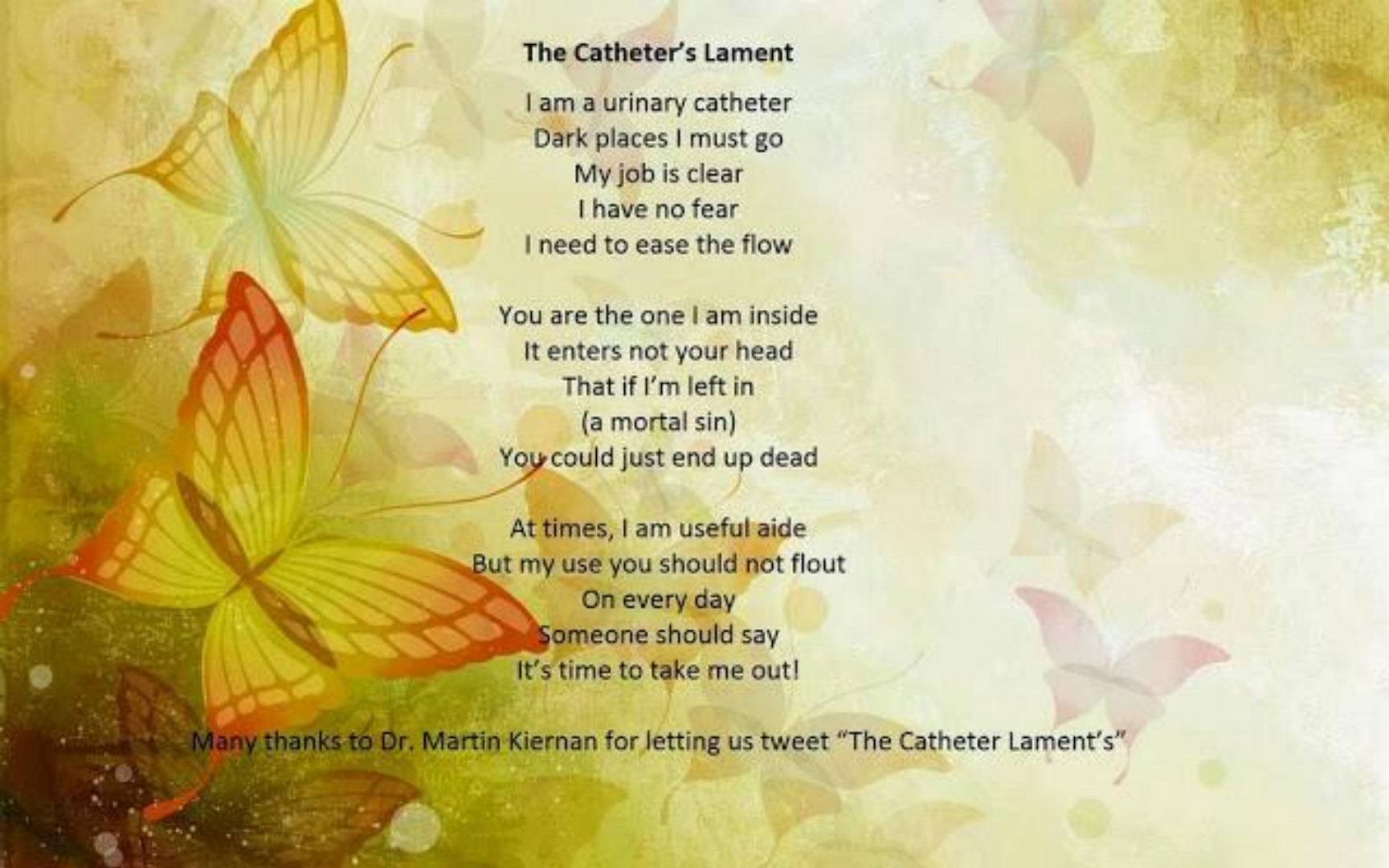


Technical and Socio-Adaptive Elements of CAUTI Prevention

Karen Jones RN, BSN



The Catheter's Lament

I am a urinary catheter
Dark places I must go
My job is clear
I have no fear
I need to ease the flow

You are the one I am inside
It enters not your head
That if I'm left in
(a mortal sin)
You could just end up dead

At times, I am useful aide
But my use you should not flout
On every day
Someone should say
It's time to take me out!

Many thanks to Dr. Martin Kiernan for letting us tweet "The Catheter Lament's"

Kiernan, M. "The Life and Times of the Urinary Catheter",
Infection Prevention Society 2013, London.

Objectives

- Identify the technical practices that contribute to catheter-associated urinary tract infection (CAUTI) prevention
- List elements of teamwork that contribute to high performing teams
- Consider how CAUTI prevention ties into other patient safety initiatives

Technical Challenges

- Can be solved with existing science or technology
“knowledge based”
- Issues or challenges for which there is “an answer”
- Examples:
 - Summarizing the evidence
 - Educating staff and senior leaders
 - Evaluation: Are patients safer?

The Technical



Healthcare-Associated Infections (HAIs)

- Almost 75% of acute-care hospital associated infections (HAIs) fall into one of these categories:
 - Catheter-associated urinary tract infections
 - Surgical site infections
 - Bloodstream infections
 - Pneumonia
- Annual cost of catheter-associated UTI (CAUTI) = \$450 million

HICPAC

HEALTHCARE INFECTION CONTROL
PRACTICES ADVISORY COMMITTEE

GUIDELINE FOR PREVENTION OF CATHETER- ASSOCIATED URINARY TRACT INFECTIONS 2009

Carolyn V. Gould, MD, MSCR ¹; Craig A. Umscheid, MD, MSCE ²; Rajender K. Agarwal, MD, MPH ²; Gretchen Kuntz, MSW, MSLIS ²; David A. Pegues, MD ³ and the Healthcare Infection Control Practices Advisory Committee (HICPAC) ⁴

<http://www.cdc.gov/hicpac/pdf/CAUTI/CAUTIguideline2009final.pdf>

**Know when
you need it
(indications)**

**Know how
to place it
(insertion)**

**Know your
catheter**

**Know how
to care for it
(maintenance)**

**Know when
it is no
longer needed
(continued use)**

CAUTI Prevention #1: Know When You Need It

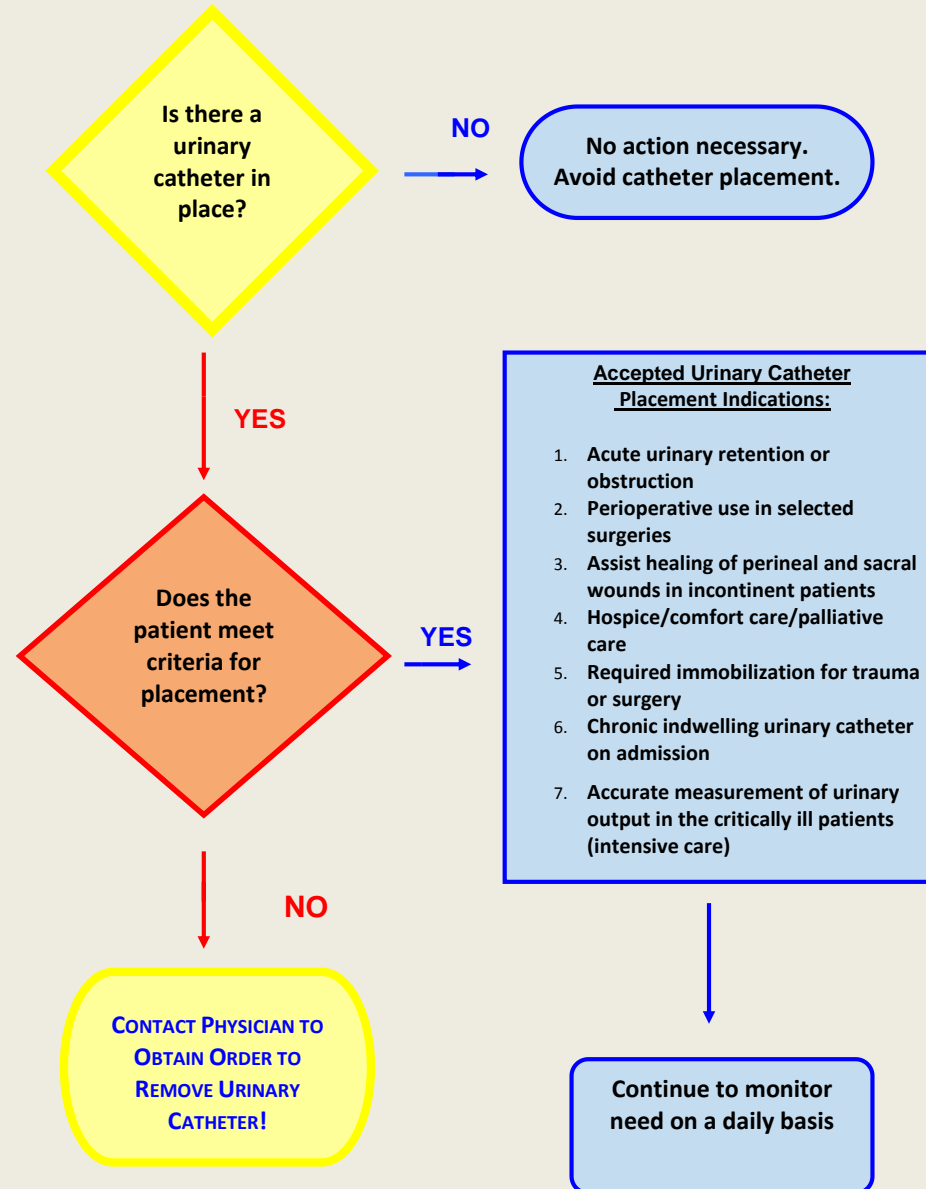
Appropriate indications

- Urinary retention or obstruction
- Immobilized for trauma or surgery
- Accurate measurement in critically ill patients (expected to be admitted to intensive care)
- Selected surgical procedures
 - Prolonged surgery; large-volume infusions intra-op; urological surgery
- Incontinence with open sacral/perineal wounds
- End of life, hospice

2009 Prevention of CAUTI HICPAC Guidelines

Gould et al, Infect Control Hosp Epidemiol 2010

GUIDELINES FOR URINARY CATHETER NEED IN NON-INTENSIVE CARE UNITS



CAUTI Prevention #2: Know How to Place It

- Ensure that only properly trained persons insert catheters
 - Competencies for urinary catheter placement
- Insert using aseptic technique
 - Goal is to avoid contamination of the sterile catheter during the insertion process
- Don't make it a one-person job



Urinary Catheter Insertion Checklist

<u>Components of checklist</u>	Compliant	
	Yes	Yes, with correction
Hand hygiene before and after procedure		
Sterile gloves, drapes, sponges, aseptic sterile solution for cleaning, and single use packet lubricant used		
Aseptic insertion technique (no contamination during placement)		
Proper securement of urinary catheter post-procedure		
Closed drainage system and bag below patient post-procedure		

Make the Steps for Insertion Easier



CAUTI Prevention #3: Know How to Care for It

- Use securement device
- Maintain a closed drainage system
- Ensure proper sample collection



Maintain unobstructed flow

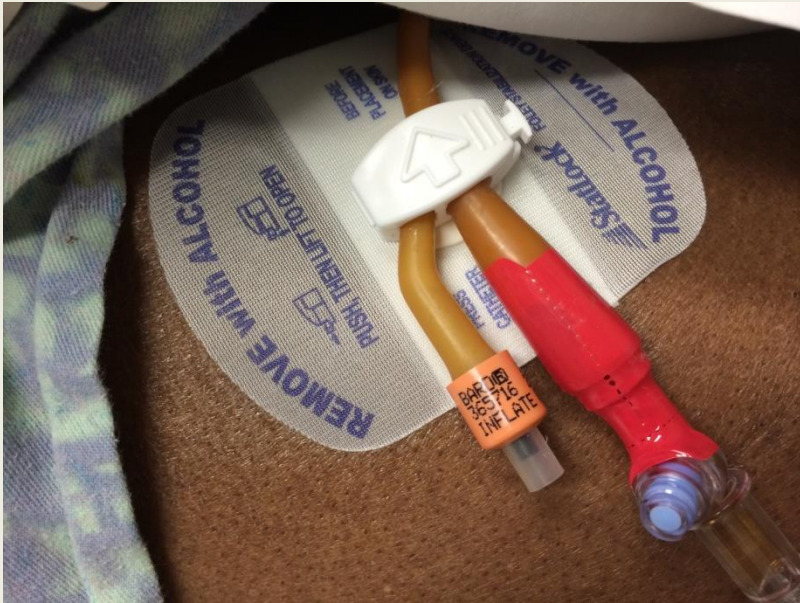
- Free of loops or kinks
- Keep it simple & safe



CAUTI Prevention #3: Know How to Care for It

- Use routine hygiene
- Keep collection bag below the bladder
- Empty the bag regularly

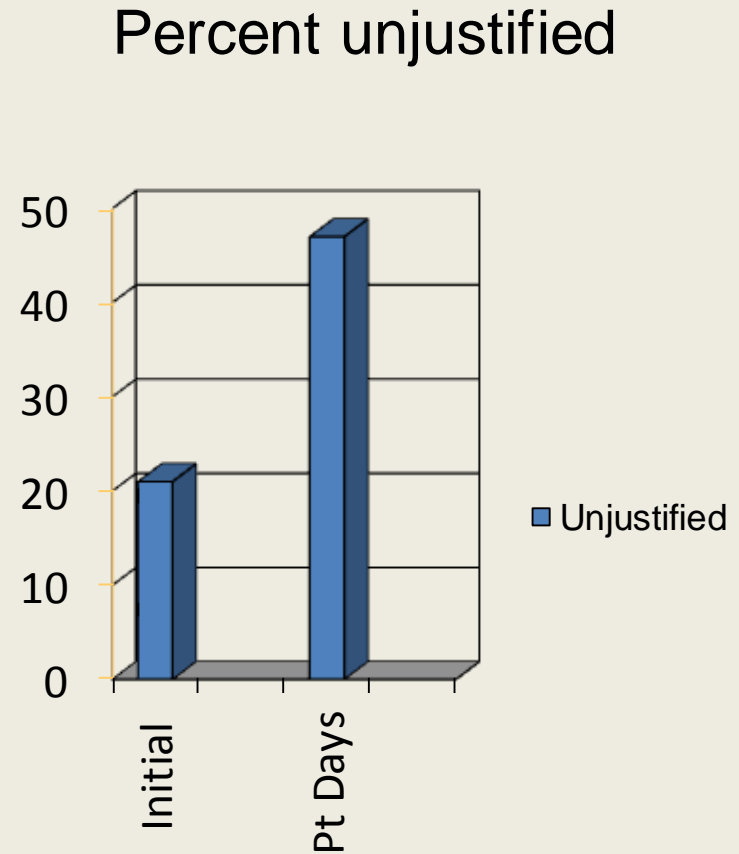
Who's “breaking the seal”?



- Point-prevalence on some ICU units indicated >50% seals were not intact
- Most required urine meters for accurate I's & O's – what was happening?
- Spoke to nursing staff on ICU units
- Reviewed charts
- Met with managers
- Collaborative approach with ED, OR, ICUs, med-surg units

CAUTI Prevention #4: Know When It is No Longer Needed

- Study by Jain (1995) examined number of unjustified or inappropriate urinary catheters
- Time of insertion, 21%
- Several days later, 47%
- “Urinary Incontinence” was most common reason cited



Jain. Arch Int Med 95

CAUTI Prevention #4: Know When It is No Longer Needed

- Triggers:
 - Change in patient status (i.e., hemodynamically stable, post-op)
 - Change in patient location
 - Patient request

CAUTI Prevention #4: Know When It is No Longer Needed

- Consider the alternatives
 - Condom catheter
 - Intermittent straight catheter
 - Urinals
 - “Hats”
 - Daily weights
 - Purposeful nurse rounding
 - Scheduled toileting
 - Absorbent cloth underpads
 - Bariatric devices to include patients of all sizes



“Prove It or Remove It” Campaign

ICU nurses and ICU technicians maintain UCs

- » Keep UC system closed
- » Always use a securement device
- » Keep urinary bag lower than the patient’s bladder
- » Appropriate urine cultures (only done when CAUTI suspected)
 - Wash hands
 - Clean sampling port with alcohol wipe
 - Use Vacutainer Access Device to collect sample
 - Transport to lab in 1 hour or less

“Prove It or Remove It” Campaign

Assess daily for continued need

- During Multidisciplinary Rounds
- After change in patient status (i.e., hemodynamically stable)
- Prior to transfer to floor

Device			Action Taken (if needed)
Urinary Catheter		If no, describe action taken	
Catheter secured	Yes	No	
Bag below bladder	Yes	No	
Appropriately indicated	Yes	No	
Mechanical Ventilation		If no, describe action taken	
Head of Bed elevated \geq 30 degrees	Yes	No	
Elevated for a weaning trial today	Yes	No	
Peripheral IV		(If no describe action taken)	
Dressing intact	Yes	No	
Site: No redness or drainage	Yes	No	
Need: line still necessary	Yes	No	
Central Line		(If no, describe action taken)	
Dressing intact	Yes	No	
Site; dry and no erythema	Yes	No	
Need: line still necessary	Yes	No	

Multidisciplinary Approach



Indiana: CUSP/CAUTI work

- 45 units across 29 hospitals
- Improvements made in UC appropriateness
- UC prevalence down from baseline
- CAUTI rates by UC days down from baseline, lower than national comparative rate



Ongoing Focus Areas

- Review of need for catheter prior to insertion
- Prompt catheter removal
- CUSP Activities (i.e., TCT, senior executive rounds)

CAUTI Prevention – Technical Takeaways

1. Reduce placement of unnecessary indwelling urinary catheters
2. Ensure the use of proper insertion technique for indwelling urinary catheters that are appropriately indicated
3. Increase prompt removal of indwelling urinary catheters that are no longer needed

Decrease the risk of hospital-acquired
catheter-associated urinary tract infections

How Do We Achieve These Goals?

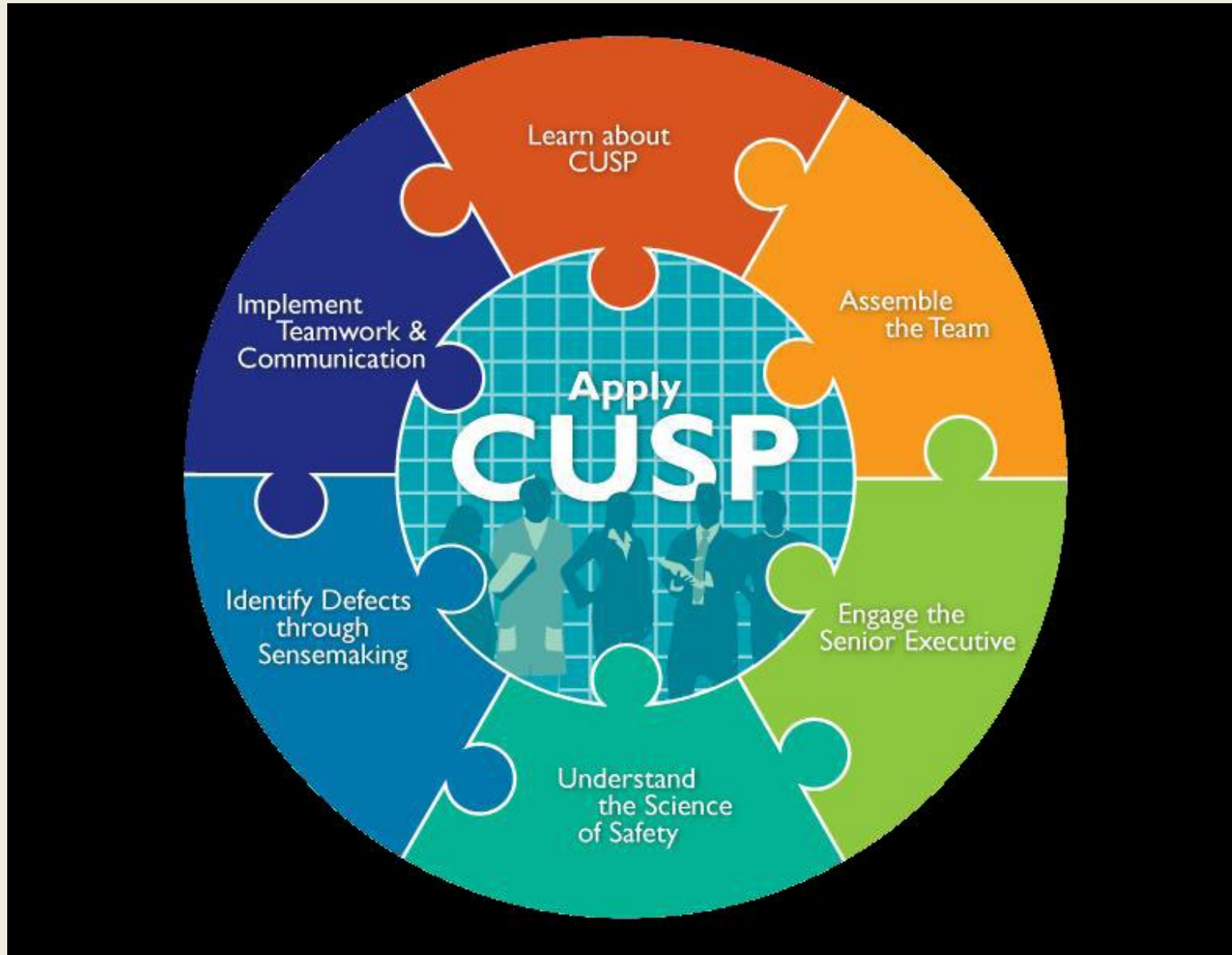
- Engagement
- Education about the appropriate use and insertion of urinary catheters
- Execution
- Evaluation
 - Monitoring and Feedback

The Socio-Adaptive



Adaptive Challenges

- Require a change of values, attitudes or beliefs
- “Behavior based”
- Teamwork
- CUSP (Comprehensive Unit-based Safety Program) can help teams address these adaptive challenges



Why CUSP works

- Focuses on culture
- Integrates safety practices into daily tasks
- Easily translates across different regions, healthcare systems, etc., as the core principles are widely accepted
- Brings accountability
- Keeps leaders in touch/involved

CUSP points to remember

- Culture is local
 - Consider implementing in a couple units and then spread, adapting as needed
 - Include bedside/frontline staff on improvement team!
- Pair it up with the technical learning
 - Consider using CUSP as a way to improve clinical practice
- Takes time to improve culture

The Model Applied to CUSP: CAUTI

CUSP

- Educate staff on science of safety
- Identify defects
- Assign executive to adopt unit
- Learn from one defect per quarter
- Implement teamwork tools

CAUTI

- Appropriate reason for insertion (HICPAC Guidelines)
- Prompt removal catheters when no longer indicated (HICPAC Guidelines)
- Proper care for appropriate catheters
- Insertion intervention

Consistently Using Evidence-Based Practices
Remains a Challenge . . .

Changing Culture



Can we get there?



Prevailing Themes

- 1) Prioritization
- 2) Champions
- 3) Tailoring
- 4) Workload and Workflow
- 5) Leadership

Now for the hard part . . .

- Must also understand the **context**, the **culture** and **people** within an organization and how we can work to cause positive change
- Qualitative research has given insight into the barriers/perceived barriers of CAUTI reduction
- Identify how hospitals approach CAUTI = gives a view of how other things function
- Requires communication across the disciplines (physicians, nurses,) involves leaders engaging followers - especially those skeptical/resistant to change

Catheter-associated urinary-tract infection is a low priority . . .

. . . especially when compared to many other issues/priorities within the hospital



FAQs (frequently asked questions)

about
"Surgical Site Infections"

What is a Surgical Site Infection (SSI)?
A surgical site infection is an infection that occurs after surgery in the part of the body where the surgery took place. Most patients who have surgery do not develop an infection. However, infections develop in about 1 to 3 out of every 100 patients who have surgery.

Some of the common symptoms of a surgical site infection are:

- Redness and pain around the area where you had surgery
- Drainage of cloudy fluid from your surgical wound
- Fever

Can SSIs be treated?

At the time of your surgery:

- Quit smoking. Patients who smoke get more infections. Talk to your doctor about how you can quit before your surgery.
- Do not shave near where you will have surgery. Shaving with a razor can irritate your skin and make it easier to develop an infection.
- Speak up if someone tries to shave you with a razor before surgery. Ask why you need to be shaved and talk with your surgeon if you have any concerns.
- Ask if you will get antibiotics before surgery.

Notes from the field

From an Infection Preventionist:

The main urologist “who everybody knows and loves thinks the whole Bladder Bundle is just *stupid*. There is no one who is passionate about getting Foley catheters out of our patients.”

From a Director of Nursing:

[Foleys are] “low tech, low glamour. If we get a Foley infection nobody says, ‘let’s have a huddle and see how it happened’.”

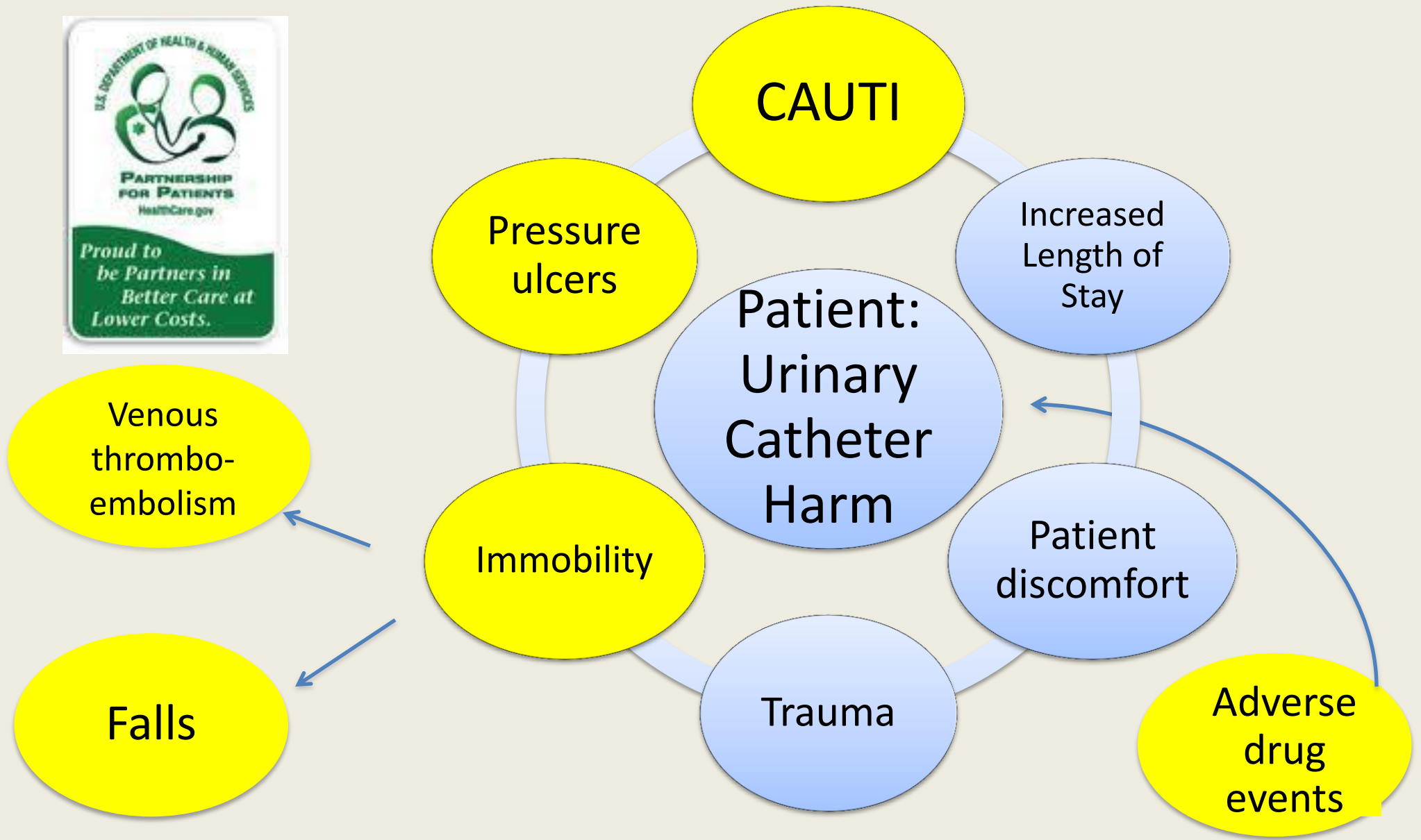
But . . . timely removal of catheters considered important by some

A physician administrator from a large private hospital explained:

“the nurses on the geriatrics unit wanted to have their patients regain mobility or maintain their mobility at all costs and having a catheter . . . was one other reason why they never had to get out of bed . . . the catheters are always removed on the geriatrics unit but it’s a fight on the other units to have those catheters taken out because there’s always an excuse. Like, ‘well, they’re really big or it’s hard for them to get out of bed or it’s a two person assist’...”

A staff nurse reported:

“the nurses call the physician and say ‘can we pull this catheter?’ because the Foley agitates the patient more . . . They keep forgetting that the Foley is there and they keep feeling like they have to urinate. The catheter will get pulled out by the patient or they are going to try and get out of bed and injure themselves . . . We have taken them [catheters] out for patient safety.”



Choosing a “champion” can help to facilitate the process

- Successful champions are
 - Intrinsically motivated
 - Enthusiastic about the practices they promote
 - Able to communicate effectively with many disciplines (bedside nurses, physicians, leadership, etc.)

The (not) 'Joy' of Being Appointed Champion

“ ...everyone thinks when they label you as a champion, everyone automatically thinks, ‘Oh more work, more problems’ . . .” – A Director of Medical Intensive Care Unit:

“...It just gets to be overwhelming after a while . . . it was just sort of dumped on ...the person but there wasn't enough hours in a day.” – An Infection Preventionist



The Importance of Tailoring

Likely need to modify or adapt your approach to CAUTI for each context and set of circumstances (post op ≠ ICU ≠ rehab ≠ Obs)

Often see different solutions at different hospitals; different solutions within different units at the same hospital

- Educating nurses about urinary catheters
- Who assesses for catheter appropriateness?
- Focus on insertion or timely removal or both?

Workflow and Workload

- The intervention(s) should become part of the workflow: both removal (floor) and insertion (ED)
- For insertion, ED and OR are paramount
 - Example: Urinary catheters put in for specimen collection and left in
 - Example: Urinary catheters placed for surgery expected to only last an hour
- Nursing workload was a big issue - since urinary catheters can be easier for the nurses, this may be a disincentive to remove

As described by a Clinical Nurse Specialist:

“I think nurses are so busy...They have a lot of things they’re dealing with ...if a patient has a catheter, it’s almost easier for them. There aren’t as many nurses that seem to get the whole picture that this is what’s best for the patient...”

A charge nurse described how some nurses prefer their patients have urinary catheters:

“ . . . because then you don’t have to get them up every 15-20 minutes to go pee. Some of the ladies go maybe 100 ccs every 15-20 minutes and you’re in there constantly answering the call light.”

“I think it’s not just that it’s easier. It’s that nurses are worried, ‘Well do I really want this person hopping out of bed and can I really be sure that they’re going to call me to help them?’ We don’t want there to be any falls. That’s considered to be a never-event in a hospital...” – [an Infection Preventionist](#)

[From a medical-surgical floor nurse:](#)

“They” (emergency department) “keep putting them in down there and they come up here – we don’t even have a Foley order? . . . And so, sometimes they just stay in because it’s easier to leave them in.

[From ED nurses:](#)

“We just do it thinking we’re saving the floor nurses some time by putting it in and we need a urine specimen and it’s probably a time saver because they don’t have to get the patient up to go to the bathroom.”

The Importance of Leadership

- Leadership at various levels appears to be important, especially at the nurse manager level
- Project leader to help 'manage' the process can be very useful
- Physician leadership
 - Behind-the-scenes (getting buy-in from medical executive committees and other physicians)
 - Front-line (i.e., hospitalists, hospital epidemiologists)

Teamwork:

Key Roles and Responsibilities

Role or responsibility	Example of personnel to consider
Project coordinator	Infection Preventionist, Quality manager, Nurse manager
Nurse champion (engage nursing personnel)	Nurse manager, charge nurse, staff nurse
Medical/physician liaison	Urologist, ID physician, hospital epidemiologist
Data collection, monitoring, reporting	Infection Preventionist, Quality manager, Utilization manager

Emerging Themes

- Passionate champion
- Leadership is crucial
- Healthcare worker engagement
- Perception of risk

Conclusions

- Many reasons to prevent CAUTI
- Implementing change is not easy
- Preventing CAUTI requires understanding both the “technical” components and the “socio-adaptive” aspects
- Preventing CAUTI is a Team Sport
- The ultimate objective is to ensure we provide the safest and most effective care for patients

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