

KEYWORDS HIGH IMPACT ACTIONS | INFECTION | UTI | CATHETER

The high impact actions for nursing and midwifery 5: protection from infection

Most urinary tract infections are linked to indwelling catheters. Best practice and limiting catheterisation to patients who really need it can help reduce them

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ABSTRACT Ward L et al (2010) The high impact actions for nursing and midwifery 5: protection from infection. *Nursing Times*; 106; 31, 20-21.

Four out of every five urinary tract infections can be traced to indwelling catheters. If the number of these infections is to be reduced significantly, nurses need to implement best practice for catheter care, and only catheterise patients when absolutely necessary.

INTRODUCTION

Patients with indwelling urinary catheters, those undergoing urological manipulations, long stay older male patients and those with debilitating diseases are all at high risk of developing nosocomial urinary tract infections (Kalsi et al, 2003).

Those at greatest risk are patients with indwelling urinary catheters – 80% of UTIs can be traced to indwelling urinary catheters (National Audit Office, 2009).

There are few up to date statistics on UTIs. However, in the mid 1990s, it was estimated it cost the NHS around £124m a year to treat them (Plowman, 2000). This calculation is based on the number of UTIs and the increased length of stay associated with them. The same study estimated the treatment of a single inpatient with a UTI cost £1,327. At today's prices (taking into account inflation at the Bank of England rate), this equates to £1,968 per patient. Despite these costs, and the effect on patients, UTIs have not gained the same level of media attention as other healthcare associated infections such as MRSA and *C. difficile*.

In many trusts, the number of catheter acquired UTIs (CAUTIs) is not routinely measured. However, where audits have

taken place, the rate has been shown to be as high as 32%. There is also wide variation in the type of catheters used, systems for stock management and clinical identification of patients who need to be catheterised.

WHAT CAN NURSES DO?

Catheterisation carries many risks, including tissue damage, bladder damage, infection, encrustation and catheter blockage. The risk of all these increases the longer the catheter remains in situ.

Nurses who perform catheterisations therefore not only need to ensure ongoing catheter care is of the highest standard, but also have a responsibility to check that there is a clear clinical need for catheterisation.

A number of approaches have been shown to be successful in reducing the use of catheters, and associated infection levels:

- Programmes to reduce the number of catheters used, standardisation of equipment, insertion protocols and optimal catheter care;
- Continuous programmes of education and training to improve catheter care;
- A policy of early removal.

Healthcare assistants are a vital group who can contribute to improvement work in this area, and should be given the support and permission to challenge the need for a patient to have a catheter inserted.

CASE STUDY 1: BRINGING INFECTION CONTROL SERVICES IN HOUSE

Birmingham's Royal Orthopaedic Hospital has 150 beds and carries out more than 16,500 procedures a year, mostly elective hip and knee replacements. Low rates of MRSA and *C. difficile* had led to a general perception that the hospital had no infection problem.

However, a 2008 audit revealed a 32% rate of CAUTIs. This compared with a national average of 7.3%. In addition, a catheter stock audit discovered that many different types were being used, with no standardisation across the hospital, and that 137 of the 660 catheters in stock were out of date.

The hospital needed to address the

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misplaced belief that there was no infection problem and tackle the problem head on. It began by selecting one type of catheter to be used throughout the organisation. Staff worked with a supplier that offered a money back agreement for the more expensive silver coated Foley catheters. If these failed to reduce infections by one third within six months, the supplier agreed to refund the cost or replace the old stock.

Stringent stock control was introduced, so wards could only stock a maximum of 10 catheters in two sizes (three sizes in high dependency units and theatres). Mandatory clinical skills courses and ward training were introduced to ensure everyone was competent in aseptic, non-touch technique (ANTT). The basis of ANTT is that the only way to truly reduce infection risk is not to touch key areas, even if wearing sterile gloves.

The work was carried out as part of the Think Link programme, which brings together the five elements of good infection prevention. These are: cleaning; universal precautions; hand hygiene; communication; and patient power.

Impact of the initiative

Within six months, the CAUTI rate had fallen to 5% and, in the past year, it has remained at zero. As a consequence, patients are no longer forced to remain in hospital for treatment. Because the catheterisation rate

has come down, fewer patients experience the discomfort and inconvenience of a catheter.

The ANTT training programme is now used for other invasive procedures, such as cannulation. A new catheter tray is being introduced, which will save around eight minutes per catheter insertion. Reducing the need to treat CAUTIs is estimated to have saved the hospital around £185,000.

CASE STUDY 2: A GIANT 'LADDERS AND BLADDERS' BOARD GAME

Nursing staff at Brighton and Sussex University Hospitals Trust came up with a novel way of educating busy ward staff in best practice approaches to catheter care. They designed a giant floor game called Ladders and Bladders. Teams of staff compete to see who has the most knowledge about good catheter care.

The game was piloted with healthcare assistants in 2009 as part of a comprehensive programme to reduce catheter use and, consequently, to cut CAUTIs.

It involves answering questions that do not have "yes" or "no" answers, but which are designed to stimulate discussion. Players can challenge an answer and, if it turns out to be wrong, the question is up for discussion. With the help of NHS Innovations South East, Ladders and Bladders is in commercial production and will be on sale in 2010 for use in other hospitals and healthcare settings. An electronic version is scheduled for 2011.

The trust's work to reduce catheter usage and infections began three years ago, when it began considering new catheter products that claimed lower infection rates. Before investing in these products, the trust carried out an audit to look at catheter use. It found catheters were being used too often and for too long, sometimes without clinical need, while the standard of catheter care varied.

The trust developed a comprehensive catheter action plan, with education and training as key. Catheter care bundles are in use throughout the trust and a protocol has

been developed for the management of male patients with acute retention of urine. Patients who are discharged with a catheter receive a referral form and a catheter diary.

Impact of the initiative

The work has helped to reduce catheter use from 24% in 2007 to 16.7% in January 2010. The incidence of CAUTIs has fallen over the same period from 18% to 13.3%, and there are fewer A&E attendances and admissions with catheter related problems.

The interface between primary and acute care has improved since the discharge pro forma and patient diaries were introduced.

The trust has seen an improvement in care and in adherence to policies on catheter storage, antibiotic use and discarding of disconnected bags. A catheter champions' programme was launched in May 2010 and an e-learning modular programme is being designed. The trust is estimated to have saved £50,000 in reduced admissions and £64,000 in reduced attendances to A&E.

CASE STUDY 3: URINARY CATHETER ASSESSMENT AND MONITORING FORMS

At Winchester and Eastleigh Healthcare Trust, urinary catheter assessment and monitoring (UCAM) forms were introduced in October 2009, following an audit on urinary catheter care. The idea was to record and document insertions and ongoing urinary catheter care across the trust.

The forms, which consist of a single sheet that provides a 28 day history of a patient's catheter care at a glance, were developed and refined following a three month trial with nursing staff, the infection control team and the specialist urology team.

The UCAM form shows when the bag was changed and whether correct hygiene procedures have been followed daily. It is designed to prevent unnecessary catheterisation and prompt a daily review of patients with a catheter to support early

removal. Its launch was accompanied by a month long awareness campaign, the highlight of which was a "trolley dash" through wards by an infection control nurse, along with quizzes and giveaways.

The aim of this initiative was to challenge the perception that catheterisation is a routine procedure to address continence issues. Instead, the trust wanted nurses to view catheters as an invasive and potentially dangerous intervention.

Initially, nurses voiced concerns that the UCAM was more paperwork but, in reality, it is improving care and helping to save time as there are fewer notes to wade through and less need for invasive patient examinations.

The trust plans to measure its success, including by weekly assessments via the nursing quality indicators audit.

Impact of the initiative

The initiative has helped to prevent unnecessary catheterisation and is prompting a daily review of patients with a catheter, thereby encouraging early removal.

The form provides evidence of the quality of patient care and, by reducing catheterisation, it has reduced workload so nurses can deliver better care.

By contributing to the prevention of CAUTIs, it is estimated that the form has helped to save around £10,000. There are also other savings, resulting from patients not being catheterised and the reduced demand on urology nurses. ●

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- Plowman N (2000) An economic model to assess the cost and benefits of the routine use of silver alloy coated urinary catheters to reduce the risk of urinary tract infections in catheterised patients. *Journal of Hospital Infection*; 48: 1, 33-42.

WHAT ARE THE BEST SOURCES OF INFORMATION?

- *Saving Lives*. www.clean-safe-care.nhs.uk
- *High Impact Intervention No 6. Urinary Catheter Care Bundle*. tinyurl.com/cleansafe-catheter
- Infection Control Nurses Association. Core competencies. tinyurl.com/ICNA-competencies
- NHS Quality Improvement Scotland. Urinary catheterisation. tinyurl.com/catheter-best
- *The Health Act 2006. Code of Practice for the Prevention and Control of Healthcare Associated Infections*. tinyurl.com/health-act06
- Gould CV et al (2009) *Guideline for Prevention of Catheter-Associated Urinary Tract Infections*. tinyurl.com/CDC-catheter
- National Institute for Health and Clinical Excellence guidance on urinary incontinence in women. www.nice.org.uk/CG40
- NICE guidance on infection control and prevention of HCAI. www.nice.org.uk/CG2
- Pratt RJ et al (2007) *epic2: National Evidence-Based Guidelines for Preventing Healthcare-*

Associated Infections in NHS Hospitals in England. *Journal of Hospital Infection*; 65 (supp 1). tinyurl.com/tvu-epic2

- Scottish Surveillance of Healthcare-Associated Infection Programme. *Catheter-Associated Urinary Tract Infection (CAUTI) Surveillance*. tinyurl.com/CAUTI-surveillance
- Wound, Ostomy and Continence Nurses Society Clinical Practice subcommittee. *Indwelling urinary catheters*. tinyurl.com/indwelling-principles