



CLINICAL  
EXCELLENCE  
COMMISSION

# REDUCING CATHETER ASSOCIATED URINARY TRACT INFECTIONS

## IMPLEMENTATION WORKBOOK

# CATHETER ASSOCIATED URINARY TRACTION INFECTIONS

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The insertion of an indwelling urinary catheter during hospital admission is a key risk factor for the onset of a healthcare associated urinary tract infection (UTI) [1]. In fact, patients who are catheterised on the basis of an inappropriate clinical justification are at a greater risk of a UTI as well as longer catheter dwell time and longer hospital stay than those patient who have had a catheter inserted for an appropriate clinical indication [2]. Despite these poor patient outcomes, it is estimated that 65% of patients are being catheterised unnecessarily [3].

The Clinical Excellence Commission (CEC) has produced the following three decision support tools to improve catheter practices in acute care settings:

- Pre-insertion decision making
- Urine specimen collection and culture
- Criteria-led catheter removal

This workbook has been developed to help clinicians in implementing these new tools.

# GETTING STARTED

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The following steps outline what needs to be done to prepare your unit for implementation of new tools.



## Find out what is going on

Before adopting a new tool, it is important to establish:

- What is the current catheterisation utilisation rate?
- What are the current practices for catheter use?
- What are the practice gaps?
- Who need to be targeted for improvement?

By answering these questions, you will have a clear understanding of what is currently happening in the unit with regards to catheterisation and where is improvement required. This will help sites decide whether one or all of the tools need to be implemented.

*How to do this?*

- Collect the current catheterisation utilisation rate by doing daily audits of patient days and catheter days in a few units for a two to three month period. Review findings and determine whether there are any units that have unexpectedly high catheterisation utilisation rates. Units with unexpectedly high catheterisation utilisation rates may be key candidates to implement the new tool.
- Survey staff on current practices and analyse findings from the survey. Variation in survey responses signifies variation in practice and identifies specific topics for that can be targeted for improvement.
- Review IIMS for incidents related to catheter use.
- Investigate current pathology usage and check rates of CSU ordering.
- Use the CEC's CAUTIs investigation template and catheter care audit tools to determine modifiable risk factors.



## Seek Executive level support to implement the new tool(s)

Challenging and changing current clinical practice requires engagement and support from hospital leadership [4]. Involving hospital leadership will ensure that all levels of the hospital are aware of the new initiative and will prioritise the initiative on the organisation's workplan. Hospital leadership also may be able to allocate resources to support the implementation of the initiative.

*How to do this?*

- Present your fact finding data to your Patient Safety, Safety and Quality or Clinical Governance Unit.
- Present your fact finding data at an infection prevention and control or Standard 3 meeting.
- Meet with the Director of Nursing and/Director of Medical Services to discuss unexpectedly high catheter utilisation rates.



### **Seek support from clinical leaders**

Urinary catheterisation can occur in any clinical unit and can potentially affect every clinical discipline. Medical officers are ultimately responsible for ordering the catheterisation of a patient however nurses often are involved in decision-making processes. It is important that both nursing and medical leaders in the unit understand the need for change, support the undertaking of the initiative and ensure collaboration and consistency between the disciplines. This will ensure that both nursing and medical clinicians are being given the same message about pre-catheterisation decision making. Support from medical and nursing leads also will:

- Raise the profile of the initiative in the unit;
- Emphasis local accountability for practice improvement;
- Enable identification of other resources to help implement the tool (e.g. medical director may be able to provide a medical registrar to help lead JMO education); and
- Enable early identification of barriers to implementation (e.g. resource accessibility).

In units where there is a mixture of specialities (e.g. mixed surgical units), it is critical that the specialty leads are in agreement for the need to change. All clinical specialities also should be involved in the review of the tool prior to its implementation. This will ensure that a consistent approach is being used across the unit.

#### *How to do this?*

- Present your fact finding data at a clinical council meeting.
- Put CAUTIs on the agenda at the departmental meeting and discuss audit and survey findings.
- Ask the Director of Nursing and/or Director of Medical Services to lead a discussion within specific clinical disciplines or clinical specialists.



### **Form an implementation team**

The implementation team should represent the clinical disciplines and specialities in the unit who are involved decisions involving catheter use. The ideal team should also involve unit educators as these individuals are essential for the implementation of the tool. It would be advantageous to have an infection prevention and control practitioner, a continence CNC or a urology registrar/consultant on the implementation team. These individuals have specific expertise around infection prevention and urinary catheterisation.

#### *How to do this?*

Consider the constituting a membership team based on the following configuration:

- Executive representative;
- Patient safety or quality representative;
- Nurse unit manager or other senior nurse;
- Medical officer;
- Clinical nurse educator(s);
- Infection prevention and control practitioner;
- Infectious diseases physician and/or clinical microbiology (if available);
- Continence clinical nurse consultant (if available);
- Urology registrar/ consultant or nurse practitioner (if available).

### Identify an implementation lead

Successful practice change is driven by local ownership of the need to change and ownership of the unit's specific change journey [5]. In other words, successful implementation and practice improvement will happen if all clinicians in the unit are aware of the need to improve practice and want to do so. The ideal implementation lead is someone from the unit who is in a leadership role (e.g. clinical nurse specialist or educator) rather than someone who works with the unit but is from another service. The implementation lead should be part of the implementation team.

*How to do this?*

- Ask the nurse unit manager and/or the director of the service to nominate a suitable implementation lead.
- Take nominations for the implementation lead from the implementation team.

### Identify local goals for improvement

The three decision-making tools from the CEC are frameworks to enable local clinical practice improvement. Aiming for system-wide changes is ambitious and system-wide changes may be difficult to detect and quantify at a unit level. Instead, units should focus on one or two local practices at time that can be improved through the introduction of this tool.

*How to do this?*

- As a unit, map out the current decision making processes. Once mapped out, identify one or two processes where there is variation among clinicians. Use these processes as local priorities for change.

### Modify the tool locally

The new tool may use different terminology to what is used locally or may refer to procedures that are not locally supported. It might be necessary to modify the tool to ensure that smooth local adoption.

*How to do this?*

- Ask the implementation team to review each tool for necessary local modifications.
- Put CAUTIs on the agenda at departmental meetings and ask for the department to review the tools.
- Ask some clinicians to road test the tools before implementation and ask for their feedback.

### Identify local implementation strategies

Local implementation of the tool should, at a minimum, involve the delivery of targeted education and training to clinicians in the unit. Other ways to implement the tool include:

- Integration with eMR ;
- Alignment with local policies, procedures and forms;
- Provision of intranet resources;
- Access to an tool app;
- Inclusion in the orientation schedule;
- Integration with simulation training;
- Inclusion in FLECC training ; and
- Themed staff development days.

Individual hospitals and units often undertake other novel initiatives which may serve as suitable levers to introduce and implement the tool. Using local initiatives may be a good strategy to adopt.

*How to do this?*

- Think of other strategies that have been effective in influencing practice change in the unit;
- Ask your local quality officer for new strategies that they think are suitable to try out;
- Read strategies described in "How to put the evidence into practice: implementation and dissemination strategies" (NHMRC, 2000)[6].

## What Bega did ....

Bega Hospital, Southern NSW LHD, piloted the implementation of the pre-insertion decision making tool in early 2015.

*"A multi-faceted approach was used in order to engage as many clinicians, hospital staff and patients into the education process. A variety of methods were used which included generic ward displays in the areas of data collection, pamphlets on CAUTI information were distributed to all the ward areas, waiting rooms, tea rooms, as well as heavy traffic patient areas to increase saturation of education/materials. Further to this regular inservices were run on each ward on a rotational basis during double staff time. This included the use of the educator Powerpoint presentation as well as the use of a mobile board which was brought with me to the areas of education so that I could meet clinicians in their zone without removing them from the clinical floor.*



A hospital display was also set up in a heavy traffic area (stair well) which has also displayed information on CAUTI, catheters on wall, different bottles full of CAUTI urine, and source sites for CAUTIs related to poor care.



*Additionally, I recruited the educator from the bladder scanner company to visit the site and all the ward areas to deliver lateral bladder scanner education which included tips/techniques and troubles shooting ideas. Lastly, I enlisted the help of the Clinical Governance Unit and local Infection Prevention and Control representatives and generated a hot link on the local intranet for CAUTI's so that clinicians can readily access the tool and other information on CAUTI. Clinically speaking I made up grab packs which contained all the necessary materials for catheterisation and documentation to adhere to aseptic technique."*

**- Matthew Gould, CNS, Bega Hospital**

## Figure out when you want to start implementation.

Figuring out the implementation start date sounds simple. Yet, implementation does require preparation. Consider:

- How long will it take for the implementation team to finalise local modifications to the tool and devise their implementation strategy?
- Are there any competing initiatives that may affect implementation of the tool (e.g. accreditation)? Should the unit wait for other competing interests to subside before investing in a new initiative?
- Are additional resources, such as in/out catheters and bladders scanners, required to support the implementation of the tool? How long will it take for the unit to source these additional resources?
- Is implementation dependent on involvement from people outside of the unit (e.g. continence CNC, urology consultant, bladders scanner reps)? When is their schedule free to participate in implementation?
- Are you using technology (e.g. eMR changes, IT changes, apps) as part of your implementation? How long will it take have the technology ready for use?
- Are extra training facilities needed for implementation (e.g. training rooms, simulation dummies)? How far ahead is booking for these required?
- How long is your implementation period going to be? How long will it take to deliver education to all clinicians in the unit?

## Plan your evaluation.

Measurement of change is significant driver of clinical governance and continual improvement. It is important to continually monitor and evaluate whether decision making practices have changed and what else is needed to make change sustainable.

*How to do this?*

- Repeat the pre-implementation survey and analyse the pre/post implementation change.
- Undertake post-implementation periodic surveillance of catheterisation utilisation rates and analysis for change in practice.
- Conduct post-implementation focus groups to identify remaining practice gaps.

# QUANTITATIVE DATA COLLECTION

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The following local data metrics can be used to evaluate change and practice improvement:

- Patient days
- Catheter days
- CAUTI episodes

If implementing the urine specimen collection tool, the following additional metrics will also provide useful information:

- Total CSU collected
- Total urine specimens collected

Aim to collect these metrics for five days a week for two months before and after implementing a new tool. This will give a clear picture of baseline practices and whether change has occurred after implementation of the new tool.

It may not be practical for all participating clinical units to submit all data metrics. For examples, it is not practical for emergency departments to provide counts of CAUTI episodes as the length of patient stay in the emergency department are too short to identify a CAUTI.

In most units some of the metrics, particularly CAUTIs episodes, are not routinely captured. Therefore it may be necessary to implement a surveillance process to capture this information. As much as possible, surveillance should be based on clinical observations rather than on a documentation audit. This is particularly important for the collection of catheter days. Currently, it is believed that documentation of catheter insertion and removal is highly variable [7]. Reliance on a documentation audit therefore may underestimate the number of catheters in place and impact on the validity of the evaluation.

To ensure standardisation of the data, walkarounds to collect catheter days and patient days should be done at the same time every day. To minimise counting errors, schedule walkarounds during times when the unit is typically not being affected by other events (e.g. new admissions, rounding).

Who has been appointed to collate data metrics:

Which data metrics will be collected in this unit:

When is the best time to carry out data collection walkarounds:

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**Patient days** are the number of days that an adult patient is in the care of the unit. This information is often collected for other reporting purposes and should be relatively easy to source.

Who will be responsible for collecting patient days data:

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<p><b>Catheter days</b> are the number of the days that an adult patient has an indwelling urethral catheter in place. Intermittent 'In/Out' catheters, urodomes and suprapubic catheters should not be included in the count.</p> <p><i>An example:</i>  <i>On Monday, the Unit's CNC did a walk around and counted six people with catheters in place. The daily count = 6 catheter days</i>  <i>On Tuesday, the Unit's CNC did a walk around and counted that four people from the previous day still had a catheter in place, plus four new patients that have new catheters inserted. The daily count = 8 catheter days.</i></p>	<p>How will catheter days be counted in this unit:</p> <p>Who will be responsible for collecting catheter day data:</p>
<p>If your site does not have its own CAUTIs definition, use the following modified surveillance definition to count CAUTI episodes:</p> <p>A <b>CAUTI episode</b> should be counted if an adult patient (&gt; 18 years of age) fulfils all of the following three criteria:</p> <ul style="list-style-type: none"> <li>• Patient has had an short term indwelling urethral catheter (not an in/out or suprapubic catheter) in place for &gt;48 hours and the catheter was in place on the date the CAUTI episode was first identified, AND</li> <li>• Patient has at least one of the following signs or symptoms with no other recognised cause: fever (&gt;38<sup>o</sup>c), suprapubic tenderness, costovertebral angle pain or tenderness, hypothermia (&lt;35.5<sup>o</sup>c core) or delirium, AND</li> <li>• Patient has returned a positive urine culture of <math>\geq 10^5</math> CFU/L with no more than one species of microorganism.</li> </ul> <p>For more robust CAUTI surveillance, the definitions from the CDC [8] or [9] may be more useful.</p> <p><i>Note</i> - Surveillance definitions for CAUTI should not be used as a clinical definition for CAUTI.</p>	<p>How will CAUTI episodes be counted in this unit:</p> <p>Who will be responsible for collecting CAUTI episode data:</p>

# IMPLEMENTATION STRATEGIES

There are a number of ways that these new tools can be implemented in the unit. Examples to consider:

- Address tool in nursing inservices
- Address tool in medical officer training
- Include in staff orientation
- Integrate into simulation training
- Include a session on the tool during staff development days

Individual hospitals and units often undertake other novel initiatives that may serve as suitable levers to introduce and implement new resources. Using local initiatives may be a good strategy to adopt.

What implementation strategies will be used in this unit:

It is important to make sure that clinicians can access to the new tool when they need to and have had sufficient initial training so they are confident in navigating the tool when they are on their own.

Consider providing the tool as:

- As handouts during education sessions
- As a communal resource binder
- As a wall chart in procedural rooms and/or near clinician workstations
- As a lanyard card
- As an insert in paper-based medical records
- As a hyperlinked reference on eMR
- As an electronic folder accessible on the intranet drive
- As a screensaver on the COWS in the unit

The unit may have previously used another way to distribute point of care information for clinicians - can any of these existing methods be used to distribute the tool?

How will the new tool be disseminated and reinforced to clinicians:

Delivery of any training for the tool needs to be engaging and needs to address the clinicians' learning needs as well as not impede too much on their clinical duties. Inservices and education sessions are the most common ways to facilitate training. It is important that clinicians can continually review and reinforce their learnings after initial training is provided. Ways to do this may include:

- Provide this training on an regular basis
- Providing clinicians with a copy of the education presentation
- Provide clinicians with a follow up activity
- Invite in guest speakers from other departments/hospitals
- Coordinate an email-based quiz or catheter trivia challenge
- Enable buddy training
- Facilitate a follow-up discussion session to review how training has impacted practice.

How will the unit train clinicians to use the new tool:

# PREPARING FOR IMPLEMENTATION

<p>These tools have been developed at a state level under the advice of clinicians who work in specialist urology settings as well as clinicians from emergency departments, intensive and critical care units, stroke and neurology units, surgical units, maternity units and acute aged care units. Therefore, the tool may use different terminology than what is used locally. It might be necessary to modify the tool to ensure that smooth local adoption.</p> <p>Integration with other local processes should also be considered. For example, if implementing the urine specimen collection tool, consider whether the current functionality of the laboratory ordering system supports the tool.</p>	<p>What local modifications to the tool are required:</p> <p>Are any changes to other processes required in order to implement the tool?</p>
<p>There may be times when a clinician cannot find suitable guidance from the new tool. It is suggested that a local support person or people is identified to provide advice if such a situation arises. Support people may be trained up also as a superuser of the tool so that any questions about the tool can be directed to them for clarification or advice. As a question could potentially arise at any time during the day, it may be beneficial to have a number of support people available to the unit.</p> <p>It is important that all clinicians are aware of the identity of the local support person or people and know how to contact them.</p>	<p>When additional guidance is required, who is/are the local support for this unit:</p> <p>How will the unit be informed of their support people:</p>
<p>The strategies that have been identified to implement this tool will determine whether additional resources are required to implement the new tool. Additional resources need to be mobilised early on to ensure that the tool can be implemented smoothly.</p>	<p>Are any additional resources required and how will these be sourced?</p>
<p>The implementation start date will be, in part, determined by how long it takes to plan and mobilise additional resources required for implementation. Not all resources will be required on the start date however it is important to consider how much preparation may be required for each implementation strategy.</p> <p>Depending on the implementation strategies to be used, implementation may take a couple of days or a couple of weeks. Implementation should not be rushed and it is okay for implementation to take some time.</p>	<p>How long will it take to arrange for implementation:</p> <p>How long will implementation take:</p>

# IMPLEMENTATION CHECKLIST

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- An understanding of current catheter practices has been established
- Evidence has been used to determine where implementation should occur
- Local Executive and clinical leadership support for implementation has been identified.
- An implementation team has been formed and an implementation lead has been nominated
- Local goals have been identified
- Tool has been modified locally
- Local strategies to implement the tool have been identified
- Additional resources to implement the tool have been identified and pathways to source these additional resources have been determined
- Local support person/people for the target unit(s) have been identified.
- A local evaluation framework has been established
- The local data collection requirements have been established and communicated to relevant individuals.
- An implementation start date and duration has been determined
- Tool implementation has been reviewed for its successes and limitations.

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