

Section: UTMB On-line Documentation Subject: Infection Control & Healthcare Epidemiology Policies and Procedures Topic: 01.30.01 – Surgical Infection Prevention Bundle for HPRO and KPRO Surgery Patients	01.30.01 - Policy 4.20.22 Revised 2018 - Author
---	--

01.30.01 – Surgical Infection Prevention Bundle for HPRO and KPRO Surgery Patients

- Purpose** To prevent surgical site infections in patients undergoing total hip and knee arthroplasty
- A. Elective Surgery Pre-Op Education & Care** All patients who will undergo a HPRO or KPRO procedure shall receive skin and nasal decolonization education and training prior to their surgical procedure. Their primary care giver shall also receive this training.
1. Patients attend a “Boot Camp” prior to the procedure at the orthopedic clinic. The boot camp should be scheduled at least a week for the scheduled surgery date.
 2. Skin Decolonization with 4% chlorhexidine gluconate (CHG, also known as Hibiclens) prior to surgery: At boot camp, patients shall be given a bottle of CHG (or have it purchased, over-the-counter, through local pharmacy) and instructed to shower or bathe with once daily for 2 days prior to their surgical procedure¹. A written patient instruction pamphlet will be given to the patient for reducing infection (Appendix A).
 3. Nasal Decolonization: At boot camp, patients will be provided a bottle of Nozin that will be used for post-operative and post-discharge nasal decolonization. Instructions will be provided at boot camp and during their inpatient admission.
 4. Day Surgery Unit (DSU) applies CHG again on admission to DSU.
 5. Patients will perform nasal decolonization upon admission to DSU. DSU nursing staff will educate patient on correct application.
- B. Emergent Surgery Pre-Op Education & Care** Patients undergoing emergent surgery will not have the opportunity to undergo skin and nasal decolonization for 2 days prior to surgery. However, skin and nasal decolonization shall be performed in the area the patient is located prior to surgery as outlined below in item C.
- C. Day Surgery Unit (DSU) or Hospital Ward**
1. Skin Decolonization with CHG Wipes: Patients arriving for HPRO or KPRO Surgery and Revision shall be provided with a package of CHG wipes and instructed to cleanse their body before changing into a hospital gown. Patients who cannot use the wipes independently shall be assisted by staff.
 2. Pre-Op Nasal Decolonization with Nozin: Nozin shall be applied two times using 2 ampules consecutively, one after another prior to surgery. See attached instructions (Appendix A). The first application should be applied by staff for demonstration and subsequent applications may be by staff or the patient.
- D. Intraoperative Aseptic Technique, Skin Preparation & Wound Care**
1. Hand scrub shall be used before **each** HPRO and KPRO procedure. Do not use hand sanitizer after the initial hand scrub.
 2. Skin preparation for surgery shall be performed using Chloraprep (2% chlorhexidine gluconate and 70% isopropyl alcohol) unless contraindicated due to allergy OR DuraPrep (0.7% iodine and isopropyl alcohol)²⁻⁴. Physicians

Section: UTMB On-line Documentation Subject: Infection Control & Healthcare Epidemiology Policies and Procedures Topic: 01.30.01 – Surgical Infection Prevention Bundle for HPRO and KPRO Surgery Patients	01.30.01 - Policy 4.20.22 Revised 2018 - Author
---	--

utilizing alternatives shall work closely with their supervisor to monitor infection rates.

3. All KPRO and HPRO Revision surgeries will have cultures sent at the time of surgery. This can be performed at the beginning or during surgery, prior to any wound wash-out or antibiotic solution application.

E. Antimicrobial Prophylaxis

1. Pre-operative antibiotics should reach acceptable tissue concentrations (Above Minimum Inhibitory Concentration) prior to the incision time in order to be effective.
2. Prophylactic antibiotics shall be administered by the Anesthesia Department.
3. Intravenous Cefazolin infusion shall be used for prophylaxis. 2 grams of Cefazolin, and 3 grams of Cefazolin for patients weighing greater than 120 kg must **begin** administration at 15 to 60 minutes before the skin incision and continued for no longer than 48 hours.⁵
4. Vancomycin shall be used for patients with a history of allergy to beta-lactam agents at a dose of 15mg/kg with a maximum dose of 2g. Vancomycin infusion should **begin** at 60-120 minutes prior to skin incision.⁵
5. Re-dosing should occur for procedures lasting greater than 4 hours.

F. Glycemic Control

Implement glycemic control pre-operatively, intra-operatively and post-operatively following the Orthopedic Surgery Adult Protocol as follows:

1. Optimize glycemic control before surgery by maintaining serum glucose levels <200 mg/dL for 2 weeks prior to surgery.¹
2. Blood glucoses shall be monitored and treated intraoperatively by the Department of Anesthesiology.
3. Postoperatively, proper diabetes education and glucose control shall be conducted through a multidisciplinary approach, including the use of sliding scale insulin.

G. Inpatient Post-Op Skin & Nasal Decolonization

1. Skin Decolonization with CHG: Patients shall be bathed daily with CHG wipes or shower with Hibiclens (if independent) when it is determined safe to do so. Skin cleansing with CHG shall continue until the patient is discharged from the hospital.
2. Nasal Decolonization with Nozin: Nozin shall be applied intranasally per instructions twice daily for the duration of the hospital stay by nursing staff or patient.
3. Nozin ordered by provider in EPIC:
4. Must use the correct order in EPIC for documentation to be available and for nursing to perform the task
 - A. For Day Surgery: General Orthopedic Day of Surgery Orders (3000000033)
 - B. Post-Op admission: Orthopedic (SOR) General Admission Floor Orders
 - C. Unit will use Nozin Popswabs found in clean supply room
 - D. Confirm prior to discharge that patient has their bottle of Nozin provided as boot camp for continued home decolonization

H. Inpatient Post-

1. Dressing per surgeon's discretion should be placed intraoperatively and

Section: UTMB On-line Documentation Subject: Infection Control & Healthcare Epidemiology Policies and Procedures Topic: 01.30.01 – Surgical Infection Prevention Bundle for HPRO and KPRO Surgery Patients	01.30.01 - Policy 4.20.22 Revised 2018 - Author
---	--

Op Wound Care monitored throughout hospital admission and monitored during week one and week two post-discharge clinic visits.

- I. Discharge**
1. Patients shall be instructed to continue Nozin twice daily until their follow-up appointment with the surgeon and until all surgical wounds have healed.^{6,7}
 2. Patients shall use bottle of Nozin provided at Boot Camp and continue nasal decolonization.
 3. Verify skin and nasal decolonization patient education with demonstration by patient and document in Epic.
 4. Patient will be given the contact information of the Surgical Hotline (832-505-1203) in case of any post-operative complication.
- J. Home Health Monitoring**
- If Home Health is involved, the patient’s Home Health agency shall monitor the surgical wounds for signs and symptoms of infection and notify the Surgical Hotline (832-505-1203) if signs and symptoms of infection are present.
- K. Post-Op Clinic Follow-Up**
1. Wound Care Management: All TKA and THA patients will be seen in clinic for wound assessment and follow-up as follows:
 - A. 1-week post-op with APP. Wound dressing will be inspected, and local and systemic symptoms of wound infection, joint mobility and physical therapy, and compliance with CHG bathing and nasal decolonization will be reviewed. CHG bathing and Nozin can stop at this visit.
 - B. 2 weeks post op with Primary Surgeon. Dressing will be removed at this time. Signs of infections will be noted.
 - C. 4 weeks post-op with APP
 - D. 6 weeks post-op with Primary Surgeon
 2. All 4 of these appointments should be scheduled while surgery is scheduled for the patient to ensure availability.
 3. The patient shall be assessed for infection at each clinic visit. If a surgical site infection or bacteremia is suspected, appropriate cultures shall be obtained, and the Department of Infection Control and Healthcare Epidemiology shall be notified by phone call (409-772-3192) or email (HealthcareEpidemiology@UTMB.EDU).

Section: UTMB On-line Documentation	01.30.01 - Policy
Subject: Infection Control & Healthcare Epidemiology Policies and Procedures	4.20.22 Revised
Topic: 01.30.01 – Surgical Infection Prevention Bundle for HPRO and KPRO Surgery Patients	2018 - Author

Instructions for use of CHG (Hibiclens):

1. If patient has any open skin areas, they should check with a nurse before using CHG to shower or bathe.
2. If patient plans to wash his/her hair, they should do so using regular shampoo. Then rinse hair and body thoroughly to remove any shampoo residue.
3. Thoroughly rinse the body with water from the neck down.
4. Apply CHG directly on the skin or on a wet washcloth and wash gently. If showering: Move away from the shower stream when applying CHG to avoid rinsing it off too soon.
5. Rinse thoroughly with warm water.
6. Do not use regular soap after applying and rinsing CHG.
7. Dry the skin with a clean towel.
8. If lotions are required, use only those that are compatible with CHG.

Put on a freshly laundered gown or clothes after bathing.

Daily Nozin Application:

Instructions for twice daily nasal decolonization using intranasal Nozin application at home after discharge following elective total joint arthroplasty surgery, and continue until orthopedic clinic visit.

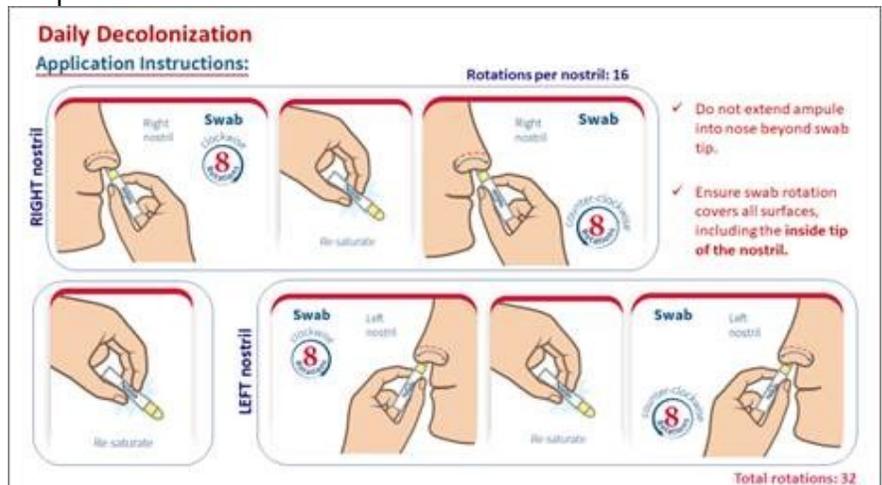


Table for documenting outpatient nasal decolonization after discharge home following surgery until orthopedic clinic visit.

	Morning	Evening
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Day 6		
Day 7		
Day 8		
Day 9		
Day 10		
Day 11		
Day 12		
Day 13		
Day 14		

Appendix A Day Surgery Instructions:

Application Instructions:

RIGHT nostril



Ensure swab rotation covers all surfaces, including the inside tip of the nostril.

Rotations per nostril: 16



LEFT nostril



REPEAT cycle with second ampule. Use both ampules consecutively, one after another.
Discard after use.

Section: UTMB On-line Documentation Subject: Infection Control & Healthcare Epidemiology Policies and Procedures Topic: 01.30.01 – Surgical Infection Prevention Bundle for HPRO and KPRO Surgery Patients	01.30.01 - Policy 4.20.22 Revised 2018 - Author
---	--

References

1. Berriós-Torres SI, Umscheid CA, Bratzler DW, et al. Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017. *JAMA Surgery*. 2017;152(8):784-791. doi:10.1001/jamasurg.2017.0904
2. How-to Guide: Prevent Surgical Site Infection for Hip and Knee Arthroplasty. *Institute for Healthcare Improvement*. 2012;(November).
3. George J, Klika AK, Higuera CA. Use of Chlorhexidine Preparations in Total Joint Arthroplasty. *Journal of Bone and Joint Infection*. 2017;2(1):15-22. doi:10.7150/jbji.16934
4. Peel TN, Dowsey MM, Buising KL, Cheng AC, Choong PFM. Chlorhexidine–alcohol versus iodine–alcohol for surgical site skin preparation in an elective arthroplasty (ACAISA) study: a cluster randomized controlled trial. *Clinical Microbiology and Infection*. 2019;25(10):1239-1245. doi:10.1016/j.cmi.2019.06.016
5. Bratzler DW, Dellinger EP, Olsen KM, et al. Clinical practice guidelines for antimicrobial prophylaxis in surgery. *Surgical Infections*. 2013;14(1):73-156. doi:10.1089/sur.2013.9999
6. Phillip A. Bostian, T. Ryan Murphy, Adam E. Klein, Benjamin M. Frye, Matthew J. Dietz, Brock A Lindsey. A Novel Protocol for Nasal Decolonization Using Prolonged Application of an Alcohol Based Nasal Antiseptic Reduces Surgical Site Infections. *American Association of Orthopedic Surgeons (AAOS) Annual Conference* . Published online 2018.
7. Mullen A, Wieland HJ, Wieser ES, Spannhake EW, Marinos RS. Perioperative participation of orthopedic patients and surgical staff in a nasal decolonization intervention to reduce *Staphylococcus* spp surgical site infections. *American Journal of Infection Control*. 2017;45(5):554-556. doi:10.1016/j.ajic.2016.12.021