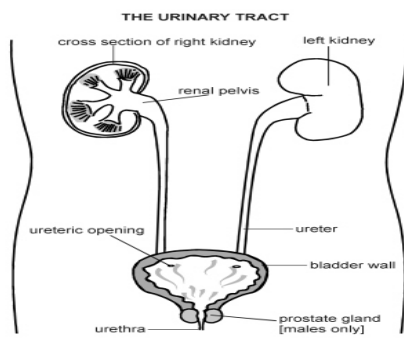


Urinary Catheters –preventing complications and promoting comfort for patients’

Gwen Regan, RGN, MSc, PgDip (IPC)
ADON – Practice Development
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The Urinary System



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Urinary Catheters

- External catheters
- Intermittent catheters
- Indwelling Urethral Catheters
- Suprapubic Catheters

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External (Conveen) Catheters

- Also known as condom catheters
- May be used in co-operative male patients as a means of managing incontinence
- Can be used for specific periods only, e.g. at night
- Are connected to external urinary drainage bag



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Intermittent catheterisation



- Involves brief insertion of a catheter into the bladder through the urethra to drain urine at intervals.
- Also known as 'in-and-out' catheterisation
- May be used in numerous situations, e.g. post gynaecology procedures, patients with spinal injuries, multiple sclerosis, spina bifida etc.

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Indwelling Urinary Catheter

- An indwelling urinary catheter is a drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a closed collection system (CDC, 2009)



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Indwelling Urinary Catheter

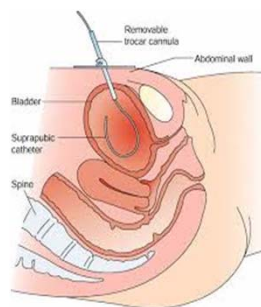


- May be short-term (post surgery) or long-term use
- **Must only be inserted by trained, competent persons**

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Supra-Pubic Catheterisation

- Inserted via the abdomen for a short or prolonged period of time.
- Performed in surgical theatre
- Indications for use
 - Post pelvic or urological surgery
 - Urethral trauma
 - Chronic prostatitis
 - Post gynaecological surgery



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How the type of Catheter is chosen

- Full patient assessment
- Involve patient in choice
- Consider patients level of understanding / memory
- Consider patients lifestyle
- Consider medical condition
- How long will catheter be required
- Consider clients sexuality, and how this will be affected
- Consider psychological state – if client is very confused/ agitated they may pull catheter out
- Does the patient have support / assistance to manage catheter
- Does the patient have any history of latex allergy?

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Indwelling Urethral Catheters - indications

- Urinary retention / bladder outlet obstruction
- Urine output measurement in critically ill patients
- Peri-operative use
- Assist in healing of open sacral or perineal wounds in incontinent patients
- Patient requiring prolonged immobilisation (e.g. potentially unstable thoracic or lumbar spine)
- To improve comfort for end of life care if needed

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Clients should *not* be catheterised...

- To substitute nursing care in clients with incontinence
- To obtain urine specimens in clients who can pass urine themselves

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Alternatives to Urethral Catheterisation

- Consider a toileting regime for clients who may be incontinent due to confusion / immobility / poor mental state / other disability
- Use external catheters (e.g. conveen) in cooperative males
- Consider intermittent catheterisation in
 - spinal cord injury patients
 - Patients with bladder emptying dysfunction
 - Children with myelomeningocele and neurogenic bladder

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Selection of catheter type & system

Silicone

- Use in patients with latex allergy
- Less likely to become encrusted or blocked
- Can be left in place for up to 12 weeks

Latex

- Can be left in place for up to 12 weeks
- Some evidence that balloon may 'cuff' on deflation causing pain to patient on removal

Size

- Measures in units fr (Ch)
- 1fr = 1/3mm
- Range in size from 6fr – 24fr
- Use the **smallest** size to suit the patient
- Male / female catheters are **different lengths** and should only be used as directed

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Standard Precautions

Standard Precautions are a set of evidence-based clinical procedures and measures that **MUST** be applied by **ALL** health care workers for **ALL** patients at **ALL** times.

- Hand Hygiene
- Personal Protective Equipment (PPE)
- Management of waste.

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Aseptic Technique

- ANTT standard – aseptic non-touch technique
- Aim - to decrease the likelihood of micro organisms entering the body during the clinical procedure

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Hand Hygiene

- The single most important intervention to prevent healthcare associated infections
- **Antiseptic** hand hygiene should be performed immediately before donning sterile gloves, prior to insertion of urinary catheter
- Gloves must be worn



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Why is Hand Hygiene so important?

- Numerous studies have shown that bacteria such as *Enterococcus* (VRE), *Serratia*, *Pseudomonas* and *Shigella* survive on hands for 60 minutes or more
- Cleaning hands with an alcohol hand rub reduces bacterial contamination of hands by up to 98%
- 80% of hospital staff who dressed wounds colonised/infected with MRSA carried MRSA on their hands for up to three hours afterwards
- 60% of hospital staff, within 30min of contact with patients with *Clostridium difficile* infection, were contaminated without even having touched the patient, from merely returning drug charts to the ends of beds!
- Pathogens can survive on your hands for prolonged periods unless you perform hand hygiene: *S. aureus* (includes MRSA) (150 minutes), Rotavirus (260 minutes), VRE (60 minutes), *E. coli* (90 minutes)

Why is Hand Hygiene so important?

- Regular use of alcohol-based hand gel in a Geneva tertiary hospital resulted in an 87% reduction in MRSA transmission, and a 42% reduction in all healthcare-associated infection
- In what is often considered the world's first randomised controlled trial, the introduction of hand decontamination resulted in a 90% reduction in mortality from puerperal fever (now known to be caused by Group A *Streptococcus*) in an obstetric hospital in Vienna (Semmelweis, 1861)
- Alcohol-based hand gel is more effective at reducing the concentration of bacteria on hands, compared to washing with antiseptic soap (83% vs 58% reduction in one study (Girou et al, BMJ 2002))
- Total bacterial counts on the hands of health professionals ranges from 39,000 to 4,600,000 bacteria per cm² (WHO Hand Hygiene Guidelines 2009)
- The immediate environment around a hospitalised patient, including surfaces like bed rails, bed linen, charts etc., are coated with a layer of that patient's respiratory, skin and faecal micro-organisms (sometimes referred to as the "faecal veneer"). Thus, you can pick up faecal bacteria on your hands without having touched the patient.

Patient Preparation

- Discuss need for urinary catheter with patient
- Discuss alternatives if appropriate
- Discuss how procedure is to be carried out
- Provide reassurance and answer any questions

This is *not* a routine device and can have a serious impact on patients lives – the decision to catheterise is not to be taken lightly

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Personal Protective Equipment



- Disposable plastic apron if required
- Sterile Gloves

**Single use items
worn once then
discarded**

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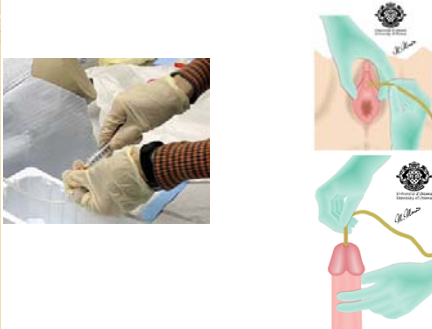
Meatal Cleaning

- The mechanical removal of exudate and smegma.
- Wash with soap and water
- Male patients – retract the foreskin and clean the glans penis
- Female patients – separate the labia minora and a front to back cleaning technique adopted
- Wash urethral opening with sterile water or sterile saline solution using sterile gauze balls or sterile swabs (single use)

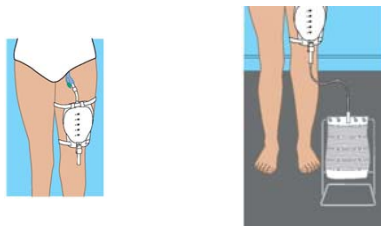


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Aseptic Non-Touch Technique



Drainage Systems



Cleaning & Maintenance

- Daily bath / shower recommended
- Always clean away from the urethral meatus
- Use non perfumed soap and water
- Catheter always below the level of the bladder
- Change leg bag at least weekly
- Night bags changed nightly, do not wash

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Complications

- Infection
- Blockage
- Bladder Spasms
- Urethral Damage

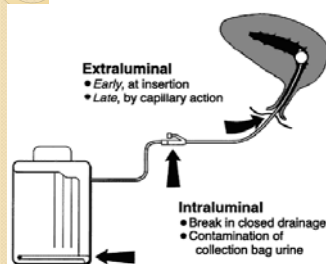
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Infection

- The risk of acquiring bacteriuria has been estimated as 5% for each day of catheterisation, accumulating to 100% in 4 weeks
- The UK NICE (2008) guidelines on antimicrobial prophylaxis against infective endocarditis do not support the use of antibiotic prophylaxis to prevent endocarditis in patients undergoing urological procedures, including catheterisation
- There is no role for routine antimicrobial prophylaxis in patients with urinary catheters.
- Definition of CAUTI in long term care - at least two of the following signs or symptoms:
 - (A) Fever ($\geq 38^{\circ}\text{C}$) or chills.
 - (B) New flank or suprapubic pain or tenderness.
 - (C) Change in character of urine.
 - (D) Worsening of mental or functional status.

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Where do bugs get in?



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Catheter Associated Urinary Tract Infections (C.A.U.T.I.s)

- The most common healthcare associated infection
- The presence of a urinary catheter and the duration of its insertion are contributory factors to the development of U.T.I.
- Among UTIs acquired in acute hospitals, approximately 75% are associated with a urinary catheter (CDC, 2013)
- CAUTI can lead to such complications as prostatitis, epididymitis, and orchitis in males, and cystitis, pyelonephritis, gram-negative bacteraemia, endocarditis, vertebral osteomyelitis, septic arthritis, endophthalmitis, and meningitis.
- Complications associated with CAUTI cause discomfort to the patient, prolonged hospital stay, and increased cost and mortality.

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Blockage

- Recurrent blockage caused by encrustation of the catheter from deposits of mineral salts is a complication in approximately 50% of all long-term catheterised patients.
- Catheter blockage causes leakage, bypassing of urine and urinary retention and results in an increased number of catheter changes.
- Encrustation on the external surface of the catheter can cause trauma to the urethra during catheter removal.
- Catheter maintenance solutions (CMS) are acidic washout solutions, which are commonly used to prolong catheter life by reducing pH resulting in dissolution of existing encrustations.
- Any disruption to the closed system increases the risk of infection. However, where frequent blockage would lead to frequent re-catheterisations, the potential infection risks associated with CMS use may be outweighed by increasing catheter life and reducing patient discomfort.
- An aseptic technique should be used for intermittent irrigation (e.g., flushing or instillation of drugs).
- Each patient should have an individual care regime designed to minimise the problems of blockage and encrustation.
- If use of catheter maintenance solutions (CMS) is being considered, they must be prescribed on an individual patient basis.
- An aseptic technique should be used for instillation and a new sterile drainage bag attached after the procedure.

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Bladder spasm

Can cause pain and urine bypassing

Medication

Ensure balloon fully inflated

Ensure there is no 'pull' on catheter

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Urethral damage

Having a urinary catheter places clients at risk of the following:

- injury to the urethra caused by inserting the catheter
- narrowing of the urethra because of scar tissue caused by repeated use of a catheter
- injury to the bladder or rectum caused by incorrectly inserting the catheter
- Paraphimosis (Males)

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Preventing Complications

- Encourage fluid intake (unless contraindicated)
- Encourage high fibre diet – prevent complications
- Educate carers / family members / clients in hand hygiene, placement of catheter, storage of supplies etc.
- Review your catheters
 - Why does your client have a catheter?
 - Do you have a care plan in place?
 - How often do you review your plan?
 - Do you feel competent to deal with this device?

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References

- Healthcare Infection Control Practices Advisory Committee, 2009, *Guideline for Prevention of Catheter-Associated Urinary Tract Infections*, US Centre of Disease Control
- National Health Service, 2009, *Essential steps to safe, clean care – Urinary catheter Care*, UK Department of Health
- Pellowe, C, Pratt, R., 2004, *Catheter-associated urinary tract infections: primary care guidelines*, Nursing Times, Vol: 100, Issue: 02
- Healthcare Infection Control Practices Advisory Committee, 2009, *Guideline for Prevention of Catheter-Associated Urinary Tract Infections*, US Centre of Disease Control
- National Health Service, 2009, *Essential steps to safe, clean care – Urinary catheter Care*, UK Department of Health
- War, L., Fenton, K., Maher, L. 2010, *The high impact actions for nursing and midwifery 5: protection from infection*, <http://www.nursingtimes.net/nursing-practice-clinical-research/acute-care>
- Pomfret, I. (2000) Catheter care in the community. *Nursing Standard*; 14: 27, 46-54
- Welford, K. 2010, Comparing indwelling and intermittent catheterisation, <http://www.nursingtimes.net/specialist-practice/continence-practice>
- Indwelling urinary catheterisation – male or female, <http://www.nmt.org.uk/indwelling>

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