1. Avoid Unnecessary and Improper Placement

Recommendations:

- Insert urinary catheters only for appropriate indications
- Avoid unnecessary and improper placement
- Ensure only properly trained persons insert catheters
- Insert using aseptic technique and sterile equipment

### Appropriate Indications for Indwelling Urinary Catheter Use

<table>
<thead>
<tr>
<th>Appropriate Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient has acute urinary retention or obstruction</strong></td>
</tr>
<tr>
<td><strong>Need for accurate measurements of urinary output in <strong>critically ill</strong> patients.</strong></td>
</tr>
</tbody>
</table>
| **Perioperative use for selected procedures:**  
  • urologic surgery or other surgery on contiguous structures of genitourinary tract,  
  • anticipated prolonged surgery duration (removed in post-anesthesia unit),  
  • anticipated to receive large-volume infusions or diuretics in surgery,  
  • operative patients with urinary incontinence,  
  • need to intraoperative monitoring of urinary output. |
| **To assist in healing of open sacral or perineal wounds in incontinent patients.** |
| **Requires prolonged immobilization (e.g., potentially unstable thoracic or lumbar spine)** |
| **To improve comfort for end of life care if needed.** |

## Inappropriate Indications for Indwelling Urinary Catheter Use

<table>
<thead>
<tr>
<th>Inappropriate Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a substitute for nursing care of the patient or resident with incontinence</td>
</tr>
<tr>
<td>As a means of obtaining urine for culture or other diagnostic tests when the patient can voluntarily void</td>
</tr>
<tr>
<td>For prolonged postoperative duration without appropriate indications (e.g., structural repair of urethra or contiguous structures, prolonged effect of epidural anaesthesia, etc.)</td>
</tr>
<tr>
<td>Routinely for patients receiving epidural anesthesia/analgesia.</td>
</tr>
</tbody>
</table>

But what about the other well-intended reasons using urinary catheters?

Other Reasons and Risk of Urinary Catheters

• **Other Reasons**
  – Urine output monitoring outside the ICU
  – Incontinence without skin breakdown/decubitus
  – Prolonged post-operative use beyond 24 hours
  – Transfer from ICU to floor
  – Morbid obesity or immobility
  – Confusion or dementia
  – Patient request

• **Other Risks**
  – Secondary bacteremia, sepsis, metastatic infection
  – “One-point restraint” = decreased mobility
    • DVT/PE, pressure ulcers
    • Fall risk by tripping over catheter
    • Deconditioning
  – Patient discomfort, need to retrain bladder

Perceived Short term benefits

Real cumulative risks:
• LOS
• Cost
• Mortality
## Inappropriate Catheter Placement

- Initial indication for catheter placement\(^1\):
  - Inappropriate in 21%-54% of catheterizations
  - Varies by location of placement and site of care

<table>
<thead>
<tr>
<th>Indication</th>
<th>MICU (N=135)</th>
<th>Med Unit (N=67)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Justified %</td>
<td>Unjustified %</td>
</tr>
<tr>
<td>Monitoring urine output</td>
<td>93</td>
<td>7</td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Urinary retention</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Periop/periprocedural</td>
<td>97</td>
<td>3</td>
</tr>
<tr>
<td>Unclear reason</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

1. Avoid Unnecessary and Improper Placement

Challenges

• Urinary catheters are placed in multiple different locations
  – different systems of care
  1. Emergency Department
  2. Pre- and post-operative care areas and operating room
  3. Inpatient Units: acute care, ICU, rehabilitation, long-term care

• No single source for catheter distribution:
  – more difficult to regulate, monitor and provide feedback

• Lack of consensus on appropriate indications for catheters.

Limiting the Temptation

• Ensure adequate resources to limit the use of urinary catheters for inappropriate indications.
  
  – **People**
    • Lift teams
    • Care assistants
    • Physical therapy
  
  – **Supplies**
    • Alternatives to urethral catheters
    • Bedside commodes, urinals, hats, daily weights
    • Incontinence pads
    • Skin care and barrier creams
  
  – **Communication**
    • On transfer from ER to floor or ICU to floor
Alternatives to Urinary Catheters
# Changing Catheter Use, by Environment

<table>
<thead>
<tr>
<th>Setting</th>
<th>Strategy</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Department</td>
<td>Indication checklists, stickers attached to catheter kits</td>
<td>Gokula, 2005</td>
</tr>
<tr>
<td>Peri-Procedure</td>
<td>Procedure-specific protocols for catheter placement and post-op stop orders.</td>
<td>Stephan, 2006; Multiple genitourinary catheter protocol studies</td>
</tr>
<tr>
<td>ICU</td>
<td>Daily checklists used in multidisciplinary rounds</td>
<td>Dumigan, 1998; Jain, 2006; Reilly, 2008; Huang, 2004</td>
</tr>
<tr>
<td>Acute Care Units</td>
<td>Reminders vs. stop order written, verbal, electronic</td>
<td>Saint, 2005; Fakih, 2008; Topal, 2005; Crouzet, 2007; Apisarnthanarak, 2007</td>
</tr>
</tbody>
</table>
1. Avoid Unnecessary Placement

**Tools**
- Require appropriate indications for catheter placement
- Require physician order for placement
- Bladder scanners to evaluate/confirm urinary retention

**Catheter Orders with Decision Support:**
- Embed reminders for appropriate indications
- Embed reminders about alternatives to indwelling catheter use
- Start clock (24-48 h) for catheter removal reminders or stop orders

1. Avoid Unnecessary Placement

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder ultrasound</td>
<td>Urinary retention protocols, to avoid catheterization if no significant urine present</td>
</tr>
</tbody>
</table>
| Intermittent catheterization | •Chronic neurogenic bladder: spinal cord injury/disorder, other neurologic diseases  
•Prostate enlargement  
•Post-operative urinary retention |
| External catheters      | •Condom catheters: Cooperative male patients with other catheter indications but no obstruction or urinary retention.  
•Female external catheters: being tested |
Recommended Intervention

• Develop a protocol for management of postoperative urinary retention, including nurse-directed use of intermittent catheterization and use of bladder scanners.

4. Preventing Catheter Replacement

• Do reminders or stop orders lead to increased need for re-catheterization?
  – No evidence higher rates of re-catheterization

• Tools to prevent catheter replacement:
  – Urinary retention evaluation protocols
    • Use bladder scan and straight catheterization
    • Do not require physician order
  – Same tools as for preventing initial placement

Summary

• Appropriate indications for catheter placement
  – Derived from expert guidance with strong clinical rationale
  – Can be modified based on local consensus

• Reducing inappropriate catheter use requires:
  – Focus on both placement and continued use
  – Understanding the clinical and economic impact of inappropriate catheter use
  – Adequate resources for alternative methods of voiding

• Reminders and stop orders can disrupt the catheter “lifecycle” at all stages
Acknowledgement

- Slides used from Interventions to Prevent CAUTI: Focus on Avoiding Unnecessary Catheter Placement presentation by Dr. David Pegues, on the July 10, 2012 national content call.