Session Contents

Catheter Assessment and Selection

- Patient Assessment
- Catheter Selection
- Catheter drainage & securement devices

- Catheter Care and maintenance
- Communication & record keeping
Why is Good Catheter Care Important?

- Increased Risks of Adverse events - sepsis, antibiotics, Length of stay, life expectancy (Kunin et al 1992, Landi et al 2004)
- Urethral trauma & pressure damage allowing bacteria to colonise more readily (Aggarwal et al 2009)
- Catheter Blockages or Bypassing
- Provides a surface for bacteria to adhere (Jacobsen et al 2008)
- Catheter Associated Urinary Tract Infection (CAUTI)
- Antibiotic Resistance

A Catheter is a valuable, sometimes essential tool, but when used incorrectly can be a considerable source of complications.
Patient Assessment
Clinical Indications for Catheterisation:

- Management of urinary retention or bladder outlet obstruction
- Monitoring of Input/Output
- Measurement/drainage of post void residual volumes
- Perioperative – for selected surgical procedures
- Intra/postnatal
- Administering medications/treatments for the bladder
- Irrigation - haematuria
- Immobility – eg unstable fractures, traumatic injuries
- Investigations – Urodynamics, cystogram
- Palliative care to promote comfort and dignity
- Tissue Viability to assist wound healing  
  (RCN 2023, EPIC 2014, NICE 2014)

Catheterisation for incontinence should only be used as a last resort when all other methods have been exhausted

HOUDINI offers a useful pneumonic to guide decision making (Adams et al 2012)
Individual Patient Assessment

- Have all other methods of managing symptoms been exhausted
- Have underlying causes of bladder symptoms or incomplete emptying been identified & treated
- History – are there any factors which will increase patients' risks associated with catheterisation
- Allergies - latex, chlorhexidine, lidocaine, products used for cleansing, adhesives
- Any previous catheter history - difficult catheterisation, complications associated with catheterisation eg. infection, frequent blockages, expulsion or pain

Potential impact on the patient of catheterisation:
- Can they manage the catheter independently
- Sexuality and body image
- Most appropriate method for the patient
  - Urethral Catheterisation – Indwelling/Intermittent Self Catheterisation
  - Suprapubic

RCN Catheter Care Guidance offers a comprehensive overview of patient assessment
EAUN Guidance offers an in-depth discussion of Risk factors and advantages/disadvantages of suprapubic and urethral catheterisation.
Does the patient have capacity and do they consent to catheterisation?

- Essential that valid consent obtained and documented
- If the patient is unable to give consent you must follow the principles of the Mental Capacity Act (2005) and your Local policy
- There must be a valid clinical indication for using a catheter and it must be clear that it is in the best interests of the patient. (RCN 2023)
- Decisions should be made within a wider MDT with family members or persons engaged in caring for the patient (RCN 2023)
- For consent to be valid the patient, relative or carer should expect:
  - To understand the rationale, alternatives and consequences of not being catheterised
  - That it is in their best interests and safety
  - The common risks associated with catheterisation
  - That their catheter care reflects up to date, evidence-based practice & the HCW is competent in the procedure (RCN 2019)

RCN Catheter Care guidance provides Further information around assessment, capacity and consent.
Catheter Selection

Catheters are Medical Devices and as such HCP must have a clear understanding of the benefits and disadvantages of catheter equipment and must be familiar with the types of catheters and equipment available (RCN 2019).
Intermittent Self Catheterisation

- I.S.C should always be considered the first option (EPIC 2014, NICE 2010, NICE 2015)
- Maintains bladder function allowing the bladder to fill and empty
- Able to monitor bladder function more readily
- Reduced incidence of UTI (Hunt et al, 1984; Wydaele, 1988)
- Maintains sexual function
- Enables patient to self manage
- Patients should be given a choice of Catheters
- Potentially requires motivation and a degree of dexterity.

RCN Library offers access to a range of articles for further reading.
Indwelling Catheters

The choice of indwelling catheters should be based upon the purpose and duration of catheterisation (Loveday et al 2014)

**Short Term Use – up to 28 days**
PVC, PTFE coated catheters
(Polytetrafluoroethylene)

**Long Term Use – up to 12 weeks**
Hydrogel coated latex
100% silicone
Hydrogel coated silicone
There is a risk of harm from wrong connection of bladder irrigation to an incorrect port on a 3 way catheter. If irrigation fluids or spigots are attached to the wrong port, the patient is at risk from the bladder being over-distended and the bladder being unable to drain safely.
Catheter Size

• System of measurement to express catheter diameter is the Charriere (ch) or French Gauge (fg)
• The correct size is the smallest size possible to ensure adequate drainage (Loveday et al 2014, Lo et al 2014)

For Routine drainage
• Female  10 – 14ch
• Male      12 – 16ch
• S/P      16 - 18ch
• Balloon Size – always use the volume advised by the manufacturer!
• Urology patients may require larger Gauge and balloon sizes (Loveday et al 2014)
Choosing Correct Catheter Lengths

- Catheters are available in 3 lengths
  - Standard  40 - 43cm
  - Female    23 - 26cm
  - Paediatric 30cm

- Female length catheters should not to be used in males (NPSA 2009)
- Check your local Policy regarding Female length catheters

See RCN Library for further reading around Types of catheters and materials
Drainage Bags

Available in variety of sizes

Factors to consider:

Tube length

Capacity required

Tap - Ease of Opening & Closing

Catheter Valve
**Securement Devices**

Catheters should be well secured to reduce trauma

Leg bag Straps alone are not sufficient to secure the catheter

Prevent excessive traction and movement of the catheter
Decrease risk of obstruction of urine flow (Lo et al 2014)

Always ensure the catheter is not placed under the thigh as this will obstruct urine flow

Alternate the placement of the securement device (IPC 2023)
Catheter Insertion and Care

The main routes for bacteria are via the tip of the catheter on insertion, intraluminal, extraluminal, connection between the bag and catheter, tap, hands (Barford & Coates 2008, Warren 2001 & Wilson 2006).
Hand Hygiene & Standard Precautions

Cornerstone of preventing Infections

Hand hygiene performed before & after any contact with the catheter (IPC 2023, NICE 2012)

Apron & gloves should be worn when performing any catheter care

Use of gloves is not a replacement for hand hygiene

Patients & family should also be educated in the importance of hand hygiene (NICE 2012)

NHS England Catheter Passport contains a guide to handwashing for patients and carers
Catheter Insertion

Skilled practitioner whose competence has been assessed (NICE 2014, RCN 2019, Loveday et al 2014)

Aseptic technique, using sterile equipment (NICE 2012, IPS 2017)

Meatal cleansing prior to procedure

Single use lubricating gel should be used for male, female & S/P catheterisation to minimise trauma on insertion (NICE 2014, EAUN 2012)

Important to document the volume of urine drained to guide treatment decisions

RCN Catheter Care Guidelines offers a suggested structure for gaining competence and Procedures for Catheterisation
Emptying the Drainage Bag

Hand Hygiene before & after emptying the bag  (NICE 2014, Loveday et al 2014, IPS 2017)

Single Use non-sterile gloves and Apron

Empty frequently enough to maintain urine flow (NICE 2014)

Don’t allow the bag to become too full (2/3 full) (NICE 2014, Loveday et al 2014, IPS 2017)

Clean the tap before & after opening in accordance with local policy (IPC 2023)

Avoid contact between the tap and jug when emptying (NICE 2014)

Use a Separate, clean container for each patient (NICE 2014)

Monitor urine concentration/output - if any concerns escalate

DRIPP Quick Reference guide (Device Related Infection Prevention Practice) Evidence based quick reference guide to catheter care
Changing the Drainage Bag

A record should be kept of date of next bag change

Most drainage bags are licensed for use for up to 7 days

Hand Hygiene before & after

Gloves and apron should be worn (refer to local policy regarding sterile/non-sterile gloves)

Use a non-touch technique when changing the bag

Position the drainage bag below the level of the bladder  (NICE 2014, Loveday et al 2014)

2L Drainage Bag should be secured on a stand not in contact with the floor  (NICE 2012)

Assess is the type of drainage bag appropriate for the patient?
Encourage adequate hydration – maintains flow of urine, reduces risk of UTI, Encrustation (EAUN 2012)

Monitor for Constipation and escalate – may exert pressure on the catheter preventing it from draining adequately. May also cause bladder spasms (EAUN 2012).


Hygiene – Routine daily hygiene and after any bowel incontinence/soiling (IPS 2017, IPC 2023)

In males ensure the foreskin is replaced.

Females care should be taken to wash front to back.

Use this opportunity to check for any signs of trauma caused by the catheter - including the urethral opening, scrotum, labia and thighs.

Equipment - sufficient amount should be available when needed and within a reasonable time without posing a risk (CQC 2009).

RCN Catheter care guidance and EAUN offers some troubleshooting guidance
Urine Sampling & CAUTI

Nearly all people with a catheter will develop bacteria in their urine within 1 month of catheterisation (Loveday et al 2014)

Do Not perform Urinalysis or Routine Culture on patients with no symptoms of infection (NICE 2015 & EAU 2023)

Treatment of asymptomatic bacteria in patients urine increases risk of side effects of antibiotics and contributes to the growing problem of resistance (Public Health England 2020, EAU 2022)

If required obtain CSU via the sampling port on the drainage bag using an aseptic technique not via the tap (NICE 2018)

If Infection confirmed - consider removing or, if this cannot be done, changing the catheter as soon as possible if it has been in place for more than 7 days. (NICE 2018)

NICE CAUTI Treatment Pathway (2018)
European Association of Urology – Urological Infections in depth resource on signs of infection, and treatments (2022)
Removal of Catheter

- The highest risk factor for CAUTI is duration of catheterisation.

- CAUTI’s are leading cause of healthcare acquired infection. 20% of bacteraemia arise from the urinary tract (EAU 2022).

- The most effective way to reduce risk of CAUTI is to remove catheter. Don’t insert it in the first place (Lo et al 2014).

- Robust processes should be in place to review ongoing need for catheterization.


- At least every catheter change in long term catheterization (IPS 2017).

- Address risk factors to optimize outcome of a Trial With Out Catheter (TWOC).

NHS urinary Catheter Tools & RCN Catheter Care Guidance offers considerations when planning a TWOC.
Patient Education

• Ensure patients, relatives and carers are given information on reason for catheter, plan for review and removal
• If discharged with a catheter, the patient should be given written information and shown how to:
  • Change leg bags/valves and how to attach night bags
  • How & when to perform hand hygiene and personal hygiene
  • Order supplies
  • Signs and symptoms of infection
  • Contact numbers and how to access help
• Ongoing advice and support should be available for the duration of catheterization
• Providing the patient with a Catheter Passport supports consistency of care

 (Loveday et al 2014, EAUN 2012, RCN 2019)
Documentation

- **Catheter Insertion**
  - Brand, catheter name, material, tip type, catheter length, Charrière size, balloon size, batch number, expiry date (usually found on a sticker on the catheter packaging)
  - Lubricant/anaesthetic gel used
  - The reason for catheterisation, change & ongoing need for catheterisation
  - That the patient understands the process and verbally consents.
  - Where the individual lacks capacity, the reasons why it was in the persons best interests must be recorded.
  - Meatal or genital abnormalities observed.
  - If the insertion was easy or difficult
  - Steps taken to overcome difficulties with insertion
  - Volume of urine drained; colour & any debris noted  

*Refer to RCN Catheter Care for full guidance on documentation*
Catheter Removal

- Was the catheter tip and balloon intact
- Was the type of catheter used appropriate for length of use
- Catheter observations – encrustation, debris, discharge
- Any haematuria noted on removal
- Meatal or genital abnormalities observed.
- Any pain or difficulties on removal and steps taken to reduce these

If Catheter Change:

- Is continued catheter usage still clinically indicated
- Is the type of catheter, drainage system & securement appropriate for the patient
- Impact on patients QoL
- Any side effects experienced – pain, bladder spasms, bypassing and plan to reduce these

What Does Good Catheter Care Look Like?

- Catheters are only inserted for valid clinical reasons which are clearly documented (Meddings et al 2014, Lo et al 2014)
- Evidence of an Individual risk assessment prior to decision to catheterise (RCN 2019)
- Catheterisation for continence is only performed where all other methods have been exhausted
- Practitioners regularly review and document the ongoing need catheterisation (APIC 2014)
- Processes are in place and staff empowered to facilitate catheter removal at the earliest possible time.
- Patients and carers are provided with education and support to care for their catheters
- Robust communication between providers on transfer/discharge
- Education provided on managing continence including treatments and appliances to manage bladder symptoms.

See RCN Bladder & Bowel eLearning resources on promoting continence and managing incontinence
In Conclusion

• Remember the 4 “R”s
• The Right catheter
• For the Right reasons
• With the Right care
• Regularly Reviewed
Questions ?
References


NICE (2014) Infection prevention and control Available at: https://www.nice.org.uk/guidance/qs61


Symptoms of CAUTI (EAU 2022)

- Fever and rigors
- Altered mental status (new onset or worsening confusion/delirium)
- Malaise or lethargy (in the absence of other cause)
- Flank pain
- Back Pain
- Acute haematuria
- Pelvic discomfort
- In a catheterised patient the presence of cloudy or odorous in the absence of symptoms should not be used to differentiate a CAUTI (EAU 2023, APIC 2014)

EUA 2022 guidelines provides comprehensive guide on where treatment of infection is indicated
“At risk” times with Catheter Care

- Insertion/change of catheter
- Catheter Care
- Removal/Renewal of bags
- Emptying of bag
- Urine sampling

The presence of a catheter allows bacteria to adhere to its surface and multiply, leading to colonisation and the formation of a biofilm. (Barford & Coates 2008)

Use a separate clean container for each patient, avoid contact with the drainage tap and the container. (NICE 2014, Loveday et al 2014, HII 2017)
Trouble Shooting Guidelines

15. Catheter maintenance solutions, bladder washouts and irrigation

Bladder irrigations, instillation and washouts do not prevent catheter associated infection. Regular use can lead to an increased risk in the sterile closed drainage system is repeatedly broken, which can lead to infection, sepsis and death.

When considering the use of washouts/medication solutions, there must be evidence of an individualised assessment and the clinical indication for use must be recorded.

Bladder irrigation

This is a continuous irrigation of the bladder via a 3-way catheter for the purpose of removing clots and debris post-urological surgery. This method of irrigation is normally used for short periods only and only within an acute care setting.

Bladder washouts

These involve flushing the bladder with sterile normal saline to remove clots, debris or mucus. Consider the following when using this technique:

- Best practice guidance suggests that small sequential volumes are more effective than a single larger volume administration.
- There is a high risk of infection due to the breaking of the closed drainage system every time an administration is performed.
- There should be a clear, documented clinical rationale for using bladder washouts with evidence of effectiveness.
- The administration should be via a pre-filled administration set.
- Bladder washouts should be administered, where possible, using gravity rather than direct pressure to avoid tissue injury.
- In the case of a patient with a surgically augmented bladder (where bowel tissue has been used to enlarge the bladder capacity), it may be necessary to use a sterile 50ml syringe to administer the washout due to the high level of mucus present.
- Consider using an irrigation connection device (inserted into the needle-free sample port of the catheter) to minimise the risk of infection caused by breaking the closed drainage system.

Catheter maintenance solutions

These are sterile prefilled preservative-free products, they should only be used when all other options have been considered. Evidence suggests smaller volumes, instilled sequentially, are more effective than large-volume single administrations.

The use is based on an individual assessment and several considerations must be made before use:

- Have all other less risky options been considered first to maintain the patency of the catheter? (See Appendix 3 for an example of this.)

7.6 Bladder spasm

Bladder spasm is very common in patients with indwelling catheters and is best managed with anticholinergic medication which may be given orally, transdermally or intravenously. Chronic constipation may also cause bladder spasm. Maintaining regular bowel function with a high-fibre and high-fluid intake helps prevent constipation. [56, 101] Sometimes a different catheter (smaller lumen and balloon size) can reduce the spasm caused by constipation. [56] (E-4)

Should this fail, intra-detrusor injections of botulinum toxin A may be administered. [56] (E-3)

Recommendations

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<thead>
<tr>
<th>Recommendations</th>
<th>LE</th>
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<tbody>
<tr>
<td>Educate the patient regarding the link between constipation and bladder spasm</td>
<td>4</td>
<td>C</td>
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<tr>
<td>Bladder spasm are best managed with anticholinergic medication</td>
<td>3</td>
<td>B</td>
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<tr>
<td>Intra-detrusor injections of botulinum toxin A may be administered if anticholinergic medication should fail</td>
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7.7 Bladder pain

Bladder pain may be an extreme form of urgency experienced as a consequence of detrusor spasm or may exist as a distinct entity without an associated urge to void. Catheter-associated bladder pain is exacerbated by constipation which therefore should be treated as a priority in affected individuals. [56] (E-3). Catheter-associated bladder pain is mentioned here as possible complication of catheterisation. Other aspects of bladder pain and painful bladder syndrome fall outside the remit of this guideline.

Recommendations

<table>
<thead>
<tr>
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<tr>
<td>Various studies have shown success in treating catheter associated bladder pain with anticholinergic medications, which reduce both the incidence and severity of such pain [41, 146]</td>
<td>13</td>
<td>A</td>
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<td>Ketorolac has also shown to significantly reduce the incidence of catheter related bladder pain at a dose of 20mg every 8 hours [153]</td>
<td>3a</td>
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<td>It would appear that the incidence of bladder pain is less for suprapubic catheters than for urethral catheters but the explanation for this is currently unclear, although this may be related to its greater apical position which may minimize or avoid trigonal stimulation [106]</td>
<td>1a</td>
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Symptoms of CAUTI (EAU 2022)

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Catheter Removal
Catheter Removal

Appendix 3: Guidance at a glance – urinary catheters

**DC/PCC Block/ Reappraisal?**

**YES**
- Can the patient use intermittent catheterisation instead of an AC?
  - **NO**
    - Can a catheter valve be unscrewed to allow emptying and filling of the bladder?
      - **YES**
        - Consider using an ATU catheter.
        - Order replacement catheter if necessary and discuss further management with the patient.
      - **NO**
        - Review within 2 weeks of starting use.

**IS the drainage bag less than 30cm away from the catheter?**
- If yes, check for increased traction and regular repositioning.
- If no, review within 2 weeks of stopping use.

**CLINICAL PROFESSIONAL RESOURCES**

**CATHETERS CARE: RCN GUIDANCE FOR HEALTHCARE PROFESSIONALS**

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