

For Use in:	All clinical areas of the Trust
Ву:	Any clinical staff who are deemed competent to carry out urethral catheterisation <i>and</i> have been taught how to teach patients intermittent self- catheterisation
For:	Patients who have been assessed to be suitable to learn clean intermittent self-catheterisation (CISC)
Division responsible for document:	Surgical Division
Key words:	Self-catheterisation, urethral catheterisation
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Date of approval:	20/09/2017
Ratified by or reported as approved to (if applicable):	Clinical Standards Group and Clinical Safety and Effectiveness Sub-Board
To be reviewed before: This document remains current after this date but will be under review	20/09/2020
To be reviewed by:	Ruth Broom
Reference and / or Trust Docs ID No:	1071
Version No:	3
Description of changes:	Added catheter passport and references updated
Compliance links: (is there any NICE related to guidance)	None
If Yes - does the strategy/policy deviate from the recommendations of NICE? If so why?	N/A

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Rationale

Clean intermittent self-catheterisation (CISC) is the intermittent insertion of a catheter into the bladder by the patient in order to assist drainage of the urine when normal voiding is not possible. This is a clinically clean procedure undertaken by the patient.

CISC is the gold standard in bladder management. The purpose of the guideline is to ensure that patients are appropriately assessed for their suitability to undertake CISC, are properly taught and receive psychological support, both to motivate them and to overcome their anxieties.

Nurses teaching intermittent self-catheterisation (CISC) <u>must</u> have been taught how to teach patients.

Definitions

Urethral stricture / stenosis

Urethral strictures are either a single or multiple narrowing(s) along the length of the urethra and are more common in men than in women.

Bladder neck stenosis

Abnormal narrowing of the bladder neck.

Dilatation

Dilatation refers to the condition of an anatomical structure being dilated beyond its current dimensions.

Urinary retention

Acute retention of urine is defined as a painful, palpable or percussable bladder, when the patient is unable to pass urine.

Chronic retention of urine is defined as a non-painful bladder, which remains palpable or percussable after the patient has passed urine. Such patients may be incontinent.

Post-void residual (PVR)

Post-void residual (PVR) is defined as the volume of urine left in the bladder **at the end of micturition.**

Bacteriuria

For a urine specimen collected by in and out catheter, a count of > 100 CFU/mL is consistent with bacteriuria. Symptomatic bacteriuria is a significant number of microorganisms in the urine that occurs together with urinary tract symptoms such as dysuria and fever. Asymptomatic bacteriuria is defined as a positive urine culture but with absence of symptoms

Catheter-associated urinary tract infection (CAUTI)

Catheter-associated urinary tract infection (CAUTI) is defined as bacteriuria or funguria with a count of more than 103 CFU/mL. [10]

Indications for intermittent self-catheterisation

It is important to acknowledge that CISC should only be performed in the presence of a residual volume AND symptoms or complications arising from this residual volume of urine. **IC should not be instituted on the basis of a post-micturition residual volume only.** There are generally three categories of lower urinary tract dysfunction requiring CISC according to the underlying reason for incomplete bladder emptying.

Detrusor dysfunction

With detrusor dysfunction (also known as detrusor failure or hypotonicity), an underactive detrusor or an atonic (or acontractile) detrusor, the detrusor muscle fails to contract for a sufficient duration and with sufficient magnitude to achieve complete bladder emptying. The patient is therefore left with a post-micturition residual volume of urine. The most common causes are neurological and/or idiopathic disorders, or being a lifetime infrequent voider.

Bladder outlet obstruction

With obstruction or blockage of the bladder outlet, complete bladder emptying is prevented by physical obstruction despite an adequately functioning detrusor muscle. The most common causes of this are prostatic enlargement, a high bladder neck or urethral stenosis in women. Urethral strictures in men may also cause bladder outflow obstruction and is most often found as a consequence of infection or post instrumentation e.g. following transurethral resection of the prostate (TURP), or radical prostatectomy (RP).

Post-operative

Operations aimed at restoring continence such as TVT or Botox instillations all carry a risk of impairing bladder emptying and hence carry a risk of needing to perform CISC in the event that any residual volume result in symptoms or complications. Acute urinary retention is also seen post-operatively especially when epidural anaesthetic is used.

• Procedures for stress urinary incontinence (SUI)

Procedures aimed at curing stress urinary incontinence (SUI) include Transobturator tape (TOT), Tension-free vaginal tape (TVT), colposuspension, fascial slings and bulking agents. These all work on the principle that by causing a certain degree of obstruction to the bladder outlet, SUI will be reduced or, hopefully, resolved. As a consequence, bladder emptying may be impaired, leading to a clinically significant residual volume of urine in some patients. In general, the risk increases from tapes (transobturator - TOT or tension-free vaginal tape - TVT) to colposuspension to fascial slings.

• Procedures for urgency urinary incontinence (UUI)

Procedures aimed at resolving urgency urinary incontinence (UUI) include Botox, Clam-cystoplasty and sacral neuromodulation. These all work on the principle that by reducing intravesical pressure and increasing functional bladder capacity, episodes of UUI will be reduced or resolved. As a consequence, the ability of the bladder to empty efficiently and completely could potentially be impaired, leading to a residual volume of urine that may result in symptoms and/or complications and hence require the use of CISC.

• Other procedures (e.g., Mitrofanoff)

Certain reconstructive procedures involve the creation of a purpose-built channel typically formed using non-terminal ileum, via which IC is performed to drain either the bladder, the augmented bladder, or a reconstructed neobladder. The Mitrofanoff principle involves the use of the appendix, refashioned non-terminal ileum (Monti procedure), or rarely, a Meckel's diverticulum to create a channel leading from the urinary bladder to the anterior abdominal wall. Typically, the bladder outlet is closed and the channel is tunnelled into the bladder such that there is a natural valve type effect on bladder filling, which causes the lumen of the channel to occlude to prevent unwanted urinary leakage. An intermittent catheter is then inserted to drain the bladder as and when required. Such procedures may be performed for a variety of conditions, including bladder exstrophy and neuropathic bladder, and post cystoprostato-urethrectomy.

Complications of high post-void residual

- Urinary Tract Infection
- Bladder Calculi
- Renal insufficiency or failure

- Patient discomfort
- Lower urinary tracts symptoms such as nocturia, frequency or urgency
- Incontinence

Summary of Indications for CISC

- 1. Incomplete bladder emptying
- 2. Neurogenic bladder
- 3. Outflow obstruction
- 4. Detrusor failure
- 5. Reflex incontinence
- 6. Urethral Stricture
- 7. Following certain urological surgery
- 8. Instillation of medication to the bladder
- 9. Prior to bladder surgery

Catheter material, types of catheters and equipment

Catheter material

Single-use medical devices have been under close scrutiny for several years; especially the choice of material. Many different requirements such as medical safety, treatment functionality and efficiency, patient comfort, and environmental performances must be considered. There is an increasing demand from the community for polyvinyl chloride (PVC)-free materials and their phthalate components in medical devices. According to REACH (EU chemical regulation), phthalates are harmful and hazardous to the human body. Products containing classified phthalates must be labelled according to the Medical Devices Directive (93/42/ECC) as of March 2010. Finding good alternatives to phthalates is a technical challenge, but some products phthalate-free alternatives are available.

Choice of catheter

Several types of catheter are available for carrying out CISC.

Single-use catheter without coating

Single-use sterile catheters without any equipment and no coating can be used with lubricants. Non-coated catheters are widely considered in the literature to cause an increase in urethral irritation, poor patient satisfaction, increased bacteriuria, and long-term urethral complications, although there is a lack of hard evidence to support this

Single-use catheter with coating or gel

Single-use sterile catheters with hydrophilic coatings, ready-to-use solution, with gel on the surface of the catheter or gel in the wrapping. As the name suggests, these catheters are designed for single use and are pre-coated to allow ease of insertion and removal, thereby reducing the risk of urethral mucosal irritation that can be more prevalent in an uncoated product. In catheters with a plastic sleeve or plastic grip, the sleeve/grip around the catheter is used as guide to introduce the catheter without touching it. There are many different types of single-use catheter available and choice depends on availability of the product, frequency of the patient needing to CISC (i.e. will they need to use catheters away

from home) manual dexterity and cognitive function, eyesight, body habitus, ease of use and patient preference.

Discreet / compact catheters

Some manufacturers offer a compact intermittent catheter that is a smaller size and therefore more discreet. The smaller packaging is more convenient and the products are sterile and for single use. The compact intermittent catheters are available in male and female versions. The female catheters are smaller than a standard writing pen, whereas the male version is less than half the size of a standard intermittent catheter. The compact products have the same coating / lubrication as the standard-length products. Both are easy to use, easy to dispose of, offer a simpler storage solution and can be used with a no-touch technique. Manufacturers that offer a compact style intermittent catheter also offer additional products such as drainage bags and easy to grip handles. (It is worth noting that in overweight females the shortest of the compact catheters may not be long enough to effectively drain the bladder).

Reusable catheters

Several studies have investigated the advantages and disadvantages of reusable catheters in the home setting where catheterisation is performed by patient or caregiver. These are catheters that are reused for between 5-7 days. There are some concerns in the literature over the efficacy and compliance with the cleansing techniques. The gold standard in hospital and residential settings remains a new sterile catheter, because of the risk of crossinfection. Available data on CISC does not provide convincing evidence that single or multiple use is superior for all clinical settings. This reflects the lack of reliable evidence rather than evidence of the absence of a difference. Currently, clinicians need to base decisions about which technique and type of catheter to use on clinical judgment, in conjunction with patients. Differential costs of catheters/techniques may also influence decision making.

Catheter sets

The above described catheters are mostly also available as catheter set or complete set; the lubrication is the same as in single catheters. The catheters are pre-connected with a urinary bag. Complete sets usually contain a catheter suitable for CISC, a drainage/reservoir bag to collect the urine, and a lubricant or activator such as water if the catheter is hydrophilic. These sets are ideal for use in confined spaces or restricted facilities such as aeroplanes, building sites, or extremely rural settings where access to toilet facilities may be limited. They are particularly useful for wheelchair users and those patients who catheterise from a seated or prone position.

Dilatation catheters

These are usually sterile hydrophilic coated single use catheters with NO drainage eyes. They are used for keeping the urethra patent in patients with strictures or who have had surgery to the urethra. Dilatation catheters will not drain the bladder. Shorter length meatal dilators are available for men who need only to dilate the meatus to avoid meatal stenosis, or to dilate a sub-meatal stricture. If the stricture is higher in the urethra then a full length dilatation catheter (40cm) will be needed.

For female patients with urethral stenosis usually a 14ch drainable catheter is used to provide dilatation.

Catheter length

Intermittent catheters are available in both male and female lengths (approx. 40 cm and 7-22 cm respectively) and also a paediatric length. There may be slight variation between manufacturers in these lengths and the discreet/compact female catheters are the shortest.

Catheter size

The external diameter of intermittent catheters is measured in millimetres and is known as the Charrière scale (Ch or CH) or French Scale (F, Fr or FG) which measures the circumference. Sizes range from 6 to 24. Female adult sizes are commonly 10-14 and male adult 12-14, although larger sizes are used for treating strictures and is usually a 16ch or larger. The choice of catheter size should be large enough to allow free flow of urine without causing damage to the urethra. Irrespective of the choice of product, the connection is universally coloured coded to denote the size of catheter

Frequency of catheterisation

Individualised care plans help identify appropriate catheterisation frequency, based on discussion of voiding dysfunction and impact on QoL, frequency–volume charts, functional bladder capacity, and ultrasound bladder scans for residual urine. Numbers of catheterisations per day vary; in adults, a general rule is "catheterising frequently enough to avoid residual urine greater than 500 mL", but guidance is also provided by urodynamic findings such as bladder volume, detrusor pressures on filling, presence of reflux, and renal function.

In the early days of establishing CISC, observation and management of bladder emptying and residual volume (including retention) are important to measure the urine volume drained to determine the frequency of CISC. Completing a voiding diary can be helpful to keep a record of the fluid intake, how much urine is voided independently (if any), frequency of catheterisation, and residual volume. The diary can then be used by the health professional, in consultation with the patient and caregiver, to decide whether amendment to the frequency of CISC is necessary.

- If the patient is unable to pass urine independently, they will usually require IC 4–5 times daily to ensure the bladder volume remains within 300–500 mL
- Excessive fluid intake increases the risk of over distension of the bladder and overflow incontinence
- <u>Incomplete emptying</u>: the regime is dependent on the post-micturition residual volume. For example, if the residual is 200mL, CISC should be performed 2 times per day. If the residual is 100mLs, CISC is required once per day. As the residual volume changes, the frequency of CISC should be adjusted

Stricture therapy regime of CISD

- Once daily CISD for two weeks
- Once daily on alternate days for two weeks
- Then reduce frequency by one day every two weeks until performing CISC only once a week
- The frequency can be further reduced if the urethra remains patent
- If problems are encountered passing the catheter, increase frequency of catheterisation for two weeks then re-commence regime

Patient selection and assessment

Not all patients with urinary symptoms are suitable candidates for CISC. Patients and/or caregivers need to be assessed with regard to their:

• General health status

This is necessary to determine if the patient is well enough to carry out CISC or whether they have other health problems that may be too burdensome for them to consider taking on CISC as an additional responsibility.

• Knowledge about the urinary tract

Patients need to have a basic knowledge of the urinary tract. In elderly women, mastery of IC is complicated by limited knowledge of their own bodies. In caregivers, long-term adherence to catheterisation can be influenced by fear of damaging the urinary tract. Therefore, teaching strategies for clean intermittent catheterisation should ensure that caregivers are familiar with the basic anatomy and function of the lower urinary tract.

• Ability to understand the information

The expert opinion of the working group is that in lower cognitive function it is important that a caregiver or health care provider accompanies the patient, and that written materials or pictograms are available. By asking the patient to repeat the training skills one can check whether the explanation has been understood. Sometimes more than one training session is needed and shorter follow-up can be helpful. Also, contacting a community nurse who can take care of these patients at home can be a solution. Sometimes an alarm watch (or mobile phone) can be helpful when patients have difficulties in remembering to perform CISC. For some the procedure is complex, especially at the start of the learning process. They have difficulty memorising the procedure, or lack organisational skills (correct sequence of the procedure, organising catheter materials). Adherence to a CISC regime can relate to knowledge, complexity of the procedure, misconceptions, and timing of the educational session. Obtaining the knowledge required and mastering the necessary skills are a real challenge to patients.

• Ability to perform the skill

Lack of motor skills (how to sit or stand in patients with neurological dysfunction, tetraplegia), fine motor skills (dexterity, limited hand function), and sensory skills (poor vision) can cause difficulties when learning or performing CISC. In particular, women can experience difficulties in finding the urethra and need to use a mirror prior to inserting the catheter. Special devices have been developed and when the patient is motivated, it is usually possible to succeed. Sometimes a caregiver or health care professional must be involved to perform CISC.

• <u>Compliance</u>

For patients to continue successfully to use IC as part of their daily routine, the procedure must be made as easy as possible. Some patients find learning the technique difficult and may discontinue because they find the task too burdensome. Convenience and speed of use are important factors because many people have to fit CISC into their busy lives. There are many factors that influence compliance, such as:

- Knowledge of the procedure and the body
- Complexity of the procedure
- Physical impairments
- Psychological factors
- Misconception
- Fears of negative effects of CISC
- Fear of lack of self-efficacy
- Embarrassment
- Resistance to the sickness role
- Availability of materials
- Timing of the educational session

Any of these factors can result in avoiding activities or non-adherence to prescribed IC. Good support from health care professionals can help patients to overcome their (initial) resistance. The services and information that patient organisations and peer counsellors can offer can increase compliance. Patients should be made aware of these possibilities. Often patient organisations have a relevant website or flyer. Health care professionals' communication skills and attitudes are instrumental in promoting confidence in carrying out the procedure and can promote long-term compliance.

• Need for psychological support

The psychological implications for people who need to learn and perform CISC, often pose the biggest challenge of this treatment. Therefore, for nurses to provide an effective service and to train and support people, it is important to explore and address the patients' psychological, emotional and practical needs, including correct communication, information giving, and attitudes. Effective communication, skills, and a positive attitude of nurses can help to alleviate patients' shock and embarrassment.

• <u>Motivation / emotional readiness</u>

Patients naturally feel anxious about learning any new technique, particularly something as invasive as CISC. It is important that the nurse undertaking the teaching programme gives the patient support and makes every effort to alleviate anxiety. The concept of CISC needs to be sold with enthusiasm.

- Point out the benefits: can reduce nocturia, frequency of micturition and incontinence
- Discuss the alternatives to CISC and their advantages and disadvantages. The alternatives will vary according to the clinical diagnosis but include an indwelling catheter, surgery, drugs or continuing with voiding difficulties

Nurses need to be aware that shock and embarrassment can occur with the patient, and investigating the needs and desires of the patient is of great importance. Recognising and responding to the patients' emotional reaction to learning to self catheterise can improve the patients' motivation, compliance, self-esteem and psychological wellbeing. Investigating the motivation of the patient is also important for successful assessment.

Fears of negative effects of CISC and lack of self-efficacy persist over time and can have a negative impact on long-term adherence. Patients perceive the combination of CISC and having an active social life as difficult and seem to choose from avoiding activities or non-adherence to prescribed CISC frequency. Some older patients tend to avoid situations that compromise adherence and some younger patients fight the difficult combination of CISC and their image of self, their independence, the routines they wish to maintain, and their intimate relationships. Young patients often have resistance to a sickness role. It has been suggested that psychological reaction of shock and embarrassment experienced initially by people carrying out CISC dissipates over time with good support from health care professionals.

- Availability to perform the procedure
 - As patients express a desire for privacy while performing catheterisation, this must be discussed with patient and caregiver. The preferred location for catheterisation, if given the choice, is at home. When the procedure is taught in hospital the patient's need for privacy must be met. Consideration should also be given to the availability of a washbasin for hand washing and lubricating the catheter. The patient and caregiver should be aware of contingency plans of who will perform CISC if the caregiver is unable due to illness or holidays, for example. Some patients, especially older people, find it difficult to perform CISC outside their own house, because they are afraid of poor hygienic sanitary conditions, and the risk of UTI because of this.

Full urodynamic studies are not always indicated but there should be some evidence of incomplete bladder emptying e.g. flow rate and post micturition ultrasound scan or urethral stricture.

Any patient being considered for CISC must undergo a full assessment to determine their suitability:

- The bladder must be able to store urine without leakage between catheterisations
- There must be an adequate sphincter mechanism
- The patient should be mentally alert, highly motivated and have sufficient manual dexterity and mobility

If the patient is unable to catheterise themselves, a carer may be taught if this is acceptable to both persons. This is a clinically clean procedure and the importance of good hand washing practice must be explained and demonstrated to the carer.

Programme of teaching

Teaching should always take place in relaxed, private environment. Patients should be given the following during teaching of CISC:

- An explanation of their individual bladder problems and the reasons for commencing CISC
- The risks of CISC such as UTI and trauma/haematuria
- The benefits of CISC such as reduction of symptoms, preservation of kidney function, potential for return of detrusor function and independent voiding
- A full explanation of their anatomy, with the aid of diagrams. Few patients have an accurate idea of their anatomy e.g. relationship of the urethra to various genital

organs

- Select appropriate catheter with the patient based on dexterity, ease of use, patient preference, frequency of CISC
- Hygiene the importance of correct hand washing
- Position to adopt to insert catheter. This should be chosen to suit individual needs.
 - Females: sitting on or standing over a toilet or bidet, standing with one leg on side of bath, squatting against a wall or lying with knees apart
 - Males: standing over a toilet, sitting on a toilet, sitting on a chair
- Potential problems they may experience:
 - UTI may develop if the catheter becomes contaminated or CISC is not frequent enough. Advise on fluid intake and reiterate the importance of hygiene. Advise on appropriate frequency of catheterisation
 - Describe the signs and symptoms of UTI and tell the patient to contact their GP if they develop these symptoms
 - Occasionally there may be a small amount of bleeding due to trauma or UTI. The patient should report this to their GP if it is excessive or persistent
 - Pain. This may occur initially and will tend to be worse if they are tense or anxious

Instructions to the patient when teaching the technique

- 1. Wash hands with soap and water.
- 2. Wash genitals with water:
 - females should wash from front to back parting the labia
 - males should wash the tip of the penis, pulling back the foreskin to ensure it is clean around the glans
- 3. Prepare catheter for use according to manufacturer's instructions.
- 4. Adopt a suitable position for the individual patient.
- 5. Insert catheter into the bladder. Females may initially use a mirror but should be encouraged to do the procedure by touch. Males should hold the penis in an upright and extended position. This straightens the first curve of the urethra and facilitates catheterisation.
- 6. When urine starts to flow insert the catheter another 2cm.
- 7. When the flow stops, slowly withdraw the catheter to allow the base of the bladder to drain.
- 8. Wash hands.
- 9. If the catheter is *not* self-lubricating wash and dry it thoroughly and store in a dry container. A self-lubricating catheter should be thrown away each time.

Watch the patient carry out the procedure from preparation to catheterisation, including care of the catheter.

There are various devices available to assist patients to locate the urethra and hold the

catheter. If the patient is experiencing problems, contact the Continence Advisor for advice on alternative products.

Make use of booklets and other teaching aids produced by product manufacturers. Obtain a specimen for urinalysis at some point during the teaching programme to exclude UTI.

Follow-up

Integrating CISC into everyday life can be difficult. Support and encouragement is very important. It is important to ensure that patients can perform the procedure in diverse settings (e.g. in a public toilet or in a car) and advice should be given accordingly. The patient and the caregiver require close ongoing support and follow-up. Following tuition in CISC, patients should be offered an early review by a health care professional to ensure that they are successfully performing the procedure, and to offer help with any difficulties they may have experienced. If the patient has been taught CISC as an inpatient, on discharge:

- Provide the patient with a hospital contact number
- Give the patient their prescription details and an outpatient follow-up appointment
- Notify the patient's GP so that the prescription for catheters can be arranged
- Refer them to the community continence teams if appropriate

If the patient is under the care of a Consultant Urologist, refer them to the Urology Continence Advisors for follow-up arrangements which will be made for them.

If a patient who is self-catheterising is admitted to hospital, they should use a new catheter on each occasion because of the increased risk of infection.

Evidence-base of the guidelines

There is evidence to support the principles of CISC and there is also product focused evidence. Product focused evidence is both objective independent clinical research and subjective company sponsored evaluation, it is important to consider this when choosing a type of catheter for CISC. However, it must be remembered that evidence should not be used in isolation but combined with clinical experience and most importantly patient choice.

Clinical audit standards derived from guideline

To ensure that this policy is compliant with the above standards, the following monitoring processes will be undertaken:

- 1. Problems with a patient's technique will be identified at their annual review appointment. All Urology patients are followed up by the Continence Advisors, they have contact information and their calls are logged which should enable monitoring of the teaching effectiveness of Urology based nursing staff.
- 2. Problems will be identified if the patient or community nursing staff feed back any problems to the GP.
- 3. A survey of patient satisfaction on the quality of teaching and the follow up care available.

The audit results will be sent to the Divisional Senior Nurse who will review the results and make recommendations for further action.

Summary of development and consultation process undertaken before registration and dissemination

The guideline was drafted by the authors listed above and updated from the previous guideline.

Distribution list / dissemination method

- A copy supplied to all patient areas within the Trust where it may be necessary to teach CISC (placed in the nursing policy and clinical guidelines folders)
- To be placed on the Trust Intranet 'Trust Docs'

References / source documents

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