Principles underlying urinary catheterisation in the community

Frank Booth

This article examines the various elements that community nurses need to consider when attempting to provide best practice in urinary catheterisation. The author seeks to challenge what is considered best practice — particularly the requirement for all practice to be evidence based — while encouraging community nurses to think proactively about the care they are providing. The article stresses that the first principle of urinary catheterisation is to avoid the procedure where at all possible — catheterisation is potentially dangerous and can even be life-threatening if performed inappropriately. Overall, the author poses some key questions, including: should there be a difference in the care provided by community and hospital nurses; do community patients have the same needs as those in hospital; and can the manufacturers of drugs/products help to make avoiding urinary tract infections (UTIs) easier?

THE SCIENCE — CATHETER-ASSOCIATED URINARY TRACT INFECTION (CAUTI)

Urinary tract infections (UTIs) resulting from catheter use are a common healthcare-acquired infection (HAI). Despite modern hygiene standards, approximately 1 in 10 people who have a catheter go on to develop a CAUTI. Because of this high risk of infection, a urinary catheter is only used when all other options have been excluded. The risk of infection is heightened with indwelling catheters. Patients who are required to insert catheters themselves intermittently, must receive proper training from the care team. Symptoms of a CAUTI include:

- Pain in the bladder or urethra
- Offensive-smelling discharge from the urethra
- Foul-smelling cloudy urine
- General symptoms of infection, e.g. high temperature (38°C/100.4°F or above), feeling generally unwell, tired or lethargic.


INFECTION CONTROL IN THE COMMUNITY AND HOSPITAL

Basic principles of care should not

KEYWORDS:
- Continence
- Infection control
- Urinary catheterisation

Frank Booth is freelance continence advisor

Urinary catheterisation in any of its forms — indwelling, suprapubic, or intermittent — is never simple. Over the past 40 years catheterisation techniques and the basic design of catheters themselves have changed little and research/evidence is frequently contradictory, even speculative. Consequently, it can be hard to maintain the correct knowledge and skill base. While recent clinical guidelines (National Institute for Health and Clinical Excellence [NICE], 2012) have produced audit tools, it is debatable how many nurses are actually aware of these and/or follow them rigorously.

BACKGROUND

Booth and Clarkson (2012) outlined the indications for urinary catheterisations (see Table 1). However, there are few real clinical indications and any suggestion of catheterisation should always be questioned. The same authors highlighted that 23% of hospital-acquired infections (HAIs) are urinary (Plowman et al, 1999; Booth and Clarkson, 2012), which incurs significant financial costs and extra hospital stays for patients.

Catheterisation is a high-risk intervention and it is not unheard of for people to die as a direct result, — even when performed well, trauma as a result of catheterisation is still not uncommon (Holroyd-Leduc et al, 2007).

It is important that clinicians, including community nurses do not catheterise for convenience, particularly given the ongoing revelations about poor care standards (Francis, 2013). It can be seen as more convenient for nurses to catheterise patients rather than move them several times a day to change bed sheets and clothing, to use a bed pan or walk to the bathroom, or to change pads. Nurses should never use those reasons to catheterise patients and catheterisation should only be undertaken where there are sound reasons that can be clinically justified (Getz, 2012).

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Table 1: Indications for catheterisation

<table>
<thead>
<tr>
<th>Drainage</th>
<th>Prostatic hyperplasia; Acute or chronic retention; Hypotonic bladder; Pre- and post-pelvic surgery; Measurement of urine output; To empty the bladder during labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigations</td>
<td>To obtain an uncontaminated urine specimen; Urodynamic investigations; X-ray investigation</td>
</tr>
<tr>
<td>Instillation</td>
<td>Bladder irrigation; Chemotherapy</td>
</tr>
<tr>
<td>Management of intractable incontinence</td>
<td>Only when all other methods have been tried</td>
</tr>
</tbody>
</table>

Source: Ponfret (1996)

change within healthcare settings, however, there are some differences between the management of infection in the hospital or in a community setting. For example, hybrid germs from multiple sources are more likely to develop in hospital, but there will be infection control nurses on hand to reduce these risks; whereas the facilities in primary care will be less sophisticated although infection risks from catheterisation remain equally high (Loveday et al., 2014).

Similarly, in the case of highly dependent patients and/or those in the final stages of life being cared for at home, infection control facilities will not be as extensive or easily available as in a hospital setting, therefore, the individual nurse will be much more autonomous (Royal College of Nursing [RCN], 2005).

However, the principle difference between infection control in the patient’s home or community clinic and the inpatient setting is the higher concentration of people — and by definition the higher concentration of pathogenic organisms — in hospital. Thousands of people pass through a hospital’s various departments every day and a multitude of staff and visitors make contact with patients and hospital equipment, such as beds or medication trolleys. Conversely, only a few people, if any at all, come into contact with the patient at home.

Similarly, any microorganisms present in the home are fairly constant and usually relatively low grade (NHS Professionals, 2010), whereas in hospital the range and scope of harmful microorganisms is much larger, including the so-called ‘superbugs’ such as meticillin-resistant *Staphylococcus aureus* [MRSA] and *Clostridium difficile*. However, while the principle of infection control is the same in the community or in hospital, the implementation differs simply because of the volume of risk and the necessity for more aggressive action in hospital (NHS Professionals, 2010).

Overall, although there are fewer infection risks in the patient’s home, they are still high and nurses can contribute to this risk directly. This is why there are handwashing campaigns and the use of antiseptic gels at the end of every bed in hospitals — perhaps this is something that should be considered in the homes of bed-bound patients, and indeed many community nurses now carry alcohol hand gel.

**WHAT IS BEST PRACTICE?**

Infection prevention and control is the responsibility of all members of staff. It is not a new problem and infections — especially catheter-related infections — are a longstanding historical issue, representing a significant risk and incurring large costs. However, with the right measures, the risk can be significantly reduced, if not completely eradicated (NICE, 2012).

Simple actions such as the principles of the RCN’s ‘Wipe it out’ campaign — including, for example, correct hand-washing techniques; use of alcohol-based hand gels; compliance with mandatory infection control programmes; and reduction in excessive antibiotic usage — can have a significant impact (RCN, 2005). While this is no longer an active campaign, it has been maintained in many areas as a focus for the drive to reduce HAIs and improve patient care.

Booth and Clarkson (2012) outline the types of catheters currently available, their composition and which ones are suited to different clinical purposes, for example, separate male, female and children’s indwelling urethral catheters; suprapubic catheters; and specialist catheters used in urology.

The Department of Health [DH] (2008) and NICE (2012) also offer guidance on preventing and controlling infections, including:

- Using systems to manage the prevention and control of infection, such as risk assessments and considering how susceptible patients are
- Providing and maintaining a clean and appropriate environment
- Ensuring that all staff are fully involved in the process of preventing and controlling infection
- Ensuring, so far as is reasonably practical, that care staff are free of and are protected from exposure to infections
- Using hand decontamination, wipes, gels and hand rubs as well as handwashing
- Using the correct medical products, for example, using intermittent rather than indwelling catheters where appropriate; ensuring that catheters are held in place properly using the correct fixation equipment
- Ensuring skin decontamination and the use of simple daily hygiene rather than antiseptic cleaning.

Periodically, certain catheterisation products are found to be faulty in...
Local health authorities, the Medicines and Healthcare Products Regulatory Agency (MHRA) and the patient/family will issue a notice about any faulty product. Community pharmacists should be aware of these, as should the local hospital supplies manager who is responsible for notifying local staff. Individual clinicians can also notify manufacturers and the MHRA should they discover any product faults.

The ‘evidence’ problem
Clinicians are always told to provide evidence-based practice. However, is it always possible to rely on evidence? For example, a multitude of evidence has been produced suggesting that silver-coated/impregnated catheters significantly reduce UTIs (Franken et al, 2007). However, there is also a large body of evidence stating that the effect of silver is not proven (Lai and Fontecchio, 2002; Dixon, 2006; Beattie, 2011; Pickard et al, 2012).

As well as relying on evidence, community nurses must take into account the clinical facts when considering catheterisation. They should consider:
- Cloudy urine
- Blood in the urine
- Pain in the back, abdomen or groin
- Acute urinary retention.

It is also vital that community nurses take into account their own knowledge about patients when considering catheterisation — for example, are they flushed, experiencing rigor, sickness and/or diarrhoea, or lethargic — as well as relying on their own skills and knowledge and what the inherent benefits and/or dangers are of procedures such as catheterisation.

It is also vital to ensure that the patient/family understand the procedure and have provided informed consent for any procedures (DH, 2009).

Manufacturers
Catheter manufacturers often provide training and information on their products and their use. However, it is important to remember:
- Not all urinary catheters are manufactured in the same way, have the same uses, or the same outcomes — community nurses must be product aware.
- Only follow the manufacturer’s instructions for the particular catheter that you are using, and never mix literature/guidance from different companies’ products.

Best practice — general rules
In the author’s experience, there are some clinical scenarios in which community pharmacists should be aware of these, as should the local hospital supplies manager who is responsible for notifying local staff. Individual clinicians can also notify manufacturers and the MHRA should they discover any product faults.

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Catheterisation is the only option available, for example, in the final hours of life, where skin integrity is being severely affected and represents a health risk; or in acute or chronic urine retention. However, in most cases it is important to ask some key questions before considering the procedure:

- What is the clinical justification for catheterisation in a particular patient?
- Does catheterisation make sense given the presenting clinical facts?
- Has the case for catheterisation been discussed with colleagues and has their clinical opinion been sought?
- Have the clinical options been discussed with the patient and have their treatment choices been outlined? Of course, with an invasive procedure such as catheterisation, patients may be anxious about pain and trauma, and it is beholden upon the community nurse to answer any questions honestly and reasonably, as well as presenting the benefits.
- Is there a better option than catheterisation (for example, more regular visits to the patient to change pads or more frequent ‘toileting’; educating relatives/carers on taking the person to the toilet more regularly; the use of a condom-type sheath), even if it involves more clinical time or resources?

In the author’s opinion, if a community nurse cannot critically justify the decision to catheterise, they must seriously consider whether it is appropriate to undertake the procedure at all. It is important to remember that as a registered professional, any community nurse is responsible for their actions and any clinical decision-making (NMC, 2011; 2013). The NMC code is the foundation of good nursing and midwifery practice, and a key tool in safeguarding the health and wellbeing of the public.

Finally, it is vital for community nurses to consider if they actually have the skills necessary to carry out the procedure. They must be sure that they have undertaken some degree of performance training under the supervision of a senior and clinically competent colleague. If the nurse cannot be sure of his or her skill to perform the procedure, specialist help should be sought.

Catheterising for convenience

In the author’s opinion, catheterisation for staff convenience is never acceptable. Catheterisation can be justified only where every other avenue has been explored and excluded. This might be the case in the latter stages of terminal illness, for example, where skin integrity is significantly compromised and no other means of redirecting or collecting urine are practical (i.e. in males a condom sheath may not be appropriate as the penis will often retract with age and/or illness) (Booth, 2009).

ROLE OF THE INFECTION PREVENTION AND CONTROL TEAM

All NHS trusts will have an infection prevention and control team tasked with providing:

- Advice about the prevention and management of infection to all staff. This includes the management of outbreaks of infection such as diarrhoea and vomiting
- Advice and information to patients and carers
- Education for all clinical staff on infections and how to control and prevent them
- Policies, guidelines and protocols to ensure care is evidence based and high quality
- Input into monitoring of environmental cleanliness, working closely with clinical matrons and patient representatives.

The infection prevention and control team is an important asset for community nurses as it can provide the latest up-to-date information, for example, on the prevention and control of healthcare-associated infections, in this case those associated with catheters (NICE, 2012).

It is vital that community nurses use the infection prevention and control team as a resource to find out what is considered ‘best practice’.

However, while it is important to keep up to date, it is also important to acknowledge that the risks of catheter-related infections have been well documented over the past 30 years (for example, that indwelling catheters carry high risk of infection after just 48 hours) (Garibaldi et al, 1982; Plowman et al, 1999; Tambyah, 2002).

CONCLUSION

Catheterisation is a procedure that can be undertaken safely, but is not without risk, particularly trauma, infection and, in rare cases, death.

Expert commentary

Carlene Igbedioh, integrated continence advanced nurse practitioner, pelvic floor unit; Guy’s and St Thomas’ NHS Foundation Trust, London

This is an interesting article as being aware of the key indications for catheterisation is vital for community nurses. It is important that nurses are aware that, yes, urinary catheters have their use, but careful consideration should be taken before deciding to recommend them.

The need for infection control as well as organisational support for education and training is another important consideration.

The author of this piece also helpfully describes how nurses should only follow manufacturer’s instructions for the particular catheter they are using. I also think it is pertinent to mention the importance of informed consent when considering catheterisation.
Therefore, catheterisation should never be regarded as a first option. It may be a ‘necessary evil’ but is not one to be entered into lightly, or without offering the patient and family some insight into the risks and benefits.

Infection is always a high risk in people who have been catheterised. The community care setting may carry less risk of infection from so-called superbugs or other patients, for example, than in hospital, but simply being in primary care is not enough to eradicate risk entirely.

As increasing numbers of high-dependent people are cared for at home, the community nurse’s role will change and the risks of procedures such as catheterisation will potentially become greater.

The rise of antibiotic-resistant strains of bacteria has meant that the use of antibiotics to combat infections is now becoming less certain — this means that nurses’ good practice is likely to come to the fore as a weapon in reducing risk.

Similarly, manufacturers are constantly striving for innovations in product design to stave off infection, such as silver-coated catheters, but only time will tell if they will work or are simply a gimmick.

Of course, increased nursing time and new product design is expensive, however, investment is needed if patients are to receive the care they expect and deserve.

**REFERENCES**


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