Preventing CAUTI: In Search of the ‘Aha’ Moment in Infection Prevention

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April 2017
Innovation: Directional vs Intersectional

- Directional innovation = incremental; very common
- Intersectional innovation = game-changer
  - Surprising and fascinating
  - Go in new directions and open new fields
  - Provides source of *directional innovation* for years
  - Can affect the world in unprecedented ways
Outline

✓ Aha Moments

• Preventing CAUTI

• Different Approaches?

• Conclusions
Catheter-Associated Urinary Tract Infection (CAUTI)

- A common infection
- 1/4 of inpatients receive catheters
- 1/3 of catheter days unnecessary
- 1/3 of physicians unaware their patient has a catheter
- 1/3 of the time no order for a catheter
“Many noninfectious catheter-associated complications are at least as common as clinically significant urinary tract infections.”
How can we reduce catheter use and prevent CAUTI?
Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement

2. Maintaining Awareness & Proper Care of Catheters

3. Prompting Catheter Removal

4. Preventing Catheter Replacement

(Meddings. Clin Infect Dis 2011)
Evidence-based guidance on when to use a Foley or condom catheter or straight catheterization...
The Ann Arbor Criteria for Appropriate Urinary Catheter Use in Hospitalized Medical Patients: Results Obtained by Using the RAND/UCLA Appropriateness Method

Jennifer Meddings, MD, MSc; Sanjay Saint, MD, MPH; Karen E. Fowler, MPH; Elissa Gales, MD, MPH; Andrew Hickner, MSc; Sarah L. Kimie, PhD, RN; and Steven J. Bernstein MD, MPH

In Pursuit of Appropriate Urinary Catheter Indications: Details Matter

Carolyn V. Gould, MD, MSCR
But if the patient really, really needs a Foley…

Ensure proper aseptic technique is used during insertion
Indwelling Urinary Catheter Insertion
(Manojlovich et al. Infect Control Hosp Epidemiol. 2015)

• Prospectively observed 81 catheter insertions in a level 1 trauma center emergency department

59% of the attempts had at least 1 major break in aseptic insertion technique

• Examples of major breaks of sterility:
  – Touching items on sterile field with bare hands
  – Catheter tip touching something before insertion
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(Meddings. Clin Infect Dis 2011)
Timely Removal of Indwelling Catheters

- 30 studies have evaluated urinary catheter reminders and stop-orders
  - Significant reduction in catheter-associated urinary tract infection (53%)
  - No evidence of harm (ie, re-insertion)
  - Will also address the non-infectious harms of the Foley

A Program to Prevent Catheter-Associated Urinary Tract Infection in Acute Care

Preventing CAUTI in Acute Care

- Federally-funded national program
- Total of 603 hospitals (926 units) in 32 states, DC, & Puerto Rico
- ~60% non-ICU; ~40% ICU
- Non-ICUs: CAUTI reduced by 32% (& decrease in catheter use)
- ICUs: no change in CAUTI or catheter use
The *key* intervention is having the bedside nurse assess daily whether the catheter is necessary.
What about the ICU?
Just because a patient is in the ICU does NOT mean that the patient needs a Foley…

The Key Question is this:

Are hourly assessments of urine output required?
Preventing Infection

Technical

Socio-adaptive
Outline

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The first intersectional innovation is to apply principles from cognitive psychology.
The 2\textsuperscript{nd} intersectional innovation to consider is applying sociological principles to prevent infection
Relevance to preventing CAUTI ....

Nurse-initiated Foley removal protocols work better in hospitals with low power distance.
Anticipate human-related barriers regardless of culture.
Active Resistors
Organizational Constipators
Applying these Principles to CAUTI Prevention…
Step 1: Form a multidisciplinary CAUTI prevention team
### Key Roles and Responsibilities to Prevent CAUTI

<table>
<thead>
<tr>
<th>Role or Responsibility</th>
<th>Example of Personnel to Consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project coordinator</td>
<td>IP, quality manager, nurse manager, nurse educator</td>
</tr>
<tr>
<td>Nurse champion (engage nursing personnel)</td>
<td>Bedside nurse, nurse educator, unit manager, charge nurse</td>
</tr>
<tr>
<td>Physician champion (engage medical personnel)</td>
<td>ID physician, hospitalist, hospital epidemiologist, urologist, ED doc</td>
</tr>
<tr>
<td>Data collection, monitoring, reporting</td>
<td>Infection preventionist, quality manager, utilization manager</td>
</tr>
</tbody>
</table>

(Modified from www.catheterout.org)
The 6 Steps to Success

1. Form a multidisciplinary CAUTI prevention team
2. Develop/modify a CAUTI policy for your institution
3. Pick an appropriate unit to start or go hospital-wide
4. Track performance and then escalate as necessary
5. Once successful, spread to other places
6. Consider sustainability at the outset; hard-wiring is worth the effort
It is always good to have a Plan B:

How can we provide tailored guidance for the ~5000 hospitals in the United States?
CAUTI Guide to Patient Safety (GPS) (www.catheterout.org)

- Brief, trouble-shooting validated guide available on-line
  (Saint et al. AJIC 2014; Fletcher et al. AJIC 2016)

- 10 questions:
  - *Do you have a well-functioning team?*
  - *Do you have a project manager with dedicated time?*
  - *Do you have an effective nurse champion?*

- Help identify the key reasons why hospitals may not be successful in preventing an infection

- Once barriers identified, can help identify possible solutions
Outline

✓ Aha Moments
✓ Preventing CAUTI
✓ Different Approaches?
• Conclusions
Conclusions

• Preventing hospital infection is important

• CAUTI is a prototypical patient safety problem: preventing infection is both simple and complex

• Diverse approaches may help

• Finally…
Please consider 3 simple leadership rules.
“I can think of no one else in infection prevention that has contributed more to our profession and scientific body of knowledge than Bill Rutala – and always so generous, gracious, with a smile, and a terrific sense of humor.”

Gina Pugliese, Vice President Emeritus, Premier Safety Institute
“Bill, our paths have crossed so many times over the past several years, and each time I continue to be even more impressed with your dedication, knowledge and passion for infection prevention.”

Linda Greene, CIC
APIC President
“Bill… As you retire and reminisce about how you and your dear friend Marty Favero enriched the lives of so many women in infection control all around the world, we say a heartfelt thank you and hope that in retirement you, Donna, Melissa, and Meredith now get to enjoy extended time together as a family. With friendship and admiration always.”

Sue Resnik & Cath Murphy
Gold Coast, Australia
“Bill, congratulations on your retirement. Stay away from those weird restaurants around the world that we went to so you don't get food poisoning. And finally, I got a note from Larry Muscarella and he said he's coming to your retirement and bringing all of his relatives. Best wishes to you and Donna.”

Marty Favero, PhD
“Bill's distinguished career in healthcare epidemiology has had an extraordinary and monumental impact around the world. Bill has achieved such heights because of his mentoring, generosity, unwavering adherence to scientific query, and friendship to all.”

Russ Olmsted, MPH

“Dear Bill, my heartfelt congratulations on your retirement! Thank you for the indelible mark you've made on us all and to your family, all the best. On the advent of this celebration I am making a motion that we revise the Spaulding Criteria to now read: The Spaulding-Rutala Approach to Disinfection and Sterilization of Patient Care Items or Equipment.”
“When I was a fellow in infectious diseases, William Rutala was the reference for anything related with disinfection and sterilization.

When I was a junior faculty in infection prevention and control, Bill Rutala was the reference for anything related with disinfection and sterilization.

Now that I am the Director of the infection control program, Bill is still the reference for anything related with disinfection and sterilization.

Thanks Bill, it is an honor to know you!”

Didier Pittet, MD, MS (U of Geneva and WHO)
“Dearest Colleague Bill:
I know that nobody is indispensable, but what are we going to do without Dr. Disinfection? Your contributions are irreplaceable and unique in the field. You are loved by all. Now, on to the next exciting phase with our blessing and best wishes!”

-- Elaine Larson, RN, PhD
Thank you!

Outliers

The Story of Success

Malcom Gladwell

#1 bestselling author of *The Tipping Point* and *Blink*