An Orthopaedic Surgical Decolonization Protocol at University of Missouri Healthcare Preliminary Results Hip and Knee

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The director of nursing, the infection control team, and the orthopaedic surgeons met between April and July 2012 to discuss surgical site infection rates of patients who have elective orthopaedic surgeries with implants. The Aim of this project is to reduce surgical site infections in patients having elective orthopedic surgery with implants by 50% by end of CY2013. Surgical site infections are determined using the National Healthcare Safety Network definition.

Plan

A process improvement team was formed in early 2012 with the specific aim to reduce surgical site infection (SSI) in patients having elective hip and knee surgery with implants by 50% by end of CY2013. The team determined that there was not a consistent method of pre-op bathing used. Three separate skin decolonization protocols were discussed and reviewed. The literature suggested a 50% decrease by the method that was chosen.

The specific skin decolonization protocol chosen included a paired product from SAGE and 3M consisting of 2% Chlorhexidine (CHG) wipes the night before surgery, applied by the patient, a viscous betadine nasal swab applied by the nurse in the pre-operative area followed by a second application of the 2% CHG wipes in the pre-operative area.

Do

All nurses in clinics and preoperative areas at two facilities were trained on the new process in October 2012 to prepare for December 1st, 2012 implementation. A patient education tool and nurse instruction sheet were designed. Electronic documentation for the evening wipes, am wipes, and am swabs was added in the pre-op section of the electronic medical record for nursing.

Study

The Center for Disease Control National Healthcare Safety Network (NHSN) definition was used to determine SSI rates by the Infection Control Department. The standard infection ratio (SIR) was calculated based on SSI rates in the NHSN report: data summary for 2006-2008, issued December 2009. The SIR was calculated by taking the number of observed infections and dividing by the expected number of infections. The SIR for hip and knee was reduced substantially between pre-implementation January 2012-December 2012 and post-implementation January-October 2013 (Graph 1). The hip SIR was reduced 49.4% (.89 to .45) with a decrease from 4 infections to 2 infections for 360 and 380 surgeries, respectively. The knee SIR was reduced 61.1% (1.80 to .70) from 11 infections to 4 infections in 631 and 670 surgeries, respectively. A combined hip and knee SIR decreased by 58.4% (1.42 to .59) (Graph 2). While adherence to all parts of the protocol overall was 55-59%, adherence to the morning wipes and swabs documented by nursing ranged from 75-95% (Graph 3).

Act


Conclusion

With implementation of, and adherence to, a pre-op skin decolonization protocol, the standard infection ratio for patients with hip and knee arthroplasty was reduced by half. This protocol is now being spread to patients undergoing gastric and hernia surgeries.