

Success study: Hospital infections

Situation:

Health care-associated infections (HAI) are infections that patients acquire while receiving treatment for other conditions. We present stories from North York General Hospital (NYGH), Windsor Regional Hospital (WRH) and Huron Perth Healthcare Alliance (HPHA) that show how well-known HAI prevention practices can be adapted to a local environment.

North York General Hospital

Aim:

Sustain 80% compliance in hand hygiene practices across all clinical in-patient units over a period of eight months starting in June 2008, and design a process to sustain a zero incidence rate for ventilator-associated pneumonia (VAP).

Measures:

- Hand hygiene compliance before and after patient contact observations
- VAP infection rate per 1,000 days on a ventilator

Changes:

For hand hygiene compliance:

- Installed more than 250 new hand hygiene rinse dispensers according to workflow requirements specified by staff and physicians, with each unit receiving their preferred product
- Educated more than 2,000 staff on appropriate moments for hand hygiene and trained more than 100 staff as hand hygiene auditors, starting with one unit
- Launched an aggressive engagement and awareness program to change hospital culture

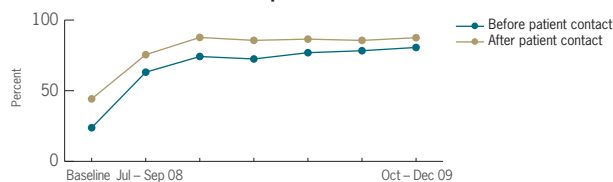
For sustaining a zero incidence rate for VAP:

- Designed a tool known as the Daily Goals Sheet based upon the Safer Healthcare Now! VAP campaign that included prompts to ensure surveillance, identification, prevention and compliance, and made this tool part of the patient chart
- Required that signs and symptoms suggestive of VAP be brought to the attention of an Infection Control Practitioner, with a review of all potential VAP cases by an Intensivist and Infection Control Practitioner to ensure accuracy and data completeness

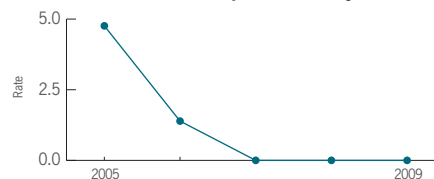
Results:

- Hand hygiene compliance rates improved from a baseline average of 30% to a hospital-wide mean of 83% (ranging between 74% and 90% for different units).
- NYGH sustained a zero incidence rate for VAP for two years.

Hand hygiene compliance at North York General Hospital



VAP infection rate per 1,000 days on a ventilator



Next steps:

NYGH will implement a plan for sustainability, including ongoing unit-based auditing, and will continue to work with units whose hand hygiene compliance has not reached the 80% target.

Windsor Regional Hospital

Aim:

Reduce the oncology unit's central line infection (CLI) rate by 50% within one year, and spread improvements across the entire organization by September 2008.

Measures:

- CLI rate per 1,000 line days
- Safer Healthcare Now! checklist completed at time of central line insertion

Changes:

The CLI "bundle" includes these best practices: hand hygiene, maximal barrier protection, chlorhexidine skin antisepsis, and optimal catheter site insertion. Implementation strategies included the following:

- Prepared insertion carts for the diagnostic imaging department, intensive care unit and operating rooms to make it easier for the physician to do the right thing, at the right time
- Hired a registered nurse to observe and record data on the diagnostic imaging department's compliance with barrier precautions during central line insertion

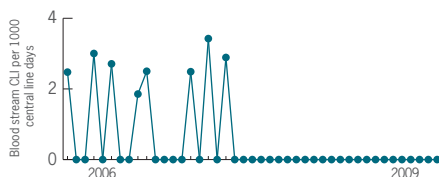


- Captured data electronically to assess compliance with the bundle
- Spread the CLI bundle to all units and all sites, including modifications for pediatrics and the neonatal intensive care unit

Results:

- WRH achieved zero central line bloodstream infections in adult non-critical care areas, and two infections in very complex cases in the intensive care unit in the past 15 months.
- Insertion bundle compliance improved to 100% from a low of less than 40%.

Central line infection rate per 1,000 central line days, Windsor Regional Hospital



Next steps:

WRH conducted a pilot to evaluate additional equipment shown to further reduce risk of infection (a positive displacement valve to prevent blockage and backflow of the central line), which was recently implemented in the hospital.

Huron Perth Healthcare Alliance

Aim:

Reduce surgical site infection (SSI) rate for joint replacements by 50% from baseline data and achieve greater than 95% compliance with best SSI practices between September 2007 and June 2008.

Measures:

- SSI rates for past and present joint replacement surgery cases assessed at 30 days, six months and 12 months
- Percentage of patients receiving timely antibiotic administration

Changes:

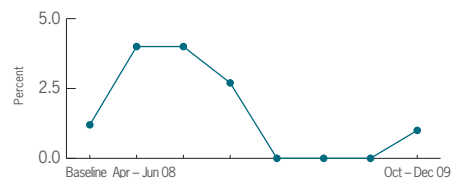
- Implemented the SSI bundle from Safer Healthcare Now!, which includes appropriate use of prophylactic antibiotics within one hour prior to incision and discontinuation within 24 hours of surgery, and clipping instead of shaving body hair
- Administered prophylactic antibiotics in operating room instead of day surgery department

- Recorded patient's temperature at beginning and end of surgery in preparation for spread of the initiative to open abdominal surgeries
- Documented antibiotic administration time, incision time, hair removal data and temperatures in an online chart that can be reviewed in real time, with data extracted into a monthly report
- Collected and assessed discharge data on all joint replacement patients from follow-up appointment clinics

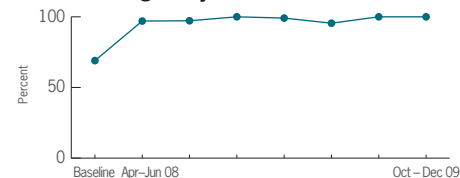
Results:

- HPHA had zero surgical site infections for joint replacement patients for most of 2009.
- By July 2009, the hospital had achieved 100% compliance with the 60-minute timeframe for antibiotic administration, and maintained it afterwards.

30 day post-joint replacement surgical site infection rate, Huron Perth Healthcare Alliance



Percentage of joint replacement patients receiving timely antibiotic administration



Next steps:

HPHA will roll out its process changes to other surgical services and other sites and continue to improve tracking methods for post-operative infections.