

# The Power is in the Cards – Utilizing K Card Elements in the Operating Rooms to Prevent Surgical Site Infections

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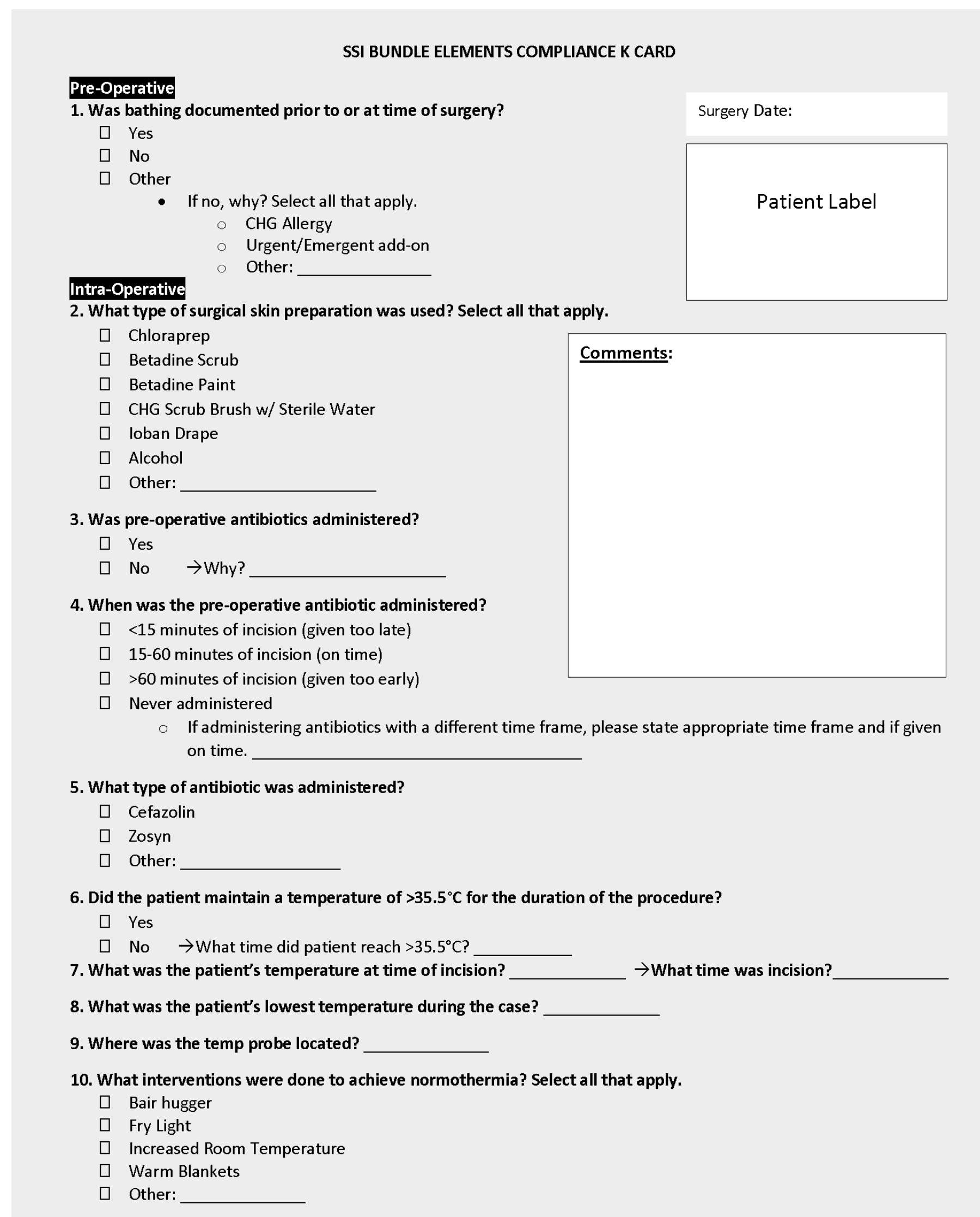
## Background

- Surgical site infections (SSIs) account for about 20% of all healthcare-associated infections (HAIs) each year, and are a significant contributor of morbidity and mortality
- SSIs can be prevented by adhering to evidence-based guidelines and recommendations such as pre-operative bathing, using an alcohol-based surgical skin preparation, administering preoperative antibiotics, and intraoperative normothermia
- Kamishibai Cards (K Cards) are a well-known quality improvement tool used for preventing device-associated infections through assessing and facilitating conversations on bundle measure compliance, but have not been adapted for use in SSI prevention
- **OBJECTIVE:** Develop and trial the use of K cards in the pediatric neurosurgery service to determine their feasibility in assessing SSI prevention measure compliance and impact on SSI rates

## Methods

- An SSI prevention K card was developed and implemented in March 2023 for a six-month trial in the intraoperative setting for pediatric neurosurgery cases
- The K card contained elements from our institutional SSI prevention bundle
- The surgical team completed and reviewed the K cards and turned them in at the end of the case
- Bundle compliance and SSI rates were analyzed

## K Card



SSI BUNDLE ELEMENTS COMPLIANCE K CARD

**Pre-Operative**

1. Was bathing documented prior to or at time of surgery?

Yes  
 No  
 Other

• If no, why? Select all that apply.

- CHG Allergy
- Urgent/Emergent add-on
- Other: \_\_\_\_\_

**Intra-Operative**

2. What type of surgical skin preparation was used? Select all that apply.

Chloraprep  
 Betadine Scrub  
 Betadine Paint  
 CHG Scrub Brush w/ Sterile Water  
 Ioban Drape  
 Alcohol  
 Other: \_\_\_\_\_

3. Was pre-operative antibiotics administered?

Yes  
 No → Why? \_\_\_\_\_

4. When was the pre-operative antibiotic administered?

<15 minutes of incision (given too late)  
 15-60 minutes of incision (on time)  
 >60 minutes of incision (given too early)  
 Never administered

○ If administering antibiotics with a different time frame, please state appropriate time frame and if given on time. \_\_\_\_\_

5. What type of antibiotic was administered?

Cefazolin  
 Zosyn  
 Other: \_\_\_\_\_

6. Did the patient maintain a temperature of >35.5°C for the duration of the procedure?

Yes  
 No → What time did patient reach >35.5°C? \_\_\_\_\_

7. What was the patient's temperature at time of incision? \_\_\_\_\_ → What time was incision? \_\_\_\_\_

8. What was the patient's lowest temperature during the case? \_\_\_\_\_

9. Where was the temp probe located? \_\_\_\_\_

10. What interventions were done to achieve normothermia? Select all that apply.

Bair hugger  
 Fry Light  
 Increased Room Temperature  
 Warm Blankets  
 Other: \_\_\_\_\_

Surgery Date: \_\_\_\_\_

Patient Label

Comments:

Figure 1. K Card

## Results

- During the trial period (March 2023 – August 2023), the pediatric neurosurgery SSI rate was **1.0 SSI per 100 tracked surgical procedures**, a decrease from **1.9 SSIs per 100 tracked surgical procedures** during the same timeframe a year prior (March 2022 – August 2022) without the K Cards
- Compliance with preoperative bathing was 91%, use of an alcohol-based surgical skin preparation when not contraindicated 96%, and administering preoperative antibiotic prophylaxis on time 97%
- Maintaining intraoperative normothermia was identified as an area of significant opportunity with 68% compliance overall despite various intraoperative interventions
- Users found the K card format to be simple, quick to complete, and helpful in determining compliance with SSI bundle measures for cases

## Conclusion

- K cards are feasible to implement for tracking and ensuring compliance with SSI prevention practices, and continuously identifies areas of opportunity for improvement to prevent SSIs
- Interventions to improve intraoperative normothermia are being explored with plans to pilot

## Acknowledgments

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## References

CDC National and State Healthcare-Associated Infections Progress Report, published November 2023, available from: <https://www.cdc.gov/hai/data/portal/progress-report.html>