Professional Nursing Practice Beyond the Toolkit: How Enculturating Human Factors Influences Sustained CAUTI Reduction

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March 10, 2016
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Session C105

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Objectives

- Upon completion of the session, the participant will be able to:
  - Define human factors.
  - Describe two ways human factors influence sustained CAUTI reduction.

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Purpose

- **Reduce the incidence of CAUTI** in patients with an indwelling urinary catheter through identification and enculturation of human factors following implementation of an evidence-based prevention program.
- Move beyond protocols to **enculturate human factors** to sustain/further improve CAUTI rates.

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Relevance/Significance

- **Catheter-associated urinary tract infections (CAUTIs)**
  - Account for > 40% of all hospital associated infections [11]
  - Increase length of stay by 2 days and direct cost of $1,000 [8]
  - Cost healthcare system $400M annually [2, 9, 14]
  - Reduce hospital payment [12, 14]
- **The Joint Commission identified the prevention of CAUTI as a National Patient Safety Goal (NPSG) to promote and improve patient safety. [13]**
  - NPSG.07.06.01: Implement evidence-based practices to prevent indwelling CAUTI

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Relevance/Significance

- Human factors recognize that the workplace needs to be designed and organized to minimize the likelihood of errors occurring and the impact of errors when they do occur.[15]
- Failure to apply human factor principles is a key aspect of adverse events.[6]

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Strategy and Implementation

- **Human Factors**
  - Science of defining the interrelationship between humans, technology they use, and the environment in which they work [5]
  - Considers how the "human condition" influences how we do our work [4]
  - Emphasizes anticipation and prevention of harm rather than reacting to harm [4]

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Strategy and Implementation

- **Personal Interaction**
  - Daily CNS rounding
  - Collegial provider dialogues
  - Interprofessional partnerships
  - Interdisciplinary rounds
  - Integrate into daily Safety Huddle

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Strategy and Implementation

- **Structured Conversation**
  - Deliberate direct nurse conversations
  - Checklist-scripted collaborative conversations
  - Adjusted EMR documentation

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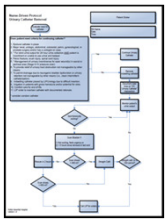
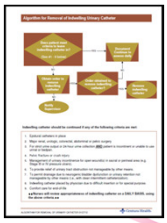
Strategy and Implementation

- **Tool**
  - **Removal Protocol**



- **Tool**
  - **Daily Need Assessment**



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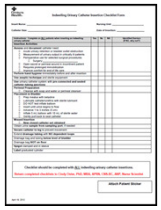
Strategy and Implementation

- **Tool**
  - **Checklist**



- **Tool**
  - **Prevention Bundle**

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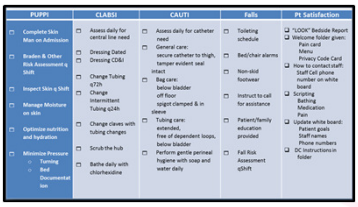
Strategy and Implementation

- **Tool**
  - **Standardized Processes**



PUPPI	CLABSI	CAUTI	Falls	Pt Satisfaction
Complete Skin Man on Admission Braden & Other Risk Assessment q Shift Inspect Skin q Shift Manage Moisture on skin Optimize nutrition and hydration Minimize Pressure ○ Turning ○ Bed Documentation	Assess daily for central line need Dressing Dated Dressing CDI&I Change Tubing q72h Change Intermittent Tubing q24h Change claves with tubing changes Scrub the hub Bathe daily with chlorhexidine	Assess daily for catheter need General care: secure catheter to thigh, tamper evident seal intact Bag care: below bladder off floor spigot clamped & in sleeve Tubing care: extended, free of dependent loops, below bladder Perform gentle perineal hygiene with soap and water daily	Toileting schedule Bed/chair alarms Non-skid footwear Instruct to call for assistance Patient/family education provided Fall Risk Assessment q Shift	"LOOK" Bedside Report Welcome folder given: Pain card Menu Privacy Code Card How to contact staff: Staff Cell phone number on white board Scripting Bathing Medication Pain Update white board: Patient goals Staff names Phone numbers DC Instructions in folder

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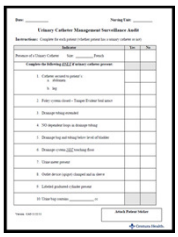
Evaluation

- **Measure and Monitor**
  - Effectiveness of prevention efforts [3, 7]
  - Adherence to EBP guidelines [3, 7]



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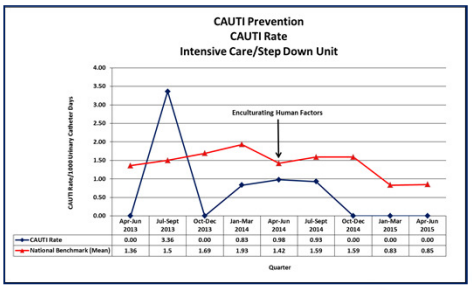

	Apr-Jun 2013	Jul-Sept 2013	Oct-Dec 2013	Jan-Mar 2014	Apr-Jun 2014	Jul-Sept 2014	Oct-Dec 2014	Jan-Mar 2015	Apr-Jun 2015
CAUTI Rate	0.00	3.36	0.00	0.83	0.98	0.93	0.00	0.00	0.00
National Benchmark (Mean)	1.36	1.5	1.69	1.93	1.42	1.59	1.59	0.83	0.85

ICU/SDU CAUTI rate below national benchmark

National comparison data are a product of Press Ganey's National Database of Nursing Quality Indicators® (NDNQI®)

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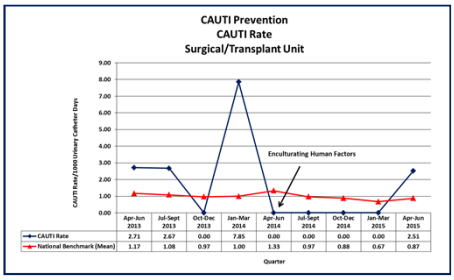

	Apr-Jun 2013	Jul-Sept 2013	Oct-Dec 2013	Jan-Mar 2014	Apr-Jun 2014	Jul-Sept 2014	Oct-Dec 2014	Jan-Mar 2015	Apr-Jun 2015
CAUTI Rate	2.71	2.67	0.00	7.85	0.00	0.00	0.00	0.00	2.51
National Benchmark (Mean)	1.17	1.08	0.97	1.00	1.33	0.97	0.88	0.67	0.87

Surgical/Transplant unit CAUTI rate below national benchmark majority of quarters

National comparison data are a product of Press Ganey's National Database of Nursing Quality Indicators® (NDNQI®)

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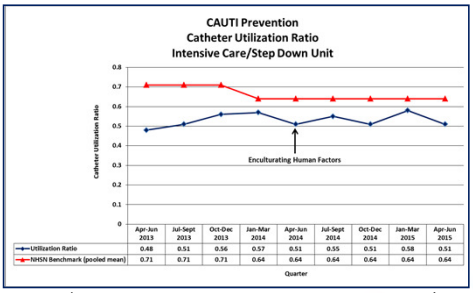

	Apr-Jun 2013	Jul-Sept 2013	Oct-Dec 2013	Jan-Mar 2014	Apr-Jun 2014	Jul-Sept 2014	Oct-Dec 2014	Jan-Mar 2015	Apr-Jun 2015
Utilization Ratio	0.48	0.51	0.56	0.57	0.51	0.55	0.51	0.58	0.51
NHSN Benchmark (pooled mean)	0.71	0.71	0.71	0.64	0.64	0.64	0.64	0.64	0.64

ICU/SDU catheter utilization ratio below NHSN benchmark[1]

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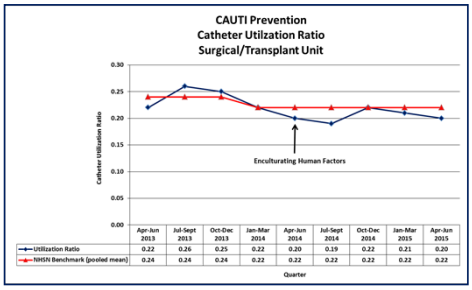
Evaluation



	Apr-Jun 2013	Jul-Sept 2013	Oct-Dec 2013	Jan-Mar 2014	Apr-Jun 2014	Jul-Sept 2014	Oct-Dec 2014	Jan-Mar 2015	Apr-Jun 2015
Utilization Ratio	0.22	0.26	0.25	0.22	0.20	0.19	0.22	0.21	0.20
NHSN Benchmark (pooled mean)	0.24	0.24	0.24	0.22	0.22	0.22	0.22	0.22	0.22

Surgical/Transplant unit catheter utilization ratio below NHSN benchmark[1]

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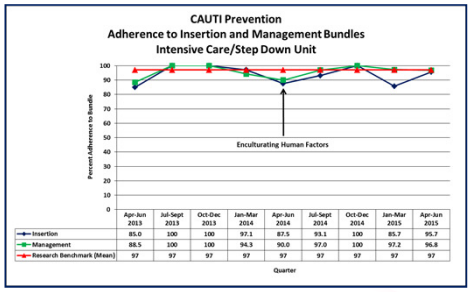

	Apr-Jun 2013	Jul-Sept 2013	Oct-Dec 2013	Jan-Mar 2014	Apr-Jun 2014	Jul-Sept 2014	Oct-Dec 2014	Jan-Mar 2015	Apr-Jun 2015
Insertion	85.0	100	100	97.1	87.5	93.1	100	85.7	95.7
Management	88.5	100	100	94.3	90.0	97.0	100	97.2	96.8
Research Benchmark (Mean)	97	97	97	97	97	97	97	97	97

ICU/SDU adherence to bundles at research benchmark[9]

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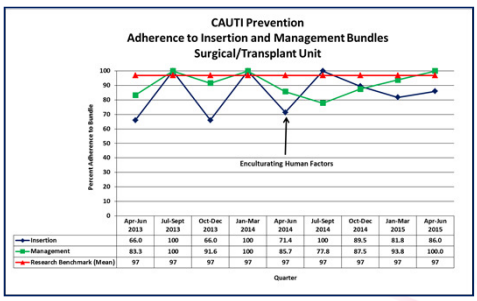
Evaluation



	Apr-Jun 2013	Jul-Sept 2013	Oct-Dec 2013	Jan-Mar 2014	Apr-Jun 2014	Jul-Sept 2014	Oct-Dec 2014	Jan-Mar 2015	Apr-Jun 2015
Insertion	66.0	100	66.0	100	71.4	100	89.5	81.8	86.0
Management	83.3	100	91.6	100	85.7	77.8	87.5	93.8	100.0
Research Benchmark (Mean)	97	97	97	97	97	97	97	97	97

Surgical/Transplant unit adherence to bundles at research benchmark[9]

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Evaluation

$112,700 ESTIMATED COST AVOIDANCE

ICU/SDU FY12 to FY15

FY12 $11,270/case x 11 cases = $123,970	$112,700
FY13 $11,270/case x 1 case = $ 11,270	($ 56,350)
FY14 $11,270/case x 6 cases = $ 67,620	$ 56,350
FY15 $11,270/case x 1 case = $ 11,270	
Estimated Cost Avoidance	**$112,700**

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Evaluation

$45,080 ESTIMATED COST AVOIDANCE

Surgical/Transplant FY12 to FY15

FY12 $11,270/case x 5 cases = $56,350	$22,540
FY13 $11,270/case x 3 cases = $33,810	($11,270)
FY14 $11,270/case x 4 cases = $45,080	$33,810
FY15 $11,270/case x 1 case = $11,270	
Estimated Cost Avoidance	**$45,080**

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Implications for Practice

- Enculturating human factors helps to design processes that make it easier to do the job right.
  - Avoid reliance on memory
  - Make things visible
  - Standardize processes
  - Routinely use checklists

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Implications for Practice

- The influence of human factors, intentional conversations, and team collaboration cannot be underestimated in the age of standardization and computerization.
- Enculturation of professional nursing autonomy enables nurses to make nursing care decisions within the full scope of their practice in an interprofessional practice environment.

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