

Surgical Skeletal Pin Site Infection Control: Translating Evidence ~ Implementing Change



Ruth Agbowu, BSN RN CMSRN CBN PCCN

Beth Poinsett, MSN RN ONC

MaryAnn Michelfelder, BSN RN

Estrella Mijares, BSN RN CCRN



Identifying Need for Change

Positive patient outcomes are achieved through early identification, early adoption and implementation of evidence-based prevention measures pertaining to Surgical Site Infection (SSIs).

Goals for Change

Our goal was to provide our orthopedic nurses with the knowledge base needed to effectively deliver high quality continuity of care among patients undergoing surgery of the musculoskeletal system. An article reviewed in the unit based forum using journal club guidelines identified recent changes to National Association of Orthopedic Nurses (NAON's) surgical site infection prevention clinical practice guidelines and their current recommendations to use chlorhexidine for surgical pin site care.

The physician group of the division of Orthopedic Surgery and the Joint Institute quickly approved the changes from hydrogen peroxide to Chlorhexidine. Clinical support was provided by Nursing Leadership, and the EBP initiative was presented to the Nursing Research Council. We discovered no current pin site care policy in place; even for the current practice of peroxide pin site care, so in order to make the changes to clinical care, a new policy had to be initiated with a new product.

Definition: Skeletal Pin Site Care

Skeletal pins or wires are inserted into the bone through skin incisions. Some pins and wires penetrate through the bone and exit on the other side of the extremity; other pins penetrate just into the bone. When pins or wires are attached to a rigid external frame, an external-fixator system is created. The assumption has been that the open wound around the pin is a potential portal for entry of bacteria into the pin tract. Skeletal pins located in soft tissue area are at greater risk for infection. After the first 48–72 hours following skeletal pin placement, postoperative pin site care should be done routinely.

Processes to Implement Change

Share identified processes to implement change in policy based on best practices and evidence from research to reduce (SSI) Surgical Site Infection through Skeletal Pin Care; and identify best practices pertinent to implementation of new policy and procedures related to reduction of (SSI) through Skeletal Pin Care. Although these processes will differ from institution to institution, most will remain the same. Our processes for making changes based on best practices and evidence are guided by the IOWA model of evidence based practice to promote quality care.

IOWA Model of EBP Change

Our knowledge focused trigger was evidence presented by NAON that suggested the use of hydrogen peroxide and betadine at certain concentrations could be harmful to new cells (osteoblasts) and damaging to healthy tissue. National Association of Orthopaedic Nurses (NAON) supports the use of Chlorhexidine 2mg/ml solution as the most effective cleansing solution for skeletal pin site care. Also suggested as an alternative cleansing solution in event of contraindications is sterile saline.

Our team to implement change consisted of Nursing through shared governance, Physician groups within the specialty of orthopedic surgery, Pharmacists through the Pharmacy & Therapeutics Council, Surgical Value Analysis Committee, Purchasing, Informatics through the Clinical Practice Informatics Council, Patient & Family Education Committee, Infection Control Department, Nursing Research Council, Nursing Practice & Education.

Our Identified Needs for Nursing Education included awareness of the current evidence based on research and best practices; knowledge to utilize new order sets in powerchart; knowledge of new policy 5280: 'Skeletal External Fixation Device', knowledge to have MD order custom pin site care if required; knowledge to educate patients on new product Inhospital and for discharge; and Education on new products: new order sets in Powerchart and iView documentation.

Successes & Challenges

Identify successes and challenges encountered during implementation of new policy and procedures related to reduction of (SSI) Surgical Site Infection: Skeletal Pin Care. **Success** was assured when the new policy initiated was approved and appeared electronically on the intranet's policy and procedure site. The second success was arrival of the selected CHG swabsticks on our units for use. We were ready for education and release of the new electronic ordersets for physicians, and new electronic assessment forms for clinicians.

Challenges included team members on councils that met infrequently (monthly or bi-monthly), slowing the approval process and natural evolution of the project. Progress in project evolution was frequently halted until one council provided approval before it could move on to the next council. Due to changes internally within one department, document approvals were delayed. Once product arrived, it differed from original product selected.

Project Evolution

The evolution of the project can be described as having 'fits and spurts'. Writing a new policy and procedures for skeletal pin site care was a first for this nursing team, and a rewarding learning experience. Identified is the need to speed up the process and take the project from identifying a need for change for the organization, to actually adopting the change in practice. We hope sharing our journey is of benefit to others.

