A cute urinary retention (AUR) is the sudden and often painful inability to pass urine, despite having a full bladder. Patients experiencing this urological emergency usually present at the emergency department (ED), not only with the inability to urinate but also with suprapubic pain, bloating, urgency, distress or, occasionally, mild incontinence (Fitzpatrick and Kirby, 2006).

AUR is a common condition that is predominately seen in men, with risk increasing as they age; it is rare in women. In seminal work by Meigs et al (1999), they estimated that AUR affects between 4.5 and 6.8 men per 1,000 annually, increasing to 300 per 1,000 men aged in their 80s; the incidence in women is only seven per 100,000. The reason for the difference is that the main causes of AUR are prostatic problems, including prostate cancer, as well as urethral strictures, urinary tract infections, constipation, neurological disorders, post-operative pain or immobility, or the use of anticholinergic drugs (Stevens, 2005).

Aims of the initiative
Until 2016, the standard management plan for AUR in the ED of Guernsey’s Princess Elizabeth Hospital, as in most UK EDs, was to take a full patient history, including medical, surgical and pharmacological information, a post-void bladder scan and, in men, a prostate-specific antigen (PSA) test to establish the cause. After the assessment, an ED doctor would insert an indwelling (urethral or suprapubic) urinary catheter to empty the bladder. The patient would then be discharged into the care of the community nurse with the catheter in situ, and an outpatient appointment was arranged with the urology clinical nurse specialist (CNS) for a trial without catheter. At this appointment, the CNS would establish the underlying cause of the AUR and commence the most appropriate treatment – for example, laxatives for constipation, antibiotics for an infection, or an alpha-blocker if the patient had benign prostatic hyperplasia.

This process took up to three weeks before the trial without a catheter could begin.
Every day that an indwelling catheter remains in situ, the risk of a catheter-associated urinary tract infection (CAUTI) increases by approximately 5% (Kang et al, 2015). Evidence suggests that 80% of patient intermittent self-catheterisation (ISC); this is regarded as the ‘gold-standard’ treatment for bladder drainage (National Institute for Health and Care Excellence, 2015). Our urology team asked patients for feedback on their experiences of both catheter types and their preference via a questionnaire. This showed they would prefer to have been taught to self-catheterise when they initially presented at the ED with AUR.

While the indwelling catheter was in situ, the patient might have two or three contacts with either the CNS or the community nurse for support and advice. Some patients also had a period of time off work, as they could not manage the catheter while working.

If the trial without a catheter was unsuccessful, the CNS would teach the patient intermittent self-catheterisation (ISC); this is regarded as the ‘gold-standard’ treatment for bladder drainage (National Institute for Health and Care Excellence, 2015). Our urology team asked patients for feedback on their experiences of both catheter types and their preference via a questionnaire. This showed they would prefer to have been taught to self-catheterise when they initially presented at the ED with AUR.

Every day that an indwelling catheter remains in situ, the risk of a catheter-associated urinary tract infection (CAUTI) increases by approximately 5% (Kang et al, 2015). Evidence suggests that 80% of
healthcare-associated UTIs occur as a result of, or in relation to, indwelling catheters (Nicolle, 2014) and they cause a 3-10% daily increase in bacteria. Indwelling catheters also increase the risk of a person having multi-drug resistant bacteria present in their urine, compared with intermittent catheterisation (IC): that risk is 3.3% for people with a suprapubic catheter and 2.6% for those with urethral catheters, compared with it being 0.7% for those with IC (Kang et al, 2015).

In response to this and the patient feedback, we decided to trial a project to teach suitable patients ISC as the first-line management for AUR in the ED.

Implementing change
At the beginning of the project we asked ED staff to complete a questionnaire so we could:
- Establish a baseline of the treatments used in the ED for AUR;
- Consider an appropriate training package and care pathway to enable ED nurses to assess patients and select those suitable to be taught ISC.

The results of the questionnaire showed that inserting a urethral catheter was standard practice and using a suprapubic catheter was the second-line choice; this finding was consistent with those of Manikandan et al’s (2004) national survey.

Although the ED nurses were in favour of changing their practice for AUR, they had concerns about the time it would take them to teach patients ISC and the extended training they would require to learn this skill. We assessed the time required for the two procedures and found that it took a nurse approximately 30-40 minutes to insert an indwelling catheter, compared with 15-20 minutes to teach ISC. When we shared this information with the ED nurses, they were more receptive to trialling the change and felt that, with the appropriate training, they would be willing to teach ISC as first-line management.

The urology CNSs developed a pathway highlighting inclusion criteria and treatment (Fig 1), and delivered 15-minute training sessions to all of the ED nurses. Extended training was available if required, but, with the support of Wellspect (the company that supplied the intermittent catheters), none of the nurses required it. The training sessions taught nurses the practical aspects of ISC and stressed the importance of patients undertaking the procedure under nurse supervision initially. They learned to ensure patients were competent and confident in the self-catheterisation procedure (Fig 2) and to address any problems or queries.

**Outcomes of the initiative**
Following the training, all patients who presented to the ED with AUR and met the inclusion criteria were offered training in ISC. For those who consented:
- The ED nurse demonstrated the equipment and explained the process;
- The patient then inserted the catheter under the nurse’s supervision;
- Follow-up care was discussed and the nurse answered any questions;
- The patient was then discharged with a box of catheters, a patient information booklet, a DVD and contact details for the urology team.

The ED nurses found the process quick, simple and effective, and reported that it saved time and resources for both them and the ED doctors who previously had to insert the indwelling catheters.

Between August 2016 and June 2019, 30

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**Fig 2. Intermittent self-catheterisation: the procedure**

2a. Catheters for intermittent catheterisation are inserted and removed immediately after the bladder is empty.

2b. Hydrophilic-coated (single-use) catheters require water to activate and hydrate the coating.

2c. Nelaton catheters (single-patient use) can be reused at home. They must be cleaned and stored dry.

2d. A mirror can be used to visualise the urethra.

2e. The patient should avoid touching the part of the catheter that is to be inserted into the bladder.

2f. Urine can be drained directly into the toilet or a clean receptacle.

“The ED nurses found the process quick, simple and effective and reported that it saved time and resources”
Of the 25 patients who were taught ISC in total, 13 self-catheterised once in the ED before their bladder function returned to normal and eight had to perform it twice. The remaining four had to continue ISC four times a day after being discharged and required surgical intervention (Fig 3).

The urology CNS asked the 25 patients to complete a feedback questionnaire in their follow-up appointment and there was 100% agreement that ISC was comfortable, easy to use and improved their quality of life. All those who had previously used an indwelling catheter said they preferred ISC – reflecting the findings of research conducted by Logan (2011). Patient testimonials included the following:

- “IC provides 24 hours a day of normal, comfortable living”;
- “IC offers convenience and comfort”;
- “IC is more convenient [than an indwelling catheter], with more freedom”;
- “Simple and convenient”;
- “Can do it yourself; [it provides] privacy”;
- “I found the IC system simple and easy to use, once familiar with it. Having tried leg bags and [an] indwelling catheter, [this was] much more comfortable and [I’m] happy now with IC”.

**Challenges**

The project’s biggest challenge was encouraging the ED nurses to follow the new pathway and use ISC as the first-line treatment. To overcome this, the urology CNS attended the monthly medical meetings of ED medical and nursing staff, and ambulance service staff, to explain the pathway and allow open discussion to promote and embed the change in practice. The support of the consultant urologist and proactive ED nurses were also invaluable in encouraging the whole team to follow the pathway.

After the nurses learned how to teach patients to self-catheterise, the ED had to ensure this standard was maintained and all new nurses were also taught the procedure. To make sure this happens, the urology CNS still regularly attends the ED to teach new staff and provide refresher sessions for anyone who has not performed ISC recently. All new ED nurses are taught the procedure as part of their induction.

**Conclusion**

This project demonstrated that, by listening to patient feedback and engaging staff, practices can be improved. By introducing a gold-standard practice in the ED, we have improved patient care, reduced the incidence of CAUTIs and potential related hospital admissions, and saved clinician time and resources. We have successfully maintained these changes and ISC is now the standard practice for patients presenting to the ED with AUR.

We recognise the patient numbers are small, but they are relative to the population size of Guernsey. We believe this change in practice could be replicated in any ED in the UK, reducing infections and hospital admissions, saving nurses’ time and, ultimately, benefitting patients.

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**Advice for setting up similar projects**

- Listen to patient feedback
- Engage staff and gain their support to undertake a change in practice
- Have a robust training programme and pathway
- Patients have to undertake the procedure themselves, so stress the importance of this during nurses’ training
- Keep data and feedback to demonstrate the effects of the change