

# Clip and Clean: An Effort to Reduce Surgical Site Infection Rates In the Cardiovascular Procedure Lab

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## BACKGROUND

Post-procedure Surgical Site Infections (SSI) are the leading cause of post-procedure hospital admissions and quality of life inhibitor. When infection is present, the patient is put at risk for having their implant device removed, additional procedures to re-implant devices, procedure delays, hospital re-admissions, loss of time from work, health declines, etc. The cardiovascular procedural labs at our hospital have seen a consistent increase in infection rates since 2004. The SSI rates for device implant patients have exhibited a range of 0.9-2.0% between the years 2003-2014.

## PURPOSE

The purpose of this study was to comprehensively examine multiple issues surrounding all aspects of the patient experience in the cardiovascular procedural unit. Any portion of the patient experience that could compromise sterile integrity or clean technique that could become a source of infection was analyzed. The amount and type of patient education was also evaluated due to the fact that it is important for the patient to understand their role in minimizing the risk of infection and recognizing the signs and symptoms of infection in the home setting. The goal was to reduce cardiovascular infection rates to below the mean of 1.3% by the beginning of the 2<sup>nd</sup> quarter of 2015.

## REFERENCES

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## METHODOLOGY

A committee was formed to initiate the discussion surrounding current issues and trends that were compromising sterile and clean technique and integrity in the cardiovascular procedural labs. The committee consisted of a representative from each unit that the patient would encounter during a typical outpatient visit to any of the cardiovascular procedure labs. Any procedure, technique, or type of patient education that was used during the patient's encounter was analyzed based on current evidence based guidelines.

### Type of Skin Prep Bath Used In the Home Setting

The existing use of Dynahex was examined. A literature review was performed and evaluated the effectiveness of other types of skin preps. Based on the findings, the decision was made to continue with the current practice of using Dynahex skin prep baths and educating the patient on its correct use.

### Type of Clippers

A clipper trial was performed to evaluate the effectiveness of the clippers in use in the cardiovascular procedural lab versus the use of a different type of clipper used in a different unit. The results of this trial revealed that there was a 75% increase in the amount of nicks and abrasions located on the patient's skin prep site with the use of the different type of clipper. This was deemed a patient safety hazard as well as a potential source of infection. A second nurse was asked to evaluate the clipped area immediately prior to the procedure to ensure the appropriate area was clipped correctly, evaluated for the presence of abrasions, and for the presence of skin reactions to the skin prep solution used in the home setting.

### Clipping Diagram Standardization

The current clipping diagram was evaluated and updated using color coded fields and a larger and more concise font. All old diagrams were removed from patient care units and replaced with the new diagrams to enhance consistency and ease of use.

### Location & Time of Clipping

The existing practice was that the patient's hair was clipped upon arrival to the hospital immediately prior to the procedure. This workflow was redesigned to allow for all of the scheduled out-patients to be clipped during the pre-procedure visit the day before the scheduled procedure.

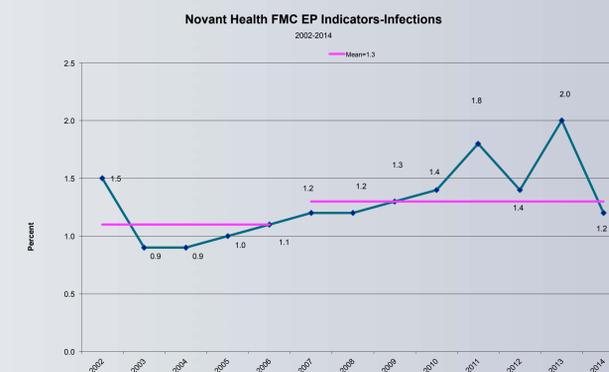
### Amount & Type of Patient Education Received Prior To The Scheduled Procedure

The amount and type of patient education was evaluated in detail and was found to be current based on evidence based practice guidelines.

## RESULTS

The implementation of the committee recommendations were performed during the months of February-April 2015. The results concluded:

- Infection rates were closely monitored by gathering data during the months of February-April 2015. SSI rates for February-April 2015 were 1.0% for implant devices concluding that there was an overall reduction in SSI rates by 23%. These results indicate a positive change for the cardiovascular procedural units and have led to an increased awareness of the importance of this issue.
- Clipper type was standardized for staff in order to perform the necessary hair clipping prior to the scheduled procedure in a safe, effective, and efficient manner. Ease of use and protection of skin integrity were the highest priorities voiced and evidenced among nurses during pre-procedural clipping. The clippers in use in the cardiovascular procedural lab during the pre-trial period were deemed appropriate for use during the continuation of this process improvement.



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## CONCLUSIONS

The implications of this process improvement suggest that a further reduction in SSI rates may be accomplished by including additional in-patient and same day surgery patients. The vast risk of acquiring a SSI in the hospital is daunting but with multi-focal efforts guided by evidence-based standards, SSI infections can be significantly reduced.