Catheterisation is the leading risk factor for urinary tract infection (UTI), and costs the NHS an estimated £99m per year (Loveday et al, 2014). Best practice in catheterisation and catheter care is set out in clinical guidelines, and health professionals must be trained and competent to undertake these procedures (Loveday et al, 2014; National Institute for Health and Care Excellence, 2012).

NICE (2015) recommends catheters are reviewed regularly and removed as soon as possible, but nurses need the systems in place and skills to undertake this review process. Although the Royal College of Nursing (2012) provides guidance on what to consider during a catheter review, there is little information on catheter review decision-making and planning. Mavin and Mills (2015) suggest nurses need specialist continence support when considering alternative methods of management.

Catheter reviews require specific clinical skills, including assessing for continence aids and intermittent catheterisation (IC). High success rates have been achieved using IC in older patients who have urethral strictures, problems with bladder emptying and urinary retention (Parsons et al, 2012).

Catheter passports have been developed over recent years to improve management, support timely catheter removal and provide patients and health professionals with essential information on catheter care and history. In 2010, we created a local catheter passport, which we gradually rolled out from 2011 across North East Essex, in a partnership between our acute and community services.

**Evaluation of the local catheter passport**

From June 2012 to June 2013 we evaluated whether the passports, which contain details such as the date of insertion, reason for catheterisation and plan for removal, improved documentation, using data routinely collected from the catheter insertion page of the passport. When a catheter is first inserted, this page is routinely faxed
by nurses to a central point and key information is entered onto an electronic catheter register.

We based our evaluation on 1,911 insertion page records. This did not represent the total number of patients catheterised, as staff used discretion in issuing a passport if the catheter was anticipated to be in place for less than 48 hours. We also assessed patient feedback from August 2012 to June 2013, using a random sample of 73 patients from the catheter register; 67 of them consented to participate in a telephone questionnaire.

Staff questionnaires were distributed to 25 acute ward areas and all the community nurse teams in June 2013. Nursing staff were invited to comment on key aspects of the passport and give specific examples and suggestions for practice improvement. A total of 76 questionnaires were received, of which four appeared to have been completed as team responses. The catheter register helped us to track patients and collect information about the factors influencing and delaying catheter review.

Key findings
We found that 82% of indwelling catheters had been inserted in the acute setting; the rationale for insertion had been identified in 99% of cases; the majority of staff (83%, n=63) agreed that the passport had improved communication. We also received positive feedback from patients, with 90% rating the information they received as excellent or good.

Despite these findings, there was no significant reduction in catheter prevalence in the acute or community setting, and we identified key factors that influenced catheter reviews and removal. These were grouped into three common themes:
- Clinical knowledge deficits;
- Responsibilities and pathways;
- Managing patient expectation.

Clinical knowledge deficits
Best practice in catheter review and timely removal was recognised in both hospital and community settings. However, there appeared to be knowledge gaps among staff on how to approach catheter reviews, assess for alternative methods of management and determine follow-up plans, particularly in more complex cases. This was also reflected in patient’s experience; 21% said they were unclear about the next step, while staff comments highlighted the need for more education and training in catheter reviews.

We also found that the terminology used to describe the reason for catheterisation could lead to delays in removal or assumptions being made about ongoing management. For example, retention of urine was used as a reason for catheterisation on 61% (1,166) of insertion pages. Urinary retention could be perceived as justifying ongoing catheterisation and a plan of routine changes be set up, particularly for patients transferring between wards and settings. This highlights the importance of staff establishing the underlying reason for retention, and ensuring alternative treatment options, investigations and specialist referrals have been considered and documented when patients are transferred. Similar problems were seen with catheters referred to as ‘long-term’, as it may be well placed and capable of undergoing change in such cases. Where catheter removal is planned it is important to anticipate continence and toileting needs, as well as the care package needed to avoid problems such as anxiety, falls and readmission. Other professionals’ help, such as social care, physiotherapy and occupational therapy, can also be important when planning to remove a catheter.

Managing patient expectation
Staff said some patients found discussing catheter removal upsetting, which may relate to the finding that 21% were unaware of catheter plans. Setting clear expectations with patients in the early stages regarding the temporary nature of the catheter (where possible), the plan for removal and alternatives is important to prepare patients and reduce anxiety. Inclusion of the increased risk of infection as

Fig 1. Urinary catheter review assessment

<table>
<thead>
<tr>
<th>Men over 50</th>
</tr>
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<tbody>
<tr>
<td>Consider:</td>
</tr>
<tr>
<td>- Enlarged or abnormal prostate</td>
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<tr>
<td>- Digital rectal examination</td>
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<tr>
<td>- Alpha blockers for prostate enlargement before trial without catheter</td>
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<tr>
<td>- Renal function</td>
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<tr>
<td>- Evaluate</td>
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<table>
<thead>
<tr>
<th>Women</th>
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</thead>
<tbody>
<tr>
<td>Consider:</td>
</tr>
<tr>
<td>- Menstrual problems</td>
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<tr>
<td>- Hysterectomy</td>
</tr>
<tr>
<td>- Vaginal condition</td>
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<tr>
<td>- Vaginal prolapse</td>
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<tr>
<td>- Gynaecology problems</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Patient picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider:</td>
</tr>
<tr>
<td>- Patient perspective – impact/lifestyle risks</td>
</tr>
<tr>
<td>- Health status including renal function</td>
</tr>
<tr>
<td>- Bladder health, continence (existing and usual)</td>
</tr>
<tr>
<td>- Fluid intake, bowel habits – assess constipation</td>
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<tr>
<td>- Pressure areas risk</td>
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<tr>
<td>- Ability to manage catheter/supports</td>
</tr>
<tr>
<td>- Medicines/diuretics/antimicrobial resistance/alpha blockers for prostate enlargement</td>
</tr>
<tr>
<td>- Gynaecology problems</td>
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<tr>
<td>If removing: mitigate risks eg risk of falls (toileting/care package/continence)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Alternative management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider:</td>
</tr>
<tr>
<td>- External sheaths or penile pouches</td>
</tr>
<tr>
<td>- Female slipper pans and urinals</td>
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<tr>
<td>- Intermittent catheterisation</td>
</tr>
<tr>
<td>- Toileting regimes</td>
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<tr>
<td>- Continence pads</td>
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</tbody>
</table>

NB: This urinary catheter review assessment acts as a guide and is not exhaustive. It does not replace the need for individual patient assessment and clinical judgement.

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part of patient education in catheter care also supports patient understanding and informed decision-making (NICE, 2012).

**Guidelines**

NICE (2014) recommends that organisations have written protocols on the completion of procedures for the safe insertion, maintenance and timely removal of catheters, to minimise the risk of patients developing infections. Clear standards exist, against which the success of catheter insertion and care can be measured. These are set out in clinical guidelines, practice recommendations (Loveday et al, 2014; NICE, 2012) and care bundle approaches (Department of Health, 2007). However, there are no clear standards to support timely catheter removal.

Determining whether timely removal of catheters has taken place in different care settings presents a challenge because the point of removal is likely to be dictated by individual patient circumstances, and may depend on the assessor’s knowledge. However, as catheter reviews underpin and may depend on the assessor’s knowledge and guide decision-making, it may be helpful to develop practice standards for this process. We have suggested such a standard (Box 1), which may help make a case for the investment needed to develop skills and pathways across care settings, providing a benchmark against which to measure best practice (NICE, 2014); the standard can be used in conjunction with existing guidance on management of indwelling catheters (Loveday, 2014; NICE, 2012).

**Guidance and education**

Following our evaluation we developed guidance to support community nurses undertaking catheter reviews in clinical practice. A follow-up of patients identified from the catheter register helped us to build a picture of common catheter review assessment factors (Fig 1). This document acts as an aide-mémoire to help assessment and support informed decision making; it is used in conjunction with a decision guidance flow chart (go online to find it at nursingtimes.net/CatheterDecisionGuide), which helps nurses to work through catheter reviews in a logical way. It also aims to define clinical ownership and maintain the momentum of the review by identifying the trigger points to ask for advice or to refer elsewhere.

The decision guidance flow chart was added to organisational catheter procedures and accompanied by guidance for trial without catheter (TWOC) and acute retention of urine. The guidance was promoted in catheterisation clinical training and laminated mini sets were placed within diary covers for each community nurse with the slogan ‘Urinary catheters: review not renew’.

Community nursing teams received education on how to carry out catheter reviews, including alternative methods of management and catheter terminology. Scenarios were used to support assessment and decision-making skills and this was also integrated into catheterisation skills training.

A community electronic patient record (SystmOne template) was developed to evidence catheter reviews and a key performance indicator for practice. The outcome of reviews for adult patients with newly inserted indwelling catheters is recorded by community nurses within 10 days following referral to the service.

Advice on managing patient expectation is included in the educational package and there are now specific prompts in the catheter passport, which are completed by staff. Patient information to support these discussions is included in the patient section of the passport.

**Potential impact mapping**

Potential impact mapping is an educational approach used to support learning and influence attitudes and behaviour towards catheter reviews. It aims to

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**Box 1. Proposed catheter review standard**

- Urinary catheter review assessment and decision-making should be documented
- Organisational guidance should be in place to support a systematic approach to urinary catheter review. It should identify clinical responsibilities, including those across the acute and community interface to ensure urinary catheters are removed as soon as clinically appropriate
- Those responsible for assessing the continuing clinical indication for a urinary catheter should be trained and competent in undertaking catheter review assessment and evaluation, use of alternative continence devices and intermittent-catheterisation practice
- The expectation that the urinary catheter is a temporary device should be discussed with the patient/carers (where possible) and as soon as appropriate and reinforced at each catheter review

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**Fig 2. Potential impact mapping**

- Supports creativity, ideas and solutions
- May spark innovation
- Potential impact mapping
- Shaping attitudes and behaviour
- Humanistic approach
- Encourages cognitive structure development
- Provides insight into patient experience, making human connections
- Develops professional virtues: open-mindedness, practical wisdom, compassion, advocacy, protection (Selman, 2011)
- Provides insight into risks and the connections between impacting elements
- Supports informed clinical judgements and avoidance of harm
- Unlocks patterns of ritualistic behaviour, confronting ‘troublesome knowledge’ (Boore and Denny, 2011)
- Exposes blind spots

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increase understanding of the wider potential impact of catheters on patient safety and encourage a mindset of review. This activity is undertaken in workshops and involves asking participants to consider, discuss and map potential impacts of catheters, creating risk cycles. It is a simple interactive approach and there are no fixed rules for completion. The maps produced gradually build in complexity as thoughts extend beyond the device and most obvious risks. Fig 2 on p30 illustrates how this approach works.

“We have seen an improvement in catheter management since introducing the community electronic patient record”

We found that the process of mapping encouraged discussion and helped nurses to look at their own and others’ attitudes to catheters and to challenge practice routines. Participants appeared to find the activity motivating; it encouraged reflection on experiences and helped them to discuss their own ideas to develop practice. Creative and critical thinking are considered to complement each other, encouraging imagination and restructuring ways of working (Boore and Deeny, 2012). This supports the need for educational approaches to go beyond the procedural aspects of catheter insertion and care.

Progress

We have seen an improvement in catheter management since the introduction of the community electronic patient record; an average of 97.5% of adult patients referred to the community nurses with newly inserted indwelling catheters had a catheter review completed and the outcome recorded within 10 days of referral (April 2015 to January 2016 inclusive). Anecdotal evidence also suggests changes in practice behaviour, as there has been an increase in requests from community staff completing reviews for support from community continuity and urology nurses. This includes advice regarding individual cases and support to review existing catheter caseloads. Monitoring community catheter prevalence and duration of insertion will support evaluating our progress.

We had found that 82% of indwelling catheters had been inserted in the acute setting; the decision guidance is being adapted for use in acute care. A survey undertaken in 425 care homes in the UK has shown that over half of care home residents with urinary catheters had them inserted while in hospital (McNulty et al, 2014). This highlights the need for hospitals and communities to work together to ensure continuity of care, patient safety and good patient experience. We suggest that optimal clinical outcomes can only be achieved in reducing catheter usage (and associated complications including readmissions) where common catheter review decision guidance and pathways are developed across the patient pathway.

Conclusions

The initiatives introduced were based on factors found to influence catheter reviews from a nursing perspective. Timely catheter removal relies on informed catheter review decision-making, and nurses in all settings require the skills and practice pathways to help them in this process.

Catheter review is a clinical skill and should be supported, across acute and community settings by education, decision guidance and clear pathways that are complementary to each other and familiar to all those involved.

A key driver for change in guiding wider practice behaviour may be introducing catheter review standards within national clinical guidelines. These principles of best practice could help inform educational curricula and operational protocols, and encourage collaborative solutions to improve continuity of care and improvements across care settings. Working in partnership across organisations is fundamental in providing the coordinated care patients need, and is the principal vision for new models of care (NHS England, 2014). This may also help provide assurance to those commissioning services that processes are in place and followed consistently. All of this supports clinical ownership, ensuring a structured and considerated approach to catheter review and sustainability in practice.

References


Decision guidance for urinary catheters

Establish the patient picture/balance risks

- Is the clinical indication for the catheter one of the following?
  - Haematuria (frank or visible)
  - Fluid balance monitoring
  - Urological surgery
  - Awaiting onward referral/assessment/investigations (for example, urology for retention/obstruction)
  - Significant pressure ulcer with incontinence (always consider/revisit alternative management methods)
  - Patient comfort in end-of-life care (always revisit and consider alternative methods, such as a sheath)
  - Confirmed as a long-term device, including evidence of the review, decision-making and assessment for intermittent catheterisation (IC) or other alternative methods management
  - Neuropathic bladder where IC has been assessed as unsuitable – such as in multiple sclerosis
  - Specific requirement, such as unstable fracture, where alternative continence methods are unsuitable

Continence and urology nurse specialist support is available for advice

Has any of the following been agreed or established?

- Male patient with acute urinary retention seen by urology department, which has requested trial without catheter (TWOC) OR
- It is clear that reason for catheterisation was retention due to constipation – now resolved OR
- It is clear that the patient’s catheter was inserted during the acute phase and there were no difficulties identified passing urine prior to this – for example, inserted to monitor fluid balance

Continence and urology nurse specialist support is available for advice

Catheter management

- Commence catheter care plan
- Set next catheter review date
- Plan date of next change of catheter to avoid blocking/bypassing (based on catheter change history as appropriate)
- Consider catheter valve
- Discuss expectation regarding catheter as temporary device (where possible) with the patient

Investigations

GP to consider the following and record all decisions/actions
- If male, 50 years or over:
  - DRE (digital rectal examination) to assess prostate status
  - Alpha blockers (consider before TWOC)
  - Renal function
- Evaluate
- If female:
  - Renal function
  - Gynaecological problems, such as prolapse
- If male less than 50 years:
  - Renal function

Patient may require onward referral to:

- Urology
- Gynaecology
- Continence and urology nurse specialist support

Where alpha blockers are prescribed (men), GP may request TWOC

Planning TWOC

- Discuss TWOC with GP/clinician and check that renal function does not contraindicate catheter removal
- Discuss with patient
- Consider and mitigate risks, such as toileting and care needs/care package visits (integrated care approach, including occupational therapist and social worker)
- Anticipate/manage continence needs
- Follow TWOC flow chart in organisational policy (includes checking patient is not constipated and consideration of alpha blockers in older men prior to TWOC)
- Record all actions and discussions in the patient record
- Successful TWOC: follow actions on the TWOC flow chart
- Failed TWOC: follow actions on the TWOC flow chart and return to start or skip to ‘Discuss with GP and consider further investigation or onward referral’
- Update SystmOne catheter review electronic patient record

Continence and urology nurse specialist support is available for advice