



Catheter Care

RCN Guidance for Health Care Professionals

CLINICAL PROFESSIONAL RESOURCE

Acknowledgements

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Publication

This is an RCN practice guidance. Practice guidance are evidence-based consensus documents, used to guide decisions about appropriate care of an individual, family or population in a specific context.

Description

This guidance has been developed as a resource and framework for health care professionals who undertakes urinary catheterisation as part of their role.

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The Nine Quality Standards

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Evaluation

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Foreword

The Royal College of Nursing's (RCN) catheter care guidance has been used widely by many health care professionals over the years. The guidance has not only influenced practice and teaching, but has also been used, and quoted extensively, within local policies. It is with great pleasure that the RCN is able to publish this updated edition.

By providing a full understanding of the National Occupational Standards (NOS), this revised publication aims to encourage further adoption of the standards across all NHS and independent health care sectors, leading to good quality care for patients.

Continence is one of the fundamentals of nursing care and maintaining continence can significantly increase a patient's quality of life. Many people may need the support of continence products, such as catheters, to help them manage their everyday activities. Catheters can provide an effective way of draining the bladder, for both short and long-term purposes, and it is therefore important that the NOS are available to guide practice in catheter care.

The NOS relating to catheter care were developed through a partnership between the RCN and Skills for Health (SfH), with funding support from B. Braun, BD Medical, Coloplast and Wellspect. The previous edition of Catheter Care has been updated, with input from the RCN Continence Care Forum, other RCN forums and independent health care and academic professionals to give an up-to-date and easy-to-use document.

Sharon Holroyd
Editor

We are indebted to the work done by both present and past members of the RCN Continence Care Forum Committee. We are also immensely thankful for the expertise and willingness of other key members of the RCN and others who have suggested additions and changes – their help has been central to the successful revision of this document. I would like to thank Sharon Holroyd for working with previous key contributors to the earlier versions and leading on this new edition.

I am also very grateful to Sharon Holroyd who willingly took on the editorship, incorporating the suggested changes and additions, reviewing other parts and updating the reference section.

I hope practitioners will continue to benefit from this publication and, more especially, our patients, by fostering good evidence-based practice.

I would also like to thank Skills for Health for ensuring the information on the National Occupational Standards is up to date.

Ali Wileman
Chair, RCN Continence Care Forum Committee

1. Introduction

In 2006 the RCN and Skills for Health (SfH) jointly identified a need for competences related to continence care. On completion of scoping, development, field testing and approval processes, a competence suite – containing six competences for catheter care – was produced. A full insight into the competency frameworks can be found at the SfH website at www.skillsforhealth.org.uk

The following six areas related to catheter care was included in the competence suite.

1. Insert and secure urethral catheters.
2. Monitor, and help individuals to self-monitor, urethral catheters.
3. Manage suprapubic catheters.
4. Undertake a trial without catheter (TWOC).
5. Enable individuals to carry out intermittent self-catheterisation.
6. Review catheter care.

The aims of this updated publication are the same – to produce further clarity and depth to the six competences related to aspects of catheter care. As before, the design and development of this publication has been shaped by a number of considerations and features:

- it is written and designed for a nursing audience
- it aims to link the six approved catheter care related competences within one document and enhance core themes
- the order of content within the document aims to reflect that used by SfH in the design of its competences
- it is written and endorsed by a group of expert practitioners, and represents their collective views and opinions
- each section focuses on a specific statement or group of statements taken from the catheter care related competency
- each section of the document ‘maps out’ a wide range of SfH competences that relate to that specific aspect of catheter care
- there is a need for an up-to-date RCN publication on catheter care to help enhance

teaching and other developments within catheter care

- recent evidence has been identified and selected to support this guidance.

However, the document is not a compendium of evidence and many of the statements are based on clinical experience and expert opinion.

How to use this publication

It is recognised that a diverse workforce of both registered and non-registered staff now deliver health care in a variety of settings. This publication is a resource and framework for practice for any health care professional (HCP) who is required to undertake urinary catheterisation as part of their role (this may be a registered practitioner or an unregistered practitioner working under the guidance/ supervision of someone on a professional register). It can be used in a number of ways, including:

- as a practical guide to take the NOS to a user-friendly clinical level within the wider nursing workforce
- forming a catheter care benchmark to reflect and compare competence and practice against, within the wider nursing workforce
- as a point of reference to support academic work related to catheter care for health care professionals
- as a point of reference for the development of KSF-friendly job descriptions related to specialist HCPs working within catheter care
- in recruitment plans, advertising, staff selection and appraisals within the wider nursing workforce
- as a nursing resource to support the development of guidelines, policies and protocols related to catheter care at a local level
- as a guide for the development of catheter care related clinical procedures
- to support catheter care related nursing assessment and the effective use of the nursing process at all levels of practice

- to inform integrated catheter care pathways (ICPs)
- as a framework on which to develop catheter care related teaching material, programmes of learning and courses
- to stimulate nursing audit and research activity in catheter care.

2. Legislation, policy and good practice

What you need to know

You need to apply:

- legislation, policy and good practice, the current international, European, UK and national legislation, guidelines and local policies, protocols and procedures which affect your work practice in relation to the care of individuals using urinary catheters
- a factual knowledge of the current European and national legislation, national guidelines, organisational policies and protocols in accordance with clinical/corporate governance which affect your work practice in relation to the care of individuals using urinary catheters.

The above statements appear in a significant number of NOS. In essence, they relate to key documents and publications which influence this specific aspect of care, and outline your areas of responsibility.

National Occupational Standards

Some key documents that relate to catheter care are listed below; this is not a comprehensive or exhaustive list. Please use it as a guide to influence you within your area of care and responsibility.

British Geriatrics Society

British Geriatrics Society (2018) *Continence care in residential and nursing homes. Clinical guideline*, London: BGS.

International Continence Society (ICS)

Haylen B, de Ridder D, Freeman R, Swift S, Berghmans B, Lee J, ... Schaer D (2010) An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction, *International Urogynecology Journal*, 21: 5–26.

Feneley R, Hopley I, Wells P (2015) Urinary catheters: history, current status, adverse events and research agenda. *Journal of Medical Engineering and Technology* 39(8): 459–70.

Abrams P, Cardozo L, Wagg A, Wein A (Eds) *Incontinence 6th Edition* (2017) ICI-ICS. International Continence Society, Bristol: UK, ISBN: 978-0956960733.

European Association of Urology Nurses (EAU/ EAUN)

Thurroff J, Abrams P, Andersson K, Artibani W, Chapple C, Drake M, ... Tubaro A (2011) EAU Guidelines on urinary incontinence, *European Urology* 59: 387–400.

Geng V, Cobussen-Boekhorst H, Farrell J, Gea-Sánchez M, Pearce I, Schwennesen T, Vahr S, Vandewinkel C (2012) *Catheterisation. Indwelling catheters in adults – Urethral and suprapubic*, Arnhem: The Netherlands.

Vahr S, Cobussen-Boekhorst H, Eikenboom J, Geng V, Holroyd S, Lester M, ... Vandewinkel C (2013) *Catheterisation. Urethral intermittent in adults*, Arnhem: The Netherlands.

Journal of Hospital Infection

Loveday HP, Wilson JA, Pratt RJ (2014) Epic3: national evidence-based guidelines for preventing healthcare associated infections in NHS hospitals in England, *Journal of Hospital Infection* 86(1 Suppl): S1–70.

Medicines and Healthcare Products Regulatory Agency (MHRA)

Medical devices regulations: compliance and enforcement (updated 24 March 2017), London: MHRA.

Association for Continence Advice (ACA)

Association for Continence Advice (2016) *Guidance for the provision of continence containment products to children and young people. A consensus document.*

Association for Continence Advice (2017) *Guidance for the provision of containment products for adult incontinence. A consensus document.*

Royal College of Nursing (RCN)

Royal College of Nursing (2002) *Chaperoning: the role of the nurse and the rights of patients*, London: RCN. https://rcn.access.preservica.com/uncategorized/digitalFile_cf6fdd33-de28-4107-9386-a5120c71c3dd/

Royal College of Nursing (2004) *The future nurse – the RCN vision*, London Hard copy available from the RCN Library & Archive.

Royal College of Nursing (2010) *Pillars of the community: the RCN's UK position on the development of the registered nursing workforce in the community*, London RCN.

Royal College of Nursing (2011) *Informed consent in health and social care research*, London: RCN.

Royal College of Nursing (2011) *Principles of nursing practice – the principles*, London: RCN.

Royal College of Nursing (2017) *Essential practice for infection prevention and control*, London: RCN.

Royal College of Nursing (2016) *Infection Prevention and Control Commissioning Toolkit. Guidance and information for nursing and commissioning staff in England*, London: RCN.

Royal College of Nursing (2018) *Adult Safeguarding: Roles and Competencies for Health Care Staff*, London: RCN.

Royal College of Nursing (2018) *Tools of the Trade: Guidance for health care staff on glove use and the prevention of dermatitis*, London: RCN.

Royal College of Nursing (2018) *Older people in care homes: Sex, Sexuality and Intimate Relationships*, London: RCN.

Royal College of Nursing (website) HCA First Steps <http://renhca.org.uk>

Department of Health

Department of Health (2010) *High impact interventions: central venous catheter care bundle*, London: DH.

Department of Health (2010) *High impact interventions: urinary catheter care bundle*, London: DH.

Department of Health (2015) *Health and Social Care Act 2008: code of practice on the prevention and control of infections and related guidance*, London: DH.

National Institute for Health and Clinical Excellence (NICE)

National Institute for Health and Clinical Excellence (2012) *Healthcare-associated infections: prevention and control in primary and community care CG139*, London: NICE.

National Institute for Health and Care Excellence (2012) *Urinary incontinence in neurological disease: assessment and management CG148*, London: NICE.

National Institute for Health and Clinical Excellence (2014) *Multiple sclerosis in adults: management CG186*, London: NICE.

National Institute for Health and Clinical Excellence (2015) *Urinary incontinence in women: management CG171*, London: NICE.

National Institute for Health and Clinical Excellence (2015) *Lower urinary tract symptoms in men: management CG97*, London: NICE.

National Institute for Health and Care Excellence (2015) *Urinary tract infections in adults QS90*, London: NICE.

National Institute for Health and Clinical Excellence (2017) *Parkinson's disease in adults NG71*, London: NICE.

National Institute for Health and Care Excellence (2017) *Farco-fill Protect for indwelling urinary catheterisation MIB121*, London: NICE.

National Institute for Health Research

National Institute for Health Research (2010) *National Audit of Continence Care*. Clinical guideline, London: NIHR.

National Patient Safety Agency (NPSA)

National Patient Safety Agency (2009) *Hospital alerted to risks of inserting suprapubic catheters incorrectly*, London: NPSA.

Nursing and Midwifery Council (NMC)

Nursing and Midwifery Council (2007) *NMC record keeping guidance*, London: NMC.

Nursing and Midwifery Council (2010) *Lack of competence*, London: NMC.

Nursing and Midwifery Council (2018) *The Code: standards for conduct, performance and ethics for nurses and midwives*, London: NMC.

Royal College of Physicians

Royal College of Physicians (National Institute for Health Research (2009) *Privacy and Dignity In Continence Care Project Attributes of dignified bladder and bowel care in hospital and care homes*, London: RCP.

Other relevant documents

NHS England (2018) *Excellence in Continence Care: practical guidance for commissioners, and leaders in health and social care*, Leeds: NHS England.

United Kingdom Continence Society (2014) *Minimum Standards for Continence Care in the United Kingdom: Report of the Continence Care steering group 2014*, Hampshire: UKSC.

All Party Parliamentary Group for Continence Care (England) (2012) *Continence Care Study*, London: APPG.

Annette Bowron (2006) *Essence of care continence care for people with Parkinson's Disease*, London: Parkinson's Disease Society.

Local documentation

Examples may include:

- antibiotic policy
- catheter care policy
- infection control policy
- Continence Products Formulary.

3. Competence

What you need to know and understand

- The importance of working within your sphere of competence and when to seek advice if faced with situations outside of your sphere of competence
- Your responsibilities and accountability in relation to the current European and national legislation, national guidelines and local policies and protocols and clinical/corporate governance.

Skills for Health GEN 63 National Occupational Standards Skills for Health

Knowledge and understanding

The following statements help provide clarity around the competence requirements as outlined in the NOS. As a health care professional (HCP) you will:

- work within organisational systems and requirements as appropriate to your role
 - recognise the boundary of your role and responsibility and seek supervision when situations are beyond your competence and authority
 - maintain competence within your role and field of practice
 - use relevant research-based protocols and guidelines as evidence to inform your practice
 - promote and demonstrate good practice as an individual and as a team member at all times
 - identify and manage potential and actual risks to the quality and safety of practice
 - evaluate and reflect on the quality of your work and make continuing improvements.
- In addition, the HCP should take into consideration the points below.
- You and/or employer will need to identify if gaining a specific competence is required. Registered nurses are assumed to have competence in female catheterisation skills as a part of their registration. Not all staff will have automatic competence in other aspects of catheterisation and will need to demonstrate underpinning theoretical knowledge and practical skills. Other HCP levels will not automatically have competence in any form of catheterisation and will need to be assessed by an appropriate practitioner.
 - You should undertake a programme of learning based on the NOS.
 - Programmes of learning for HCPS, in line with national occupational standards related to all aspects of catheter care, should be facilitated by competent registered staff at local level.
 - Observation and supervision are required, as is assessment/evaluation of knowledge and skills in catheterisation and catheter care.
 - Declaring competence requires you to have an agreed/approved level of knowledge, understanding and skill.
 - You are required to have the relevant skills and abilities and to maintain competence requirements – you must regularly practise these skills; performing procedures once or twice annually, is not acceptable to maintain competence.
 - Even though you may feel competent to perform a procedure, the employer must allow/approve its nursing workforce or individual named HCPs to undertake this.
 - To maintain competence, you must keep up to date with new knowledge and changes to procedures.
 - Performance criteria taken from the NOS must be used to measure level of competence.
 - Develop and use nursing indicators based on the NOS performance criteria as a 'tool' to monitor competence.
 - Gain consent from a patient to perform a procedure – this indicates that the nurse is competent; do not mislead patients about your abilities and competence when gaining consent (this is unlawful).
 - If a procedure performed by you does not go according to plan, it may indicate a lack of competence and should be assessed; if incompetence is identified, then an

individual programme of reflection and learning must be undertaken to ensure the competence is attained and maintained.

- Professional clinical supervision is an ideal framework to facilitate reflection on competence.
- A competent mentor is essential in gaining competence in clinical practice.
- The NOS should be used when teaching HCPs to gain competence in specific procedures.
- Training courses, lectures and study days should focus on specific competences based on the NOS.
- Documented evidence of competence attainment or updating should be kept as evidence for KSF reviews.
- Hand hygiene and use of personal protective equipment (PPE).
- Aseptic technique.
- Obtaining a catheter specimen of urine (CSU).
- Changing urinary drainage systems.
- Emptying a urine bag or catheter valve.
- Catheter insertion.
- Catheter removal.
- Meatal cleansing.
- Bag position and support.
- In relation to all aspects of catheter care it is recommended that health care professionals have a formal update at least every five years, and more often if appropriate or required.

Practice recommendations

The suggested structure for gaining competence in catheterisation

- Gain a theoretical knowledge and understanding in aspects of catheterisation.
- Observe model/manikin being catheterised.
- Practise catheterisation on a model/manikin under supervision until confident.
- Observe catheterisation performed by others on actual patients.
- Undertake supervised catheterisation on actual patients.
- Be able to catheterise without direct supervision.
- Gain experience and become confident.
- Become a competent mentor for others.
- Have the catheterisation technique observed as part of a clinical audit (*Saving Lives*)

HCPs, in all care settings, should have observed clinical practice for the following procedures supporting urinary catheter management.

- Assessing individual patients to ensure catheterisation is still required.

4. Documentation

What you need to do

You need to record clearly, accurately and correctly any relevant information in ongoing patient/person or urinary catheter care records. You also need to be aware of the importance of documentation and the implications of the Data Protection Act 2018. You must be careful with patient records; any disclosure of information should be with the consent of the patient and your employer. You must understand the legal and professional consequences of poor practice.

Knowledge and understanding

What you need to know and understand

- Produce documents in a business environment (BAA211).
- Prepare text from notes (BAA213).
- Communicate with, and complete records for individuals (HSC21).
- Use and develop methods and systems to communicate, record and report (HSC41).
- Maintain and manage records and reports (HSC434).
- Determine a treatment plan for an individual (CHS41).
- Develop clinical protocols for delivery of services (CHS170).
- Monitor your own work practice (GEN23).
- Capture and transmit information using electronic communication media (GEN69).
- Observe, monitor and record the conditions of individuals (HSC224).
- Develop models for processing data and information in a health context (HI5).
- Provide authorised access to records (SS34).
- Protect records (SS35).

Skills for Health Competencies

Some general principles relating to documentation apply. These include confidentiality and legibility (so that documents can be photocopied several times and are legible, factual, easy to understand, contain no jargon, remain objective – with no personal opinions).

Good documentation:

- contributes to and establishes a diagnosis
- influences a care bundle and pathway of catheter care for an individual patient
- is a legal record of care bundle provision and what actually happened
- provides effective communication for other health care professionals involved in a patient's care
- is a point of reference and can be used to influence decisions for further interventions
- facilitates product tracing (if for any reason an individual patient experiences product failure)
- provides a record for the investigation of complaints and/or litigation
- facilitates critical reflective thinking
- offers a focus for clinical professional supervision and identification of learning needs
- completes an episode of care, end of a procedure or care bundle (group of procedures, tasks or activities forming a bundle of care).

Ensure all documentation is audit friendly and understood by the patient. You must be thorough in how consent is recorded and documented, even if it is written or verbally provided.

You should consider including the following information in your catheter insertion documentation

- The reason for the catheterisation, catheter change or ongoing need for a catheter with all its risks.
- Use of a catheter passport – as a tool for communication between different health care providers and if used what information needs to be included.

- The results of any risk assessment prior to catheterisation.
- The health status of the patient prior to catheterisation – well/unwell.
- Is the patient febrile, do they have a temperature (over 39°C, are blood cultures needed)?
- If taking antibiotics for a urinary tract infection, are these appropriate and still required?
- Is the individual patient in any form of localised discomfort or pain?
- It may be necessary to record fluid intake balanced against urinary output and, in some cases, this may be ongoing (for example, renal function and or failure).
- The use of a bladder scanner to determine bladder capacity, pre and post void residuals.
- Allergy status (for example, latex, gels and medication).
- Has consent been obtained for the procedure? Some organisations now require this to be in written form.
- If antibiotic cover has been used, state drug and dosage. Check prescription is correctly written and document administration of medicine.
- Meatal or genital abnormalities observed, including discharge.
- If the insertion was easy or difficult.
- Indications used to ensure catheter was inserted correctly (in men – amount of catheter inserted, obstruction felt at prostatic area, patient reaction to passing the prostatic area, urine drained, no resistance to balloon inflation, no patient reaction or pain related to balloon inflation, free movement of the catheter once balloon inflated).
- If urine is drained, the amount, colour, smell and, if necessary, dipstick and record the result (blood, protein, pH, glucose, nitrite, leucocytes). Dipsticks should not be undertaken routinely as they form part of a wider clinical assessment.
- If no urine drains, document what actions you took.
- Brand, catheter name, material, tip type, catheter length, Charrière size, balloon size, batch number, expiry date (usually found on a sticker on the catheter packaging).
- Cleaning fluid used.
- Lubricant/anaesthetic gel used.
- If specimens were sent, why? Note: A specimen of urine should only be sent if clinically indicated.

Drainage equipment documentation checklist

- Is this type of urinary drainage system appropriate for this particular patient?
- Is the brand, capacity and tube length appropriate?
- What support system is being used and is it appropriate?
- Is a link system being used and what type of night bag (single use or drainable)?
- Check when the drainage system was previously changed and if this is appropriate. Note the date of the change of bag or valve.
- Urinary drainage bags are dated whenever they are changed within health and social care settings.
- Note the batch number of equipment and sterility expiry date.
- Note any problems with product function.
- Note any problems with the supply of equipment.
- Note any problems with comfort.
- Note any associated skin or allergy problems.
- Note any problems related to lifestyle or daily activities.
- Is the system being used cost effective? Where are the supplies to be obtained from? (eg pharmacy, acute trust, GP, Home delivery service).

Catheter removal documentation checklist

- Was the length of time the catheter was in-situ appropriate for the type being used?
- Was the type of catheter, drainage system and support garments/straps being removed appropriate?
- Were the catheter tip and balloon intact upon removal?
- Note if encrustation was present, and to what degree.
- Note if the section of the catheter retained within the bladder was clean or dirty or if debris was evident.
- Did the balloon deflate appropriately?
- Note if the catheter was removed because of blockage, the catheter was not present to allow direct observation, was it dissected to identify the cause and severity?
- Note if the removal was painful.
- Note if blood was present and, if so, where (catheter tip, in the bag, around the meatus, clots in the drainage bag tube) and to what degree (clot, red coloured urine, meatal bleeding, frank haematuria)?
- Note observations around the meatus for any abnormalities (inflammation, swelling, meatal erosion, discharge/amount/colour).
- Note observations of urine and any clinical indication of signs of infection (cloudy, debris, amount, colour and smell, abdominal pain, pyrexia).
- Note patient tolerance of the catheter.
- Have any issues been encountered? eg self expelling, bypassing.
- Is the patient taking antibiotics for a urinary tract infection? Record the type and duration of course, and if they are appropriate and still required.
- Note patient's tolerance of the catheter and associated drainage system.
- Is the patient in any form of discomfort or pain?
- Note the fluid intake balanced against urinary output.
- If first-time catheterisation takes place in a primary care setting, it is safe practice to monitor and make note of urine output for four hours after catheterisation. If the patient passes more than 200mls per hour after initial drainage, they need to be referred to the accident and emergency unit for fluid replacement as they are in risk of hypovolemic shock.
- Note the hourly urine output in critically ill patients.
- Note bowel activity.
- Note renal status.
- Note relevant blood results (prostate-specific antigen (PSA), urea, creatinine), plus the results, diagnosis and any further interventions.
- If patient is diabetic, glycosuria is indicative of poor blood sugar control and a potential infection risk, if diagnosis is unknown then further investigations are needed to establish a diagnosis.
- Note blood pressure status in relation to proteinuria and nocturnal polyuria (increased night time urinary output) to help establish a diagnosis.
- If a patient is immunocompromised, insertion of an indwelling catheter needs to be considered carefully due to higher risk of infection.

Ongoing observations documentation checklist

- Record the health status of the patient (well/unwell/seriously ill).
- Is the patient febrile, do they have a temperature (over 39°C, are blood cultures needed)?
- Record all communication with other members of the multidisciplinary team regarding the patient's status.
- Does patient know how, where and when to obtain further supplies?

5. Anatomy and physiology

What you need to know

You need to apply an in-depth understanding of:

- the anatomy and physiology of the male and female lower urinary tract in relation to lower urinary tract function and continence status, including:
 - urine production and what influences this
 - normal micturition
 - the nervous system, including autonomic dysreflexia
 - the bowel and its links to voiding problems
 - the endocrine system
 - sexual function and links to catheter usage
 - the prostate gland, urethral sphincters and the urethra
 - anatomy and physiology applied to voiding dysfunction and how a urethral urinary catheter could be used to relieve this
 - anatomy and physiology links on how common catheter-related complications occur
- how to educate and advise individuals in the use of catheters, particularly on anatomy, catheter function and sensation.

Skills for Health

Urine production

The production of urine is influenced by several body systems; failure of any of these systems to function within normal limits will alter urine production. When a catheter has been inserted, these influencing factors must be considered in the measurement of urine output and fluid intake.

Urine production is controlled by the kidneys, a minimum of 30mls of urine an hour is produced by the normal functioning kidneys. The primary function of kidneys is to remove and restore selected amounts of water and solutes, in order to maintain homeostasis of blood pressure.

Renal function in the formation of urine is carried out by the nephrons. Nephrons carry out three important functions:

- the control of blood concentration and volume by removing selected amounts of water solutes
- regulating blood pH
- removing toxic waste from the blood.

The nephrons remove many unwanted materials from blood, return ones that the body needs and excrete the remainder as urine. The kidneys become less effective with age; at 70 years of age the filtering mechanism is half that of someone who is 40 years of age. HCPs therefore need to know what actions to take if urine production is reduced or stops.

The bladder is a hollow muscular organ situated retroperitoneal in the pelvic cavity. Its shape depends on the volume of urine in it; empty, it is collapsed and becomes spherical when slightly distended. It rises into the abdominal cavity as urine volume increases. The function of the bladder is to store urine. HCPs need to understand how catheter usage affects bladder function from both a positive and negative perspective.

Prostate – only present in males and transgender females. It sits around the urethra just below the level of the bladder. It enlarges normally with age, causing bladder outflow obstruction, which can lead to urinary retention and is a common reason to insert a urinary catheter. Outflow obstruction can also be caused by inflammation of the prostate. In catheterisation technique, it is important to understand how the patient reacts and the feeling of obstruction as the catheter is passed through the prostate gland. It is also important to be aware of catheter insertion and removal techniques in individuals following prostatic surgery.

Urethral sphincters – there are two urethral sphincters. The internal sphincter is under the control of the brain and spinal cord nerve pathways. The external sphincter has an element of learned behaviour that the patient can control. Closure of the sphincters during bladder filling help to maintain continence, but damage or excessive detrusor pressure can lead to incontinence. They may be damaged during catheterisation or post prostatic surgery. In catheterisation, it is important to understand

how the patient reacts and the feeling of obstruction as the catheter passes through the sphincters.

Urethra – the anatomy of the urethra makes it sensitive to trauma during catheterisation. The lumen of the urethra is a convoluted, ribbon-like structure, only dilating during urination or when accommodating a urethral catheter. The urethra is lined with transitional epithelium; underlying the epithelium lays is a thin layer of tissue that is rich in blood vessels. Therefore, any trauma to the epithelium during urethral catheterisation provides convenient entry sites for micro-organisms into the blood and lymphatic system.

The female urethra is 3 to 5cm long and its elasticity is influenced by circulating oestrogens. The male urethra is 18 to 22cm long; trauma to the male urethra often results in the formation of scar tissue which can cause urethral stricture. Its function is to allow the discharge of urine from the body. Its length is important in relation to how much of the catheter is needed to reach the bladder.

Catheters come in different lengths and relate to urethral length; a female catheter is not long enough to reach the bladder in a male. In the catheterisation technique of a male patient, the amount of catheter inserted is an important indication of being in the bladder, along with other key observations. The HCP should be aware of any individual who has undergone surgery on the genitourinary tract as this may alter the urethral length/structure and will affect the type of catheter chosen. If the patient is very tall or obese, shorter length catheters may not be sufficient for effective drainage.

Normal micturition – this is caused by a combination of involuntary and voluntary nerve impulses. As the bladder fills, stretch receptors in the bladder wall transmit nerve impulses to the spinal cord. These impulses transmit by way of sensory tracts to the cortex, initiating a conscious desire to void. Parasympathetic impulses from the micturition centre in the sacral spinal cord are conducted to the urinary bladder wall and internal urethral sphincter. These cause contraction of the detrusor muscle and relaxation of the internal urethral sphincter. The cerebral cortex of the brain then allows voluntary relaxation of the external sphincter and urination takes place.

Involuntary micturition – this can occur as a result of:

- unconsciousness
- injury to the spinal nerves controlling the urinary bladder
- irritation due to abnormal constituents in urine
- disease of the urinary bladder
- damage to the external sphincter
- inability of the detrusor muscle to relax.

Urinary retention – this can occur as a result of:

- obstruction at the bladder neck
- enlarged or inflamed prostate
- obstruction of the urethra (stricture)
- contraction of the urethra during voiding
- lack of sensation to pass urine
- neurological dysfunction
- urinary tract infection
- the effects of medication
- pain overriding normal bladder sensation
- psychological causes.

Nervous system – this needs to be intact to allow normal bladder function to take place, but it may be a reason for catheterisation. Poor or no bladder sensation can lead to incomplete emptying or urinary retention. Catheterisation technique needs more caution in individuals with altered sensation, as normal reactions are absent.

Endocrine system – there are a number of factors that influence its effect on the production of urine, such as angiotensin II and antidiuretic hormone (ADH) or vasopressin.

- Angiotensin II stimulates thirst, promotes the release of aldosterone, which increases the rate of salt and water re-absorption by the kidneys.
- Antidiuretic hormone (ADH) is produced by the hypothalamus and released into the blood stream by the posterior pituitary

gland. This hormone regulates the rate of water reabsorption by the kidneys and causes constriction of blood vessels.

- Aldosterone is secreted by the renal cortex; release of aldosterone enhances the reabsorption of sodium and water.
- Glycosuria is usually an indicator of diabetes mellitus. When glucose exceeds the renal threshold in normal glomerular filtration, the sodium glucose symporters cannot work fast enough to reabsorb the glucose and glucose is excreted in the urine. It can lead to symptoms of urgency and frequency, and can also become infected as bacteria have a medium by which to multiply quickly.

HCPs need to link urinary output and symptoms to possible endocrine dysfunction.

Cardiac system – the heart is responsible for pumping blood around the body. As the blood flows through body tissues it picks up waste products which are excreted via the kidneys. An inefficiently functioning heart can produce the side effects of nocturia or nocturnal polyuria. If a catheterised patient produces more urine at night than during the day, it could be nocturnal polyuria and appropriate interventions should be considered.

Pelvic floor muscles – in females, the pelvic floor supports the organs within the abdominal cavity, resists increased intra-abdominal pressure and draws the anus towards the pubis and constricts it. Nerve supply is from sacral nerves S3 to S4 and the perineal and pudendal nerve. Where catheters fall out of females, pelvic floor laxity should be considered as a cause. In males, the bulbocavernosus and deep transverse perineal helps to expel the last drops of urine during micturition. Ischiocavernosus helps to maintain erection of the penis. Nerve supply is from sacral nerves S4 and the perineal and pudendal nerve.

Sexual function – this can become compromised with the use of a catheter. Altered body image due to urethral or suprapubic catheterisation may impede the person's desire to want sexual intercourse. The presence of an indwelling catheter in a male urethra may cause trauma to the urethra on erection. Painful erections, particularly when sleeping, are a

common complication of having an indwelling urethral catheter. In undertaking a catheter care review, HCPs must consider sexual needs and plan care where possible to facilitate an individual's ability to meet these. The RCN has produced *Older People in Care Homes: Sex, Sexuality and Intimate Relationships* (2018). This publication offers guidance for nursing staff to help address the needs of older people in a professional, sensitive, legal and practical way.

Skin – has several functions, but related to continence and catheterisation it offers:

- protection – providing a physical barrier that protects the underlying tissues from physical abrasion, bacterial invasion and dehydration
- sensation – skin contains abundant nerve endings and receptors that detect stimuli related to pain, touch and pressure.

It is important to make every effort to ensure that incontinence and catheterisation do not compromise these vital functions of the skin. Catheterisation can increase sacral skin breakdown due to lack of movement. Where sacral skin breakdown has occurred, catheter-related complications increase because of cross infection from wound to bladder. It can also increase the risk of bacteraemia.

Female Genital Mutilation (FGM) – this is the alteration/mutilation of the female genitalia for any non-medical reason. It can involve piercing, tattooing, removal of the clitoris and labial folds, suturing. It is illegal in the UK to allow FGM practices. All HCPs have a legal duty of care to report any known episodes of FGM or anyone at risk of FGM. For further guidance see the RCN's publication *Female Genital Mutilation* (2016).

Transgender individuals – individuals who undergo treatment or surgery to alter their gender. Their internal urethral structure is altered, and this may affect the choice of catheter used. Careful assessment and sensitive questions are required to ensure the correct equipment and products are used.

6. Consent

What you need to do

The law requires that the patient must give valid consent before the procedure (catheterisation) or care is given. In terms of care and support of the patient, know how to obtain valid consent and how to confirm that sufficient information has been provided on which to base this judgment.

What you need to know and understand

- Obtain valid consent for or authorisation (CHS167).
- Enable individuals to make informed choices and decisions (PE1).

National Occupational Standards

Obtaining consent is essential before carrying out catheterisation. Without consent, the care or treatment may be considered unlawful and the patient could take legal action against the health profession, even if treatment was for the patient's benefit.

Consent can only be given by the patient. To enable the patient to give consent they must have capacity to understand and retain the information and be able to weigh the risks against the benefits.

You must respect and support an individual's right to accept or decline treatment. You should uphold their right to be fully involved in decisions about their care, plus be aware of the legislation regarding mental capacity (NMC, 2015; Mental Capacity Act, 2005).

The five key principles of the Mental Capacity Act (2005) need to be taken into consideration when obtaining consent from a patient for catheterisation.

1. **A presumption of capacity** – every adult has the right to make their own decisions and must be assumed to have capacity to do so unless it is proved otherwise.
2. **Individuals should be supported to make their own decisions** – a person must be given all practicable help before anyone treats them as not being able to make their own decisions.

3. **Unwise decisions** – just because an individual makes what might be seen as an unwise decision, they should not be treated as lacking capacity to make that decision.
4. **Best interests** – an act done, or decision made under the Act for, or on behalf of a person who lacks capacity, must be done in their best interests.
5. **Least restrictive option** – anything done for, or on behalf of a person who lacks capacity, should be the least restrictive of their basic rights and freedoms.

Additional key statements related to consent and catheterisation

- A health care worker may decline temporarily (not consent) to perform any aspect of catheterisation or ongoing catheter care because of a lack of competence, until it is gained within an agreed reasonable period of time (at local level).
- Catheterisation is an invasive procedure with associated serious risks, therefore obtaining documented, valid consent is vital prior to the procedure. In the patient who is unable to give consent, there must be a clearly stated rationale for using a catheter and it must be clear that this is in the best interests of the patient. There should be MDT involvement in this situation and also evidence of consultation with appropriate next of kin.
- The patient expects that it is in their best interests and safety.
- The patient should be provided with supportive, written information, in a format that they can understand.
- The patient should understand the rationale, the alternatives and the consequences of not being catheterised.
- The patient expects that their catheter care reflects up-to-date, evidence-based best practice in the giving of consent.
- Where other health care workers are present to observe or perform, under supervision, aspects of catheter care, patient consent is required.

- Patient consent is required for the use, or not, of a chaperone during any aspect of catheterisation or ongoing catheter care.
- In an acute care setting, the patient understands that the catheter will be removed as soon as possible because of the daily increase in the serious risk of infection.
- The patient understands the types (indwelling urethral, suprapubic, intermittent) available and has made an informed choice for the one selected.
- The common risks associated with long-term catheter usage (over three months) should be explained in the process of gaining consent. These include: bypassing, discomfort, blockage, infection, bleeding and, in men, painful erections.
- In gaining consent to catheterise a patient, they are accepting that the health care worker is competent and can demonstrate this if required.
- Avoid coercing or restraining patients for catheterisation, including aspects of ongoing catheter care, as this is assault in law and demonstrates a lack of consent.
- The patient would expect that any health care worker will take all standard precautions in performing the procedure in an aseptic manner.
- In undertaking any aspect of catheter care, the patient gives consent to that individual health care worker to perform specific tasks.
- In gaining consent for screening/testing/monitoring of urine, performing other investigations and reaching a diagnosis, the rationale needs to be explained and the implications of the results.
- If a patient is being discharged from hospital with any form of urinary catheter in place, consent is required before information concerning their care can be passed onto community staff within another organisation.
- Consent is required for all aspects of catheter care including: catheter removal, meatal care, use of a catheter instillation, solution and medication and for obtaining a specimen of urine for laboratory analysis.
- In using any catheter care equipment or medication, the consent is valid on the grounds of indications, manufacturers' directives and licence.
- When considering onward referral (for example, the urologist or specialist nurse), explain clearly: patient choice, the rationale, what it involves, the waiting times and possible outcomes, so the patient can give consent and comply.
- If a home delivery service is recommended for catheter care equipment (dispensing appliance contractor), consent is required before passing on agreed information outside of your organisation.
- In the usage of catheterised patient's data, ethical approval and consent are required in writing before the data can be released or used for this specific purpose.
- Documenting the giving of consent for catheter usage and ongoing catheter care is vital from a professional, ethical and legal perspective.

7. Reasons for, and decisions influencing, catheterisation

Catheters should only be used after all alternatives have been considered. (NICE, GC171)

Knowledge and understanding

Clinical indications for intermittent, suprapubic or urethral catheterisation

- Acute urinary retention (AUR).
- Chronic urinary retention, only if symptomatic and/or with renal compromise.
- Monitoring renal function hourly during critical illness.
- Monitoring/recording/draining residual urine volumes (wherever possible, a bladder scanner is the preferred option to measure residual urine volumes).
- During and post-surgery, for a variety of reasons.
- Allowing bladder irrigation/lavage.
- Allowing instillation of medications, for example, chemotherapy.
- Bypassing an obstruction/voiding difficulties.
- Enabling bladder function tests, for example, urodynamic assessment.
- Facilitating continence and maintain skin integrity (when all conservative treatment methods have failed).
- Obtaining a sterile urine specimen.

What you need to know

- Plan the assessment of an individual's health status (CHS38).
- Plan interdisciplinary assessment of the health and wellbeing of individuals (CHS52).
- Assess an individual's health status (CHS39).
- Assess risks associated with health conditions (CHS46).
- Obtain valid consent or authorisation (CHS167).

- Establish a diagnosis of an individual's health condition (CHS40).

What you need to do

- During individual assessment, when instrumental bladder drainage is deemed necessary, consider the patient's suitability for intermittent, suprapubic or urethral catheterisation (NICE GC171)
- Understand the reasons for catheterisation and constantly review the need for continued catheter usage. In acute areas, this should be a daily review.
- Where it is viewed as appropriate for the patient to use a catheter, such as: end-of-life care, disability, unfit for surgery, HCPs must remember that the risks associated with catheter usage are serious and increasingly may be more difficult to justify.
- Never catheterise or continue catheter usage for nursing convenience.
- HCPs must ensure that catheterisation is based on a balanced decision with more benefits than disadvantages and in consultation with the patient, where possible.
- Routine catheterisation must not be regularly supported by HCPs, particularly in specific patient groups, such as those with a fractured neck or femur.
- Incontinence is considered a major factor in the development of moisture-associated skin damage, incontinence-associated dermatitis and pressure ulcers. Inserting an indwelling catheter could be assessed as reducing this risk, however with a catheter in-situ, there is less need for the patient to mobilise as they would with toileting or pad changes, so the risk may be higher.
- Catheterisation of patients who are agitated and/or cognitively impaired should be carefully considered and risk assessed, due to the possibility of deliberate self-removal of the catheter leading to tissue trauma.
- Where a significant residual volume of urine is identified, the patient's symptom

and severity profile, along with their renal function and cognitive status, must be considered prior to catheterisation.

- Where a residual volume of urine is identified and a decision to catheterise is made, it is imperative that the HCP ensures that the route of catheterisation is made within a multidisciplinary team (MDT) framework.
- HCPs must always assess clinical need for catheter usage as part of their professional role, even if medical directives state 'to catheterise'.
- When an indwelling catheter is inserted, the HCP should consider and plan for early removal as infection risk increases on a daily basis.
- HCPs should not, under any circumstance, present or promote catheterisation to patients as an easy, best option to regain continence.
- When making the decision to catheterise, HCPs must be mindful of the serious implications, for example, the risk of infection, particularly those associated with multi-resistant bacteria and a possible lack of effective antibiotics.

Risk assessment

It is essential that risk assessment is an integral part of catheter care in all care settings. Using any form of catheter has associated risks. These risks are becoming more serious with the continued development of a wide range of multi-resistant bacteria which cause catheter-associated urinary tract infections and associated life-threatening complications. HCPs should consider the following questions.

- Is there a catheter in use, is it necessary?
- What type of catheter is in use (for example, 3-way, long-term short-term, Tiemann tip)?
- Is this type of catheter normally used in this facility? Are staff competent to manage the type of catheter?
- Is a closed system being maintained?
- Is the catheter inserted using a catheter 'insertion tray' with pre-connected catheter and drainage bag? (Refer to local formulary/policy)
- Is the catheter secured to the patient's

body to prevent urethral tension using an appropriate securement device?

- Is the bag below the level of the patient's bladder? (if the bag is more than 30cm away from the bladder, there is an increased negative pressure which may increase the risk of blockage or bypassing).
- Is the tubing from the catheter to the bag free from kinks or obstruction?
- Is the drainage bag well supported using an appropriate stand or securement device?
- Could a catheter valve be used instead of a drainage bag?

Patients who are more likely to be at risk of an associated catheterisation infection

The following examples are not comprehensive, but can be used in the formation of risk assessment tools for HCPs to use in clinical practice. By performing a risk assessment, indwelling catheterisation may not be the best management for the patient; intermittent catheterisation or pad, or external appliance, may be a better choice. However, indwelling catheterisation may be the only option and the risks should be managed carefully.

In carrying out a risk assessment consider if the patient has/had:

- an artificial heart valve
- a heart defect
- urinary infections post catheterisation – the urinary catheter and drainage system will become colonised by bacteria within 48 hours (the longer a catheter remains in situ the greater the risk)
- or is immuno-suppressed
- organ transplants
- poor bowel control/diarrhoea since having a catheter (high risk of infection)
- one kidney (risk of renal infection)
- a urinary infection since having a catheter (this indicates a high risk of further infection).

8. Risk assessment

Knowledge and understanding

Using any form of catheter has associated risks and with the continued risk of urine infections and associated life-threatening complications, such as sepsis, it is of great importance that risk assessment becomes an essential part of clinical decisions and catheter care in all care settings.

Catheterisation should only be undertaken after considering alternative methods of management and the person's clinical need for catheterisation should be reviewed regularly, with the urinary catheter removed as soon as possible (NICE, 2012).

What you need to know

- Understand the different risks and health issues that will influence how, where and when to catheterise, and when to undertake a trial without a catheter.
- Understand the risks associated with catheterisation and how to minimise their impact.
- Undertake a risk assessment to determine whether the patient still requires an indwelling catheter or is ready to undergo a trial without catheter, or to perform intermittent catheterisation.
- Plan an assessment of an individual's health status (CHS38).
- Plan an interdisciplinary assessment of the health and wellbeing of the individual (CHS52).
- Assess an individual's health status (CHS39).
- Assess the risks associated with health conditions (CHS46).

Skills for Health

When considering long-term catheterisation, a risk assessment should consider the patient's quality of life, particularly:

- the impact of the catheter on the patient
- their sexuality and body image
- their social support networks

- if they can manage the catheter independently at home and, if not, what support needs to be arranged
- the patient's and family's education
- the supply of equipment
- how the equipment will be ordered and where from.

(EAU, 2012)

Patients where the risk of catheter associated urinary tract infection (CAUTI) may be serious

The following are examples of health risks that should be assessed prior to catheterisation and catheter usage. They can be used in the formation of risk assessment tools for HCPs to use in clinical practice. By performing a risk assessment, it may be decided that an indwelling catheter may not be the best management for the patient; intermittent catheterisation or pad, or external appliance may be a better choice. Any patient can experience serious complications as a result of infection but some are particularly vulnerable.

It is important to minimise the use and duration of urinary catheterisation in all patients, but especially those at higher risk for CAUTI-related morbidity and mortality such as:

- women
- the elderly
- individuals with impaired immunity.

Additional risk factors which may increase the potential for serious complications of CAUTI include if the patient:

- has been in hospital in the last 12 months, exposed to the risk of colonisation with multi-resistant bacteria
- has taken antibiotics in the last six months, as this increases the risk of C. difficile infection

- is pregnant
- has diabetes mellitus
- has more than six medications – indicative of compromised health status
- has had chemotherapy within the last six months (immune compromised)
- is taking steroids (immune compromised, increased infection risk)
- has underlying renal tract abnormalities
- has one kidney (due to the potential implications of a renal infection)
- has one functioning kidney – currently taking antibiotics for a urinary tract infection
- has a history of repeated urine infection or at least one urinary tract infection since using a catheter
- has chronic wounds that require dressings (could potentially cross-infect the catheter and drainage system)
- has an artificial heart valve or heart defect (due to risk of endocarditis)
- is immuno-suppressed
- has organ transplants
- has poor bowel control/diarrhoea.

Allergy risks related to catheterisation include:

- latex
- soap
- lubrication gels containing lidocaine.

Complications which indicate a need for further investigation include:

- previous difficulty in catheter insertion and/or removal
- history of frequent catheter blockage
- catheter has fallen out
- bypassing of urine

- pain, discomfort and discharge associated with catheter usage
- recurrent infection.

Risks of haematuria include:

- use of medication such as aspirin or warfarin
- recent catheter-related trauma
- recent urinary tract surgery
- known bladder/prostate cancer
- prostatic trauma.

Careful consideration should be given to patients where:

- blood clots have been observed
- meatal bleeding is observed.

When a catheter is already being used the HCP should consider if it is necessary. This can be established using the HOUDINI (Adams et al, 2012) indicators.

H – Haematuria.

O – Obstructed.

U – Urologic surgery.

D – Decubitus ulcers – open sacral or perineal sore in an incontinent person.

I – Input/output monitoring.

N – Not for resus/end of life care – comfort.

I – Immobility due to physical restraints.

If the catheter is necessary, consider the following questions to minimise the risk of infection and complications.

- Has hand washing/general hygiene advice been given to patient?
- Is a closed system being maintained?
- Is the catheter secured to the patient's body to prevent urethral tension?
- How secure is it? And is it the most appropriate device?

- Is the bag secured below the level of the patient's bladder?
- Is the tubing from the catheter to the bag free of dependent loop?
- Is a catheter bag stand in use which prevents the bag from touching the floor?
- Does the patient have an individual measuring device (if appropriate, marked with their name and room number)?
- Is the meatus washed daily with non-perfumed soap and water? Women should wipe front to back and if the man has a foreskin, ensure cleansing is undertaken with a retracted foreskin.
- Who will be responsible for emptying/ changing the bag? Have they been trained appropriately?

If the catheter needs to be removed (and your patient is male), before undertaking a trial without catheter and to help minimise failure, consider the following factors.

- The patient's prostate size.
- Has the patient had a previous episode of acute urinary retention?
- Is the patient over 70 years of age?
- Has the patient had a previous failed trial without catheter?
- Check the patient isn't taking alpha blockers.
- Check other medication taken, such as anticholinergics
- The patient's ability to manage toileting without a catheter.

Factors which may increase urinary output when supine (important when considering flow rates or trial without catheter when the patient is upright) include:

- heart disease
- diuretics
- postural oedema
- hypertension.

9. Catheter-related equipment

What you need to know

Knowledge of available catheter equipment including catheter types and sizes, indwelling, intermittent, suprapubic, urinary drainage bags, catheter fixation devices, catheter valves – see appendix list.

- A comprehensive understanding of appropriate choice of catheter and associated equipment based on holistic patient assessment and education.
- How to order, store and dispose of catheter equipment, adhering to manufacturers recommendations and local policies including waste and IPC.

Skills for Health

Knowledge and understanding

- Insert and secure urethral catheters (CC02).
- Care for individuals with urethral catheters (CC03).
- Manage suprapubic catheters (CC04).
- Undertake a trial without catheter (TWOC) (CC05).
- Enable individuals to carry out intermittent catheterisation (CC06).
- Review catheter care (CC07).

A medical device is defined as an apparatus, appliance, material, software or an instrument used alone or collectively to diagnose, monitor, treat, and alleviate disease or injury.

Regulation and appropriate use

The Medicines and Healthcare products Regulatory Agency (MHRA) is an executive agency of the Department of Health. It has three UK centres which use research and anonymised NHS data to improve public health. The MHRA is responsible for ensuring medical devices are high quality, effective and safe for patient use.

Urinary catheters and related equipment are medical devices. HCPs must therefore understand the importance of research and

audit for the appropriate evaluation, selection and use of urinary catheters and associated catheter equipment. All equipment must be evidence based and used in accordance with a manufacturer's guidance and used only for the purpose intended.

Catheter products require a CE mark. This is a declaration of conformity by the manufacturer that the device is fit for intended purpose and meets legislation relating to safety.

HCPs must have a clear understanding of the benefits and disadvantages of catheter equipment and must be familiar with the types of catheters and associated equipment available:

- catheter size
- type – indwelling, suprapubic
- intermittent, long term, short term
- leg bags, belly bags, night bags
- stands, link systems, catheter valves, fixation devices, support garments (See Appendix 1).

Ordering equipment

The UK health services must consider cost efficiency and the best use of available products and resources when purchasing catheters and related equipment. Many continence services have their own product formulary created using evidence-based research, cost and availability.

The ordering of catheter equipment is guided by local policy. The HCP must know how to order the correct catheter equipment and organise this prior to patient discharge. In areas where a stock of catheter equipment is required, overstocking must be avoided, and stock should be rotated to prevent products expiring and leading to wastage.

Correct procedures

The following processes and procedures must be adhered to when using any catheter-related equipment.

- The patient must be provided with the correct equipment, which is in date and stored appropriately. In a community setting, the patient should also have a spare catheter in case of unplanned recatheterisation.

Catheters and associated equipment must be stored intact in a clean area to avoid cross contamination. The HCP must check the urinary catheter size, length and date prior to insertion of catheter and use of associated equipment. A female length urinary catheter must never be used for male catheterisation.

- In a community setting the patient should have a spare catheter in case of unplanned recatheterisation.
- The patient must be provided with education and information on available catheter equipment to support an informed choice. Also provide advice on process of obtaining regular supplies and where they can be obtained from. Patient information leaflets must be up to date, evidence based and available in several formats to support the individual needs of the patient.
- Patients who independently manage their catheter care must be provided with appropriate support. Practical planned education and written information is required to ensure the patient can competently care for their catheter. This education must include hand decontamination and personal hygiene information to maintain infection control.
- Single use equipment must not be reused or reconnected in any care settings.
- Drainable products should not be rinsed/washed out. If the bag is contaminated, it should be changed for a new product even if this is earlier than the scheduled change of seven days (or 28 days in the case of a belly bag).
- The HCP must have the knowledge and skills to teach a patient intermittent self-catheterisation, how to use catheter valves, catheter bags and associated equipment, as appropriate. Catheters and related equipment must be used following manufacturers' guidelines.
- Any adverse incident involving urinary catheter related equipment requires reporting to the MHRA, who immediately work with the manufacturer and take timely action. Incident reporting must be in line with local incident reporting policy.
- A patient assessment is required prior to the use of any catheter and catheter-related equipment. Assessment safeguards the appropriate choice and use of catheter type, size and associated equipment. The HCP must ensure the patient receives a holistic assessment which is documented.
- Patient privacy and dignity must be considered and the HCP must be able to advise the patient on the most suitable catheter types and associated equipment to support their lifestyle.
- The type of catheter and related equipment required must be clearly documented. The patient must have a documented plan of care which must indicate the reason for insertion of the catheter, if it is long term, short term or plan for trial without catheter (TWOC). The care plan must be periodically reviewed, inclusive of the catheter and equipment, to ensure the appropriate care is received.
- HCPs must be aware of how to safely dispose of catheter equipment (following local policy for the safe disposal of waste). This applies to all settings – hospital, clinic and the patient's home.

Urinary catheter passport

Providing the patient with a urinary catheter passport supports consistency of catheter care. Catheter passports are currently used in many areas and are advocated by [NHS England](#) (2015) The HCP must educate the patient on the importance of the catheter passport document when accessing health care support for their catheter. The document provides the patient and health care professionals with relevant catheter care information, inclusive of reason for catheterisation, catheter type, size, insertion information, catheter-related equipment, planned catheter change and forward planning (for example, TWOC date).

10. Suprapubic catheterisation

What you need to know

An in-depth understanding of the reasons why suprapubic catheterisation is necessary including: maintaining urethral surgery, long term catheterisation, and sexual needs.

- Indications and contraindications for suprapubic catheters.
- Advantages and limitations.
- Insertion techniques.
- Subsequent catheter changes, management and complications.

Knowledge and understanding

- Assess bladder and bowel dysfunction (CC01).
- Care for individuals with urethral catheters (CC03).
- Manage suprapubic catheters (CC04).
- Undertake a trial without catheter (TWOC) (CC05).
- Review catheter care (CC07).

Skills for Health

What you need to do

- Comply with the correct protocols and procedures relating to suprapubic catheterisation.
- Observe the cystostomy site for any abnormalities and take appropriate action.
- Remove the previous indwelling catheter in accordance with protocols.
- Observe the catheter removal.
- Contain any leakage from the cystostomy.
- Aseptically clean the site for insertion of the new catheter and administer appropriate lubrication.
- Insert catheter safely, aseptically and correctly, according to manufacturer's instructions and with minimal discomfort and trauma to the individual.

- Ensure the catheter is in the correct position, using the appropriate indicators before balloon inflation.
- In addition to the indications for a urethral catheterisation, the following indications apply for suprapubic catheterisation.
- Acute and chronic urinary retention that cannot be adequately drained with a urethral catheter or where a urethral catheter is contraindicated.
- Patient preference due to patient needs for comfort and accessibility (for example, wheelchair user, sexual issues).
- Acute prostatitis.
- Obstruction, stricture, abnormal urethral anatomy.
- Pelvic or urethral trauma.
- To minimise complications of long-term urethral catheterisation.
- Complex urethral or abdominal surgery.
- Neuropathic disorders, such as multiple sclerosis and spinal cord injury, require frequent catheterisation due to catheter expelling frequently.
- Patients who have faecal incontinence and are constantly soiling urethral catheters or suffer moisture lesions.

Adapted from the European Association of Urology Nurses, *Catheterisation. Indwelling catheters in adults – Urethral and suprapubic*, (2012) and the British Association of Urological Surgeons (2010).

Contraindications for a suprapubic catheter

- Absolutely contraindicated in the absence of an easily palpable bladder or when unable to visualise a distended bladder by ultrasound.
- Known or suspected carcinoma of the bladder.
- Previous lower abdominal surgery.
- Coagulopathy – a clotting disorder and bleeding disorder in which the blood's ability

to clot (coagulate) is impaired –until the abnormality is corrected.

- Ascites.
- Prosthetic devices in lower abdomen (for example, a hernia mesh).

Adapted from the European Association of Urology Nurses, *Catheterisation. Indwelling catheters in adults – Urethral and suprapubic*, (2012).

Advantages of a suprapubic catheter

There is little evidence-based research on the use of suprapubic catheters but the EAUN (2012) and Yates (2016) highlight several benefits to having a suprapubic catheter when compared to a urethral catheter.

- There is less risk of urethral trauma, necrosis, or catheter-induced urethritis and urethral strictures.
- Greater comfort, particularly for patients who are in wheelchairs, as the catheter is not positioned between the legs and less risk of the catheter becoming kinked causing bypassing.
- Easier access to the cystostomy site for cleaning and catheter changes.
- Reduced risk of catheter contamination with micro-organisms that are commonly found in the bowel, therefore reducing the number of urinary tract infections.
- Greater freedom to be, or remain, sexually active
- Micturition is still possible if urethra not surgically closed or obstructed.
- Voiding trials (TWOC) may be easier.

Disadvantages of a suprapubic catheter

- It can bring about significant life changes, including physical, psychological as well as altered body image.
- It can cause swelling, infection, cellulitis and over granulation of the cystostomy site.

Suprapubic catheter – how to help prevent granulation and infection

To help prevent over granulation the EAUN (2012) recommend changing the angle of the balloon so that the catheter lies externally against the abdominal wall. An appropriate catheter fixation device should be used to reduce migration and potential trauma.

To reduce infection, always ensure good hand hygiene is performed prior to any intervention, and ensure an aseptic technique is followed during catheter changes.

National guidelines recommend that daily cleansing of the site with soap and water is all that is required as excess cleansing may increase the risk of infection (EAUN, 2012).

- Bypassing can occur as it may be caused by catheter blockages or detrusor overactivity. Also, a patient may still experience urethral leakage if urethral closing pressure is inadequate or absent (BAUS, 2010).
- Cuffing and/or encrustation can make suprapubic catheter removal difficult, causing pain and trauma. This has often been associated with all-silicone catheters. EAUN (2012) recommend that by leaving the catheter in situ for five minutes after deflating the balloon, allows the catheter to regain its original shape. Then, on removal, rotate the catheter slowly. The use of an all-silicone catheter with an integral balloon may help reduce the risk of cuffing.
- Bladder stones are more prevalent in suprapubic catheterisation than in urethral catheterisation, and can cause recurrent urinary tract infections, haematuria and catheter blockages. The EAUN (2012) recommend that frequent catheter blockages should be investigated using a cystoscopy as these blockages are often related to the development of bladder stones.
- Bladder cancer has been associated with long-term catheterisation. The EAUN (2012) believe the risk is greater in spinal cord injury patients.
- Complications such as bowel perforation or internal injury can occur during the initial

cystostomy formation (National Patient Safety Agency, 2009).

- Urinary tract infections are associated with catheters, however, suprapubic catheters are less prone to cause symptomatic infection compared to urethral catheterisation (EAUN, 2012). Trauma on removal or changing of catheters can result in infection.

Changing a suprapubic catheter

Following the initial insertion of a suprapubic catheter, the catheter must stay in place for up to 4 to 6 weeks, depending on local guidelines. This allows time for the tract to become established (EAUN (2012)).

There are potential risks when changing a suprapubic catheter (for example, the loss of the tract) and, therefore, the first change must be done without delay so that the cystostomy is not allowed to close. This procedure is usually performed in hospital and should take no longer than 10 to 15 minutes – from removing the old catheter to replacing the new catheter. A subsequent change, when the cystostomy is established, is not so critical but does need to be carried out immediately after removal of the old catheter.

Most uncomplicated changes occur in a community setting or within the patient's own home. Subsequent changes should be undertaken on an individual basis, when clinically indicated, or when local protocols dictate.

Training and experience in changing a suprapubic catheter is essential. Only appropriately trained staff should undertake a suprapubic catheter change and they should ensure that they comply with local protocol and procedures. It is also important that checks are made with the manufacturer to ensure that the catheters, and any lubricant used, are licensed for suprapubic usage (EAUN, 2012).

Incorrect insertion into the bladder can potentially lead to tissue trauma of the suprapubic tract. Further complications can be caused if the catheter is inserted too far; the catheter can advance into the urethra, resulting in trauma when the balloon is inflated. Therefore, when changing a suprapubic catheter,

it is essential to observe:

- the lie of the existing catheter
- the angle of insertion
- how much of the catheter length is viable outside of the body.

On insertion of the catheter, advance the catheter into the tract 3 cm deeper than the removed catheter. If no urine drains, gently apply pressure on the symphysis pubic area. Once urine starts to drain, slowly inflate the catheter balloon according to the manufacturer's instructions. Withdraw the catheter slightly and attach the drainage bag (if this has not already been done) and secure with the appropriate support strap (EAUN, 2012).

Dressings

Dressings are often unnecessary and are best avoided, if a dressing is used to contain a discharge this should be undertaken with strict aseptic technique to protect against infection. Wherever possible, patients should be encouraged to change their own dressing (EAUN, 2012).

Licensed products

If in doubt, check the catheter is licensed for suprapubic usage with the manufacturer. Ensure lubrication and anaesthetic agents are licensed for suprapubic usage.

Antibiotic cover

Local policies should be checked for information on if antibiotic cover is required

11. Trial without catheter

Knowledge and understanding

- Assess bladder and bowel dysfunction (CC01).
- Insert and secure urethral catheters (CC02).
- Care for individuals with urethral catheters (CC03).
- Manage suprapubic catheters (CC04).
- Undertake a trial without catheter (TWOC) (CC05).
- Enable individuals to carry out intermittent catheterisation (CC06).
- Review catheter care (CC07).
- Care for individuals using containment products (CC08).
- Help individuals to effectively evacuate their bowels (CC09).
- Assess residual urine by use of portable ultrasound (CC10).
- Implement toileting programmes for individuals (CC11).
- Enable individuals to undertake pelvic floor muscle exercises (CC12).
- Enable individuals with complex pelvic floor dysfunction to undertake pelvic floor muscle rehabilitation (CC13).
- Plan interdisciplinary assessment of the health and wellbeing of individuals (CHS52).
- Assess risks associated with health conditions (CHS46).
- Establish a diagnosis of an individual's health condition (CHS40).

Skills for Health

What you need to know

- The reasons why trial without catheter is necessary.
- The different types of trial without catheter and the rationale behind chosen methods.

- How to minimise any unnecessary discomfort during treatments relevant to trial without catheter.
- When not to proceed, or when to abandon a trial without catheter for an individual and what actions to take.
- The reasons why intermittent bladder drainage is the better option if the trial without catheter is unsuccessful.
- How to perform a trial of voiding for an individual with a suprapubic catheter.
- How to perform and interpret bladder ultrasound.

What you need to do

- Provide the individual and relevant others with the appropriate health-related information and advice to establish the individual's health needs and suitability for trial without catheter.
- Undertake a risk assessment and use the outcomes to determine a suitable method for trial without catheter.
- Recognise any adverse effects and potential complications during the trial without catheter.
- Identify appropriate treatments for the individual based on the results of the trial without catheter.
- Provide appropriate care for individuals where the trial without catheter is not effective.

National Occupational Standards

Indications for a trial without catheter (TWOC)

This is to establish if voiding is possible, therefore preventing unnecessary continued catheter usage. Ascertain:

- voiding function post-operatively
- post-acute urinary retention and, in men, the effectiveness of alpha blockers
- chronic retention, and to what degree.

- If a suprapubic catheter is present, a catheter valve can be used to stop continuous drainage, if appropriate. If voiding is satisfactory and the residual is low, the catheter can be removed after three days.

Suitability for a TWOC

- Self-scheduled assessment where possible, with a focused history combined with a risk assessment.
- Medical status should include: infection history and status, antibiotic indications, nocturnal polyuria indications, cognitive status and social status.
- Catheter history should include: equipment used, who is involved in catheter care.
- Is medical status improving, stable or deteriorating?
- Patient's ability to consent/co-operate.
- Any previous falls or are there mobility, dexterity, difficulty issues in getting to the toilet?

Cautions

- Presence of a large urogenital prolapse.
- Previous failed TWOC.
- Any surgery for stress incontinence.
- Medication (for example, anticholinergics)
- Large fibroid uterus.

Types of TWOC

(Refer to local policy, if available.)

- Early daytime, with an increased fluid intake – undertaken more for the convenience of those involved.
- Daytime extended overnight, with next day review – especially for those patients with likely residual urine volume.
- Night time – useful for inpatients and those with nocturnal polyuria.

How to minimise discomfort during a TWOC

- When removing a catheter at the start of a TWOC, check water volume in the balloon.
- Avoid pulling on the syringe as this may create a vacuum and cause the balloon to cuff, making removal difficult. Instead, allow water to drain out of the balloon under its own pressure.
- Warn the patient of potential discomfort prior to catheter removal.
- Encourage the patient to drink normally (1.5 to 2 litres during the day) prior to TWOC – over consumption may compromise bladder function.
- Advise the patient on protocol should TWOC fail (for example, about catheterisation or learning to perform intermittent self-catheterisation).

Indications to abandon a TWOC

- A patient withdraws consent.
- Bleeding is of concern.
- Pain is of concern.
- Urine has not passed, or an unacceptable amount of residual urine is showing present on a bladder ultrasound (bladder scanners should be used in caution postpartum). If you have a real time imaging scanner, and can competently identify the bladder, this can be used as they are reliable. However, a standard bladder scan will often give a false positive result due to increased fluid in, and around, the uterus postpartum.
- Where to perform TWOC and why
- At home, if possible, as it is more relaxed for the patient and may reduce the risk of cross infection from a hospital ward environment.
- An isolated environment, if immuno-compromised. This is best performed in the patient's own home to minimise the risk of infection.

- In a supervised environment if:
 - urinary output is a concern (because of ill health problems such as renal failure, cardiac failure, postural oedema)
 - functional issues are a concern (for example, assistance with toileting or there is risk of falls in relation to toilet, or commode usage)
 - haemorrhaging is a concern (such as with prostate cancer, medication or a combination of these factors)
 - the likelihood of re-catheterisation could be difficult
 - the patient's needs are complex (for example, sudden acute urinary retention may be an outcome – with a time delay in returning to the patient and potential difficulty in catheterisation).
- Continual supervision because of cognitive impairment, (for example, dementia resulting in the patient's inability to follow instructions).

Intermittent bladder drainage

Intermittent bladder drainage is the better option if a TWOC is unsuccessful for various reasons.

- Intermittent bladder drainage can be achieved by use of a catheter valve or intermittent catheterisation as these allow the bladder to expand to store urine and contract to empty. This helps maintain the muscular effect, stimulate blood supply and continue normal bladder health.
- If a patient remains on long-term continual/free drainage, bladder function can be lost and may not return if a TWOC is considered in the future.
- It should be considered for patients using long-term indwelling catheters because of the long-term (over six months) consequences of continual drainage.

12. Intermittent self-catheterisation

Knowledge and understanding

- Assess bladder and bowel dysfunction (CC01).
- Care for individuals with urethral catheters (CC03).
- Enable individuals to carry out intermittent catheterisation (CC06).
- Review catheter care (CC07).
- Care for individuals using containment products (CC08).
- Help individuals to effectively evacuate their bowels (CC09).
- Assess residual urine by using ultrasound (CC10).
- Acquire, interpret and report on ultrasound examinations (CI.C).
- Acquire, interpret and report on ultrasound examinations of the abdomen and pelvis (CI.C1).
- Plan interdisciplinary assessment of the health and wellbeing of individuals (CHS52).
- Assess risks associated with health conditions (CHS46).
- Establish a diagnosis of an individual's health condition (CHS40).
- The frequency and continued usage of intermittent catheterisation should be based on: symptom severity improvement.

Skills for Health

What you need to know

- How to undertake intermittent catheterisation.
- Possess an in-depth understanding of the effects of intermittent catheterisation and dilatation on the individual.
- Have an in-depth understanding of the different short and long-term risks, and the health implications associated with intermittent catheterisation/dilatation and how to resolve or minimise these.

- Possess an in-depth understanding of the clinical decisions and method/s required to terminate the usage of intermittent catheterisation/dilatation in an effective and safe manner.
- Possess an in-depth understanding of how individuals should risk assess themselves and how this will influence their self-care.
- Have an in-depth understanding of how to minimise any unnecessary discomfort during and after the procedure, being aware of privacy and dignity.
- Be able to assess the individual's ability to perform self-catheterisation.
- Should explain and demonstrate the relevant aspects of self-catheterisation.
- Enable individuals to develop the necessary skills and actions to carry out intermittent self-catheterisation, safely and correctly.
- Should maintain the comfort and dignity of the individual during and post procedure.
- Always review the continued need and frequency of self-catheterisation (with all its associated risks) with the symptom improvement, quality of life indicators and volumes drained via catheter.
- Review the support required for individuals to successfully continue with ISC on a long term basis.
- Recognise when to stop the catheterisation/ intermittent catheterisation in case of bleeding/complications, and to seek help.

Intermittent catheterisation – the Gold Standard

Intermittent catheterisation is considered the Gold Standard for urine drainage (NICE, 2015). It can be used as treatment for voiding problems due to disturbances or injuries to the nervous system, non-neurogenic bladder dysfunction or intravesical obstruction with incomplete bladder emptying. In a hospital setting, intermittent catheterisation is often used for diagnostic evaluation (for example, to obtain a sample or to facilitate urodynamics (NICE, 2015)).

As with any urethral catheterisation, intermittent catheterisation is contraindicated if the patient is experiencing priapism, suspected urethral tumours or injury urethral. False passage, stricture and some diseases of the penis (such as injury, tumours or infection) can contraindicate intermittent catheterisation. Caution should be displayed with patients following prostatic, bladder neck or urethral surgery, female genital mutilation, and in patients with a stent or artificial prosthesis

Further information to support intermittent catheterisation

- Before commencing a patient on intermittent catheterisation, their symptom severity profile, renal function, risk assessment, psychological and physical ability to perform intermittent catheterisation and residual urine status must be considered. Do not initiate intermittent catheterisation based solely on the residual urine status.
- Intermittent catheterisation is preferable to an indwelling urethral or suprapubic catheter with patients who have a bladder emptying dysfunction or a spinal cord injury.
- With the usage of portable ultrasound equipment, HCPs can easily identify residual urine status and have the ability to initiate intermittent catheterisation as an intervention. It is imperative that the importance of cause is not over looked and that the patient receives further investigations or onward referral to reach a formal diagnosis.
- Intermittent catheterisation has a reduced infection rate when compared to indwelling catheters, although there still is a risk.
- Where a trial without catheter is unsuccessful, the HCP should, if appropriate, consider introducing the use of intermittent catheterisation.
- There is a reduced risk of infection.

Consent

When gaining consent from a patient to perform intermittent self-catheterisation, the following must be covered.

- Rationale for intermittent catheterisation.
- Information on lifestyle and disability.
- The procedure may be lifelong and performed several times each day.
- The positive benefits of intermittent catheterisation, including increased independence.
- The negative risks and common complications.
- The need for continual follow up and regular review.

Catheter choice

In helping patients to choose an intermittent catheter, HCPs should be aware of:

- the types available
- the value of previous user feedback
- lifestyle needs
- clinical evidence base, quality assurance and support
- catheters that have infection reducing properties, for example 'no touch'
- additional features, such as integral drainage bags
- cost effectiveness
- user-friendly aspects of design.
- local formulary.

Catheter samples

In using catheter samples, the HCP:

- must use them only for demonstration purposes
- may use them to inform patient choice

- must not use them in actual catheterisation (unless the company concerned takes vicarious liability).
- must not give them to patients for insertion unless the company concerned takes vicarious liability.

Teaching intermittent catheterisation

When teaching a patient the procedure of intermittent catheterisation, the following must be considered.

- Intermittent catheterisation is best taught by a competent experienced specialist HCP with the relevant communication skills.
- Exclusions to intermittent catheterisation include cognitive impairment and lack of consent.
- Assess the likely level of motivation and compliance with intermittent catheterisation.
- Increased support and follow up may be necessary, particularly in the early stages, to ensure long term compliance.
- Motivational factors for intermittent catheterisation, such as improved quality of life, symptom improvement, reduced risks.
- Explain the anatomical and physiological aspects of self-catheterisation, with the help of visual aids.
- Carry a wide range of samples to ensure the patient has choice. Choice is important to ensure product suitability to individual patient needs and lifestyles. Local formulary may be available in some areas.
- Demonstrate the features, size, preparation, lubrication and handling of the intermittent catheter.
- Use models to demonstrate catheter insertion and removal.
- All products must be used in line with the manufacturer's guidelines.
- Intermittent catheterisation should be taught in a safe environment, with the patient sitting or lying or standing, depending on patient choice and ability.
- Teaching must be in an environment that offers a minimum risk of cross infection.
- Genital and hand hygiene should be supervised prior to insertion and removal.
- Aids and devices, such as mirrors, leg dividers and grips, should be discussed where appropriate.
- It is acceptable for the patient to use a clean technique (EUAN, 2013)
- The process of catheterisation, and product used, should be adapted depending on the patient's lifestyle and daily activities.
- Observe the patient post-intermittent catheterisation (particularly if this is a first-time catheterisation) as decompression of the bladder may cause bleeding and/or shock. To avoid this occurring the residual urine should be assessed by a bladder scan prior to undertaking the first catheterisation.
- All equipment must be disposed of appropriately and according to local waste disposal policy.
- Advice should be provided on how to transport catheters for daily usage outside of the home environment.
- Understand there are various ways to obtain a supply of equipment: from GP dispensing practices, high street pharmacists and dispensing appliance contractors.
- Offer patients supporting information and signpost to: learning programmes, literature, websites, classes, meetings (patient support groups), and recommend organisations and help lines.

It is unlikely that a patient (or a carer if performing the procedure) will become competent in intermittent catheterisation with one interaction. Appropriate support and products are crucial to long term concordance with ISC. Several sessions are required, over a period of time, to support learning, problem solving, and to review experiential learning and related habits. The patient will then require follow up and review depending on need.

Patients should be taught how to deal with common complications associated with intermittent catheterisation. These include:

- signs and symptoms of a urinary tract infection
- colonisation
- bleeding
- false passage
- difficult insertion or removal
- how to manage multi-resistant bacterial invasion
- how to initiate unscheduled care for urgent catheter-related needs.

Frequency and use

The frequency and continued usage of intermittent catheterisation is based on:

- symptom severity improvement
- quality of life and lifestyle indicators
- volumes drained related to times of urinary output
- clinical requirement
- renal function.

During periods of urinary tract infection, increased intermittent catheterisation may be needed, not a reduction or withdrawal of catheter use. A risk assessment should be undertaken to determine the risks associated with increased catheterisation in such circumstances.

13. Catheter care review and follow up

All aspects of urinary catheter care require regular review

Knowledge and understanding

- Obtain valid consent or authorisation (CHS167).
- Plan the assessment of an individual's health status (CHS38).
- Plan the interdisciplinary assessment of the health and wellbeing of individuals (CHS52).
- Assess an individual's health status (CHS39).
- Support individuals in undertaking desired activities (GEN15) and enable carers to support individuals (GEN20).
- Inform an individual of discharge arrangements (GEN16), contribute to the discharge into the care of another service (GEN17) or discharge and transfer individuals from a service of your care (GEN28).
- Interact with individuals using telecommunications (GEN21).
- Minimise the risk of spreading infection by cleaning, disinfecting and maintaining environments (IPC1).
- Perform hand hygiene to prevent the spread of infection (IPC2).
- Minimise the risk of spreading infection by cleaning, disinfecting and storing care equipment appropriately and in line with manufacturers' guidance (IPC4).
- Use personal protective equipment to minimise the risks of exposure to blood and body fluids while providing care only (IPC5).
- Perform hand hygiene when indicated to reduce the risk of transmission of infection and wear gloves only when indicated (IPC3).
- Remove, clean and disinfect spillages of blood and other body fluids to minimise the risk of infection (IPC3).
- Minimise the risks of spreading infection when handling used linen (IPC11).
- Enable individuals to make informed health choices (PE1).
- Manage information and materials for access by patients and carers (PE2).
- Work with individuals to evaluate their health status and needs (PE3).
- Agree a plan to enable individuals to manage their health condition (PE4).
- Develop relationships with individuals to help support them in addressing their health needs (PE5).
- Identify the learning needs of patients and carers to enable management of a defined condition (PE6).
- Enable individuals to manage their defined health condition (PE8) by providing advice and information to individuals on how to manage their own condition (GEN14).
- Collate and communicate information to individuals (GEN62).
- Develop learning tools and methods for individuals and groups with a defined health condition (PE7).

Skills for Health

What you need to know

- How to competently assess and review a patient's catheter care.
- The importance of ensuring any individual with a urinary catheter has a completed care plan in all care settings.
- The importance of patient/carer catheter care education, scheduled catheter changes and forward planning for catheter care and/or removal.
- The reasons for scheduled and unscheduled catheter care reviews.

- What methods to undertake to assess the function of a urinary catheter.
- National and local guidance and policy for urinary catheter and catheter care.

Indwelling urinary catheterisation must only be used when clinically indicated and following an assessment and discussion with the patient. All other methods of management must be considered prior to catheterisation. A plan for removal of the catheter must be made at the point of catheter insertion and reviewed regularly.

A urinary catheter care review can include

- A review of the patient urinary catheter passport, if available in your area and/or catheter diary/care plan for monitoring changes and plan of ongoing management.
- A patient assessment which considers the clinical ongoing need for the urinary catheter and ensures no other alternative method or catheter is appropriate at the time of assessment.
- A clearly documented rationale for the continuing use of a urinary catheter, with a forward plan.
- The patient's current health status, inclusive of long-term conditions, medical and surgical history, medications and allergies. Also consider the health of the patient's bladder.
- Considering the psychological implications of catheterisation: how is the patient coping with the catheter, how do they feel about having a urinary catheter? Does the catheter impact on their lifestyle and quality of life? Discuss any concerns, such as the potential impact on employment and home life (including sexual activity, sports and recreation, body image and confidence, socialising, travel and holidays). Provide support, reassurance and information to the patient.
- Reviewing the patient's understanding and compliance with their catheter care. Ensure the patient is following the manufacturer's guidance when independently caring for their catheter. Confirm all single use equipment is only used once and discarded following local infection control policy. The products must not be washed out and reconnected. Review frequency of the catheter drainage system changes and if this is appropriate. Check leg/night bag and valve changes are in line with manufacturer's guidance. Discuss bag or valve emptying routines and educate the patient if needed to support infection control.
- Discussing the patient's meatal hygiene practices, ensure the patient/carer is aware that after washing a male, the foreskin must be returned to its usual position to avoid paraphimosis.
- Reviewing the patient's daily fluid intake inclusive of fluid type, the patient's knowledge and health belief regarding daily intake and its appropriateness. Review the 24-hour urine output, urine colour, visual sediment etc.
- Reviewing bowel activity and relationship to the catheter function, stool type (Bristol stool chart) amount passed and how frequently.
- Reviewing the patient's compliance and capability to care independently for their catheter and dependence status.
- Understanding the roles of health care workers and review the appropriateness of those involved; inclusive of community nurses and matrons, urologists and specialist nurses.

Reviewing the risk of infection

The following should be considered.

- Preventing infection. Maintain a closed urinary drainage system as it is essential to avoid the patient acquiring a catheter-associated urinary tract infection (CAUTI). Review any need for breaches in the closed system as part of catheter care assessment. The frequency of drainage bag emptying, catheter valve opening and obtaining a urine sample, increases the risk of CAUTI and must be avoided. The patient/carer or HCP must be educated to only initiate a break in the closed system to empty the drainage bag when three quarters full. The catheter valve

may require opening every three to four hours, depending on the fluid intake of the patient. Urine samples must only be obtained when clinically indicated using the sample port and an aseptic technique.

- Clinical indicators for a urinary tract infection (UTI) are pyrexia, tachycardia, abdominal pain and changes in the urine, such as colour and odour. A specimen for culture and sensitivity should only be obtained if a clinical indication of infection is suspected, and not 'just in case', as all urine from a catheterised patient will contain bacteria. The presence of bacteria does not always indicate infection. For patients over the age of 65 years, asymptomatic bacteriuria is common and unnecessary antibiotic use must be avoided.
- Classical symptoms of UTI should not be relied upon for patients with a urinary catheter. Antibiotics will not eliminate asymptomatic bacteriuria in patients with indwelling catheters. A urine dipstick is not an effective method for detecting infection for adults with an indwelling catheter. If a urine sample is required, it must not be obtained from the catheter drainage bag. A sample should be taken via the sampling port as a result of an aseptic procedure. The risk of CAUTI increases the longer the urinary catheter remains in place, therefore the catheter must be removed as soon as it is no longer required.

Antibiotics

Review current treatments and interventions, such as antibiotics and always follow local antibiotic policy. Antibiotics should only be prescribed for a symptomatic patient with confirmed urinary tract infection to ensure appropriate treatment is prescribed where possible. Antibiotics do not eliminate asymptomatic bacteriuria in a urinary catheterised patient. Treatment with antibiotics should only be prescribed if the patient is systematically unwell or pyelonephritis is suspected.

Patients receiving IV (intravenous) antibiotics require a review of treatment within 48 to 72 hours in all care settings. This assessment determines the need for continued IV treatment or, if suitable and required, treatment can be switched to oral antibiotics (*Start Smart – then Focus*, PHE (2015)).

HCPs must consider the side effects of antibiotics which may cause catheter-related complications. Side effects include: abdominal pain, bloating, diarrhoea and constipation. Exposure to antibiotics can also increase the risk of other infections such as *C. difficile*. Increasing resistance of *E. coli* bacteria to first line antibiotics is an increasing cause of concern.

Prophylactic use of antibiotics

Prophylactic use of antibiotics is not recommended for routine use against infective endocarditis when changing a urinary catheter. Prophylactic antibiotic use to avoid symptomatic UTI for patients with long-term catheter use is not recommended. There is no supportive evidence that prophylactic antibiotics are beneficial. However, they could be used for patients with long-term catheters if they have a history of recurrent or severe urinary tract infection.

Catheter care equipment review

Assess the catheter equipment being used. Does it remain appropriate for the patient? Is the equipment being stored and disposed of correctly? Check the equipment is in date and it is licensed for use – some catheters are not licensed for suprapubic use.

Catheter size

Check the catheter size is the smallest gauge to meet the patient's needs, to reduce risk of bladder spasms, catheter bypassing and trauma.

- 12ch, 14ch or 16ch for male long-term use.
- 12ch or 14ch for female long-term use.
- 16ch or 18ch for suprapubic use in both male and females.
- Catheter length.
- Check the correct length of the catheter.
- A male standard length catheter used for men in all situations – a female catheter must never be used for a male patient.
- Male/standard length catheter is recommended for females in the following situations: bedbound, immobile, post operatively, emergency situations, critically

ill and clinical obesity.

- Female length catheters are recommended for ambulant female patients who are a reasonable weight.

Also check:

- the catheter material
 - the balloon size (should be 10ml, unless following prostatic surgery)
 - there is a clear rationale for not using a catheter valve – the patient must be educated on the long-term implications when not using a valve
 - the capacity of the urine bag – day and night bag
 - any complications relating to wearing products or accidental disconnection
 - supply issues, stock levels and safe storage
 - correct emptying techniques are being used
 - correct changing techniques are being used
 - correct disposal techniques of urine and equipment are being used – follow local disposal of waste policy.
- size) to ensure the correct position and appropriateness of equipment and use
 - if the support system and drainage system need a check to ensure they are effective and suitable for the patient and avoid traction trauma
 - and assess the entry site of the catheter for sores and inflammation, traction trauma, over granulation, bleeding or discharge – a swab may be required
 - if there are signs of pressure damage or a reaction to any of the equipment. Assess the general health of the genital area
 - and discuss meatal hygiene and general hygiene with the patient or carer to avoid introduction of bacteria around the catheter site. Male patients with a foreskin must gently pull the foreskin back to cleanse the area (the foreskin must be returned to its usual position after cleansing to avoid paraphimosis).

Assess and discuss incontinence (urinary and faecal). If containment products are in use, this can impact on the catheter function and cause catheter complications.

Catheter-associated complications review

Consider and discuss any complications the patient is experiencing. Complications include: bypassing, discomfort or pain, bleeding, painful erections, blocked catheter, infection, insertion and removal problems, history of difficult catheterisation, meatal soreness, bladder and meatal erosion, stone formation and catheter rejection. Consider:

- the severity and frequency of the complications, any triggers that cause the complication (such as physical activity)
- if the complications are of a serious nature
- what interventions have been implemented to prevent or to treat the complications and how effective have they been?
- the catheter position (type of catheter and

14. Patient education

Knowledge and understanding

- Enable individuals to make informed health choices and decisions (PE1).
- Manage information and materials for access by patients and carers (PE2).
- Work with individuals to evaluate their health status and needs (PE3).
- Agree a plan to enable individuals to manage their health condition (PE4).
- Develop relationships with individuals that support them in addressing their health needs (PE5).
- Identify the learning needs of patients and carers to enable management of a defined condition (PE6).
- Enable individuals to manage their defined health condition (PE8).
- Provide advice and information to individuals on how to manage their own condition (GEN14).
- Collate and communicate information to individuals (GEN62).
- Develop learning tools and methods for individuals and groups with a defined health condition (PE7).

Skills for Health

What you need to know

How to educate individuals using catheters in relation to lifestyle advice, maintaining catheter function, reducing infection, what to do in the event of problems with equipment and how to deal with common complications.

People with catheters should also be supported to understand best practice on the indications for the need and use of antibiotics as part of broader antimicrobial stewardship programmes in health and care settings.

National Occupational Standards

Guidance and information – HCP role

It is important to provide patients or carers with clear instruction and advice. This should cover:

- hand hygiene (indications and technique)
- how to change bags/valves and the timescale for doing this
- the use of a catheter restraining strap
- guidance on good fluid intake; urine colour should be pale, clear yellow in most cases
- creating and maintaining good bowel habits
- cleaning of perineal area from front to back, to include under foreskin (but ensure this is rolled back to prevent complications)
- how to obtain catheter associated products, store and dispose of them
- common complications and where to seek advice
- information on the catheter passport – ensure patients know it is their property and they should take it with them to any health care setting.

Possible complications

Paraphimosis

Paraphimosis is a urological emergency in which the retracted foreskin of an uncircumcised male cannot be returned to its normal anatomic position. It is important for clinicians to recognise this condition promptly, as it can result in gangrene and amputation of the glans penis.

Paraphimosis can often be effectively treated by manual manipulation of the swollen foreskin tissue. This involves compressing the glans and moving the foreskin back to its normal position, perhaps with the aid of a lubricant, cold compression and local anaesthesia – as necessary. If this fails, the tight oedematous band of tissue can be relieved surgically with a dorsal slit or circumcision.

Urethral erosion

This is usually found in patients with long-term catheters that have not been secured correctly; the degree of erosion can vary. The erosion is usually secondary to catheter tension on the distal urethra at the meatus. The way the catheter is secured should be alternated to prevent prolonged tension or pressure at an individual site.

15. Catheter maintenance solutions, bladder washouts and irrigation

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

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

Bladder irrigation

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

Bladder washouts

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

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

- Consider using an irrigation connection device (inserted into the needle-free sample port of the catheter bag) to minimise the risk of infection caused by breaking the closed drainage system.

Catheter maintenance solutions

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

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

- Have all other less risky options been considered first to maintain the patency of the catheter? (See Appendix 3 for an example of this.)
- An individual risk assessment.
- Clear rationale for use is documented.
- Frequency of administration should be according to severity and manufacturer's instructions.
- Always use sterile gloves and ensure an aseptic technique procedure is followed.
- Warm solution to room temperature.
- Consider use of closed irrigation administration set to minimise infection risk.
- Leave solution in situ in line with manufacturer's instructions.
- Record the effectiveness of the intervention each time.

Types of catheter maintenance solutions

- Normal saline – mechanical removal of small clots, debris, tissue etc. Not effective for encrustation. Use as required.

- 3.23% citric acid – dissolves crystals formed by urease producing bacteria. Contains magnesium oxide to protect the bladder. Use once weekly, up to a maximum of twice daily (depending on severity of symptoms). Instil for 5 to 10 minutes in the bladder.
- 6% citric acid – stronger solution, effective in severe encrustation and dissolves persistent crystallisation in the bladder or catheter. Can also be used prior to catheter removal to prevent trauma. Use once a week, up to a maximum of twice a day (depending on severity of symptoms). Instil for 5 to 10 minutes in the bladder (5 to 10 minutes prior to removal of a catheter).

When considering the use of any instillation, HCPs should consider the clinical rationale, evidence and manufacturer's advice before commencing. A clear clinical rationale must be documented and reviewed regularly.

Anti-microbial catheter inflation solution

Clinical evidence suggests that many catheter encrustations are caused by *Proteus mirabilis*. Using Triclosan in the catheter balloon inflation solution has been shown to improve the patency of the catheter and improve the patient experience.

The use of antimicrobial catheter inflation solutions was licensed in the UK in 2016, although clinical evidence of its use in the wider European health care system has been documented for several decades. NICE issued a Medtech innovation briefing in 2017 on the use of Triclosan (NICE, 2017). It is a potential aid for the treatment of problematic catheters and can be considered by the HCP responsible for catheter management.

16. Infection control and catheter care

Knowledge and understanding

- Minimise the risk of transmission of infection by cleaning, disinfecting and maintaining environments (IPC1).
- Minimise the risk of transmission of infection by cleaning, disinfecting (if necessary) and storing all equipment (IPC4).
- Perform hand hygiene to prevent the spread of infection (IPC2).
- Use of personal protective equipment appropriately to protect HCP from the risk of infection from blood/body fluids (IPC6).
- Clean, disinfect and remove spillages of blood and other body fluids to minimise the risk of infection (IPC3).
- Minimise the risk of spreading infection when storing and using clean linen (IPC12).

Skills for Health

What you need to know

- Knowledge of the causes of urinary tract invasion from bacteria and how to minimise this in all care settings.
- Knowledge of the importance of applying standard precautions for the prevention of infection and the potential serious life-threatening consequences of poor practice.
- Knowledge of how to meet standards of environmental cleanliness in the area where catheterisation is to take place, to minimise the infection risk.
- Knowledge of when to undertake urinalysis and obtain a catheter specimen of urine (CSU).
- How to perform an aseptic technique.

National Occupational Standards

General principles of catheter care

- Gloves should only be worn if indicated – eg to avoid contact with blood/body fluids.
- Hands should be washed/decontaminated before and after attending to a catheter or performing catheter care or removal of gloves.
- Meatal care and observation are best undertaken during daily hygiene practices. Only soap and water are needed to maintain meatal hygiene.
- Drainage bags with taps must be emptied often enough to maintain urinary flow and prevent reflux.
- A separate container must be used for each patient and contact between the tap and the container avoided.
- Drainage bags should be changed when they become discoloured, contain sediment, smell offensive or are damaged. The HCP must consider the risk of too frequent changes as breaking the sterile system will increase the risk of infection.
- All drainable day and night bags must be changed at least every seven days, in line with manufacturer's guidelines. It should be noted some drainage bags are designed for longer use (up to 28 days for some belly bags).
- Never reuse, wash urine bags or reconnect them in any care setting, unless the manufacturer has put in writing that this is an acceptable practice and you have the resources and facilities to comply with this.
- Consider use of non-drainable bags.
- Antiseptic or antimicrobial solutions must not be added to drainage bags.
- Always challenge the need for catheterisation and catheter usage.
- Always review your own competence and challenge others where you have concerns.

- All staff involved in catheter care must be educated, trained and competent to manage urinary catheters.
- Observation and feedback to HCPS delivering catheter care is a high priority within nursing to help maintain high standards of care.
- A risk assessment is imperative prior to catheterisation in all care settings to determine the need for, or removal of, a catheter.
- Always consider the environment in which the catheterisation is to take place and the associated risk variance.

Defining a urinary tract infection

HCPs must understand the following terms and the associated implications for the care of the patient.

- Colonisation.
- Bacteriuria.
- Urinary tract infection (UTI).
- Catheter-associated urinary tract infection.
- Asymptomatic UTI.
- Symptomatic UTI.
- Uncomplicated UTI.
- Complicated UTI.
- Nosocomial UTI.
- Hospital acquired, community acquired UTI and the classification of each.
- Bacteraemia.
- Septicaemia.

HCPs must understand the aetiology of the following organisms.

- Escherichia coli (E. coli).
- Meticillin-Resistant Staphylococcus Aureus (MRSA).
- Extended spectrum beta-lactamases (ESBL).
- Clostridium difficile (C. diff).

- Carbapenemase Producing Enterobacteriaceae (CPE).
- Proteus mirabilis.

How and when to send a catheter specimen of urine (CSU)

All catheterised patients will have an abnormal urinalysis (NICE, 2015 [MIB 121]). Routine dipstick urinalysis testing on patients who regularly use intermittent self-catheterisation (ISC), or have an indwelling catheter, is therefore unnecessary and unreliable. Following a clinical assessment, if a patient has symptoms indicating a CAUTI, a CSU should be taken to determine the cause of infection. Urine samples must be obtained using an aseptic technique from a catheter sampling port and only if:

- clinical indication of infection is present
- the patient is not responding to antibiotic treatment.

Environmental and geographical risk areas

- Patients with poor health in nursing homes (where they require continuous nursing care and are grouped together) and older men are more likely to have a catheter.
- Orthopaedic units, particularly those wards grouping older people who are frail or have fractured femurs.
- Intensive care and high dependency areas, where the majority of patients will have a urinary catheter.
- Emergency departments, when the insertion of catheters is for emergency life-saving reasons and aseptic technique may be minimised or abandoned.
- In wards and departments where older people are being cared for and male patients (who are more likely to have a long-term catheter on admission) are grouped together in bays (as in single-sex accommodation).

Care of the patient with an infection

The presence of a urinary catheter places patients at increased risk of a CAUTI. People with CAUTI should be closely monitored to ensure the infection is treated appropriately due to the risk of sepsis if the infection is not resolved.

- If the patient is colonised or infected with a resistant organism, such as MRSA, they may undergo a programme of decolonisation and the catheter and drainage system should be changed (refer to local policy).
- Where possible, intermittent catheterisation by the patient may be of benefit and has less associated risks but is not risk free.
- Antibiotics should only be prescribed if the patient is systemically unwell and an infection is suspected following clinical assessment.
- Catheters should be changed as soon as possible when a bacterial infection has been confirmed or is suspected. The clinical evidence is limited, but expert opinion recommends this should be immediately (if the patient is stable and comfortable) or within 48 to 72 hours of starting antibiotic treatment European Association of Urology.
- Hand hygiene – hand washing or hand sanitisers.
- Use protective clothing (aprons and gloves) only when indicated as change between tasks or patient's as required.
- Staff should undertake clinical procedures when bare below the elbow.
- Trolleys and trays should be decontaminated and cleaned prior to individual procedures.
- Create a sterile field to maintain sterility of the procedure.
- Check all equipment sterilisation dates to ensure equipment is in date. Catheters, drainage bags and catheter valves have a shelf life of five years, pre-inflated catheters only three years; they must be discarded if out of date.
- Check the packaging of sterile items to ensure they are intact; discard if damaged.

Aseptic technique

Procedures which require an aseptic technique

- A catheter insertion.
- CSU or mid-stream urine (MSU) sample.
- Changing a catheter bag or valve.
- Administering any form of catheter management fluid instillation.

Broad principles of an aseptic technique

- The patient's area of the body is socially clean.
- Use sterile equipment where required (for example, urinary catheters and bags).

17. Catheter guidance for the end of life

Knowledge and understanding

- Assess bladder and bowel dysfunction (CC01).
- Obtain valid consent or authorisation (CHS167).
- Plan assessment of an individual's health status (CHS38).
- Assess risks associated with health conditions (CHS46).

Skills for Health

What you need to know

- To understand the role of catheterisation at end of life and the indications for catheter use.

There is a lack of evidence on the role of catheters at end of life/palliative care. The relaxation of the urethral sphincters of the bladder, causing urinary incontinence, can indicate approaching death. It is appropriate to use absorbent pads at this stage. However, if a full distended bladder or urinary retention is suspected, then prompt action of urethral catheterisation is needed before the patient becomes agitated or distressed.

It is important to note that retention can be a peripheral side effect of opioid medication.

Indications for urethral catheterisation at the end of life

- The management or prevention of wound damage (for example, sacral pressure ulcers, fungating wounds or soreness of the anus, perineum, vulva or penis).
- Painful physical movements due to frequent changes of bed linen caused by incontinence.
- Pain or difficulty for female patients getting in and out of bed to use a commode.
- Urinary incontinence associated with obstruction.

- Urinary retention/distended bladder – excessive oedema of the genitalia making micturition uncomfortable.

Catheterisation is an invasive procedure and it is important to explore alternatives. Consider which method of containment is best for the patient so they are able to maintain comfort, hygiene, dignity and wellbeing (especially if the patient is unable to give consent).

The benefits of inserting a urinary catheter at the end of life must outweigh any possible complications, such as catheter encrustation (leading to frequent changes) or bladder spasm (leading to pain and discomfort and possible catheter expulsion).

References and further reading

Indwelling catheters

- Acker N (2014) Reducing the risk of infection in indwelling catheterisation, *Journal of Community Nursing* 28(3): 28,30–32.
- Bardsley A (2017) How to remove an indwelling urinary catheter in female patients, *Nursing Standard* 31(19): 42–45.
- Clayton JL (2017) Indwelling Urinary Catheters: A Pathway to Health Care-Associated Infections, *AORN Journal* 105(5): 446–452.
- Davey G (2015) Troubleshooting indwelling catheter problems in the community, *Journal of Community Nursing* 29(4): 67–68,70,72,74.
- Fowler S, Godfrey H, Fader M, Timoney AG and Long A (2014) Living with a long-term, indwelling urinary catheter: catheter users' experience, *Journal of Wound, Ostomy and Continence Nursing* 41(6): 597–603.
- McGoldrick M (2016) Frequency for changing long-term indwelling urethral catheters, *Home Healthcare Now* 34(2): 105–106.
- Prinjha S and Chapple A (2014) Patients' experiences of living with an indwelling urinary catheter, *British Journal of Neuroscience Nursing* 10(2): 62.
- Shum A, Wong KS, Sankaran K and Goh ML (2017) Securement of the indwelling urinary catheter for adult patients: a best practice implementation, *International Journal of Evidence-Based Healthcare* 15(1): 3–12.
- Wilde MH, McMahon JM, Crean HF and Brasch J (2017) Exploring relationships of catheter-associated urinary tract infection and blockage in people with long-term indwelling urinary catheters, *Journal of Clinical Nursing* 26, 17–18: 2558–2571.
- Yarde D (2015) Managing indwelling urinary catheters in adults, *Nursing Times* 111(22): 12–13.
- Yates A (2016) Indwelling urinary catheterisation: what is best practice? *British Journal of Nursing* 25(9): S4–S13.
- Yates A (2017) Urinary catheters 6: removing an indwelling urinary catheter, *Nursing Times* [online] 113(6): 33–35.

Catheter associated infections

- Carter NM, Reitneier L and Goodloe LR (2014) An evidence-based approach to the prevention of catheter-associated urinary tract infections, *Urologic Nursing* 34(5): 238–245.
- Lu S-F; Yang W-J; Su H-W; Chou S-S (2016) The Effectiveness of Clinical Reminder System Applied to Reduce Catheter-associated Urinary Tract Infection in Critically Ills, *International Journal of Evidence-Based Healthcare* 14(4): 188–189.
- Magers TL (2013) Using evidence-based practice to reduce catheter-associated urinary tract infections, *American Journal of Nursing* 113(6): 34–42.
- Meddings J, Rogers MAM, Krein SL, Fakh MG, Olmsted RN and Saint S (2014) Reducing unnecessary urinary catheter use and other strategies to prevent catheter-associated urinary tract infection: an integrative review, *BMJ Quality and Safety* 23(4): 277–289.
- McCoy C, Paredes M, Allen S, Blackey J, Nielsen C, Paluzzi A, Jonas B and Radovich P (2017) Catheter-Associated Urinary Tract Infections *Clinical Journal of Oncology Nursing* 21(4): 460–465.
- McNeill L (2017) Back to basics: how evidence-based nursing practice can prevent catheter-associated urinary tract infections, *Urologic Nursing* 37(4): 204–206.
- Peate I and Gil M (2015) Closed and open catheter irrigation by a skilled and competent healthcare worker, *British Journal of Healthcare Assistants* 9(2): 71–76.
- Public Health England (2015) Stay Smart – Then Focus. *Antimicrobial Stewardship Toolkit for English Hospitals*, London: PHE.
- Richards B, Sebastian B, Sullivan H, Reyes R, D'Agostino JF and Hagerty T (2017) Decreasing catheter-associated urinary tract infections in the neurological intensive care unit: one unit's success, *Critical Care Nurse* 37(3): 42–48.
- Townsend T and Anderson P (2015) Decreasing the risk of catheter-associated urinary tract infections, *Nursing Critical Care* 10(6): 36–41.

Catheter solutions

Gibney LE (2016) Blocked urinary catheters: can they be better managed? *British Journal of Nursing* 25(15): 828.

Holroyd S (2017) A new solution for indwelling catheter encrustation and blockage, *Journal of Community Nursing* 31(1): 48,50–52.

Levers H (2014) Switching to an antimicrobial solution for skin cleansing before urinary catheterisation, *British Journal of Community Nursing* 19(2): 66,68–71.

Sandle T (2013) Using an antimicrobial skin cleanser before catheterisation, *Journal of Community Nursing* 27(5): 30–34.

HOUDINI

Adams D, Bucior H, Day G and Rimmer J-A (2012) HOUDINI: make that urinary catheter disappear - nurse-led protocol, *Journal of Infection Prevention* 13(2): 44–46.

Catheter gels

Farrington N, Fader M and Richardson A (2013) Managing urinary incontinence at the end of life: an examination of the evidence that informs practice, *International Journal of Palliative Nursing* 19(9): 449–456.

Farrington N, Fader M, Richardson A, Prieto J, Bush H (2014) Indwelling urinary catheter use at the end of life: a retrospective audit, *British Journal of Nursing* 23(9): S4, S6–10.

Farrington N, Fader M, Richardson A, Sartain S (2015) Exploring the role of practical nursing wisdom in the care of patients with urinary problems at the end of life: a qualitative interview study, *Journal of Clinical Nursing* 24(19-20): 2745.

Steggall M and Jones K (2015) Anaesthetic or lubricating gels for urethral catheterisation? *British Journal of Nursing* 24(Sup 9): S12–S14.

Williams C (2017) Making a choice of catheterisation gel and the role of chlorhexidine, *British Journal of Community Nursing* 22(7): 346–351.

Yates A (2015) Selecting gel types for urinary catheter insertion, *Nursing Times* 111(26): 18–20.

Encrustation problems

Gibney LE (2016) Blocked urinary catheters: can they be better managed? *British Journal of Nursing* 25(15): 828.

Holroyd S (2017) A new solution for indwelling catheter encrustation and blockage, *Journal of Community Nursing* 31(1): 48,50–52.

Marchitti CM, Boarin M and Villa G (2015) Encrustations of the urinary catheter and prevention strategies: an observational study, *International Journal of Urological Nursing* 9(3): 138–142.

Fixation devices

Nazarko L (2016) Primum non nocere – how securement and fixation of indwelling urinary catheters can reduce the risk of harm, *British Journal of Healthcare Assistants* 10(1): 14–19.

Payne D (2014) Safe and secure: catheter fixation, *Nursing and Residential Care* 16(11): 608–610.

Spinks J (2013) Urinary incontinence and the importance of catheter fixation, *Journal of Community Nursing* 27(5): 24–29.

Wilson M (2016) Urinary catheter securement and fixation in residential care homes, *Nursing and Residential Care* 18(9): 476–479.

Yates A (2013) The importance of fixation and securing devices in supporting indwelling catheters, *British Journal of Community Nursing* 18(12): 588–90.

Yates A (2015) An essential part of catheter management, *Nursing and Residential Care* 17(2): 75–76.

Yates A (2015) Catheter securing and fixation devices: do they really matter? *Nursing and Residential Care* 17(9): 498–501.

Urinalysis and dipsticks

Bardsley A (2015) How to perform a urinalysis, *Nursing Standard* 30(2): 34–6

Dawson CH, Gallo M and Prevc K (2017) TWOC around the clock: a multimodal approach to improving catheter care, *Journal of Infection Prevention* 18(2): 57–64.

Turner N (2014) The invention of the dipstick: Test papers to dipsticks in 72 years, *Journal of Renal Nursing* 6(2): 99.

Catheters and sepsis

Eley R (2015) Cardboard versus sterile containers: more nitrite-positive urinalysis results? *British Journal of Nursing* 24(9): S4, S6–9.

Goveas B (2017) Urosepsis: A simple infection turns toxic, *Nurse Practitioner* 42(7): 53.

Melzer M and Welch C (2017) Does the presence of a urinary catheter predict severe sepsis in a bacteraemic cohort? *Journal of Hospital Infection* 95(4): 376–382.

Nelson JM and Good E (2015) Urinary tract infections and asymptomatic bacteriuria in older adults, *Nurse Practitioner* 40(8): 43–8.

Perry M (2013) Urinalysis – when, why and what does it mean? *Practice Nurse* 43(1): 14–17.

Trial without catheter

Dawson CH, Gallo M and Prevc K (2017) TWOC around the clock: a multimodal approach to improving catheter care, *Journal of Infection Prevention* 18(2): 57–64.

Gonzalez L and Sole ML (2014) Urinary catheterization skills: one simulated checkoff is not enough, *Clinical Simulation in Nursing* 10(9): 455–460.

Legislation

Data Protection Act (2018) The Stationery Office.

Mental Capacity Act (2005) The Stationery Office.

Other useful references

Dougherty L, Lister S and West-Oram A (Eds) (2015) *The Royal Marsden Manual of Clinical Nursing Procedures*, London: The Royal Marsden NHS Foundation Trust.

Geng V, Cobussen-Boekhorst H, Farrell J, Gea-Sánchez M, Pearce I, Schwennesen T, Vahr S, Vandewinkel C (2012) *Catheterisation. Indwelling catheters in adults – Urethral and suprapubic*, Arnhem: The Netherlands. <https://tinyurl.com/yanxhfsq>

Nursing and Midwifery Council (2015) The Code. Professional Standards of Practice for nurses, midwives and nursing associates, available at www.nmc.org.uk/standards/code London: NMC.

Royal College of Nursing (2016) *Female Genital Mutilation. An RCN Resource for Nursing and Midwifery Practice*, available at www.rcn.org.uk/professional-development/publications/pub-005447 London: RCN.

Royal College of Nursing (2018) *Older People in Care Homes: Sex, Sexuality and Intimate Relationships*, available at www.rcn.org.uk/professional-development/publications/pub-007126 London: RCN.

Appendix 1: Urinary catheter and related equipment

Catheter material

Latex

Polytetrafluoroethylene Teflon coated latex (PTFE)

Hydrophilic polymer coated

Hydrogel coated silicone

Silicone elastomer coated latex

Silver alloy

Antibiotic coated

Gel coated and PVC free

Drainage bags

Closed drainage system

Bedside drainage bag

Leg bag

Belly bag

Self-contained sterile system (for intermittent catheters)

Securing devices

Adhesive Foley catheter device

Catheter leg strap

Elasticated catheter fixation device

Foley anchoring device

Foley stabilising device

Leg bag sleeve

Appendix 2: Urethral catheterisation procedures for male and female patients

Urethral catheterisation procedure: male

This procedure has been adapted with kind permission from the *Royal Marsden Manual of Clinical Nursing Procedures* (2015) www.royalmarsdenmanual.com/productinfo and the *EAUN's Catheterisation Indwelling Catheters in Adults* (2012).

Essential equipment

Sterile catheterisation pack

Catheter(s)

Disposable pad

Sterile anaesthetic gel

Sterile gloves

Sterile water

Apron

Drainage bag

0.9% sodium chloride solution for cleansing (saline)

Attachment device

Stand/holder

Alcohol hand sanitiser

Universal specimen container

1. Explain/discuss the procedure with the patient including the consideration of a chaperone, and gain consent.
2. Prepare the patient, maintaining their dignity (procedure sheet underneath and underwear removed).
3. Clean and prepare the trolley, placing all equipment on the bottom shelf (having checked all expiry dates). Take the trolley to the patient's bedside.
4. Wash hands using approved technique or decontaminate using the hand sanitiser – put apron on.
5. Open catheterisation pack onto the trolley.
6. Using an aseptic non-touch technique, (ANTT) open the supplementary pack.

- Attach disposable bag onto side of trolley for waste disposal.
 - Slide the catheter and drainage bag from the packaging onto the sterile area.
 - If not in catheter pack, prepare 10ml of sterile water for injection and place this to the side of the sterile field.
 - Open the 0.9% sodium chloride and pour into gallipot.
 - Open but do not remove sterile anaesthetic gel from packaging.
7. Prepare the patient by removing the cover that is maintaining their dignity and place a procedure sheet underneath the patient.
 8. Decontaminate hands using hand gel or washing – apply sterile gloves.
 9. Place sterile towel across the patient's thighs, ensuring the scrotal area is covered. Place the receiver between the patient's legs.
 10. Wrap a sterile swab around the penis and with the same non-touch technique, retract the foreskin if present.
 11. Clean the urethral meatus with sterile saline – ensuring finger tips do not touch the glans penis.
 12. Position the penis at a 90° angle to the patient's thigh, extending the penis forward.
 13. Pre-installation – prime the syringe of the anaesthetic gel, then squeeze a small amount onto the tip of the urethra.
- Installation – place the tip of the syringe into the urethral opening and slowly insert all 11mls of the gel – remove the syringe and discard.
- Squeeze the penis and wait approximately 3 to 5 minutes (according to manufacturer's instructions) for the gel to take effect.
14. Remove used gloves – use hand sanitiser and put on second pair of sterile gloves.
 15. Remove catheter packaging from the end and attach the sterile drainage bag (optional).

16. Ensure the water for inflation of the catheter balloon is prepared and ready to use (unless catheter has prefilled device attached). Free packaging from the catheter tip
17. Re-position the penis at 90° and insert the catheter into the urethra for 15 to 25cm, ensuring the fingers do not touch the glans penis. If resistance is felt at the external sphincter, ask the patient to cough or strain gently as if trying to pass urine.
18. When urine begins to flow, advance the catheter a further 2 to 5cm.
19. Slowly inflate the balloon, according to the manufacturer's guidelines and observing the patient at all times – if discomfort is displayed stop and re-check the catheter's position. Withdraw the catheter slightly and check that it remains secure.
20. Ensure that the glans penis is clean and then reduce or reposition the foreskin.
21. Ensure patient is comfortable and dry.
22. Observe the colour and measure the amount of urine drained – collect sample if required.
23. Retain the sticky labels from the catheter packaging and dispose of equipment, including apron and gloves. Secure the drainage system to the patient; consider their individual needs using either:
 - adjustable leg bag straps
 - thigh strap device
 - leg bag sleeve.

Ensure that the catheter tubing does not become taut when the patient is mobilising. Ensure that the patient's clothing has been repositioned and is comfortable.
24. Wash hands using soap and water, then dry thoroughly using paper towels. Record essential information in the patient's documentation:
 - reason for catheterisation
 - informed consent
 - name of the person inserting or changing the catheter
 - date and time of catheterisation
 - type of catheter – including manufacturer, material, batch number and expiry date (use manufacturer's catheter sticker)
 - size and length of catheter
 - type of sterile anaesthetic/lubricating gel used
 - volume of sterile water used in the balloon
 - name, size and type of drainage system used
 - problems encountered at the time of the procedure, including difficulties specific to the individual
 - if patient leaflet discussed and evidence of the care instructions given to the patient or carer.

Complete catheter documentation and include the planned date of review and catheter change.

Urethral catheterisation procedure: Female

This procedure has been adapted with kind permission from the *Royal Marsden Manual of Clinical Nursing Procedures* (2015) www.royalmarsdenmanual.com/productinfo and the *EAUN's Catheterisation Indwelling Catheters in Adults* (2012).

Essential equipment

Sterile catheterisation pack

Catheter(s)

Disposable pad

Sterile anaesthetic gel

Sterile gloves

Non-sterile gloves

Sterile water

Apron

Drainage bag

0.9% sodium chloride solution for cleansing (saline)

Attachment device

Stand/holder

Alcohol hand sanitiser

Universal specimen container (only required if clinical assessment identifies need for laboratory analysis)

1. Explain/discuss the procedure with the patient, including the consideration of a chaperone, and gain consent.
2. Prepare the patient, maintaining their dignity (procedure sheet underneath and underwear removed).
3. Clean and prepare the trolley, placing all equipment on the bottom shelf (having checked all expiry dates). Take the trolley to the patient's bedside – put apron on.
4. Wash hands using approved technique or decontaminate using the hand sanitiser.
5. Open catheterisation pack onto the trolley.
6. Using an aseptic non-touch technique, open the supplementary pack.
 - Attach disposable bag onto side of trolley for waste disposal.
 - Slide the catheter and drainage bag from the packaging onto the sterile area.
 - If not in catheter pack, prepare 10ml of sterile water for injection and place this to the side of the sterile field.
 - Open the 0.9% sodium chloride and pour into gallipot.
 - Open, but do not remove, sterile anaesthetic gel from packaging.
7. Prepare the patient by removing the cover that is maintaining their dignity and place a procedure sheet underneath the patient.
8. Decontaminate hands using hand gel or washing – apply sterile gloves.
9. Place sterile towel across the patient's thighs and place the receiver between the patient's legs.
10. Using the sterile swabs, part the labia minora so that the urethral meatus can be seen –

one hand should be used to maintain labial separation until catheterisation is completed.

11. Clean around the meatus with sterile saline – use separate single downward strokes (firstly the labia majora, then the labia minora and then the urethral meatus).
12. Pre-installation – prime the syringe of the anaesthetic gel, then squeeze a small amount onto the tip of the urethra.

Installation – place the tip of the syringe into the urethral opening and slowly insert all 6mls of the gel – remove the syringe and discard.

Wait approximately 3 to 5 minutes (according to manufacturer's instructions) for the gel to take effect.

13. Remove used gloves – use hand sanitiser to decontaminate hands and put on second pair of sterile gloves.
14. Remove catheter packaging from the end and attach the sterile drainage bag (optional)
15. Ensure the water for inflation of the catheter balloon is prepared and ready to use (unless catheter has prefilled device attached). Free packaging from the catheter tip.
16. Introduce the tip of the catheter into the urethral orifice in an upward and backward direction. Advance the catheter until 5 to 6cm has been inserted.
17. When urine begins to flow advance the catheter a further 2 to 5cm.
18. Slowly inflate the balloon according to the manufacturer's guidelines, observing the patient at all times – if discomfort is displayed stop and re-check the catheter's position. Withdraw the catheter slightly and check that it remains secure.
19. Ensure that the meatal area is clean and that the patient is comfortable and dry.
20. Observe the colour and measure the amount of urine drained – collect sample if required.
21. Retain the sticky labels from the catheter packaging and dispose of equipment, including the apron and gloves. Secure the drainage system to the patient; consider their individual needs using either:

- adjustable leg bag straps
- thigh strap device
- leg bag sleeve.

Ensure that the catheter tubing does not become taut when the patient is mobilising. Ensure that the patient's clothing has been repositioned and is comfortable.

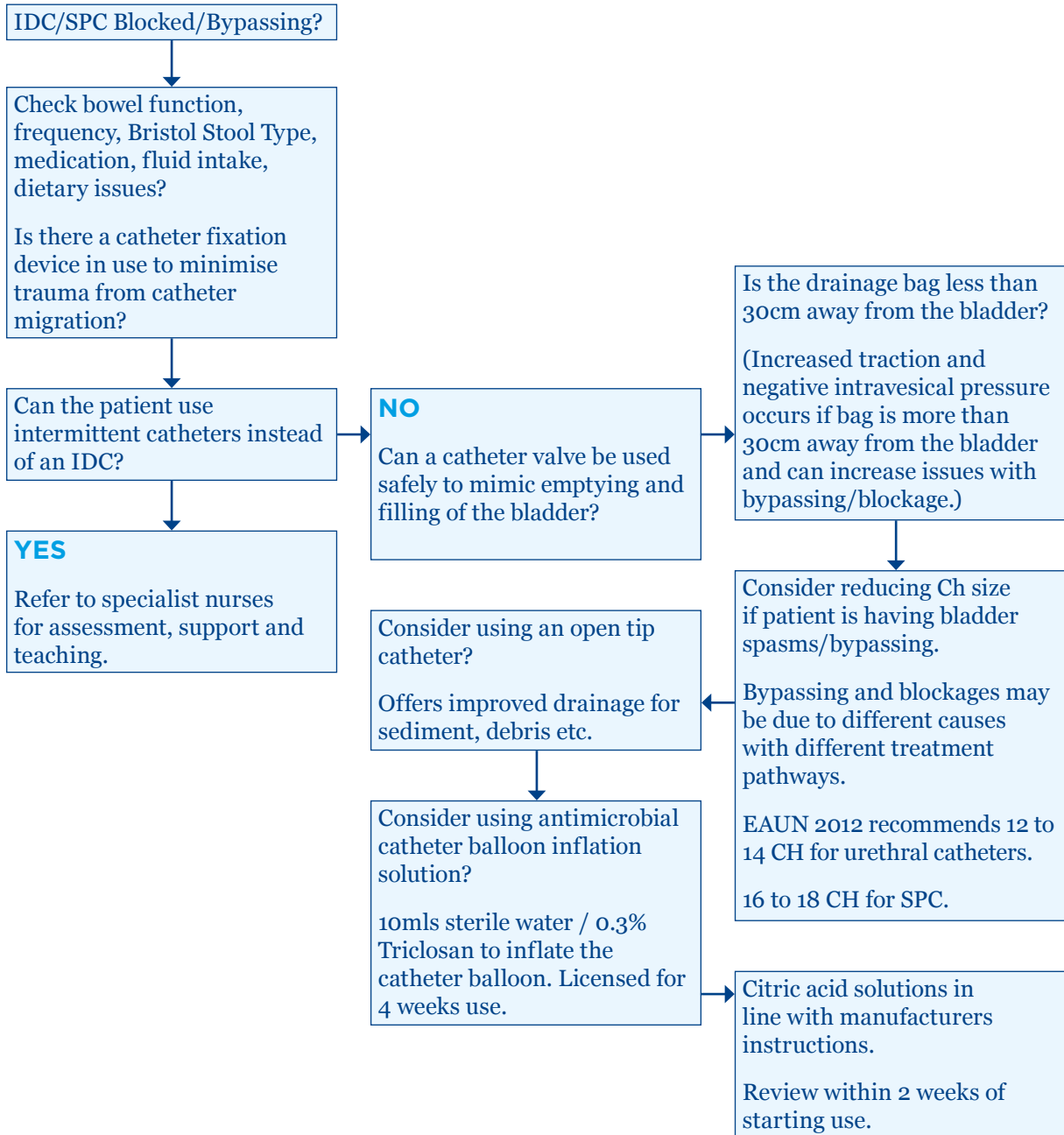
22. Remove PPE, dispose of waste in line with local policy. Wash hands using soap and water, then dry thoroughly using paper towels.

Record essential information in the patient's documentation:

- reason for catheterisation
- informed consent
- name of the person inserting or changing the catheter
- date and time of catheterisation
- type of catheter – including manufacturer, material, batch number and expiry date (use manufacturer's catheter sticker)
- size and length of catheter
- type of sterile anaesthetic/lubricating gel used
- volume of sterile water used in the balloon
- name, size and type of drainage system used
- Problems encountered at the time of the procedure, including difficulties specific to the individual
- if patient leaflet discussed and evidence of the care instructions given to the patient or carer.

Complete catheter documentation and include the planned date of review and catheter change.

Appendix 3: Guidance at a glance - urinary catheters



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