



Standardization of Skin Antisepsis for Hip Replacement Surgery

Jacob Pierce, MD, MPH

Michelle C. Ball, MSN RN, CCRN-K, CIC

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Background/Introduction ~2022



In 2022, to improve THK (Total Hip/Knee) Complications/Readmissions – which are publicly reported measures that included in a variety of rating, ranking and payment reform programs – the Orthopedic Service Line Quality Committee analyzed data from Vizient, DICON, and CMS Stars. Hip infections rose to the top of the opportunity list in both THK Complications and THK Readmissions.



CJR (Comprehensive Care for Joint Replacement Model) predicted a potential loss = \$182K after receiving 1 million back the prior year. This was related to readmissions due to infection as the contributing factor.



Most important: impact on patients: severe pain, reduced physical function, increased mortality.

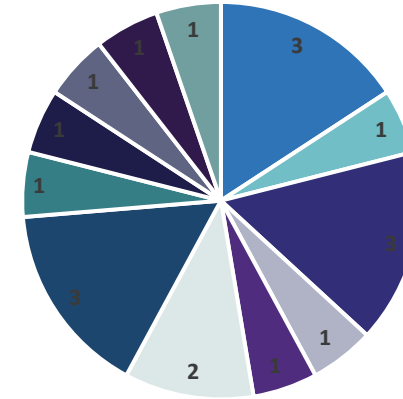
Surgical Site Infections (SSIs) Data in 2022 to Current ECU Health Medical Center

FY 2019-2024 Year End Totals HPRO

<u>Surgery</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>
HPRO	14	15	15	14	15	15
KPRO	2	19	4	10	6	9

- 461 total Hip Prosthesis Replacement Operations (HPRO) done at ECUH MC
- 14 total called SSIs
- 12 related to primary surgery, 2 revision
- 3.04 % infection rate
- Pathogens: enteric/environmental contaminants

HPRO Organisms



- Candidia parapsilosis
- Staph Aureus
- Steno maltophilia
- MRSA
- Enterobacter cloacae complex
- Enterococcus fascialis
- Staph hominis
- E. Coli
- Serratia marcescens
- Klebsiella pneumoniae
- Pseudomonas aeruginosa

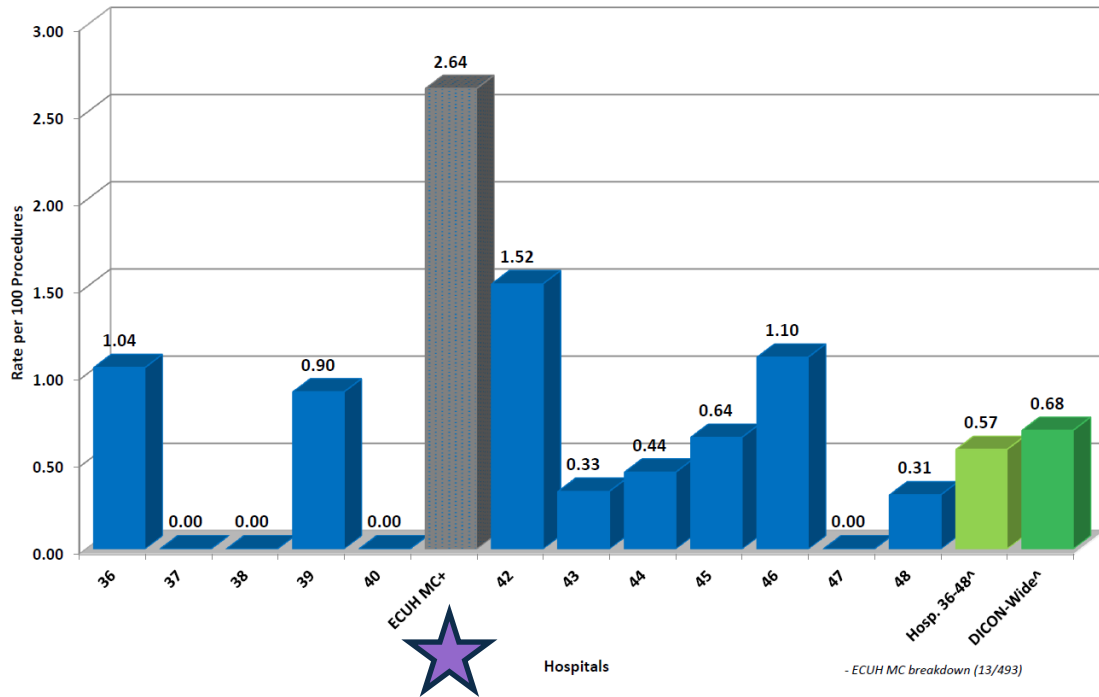
Comparison Graphs



ECU Health Medical Center Rate of SSI following Total Hip Replacement

January-December 2022

(Hospitals with greater than 4,000 total procedures - Complex SSI - excluding PATOS)

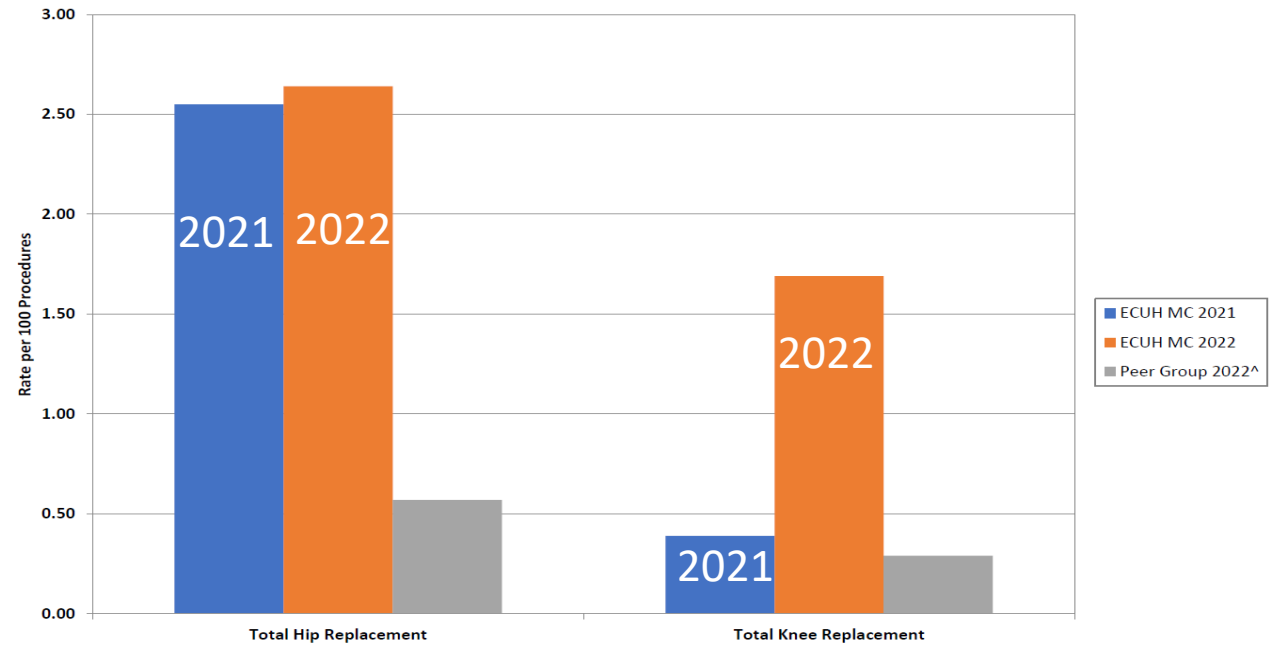


Rate of Surgical Site Infection following Total Hip Replacement



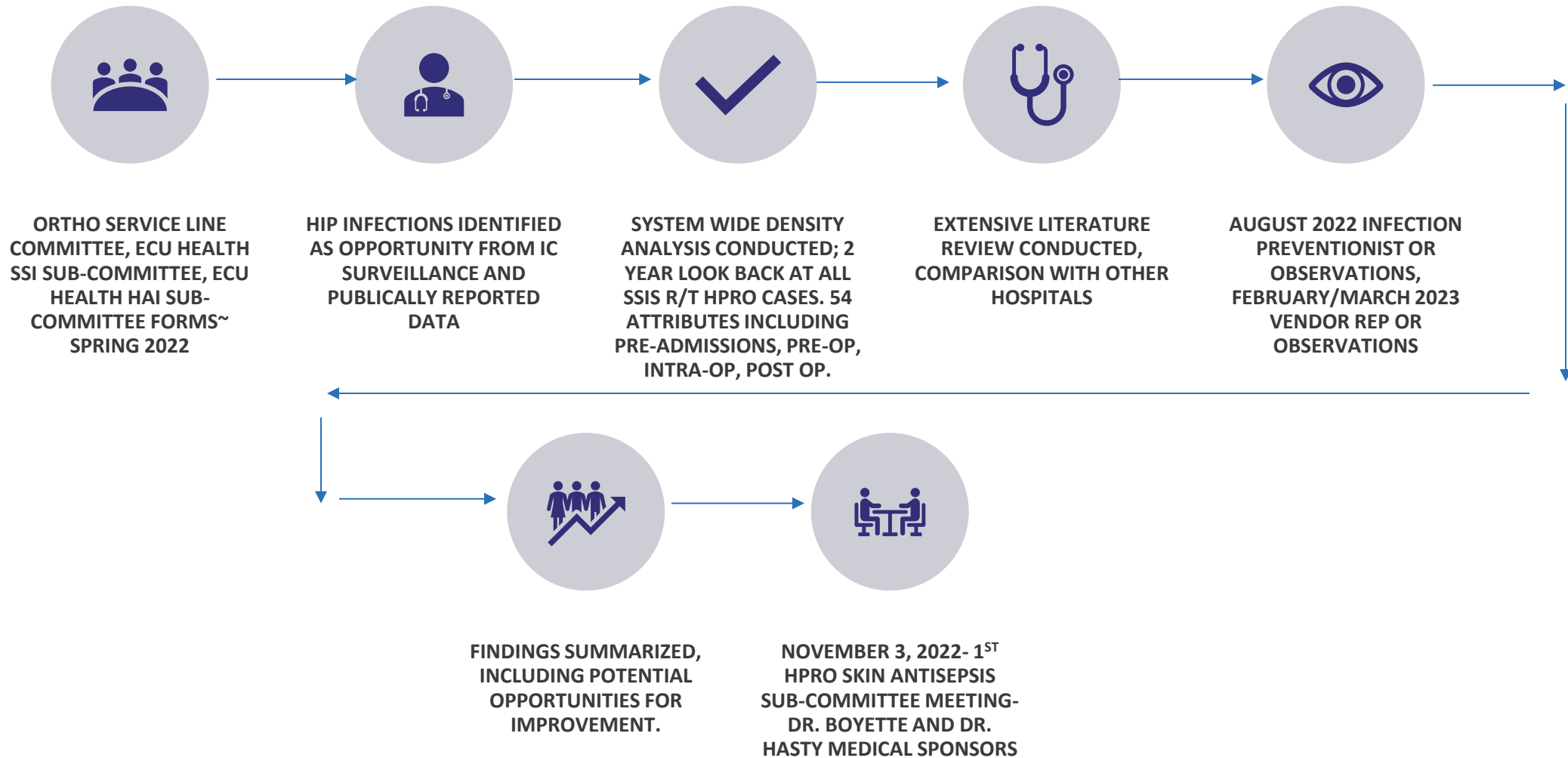
ECU Health Medical Center Two Year Surgical Site Infection Rate Comparison Total Hip Replacement and Total Knee Replacement

(Hospitals with greater than 4,000 total procedures - Complex SSI - excluding PATOS)



2-year Surgical Site Infection Comparison

Project Timeline



Aim Statement

Demonstrate >90% compliance with standardized skin antisepsis prep for all hip replacement surgeries by December 31, 2023, therefore reducing surgical site infections by 5-10% by September 30, 2024.

Improvement Strategies Employed

○ PDSA Cycle #1- July 2023-February 2024

- Collaborated with surgeons, educators, front line team members, OR leadership and Infection Prevention.
- Designed a standardized antiseptic skin prep process, including technique, products used and pre-op bathing products/instructions for home skin prep.
- Skin antiseptic prep education and training completed at Medical Center and multiple regional hospitals.
- Tracked compliance using EHR documentation abstraction, infection rates, organisms impacting SSIs.

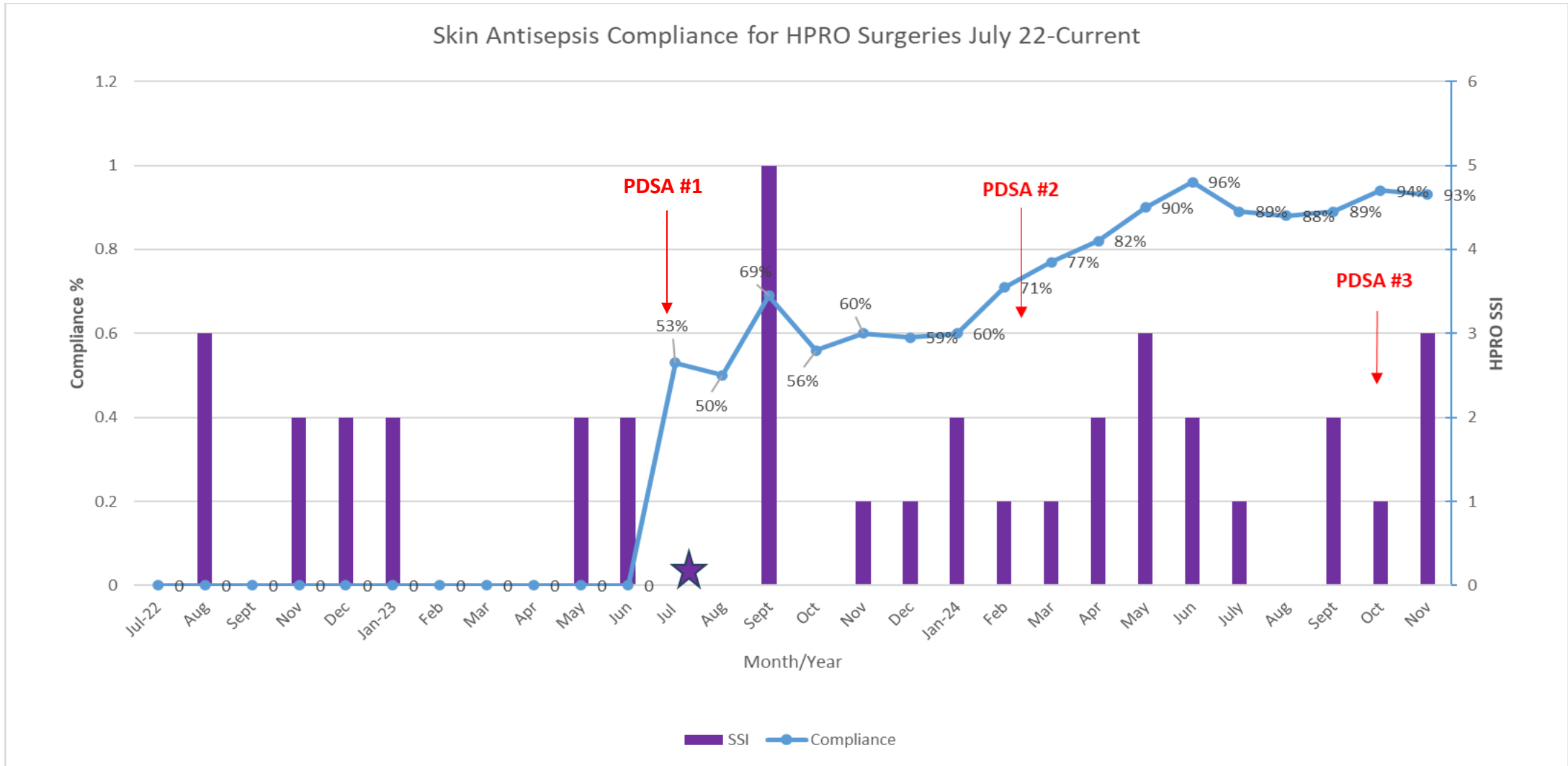
○ PDSA Cycle #2-February 2024-September 2024

- Based on compliance scores, identified a need to re-educate staff on correct EHR documentation for skin antiseptic.
- Performed OR observations to validate documentation consistent with defined skin antiseptic protocol. Recruitment and reinforcement with surgeons, advanced practice professionals and operating room team members.

○ PDSA Cycle #3- September 2024-December 2024

- Universal Nasal Decolonization trial- moving to permanently adopt product for all orthopedic surgical cases. Huge success in the pre-operative area!

Skin Antisepsis Prep Compliance compared to SSI's



Outcomes



Standardized pre-op home skin prep product and patient instructions system wide.



Provided standardized skin antisepsis at 6 ECU Health Medical facilities achieving $\geq 90\%$ compliance more consistently since May 2024 at the Medical Center.



Reduction in the number of SSIs related to enteric pathogens from 12 to 5 in the past fiscal year.



Implemented universal nasal decolonization product, in place of universal screening for MRSA

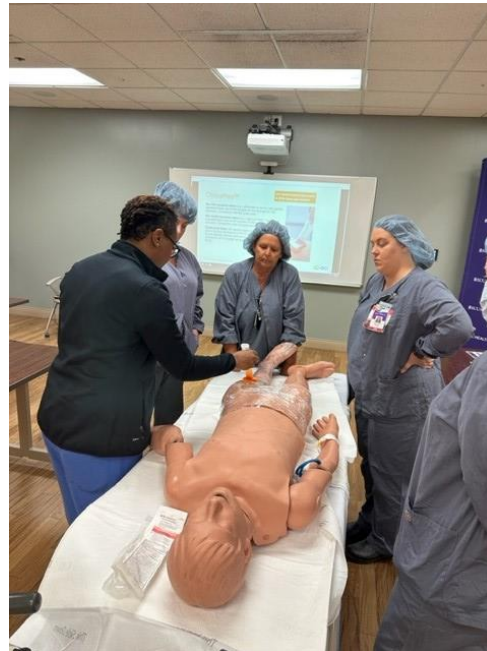


Estimated cost savings ~ \$200,000 across all service lines

Lessons Learned

Collaboration is key for success- engaging Physicians, OR leadership, Infection Control, Education

Employee engagement drives the success of the team.



Next Steps



Continue to track skin antisepsis compliance in comparison to infection rates

Track surgical site organisms causing infections

Permanent adoption of nasal decolonization product for all orthopedic surgical patients

EPIC upgrade for improved documentation and compliance capture of skin antisepsis

Roll out nasal decolonization to other surgical service lines and system hospitals

CHG wipes and instructions for home skin antisepsis pre-op

Questions?

Dr. Jacob Pierce & Michelle Ball
Infection Control and Prevention

Jacob.Pierce@ecuhealth.org

mcarawon@ecuhealth.org