Successful Strategies to Reduce Pediatric CAUTIs

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Description

Quality of Care and Safety for our patients is a top priority at Nationwide Children's Hospital (NCH). At NCH we are taking proactive measures to prevent and reduce the number of hospital-acquired infections (HAIs) on our campus. Urinary tract infections represent 36% of the total HAIs. Indwelling catheters predispose patients to infection. Complications resulting from a CAUTI can extend a patient's hospital stay 0.4 - 2 days and increase the expense $3,803 per occurrence. Complications include: secondary bacteremia/ sepsis, acute pyelonephritis, acquisition of MDROs, and urethral strictures. To eliminate this risk in our patient population, the multidisciplinary CAUTI Reduction Committee was formed in January of 2010. Committee members include the Chief Nursing Officer, the Chief of General Surgery, the Program Manager of the Medical/Surgical Unit, Neonatal Nurse Practitioners, Clinical Leaders, PCAs, and members from Epidemiology and Quality Improvement Services.

Aim

Our global aim is to eliminate CAUTIs by December 31, 2013. Our initial specific aim is to reduce CAUTIs to 10 or less and a rate of < 1.0 CAUTIs per 1000 catheter days for 2011.

Project Strategy

The CAUTI Reduction Committee implemented a bundled reduction strategy to decrease CAUTIs and increase patient safety. Initial strategies were focused on CAUTIs related to the Emergency Department (ED) and Operating Room (OR). Initiatives included:

- Standardizing the insertion procedure
- Adding a perineum cleansing step to the insertion procedure to increase the efficacy of the skin antiseptic
- Surgery evaluating catheter removal post-operatively
- Limiting the surgeries utilizing indwelling urinary catheters

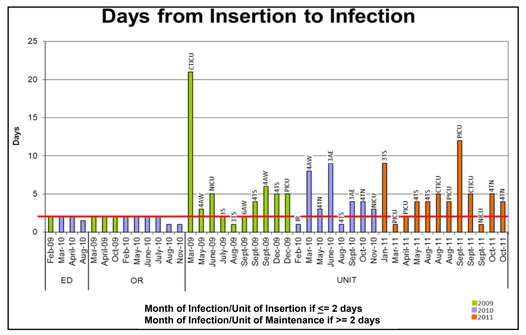
Initiatives

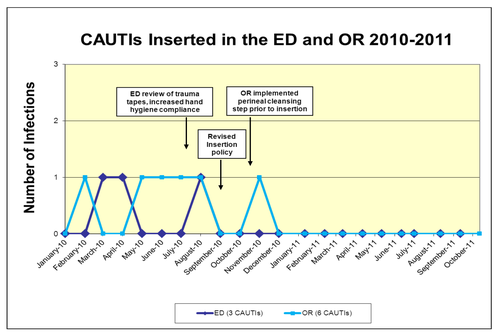
The following evidence based initiatives were implemented:

- Policy Review: Instituted revisions to hospital policies relating to the care and insertion of catheters.
- Insertion Bundle: Tool developed for skilled clinical staff to standardize best practice for catheter insertion.
- Foley Care Reminder Card: Card posted at the bedside containing bulleted points of best practice for catheter care.
- Foley Fridays: Each Friday, staff utilize a maintenance bundle check sheet to ensure proper catheter care for every patient on the unit with an indwelling urinary catheter.
- Daily Goals: Form used daily by rounding physicians to document catheter need or its removal.
- Root Cause Analysis (RCA): After identifying a hospital acquired CAUTI, multidisciplinary staff who cared for the patient huddle to discuss risk factors and prevention methods resulting in the development of an action plan. Action plans implemented in the ED and OR eliminated infections related to insertion in those areas.

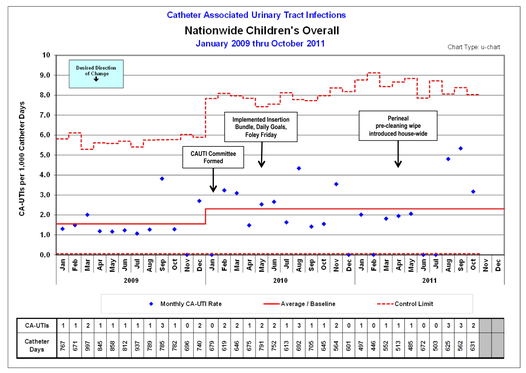
Each reduction initiative was trialed in a high incidence area before the initiative was implemented house-wide. A survey of clinical staff indicated successes and weaknesses in our implementation efforts.

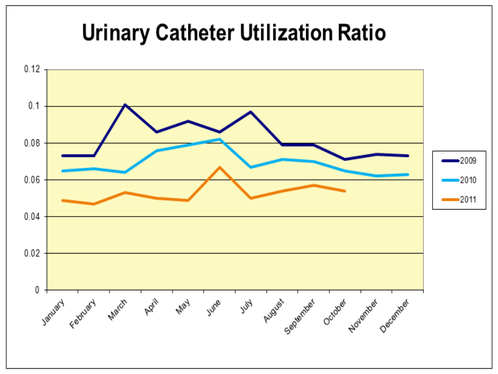
Results





- A CAUTI has not been attributed to insertion in the ED and OR since November of 2010
- Every CAUTI in 2011 can be attributed to insertion and/or maintenance on an inpatient unit
- The PICU achieved 183 days between CAUTIs, the inpatient surgery unit achieved 197 days between CAUTIs





- The catheter utilization ratio has decreased each year since 2009:
  2009= 0.082
  2010= 0.069
  2011= 0.050
- In January of 2011, the Surgical Chiefs met and discussed additional opportunities to decrease the use of indwelling urinary catheters
- The increase in catheter utilization in the months of June/July each year is attributed to trauma season

NHSN Data Summary 2009 CAUTI Rates

	10%	25%	50%	75%	90%	Pooled Mean	NCH 2009	NCH 2010	NCH 2011
Pediatric cardiothoracic critical care						2.7	0.8	0	2.5
Pediatric medical/surgical critical care	0.0	0.0	1.4	3.5	5.5	2.8	1.6	1.6	2.8
Pediatric Heme/Onc						3.6	2.3	0	0
Inpatient pediatric medical/surgical	0.0	0.0	0.0	0.0	6.2	1.3	2.3	3.4	2.3

NHSN Data Summary 2009 Urinary Catheter Utilization Ratio

	10%	25%	50%	75%	90%	Pooled Mean	NCH 2009	NCH 2010	NCH 2011
Pediatric cardiothoracic critical care						0.25	0.39	0.31	0.38
Pediatric medical/surgical critical care	0.10	0.17	0.24	0.31	0.39	0.28	0.38	0.37	0.29
Pediatric Heme/Onc						0.02	0.05	0.02	0.02
Inpatient pediatric medical/surgical	0.01	0.02	0.04	0.08	0.15	0.06	0.13	0.07	0.05

CAUTI Rate = (# of CAUTI/ # urinary catheter days) X 1000
Urinary Catheter Utilization Ratio = # urinary catheter days/ # patient days
Revised 11/9/11

- Pediatric Hematology/Oncology unit maintains a zero CAUTI rate
- In 2011, the pediatric medical/surgical areas decreased their CAUTI rate from 3.4 in 2010
- PICU decreased catheter utilization from 0.37 in 2010 to 0.29 in 2011
- 2012 CAUTI reduction efforts will focus on:
  - ✓ Decreasing catheter utilization in critical care
  - ✓ Standardizing catheter maintenance
  - ✓ Patients demonstrating competence to perform their own perineal care
  - ✓ Implementing a specifically designed pediatric insertion kit

Lessons Learned

Infection prevention starts with role models in leadership. We achieved our greatest success with the support of the Chief Nursing Officer, the Chief of General Surgery, the Program Manager of the Medical/Surgical Unit and other key staff members from various disciplines who enthusiastically influenced the necessary practice changes. An evaluation of practices revealed inconsistencies, indicating that standardization was necessary. Ultimately, decreasing catheter use results in fewer infections and reduced potential for patient harm.

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