Name of the speaker: Dr. Debra Adams

I have the following potential links of interest to report:

- NICE (National Institute for Clinical Excellence) fellow.
- FIT (Forum for Injection Technique) Board member.
- In the last 5 years, honorariums received from BD, 3M.
HOUDINI.
THE URINARY CATHETER DISAPPEARING ACT.

Dr. Debra Adams R.N. PhD.
NICE Fellow
Senior Infection Prevention Advisor
NHS Improvement
Objectives

- Overview of some of the National drivers to prevent CAUTI (catheter associated urinary tract infection) in England.
- Discuss; Are Urinary Catheters an infection risk?
- Present: HOUDINI; a nurse led protocol.
National IP Improvement Drivers in England

• 50% reduction in Gram negative HCA BSI by 2020.

• Over 5 years - an extra 6,000 deaths will be attributable to pan-resistant Gram–negative bloodstream infections (GNBSIs).
  • Extra NHS (National Health Service) costs to manage resistant infections: estimated to be £280 million.
  • Estimated cost of treating Gram-negative infection:
    • For a straightforward case = at least £3,000
    • For a highly resistant case = at least £6,000
    • Cost of £1m per resistant infections outbreak in a hospital.
National Guidelines

- NICE: Quality Standard QS61 and Clinical Guideline CG139... “Reviewed regularly and the urinary catheter removed as soon as possible”.

- EPIC 3: Assess and record the reasons for catheterisation every day. Remove the catheter when no longer clinically indicated.
Are Urinary Catheters a Risk?

• The Foley catheter was introduced in the 1930s and hasn’t changed in its design!!

• DVD……..
Context

• 15–25% of hospitalised patients have a UC inserted during their stay (EPIC 3).

• UTI are the most common HCAI in acute hospitals: 19% (HPA, 2012, Smythe et al; JHI 2008).

• The major predisposing factor for healthcare associated UTI is the presence of an indwelling UC (Tenke, Koves, Johansen. Curr Opin Infect Di. 2014; 27:102-107).

• In acute care facilities, the risk of developing bacteriuria increases 5% for each day of UC. (Saint. AJIC. 2000;28:68-75).
Improvement Issue:

- To evaluate the effectiveness of a nurse led HOUDINI UC removal protocol in reducing the number of UCs used. Therefore, potentially reducing the associated risk of a catheter associated urinary tract infection (CAUTI).
Method:

• **TEAM WORK!!**
  - The Infection Prevention Nurses, Continence Nurse Specialist and Urology Nurse Practitioner implemented an adapted HOUDINI urinary catheter removal protocol.

• **Quality Improvement process:**
  - A Plan Do Study Act (PDSA) cycle was utilized to evaluate the HOUDINI protocol; two months pre and two months post implementation.
HOUDINI
The Urinary Catheter Disappearing Act!!!

- **Haematuria** - visible?
- **Obstruction** - urinary?
- **Urology surgery**?
- **Decubitus Ulcer** - open sacral or perineal wound in an incontinent patient?
- **Input/Output fluid monitoring**?
- **Not for resus/Comfort care**/(Physician required?)
- **Immobility** due to physical constraints e.g. unstable fracture?

If NO; then make that urinary catheter disappear!

Ammended from:
Development of a Nurse-Driven Protocol to Remove Urinary Catheters
Key Performance Indicators.
Chosen because:

- 8.5% of hospital acquired BSI may be associated with a CAUTI \(^{(\text{Public Health Laboratory Service, 2002})}\).

- *E. coli* is the most prevalent pathogen causing UTIs

  \(^{(\text{Hidron \textit{et al.}, 2008. Abernathy \textit{et al} 2017})}\).
Data Collection: Monitored Two Months Pre and Post HOUDINI:

• UC usage was monitored utilizing a monthly point prevalence audit.
• Non-duplicated *Escherichia coli* laboratory confirmed urine samples were monitored (note we were not identifying UTI but laboratory confirmed diagnosis of *E-coli* present.
• Non-duplicated *E-coli* blood stream infection (BSI) on the pilot wards were monitored.
Approach

• Keep it simple!
• Put posters where staff access them; ward round trollies, behind toilet doors.
• Develop credit card style HOUDINI cards.
• Win hearts and minds.
• Work with, and not do to.
Did it work????
Evidence of Improvement:

- UC per patient population usage decreased by greater than 17% following the implementation of HOUDINI on the trial wards.

- Non-duplicated *E. coli* laboratory confirmed CSU decreased by 70% compared to the control group de-duplicated E-coli laboratory confirmed MSU which increased by 25%

- Non-duplicated *E. coli* BSI from patients with UC remained unchanged at 0%
% of patients catheterized on the three trial wards
% of patients catheterized on Ward 10
% of patients catheterized on Ward 11
% of patients catheterized on Ward 12
TRIAL; E coli +ve urine samples: CSU
CONTROL; E coli +ve urine samples: MSU

2 months pre HOUDINI
2 months post HOUDINI
Recommended Future Steps:

• The implementation of HOUDINI demonstrated a **decrease** in both UC usage and *E. coli* UC associated positive urine samples.

• Therefore, an assumption may be made that implementing the HOUDINI protocol can reduce the risk for patients developing a CAUTI.


  • This data was presented at the Infection Prevention and Control Conference- Bournemouth 2011 and was awarded “Best Poster”.

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“Compelling data”

**HOUDINI: make that urinary catheter disappear – nurse-led protocol**

Dale Adams, Helen Bucior, Oliva Day, Jo-Ann Rimmer
Infection Prevention and Control Department, Hill Stephenson NHS Foundation Trust, Westmorland Road, Jedford T22 2AY UK.

“Compelling data”
Others Experiences: UHB NHSFT.

- HOUDINI was used as part of a series of interventions at The University Hospitals Birmingham NHS FT:

- Outcomes:
  - CAUTI decreased by >50%,
  - Prevalence of indwelling catheters reduced from 22% to 17%
  - E-coli BSI reduced from 17% to 10%.

Utilized HOUDINI as part of a multi-modal strategy.

Outcome:

- A comparison of audit data between March 2013 and January 2015 showed:
  - a 30% reduction in the number of patients with a UC
  - a 71% reduction in the number of patients with a UC who developed a CAUTI

A patient experience:
Professor Jennie Wilson.
Richard Wells Research Centre, University of West London

• Mr. A was admitted to the ward with an indwelling catheter.
• He told us that the GP had inserted the catheter for a swollen abdomen some 18 months previously.
• Since that time Mr A said he had suffered a recurrent UTI whenever the catheter was changed.
• According to his wife having the catheter "Ruined his life for the last 18 months. Indeed he spent Christmas at home as he was afraid the bag would leak"
• The IPC team and ward staff could find no record of a formal referral to the urology service and so the rational behind the catheter was unclear. Following Houdini principles the catheter was removed
• Mr A passed urine normally and was discharged without a urinary catheter.
Finally.
Get the message across!

Sometimes it's not that staff don't know, its that we haven't made the message simple........

• https://www.youtube.com/watch?v=Hzgzim5m7oU (Power of Words)