Innovation

NK4EO
Innovation in nursing is supported and encouraged.

> Provide two examples, with supporting evidence, of an improvement that resulted from an innovation in nursing. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Example #1
Xenex Room Cleaning: Decreases Surgical Site Infections

BACKGROUND/PROBLEM:
Surgical site infections (SSI) account for 25 percent of all healthcare-associated infections (HAI), which result in extended lengths of postoperative hospital stays and thousands of dollars in excess costs per patient.

In early 2012, the organization saw an increase in SSI from the previous year. In response to these outcomes, the Infection Preventionist nurses focused on investigating and implementing evidence based best practices, identifying new and enhanced technology, and on increasing the awareness of physicians and staff to strategies for reducing SSIs. Strategies included improving the patient experience from the pre-operative, intra-operative, and post-operative processes.

GOAL STATEMENT(S):
Decrease the number of SSIs below the NHSN SIR Benchmark.

DESCRIPTION OF THE INTERVENTION/INITIATIVE/ACTIVITY(S):
Monthly, St. Joseph Hospital hosts the Orange County Chapter of the Association for Professionals in Infection Control and Epidemiology (APIC). The meetings are attended by SJO certified infection prevention nurses as well as infection control professionals from all Orange County, hospitals. The meetings provide a venue for discussing nursing practice as well as new and emerging infection control technology and equipment.

In May 2012, the pulsed xenon ultraviolet light (UV) disinfection system from Xenex was presented at an APIC meeting as a new technology that prevented the emergence or cross contamination of infectious organisms. Infection preventionists Russ Abellera RN, MSN, CIC, Virginia Scanlan RN, AD, CIC and Susan Parke, DNP, NP, FNP-BC, CPHQ, CIC, Department Director identified how this innovative equipment and new process for disinfecting patient rooms would assist in the goal of decreasing surgical site infections.

This innovative way of disinfecting patient rooms and procedural areas results in improved patient health outcomes and organizational cost effectiveness. Resembling R2D2 from Star Wars, the Xenex robot pulses UV-C light that washes over surfaces where germs reside without leaving a chemical residue. The light is 25,000 times more powerful than sunlight and is effective against a variety of the most dangerous

superbugs, including Clostridium difficile endospores (C. diff), norovirus, influenza, and staph bacteria like methicillin-resistant staphylococcus aureus (MRSA).The UV light damages the walls and cellular structure of microorganisms impeding the ability to replicate. The robot can disinfect a patient room, patient bathroom or operating room in 5-10 minutes.

In July 2012 infection prevention nurses presented this product to the Environment Associated Infection Prevention Clinical Excellence Team who saw the Xenex robot's potential to heighten infection prevention, reduce the use of potentially toxic cleaners, and contribute to a safe environment for patients.

The team developed a plan by the team to bring in the robot for a pilot. During August and September 2012 Susan and the infection preventionists met with nursing department managers, EVS leadership, and the Xenex robot sales team to map the plan of where the robot would be utilized. The trial commenced in April 2013 with Xenex use in the operating rooms.

As a result of the pilot conducted April through October 2013 SJO received funding from a donor earmarked specifically for the purchase of the Xenex robot.

NK4EO Figure 1 Pilot Results

	2013 Q2	2013 Q3	2013 Q4
Infection Count	30	23	20
Standardized Infection Ratio	0.66	0.53	0.45
NHSN SIR Benchmark	1	1	1

The delivery and set up of the purchased robot occurred in March 2014. The robot was used to disinfect all isolation rooms, procedural rooms, labor and delivery surgical suites, interventional radiology, cath lab, and operating rooms on a daily basis beginning in June.

Discussion of the benefits resulting from the Xenex robot prompted thoughts on how to expand the enhanced disinfecting technology. An evaluation of the operating plan for the Xenex robot was conducted. It was determined that an additional robot would allow for the expansion of the service and for additional non-isolation rooms to be serviced daily. The funding for a second Xenex was provided by the same donor, leading to expansion of service and a more robust operating plan.

SJO was the first hospital in Orange County to use the Xenex robot. The technology further enhances the hospital's strong infection control program and allows us to be proactive in protecting the health of our patients and staff. Xenex technology is used in high risk areas, including operating rooms and patient rooms, in conjunction with the extensive cleaning services already provided by our environmental services team.
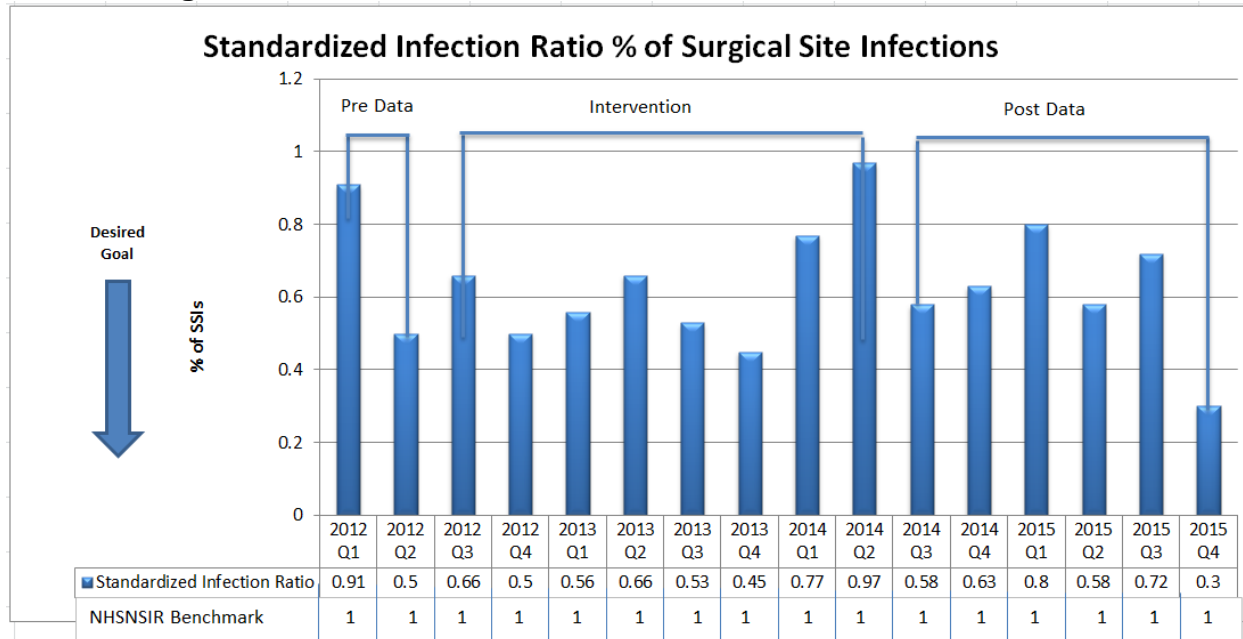
PARTICIPANTS:

Name	Discipline	Title	Department
Dr. Lawrence Ehrlich	Physician	Physician Leader	Family Practice
Dr. Raymond Casciari	Physician	Chief Medical Officer	Administration
Tina Retrosi	Nursing	Patient Safety Officer	Patient Safety
Susan Parke	Nursing	DNP, NP, FNP-BC, CPHQ, CIC Director Infection Prevention	Infection Prevention
Russ Abellera	Nursing	RN, MSN, CIC Infection Preventionist	Infection Prevention
Virginia "Ginny" Scanlan	Nursing	RN, AD, CIC Infection Preventionist	Infection Prevention
Diana Gilbert	Nursing	RN, BSN, CAPA Clinical Nurse II	Pre-Op
Asif Khattak	Support Services	Director	EVS
Kate Vogel	Laboratory	Clinical Laboratory Scientist Supervisor	Laboratory
Judy Vicek	Respiratory	Respiratory Care Practitioner Supervisor	Respiratory Therapy
Nancy Fonsuelo	Nursing	RN, BSN, CMSRN Clinical Coordinator	General Surgery

OUTCOMEs:
This innovative technology introduction and implementation was planned and coordinated by the actions of the Infection Preventionists Russ, Ginny and Susan, resulting in decreased surgical site infections below the NHSN SIR Benchmark.

NK4EO Surgical Site Infections

Standardized Infection Ratio % of Surgical Site Infections

Pre Data   Intervention   Post Data

Desired Goal

% of SSIs

	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2015 Q1	2015 Q2	2015 Q3	2015 Q4
Standardized Infection Ratio	0.91	0.5	0.66	0.5	0.56	0.66	0.53	0.45	0.77	0.97	0.58	0.63	0.8	0.58	0.72	0.3
NHSNSIR Benchmark	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Example #2
Innovative Discharge Milestones Checklist

BACKGROUND/PROBLEM:
Patient flow and throughput continue to be an opportunity for improvement as delays in patient placement result in a downstream effect. Knowing that this needed to be addressed, a team of admission / discharge nurses assembled in 2015 to help identify gaps and potential opportunities where the discharge process could be improved.

The Admit Discharge Team (ADT) clinical nurses outlined a plan to expedite task completions. One particular barrier was that clinical nurses were requesting the assistance of the ADT too early in the discharge process. The clinical nurses were not completing the necessary steps to prepare patients for discharge resulting in unnecessary and return visits from the ADT nurse adding to increasing the overall discharge time.

GOAL STATEMENT(S):
Decrease overall patient discharge time as measured from the time of discharge order until the time that the patient leaves the patient care area, as measured in hours and minutes.

DESCRIPTION OF THE INTERVENTION/INITIATIVE/ACTIVITY(S):
The Admit Discharge Team of clinical nurses are deployed from a centralized unit and assist with admissions and discharges on medical, surgical and telemetry units. They are routinely assigned to serve on a particular unit but are flexible to respond where

their assistance is needed. In addition, they can be directed by the Patient Placement Coordinator/ House Supervisor to aid and support where there is an increased need for bed availability. The ADT assist in expediting patient discharges consequently contributing to opening beds to admit patients.

In April 2015 the ADT nurses were actively engaged in a process to contribute ideas, identify gaps and opportunities that interrupted the discharge process. They provided insight from their role where the process was broken and new ways of working that would expedite the discharge. The ADT nurses identified that Teletracking, our electronic bed board system for patient tracking, had a discharge tab with the capability to electronically track patient progress toward discharge. The team regrouped to develop this technical functionality into an innovative and customized Discharge Checklist.

The ADT nurses designed and customized major discharge milestones into the checklist. These milestones are initiated when a discharge order is entered into the electronic medical record called Meditech. This is then prompted to Teletracking and the discharge milestone progression begins. Once the order is entered, the time is captured and recorded to track the intervals.

NK4EO Figure 1 Discharge Milestones

These represent the completion of each step and the nurses check off as they fulfill that task. The milestones include:

- Physician Order- This is generated and checked off when a discharge order is entered into electronic medical record.

- Admission Medication Reconciliation - checked after bedside nurse reviews the initial Admission Medication Reconciliation has been completed
- Discharge Medication Reconciliation - checked when the Discharge Medication Reconciliation is reviewed, updated and complete
- Case Management and Durable Medical Equipment (DME) Needs Met- checked when the Case Management and DME needs have been addressed if applicable
- ADT Starts Discharge- notes that the ADT is assisting and has begun the discharging tasks
- Unit Nurse Starts Discharge- notes that the bedside nurse will be completing the discharge tasks if ADT not assisting
- Discharge Complete- notes when either the ADT or the bedside nurse has completed the discharge process and all expected tasks have been fulfilled.

In May 2015 the clinical nurses were educated and the discharge milestones were activated in Teletracking. The clinical nurse can now view this innovation and proceed with completion of the tasks on the checklist to move forward toward patient discharge. An electronic progress bar reflects each milestone that has been met. By having a visual board for progression the clinical nurse is reminded on their role expectations as well as remains updated on when to notify the ADT nurse to complete the discharge process. Once the bedside milestones are completed, the ADT nurse responds to complete the discharge process.

This new work routine has decreased the number of calls to the ADT nurse by 85% from April 2015 through December 2015 contributing to a decrease in the time it takes for patients to be discharged.

NK4EO Figure 1 Early Discharge Calls to Admission/Discharge Nurses

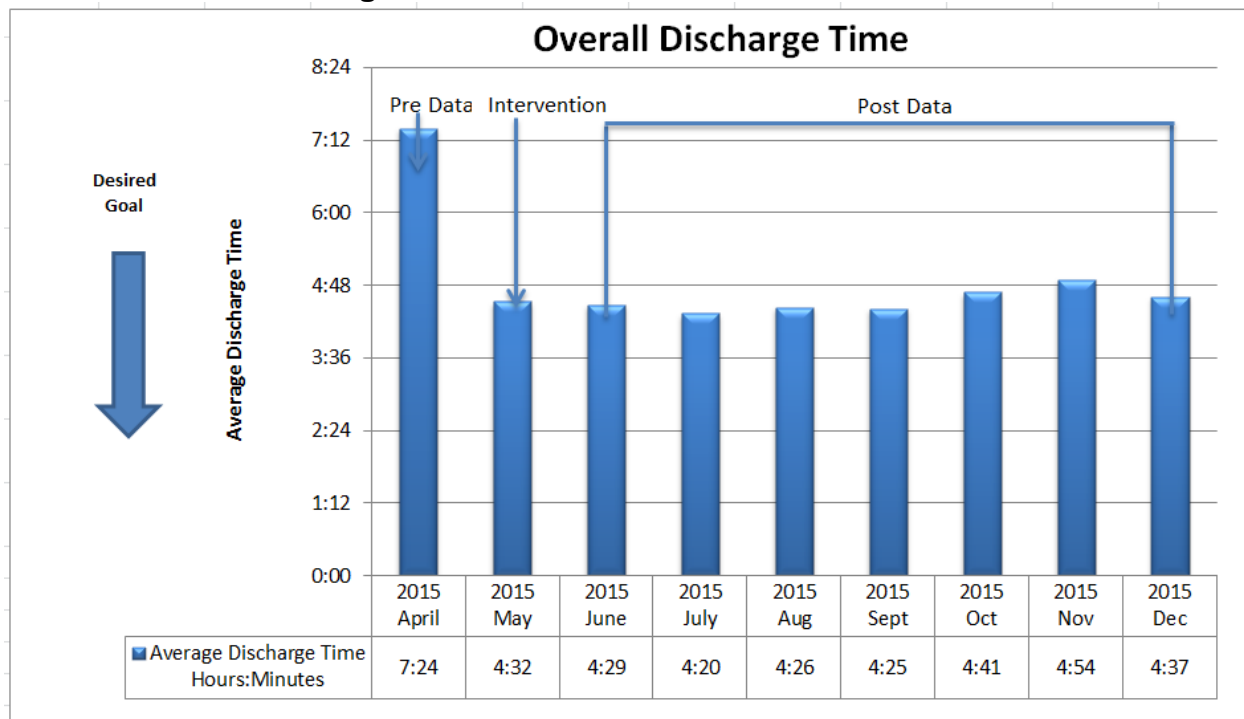|	2015 April	2015 May	2015 June	2015 July	2015 Aug	2015 Sept	2015 Oct	2015 Nov	2015 Dec
# Calls resulting in delay	52	48	29	23	33	17	11	4	10
# Discharges	858	912	977	993	982	996	1025	955	1078
% Calls resulting in delay	0.6	.05	.03	.02	0.2	0.2	0.1	0.04	0.09

PARTICIPANTS:

Name	Discipline	Title	Department
Gardenia Cuevas	Nursing	BSN, RN, CN II ADT Clinical Nurse	Nursing Support
Grace Alonzo	Nursing	BSN, RN, CMSRN, CN II ADT Clinical Nurse	Nursing Support
Jane Brugman	Nursing	MSN, RN, CN IV ADT Clinical Nurse	Nursing Support
Jeddah Agraviador	Nursing	BSN, RN, CN II ADT Clinical Nurse	Nursing Support

Ria Gonzaga	Nursing	BSN, RN, CN II ADT Clinical Nurse	Nursing Support
Rom Llamado	Nursing	BSN, RN, CN II ADT Clinical Nurse	Nursing Support
Soudi Bogert	Nurse Manager	MSN, RN, CCRN	Nursing Support
Stephanie Floriano	Nursing	BSN, RN, CN II ADT Clinical Nurse	Nursing Support
Yvonne Shaver	Nursing	MSN, RN, CMSRN, CN II ADT Clinical Nurse	Nursing Support

OUTCOMES:

The ADT clinical nurses were able to improve the discharge process by implementing an innovative process that eliminated waste (multiple phone calls) and use technology to assist the nurse in completing a patient discharge. Post intervention data shows a significant decrease in hours from time the discharge order is written until the patient is discharged.

NK4EO Overall Discharge Time

Overall Discharge Time

Pre Data Intervention   Post Data

Desired Goal

Average Discharge Time

	2015 April	2015 May	2015 June	2015 July	2015 Aug	2015 Sept	2015 Oct	2015 Nov	2015 Dec
Average Discharge Time Hours:Minutes	7:24	4:32	4:29	4:20	4:26	4:25	4:41	4:54	4:37

Back to NK home page