected e.g. 70% Alcohol (AZOWIPES).

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- Do not **DROP** your equipment into your tray
(There is a risk some Key-Parts will touch the tray)
- Key-Parts should **NEVER** be touched
- Only Key-Parts should touch other Key-Parts

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- Don't do this to identify your drugs (The bungs often leak around the needle making things wet - so no longer aseptic).
- It also increases risk of needle stick injury.
- Use labels to identify syringes.

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NEVER flick off Key-Parts such as needles or caps
(Your gloved thumb is likely to touch the Key-Part)

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Key-Part Protection



- Do not **DROP** your equipment into your tray.



- Don't leave Key-Parts unprotected and exposed even if a sterile clinical sheet is in use.

- Key-Parts should **NEVER** be touched

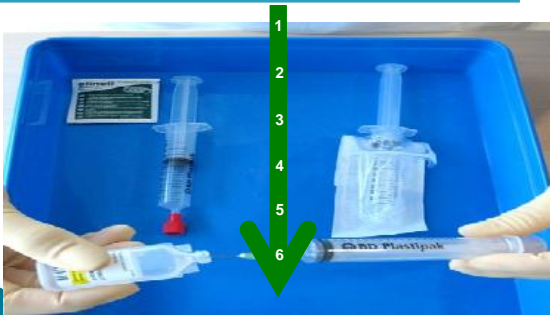
- Only Key-Parts should touch other Key-Parts.

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The ANTT-Approach (IV Preparation and Administration)

'6 Actions for Safe Aseptic Technique'



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The ANTT-Approach (IV Preparation and Administration)

'6 Actions for Safe Aseptic Technique'

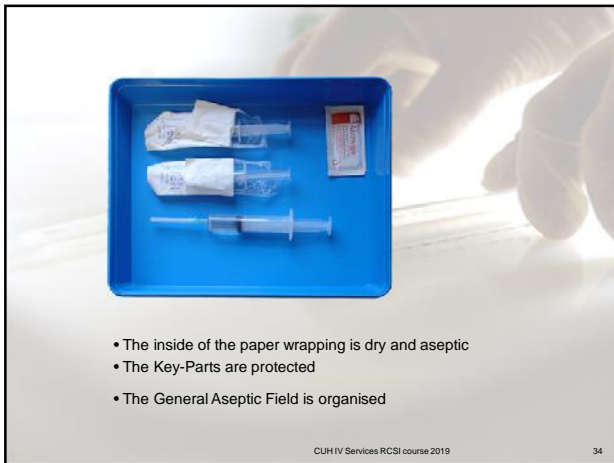
Key-Part/Key-Site risk assessment	1	Select the right technique (Standard-ANTT)
Environmental management	2	Reduce, avoid risks
Decontamination/PPE	3	Clean hands, gloves etc. disinfect Key-Parts (Remember to scrub hubs for 15 seconds)
Aseptic field management	4	Protect Key-Parts/Key-Sites (General Aseptic Field and Caps & Covers)
Non-touch technique	5	Protect Key-Parts/Key-Sites
Decontamination	6	Prevent cross infection (Clean hands, gloves etc. disinfect Key-Parts)

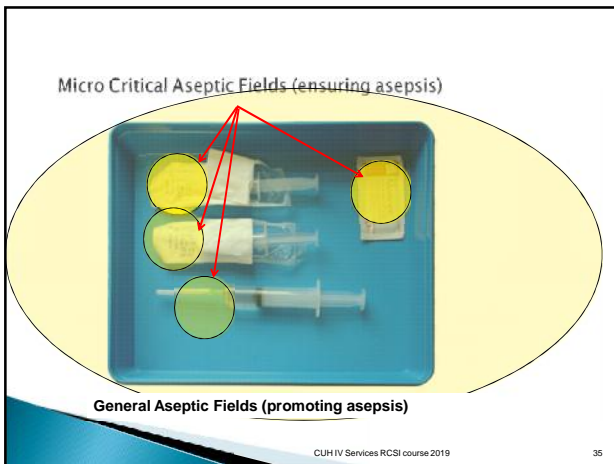
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Further information

- ANTT® e-learning on HSE land.
- Log onto HSE land.
<http://www.hseland.ie/dash/Account/Login>
- Search for ANTT® under the “Search Learning Catalogues”

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ANTT® in IV Therapy

- In ANTT®, asepsis is the aim during insertion, maintenance and use of IV access devices and administration of IV therapy.
- Asepsis is achieved by using “Key-Part and Key-Site protection”.
- ANTT® is not an optional extra!



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ANTT®

Please note that the Registered Trademark is not intended to stop healthcare organizations using ANTT! It is there to prevent commercial exploitation and encourage people and organizations not to modify the ANTT Practice Framework. This will help maintain the accuracy and integrity of the framework for the benefit of everyone – ensuring it remains a common standard approach to practice.

If in doubt simply email enquiries@antt.org who will be happy to advise

THANK YOU QUESTIONS?

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Royal College of Physicians in Ireland (RCPI) (2014) Prevention of Intravascular Catheter-related infection in Ireland. Update of 2009 national guidelines. Dublin: RCPI.

www.ANTT.org - Contact enquiries@antt.org for further information on ANTT®
