UROLOGY & CONTINENCE CARE TODAY

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For what matters in practice

Volume 1
Number 1
2018

Promoting competence in catheter care

Intermittent self-catheterisation

Indwelling catheterisation

Trial without catheter (TWOC)

Psychosocial issues and self-catheterisation

Cost and complications of catheterisation

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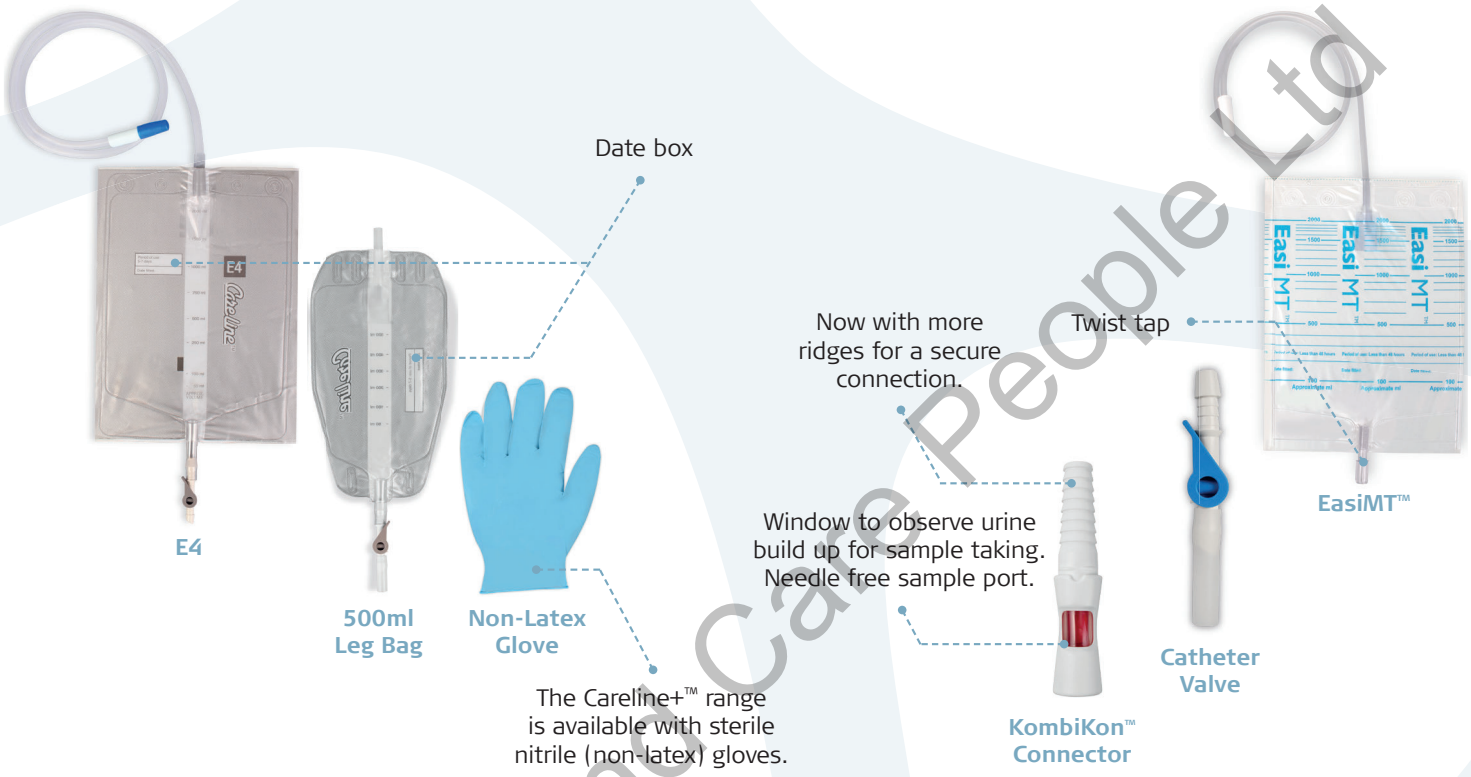

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		Leg bag 350ml long Glv		✓	29	45-02-LVCG	388-6967
500ml		Leg bag 500ml short Glv		✓	8.5	45-05-SVCG	388-6959
		Leg bag 500ml short Glv	✓			46-05-SVCG	388-6892
		Leg bag 500ml long Glv		✓	29	45-06-LVCG	388-6942
		Leg bag 500ml long Glv	✓			46-06-LVCG	388-6918
750ml		Leg bag 750ml short Glv		✓	8.5	45-09-SVCG	388-6934
		Leg bag 750ml short Glv	✓			46-09-SVCG	388-6900
		Leg bag 750ml long Glv		✓	29	45-10-LVCG	388-6926
		Leg bag 750ml long Lvt Glv	✓			46-10-LVCG	388-6884
E4		E4 2L night bag 97cm Glv		✓	100	45-20-IDCG	389-1447
		E4 2L night bag 97cm Lvt Glv	✓			46-20-IDCG	389-1454

E1, E2 EasiMT™

	Sterile / Non sterile	Description	Twist Tap	Tube Length (cm)	Order Code	PIP Code
E1	Non sterile	E1 without NRV	*Non drainable*	100	45-30-LBC	001-1296
E2		E2 with NRV	*Non drainable*	100	45-40-LBC	001-1189
EasiMT™		EasiMT™ with NRV	Twist	90	47-60-LBH	301-2705

Accessories

	Description	Order Code	PIP Code
Straps	Velcro Hk/Loop straps 5prs (Deluxe)	45-85-EX	094-5014
Care Sleeves	Careline® CareSleeve Sm	46-LS-01	340-6097
	Careline® CareSleeve Med	46-LS-03	340-6105
	Careline® CareSleeve Lge	46-LS-05	340-6113
	Careline® CareSleeve Xlge	46-LS-07	340-6121
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Contents

Welcome to *Urology and Continence Care Today*

This first issue of *Urology and Continence Care Today* focuses on catheterisation and catheter care and why providing good quality care and support for the many people living with a catheter is vital.

The articles, written by experts in their field, look at a range of topics relevant to clinical practice. The debate piece focuses on the controversies around catheterisation and why care should be patient-centred and tailored to the individual concerned. Jaqui Walker reinforces this with her feature on the roles and responsibilities of healthcare professionals to ensure that they meet best practice standards in the delivery of continence assessment and management. As continence is part and parcel of patient dignity, keeping the patient central is again highlighted in the piece on intermittent self-catheterisation, as listening, giving choice and education, can help patients to overcome the challenges of this intimate and invasive procedure. Although indwelling catheters should only be used as a last resort, for some they may be necessary. Sharon Holroyd provides a comprehensive overview of the risks involved and how following best practice can ensure that patients get the right treatment, at the right time, with the lowest risk.

Alongside the physical aspects, the psychological impact of catheterisation should never be underestimated. June Rogers explores the burden this can place on quality of life, particularly children and adolescents, and how nurses and urologists can help to empower them to self-manage their condition and take control. The insightful patient stories included within this issue, again highlight the very real need for healthcare professionals to offer ongoing emotional and practical support.

We hope that this supplement will be thought-provoking and provide an update of best practice to everyone working with patients who need catheters.

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Catheters have been around for thousands of years, but the basic principles have not changed, so here we ask...

Is it time to take a fresh look at catheter care and could we do better?

It has never been the most glamorous piece of medical equipment, but a growing older population, rising rates of obesity and a higher number of surgical procedures mean that the demand for catheters has never been greater. And, it doesn't end here; the global catheter market is expected to rise 8.1% between 2017 and 2023 (Global urinary catheter market 2017–2023, 2017).

Catheters have been used to drain poorly emptying bladders for 3,500 years (Feneley et al, 2015). Indwelling catheters are inserted into the bladder via the urethra, whereas suprapubic catheters are inserted into the bladder via the abdomen, just above the pubic bone. While the design has moved on somewhat since Egyptian times, the catheter design that most nurses are familiar with has remained basically the same since it was designed by Frederic Foley in 1929 — a long flexible plastic tube with an inflatable balloon that holds the catheter in place in the bladder.

A catheter should only ever be used as a last resort after the nurse has undertaken a thorough assessment to identify the cause of the patient's bladder dysfunction. In most cases, catheters are employed for short-term use and can be left *in situ* for anything from a few minutes to a few days. However, in 2015, figures showed that 90,000 people required an indwelling catheter for three months or more (BBC news, 4 July 2015 —'Industry"must do more"to improve urinary catheters'). For patients with permanent conditions which can result in the patient having no bladder control, such as spinal cord injury or multiple sclerosis, the use of an intermittent catheter may be a lifelong measure.

And yet, despite its prevalence in both hospital care and in the community, there is still controversy surrounding catheter use. This mainly focuses on when catheters should be used and for how long, how to manage them *in situ* and how to ensure patients who are fitted with a catheter are made comfortable and assisted to retain their dignity. While many of these issues are the result of poor clinical assessment, the lack of innovation in the design of catheters themselves is also a concern.

TREADING WATER

Unlike drugs, which are often redesigned and rebranded, or medical equipment such as scanning or diagnostic equipment, which is regularly modernised to increase patient comfort, the basic design of the catheter has changed very little in the past 80 years. In 2015, Mandy Fader, professor of continence technology at the University of Southampton, called on'industry to wake up and invest more heavily in new catheter designs and materials that resist infection' (BBC news, 4 July 2015 —'Industry"must do more"to improve urinary catheters').

Catheters are internal devices which can cause considerable harm and risk to patient safety. However, some people require them in the short term following surgery, or long term due to an inability to empty the bladder. When catheters block, they cause an emergency situation, impacting on the patient's wellbeing and nursing resources. Catheterisation and catheter care is every nurse's business and is a significant component of the community nurse's work, with large numbers of catheterised patients on caseloads. Hospital nurses can be challenged by this aspect of care and fail to remove catheters in a timely fashion, or to plan adequately for the discharge of the catheterised patient.

The introduction of catheter passports is a welcome development and should be embraced by hospital and community nurses alike to improve discharge communication, documentation and outcomes for patients. Used in conjunction with evidence-based catheter care bundles, they have the potential to significantly improve practice, and thus contribute to the campaigns to reduce CAUTIs and unplanned admissions, facilitate timely reviews, and expedite early catheter removal — in short, to improve general catheter management and outcomes for patients.

Karen Logan OBE, nurse consultant, Aneurin Health Board

Updating the basic catheter design isn't just about aesthetics. As well as the potential trauma involved in encrustation and subsequent blockages, catheters present a very real infection risk. Catheter-associated urinary tract infections (CAUTIs) are one of the most common healthcare-associated infections (Nicolle, 2014), costing the NHS £1–2.5 billion per year and accounting for around 2,100 deaths (Feneley et al, 2015).

However, it's not only a lack of innovation that accounts for the risks involved in catheter care: patient education and the role of nurses in passing on best practice also has a case to answer.

According to National Institute for Health and Care Excellence (NICE) guidelines, the risks associated with catheters are greatly reduced with best practice (NICE, 2017). This includes nurses understanding when a catheter is appropriate; being familiar with catheter maintenance; and knowing that the catheter should be removed when it is no longer necessary. Nurses also need to be aware of the advice that they need to pass on to patients. For example, the catheter must be kept clean during bowel movements, especially in those people who have less control over their bowels and risk faecal matter coming into contact with the catheter.

As well as the risks involved in having a catheter *in situ*, many people are embarrassed by the lack of dignity involved. This can impact on a person's quality of life, leaving them isolated at home and fearful of socialising in case they experience a leak or find that their drainage bag is visible under their skirt or through their trousers, for example.

Everyday activities such as swimming or sexual intercourse may have to be put on hold for the duration of the catheterisation, which can add to an individual's distress. In December 2017, a nursing home in High Wycombe was put into special measures due to 'undignified care practices'. One male resident was discovered walking around with his trousers rolled up to his knees and his drainage bag clearly visible; another resident sat in a chair with their drainage bag resting on the carpet (http://bit.ly/2Bz2VtN).

Following best practice in catheter care is literally a matter of life and death. In December 2017, an 87-year-

Intermittent catheterisation — the reusable debate

Intermittent urethral catheterisation has a very long history, however it was not until 1949, at Stoke Mandeville, that it began to be performed by nurses as a matter of routine as a sterile 'no touch' procedure (Guttmann and Frankel, 1966). Intermittent catheterisation continued to be undertaken as a sterile procedure until 1970 when Lapides (1972), after finding that a patient had admitted dropping her catheter which was therefore no longer 'sterile', realised that using a 'clean' technique only did not apparently increase the infection risk.

The initial catheters used for clean intermittent catheterisation (CIC) were reusable plastic or rubber ones, with a water-based lubricant applied as necessary, and washed in between use. This practice of reusing catheters continued until the 1980s when the first hydrophilic single-use catheters were produced. Later on, a wide range of catheters for single-use were developed and this soon became the norm, particularly within the UK.

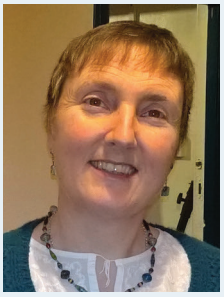
However, in some countries, the spiraling costs meant that single-use catheters were not becoming a viable option and many reverted to reusing catheters. This caused a debate as to whether single-use catheters were worth the extra cost, as there was an opinion that there was no difference of increased risk of infection between single- or reusable catheters.

To try and address this issue, Cochrane carried out a review in 2014 to evaluate and compare the infection risk of the two methods of catheterisation (Prieto, 2014). They concluded that: '... there is still no convincing evidence that the incidence of UTI is affected by use of aseptic or clean technique, coated or uncoated catheters, single (sterile) or multiple-use (clean) catheters, self-catheterisation or catheterisation by others, or by any other strategy.'

However, in 2017, this review was withdrawn following peer review feedback which felt that their own clinical experience did not reflect the findings of the review (Christison et al, 2017). Christison et al (2017) also voiced concerns regarding the handling of cross-over and multi-arm trials, as well as corrections and clarifications of data used. These issues are currently being addressed, as well as changes that are required to reflect current methodological standards.

It is now suggested that until evidence can conclusively demonstrate that catheter reuse is as safe as single-use, healthcare professionals should advocate the latter. This is important, as currently there is no standardised and universally accepted cleaning method for catheters, which would be the prerequisite for safe multiple use — the debate continues!

June Rogers MBE, specialist continence advisor, Bladder & Bowel UK



The child's perspective

The incidence of Foley catheter use in children is far less than in adult practice, but the risks from improper use are the same, if not more significant.

Excellent paediatric leg bags are now available, so why do we still see children on hospital wards with adult-sized, long-tube leg bags, or even worse, night bags or urometers trailing behind them as they walk down the ward? For those of us who work in the field, using a paediatric product is obvious:

- *It promotes acceptance in the child – e.g. child-friendly images on bags places them reassuringly in the same category as toys, rather than scary hospital equipment*
- *It reduces clinical risk — as the child recovers and becomes more active, a long loop of inadequately secured tubing is highly likely to get caught in a toy/buggy/cot side.*

So, why are paediatric leg bags not universally used? I'm guessing at least in part because of ignorance; general nurses simply don't know they are available. However, it is the responsibility of specialists in the field to share their knowledge and awareness of products.

Although in recent years we have seen some children's catheter accessories coming onto the market, what is apparent to us at ERIC is that there is very little investment in the field of paediatric continence; it is the 'poor relation' that attracts little interest or support. With regard to catheters themselves, the only concessions toward child users are smaller charrière sizes and shorter lengths. Is that sufficient? If manufacturers respond to Professor Fader's criticism of their attention to innovation and improvement, will they remember that children are not just little adults?

Brenda Cheer, ERIC nurse, The Children's Bowel & Bladder Charity

old woman living in a nursing home in Clacton, Essex, died after staff failed to notice her catheter was blocked. She was found to have retained two litres of urine (http://bit.ly/2C0RJHJ).

MORE IS NOT NECESSARILY MERRIER

Not all catheters are necessary. Approximately one-quarter of patients admitted to hospital are fitted with a catheter and in 30–50% of cases, the clinical rationale is unclear (Loeb et al, 2008). Often, as a result of lack of knowledge and poor assessments, catheterisation is treated as a routine intervention, undertaken as casually as inserting a cannula or recording a patient's blood pressure.

The first question a nurse needs to ask when considering a catheter, particularly an indwelling catheter, is: 'Does my patient need this?' Nurses need to investigate whether a less invasive alternative could be used, for example, would conservative methods such as pelvic floor exercises, bladder retraining, or teaching a patient or carer to employ intermittent self-catheterisation, be more effective?

Of course, this is not easy — properly assessing a patient's suitability for a catheter requires the completion of a full assessment including measurements of the patient's post-void residual urine and a frequency/volume chart. But, while nurses are all busy, there is no excuse for failing to perform a comprehensive assessment before considering such an invasive procedure as a catheterisation. After all, it is thought that improved catheter care can reduce the rate of CAUTIs by 30% (Academic Health Science Network [AHSN], 2016).

Determining whether a patient requires a catheter is the first step in improving care. There are protocols designed for this very purpose, for example, nurses can use the **HOUDINI** anagram to identify the reasons why a catheter should be used (Houghton, 2017):

- **H:** haematuria
- **O:** obstruction (urinary)
- **U:** urology surgery
- **D:** pressure ulcer (open sacral or perineal wound in an incontinent patient)
- **I:** input and output monitoring being performed
- **N:** not for resuscitation; nursing management for end-of-life care
- **I:** immobility.

If none of these factors are involved, the nurse should consider removing the catheter. If the nurse decides that a catheter is necessary, it should be removed as soon as possible and not left *in situ* simply because it is more convenient for the healthcare staff.

PASSPORT TO IMPROVING CARE

Catheter passports are documents that provide information for patients on how they should care for their catheter at home, as well as including a section for healthcare staff and carers to record catheter changes and maintenance. Catheter passports can improve communication between primary and secondary care services, where often the rationale for a catheter insertion has not been adequately communicated. Catheter passports can also promote self-care among patients, improve communication between patients and nurses and help patients to adjust to living with a catheter (Jaeger et al, 2017). One study found that using a catheter passport not only helped patients to cope at home, but also assisted nurses who wanted to increase their

All urologists will welcome articles such as this one that increase the awareness of healthcare professionals and patients to the correct use of urinary catheters.

It is not controversial to claim that no one wants to have a catheter, that is until you can't pass urine! Retention of urine is not only very painful but also potentially life-threatening. Seeing the immediate relief of pain by draining the bladder with a catheter is wonderfully satisfying for the healthcare professional who inserts it, never mind the patient. How humans managed without catheters beggars belief. Egyptians used reeds that they found along the river Nile.

Modern catheters are designed to be comfortable and avoid complications, such as infection and blockage. However, the longer a catheter is in place, the more likely problems will occur. So, this article is correct to encourage more education on the correct use of catheters, on how to avoid complications, and how to treat them should they occur. So much suffering and cost could be avoided with good training. As a general principle, catheters should be avoided unless absolutely essential. If they are used, they should be used properly and expert advice taken on how to sort out the problem necessitating their use in the first place.

Alan Doherty, consultant urologist, Birmingham Prostate Clinic

catheter care knowledge (Jaeger at al, 2017).

Providing a catheter passport is particularly important on discharge, as many patients leaving hospital with a catheter do not have enough information about how to care for the equipment at home, which can lead to physical and psychological issues. For example, full drainage bags can 'drag' on the catheter, which is uncomfortable for the patient and increases the risk of the catheter being torn out. Similarly, it is essential that patients leave hospital with the correct length of drainage bag tubing; for example, men may want longer tubes so the drainage bag can be secured below the knee, while women may require a shorter tube so it fits to their thigh.

Many patients are also discharged without leg socks, which can hold the drainage bag in place more comfortably. Stabilisation devices that secure the catheter discreetly with foam anchor pads are also available.

THE FUTURE

The catheter is here to stay, but its current design faces much criticism. Feneley et al (2015) echo Professor Fader's insistence that there is an urgent need for the development of an alternative indwelling catheter system, which:

- Is safe, easy to insert, either urethrally or suprapubically
- Can be retained reliably in the bladder
- Can empty without damage to the bladder
- Has control mechanisms appropriate for all users.

Whether we'll have to wait another 80 years for this to happen is yet to be seen.

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The ACA — enabling healthcare organisations to flourish and grow

Patricia McDermott explains how the ACA is setting the standard for excellence and innovation in continence care today.

Association for Continence Advice
Driving Excellence in Bladder and Bowel Care

Are you a healthcare professional working in the area of continence or urology, or is continence management a large proportion of your workload? If yes, have you heard of the Association for Continence Advice (ACA) and have you thought of becoming a member?

The ACA is a multi-professional association open to all health and allied care professionals who are working within, or have an interest in the field of bladder and bowel management.

The ACA started in 1980 with a questionnaire sent to every health authority and board in the UK seeking to identify concerned healthcare professionals. At that time, there were only 19 nurses in the UK identified as continence advisors; now most NHS trusts and many private healthcare organisations have staff designated as continence specialists. As continence care has changed, so too has the complexity of members' backgrounds; with physiotherapists, occupational therapists, midwives, hospital, general practice and district nurses, health visitors, lecturers, researchers, NHS managers, healthcare assistants, nursing homes and doctors increasingly represented alongside the central core of continence specialists.

Not everything is always as it seems and there are many instances where professional help from your peers will give you exactly what you need.

The ACA, through its strong multi-professional membership, its local branches, national and regional conferences and study days, will be an asset to you. Whether you are a continence advisor for your area, or someone working in your chosen area with an interest in continence, the ACA could well be for you.

'The ACA is a multi-professional association open to all health and allied professionals who are working within, or have an interest in the field of bladder and bowel management. It works to promote safe, high quality continence services that reflect UK-wide policy developments.'

The key objectives that the ACA work towards are:

- Representing the interests of the multi-professional membership by communicating effectively, for example, through its newsletters and website
- Leading educational activity and supporting research development within the organisation
- Initiating projects and engaging with internal or external groups, organisations or companies; and likewise, contributing to projects that aim to maximise evidence-based continence care
- Influencing UK-wide clinical, professional and political developments in the field of continence care policy. The ACA have representation on the following national groups; NHS England Excellence in Commissioning Continence Care (EICC), All Party Parliamentary Group (APPG), Expert LUTs Group, Paediatric Continence Form (PCF), Nursing Times, Scottish NES modules
- Promoting safe, high quality continence services that reflect UK-wide policy developments.

Patrica McDermott, chair, Association for Continence Advice (ACA)

If you are interested in joining the ACA now, the first six months' membership are free, simply go to our Join Us page:

www.aca.uk.com/about-aca/

Or if you would like to attend the ACA's annual conference, details can be found at:

www.aca.uk.com/about-aca/

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KEY TOPICS

- 7 ages of Continence – Continence issues affect people of all ages and many health conditions
- Challenging public attitudes to incontinence
- Male pelvic pain
- Neurogenic bladder
- Diabetes and the relationship with continence
- Practical application of excellence in continence care guidelines
- Menopause
- Dementia
- End of Life
- And much more!

REGISTER NOW AT WWW.ACA.UK.COM

BAUN — helping to improve urological patient care

Jane Brocksom explains how BAUN has deveoped into the vibrant organisation it is today and the opportunities it offers to the profession.

The British Association of Urological Nurses (BAUN) is a registered charity which aims to promote and maintain the highest standards in the practice and development of urological nursing and urological patient care. The charity's objects are specifically directed to the promotion of the advancement of education in urological nursing and urological patient care for the benefit of the entire community, and in particular the provision of nurse education and training, endorsement schemes, education materials, meetings and conferences.

Since its inception in 1995, the aims of the association were always to develop urological nursing and support urology nurses. In 2001, the first annual conference was inaugurated; this remains the highlight of the BAUN year, and 2020 sees our 35th year celebration.

BAUN's aims include:

- Helping to improve the care of urological patients in all healthcare settings
- Organising conferences, courses of instruction, exhibitions, lectures and other educational activities
- Providing and procuring educational materials, including guidelines, websites, newsletters and an *International Urological Nursing Journal* (IJUN) for BAUN members
- Providing personal development opportunities for BAUN members through involvement in running the association
- Working collaboratively with other organisations and exchanging information and advice to the benefit of patients
- Promoting, encouraging, carrying out or commissioning research, surveys, studies or other work, and making the useful results available
- Alone, or with other organisations nationally and internationally, seeking to influence the urological healthcare agenda.

As it has grown, BAUN has forged links with the Departments of Health throughout the United Kingdom, various publishing groups, other nursing organisations, universities, device companies, industry and pharmaceutical companies. International links with European and worldwide urological nursing associations are well established and continue to go from strength to strength.

BAUN values

B	Business efficiency and continuous improvement
A	Accountability and transparency, including trustees
U	Urologic nursing, our 20:20 vision, meeting the holistic needs of ALL our members from novice to expert
N	Nursing representation and networking to raise our profile

Jane Brocksom, senior urology/consultant nurse specialist, St James' Hospital, Leeds; president-elect, BAUN

Goals and objectives of the association centre around the four pillars of advanced practice, not only for trustee development, but also to inspire membership:

- Clinical expertise/knowledge
- Leadership
- Research/audit/ quality improvement
- Facilitating learning/education.

I, personally, have been a BAUN member for 20 years. It has helped to shape my development within the urological speciality, brought me into contact with some exceptional professionals and this year I find myself as president-elect. There are untold benefits from sharing experiences with like-minded nurses, developing connections outside your organisation and communicating with all groups of urology nurses, as this inspires you to aim for higher personal development.

BAUN trustees work hard to ensure transparency and collaboration with all levels of urological nurses. For more information:

www.baun.co.uk

BAUN
BRITISH ASSOCIATION of UROLOGICAL NURSES

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Overview of the urinary tract

Passing urine is something most of us do not give a thought about, as it is part of everyday lives. However, it is a more complex process than is apparent, as all elements of the urinary tract need to be functioning and working together, and the three micturition centres in the body, which control filling and emptying of the bladder via the autonomic and somatic nervous systems, also need to work in harmony to urinate successfully. Here, Rachel Leaver, lecturer practitioner, urological nursing, UCLH and London South Bank University, UCLH NHS Foundation Trust, provides an overview of the male and female urinary tracts.

The urinary tract is divided into:

- The upper tract, which includes the kidneys and ureters
- The lower tract, which consists of the bladder and urethra.

Urine is formed by the kidneys which filter blood passing through them to remove excess ions, metabolic waste and chemicals. The urine passes down the ureters to the bladder, a hollow muscular organ which lies to the front of the pelvis behind the pubic bone.

The bladder has four layers, the outermost of which is continuous with the peritoneum. The innermost layer is the internal mucosa made of transitional epithelium. This is surrounded by a muscle layer made up of circular and longitudinal muscles forming a sort of net around the bladder. The mucosal layer is connected to this muscle layer by the lamina propria, a connective-tissue layer. The bladder muscle layer is called the detrusor muscle. It is studded with stretch receptors and as the bladder fills with urine and stretches to accommodate it, nerve impulses relay the message via the sacral spine up the vertebral column to the higher micturition centres in the brain, i.e. the pons, and then to the cerebral cortex (Fillingham and Douglas, 2004).

The micturition centres in the brain and sacral spine must all be functioning and able to communicate with each other via the nerves connecting them for the bladder to fill and empty normally.

The normal adult bladder usually holds between 300–600ml of urine and this empties out via the urethra. An internal sphincter made of smooth muscle lies at the base of the bladder at the bladder neck. There is also an external sphincter, consisting of striated muscle which is lower down the urethra and in close contact with the pelvic floor. Both are closed while the bladder is filling, but open when the bladder needs to be emptied (Urology textbook, 2018).

The male urethra is between 15–22cm long, while the female urethra is only 3–5cm in length. The male urethra extends from the bladder neck, through the prostate gland and the pelvic floor, then down to the external urethral opening.

The female urethra extends from the bladder neck and through the pelvic floor to the external opening and shares a wall with the vagina, which is situated behind it (Fillingham and Douglas, 2004).

EMPTYING THE BLADDER

The sensation of fullness when the bladder fills with urine triggers off a response, which alerts that it needs to be emptied. For this to happen, both sphincters need to relax and open while the bladder muscle contracts and expels the urine out of the body via the urethra. Unlike the internal sphincter muscle, which is not under voluntary control, the external sphincter can be controlled, and when it is time to void, this muscle relaxes to allow it to open.

Meanwhile, the pelvic floor moves downwards allowing 'funnelling' of the bladder, which means it is in the best position to empty (Fillingham and Douglas, 2004). At the same time, nerve impulses send messages from the cerebral cortex via the pons and down the spine to the bladder, allowing relaxation of the internal sphincter and contraction of the bladder muscle. The muscle squeezing the bladder causes a rise in bladder pressure, which pushes the urine out past the open bladder neck, down the urethra, past the open external sphincter and then the rest of the urethra and out of the body. When empty, both sphincters close again, the pelvic floor moves back up and the bladder relaxes allowing it to continue to fill. Again, to fill and empty normally, the bladder muscle and sphincters need to coordinate when they open and close with muscle contraction and relaxation. This means that the nerves which supply the bladder, sphincters and pelvic floor must all be functioning properly (Royal College of Nursing [RCN], 2012).

Anything which interrupts this coordination, for whatever reason, will cause the patient to have filling and voiding problems, which may lead to incomplete emptying or incontinence.

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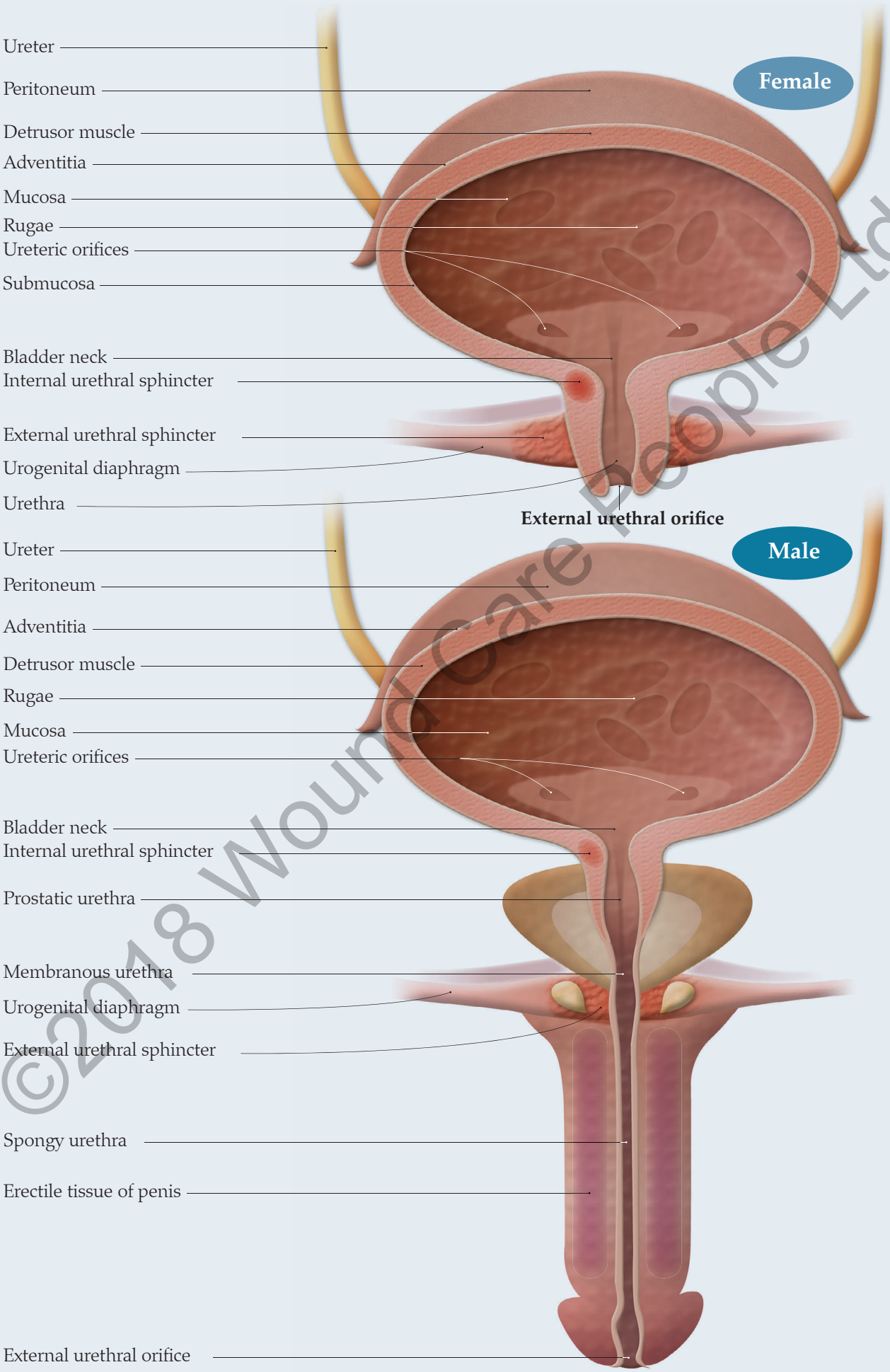

IN BRIEF

- Continence is an important and common problem and so nurses have a responsibility to be able to screen for and perform a basic assessment of incontinence.
- Resolution of continence issues is possible for many with the right care and advice.
- Primary care nurses need the education and training to be able to offer advice and treatment to help meet people's continence needs and to know when to refer on to specialist services.

KEY WORDS:

- Continence care minimum standards
- Assessment
- Referral pathways
- Educational needs and incontinence

Minimum standards of care: an overview

Jaqui Walker

Continence is an individual's voluntary control of their bladder or bowel. It is a crucial part of dignity and a firmly entrenched societal norm. We are born without it and develop it as we mature into early childhood; intense embarrassment can exist for those who lose or never gain this control, making it hard for them to reach out to health and social care workers who can help them adapt to, resolve, or manage this problem.

With a focus on urinary incontinence in adults, this article explores recent best practice guidance to help healthcare professionals, who have contact with people with continence needs, to be aware of their role and responsibilities and the best practice standards available to guide training and development in the delivery of continence assessment and management.

The United Kingdom Continence Society (UKCS) 2015 minimum standards document states that those with continence care needs should be assessed with the goal of making a diagnosis and offering treatment, and that it is only in a minority of cases that this goal of treating and resolving the problem may need modifying to a goal of managing the symptoms. It is tragic, therefore, that many people with continence needs still suffer in silence. The British Association of Urological Surgeons (BAUS) estimates that around three million people in the UK experience urinary incontinence and, of these, as many as 60–80% have never sought medical advice for their condition. Often, they just see it as part of the aging process (BAUS, 2018).

The 'Five Year Forward View' document encourages health and social care to work in tandem, utilising the many resources the third sector has to offer and empowering people to have greater input and choice around the management of their condition (NHS England, 2014). This model is ideal for continence care and should guide healthcare professionals' approach to achieving an excellent service for people.

There are many advantages in providing excellent continence care. In their guidance document, NHS England (2015) conclude that improved continence care with integrated services across primary, secondary and care home settings will produce the following benefits:

- A better quality of life and more independence through finding solutions appropriate to individual needs
- Less reliance on pads and products by using alternative treatments
- A reduction in admission to hospital and care homes
- Fewer complications, such as urinary tract infections (UTIs), faecal impaction and skin breakdown
- A reduction in costs (NHS England, 'Excellence in continence care' [EICC], 2015).

WHAT SHOULD BE DONE IN THE COMMUNITY?

Case finding

Embarrassment and a lack of awareness of the possibility of improving or even curing continence problems often blocks an individual's ability to seek help for their condition. Being aware of who is at risk and asking the right questions is therefore an important part of clinical assessment (NHS England, 2015).

Jaqui Walker, general practice nurse, Allanpark Medical Practice, Stirling; freelance medical writer

It is vital to screen for continence issues in the following populations (NHS England, 2015):

- Children and young people
- Pregnant women
- Women who have had children
- Women undergoing the menopause
- Women who have had a hysterectomy
- Men who have had a prostatectomy
- People with constipation
- People with dementia
- People with diabetes
- People with diarrhoea
- People with heart failure
- People with learning disabilities
- People with mental health problems
- People with musculoskeletal problems, e.g. arthritis
- People with neuropathological problems e.g. dementia, Parkinson's disease, spina bifida, multiple sclerosis, stroke
- People who are obese
- People with spinal injury
- People with urinary tract infections (UTIs)
- Older people (65+).

This level of screening for continence needs in at-risk groups is something all health and social care staff need an awareness of to identify people who may not have reached out for help with this problem. A basic understanding of assessment, useful resources and referral pathways will then help to point individuals in the right direction to unlock good quality continence care. The list of those at risk is fairly diverse and will not cover everyone who may have a problem. Routinely including questions to identify those with continence issues needs to be part of all health and social care assessments.

The National Institute for Health and Care Excellence (NICE) guidance on urinary incontinence in women provides detailed information on how to assess and manage stress urinary incontinence, urgency urinary incontinence, mixed urinary incontinence and overactive-bladder (NICE, 2013). This is a useful starting point for delivering evidence-based practice.

A continence service needs to be person-centred and seek to help people identify their needs and agree shared goals. The person experiencing the continence issue should be an active partner in their own care and feel that they have had a good experience (NHS England, 2015). It is important that they are made aware of all the possible options for treatment and be free to choose the approach that will be most likely to meet their individual needs.

The EICC report recommends that as well as treating people with empathy and respect and ensuring that their voice is heard and responded to, a person-centred approach should include person-held records, education about how to manage their condition and prevent a deterioration in their health and, if appropriate, access to personal budgets (NHS England, 2015). People need to experience quick, efficient access to experts who can assess and diagnose the underlying condition or cause of the continence problems and offer effective treatment, self-management and, when required, referral to appropriate specialist services, e.g. urology, urogynaecology, gastroenterology, learning disabilities, neurology, paediatrics, geriatrics, specialist physiotherapy, etc.

> *True empowerment of people brings choice: not just a choice of provider, but choice of what they feel is appropriate for them. This may mean turning down a particular treatment option. Empowerment means having access to information, advice and treatment and brings the understanding that people have the right to continent living, whenever this is achievable. This enables an optimum quality of life, independence and personal dignity.*
>
> NHS England, 2015

The complexity of continence care is that the root cause is not just one problem, but a myriad of potential and often treatable conditions that span many different specialities (see *Mini case examples box*). Understanding this complexity and educating health and social care staff (who are most likely to have contact with individuals experiencing continence difficulties) so that they can provide an assessment which gathers the information required for appropriate management or referral pathways is the challenge that health, social and educational institutions need to achieve.

Practice point — hidden costs

Continence problems impact on:

- Personal relationships
- Body image
- Sex and romantic life
- Skin health and integrity — increased risk of pressure ulcers
- Increased urinary tract infection (UTI) rates
- Increased need for catheterisation
- Increased risk of faecal impaction
- Increased admission to and time spent in hospital or care home.

(NHS England, 2015)

CONTAINMENT PRODUCTS

Long-term use of containment products is an option when a curable problem or diagnosis has not been found and full assessment and referral pathways explored. Containment products, such as pads, hand-held urinals, etc can help people feel comfortable and secure. However, they require regular assessment to ensure that they are the best option for each individual's needs.

Indwelling catheters are associated with significant morbidity and mortality and other options, such as teaching people intermittent self-catheterisation (ISC), need exploring (NHS England, 2015).

EDUCATION

Educating the workforce is a critical part of delivering an effective, integrated person-centred continence service. As the EICC report states:

Mini cases of people with continence needs, showing examples after assessment and treatment

- Mother of three is referred to her GP for assessment and medication of her stress incontinence. Medication and pelvic floor exercises resolve the problem
- A 40-year-old man with an overactive bladder undergoes successful bladder retraining after visiting his GP and being referred to the local continence team
- 65-year-old grandmother stops going out of the house and becomes isolated after experiencing abdominal pain, weight loss, bloating, wind and faecal incontinence. After a colonoscopy that included a biopsy sample, she is diagnosed with microscopic colitis and her condition resolves after effective medication is initiated
- Intermittent bladder catheterisation is instigated after a full assessment for a woman where an issue with urinary retention is resulting in incontinence
- Percutaneous tibial nerve stimulation (PTNS) is used to treat an overactive bladder and its symptoms of urinary urgency, frequency and urge incontinence in a 35-year-old woman after discussion within the multidisciplinary team
- A 55-year-old woman with over active bladder is treated with botulinum toxin injection with good results
- Pelvic floor muscle exercises are taught to a 31-year-old mother with stress incontinence, and at the end of the supervised training programme her condition is under control.

The NHS is defined by its staff: developing and supporting the workforce within a culture of safety and compassion is crucial to ensuring the best outcomes for people. The correct education and training helps us all understand the importance of the need to embrace the right skills, values and behaviours for the benefit of all those with continence needs who touch our services.

NHS England, 2015

The report goes on to emphasise that it is the responsibility of each individual member of staff to be aware of NHS England's priorities in relation to continence services, and to identify how they can be involved in helping achieve these objectives (NHS England, 2015). It recommends education at undergraduate level for all physiotherapists, nurses and medical students, continuous professional development (CPD) for those who care for, or may be able to identify and signpost people with continence needs, and fundamental continence care education for other workers, such as care assistants, who will be involved in delivering care.

All staff that come into contact with an adult who has a bladder or bowel problem should be trained to assess, treat and refer as required. It is essential to reduce the negative impact and improve the quality of life for those with bladder and bowel care problems. The cost implication of not providing staff that are competent to proactively diagnose and treat bladder and bowel problems is significant.

UKCS, 2015

In the UKCS's guide detailing the minimum standards for continence care, a multidisciplinary team from the UKCS provide modules detailing the knowledge and skills required to provide an effective continence care service across primary, secondary and tertiary settings. These are laid out into eight modules, each providing a simple overview of the learning and minimum standards needed to perform an assessment of, or manage a patient with continence needs:

- Module 1: Structure of continence services
- Module 2: Basic assessment and conservative management of bladder and bowel symptoms
- Module 3: Specialist assessment and conservative management of the female lower urinary tract
- Module 4: Specialist assessment and conservative management of the male lower urinary tract (LUT)
- Module 5: Specialist assessment and conservative management of patients with neuropathic bladder
- Module 6: Specialist assessment and conservative management of constipation and faecal incontinence
- Module 7: Urinary catheterisation
- Module 8: Assessment tools.

The aim of this continence care document is not only to reduce variation in practice across the UK and ensure that all those with continence needs are seen and managed by properly trained staff, but also to improve outcomes in continence care. In addition, the document aims to facilitate the development of appropriate pre- and post-registration education by service leads and educational institutions. It is hoped that e-learning packages and study days can be developed using the modules in the guide for healthcare professionals as part of their continuing professional education, and that continence care skills will be included as a mandatory part of pre-registration nurse and other relevant healthcare professional initial training.

The UKCC 2015 report recommends that every healthcare professional who encounters patients with continence needs should use the document to identify where their role sits within its framework and take individual responsibility for ensuring that they have the skills and competencies required. This is part of the Nursing and Midwifery Council's (NMC) requirements for ensuring that nurses

have the competencies required to deliver care and can be included as part of reflection and revalidation (NMC, 2015).

The author, who works as a general practice nurse (GPN), is aware that a number of the patients she sees may have unspoken continence needs. Incontinence is a common problem and the UKCS 2015 report therefore recommends that it should initially be assessed in the community. The basic assessment skills required for this will include having information to give to patients about bladder/bowel function and the use of simple questions to assess this, screening questionnaires, symptom questions, bladder diaries to assess frequency and volume, as well as knowledge on how to refer patients for a bladder scan to assess post-void residual urine when required. Understanding referral pathways to access specialist care, for example, urodynamic teams, is also important. There is a resource list at the end of this article which will be useful for educating both nurses and patients and explaining the importance of lifestyle intervention, e.g. weight loss, drinking habits as well as pelvic floor exercises, or bladder training. Taking part in an accredited training course is also important. Specialist generalists in the community should be involved with case finding, i.e. asking people the right questions within a routine holistic assessment and providing basic continence care for some, while referring others onto specialist services.

The following are some of the knowledge and skills needed to undertake a basic assessment and be able to offer conservative management of bladder and bowel symptoms (UKCS, 2015):

- Having knowledge of anatomy and physiology relevant to continence
- Understanding the impact of LUT and bowel symptoms on those experiencing them
- Being able to identify red flag symptoms and when to make an urgent referral
- Understanding the conservative management of bladder and bowel symptoms
- Knowing when to refer on
- Being able to assess bladder and bowel symptoms and perform a basic clinical examination
- Thinking about other factors that can effect continence status, e.g. mobility, medications
- Being able to perform and interpret urine dipstix and know when to send a midstream urine specimen (MSU)
- Having an awareness of and access to bladder and bowel diaries
- Being aware of treatment options for continence management
- Being aware of how comorbidities can impact on bladder and bowel symptoms
- Being aware of effective lifestyle interventions, e.g. weight loss
- Having knowledge of available resources for patients

Practice points — Action plan

- Read through and place your role within the UKCC 2015 minimum standards for continence care guidance. Use this to plan your development over the next year and to build your knowledge, skills and resources
- Write a reflection for your revalidation file on your current practice and future development needs, including an action plan as to how you will achieve this
- If you do not already have them, build links with the specialist continence service in your area. See if you can shadow one of the team members for a day
- Where possible, attend clinical meetings to discuss cases.

Red Flags **Reasons for early referral to specialist teams/suspected cancer referral pathway**

- Aged 45 years and older with unexplained visible haematuria without urinary tract infection (UTI)
- Visible haematuria that persists after successful treatment of UTI
- < 60 years with unexplained non-visible haematuria and either dysuria or raised white cell count on a blood test
- Check prostate-specific antigen (PSA) and arrange a digital examination for men with lower urinary tract symptoms and refer using a suspected cancer pathway if PSA levels are above normal for their age.

Adapted from NICE, 2015, NG12

In women with urge incontinence consider referral to a specialist team if:

- Persisting bladder or urethral pain
- Clinically benign pelvic masses
- Associated faecal incontinence
- Suspected neurological disease
- Symptoms of voiding difficulty
- Suspected urogenital fistulae
- Previous continence surgery
- Previous pelvic cancer surgery
- Previous pelvic radiation therapy.

NICE, 2013, CG171

- Offer men with bothersome lower urinary tract symptoms (LUTS) referral if they do not respond to conservative management or drug therapy
- Refer men to a specialist service for LUTS if these are complicated by recurrent or persistent urinary tract infection, retention, or renal impairment.

NICE, 2010, CG9 7

- Training must at least initially be under the supervision of an identified preceptor

Adapted from UKCS, 2015.

The author has used this list to acknowledge the current knowledge and skills she has and to plan further development within this area to fully meet the UKCS 2015 minimum standards. In her local area, NHS Education for Scotland (NES) provide an online short course entitled 'Promotion of Continence and the Assessment of Bladder Dysfunction in Adults' via learnPro.

In contrast, the UKCS minimum standards report recommends a specialist continence team composed of specialist nurses, specialist physiotherapists, urologists and/or gynaecologists will be able to offer specialist assessment, advice on containment and appliances, conservative and drug management and primary surgery for uncomplicated urinary incontinence (UKCS, 2015). They will hold regular multidisciplinary team meetings and undertake audit of services. Referral to regional expert multidisciplinary teams should be available for the management of more complicated cases, e.g. women who have failed stress incontinence therapy or first-line surgery for urge urinary incontinence, people with complex neuropathy, men with post prostatectomy urinary incontinence, and people with combined urinary and faecal incontinence.

Specialist continence staff are expected to fulfil the following responsibilities (NHS England, 2015):

- Provide clinical leadership of continence services
- Provide advanced clinical assessment and treatment
- Advise about the design and delivery of services
- Develop clinical guidelines and pathways
- Endorse best practice by teaching
- Guide and correct practice where necessary
- Assess and review policies and practices: make recommendations for change
- Evaluate clinical outcomes.

In primary care, the move away from the Quality and Outcomes Framework (QOF) and its targets to a more flexible and open agenda is hoped to give GPs the chance to focus on quality improvements, which can include identifying and caring for people with continence needs (NHS England, 2015). Understanding which areas of continence care to manage in the community, including the skills required to do this and who to refer on, will be important and is something this article has sought to clarify.

CONCLUSION

Most nurses will encounter people with continence needs. Being aware of the standards guiding continence care is crucial if healthcare professionals are to meet the needs of this significant proportion of the population and ensure minimum standards for continence care are delivered. While there may be many competing demands on the topics healthcare professionals choose for continuous professional development, continence care certainly needs to be one of them.

Useful resources

- For impartial product advice: www.continenceproductadvisor.org/
- Association for Continence Advice (ACA): www.aca.uk.com
- Bladder & Bowel Community: www.bladderandbowel.org
- British Association of Urological Nurses (BAUN): www.baun.co.uk
- ERIC (The Children's Continence Charity): www.eric.org.uk
- PromoCon Disabled Living: www.disabledliving.co.uk/PromoCon/About
- Paediatric Continence Forum: www.paediatriccontinenceforum.org/
- United Kingdom Continence Society: www.ukcs.uk.net/
- NHS choices: www.nhs.uk/Conditions/Pages/Hub.aspx
- NHS Inform: www.nhsinform.scot
- Patient: https://patient.info

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For the joy of individuality

IN BRIEF

- If a patient cannot empty their bladder completely, intermittent self-catheterisation (ISC) may be an acceptable treatment option.
- Learning ISC can be daunting for patients and unless taught properly and the patient is given time to learn at their own pace, compliance may be a problem (Logan et al, 2008).
- There are a huge variety of catheters available for ISC and each patient should be assessed individually to find which option best suits their needs.

KEY WORDS:

- Intermittent self-catheterisation (ISC)
- Patient education
- Performing ISC
- Complications

Intermittent self-catheterisation

RACHEL LEAVER

Over the last few decades, the use of intermittent self-catheterisation (ISC) to control or assist voiding has become widespread. Increasingly, more treatments, both medical and surgical, are possible because of ISC. Alongside this increase in use has been the development and evolution of intermittent catheters themselves. There are also a number of National Institute for Health and Care Excellence (NICE) guidelines advocating the use of ISC (*Table 3*). Of course, there will always be patients who cannot or will not perform ISC on themselves, either because of physical, practical or psychological impediments; however, it is equally true that not all patients who could benefit from using ISC are necessarily being offered it (Dingwall and McLafferty, 2006).

Lapides et al first published their findings on ISC in 1972, which showed that the procedure was associated with less urinary tract infections (UTIs) than indwelling catheterisation, and that it greatly improved the quality of life of patients with bladder problems. This 1972 paper and subsequent publications by Lapides et al (1974, 1976) and Diokno et al (1983) outlined the main advantages of ISC, which included:

- Preventing or overcoming infection by regular emptying of the bladder
- No real increased infection rate using a clean rather than a sterile procedure
- Promoting a 'normal' pattern of filling and emptying stages of micturition
- Protecting the upper urinary tract
- Improving symptoms
- Promoting independence
- Improving quality of life.

INTERMITTENT CATHETERISATION

Indications

There are several indications for using catheters — both indwelling (see *pp. 28–34*) and intermittent (*Tables 1* and *2*).

Although not all patients are suitable for ISC, it is increasingly becoming an option, either as treatment or as a consequence of having surgery (Van Achterburg et al, 2007).

ISC is used to manage voiding for individuals with various problems, including those who, historically, were routinely managed with indwelling catheters for benign prostatic hyperplasia (BPH) or urethral strictures. Incomplete emptying, i.e. in neurogenic or hypotonic bladders, can also be successfully managed with ISC, as can that caused by surgical intervention such as Botox treatment for overactive bladders or following insertion of mid-urethral tape for urinary incontinence. Indeed, many surgical procedures which have become standard nowadays would not be possible without ISC. Continent urinary diversions, such as neobladders, enterocystoplasties, or urinary pouches, e.g. the Mitrofanoff, all rely on the patient being able to successfully self-catheterise to void (European Association of Urology Nurses [EAUN], 2013).

Other indications for the use of ISC include bladder or urethral investigations and intravesical instillation of drugs directly into the

Practice point

Intermittent self-catheterisation is a means of giving patients control over when to void. For some cases, this may be preferable to more invasive procedures, especially if the patient is unfit for surgery or further intervention.

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bladder, such as Bacillus Calmette–Guérin (BCG) vaccine or mitomycin for superficial bladder cancer (Bohle et al, 2003), or capsaisin for bladder overactivity (Kim and Chancellor, 2000).

Contraindications and precautions

ISC is contraindicated in patients with a false passage down the urethra, those who have had trauma to the penis, or have a tumour or other injury. It should be used with caution following prostatic or urethral and bladder surgery, in patients with urethral stents or artificial prosthesis, or those with a tendency to bleed (Royal College of Nursing [RCN], 2012).

It is also not suitable for accurate urine output monitoring, continuous bladder irrigation and immediately following surgery to the lower urinary tract, or where continuous drainage is required in high pressure bladders to avoid kidney damage (EAUN, 2013).

ISC versus indwelling catheters

The principles governing ISC are the same as those for indwelling catheters in terms of how to do the procedure safely and to minimise risk to the patient. The main difference is that instead of the healthcare professional catheterising the patient aseptically, it is the patient who learns how to insert the catheter and drain the bladder using a clean rather than aseptic technique.

Research has shown that when done correctly, ISC is a safe procedure which avoids the problems associated with long-term indwelling catheters (Lapides et al, 1972; Igawa et al, 2008). Patients with indwelling catheters are at risk of UTIs, encrustation, stone formation, bladder spasm, urine bypassing and consequent urine leakage and catheter blockage (Feneley et al, 2015). These problems arise because the catheter, which is a foreign body, is usually left in the bladder for long periods of time (4–12 weeks). With ISC, the dwell time in the bladder is only a matter of minutes until all the urine has been drained away, after which the catheter is removed and discarded. This results in less risk of infection and all the consequent problems associated with it. Another advantage is that the patient does not need a permanently placed appliance, or have to deal with an external urine drainage bag, thus reducing the impact of catheterisation on quality of life and allowing the patient to be in control (Igawa et al, 2008; RCN, 2012; EAUN, 2015).

TEACHING ISC

In the author's clinical experience, the key to successful ISC depends on three main factors:

- Choice of the right patient
- Willingness of the patient to undertake the procedure
- How the patient is taught to do it.

Although ISC is a fairly simple procedure, it is important that patients are shown how to perform it safely and are supervised and supported until confident and competent to do so. Patients also need to know what complications to look out for, how to solve them, and when to seek help. Thus, patients need to have the cognitive skills to understand how the bladder works, why theirs does not work normally, and how ISC is going to help and what the consequences of not doing ISC would be, so that they know what to expect (Logan, 2017).

Practice point

The Mitrofanoff procedure creates a channel into the bladder through which a catheter can be inserted to empty the bladder of urine, instead of passing urine through the urethra.

They also need to have enough physical ability and manual dexterity to handle the catheter and do the procedure cleanly, have reasonable bladder capacity, and the motivation and willingness to take ISC on for as long as needed, perhaps even for life. To help achieve the latter, it is important that ISC fits into the patient's life and not the other way around, and that the procedure is kept simple and practical (RCN, 2012). If it negatively impacts on the patient's day-to-day life, it is more likely that they will not stick to their regimen, which may mean a return of some of their symptoms and/or damage to the upper urinary tract (Shaw et al, 2008; RCN, 2012).

Therefore, it is important that nurses undertake a thorough assessment to establish the patient's knowledge and ability, as well as their motivation. Patients need to

Table 1: Indications for catheterisation (RCN, 2012; Dougherty and Lister, 2015)

To empty the contents of the bladder before or after surgery, before certain investigations
To determine any residual urine
To allow irrigation of the bladder
To bypass any obstuction
To relieve the retention of urine (both acute and chronic)
To introduce cytotoxic drugs in the treatment of papillary bladder carcinomas
To enable bladder function tests to be performed
To measure urinary output accurately, for example, when a patient is in shock
To relieve incontinence and maintain skin integrity when no other means is practicable
To obtain a sterile urine specimen
Before childbirth, if thought necessary
To avoid any potential complications during the insertion of radioactive treatments, i.e. Caesium into the cervix

understand (Robinson, 2006; RCN, 2012; EAUN, 2013):

- Their anatomy
- Why ISC needs to be done and how it will change their symptoms
- The principles of ISC — what it involves and the importance of carrying out a clean procedure
- How often it needs to be done and why
- How it will fit into their life
- What types of catheters are available
- How to dispose of used catheters
- How to store catheters safely
- What the most common problems or complications are and how to deal with them
- When they need to seek help.

One of the main contributing factors for successful ISC is the ability and attitude of the person teaching the skill. Patients want to be taught by someone who knows what they are doing and who understands that no two people are alike and can adapt their teaching accordingly (Logan et al, 2008). Shaw et al (2008) focused their research on asking patients about their experience with ISC. Not surprisingly, patients found learning ISC daunting, and that it caused them fear, anxiety and embarrassment. Ideally, they wanted to be taught the skill in their home environment. The nurse's attitude and communication skills were also important in creating a relaxed atmosphere to help alleviate embarrassment and anxiety and enable patients to retain information (Logan et al, 2008; Shaw et al, 2008). The key to keeping patients motivated is having healthcare professionals who are experienced and aware that patients need time and understanding, as well as a proper assessment of their condition and physical and cognitive abilities.

Practice point

Many patients are reluctant to learn ISC — so, it is vital that the pros and cons are explained, as well as the consequences of not doing it emphasised to ensure that they have a full understanding (Logan, 2017).

Thus, teaching ISC should be tailored to each individual. As said, the amount of time it will take to learn and be confident varies from person to person. However, some healthcare professionals have limited time and resources and may not be able to cater to individual needs (Logan, 2017). Unfortunately, this means that patients either get minimum teaching before being expected to start the procedure, or are not followed up once they do so. Patients may be rationed to one face-to-face slot for a scheduled amount of time (e.g. 15–30 minutes), and then followed up by phone. Teaching aids, such as DVDs, sent to patients ahead of appointments can help them to focus on learning the actual technique and so get the greatest benefit from their appointment with the healthcare professional (Logan, 2017).

Ideally, patients should be seen as often as they need until they are confident and competent.

Follow-up

Patients should always be followed up for a period of time. Indeed, time spent with patients at this stage means that they are more likely to comply with care and carry on with ISC (Logan et al, 2008). Adherence to treatment regimens has been found to be directly linked to the patient's ability to actively accept the need for ISC by establishing early coping strategies, rather than being in denial and avoiding the topic (Shaw and Logan, 2013). Shaw and Logan (2013) also found that reinforcing the positives of ISC and highlighting how it will enable independence and control over bladder function helps patients to achieve a return of some sense of normality, helping them to maintain the integrity of their:

- Self-image
- Privacy
- Dignity
- Self-esteem
- Quality of life.

Follow-up, whether in person or by phone, helps to reinforce learning and troubleshoot any problems or complications. It also offers support to patients and can help with any practical or psychological issues that may arise (Bardsley, 2015).

Remember...

It has been shown that the interpersonal skills and experience of the nurse facilitates the patient's learning and acceptance of ISC (Shaw et al, 2008).

CHOOSING THE RIGHT CATHETER

When teaching ISC, it is vital to choose the right catheter for the patient (Shaw et al, 2008). It needs to be the right length, size and type to enable efficient emptying of the bladder without being too big and so causing trauma and pain on insertion. In other words, the right catheter is the smallest size possible to do the job. Most people find size 12 Charrière (Ch) or French (F) catheter small enough to reduce discomfort, while allowing emptying within a reasonable time. The measure Charrière or French relates to the external diameter of a catheter, e.g. size 12Ch or F catheter is 4mm in diameter. The fuller the bladder, the longer it takes to empty, so establishing a regimen to suit the patient's lifestyle, while also reversing the symptoms and maintaining bladder and upper urinary tract health, is important (RCN, 2012). Patients should be given a choice of different catheters to try to make sure that they choose the right one for their needs (Bardsley, 2015; Logan, 2017).

Intermittent catheters are known as Nelaton catheters. Standard length catheters are between 40–45cm long and these suit men who have a longer urethra, as well as women who prefer or need to use a longer catheter. Female catheters are usually 25cm long (Continence Product Advisor, 2018). However, there are shorter, compact female-specific catheters, which are between 7 and 9cm long, making them discrete to carry and easy to use.

Most ISC catheters are made of plastic (PVC), which is an inert substance and does not irritate the urethral mucosa. Catheters can also be made of silicone or ethylene vinyl acetate (EVA), and there may be some patients, although this is not common, who need to use stainless steel catheters (usually female patients), because these are more rigid and suit their needs (EAUN, 2013).

How catheters are manufactured affects the discomfort and trauma they may cause to the urethra. Nelaton catheters have a soft rounded tip and two lateral eyes (holes) at the tip through which urine drains. These eyes can cause discomfort and trauma if their edges are not smooth. Ideally, these should be cut into the catheter before it is polished in the manufacturing process, which will 'round' off the edges of the holes, making them smooth to touch. There are now also some catheters which have four holes instead of two. This speeds up drainage of urine and is particularly useful when emptying neobladders or enterocystoplasties, which tend to contain debris and mucus as well as urine and may easily block a catheter (Fillingham and Douglas, 2004).

Lubrication

Catheters also need lubrication to minimise friction and trauma on insertion (Bardsley, 2015). Patients may choose uncoated/unlubricated catheters, which can then be lubricated using gel before use. The gel is often supplied in the packet with the catheter or can be bought separately. Alternatively, some catheters are coated with a special hydrophyllic surface layer, which is activated by water or moisture. Most are made to allow the user to open the packet and add either tap water or the water supplied with the catheter itself. The latter has the advantage that a patient does not need to be around water to lubricate the catheter, thus making the procedure more flexible. There are also pre-lubricated catheters, which are packaged laying in a wet solution, thus eliminating the need for additional water or saline (EAUN, 2013).

Table 2: Indications for ISC (RCN, 2012; Cho et al, 2013; EAUN, 2013)

Retention and/or overflow incontinence, e.g. benign prostatic hyperplasia (BPH), urethral strictures
Incomplete emptying, e.g. neurogenic or hypotonic bladders, or following interventions such as bladder augmentations, Botox, mid-uretral tape
Neobladders/continent urinary diversions, e.g. Mitrofanoff pouch, Struder neobladder
Intravesical installation, e.g. BCG, mitomysin C for superficial bladder cancer
Investigations, e.g. urodynamics
Prevention of strictures, e.g. post high intensity focused ultrasound (HIFU)
To avoid any potential complications during the insertion of radioactive treatments, i.e. c1aesium into the cervix

Currently, all intermittent catheters are single-use only. If inserting the catheter is difficult, patients should be advised to try a different type. Different brands of catheter may feel softer and more pliable or stiffer than others, despite being the same Charrière size. Catheters may also have different shaped tips, such as a tapered or olive tip, while some patients may require a catheter with a curved tip rather than a straight one (a Tiemann or Coude tip catheter). These can be useful if catheterisation is difficult, such as when trying to get past an enlarged prostate.

'... patients may need the self-lubricating catheters attached to bags by day to ensure that they can empty their bladder wherever they are, for example, if there is no disabled toilet they can access, but then use ones without a bag when at home.'

There are also catheters which are already attached to a urine drainage bag. This is especially useful when not in the vicinity of a toilet, or if the patient is in a wheelchair or cannot transfer onto the toilet for whatever reason. Here, urine drains directly into the bag and then can be disposed of later (EAUN, 2013).

A mixture of catheters can be used to suit different aspects of daily life. For example, patients may need the self-lubricating catheters attached to bags by day to ensure that they can empty their bladder wherever they are, for example, if there is no disabled toilet they can access, but then use ones without a bag when at home. There are also different aids available to help with dexterity or positioning issues (*Figure 1*).

Handling a catheter can be difficult, especially if it is self-lubricating, as this layer tends to cover the full length of the catheter down to the end nozzle making it slippery. Nowadays, many manufacturers do not coat the catheter all the way down, but allow a few lubrication-free centimetres for a better grip. Some provide a plastic sleeve or grip around the catheter, which can be moved up or down the tube, allowing for it both to be gripped firmly as well as a no-touch technique. Female patients may use a mirror to visualise their urethra, although it can be difficult to hold or balance a mirror while catheterising (Logan, 2017). Using mirrors which are mounted on holders or leg spreaders that can be placed between the knees allowing two hands free for catheterisation can be useful. Similarly, male patients may benefit from using penis holders, while portable urinals for both men and women can also help with the process (Continence Product Advisor, 2018; *Figure 1*).

PERFORMING ISC

Patients are encouraged to find the position that is most comfortable and best suited for them to carry out ISC (Robinson, 2006). Most men will opt to stand over a toilet if able

or sit facing it, for example, if in a wheelchair. Women tend to sit on a toilet, although some prefer to stand or sit on the side of a bath or bed.

Male patients

Most healthcare professionals ask patients to clean the urethal area with soap and water before ISC, although there is evidence that using water for general urogenital hygiene is sufficient (Bardsley, 2015). If away from home, a wet wipe may be used. Patients should then wash their hands and prepare the catheter for use, making sure that it does not touch any other surface which may contaminate it and taking care not to touch the tip or any part of the catheter that will be advanced into the bladder. Catheters that need lubrication or activation of a lubricating layer usually come with a little sticky pad at the top of the packet to allow this to stick to a surface, such as the side of a sink, thus freeing up both hands. In some cases, activation of the lubricating layer may take up to 30 seconds.

The penis should be grasped in one hand at an angle of 90 degrees to the body and the foreskin (if present) pulled back to expose the head of the penis and the external urethral opening. The catheter should be taken out of its packet and the tip gently inserted into the opening, then down the urethra. Patients may find this uncomfortable and frightening at first, and need reassurance to persevere. They should be asked to use gentle but firm pressure when inserting the catheter, and be prepared to feel some resistance when the catheter gets to the external sphincter area. It is important to encourage patients to relax the sphincter and continue

Top tip:

Nowadays, many manufacturers are producing catheters in discrete small packets, so ensuring privacy and making it more acceptable for people to be able to carry them around in bags without fear and embarrassment.

Figure 1. *Aids to hold catheter in place or to allow a better grip.*

to push the catheter through until it gets to the bladder when urine should start to drain. The catheter should be pushed in 3–5cm further to ensure it is definitely in the bladder. Once the flow slows, it can be gently withdrawn. Patients should be warned that as the catheter comes out more urine may drain. It is good practice to press gently on the suprapubic area to make sure all urine has drained and the bladder is completely empty. The catheter can then be removed and disposed of. This can usually be put into a plastic bag and disposed of in household rubbish. If there is a foreskin, this needs to be pulled back into place.

Female patients

The procedure is essentially the same except that it is a little bit more difficult for women to visualise their urethral opening and, in the author's clinical experience, repeated failure to successfully catheterise in the early stages may reduce the patient's confidence. It is important to reassure women that this is normal and that it will improve with practice. Finding a comfortable and practical position may take time. Using a mirror to locate the urethral opening can be helpful, although many women eventually stop using this and are able to insert the catheter successfully by touch. If the catheter is inadvertently inserted into the vagina, patients should be warned not to use the same catheter again as this will contaminate the bladder and may cause infection (Logan, 2017).

PROBLEMS IN CATHETERISATION

Although ISC causes less problems than indwelling catheters for patients, it is not trouble-free, which is why it is essential to ensure that patients have a good knowledge of what to do, and when to seek help should the need arise.

Difficulty inserting catheter

Catheter insertion may be difficult, either because of anatomical changes (e.g. following a prolapse, an enlarged prostate or post-surgery), or because of trauma from repeated catheterisation (e.g. urethral stricture or false passage). This may mean reassessing the patient's technique and possibly using a different catheter to get past the obstruction, or referring back to the surgeon, especially if there is a stricture or false passage (EAUN, 2013).

Pain

Pain on insertion or removal of catheters can cause patients to avoid doing ISC regularly, or even at all (Barton, 2000; Mangall, 2013). Pain may be a result of the patient feeling tense and not completely relaxing the pelvic floor, and thus stopping the catheter going past the external sphincter and up to the bladder. Older women may also have mucosal atrophy and vaginal atrophy post menopause, making the area sensitive as they insert the catheter (Logan, 2017).

Catheterisation may also trigger bladder spasm which causes pain. Again, the patient's catheterisation technique should be reassessed and instruction on how to relax the pelvic floor may be beneficial. Local anaesthetic gel may also help, as well as trying different catheters, such as a softer catheter or one with a different lubricant. Anticholinergic medication can help with bladder spasms (Bardsley, 2015).

No urine draining

Occasionally, although the catheter is in the bladder, no urine drains out. If the bladder is not very full it may be that the patient is not in the correct position to ensure urine can drain through the catheter. This can be resolved by sitting up, leaning forward or gently inserting the catheter a little further in, or alternatively actually withdrawing it slightly until urine starts to drain. Sometimes the drainage holes may be blocked and need clearing if a lot of gel was used to lubricate the tube. Increasing intra-abdominal pressure by coughing or pressing down on the suprapubic area will force the gel down the catheter and the urine will follow.

Practice point — frequently asked questions

Will it hurt?

✓ It may feel uncomfortable at first but should not be painful. Using a well lubricated catheter with well-polished eyeholes minimises the discomfort. Some patients may need local anaesthetic gel to numb the urethra.

How much of the catheter has to go into my bladder?

✓ Male patients — at least ¾ of the tube will go in as the male urethra is so long. However, the tube is soft and will coil in the bladder so will not hurt or puncture your bladder even if all the catheter is inserted to the hilt

✓ Female patients — as the urethra is so short in females only about 7–10cm will go in before urine starts to drain, although it is good practice to insert the catheter in for another 2–3cm.

Can I catheterise away from home?

✓ Yes, you can catheterise anywhere as long as you are happy to do so and can make sure that you can do it cleanly and safely.

How do I dispose of the catheters?

✓ Catheters can be wrapped up in their packaging and put into a plastic or paper bag and disposed of in normal household rubbish.

Do I have to pay for my catheters?

✓ Catheters are available on prescription. If you are exempt from paying prescription charges, you will not have to pay for them. However, if not, there is a prescription charge.

Where do I get them from?

✓ You can get catheters from your local pharmacy (they will have to order them for you as most pharmacies do not keep them in stock). Some patients prefer to use a delivery company. The prescription is sent to the company who will generally deliver it to your home or preferred address within 24–48 hours.

Can I go on holiday?

✓ Yes. Remember to take some catheters in your hand luggage in case your suitcase is delayed or goes missing. Some air companies need you to carry a letter saying you need to have the equipment with you. Also, some delivery companies can send your equipment out to your holiday destination to avoid you having to carry a great deal of stock.

Trouble removing catheter

Patients may experience difficulty in removing a catheter. This happens because as the bladder empties rapidly the bladder collapses down, and the inner wall of the bladder, the mucosa, can get 'sucked into' the eyes of the catheter, which effectively blocks it. When the patient tries to pull the catheter out, there is resistance because the mucosa is caught in the holes. Patients describe the catheter as 'shuddering' when this happens, and should be instructed to wait a few moments to allow the bladder to relax, then slowly rotate the catheter while gently pulling it out (EAUN, 2013).

Bleeding

It is also important to reassure patients that some slight bleeding

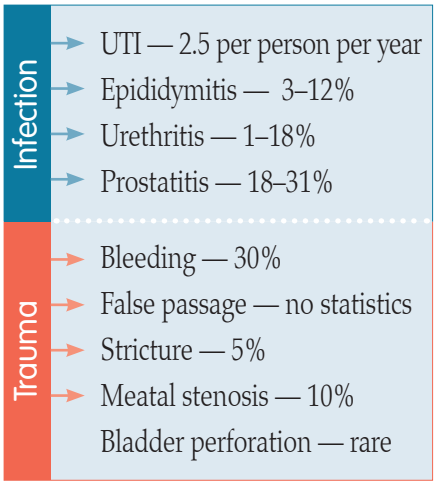

Figure 2. *Complications of ISC (EAUN, 2013).*

when the urine starts to drain, or some blood on the catheter tip when it is withdrawn, are normal, although prolonged and heavy bleeding is not (RCN, 2012). If this happens, they should seek help (Bardsley, 2015).

Leaking urine in between catheterisations

Some patients may still leak urine in-between catheterisations and again this may impact on their adhering to the treatment regimen. Asking the patient to keep a three-day diary of all their fluid input and urine output and indicating when they leak will give a picture of how often they are doing the procedure and if they are emptying the bladder properly. Again, they may need their technique reassessed to ensure that they are emptying properly and completely. It might mean that patients need to increase the number of times they catheterise during the day and adjust how much fluid, and when they drink it, during the day, to have longer dry spells. Once again, anticholinergic medication may help if the bladder is overactive and the leak is a result of bladder spasms (Barton, 2010; Mangnall, 2012).

Other complications

Other problems on immediate catheterisation include formation of a false passage and very rarely bladder perforation (especially in reconstructed bladders, such as neobladders or enterocystoplasties) and urethral strictures. There is still the possibility of chronic bacteriuria, although this is less so than with indwelling catheters. Other issues that might arise include epididymitis, urethritis and prostatitis. Patients can also produce bladder stones. This is rare, but can happen especially if the patient has a reconstructed bladder made of bowel and so has a lot of mucus sitting in the bladder, which is not drained out and/or washed out regularly (EAUN, 2013). *Table 3* outlines NICE guidelines which advocate use of ISC in bladder care of certain patient groups.

PATIENT SCENARIO

Mr Fox, a 72-year-old retired teacher, presented in Accident and Emergency as he had been unable to pass urine for the past eight hours. On questioning, he admitted that since retiring from teaching at the age of 65, he had noticed that he passed urine more frequently and in smaller amounts during the day. His stream was weak and he rarely slept through the night without having to wake up four to five times to empty his bladder. This disturbed his wife, who had had to resort to sleeping in the spare room on occasion. Recently, he had also found that when he got the urge to pass urine it was difficult for him to hold on and occasionally he leaked urine before he got to the toilet. He had to wear a small male incontinence pad, which he found upsetting and embarrassing. This made him reluctant to leave the house, especially if he was going somewhere new or where he did not know what bathroom facilities would be available. He usually limited his outings to under two hours, as he would inevitably need to find a toilet quickly if he stayed out any longer. He had cut down his fluid intake in an attempt to produce less urine and to stop being 'caught short', but this did not seem to make any difference. If anything, his urgency had increased.

Mr Fox was catheterised with an indwelling catheter and 2,500mls of urine was drained. He was discharged home with antibiotics to take for three days and given instructions on caring for his catheter. This was removed during a clinic appointment two weeks later. However, Mr Fox was unable to empty his bladder spontaneously and the catheter was reinserted and he subsequently failed a further trial without catheter. On discussion with his consultant, Mr Fox was reluctant to have surgery for his enlarged prostate and it was decided to start him on alpha blocker medication (Roehrborn and Schwinn, 2004), which would relax the smooth muscle of his bladder neck. He was also referred to the continence advisor to learn ISC. He opted to try this, as he was not keen to have a permanent indwelling catheter.

He was reviewed in clinic three months later and reported no problems with ISC. His urgency and frequency had subsided and he was now able to pass some urine spontaneously. However, he still did not empty completely and was doing ISC three times a day. He was dry and, most importantly, was sleeping throughout the night much to his wife's relief.

Table 3: NICE guidelines

Infection control (CG 139) — catheter selection March 2012
Urinary incontinence in neurological disease: management of lower urinary tract dysfunction in neurological disease (CG 148)
Urinary incontinence in women (CG 171) — September 2013
Metastatic spinal cord compression (CG 75)
Intrapartum care (CG 55) — 2008
Multiple sclerosis (CG 8) — 2003

CONCLUSION

Intermittent self-catheterisation is an intimate, invasive procedure which patients find challenging. It can cause anxiety and distress, especially because of the fear of possible pain on insertion (Logan, 2017). These barriers may impede patients' ability to learn the technique and adhering to a catheterisation schedule.

Teaching ISC can also pose a challenge to healthcare professionals. Research has shown that healthare professionals' attitude, communication and teaching skills are key when it comes to helping patients accept the need to perform ISC, and learn how to do it safely and retain all the information needed to cope with problems as they arise (Shaw et al, 2008; Logan, 2017). Tailoring teaching to the individual needs of each patient and taking the time to ensure that they absorb the information and become confident and competent has been shown to increase the likelihood of patients being successful (Bardsley, 2015). Having a better understanding of the advantages and disadvantages of undertaking ISC enables healthcare professionals to better identify patients who would benefit from this technique, and so be referred for assessment and to learn how to do the procedure, as well as becoming knowledgeable and skilful enough to carry on using ISC safely in the long term. Healthcare professionals should also be aware of the possible difficulties and complications that may ensue, and be able to resolve problems to support patients and help them adhere to their treatment regimens.

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IN BRIEF

- Over one million indwelling urinary catheters are inserted every year in the UK; this equates to between 12 and 24% of hospital patients having an indwelling catheter at some point during their inpatient stay (Feneley et al, 2015).
- The use of indwelling urinary catheters in the care sector can be higher (Royal College of Physicians, 2004; Loveday et al, 2015).
- Nurses should be familiar with best practice and understand the advantages and disadvantages of using indwelling urinary catheters in the urethral and suprapubic sites.

KEY WORDS:

- Indwelling catheterisation
- Catheter choice
- Catheter-associated urinary tract infection (CAUTI)
- Encrustation

Best practice in the use of indwelling catheterisation

Sharon Holroyd

Clinical indications for the use of indwelling urinary catheters have been identified by the Royal College of Nursing (RCN, 2012) and also the European Association of Urology Nurses (EAUN) (Geng et al, 2012) (*Table 1*). There are significant risks associated with the introduction of a foreign body into the bladder (*Table 2*), not least infection, with statistics demonstrating that the longer a urinary catheter is in place, the more likely an infection is to develop (Loveday et al, 2014). It is widely acknowledged, therefore, that indwelling urinary catheters should only be used as a last resort and when all other options have been considered, tried and failed (National Institute for Health and Care Excellence [NICE], 2014; Davey, 2015; Yates, 2016; Simpson, 2017).

An indwelling urinary catheter can be inserted through the urethra or via the suprapubic (abdominal) route using a self-retaining balloon catheter, which can be used over a short-term (less than 28 days) or long-term (up to 12 weeks) period (RCN, 2012).

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Inserting a new, or changing an existing urinary catheter should only be undertaken following a thorough individual assessment (Feneley et al, 2015; Yates, 2016). This must include a risk assessment of any contraindications before insertion (RCN, 2012), such as an inability to care for it, no carer support, or cognitive impairment where there is a high risk of deliberate self-expulsion/removal, and also consideration of the type of drainage system used to ensure safe and effective drainage of the bladder (Leaver, 2017). The clinical indication for the use of the catheter should be clearly identified and documented in the patient notes and reviewed every time the catheter is changed to ensure it is still the best option for managing the individual's bladder drainage.

CHOOSING THE CORRECT CATHETER

There are many different types of indwelling urinary catheters available. The nurse should consider the use of latex, silicone, coated or composite materials, and pay attention to any patient history of sensitivity or allergy (Elvy and Colville, 2009).

Latex catheters

Latex catheters are the most common type of catheter available. They are made from natural rubber and have been traditionally popular due to their flexibility. However, the high surface friction associated with latex can increase the risk of catheter encrustation, particularly around the catheter tip, which can increase pain and discomfort for the patient (Feneley et al, 2015; Yates, 2016). Sensitivity and allergy to latex is common and the initial assessment of each patient needs to consider the risks associated with the use of latex materials (Health and Safety Executive [HSE], 2011; NICE, 2017).

Silicone catheters

Silicone catheters have a wider internal lumen due to the composition, i.e. thinner walls

Practice point

Indwelling urinary catheters are also commonly referred to as Foley catheters, named after the American urologist Frederick Foley, who popularised their use in the 1930s.

than latex or coated catheters, and those made of 100% silicone are hypoallergenic for the majority of the population (Loveday et al, 2014). Silicone is slightly more rigid than latex and has a tendency to cause 'cuffing' or 'ridging' around the deflated balloon, which may in turn become attached to the urethral or suprapubic tract on removal, causing trauma (Geng et al, 2012; Feneley et al, 2015). In the author's experience, this issue can be managed by completely deflating the catheter balloon and then inserting 1ml of sterile water to smooth out the edges of the balloon, which helps prevent the catheter from sticking to the urethral or abdominal tract tissues on removal. This, in turn, will reduce potential trauma.

Polytetrafluoroethylene-coated catheters

These are latex catheters coated in polytetrafluoroethylene [PTFE], which is smoother than latex and can be useful in reducing encrustation and discomfort for the wearer. There is still the risk of latex allergy and, therefore, PTFE-coated catheters must be avoided in patients with a known allergy or sensitivity.

Hydrogel-coated catheters

Hydrogel-coated catheters can reduce friction and irritation, as they are soft, hydrophilic and biocompatible (Geng et al, 2012). They are typically a latex catheter with an integral hydrogel coating that offers a smooth catheter surface aimed at reducing friction and trauma on insertion.

Silver-coated catheters

Silver-coated catheters were introduced in the 1980s and are manufactured either as silicone, hydrogel or latex catheters with a thin layer silver alloy coating. Silver has long been recognised for its natural antimicrobial properties (Hayes, 2009), and these catheters were initially thought to significantly reduce the incidence of catheter-associated urinary tract infections (CAUTIs) (Pellowe, 2009; Stickler and Feneley, 2010; Pickard et al, 2012). However, it has since been acknowledged that the antimicrobial effect is short-lived and lasts no longer than 28 days (Tenke et al, 2008; Hayes, 2009; Beattie and Taylor, 2011; Geng et al, 2012; Loveday et al, 2014; Feneley et al, 2015). This means that the catheter has no added benefit in reducing infections after the 28 days and, therefore, would need changing to ensure optimum antimicrobial effect is continued. This will have cost implications, as these types of catheters are more expensive.

Table 1: Indications for indwelling catheter use (Geng et al, 2012; RCN, 2012)

Acute or chronic retention of urine
Neurological conditions affecting sensation or control of micturition
Accurate measurement of urine output in critically ill patients
Perioperative use for selected surgical procedures
Urology/genito-urinary tract surgery
Prolonged duration of surgery, intraoperative monitoring
Wound healing of open sacral or perineal wounds in incontinence patients
Patients requiring prolonged immobilisation, e.g. unstable thoracic or lumbar spine injuries, multiple trauma injuries
Bladder irrigation/lavage
To maintain skin integrity in intractable incontinence
To provide comfort and dignity during end-of-life care
Accurate output monitoring
Detrusor failure or inefficiency
Bladder irrigation following urology surgery, e.g. prostate surgery

Practice point

Between 12% and 24% of hospital patients have an indwelling catheter at some point during their inpatient stay (Feneley et al, 2015).

Nitrofurazone catheters

Nitrofurazone catheters are antibiotic-impregnated catheters that may reduce asymptomatic bacteriuria when used as a short-term measure. However, the clinical evidence does not demonstrate a significant reduction in the incidence of symptomatic infection and, therefore, the use of this particular type of catheter is not widely recommended (Geng et al, 2012; Feneley et al, 2015).

CHARRIÈRE AND LENGTH

The Charrière (Ch) size of the catheter should be small enough to reduce tissue damage and trauma, yet large enough for effective and timely drainage. The EAUN guidelines for best practice (Geng et al, 2012) recommend a 12–14 Ch catheter be used in adult male and females for urethral catheterisation, and a size 16 Ch or larger for suprapubic catheters, as catheters with a smaller Ch can be become blocked through abdominal pressure.

Catheter lengths in the UK are categorised as:

- Paediatric catheter: 30cm in length and available up to a size 10 Ch
- Female catheter: 23–26cm in length
- Standard- or male-length catheter: 40–44cm in length (maximum size is 26 Ch for male and female).

A standard-length catheter must always be used in adult males aged 16 years and above as insertion of a shorter catheter may result in the balloon being inflated within the urethra leading to haematuria, swelling, retention, and significant trauma to the prostatic urethra (National Patient Safety Agency, 2009).

Female catheters provide discretion for the wearer, as they are

easily concealed; similarly, there is less movement in and out of the urethra (Yarde, 2015). However, standard length catheters can also be used in females who are larger, obese or taller, as the extra length provides more comfort and the drainage connection is further away from the genitalia, thereby reducing the risk of infection. Female transgender patients who have undergone significant urethral reconstruction should only use standard-length catheters.

BALLOON SIZE

The balloon size of the catheter needs to be considered when choosing a product. Manufacturers produce Foley catheters with balloon sizes ranging from 5mls to 30mls. The larger balloons can increase the trauma and infection risk at the bladder neck, sphincter or suprapubic entry site, and leave a higher residual volume of urine within the bladder, thereby increasing the risk of infection from static urine (Garcia et al, 2007; Feneley et al, 2015). Larger balloons may also increase the incidence of urine bypassing, bladder spasms, pain and discomfort (Simpson, 2017). Larger balloon size catheters are commonest in urology when the Ch size is much larger, and the catheter is three-way rather than the standard two-way product to enable irrigation and effective drainage postoperatively. As the larger balloon size can cause trauma and increase the risk of infection, their use should be short term. A clinical indication for the choice of catheter should always be documented and the least risky option used.

Consideration should also be given to the loss of liquid volume that occurs over the catheter life of a sterile water-filled balloon, due to osmosis. While this is believed to be less of an issue when using glycerine solutions to inflate the balloon (Simpson, 2017), nurses should always follow the manufacturer's advice when inflating a catheter balloon with water, and the balloon should never be overinflated.

CLEANSING SOLUTIONS

Indwelling urinary catheterisation is undertaken using an aseptic no-touch technique (ANTT) (Rowley et al, 2010; NICE, 2017). The use of sterile normal saline or sterile water to cleanse the meatal or abdominal skin is normally recommended before inserting the catheter (Healthcare Infection Control Practice Advisory Committee [HICPAC], 2009; Loveday et al, 2014). However, NICE (2017) has recommended that nurses use local policy and guidance for meatal cleansing before urethral catheterisation, without any specific reference to the type of cleansing solution.

There have been some small studies reviewing the benefits of using an antimicrobial solution for meatal cleansing to reduce CAUTIs (Sandle, 2013; Levers, 2014). These have suggested that the use of such solutions may be beneficial, particularly in a community setting as the patient's home environment can be more challenging from an infection control point of view, than a hospital setting. However, more work is required in this area before a definitive recommendation can be made on the advantages or disadvantages of introducing antimicrobial cleansing as a standard approach in urethral catheterisation. Until then, the best practice recommendation for managing catheter hygiene on a daily basis remains the use of soap and water in the individual's normal personal hygiene routine (NICE, 2017).

LUBRICATION

Insertion of a urinary catheter, both suprapubic and urethral, requires the use of an appropriate lubricant so that trauma, discomfort and the risk of infection can be minimised (Loveday et al, 2014). Standard practice across the UK has been to use catheter lubricant gels that contain chlorhexidine (an antiseptic) or lidocaine (an anaesthetic), or a combination of both. However, in recent years there has been an increase in reports of adverse reactions, sensitivities and allergic reactions to chlorhexidine, possibly because of the inclusion of the active ingredient in many everyday household products (Marinho et al, 2013; Wilson, 2016).

Bypassing...

Urine bypassing a catheter may be caused by a number of factors. Common causes include a build up of residual urine in the bladder, bladder spasms, an overactive detrusor, or constipation creating pressure on the bladder.

The clinical evidence suggesting that the use of chlorhexidine effectively reduces the incidence of CAUTIs is also limited and inconclusive (Wilson, 2016), with many countries switching to antiseptic-free gels (Williams, 2017). Several studies have outlined the benefits of anaesthetic gels in reducing pain on catheter insertion (Ramakrishnan and Mold, 2004; Kyle, 2009; Tzortzis et al, 2009).

During any assessment for catheterisation, it is the individual nurse's responsibility to identify any contraindications, sensitivities or allergies that the patient may have to the active ingredients used in lubricating gels. Similarly, the nurse should use the assessment to choose an appropriate catheter for the patient that will ensure that the experience of catheterisation is as safe, effective and comfortable as possible.

DRAINAGE BAGS, VALVES AND FIXATION DEVICES

Drainage bags

There are a variety of options available to the nurse when choosing a drainage bag to accompany the urinary catheter, both suprapubic and urethral, ranging in capacity from 350mls to 3,000mls. Drainage bags can be single-use or drainable and must be sterile and maintain a closed system to reduce the risk of infection. Drainage bags are generally changed every 5–7 days in line with the manufacturer's instructions.

The nurse's choice of drainage bag will depend on (Yates, 2016):

- Rationale for catheter use — this could be influenced by many factors, such as patient mobility, manual dexterity or eyesight

- Patient choice
- Length of tubing required
- Design and position of the tap
- The patient's ability to manage the system
- The patient's bladder capacity.

Any drainage bag should be adequately supported with an appropriate device or stand to reduce the weight exerted on the catheter and bladder, which may otherwise cause tissue trauma and increase the risk of infection. Drainage bags should be emptied frequently enough to maintain the flow of urine and prevent reflux, without interrupting the closed drainage system unnecessarily, which could increase the risk of infection (Geng et al, 2012; RCN, 2012). It is recommended that the bags are not allowed to become more than three-quarters full (Loveday et al, 2014).

Valves

Catheter valves are a popular choice, as they allow the bladder to fill and empty over a period of time, mimicking the micturition cycle, which may contribute to a more successful trial without catheter (TWOC, see *pp.35–39*) (Woodward, 2014). As the urinary catheter is considered a high risk intervention, planning a TWOC should always be considered at the earliest opportunity in patients who may regain effective control of bladder filling and emptying. If a patient is identified as always needing assistance with bladder emptying, consideration should be given to the feasibility of alternative less risky management methods, such as intermittent catheters. However, there are some factors that the nurse must consider before recommending a catheter valve, for example, the patient's bladder capacity, their sensation of whether their bladder is full (although a patient with no sensation can be taught to safely manage a valve system). Their ability to understand the valve system should also be assessed (Yates, 2016). The risk of high pressure from a full bladder causing renal damage, or a history of recent surgery on the genitourinary tract, exclude the use of a catheter valve system (see *Table 3* for the advantages and disadvantages of using a catheter valves).

Catheter fixation devices

Catheter fixation devices have been in use since the 1960s and a variety of products are now available. An unsecured catheter will move inside the bladder causing unstable detrusor contractions, bladder spasms, pain, bypassing and possible expulsion of the catheter (Geng et al, 2012). This increases the risk of urethral, bladder neck or suprapubic tract trauma, which can lead to infection (Hanchett, 2002; Spinks, 2013; Feneley et al, 2015). Urinary bypassing also increases the risk of skin damage, incontinence-associated dermatitis and secondary infections. This is because as the skin comes into contact with urine, the epidermis can become overhydrated or irritated by the urine leading to damage or secondary infections (Holroyd, 2016).

The Wound Ostomy and Continence Nurses Society published best practice guidance on the benefits of catheter fixation (WOCN, 2012). Any assessment should aim to identify an appropriate catheter fixation device that will reduce the incidence of catheter displacement, expulsion and migration and, thereby, reduce the risk of tissue damage and infection (Holroyd, 2016).

CATHETER-ASSOCIATED URINARY TRACT INFECTIONS

CAUTIs account for a large proportion of healthcare-acquired infections (Pellowe, 2009) and the cost of treating a single CAUTI is estimated at almost £2,000 (Loveday et al, 2014), placing an enormous burden on the healthcare economy. Establishing the effect of a CAUTI on a patient's quality of life is difficult to determine, with the risk of serious infection rising the longer the catheter is in place (Chang et al, 2011; Loveday et al, 2014). Forty-five per cent *Escherichia coli* bacteraemia are attributed to the urinary tract and use of catheters (Abernathy, 2017). It is now a Public Health England policy to reduce all healthcare-associated Gram-negative bloodstream infections by 50% by 2021, and all trusts have been challenged with ensuring a robust action plan is in place to achieve this by closer monitoring, robust early detection and appropriate treatment of CAUTIs (NHS Improvement, 2017).

Table 2: Risks associated with indwelling catheters (Geng et al, 2012; RCN, 2012)

Catheter-associated urinary tract infection (CAUTI)
Epididymitis
Catheter blockage
Catheter bypassing
Iatrogenic trauma
Bladder spasm
Bladder pain
Haematuria
Granulation formation
Urinary extravasation
Inability to remove catheter
Squamous cell carcinoma (SCC)

ENCRUSTATION

Catheter blockage and bypassing are common issues encountered with the use of indwelling urinary catheters and are usually caused by infection and encrustation. Encrustation is commonly caused by a build-up of *Proteus mirabilis*, a urease-producing bacteria, which causes biofilm formation on the catheter surface leading to blockage of the lumen and drainage eyelets (Stickler et al, 2003; Feneley et al, 2015). Traditionally, catheter maintenance solutions have routinely been used to dissolve the encrustation or remove debris. However, this is a high-risk strategy for a number of reasons (Turner and Dickens, 2011; Davey, 2015; Feneley et al, 2015; Gibney, 2016):

- To flush the catheter with maintenance solutions requires breaking the closed drainage system, thus increasing the risk of infection
- The acidic content of catheter maintenance solutions can damage the urothelial lining of the bladder and cause an inflammatory response
- The increased pressure under

PATIENT SCENARIO

Patient A is a middle-aged male in his late forties. He has multiple medical conditions, including a significant head injury that has affected his ability to effectively manage bladder drainage, resulting in the need for a catheter. His bladder is unable to store urine volumes at a safe pressure and in the past this has caused significant renal damage. Therefore, he requires the catheter to be on free drainage, which causes an internal suction effect that increases the risk of bladder spasms and pain. His head injury also causes behavioural issues and he struggles to cope with any pain, discomfort or interventions involving his catheter, often pulling at the device causing trauma and increasing the risk of infection.

The indwelling free-drainage catheter using a bag system is managed by his family and a team of community carers. The patient finds the catheter uncomfortable and painful, reporting bypassing of urine on a frequent basis. The catheter blocks frequently, resulting in several emergency calls to the district nursing team each week. There is documented evidence of encrustation around the catheter tip when it is changed and the patient is at high risk of infection and sepsis every time the closed drainage system is compromised.

A comprehensive and individualised assessment by the author investigated the rationale for the use of the catheter system and decided that a change in catheter material may reduce some of the symptoms. The patient had been using a latex catheter. Evidence demonstrates that encrustation is common in these types of catheters, so a decision was made to try a silicone catheter, as these have been shown to have reduced encrustation as previously discussed. An alternative catheter-fixation device was introduced to minimise any migration of the catheter and potential trauma. The patient had been using an elasticated strap version of a catheter fixation device, which caused issues with lower limb circulation due to peripheral neuropathy and oedema. This caused discomfort for the patient and some superficial skin damage, which resulted in the patient removing the device. An alternative hydrocolloid plaster version fixation device was used to minimise catheter migration and improve patient comfort and compliance. Fixation devices need to be appropriate for use and should be chosen after an individual assessment of the patient, including any contraindications or cautions.

Bladder washouts had been routinely performed with little effect and were stopped due to the significant risk of infection. A catheter valve was contraindicated due to patient A's renal damage and high-pressure bladder, i.e. a bladder that is unable to store urine safely without causing high intravesical pressures leading to significant renal damage. A review of patient A's bowel habit and fluid intake was undertaken to ensure that this was not a contributory factor. The catheter balloon size was reduced from 10ml to 30ml, and a different balloon-inflation solution containing an antimicrobial agent (triclosan 0.3%) was introduced. The rationale for a smaller balloon size was to reduce the irritation on the bladder neck and sphincter commonly seen in larger balloon sizes (Geng et al, 2012). The catheter life was extended and the amount of calls from the patient to the district nursing team reduced significantly. The change in catheter system improved the patient's quality of life and reduced the excess workload on the carers and community nursing teams.

The trust involved in this case have now developed a quick reference guide for managing patients with problematic urinary catheters to assist staff in identifying potential issues and treating them appropriately with the lowest risk (see *Figure 1*).

Table 3: Advantages and disadvantages of catheter valve usage (Simpson, 2017)

Advantages	Disadvantages and contraindications
› Discretion › Comfort › Potential for maintenance bladder function, capacity and tone › Mimics normal bladder › Reduces risk of trauma by lifting bladder wall tissue away from catheter tip › Reduces the risk of bladder neck trauma caused by drainage bag › The four-hourly release schedule may reduce catheter blockage › Possible reduction in risk of infection	› Limited bladder capacity › Potential for detrusor overactivity (see practice point box) › Ureteric reflux — this is when urine is forced back up the ureter towards the kidneys leading to swelling and potential damage of both the ureter and kidney › Reflux/renal impairment › Poor dexterity › Impaired bladder sensation › Immobility

which they can be administered, can also contribute to significant damage and increased infection risk. Thus, pre-filled catheter maintainence solutions should be gravity fed/administered. Any squeezing of the container/bag will create pressure within the catheter and bladder which can cause trauma and tissue damage.

Catheter maintenance solutions should be used with caution, and only after a thorough assessment of risk and the formulation of a clear clinical rationale, which must be documented in the patient's records.

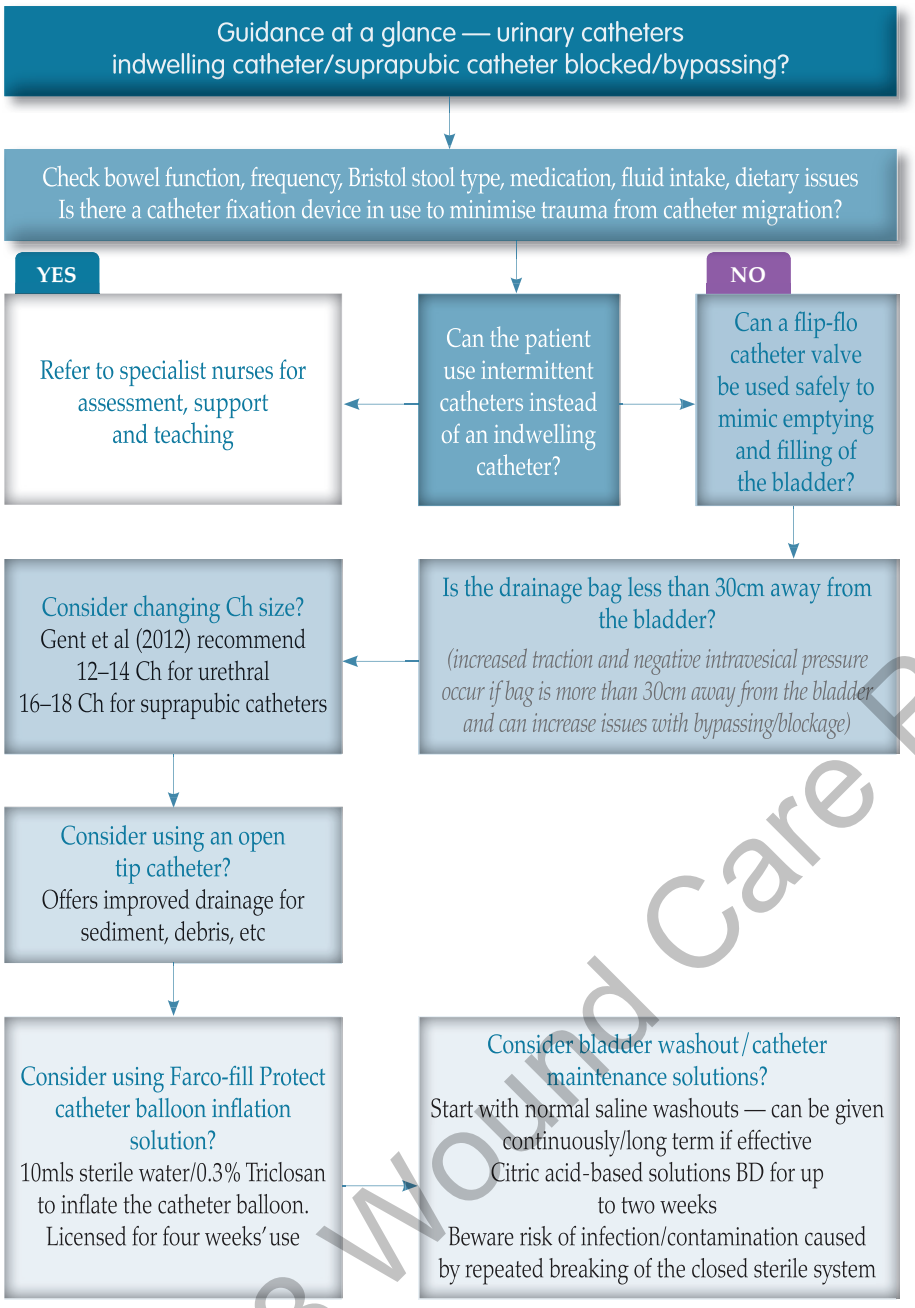

Figure 1. *Guidance at a glance.*

Antibiotics and antiseptics are ineffective in reducing catheter encrustation; however, antimicrobials used in the balloon-inflation solution may be effective in reducing harmful bacteria including *P. mirabilis* (Pannek and Vesweber, 2011; Sperling et al, 2014; NICE, 2017).

CONCLUSION

Indwelling urinary catheters involve a certain amount of risk, primarily through infection, encrustation over time and leakage. However, their use is unavoidable in some patients who require a reliable bladder management option. Nurses should ensure that all patients undergo an individualised risk assessment before the insertion of a catheter to determine the clinical rationale for use, including the type of catheter, size, length and drainage options.

Best practice guidelines provide advice on managing risk appropriately and should be embedded into local policy and clinical practice to ensure patients are offered the right treatment, at the right time, with the lowest risk.

Detrursor overactivity...

Detrursor overactivity is where the detrusor muscle contracts erratically, with little stimulation and often with a low volume of urine present in the bladder (normal detrusor behaviour is to stay relaxed as the bladder fills, then contract when the emptying phase begins at normal capacity — usually 500mls for adults). A valve would not be useful in this situation, as the bladder cannot hold any volume of urine without spasms/detrursor overactivty occurring (the purpose of a valve is to allow the bladder to fill).

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IN BRIEF

- Unnecessary continuation of indwelling catheterisation heightens the risk of catheter-associated urinary tract infection (UTI) or sepsis.
- Timely removal of an indwelling catheter is essential to prevent unnecessary infections.
- Trial without catheter (TWOC) is used to assess patients' bladder function and establish their ability to effectively and successfully empty their bladder unaided.

KEY WORDS:

- Trial without catheter (TWOC)
- Patient assessment
- Catheter-associated urinary tract infection
- HOUDINI

Best practice for trial without catheter

Sharon Holroyd

Indwelling urinary catheters are one of the most commonly used clinically invasive devices in the UK (Loveday et al, 2014; Feneley et al, 2015). There are at least 90,000 people living in community settings in England currently using long-term urinary catheters (Gage et al, 2016). It has long been recognised that the length of time a catheter is in place can increase the risk of developing an infection and a significant number of patients with long-term catheters develop sepsis, which can lead to death (Chenoweth and Saint, 2013; Loveday et al, 2014).

Feneley et al (2015) estimated that about 2,100 deaths a year are directly caused by the use of indwelling catheters. Given that the cost of treating catheter-related urinary tract infections (CAUTIs) is estimated to be about £2,000 an episode (Yates, 2016), and the total cost of using indwelling catheters in the NHS is estimated to be between £1–2.5 billion a year, appropriate management and early removal of these devices must be a priority.

'Ensuring that best practice guidelines are followed and that catheters which are no longer necessary are removed promptly may be a way of reducing infection rates and unnecessary deaths...'

There are many clinical situations where an indwelling urinary catheter is indicated for bladder drainage (see *pp. 28–34*). Ensuring that best practice guidelines are followed and that catheters which are no longer necessary are removed promptly may be a way of reducing infection rates and unnecessary deaths (Magers, 2013; Chenoweth et al, 2014). This article will explore optimum timing for trial without catheter (TWOC) and current evidence advising on how to safely and effectively manage TWOC.

Hospital episodic data (HES, 2011–12 data) for one year alone recorded more than 280,000 episodes of urinary tract infection (UTI) in acute care in England and Wales (Health and Social Care Information Centre, 2013). It is probable that a fair proportion of these were linked to indwelling catheters when considered with the statistical data on how often these devices are used (Feneley et al, 2015). The impact of catheter complications is felt by the patient who suffers the often significant issues relating to infection and the need for antibiotics (Chapple et al, 2016). Nursing and care services both in the community and emergency departments experience an increased demand on their services, a reduction in capacity and ability to respond to the holistic needs of patients with indwelling catheters, which results in an increased economic burden on the NHS and social care sector (Tay et al, 2016; Ansell and Harari, 2017).

Indwelling catheterisation should only be considered when all other options have been discounted (Geng

TWOC...

Trial without catheterisation (TWOC) is the term used to describe the removal of a catheter for a trial period to see if the patient is able to pass urine safely and spontaneously without the need for recatheterisation.

Sharon Holroyd, lead CNS continence, Calderdale and Huddersfield Foundation Trust; chairperson, Yorkshire ACA

Practice point

Catheterisation should be used only when other options have been discounted and after a thorough assessment of the patient. Each episode of catheterisation should have a date set for its review from the start.

et al, 2012; Royal College of Nursing (RCN), 2012; National Institute for Health and Care Excellence (NICE), 2017). There should be evidence of a comprehensive and individualised patient assessment with a clear documented reason for using the catheter and a set date for review or removal (Geng et al, 2012; RCN, 2012; Loveday et al, 2014; Simpson, 2017).

Use of catheter passports has encouraged the sharing of appropriate information among care professionals, prompting health and social care staff to challenge the presence of catheters and ensuring timely review is completed (Yarde, 2015; Simpson, 2017). The passports are also a valuable aid in patient education and empowerment, often providing the patient, carer or family with useful information on hygiene and catheter maintenance, which is crucial in helping to reduce the risk of infections (Loveday et al, 2014).

WHY, WHEN AND HOW TO USE TWOC

The purpose of a TWOC is to assess the patient's bladder function and establish the patient's ability to effectively and successfully empty the bladder unaided (*Table 1*). TWOC should always be planned in advance, considering:

- Timing of catheter removal
- The environment in which the TWOC is performed
- Ongoing assessment of bladder function, including any urinary retention
- A clear plan of action should the TWOC be considered a failure (Yarde, 2015; Bardsley, 2017).

It has been suggested a TWOC should take place within two weeks of catheterisation, although there has not been any robust clinical evidence to support this timescale. Some papers have reported that a TWOC should ideally be performed within two to three days after initial catheterisation (Kuppusamy and Gillatt, 2011), when the reason for the catheter has been acute urine retention. They report a 40% success rate for TWOCs in patients whose underlying cause of acute urinary retention, such as constipation, UTI and medication effects, has been resolved. TWOCs may also be more successful in early stages for those patients with a residual urine volume of less than one litre and no previous lower urinary tract (LUT) symptoms (Emberton and Fitzpatrick, 2008).

The timing of a TWOC in relation to catheter insertion should be decided using an individual assessment, which considers the reason for the initial catheterisation as well as the support planned for the TWOC procedure and any management strategies for possible failure of the trial.

Over the years there has been discussion about the optimum time to TWOC, with some stating early morning is best (Addison, 2001; Watering, 2001; Warrilow et al, 2004), and others preferring midnight (Kelleher, 2002). The author has not found any substantive clinical evidence to suggest a particular time of day improves the outcome or success of a TWOC. The author's recommendation is to time the removal of a catheter based on individual assessment of need, environment and consideration of the availability for follow-up to ensure successful and effective bladder emptying is re-established.

Some areas have dedicated TWOC clinics in hospitals and healthcare environments, the aim being to formally manage the procedure and achieve the best outcomes for the patients with support from healthcare professionals. However, it is now commonplace to offer a TWOC at a patient's own home, as long as a suitably experienced healthcare professional is available to monitor and support the patient to determine the success of the procedure, with a clear follow-up protocol in place (Gilbert, 2006).

DO CATHETER VALVES IMPROVE THE SUCCESS OF TWOC?

In some patients, bladder function can slow down over a period of weeks or months when a catheter is *in situ*, especially if the urine is on continuous drainage into a bag (Addison, 2001; Robinson, 2005). There has been some suggestion that using a catheter valve before a TWOC may improve the success and outcome of the procedure (Woodward, 2013; Yates, 2016), as this allows the bladder to fill and empty over several hours, preserving some sensation and detrusor function by mimicking a normal pattern of micturition. The author has not been able to find any clinical evidence suggesting a minimum amount of time to wear a valve before a TWOC to ensure its success. In practice, the recommended timescale to wear a valve system appears to range from 48 hours to two weeks before removing the catheter. The clinician

Table 1: Reasons for TWOC (Robinson, 2005)

To assess if patients can pass urine without an indwelling catheter
For the patient to become continent or able to use another form of continence product, such as pads or penile sheath, instead of an indwelling catheter
To assess if urinary output is adequate after urological intervention, e.g. following prostatectomy (this is usually undertaken while the patient is still in hospital)
At the patient's request
Patients with benign prostatic hyperplasia who are taking finasteride to reduce incidence of acute urinary retention and the need for surgery in benign prostatic hyperplasia
Patients with prostate cancer after receiving 3–4 injections of goserelin
Detrusor failure or inefficiency
Bladder irrigation following urology surgery, e.g. prostate surgery

should follow local policy and guidelines for use of catheter valves. It should be noted that some patients cannot safely use a catheter valve (see *Table 3* on *p.32*), yet can still have a successful TWOC procedure.

POTENTIAL ISSUES DURING TWOC PROCEDURE

The removal of an indwelling catheter should be a simple and uncomplicated procedure, but there are some potential issues that staff need to be aware of, namely:

- Being unable to deflate the balloon. This may be due to a faulty or damaged valve on the catheter
- Wrinkling or cuffing of the balloon causing the catheter to stick to the urethral or suprapubic tract on removal
- Pain or increased sensitivity when the catheter is removed.

Geng et al (2012) included a comprehensive troubleshooting guide in their best practice guidelines for the European Association of Urology Nurses (EAUN), with management strategies for dealing with these issues (*Table 2*).

Table 2: Potential issues during TWOC (Geng et al, 2012)

Problem	Cause	Solution
Unable to deflate balloon	Damaged or faulty valve on the inflation/deflation arm of the catheter	Check the valve for evidence of damage. Try adding 2–3ml of sterile water into inflation channel to dislodge blockage. If unsuccessful, refer to medical staff
	Channel obstruction	Attach syringe to the inflation arm and leave in place for 20–40 minutes. Gravity will help with the deflation process. Squeeze the visible tubing to try and displace crystal formation in inflation channel. If the above are unsuccessful, refer to medical staff as the balloon will need to be punctured supra-pubically using a needle under ultrasound visualisation. After catheter removal, the balloon should be inspected to ensure it is intact and that there are no fragments left in the bladder
Wrinkling of balloon after deflation resulting in formation of a 'cuff'	Balloon unable to return to pre-inflation shape resulting in formation of a ridge	Withdraw catheter gently on deflation of balloon, but if resistance is experienced, stop the procedure. Reinsert 1–2ml of fluid back into the balloon using a syringe. This action will prevent cuff formation. Withdrawal of the catheter should now be easier and patient discomfort and the potential for urethral trauma will be reduced
Pain	Balloon cuffing (as above), or sensitivity experienced at the bladder neck or within the urethra from the catheter	Preparing and supporting the patient throughout the procedure is essential so that they are relaxed and fully aware of what to expect. Inserting anaesthetic gel, such as lignocaine/lidocaine, into the drainage port of the catheter 3–5 minutes before removal can reduce sensitivity at the bladder neck. It should be noted that more than 2–3ml will need to be used, as this volume will remain in the catheter

MONITORING POST TWOC

Once a catheter has been removed, the patient's urine output and fluid intake should be monitored over a period of time to ensure that the pattern of bladder emptying is consistent and effective. This should include the use of bladder scanning to check residual volumes (Burkhard et al, 2016). It should be noted that to achieve an accurate post void residual (PVR) measured on a bladder scanner, the scan must take place within 20 minutes of the spontaneous void (Newman, 2015, updated from 2007). It is important to understand the significance of the residual volume, the spontaneous void volume and the fluid intake of the patient to be able to accurately interpret the results and make a decision whether the TWOC has been a success, or if the patient needs re-catheterising. The general opinion of urologists worldwide when considering urine retention is that a PVR that is less than 100ml is not considered significant, while a PVR of more than 100ml should be investigated further to establish a pattern of retention (Gallien et al, 2005; Ghalayini et al, 2005).

Red Flag

Urgency and frequency of micturition after a TWOC may be reported by some patients. This may be the result of residual inflammation of the urethra caused by the catheter, or an infection.

OUTCOMES OF TWOC

A failed TWOC would be determined by a patient failing to void successfully and effectively resulting in a need to re-catheterise (Gilbert, 2006). However, other complications may need to be considered.

Incontinence after urological surgery and subsequent removal of a catheter or a recurrence of the incontinence symptoms that initially determined the need for a catheter will need assessment and an agreed treatment plan with the patient. This may involve replacing the catheter or teaching appropriate and effective pelvic floor muscle exercises to help improve the tone and tolerance of the supporting muscles and urinary sphincters (Kuppusamy and Gillatt, 2011).

Urgency and frequency of micturition after a TWOC are also reported by some patients. This may be the result of residual inflammation of the urethra caused by the catheter, or an infection. The patient with irritating symptoms should be tested for a UTI and treated according to clinical

presentation and local policy. Overactivity of the detrusor should be eliminated as a cause of the frequency and urgency, as this can be successfully treated with anticholinergic medication in some patients.

Bladder capacity may have been reduced after long-term use of a catheter, particularly if the catheter has been on free drainage. Rectifying this will require a structured programme of bladder retraining after a TWOC. The retraining programme needs to be individualised and should take into account the patient's dietary and fluid intake, as there are some well-known irritants such as caffeine, nicotine, carbonated drinks and artificial sweeteners that can adversely affect the bladder (Colley, 2015).

Timed voiding is a recognised method of retraining the bladder, based on the amount a normal healthy bladder should hold (400–600ml in adults) and how many times a day a normal healthy bladder empties (4–8 times in 24 hours). This can establish a 'normal' bladder function even in the absence of sensation with voiding set to times and prompted throughout the day.

Distraction techniques when the sensation to void is frequent and building up the intervals between voiding over a period of days can increase bladder capacity and help regain a more normal pattern of micturition.

Practice point

The introduction of any new protocol into an organisation and ensuring that it is accepted and embedded into standard clinical practice can have challenges. Careful planning and a structured, well-managed introduction with appropriate education for all staff concerned is essential to ensure successful integration into policy and clinical practice.

Incomplete emptying of the bladder should be determined through the use of frequency volume charts (Colley, 2015) and bladder scans post voiding at appropriate intervals after catheter removal. Clinicians should refer to local policy on how and when to perform a post void bladder scan after a TWOC.

It has been recognised that patients with any of the aforementioned complications in relation to TWOC and catheters would benefit from specialist nursing input to ensure the best management plan and options are considered and implemented (Mavin and Mills, 2015).

If a patient repeatedly fails TWOC or has repeated episodes of urinary retention, an opinion from a urology specialist would be beneficial and should be considered. The clinician should refer to local policy for guidance on the referral pathway.

THE HOUDINI PROTOCOL

The optimum time to perform a TWOC will be different for individual patients. The initial reason for catheterisation and availability of services to ensure that there is appropriate support and follow-up to determine the success of a TWOC can also differ. However, the use of evidence-based, nurse-led daily checklists can reduce CAUTI rate significantly (Fuchs et al, 2011; Purvis et al, 2014; Yatim et al, 2016).

The HOUDINI protocol was developed by Adams et al (2012) and is a nurse-driven protocol offering staff a method of determining when to remove a catheter. The acronym stands for:

- Haematuria of significant nature
- Obstruction (urinary)
- Urology surgery
- Category 3 or 4 pressure ulcer or open sacral or perineal wound in a patient with incontinence
- Input and output measurement for patient management or haemodynamic instability

Top tip:

Distraction techniques can be used by patients who are trying to regain a normal pattern of micturition.

- Nursing — end-of-life care
- Immobility due to physical constraints.

The protocol recommends a daily challenge of asking whether patients meet any of the criteria reflected in the acronym. When a patient no longer meets the criteria, the catheter should be removed. The HOUDINI protocol provides a structure which enables nurses to make decisions and ensure safe and quality patient care.

CONCLUSION

Although indwelling urinary catheters are a high-risk intervention, they are unavoidable in some situations. The clinical evidence concludes that, where possible, the catheter should be removed at the earliest opportunity to reduce the risk of CAUTI. Planning and implementing a TWOC procedure should consider many factors that could affect the success of the TWOC. Patients with indwelling catheters should be reviewed daily, which includes assessing their need for catheterisation (Andreessen et al, 2012), and a structured system or protocol should be in place to manage the TWOC (Carter et al, 2014; Meddings et al, 2014; Purvis et al, 2014; Sanjay Saint et al, 2015).

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IN BRIEF

- Catheterisation has improved continence and reduced associated urinary tract problems.
- Intermittent catheterisation has been shown to be acceptable for all ages, including the elderly.
- The role of the nurse is important in teaching and supporting patients using clean intermittent catheterisation (CIC) to ensure confidence and adherence with the procedure.
- Some patients with indwelling catheters may experience poor body image and negative sexual self-esteem.

KEY WORDS:

- Catheterisation
- Psychosocial issues
- Acceptability
- Patient satisfaction

Psychosocial issues and self-catheterisation

June Rogers

Catheterisation, particularly clean intermittent catheterisation (CIC), is now considered the mainstay of treatment for neuropathic bladder and other bladder issues associated with incomplete voiding, such as dysfunctional voiding (Schaeffer and Diamond, 2014).

Intermittent catheterisation, which was first described by Lapides et al in 1972, has revolutionised bladder care, as well as vastly improving continence and reducing associated urinary tract problems such as urinary tract infections (UTIs) (Lamin and Newman, 2016). However, for catheterisation to be of benefit and to give optimal results, it usually has to be carried out between four and six times per day. For this to happen, there needs to be good acceptability and adherence, particularly for those individuals who begin catheterisation beyond infancy. This paper looks at some of the factors that impact on those undertaking catheterisation.

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INTRODUCING AND ACCEPTING CIC

The decision to offer CIC to patients and families is often based on underlying medical problems and the results of relevant bladder assessments. Although CIC is commonly used in patients with neuropathic bladders, with associated reduced urethral sensation, there is some belief that those with urethral sensation may be reluctant to start CIC (Alpert et al, 2005; Neel, 2010).

To test this theory, a study was carried out to evaluate the acceptability of CIC in boys who had urethral sensation (Alpert et al, 2005). The study reviewed a group of boys following the decision to start CIC, which was based on the child's history and the results of a completed bladder diary, in accordance with the recommendations of the International Children's Continence Society (ICCS) (Pohl et al, 2002). Initiating CIC was considered for those boys who had lower urinary tract (LUT) voiding dysfunction, with or without hydronephrosis, impaired renal function, and recurrent UTIs.

CIC was shown to be successful for bladder emptying in children without genital sensation with success rates of 94–100% in select groups. CIC was an easy technique for most sensate children to learn in one visit and master in a short time. Overall, comfort with the technique was excellent and few problems were encountered (Alpert et al, 2005).

Another similar study by Neel (2010) also reviewed the feasibility of CIC in children with a sensate urethra and came up with corresponding findings, but also suggested that the earlier the CIC is started, the more accepting the child is of the procedure.

At the other end of the age scale, a study by Pilloni et al (2005) investigated whether intermittent catheterisation is a valuable alternative to an indwelling catheter

Practice point

Clinicians working with adolescents need to be mindful of the particular developmental needs of this group and provide appropriate support as necessary.

in patients older than 70 years. They reviewed the records of 21 individuals and found that for those relying on CIC, the UTI rate was reduced, and urinary continence was restored in all of the six previously incontinent patients. Eighteen of the 21 patients reported a significantly improved quality of life owing to the restoration of urinary continence, decreasing of daytime frequency, nocturia and urge, and the lowering of the UTI rate. They concluded that CIC is a safe and valuable technique in older people, particularly those with significant post-void residuals owing to detrusor underactivity and strongly recommended it.

PSYCHOSOCIAL FACTORS

A number of studies have looked at the psychosocial impact of catheterisation on individuals. A study by Lindehall et al (2008) explored the views of teenagers and young adults who had been undertaking CIC for at least five years. They found that the main issues were about the young people wanting to tell their peers about having to catheterise, but felt they did not have the courage to do so. The young people also wanted to have more information about catheterisation from the medical staff. The study did not find any negative psychosocial factors associated with catheterisation.

Another study by Edwards et al (2004) involved 40 children and their families and looked at the social and psychological impact of CIC on children and young people. Although faced with a number of practical, social and emotional challenges, both related to learning the procedure and incorporating it into day-to-day activities, all the children managed successfully to implement the procedure as part of daily life.

What did come out of the study was that very few children and young people felt that they were involved with the decision to start catheterising. Although it can be a challenge to convey the long-term benefits and rationale of CIC to children, it is important that they understand that not only will the procedure help keep them dry (enabling them to stop wearing pads and different clothes), but also that it will protect their kidneys in the long term. Motivating them long term may be an issue if they are unable to understand these potential 'invisible' benefits.

'Older adolescents may have concerns about relationships and intimacy, for example, while younger children may have concerns about the practicalities of catheterising in school or at a friend's house.'

Therefore, it is vital to recognise the importance of providing information in a format that the child or young person can understand, and that any information given will need to be amended and adapted as the child matures. Facilitating an open relationship between the child or young person and the clinician will hopefully enable them to feel confident to ask questions about catheterisation that may worry them. Older adolescents may have concerns about relationships and intimacy, for example, while younger children may have concerns about the practicalities of catheterising in school or at a friend's house.

PATIENT SATISFACTION

Very few papers were found that specifically related to formally examining patient satisfaction with CIC, with the use of a patient satisfaction survey. Guinet-Lacoste et al (2014) carried out a study to validate a new tool for evaluating patient satisfaction of using an intermittent catheter. This tool looked at a number of aspects, including packaging, the type of lubrication of the catheter and disposal. They concluded that the tool (InCaSaQ) was a valid test of patient satisfaction with using the catheter and it could also be used as an objective measure to compare different catheters in trials.

Practice point

Self-confidence of CIC is related to success and continuity of treatment (Faure et al, 2016).

Another study looked at both patient and healthcare professional self-confidence in undertaking CIC by using a 16-item checklist (Biaziolo et al, 2017). Knowing how self-confident an individual is in performing CIC will not only improve teaching outcomes and compliance, but also treatment success. Self-confidence may be related to the self-efficacy theory that is constantly associated to a behaviour or task (Perry, 2011). It originates from repeated experiences and realistic perception of individual difficulties and potentials. Those individuals with a higher sense of self-confidence are both more able to undertake any challenges and correct any failures.

IMPROVING SELF-CONFIDENCE AND ADHERENCE

Healthcare professionals are in an ideal position to help improve adherence and self-confidence with CIC and a number of studies have identified their important role. Faure et al (2016) described how the urology nurse provided therapeutic education and practical hands-on instructions in the successful teaching of CIC to boys. They used a number of educational materials including anatomical drawings, information booklets and dolls, and provided practical tips aimed at making the procedure as easy as possible.

It has been recognised that nurses play an important role in preparing the patient who needs to start CIC, in relation both to their capability and self-management. When patients and healthcare professionals develop self-confidence for the procedure, performance is more efficient, which encourages compliance during the rehabilitation process (Biaziolo et al, 2017).

For those that have an indwelling catheter, where the risk of complications (such as UTIs and blockages) is higher than in CIC (Wilde et al, 2015), having strategies in place to help reduce any of those complications is important. A randomised control study was carried out by Wilde et al (2015) to assess whether teaching catheter users self-management skills could decrease short-term catheter-related problems, and whether improvements could be sustained over 12 months. They found that a simplified intervention using a self-monitoring calendar with optimal and consistent fluid intake was likely to add value in reducing complications.

The type of catheter that the patient uses has also been shown to influence compliance. Taskinen et al (2008) carried out a study to review patient experience of using a range of different hydrophilic catheters. Questionnaires were completed by 100 participants with a median starting age of CIC of four years. The questionnaire looked at a number of factors, including packaging, handling of the catheter, and any discomfort. Although there was no real difference between any of the catheters, the patients did have their own catheter preferences. Due to the demanding nature of CIC and the long-term commitment required, the study concluded that the patient is justified in selecting the best catheter for their own use.

CATHETERISATION AND SEXUALITY

Incontinence is often a taboo subject in our society and the use of catheters, particularly indwelling catheters, may have an impact on body image and feelings of sexuality. A study by Chapple et al (2014) found that for some individuals having an indwelling catheter resulted in feelings of negative body image and reduced sexual self-esteem. They concluded that although for some individuals sex was not an important part of their lives because of old age or illness, other patients would benefit from information on how to have a sexual relationship with a catheter in place and a chance to discuss the subject with their doctors.

Top tip:

Assessing a patient's health-related quality of life can help clinicians gain an understanding of the potential effect that urinary incontinence is having on their activities of daily life and wellbeing.

Although sexuality is considered to be an important aspect of holistic care, research has demonstrated that it is not routinely addressed in healthcare services. Dyer and das Nair (2013) undertook a study to look at clinicians' experience of discussing sexuality with patients. Nineteen interconnected themes emerged relating to discussing sexuality with service users, including:

- Fear about 'opening up a can of worms'
- Lack of time, resources, and training
- Concern about knowledge and abilities
- Worry about causing offence
- Personal discomfort
- Lack of awareness about sexual issues.

To improve an individual's feelings of 'normality' and wellbeing, healthcare professionals need to address this issue and facilitate discussion around sexuality for those for whom intimate relationships are an important part of their life.

ISSUES FOR ADOLESCENTS

When working with adolescents with long-term medical conditions, the management of these conditions is often played out against a background of rapid physical, psychological and social changes. As a result, it can often result in unique communication and management challenges. Previous studies have identified how teenagers find it difficult to accept and discuss 'invisible' problems (for example, the need to catheterise) with their peers (Michaud et al, 2004; Lindehall et al, 2008).

Remember...

Urinary incontinence can limit a patient's day-to-day activities, affecting education, social life and employment. This, in turn, can cause social isolation, distress, low self-esteem and possible mental health issues (All Party Parliamentary Group for Continence Care [APPGCC], 2013).

Not wanting to be seen to be different often means that they will avoid taking part in some social activities, as well as not regularly complying with the catheterisation regimen. Poor compliance to treatment is not uncommon in this age group, and is seen as a developmental component of adolescence (Michaud et al, 2004).

It is important that healthcare professionals involved with adolescents give plenty of opportunity for open discussion without being judgemental and provide as much support as possible. Opportunities to link in with their peers with similar problems should be explored and there are a number of support groups where adolescents can link up with young people with similar problems, to help them make sense of some of their feelings and concerns. Transition to adult services should be planned for as early as possible. Initiatives, such as 'Ready Steady Go', have been shown to improve long-term outcomes (Nagra et al, 2015).

DISCUSSION

Overall, the literature appears to suggest that, although for some individuals indwelling catheters can have a negative affect on body image, CIC in fact improves patient quality of life and psychosocial factors, as it enables many individuals to gain continence and maintain their independence. However, this assumption could potentially affect long-term compliance if patients concerns are not fully understood and acknowledged. Nurses have

Patient perspective — Carys and Rose

Brenda Cheer, ERIC nurse, ERIC, The Children's Bowel and Bladder Charity

CATHETERISATION MILESTONES

The following patient story looks at certain milestones in a child's life, which provides an opportunity to reflect on the psychological impact of catheterisation on a child and her mother at key points over early childhood.

This case involves Carys, who is just 11 and in year six at school, and her mother, Rose. Carys was born with spina bifida, is ambulant, and has a neuropathic bladder and bowel.

Birth

Clean intermittent catheterisation (CIC) was taught to Rose soon after birth. Like other mothers, Rose was dreading starting to catheterise her tiny little girl, terrified of hurting her and worried about 'doing it wrong'. She was also already fearing the future — would Carys be able to attend a mainstream school? Would she ever share the social opportunities enjoyed by her siblings?

Catheterising Carys for the first time was a bit of an anti-climax, as after thorough preparation, using pictures to teach Rose the anatomy and physiology (A&P) of the normal and neuropathic bladder and the role of CIC, the actual insertion was just so easy. Carys didn't stop smiling…

Age three

Carys was due urodynamic investigations. This provided an opportunity to start teaching Carys herself about her catheters, why she needed them, that other children use them too, and that she would be able to start learning to do them herself soon.

Age four: school

More teaching, this time to school staff who would catheterise Carys until she mastered it herself, then continue to supervise and support. Rose was understandably anxious; such an intimate procedure to be performed by people who were as yet strangers. Carys, however, was very matter of fact about it all — after all, CIC is just how she wees! Again, thorough preparation, using pictures to teach A&P and the role of CIC was key to allaying the anxieties of the staff.

Age five and a half

Carys wanted to attend a summer holiday club. The staff were willing to supervise CIC but not to insert the catheter. This, of course, threw Rose into a panic — what should she do? Simple solution — let Carys do it herself. She had been ready to do it for the last year, but Rose was reluctant to let her, worried about increasing the risk of urinary tract infection (UTI) if she did not 'do it properly'. One brief teaching session with Carys and she was already a pro, leaving mum really impressed and wondering why she had not let her do it before.

Throughout childhood years

Carys and her family attended social events run by Shine (spina bifida, hydrocephalus, information, networking, equality), and realised that the other children there shared her diagnosis, so shared similar bladder symptoms and a similar need for CIC. This provided peer support for Rose and Carys' siblings too.

Age 11: transition to high school

Carys was now thinking about going to high school and ready for more independence. She was needing to make her own choices — she was still using the intermittent catheter chosen years ago by her mother, who had previously been reluctant to 'rock the boat' by change after several infection-free years. However, Rose understood that Carys needed to choose for herself; an essential part of 'owning' her CIC. Carys was quite excited by the range of catheters on offer and this provided her with an opportunity to look at the challenges ahead, namely; managing CIC at high school without the teaching assistants to prompt and support her, anticipating starting her periods and wondering how to manage catheters then. Once again, education made a difference, as presenting information to Carys in an age-appropriate way encouraged her to ask questions and work out the answers for herself. And, once again, Rose was impressed by her daughter's maturity and ability to accept and even embrace catheterisation as part of her life.

The Children's Bowel & Bladder Charity

A national charity dedicated to the bowel and bladder health of children and teenagers, ERIC provides information and resources for children, families and professionals via its website www.eric.org.uk and helpline. It delivers a programme of acclaimed training seminars for professionals covering healthy bladders and bowels, complex bladders and bowels, night-time wetting and toilet training, including additional needs. The biennial ERIC Paediatric Continence Care Conference takes place this year on 9 October.

For more information:
www.eric.org.uk

an important role in educating and supporting patients to carry out CIC and providing ongoing advice and information. Clinicians working with adolescents need to be mindful of the particular developmental needs of this group and provide appropriate support as necessary.

Useful resources

Bladder & Bowel UK: www.bladderandboweluk.co.uk

- Bladder & Bowel UK is a national charity that provides confidential advice and information via their helpline and website. A range of information leaflets are available to freely download, including 'Talk about CIC', which is aimed at children, and 'Teen Talk: Clean Intermittent Catheterisation (CIC), aimed at teenagers.
- www.bladderandboweluk.co.uk/wp-content/uploads/2018/01/Talk-about-Clean-Intermittent-Catheterisation-2018.pdf
- www.bladderandboweluk.co.uk/wp-content/uploads/2018/01/Teen-Talk-CIC-2018.pdf

Breakaway: www.breakawayfoundation.org.uk

- Breakaway is a registered charity that supports children and young people, aged 0–18, with bowel and/or bladder diversions and dysfunction

Diversions Family Support Network: www.diversions.org.uk

- Diversions is a support network, based in the North West of England, for families with a child or young person living with a bladder or bowel diversion/dysfunction

ERIC The Children's Bowel and Bladder Charity: www.eric.co.uk

- ERIC has a teen page specifically designed for teenagers

Ready Steady Go transition: www.uhs.nhs.uk/OurServices/Childhealth/TransitiontoadultcareReadySteadyGo/

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IN BRIEF

- Urinary tract infection (UTI) is an important cause of morbidity and mortality in the healthcare setting, accounting for 19% of all nosocomial infections (Loveday et al, 2014).
- It is estimated that 43–56% of these are catheter-associated urinary tract infections (CAUTI) (Loveday et al, 2014).
- If inadequately treated, CAUTI may progress to bacteraemia and consequent urosepsis syndrome, multiplying the risk of mortality and extending hospital stay (Centers for Disease Control and Prevention, 2009).

KEY WORDS:

- Prevalence
- Urinary tract infection (UTI)
- Cost
- Complications

An overview of the cost and complications of catheterisation

Mariama Barrie

Urinary incontinence affects people of any age and gender and can vary in severity from mild to very severe (National Institute for Health and Care Excellence [NICE], 2013). It is a common problem, with the Bladder & Bowel Community estimating that 12 million people in the UK are affected with a bladder or bowel problem, a figure that is probably underestimated (Bladder & Bowel Community, 2018).

While catheterisation is a common procedure undertaken by healthcare professionals, it is neither simple nor risk-free (Booth and Clarkson, 2012).

According to the Health Economics Research Unit (HERU), about 15–25% of patients admitted to NHS hospitals each year will need urethral catheterisation, and approximately 5% are at risk of developing bacteriuria per day (HERU, 2015).

Bacteriuria is defined as the 'presence of bacteria in the urine revealed by quantitative culture or microscopy' (Fisher et al, 2017). Between 2 and 7% of catheterised patients will acquire bacteriuria every day despite best practice (Scottish Intercollegiate Guidelines Network [SIGN], 2012), with culture positive urine being effectively universal by 30 days across all clinical settings (Nicolle, 2014).

Causative pathogens may contaminate the urinary tract via a variety of sources. Endogenous bacteria are typically meatal, vaginal or rectal commensals. Exogenous sources include the contaminated hands of patients and healthcare personnel, as well as hospital equipment. Although *Escherichia coli* is classically the most common pathogen, many other strains have been isolated, including *Pseudomonas aeruginosa*, coagulase negative *Staphylococcus* and *Candida* species (Centers for Disease Control and Prevention, 2014). In long-term catheterised patients, two or more strains are commonly isolated (SIGN, 2012).

When entering the urinary tract, pathogens may migrate extraluminally via the outside of the catheter, or intraluminally through the catheter drainage system itself. There is little evidence to differentiate which route is more important in the pathogenesis of catheter-associated urinary tract infection (CAUTI),

Practice point

Bacteriuria is the presence of bacteria in urine — more than 100,000 pathogenic bacteria per millilitre of urine is usually considered significant and diagnostic of urinary tract infection (Richards et al, 2006). CAUTI is an infection involving any part of the urinary system, including the urethra, bladder, ureters and kidneys and is the most common type of hospital care-associated infection reported to the National Healthcare Safety Network (NHSH) (Centers for Disease Control and Prevention, 2015).

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although the rapid decline in incidence following the introduction of closed catheter systems in the 1960s suggests that the intraluminal route may be of greater significance (Centers for Disease Control and Prevention, 2009).

Progression from bacteriuria to CAUTI causes both increased risk to the patient and healthcare costs, i.e. longer hospital stays, treatment, etc (Loveday et al, 2014). Risk factors for progression to CAUTI include:

- Female gender
- Advanced age
- Immunosuppression
- Poor catheter care
- Prolonged days with catheter inserted
- Failure to maintain a closed catheter system (Loveday et al, 2014).

Facts...

Prevalence varies internationally between acute, long-term institutional and community settings (Fisher et al, 2017). A 2013 point prevalence survey by the European Centre for Disease Control and Prevention (ECDCP) of 231,459 patients being cared for in 947 acute care hospitals in 29 countries showed that 17.2% were catheterised at the time of the survey, the majority of whom were for short-term catheterisation (i.e. less than 30 days). This figure varied between countries, ranging between 6.4% in Lithuania to 30.7% in Greece (ECDCP, 2013). A further ECDCP survey of 77,264 patients in 1,181 long-term institutions demonstrated a median prevalence of 6.3% being catheterised, with the Czech Republic being the highest of all 19 countries surveyed, at 33.3% (ECDCP, 2013).

Surveying a large cohort (n=4,010) receiving care at home in 11 European countries, Sørbye et al (2005) found that 11.5% of males and 3.3% of females had an indwelling urinary catheter. Again, differences in healthcare practice revealed variations between countries, with higher prevalence in France, Germany and Italy.

Furthermore, 4% of patients who develop a CAUTI will have a severe complication, such as bloodstream infection (Loveday et al, 2014). CAUTI constitutes 8% of all hospital-acquired bacteraemia (presence of bacteria in the blood) (SIGN, 2012), with this figure rising to 50% in long-term healthcare facilities (Centers for Disease Control and Prevention, 2009).

The economic burden of catheterisation can be reduced by:

- Ensuring that all catheterisation is completely necessary
- Observing good catheter care
- Monitoring the use of catheters
- Ensuring timely cessation of catheter use to avoid prolonged, unnecessary use (see section below on CAUTI).

RATIONALE FOR URINARY CATHETER INSERTION

Urinary catheters are used when people have difficulty urinating naturally. Catheterisation can also help to empty the bladder before or after surgery and to help perform certain tests, such as haemodynamic monitoring during surgery, and continuous bladder irrigation for prevention of urethral obstruction from blood clots after genitourinary surgery.

Specific reasons for the insertion of a urinary catheter may also include:

- Severe urinary retention and obstruction of urine outflow, for example, because of scarring or prostate enlargement
- To improve comfort for those who are terminally ill
- Non-healing sacral, buttock or perineal pressure ulcers or injuries in incontinent patients
- Perioperative use during prolonged surgery, or during surgery of the genitourinary tract, or for patients with urinary incontinence
- Measurement of urinary output in the critically ill
- Urodynamic testing

Remember...

Catheterisation should not be used for first-line management of incontinence, or for the comfort of carers.

- Imaging studies of the lower urinary tract (LUT)
- To deliver medication directly into the bladder, such as chemotherapy for bladder cancer (Meddings et al, 2015).

Depending on the type of catheter *in situ* and why it is being used, the catheter may be removed after a few minutes, hours or days, or it may be needed for the long term (Fisher et al, 2017).

According to the guidelines of the author's trust in line with the Nursing and Midwifery Council (NMC), nurses are required to maintain their own professional knowledge and competency regarding urinary catheterisation (NMC, 2015). Thus, it is the responsibility of the individual nurse to access training to ensure that they are competent to practice. Care assistants can undertake catheterisation with the support of a competent qualified nurse. The patient should be supported and encouraged to empty their bladder normally, and other alternative methods, such as trying to empty the bladder by drinking more, opening taps, or bladder stimulators or intermittent self-catheterisation should be considered before using indwelling catheterisation.

There should be a genuine clinical need for catheterisation, and the patient should be reviewed regularly. Catheters should be removed as soon as it is practical, or the patient's condition allows (NICE, 2012; Loveday et al, 2014).

Patients should be informed of the risks associated with urinary catheterisation and it is essential to gain consent before carrying out a catheterisation procedure. Catheterisation care bundles

form the care plan for patients and their catheters, and should be used to document catheter care and management. Risk assessment should be carried out before all catheterisations, especially in the community, to ensure the patient's safety.

URINARY CATHETER COMPLICATIONS

According to NHS England (2015), regular audits by the Healthcare Quality Improvement Partnership (HQIP), the latest being in 2010, show that despite the amount of guidance available, the quality of continence care remains variable across the country and poorer overall for the elderly. In the author's clinical experience, many continence problems can be cured and certainly managed better.

Bladder spasms

Bladder spasms feel like abdominal cramps and are usually caused by the bladder trying to squeeze out the balloon that holds the urinary catheter in place. If spasms are causing distress, patients can be prescribed medication to help relax the bladder muscles (Davey, 2015).

Leakage/bypassing

Leakage around the urinary catheter is called 'by-passing'. It is sometimes caused by bladder spasms, or it can happen when opening the bowel. It can also occur if the urinary catheter is blocked and stops draining. In the author's experience, any incidence of urinary catheter by-passing has cost implications, as the catheter has to be changed to a different one, involving the cost of staff to perform this procedure. The following measures may help to prevent bypassing of urine around the catheter:

Practice point

Comprehensive assessment is key for effective continence care and is vital in ensuring that the most suitable catheter is chosen for each individual patient.

- Use a small Charrière (Ch) size (diameter size) (10–12 Ch in women, 12–14 Ch in men)
- Anticholinergic medication may help reduce bladder spasm
- Consider using an all-silicone catheter which has a wider lumen and larger eyes to allow optimum drainage, rather than a hydrogel-coated latex catheter
- Check for UTI
- Avoid restrictive clothing
- Check for constipation
- Consider the position of the catheter and troubleshoot to find out cause of leakage
- Secure the fixing device. Temporarily raise the urine bag above the level of the bladder to reduce suction and avoid occlusion of the drainage eyes by bladder mucosa.

Blockage

Blockage can cause a great deal of pain and needs urgent attention. Patients are advised to check that their drainage bag is below the level of their bladder, that the urinary catheter and tubing is not kinked or twisted, and that there are no clots or debris in the urinary catheter. However, if the urinary catheter fails to unblock and no urine is draining, patients are advised to contact their district nurse or GP immediately, as this could indicate acute urinary retention.

Expulsion

Urinary catheters can sometimes fall out. If this occurs, patients should contact their district or specialist urology nurse immediately so that it can be replaced. If this continues to happen, patients may be referred to the urologist for further advice and reassessment of the type of catheter in use.

Infection

Infection will present as blood or debris in the urine (cloudy urine). The longer a urinary catheter has been in the bladder, the more likely this is to occur. Blood and debris can sometimes block the urinary catheter and when this occurs, patients are advised to contact their district nurse, GP or continence specialist nurse.

Practice point

Patients with invasive devices, such as urinary catheters, are at a greater risk of developing an infection (NICE, 2012).

Urinary tract infection can also be detected when patients develop symptoms such as pyrexia (high temperature), discomfort, pain in the urethra, or increased confusion in those with dementia, etc. If this happens, patients can contact their district nurse or GP who will decide whether they need antibiotics and may send a urine sample for laboratory testing to find out the cause of the blood in the urine, such as renal problems, bladder cancer, etc.

However, it is important to remember that there will always be some bacteria in the urine if a patient has had a urinary catheter for more than a few days, so this does not necessarily mean that the patient has an infection and needs to take antibiotics (British Association of Urological Surgeons [BAUS], 2017).

Catheter-associated urinary tract infection (CAUTI)

Urinary tract infections (UTIs) are the most common healthcare-acquired infection (HCAI), accounting for 17.2% of all HCAIs, and between 43 and 56% of UTIs are associated with an indwelling urethral catheter (Loveday et al, 2014).

CAUTIs are likely to prolong hospital stays (an estimated 0.5–5 extra days), and increase readmissions and mortality (HERU, 2015). They are estimated to cost the NHS up to £99 million each year or £2,000 per episode (Loveday et al, 2014). They can also adversely affect quality of life, particularly older people, who are also more likely to be using catheters that are not appropriate for their needs. In the author's clinical opinion, the aim should always be to:

- Reduce avoidable harm to patients from inappropriate catheter days and CAUTI

- Improve care
- Reduce costs resulting from treating these infections.

CONCLUSION

In the UK, there are over 14 million adults who have bladder control problems and six and a half million with bowel control problems (Buckley and Lapitan, 2009). In addition, 900,000 children and young people suffer from bladder and bowel dysfunction (NICE, 2010).

In addition to the added cost that treating CAUTI incurs, there is also the additional use of NHS resources, greater patient discomfort and a decrease in patient safety.

Improving continence care provision through integrated services brings many benefits, including a better quality of life and more independence through finding solutions appropriate to individual needs, less reliance on pads and products by using alternative treatments, a reduction in admissions to hospitals and care homes, fewer complications, such as UTIs, faecal impaction and skin breakdown, and thus a reduction in costs.

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Practice point

People have the right to be heard, receive the right treatment at the right time and live the best achievable quality of life possible.

National Institute for Health and Care Excellence (2012) *Healthcare-associated infections: prevention and control in primary can community care*. NICE, London. Available online: www.nice.org.uk/guidance/cg139/resources/healthcareassociated-infections-prevention-and-control-in-primary-and-community-care-pdf-35109518767045

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Patient perspective

Belinda Campbell started using a single-use urinary catheter in 2011. Although she did not have a proper diagnosis, she was told that her bladder and sphincter muscles did not work and that the connection between the brain and the bladder was not as it should be. Here, we ask Belinda about her journey and the support she has received in learning how to self-catheterise and coming to terms with a lifelong condition.

Q How did you feel about having to catheterise?

A When I learnt that I was going to have to self-catheterise I was shocked and scared. I felt anxious, as if this was something serious and potentially life-changing. When I received my appointment for self-catheterisation training, I was dreading it, but knew that there was no way out. This had been mentioned to me in my 20s, but now it was a real thing.

Q What were you shown and taught in relation to your condition?

A On the day of my catheter training, I met the continence nurse and she asked me to sit on the bed. There was a mirror placed in front of me, a light, and a plastic, kidney-shaped dish. She asked me to point out where the urethral opening was, which I guessed correctly and then I inserted the catheter and urine flowed into the plastic dish. I felt really elated at this achievement, as I could see this manual emptying of the bladder happening right in front of me. This gave me confidence that I had done it properly. When we finished, the continence nurse gave me a leaflet and asked me to come back in a couple of weeks.

Q What helped you decide on your catheter?

A I myself didn't choose the actual catheter, the continence nurse showed me which product I would use. I had no prior knowledge, so I obviously went along with the recommendation from someone medically trained. I didn't question what she offered me. After some time, however, I think that patients should be given the option to try out different products. But, at that time, I was just given the one type and size and I went along with that.

Q How easy did you find the catheter to use?

A When you do something so repeatedly, every day and every night, you can become complacent and take more risks with hygiene and even become less gentle with yourself. I have injured myself internally just from thinking about something else when catheterising. You have to stick to the same regimen every single time and be disciplined within that.

Q What were the downsides and upsides of using the catheter?

A The catheter that I use has practicality issues. The packaging is quite long and made of flimsy plastic and because there is a catheter and saline solution inside of it, the packaging could potentially be pierced and the solution leak out. Also, it is quite large in surface area, so when I go out and want to take 20 catheters with me, that takes up quite a lot of room in my bag. The upsides of the catheter that I am using is that it is well protected inside the packaging and also has a sticker on the back, which is handy as you can stick it on the wall inside a toilet if there is nowhere else to put it. I don't have to use the actual catheter until the very last minute, so I know that it is protected in the saline solution and not exposed prematurely to germs.

Q What follow-up and support did you receive?

A After my initial training in 2011 on how to self-catheterise, there was not much follow-up. Any appointments were instigated by myself; for instance, I asked my GP if I could go and talk to a urological consultant to ask them about sacral nerve stimulation surgery. I also asked my GP if I could go and talk to a continence nurse about different catheters, as I had a whole list of questions that I wanted to ask. In fact, I was the one who instigated any future follow-up appointments and I don't think anybody actually contacted me to see if I wanted any more guidance.

I also don't feel that I have received any psychological support, other than what I have gone to find myself. But, this is important, because it is extremely stressful at the beginning and even afterwards — it's a new life and people need ongoing support to give them the reassurance and confidence that they are performing the technique correctly.

Q Which learning aides did you have access to?

A When I left my initial training appointment on how to self-catheterise, I was given a leaflet which I did flick through. But, I was more concerned about the actual medical procedure and not getting a bladder infection. This was what overwhelmed me, and I forgot about all the help that is out there on the internet, in publications or newsletters . To be encouraged and reminded would have been helpful, as when you start this journey you are concerned about doing it right and not getting ill because urinary tract infections can be painful and have an impact on your life and wellbeing.

After some years of self-catheterising, I started to read patient stories and realised that maybe I could write my own. I looked at animated videos and read articles and became more interested in seeking out information, but this was only after I was more settled into life using single-use catheters.

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