# REDUCING SURGICAL SITE INFECTIONS BY INVOLVING PATIENTS THROUGH PATIENT EDUCATIONAL TOOLS

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## ABSTRACT

There has been significant progress in surgical techniques, advances in operating rooms, and implementation of surgical site infection (SSI) prevention bundles, but surgical site infections remain a significant burden, increasing morbidity, mortality, and healthcare costs. Most SSI prevention strategies concentrate on healthcare workers' (HCWs') roles and procedure-related risk factors but patient participation is becoming an increasingly important concept to improve patient safety. By providing patients with the information they need, SSI prevention can be implemented more effectively. Based on existing guidelines and expert opinion, five recommendations were made for the surgical patient. This practice brief is described in the form of a patient information leaflet. We observed reduction in SSI rate in one year of our study period. This information can be used by health care professionals to educate patients and engage them in their care.

## CONTACT

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## INTRODUCTION

Surgical site infections (SSIs) continue to constitute a major challenge to healthcare institutions as a second most common cause of healthcare associated infections (HAIs). Preventative measures require an integrative approach that focuses through the pre-, intra and postoperative care involving all the stakeholders .There has been a greater emphasis and a marked emergence of more patient involvement in decision-making process concerning their health. Patient participation in SSI preventive programs refers to interventions ranging from patient education to ensure a clean skin pre- surgery to empowering patients to remind HCWs to not shave the surgical site; to perform hand hygiene prior contact with the surgical site and other actions outlined here.

## METHODS AND MATERIALS

Three key infection prevention and control experts and infectious disease specialists, with a special interest in surgical site infections formed the expert panel and convened a day-long meeting to discuss the topic. To this end, the panel identified 5 fundamental recommendations based on evidence and expert advice.



**Hair Removal**

- Shaving is strongly discouraged




**Preoperative showering and bathing**

Bathe (full body) with either soap (antimicrobial or non-antimicrobial) on the night before and/or in the morning of the surgery




**Diabetes mellitus**

Maintain stable blood glucose levels before, during and after surgery
See your doctor at least one month before your scheduled surgery




**Wound care after surgery**

- Report any redness, pain, swelling or fever to HCWs
- If change of dressing is necessary, this should be done under a clean technique

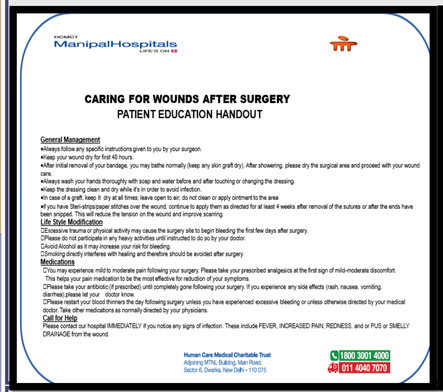


**Hand hygiene**

**Clean** before eating a meal; after visiting the toilet or using commode/urinal; before and after touching your drip (IV line)

## RESULTS

By educating patients via leaflets or education sessions, patients can be proactive about minimizing harm or errors in their own care and thus reducing surgical site infections.



HCMCT ManipalHospitals LIFE'S ON

**CARING FOR WOUNDS AFTER SURGERY**
**PATIENT EDUCATION HANDOUT**

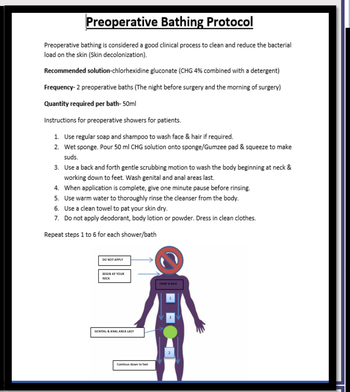
**General Management**
•Always follow any specific instructions given to you by your surgeon.
•Keep your wound dry for first 48 hours.
•After initial removal of your bandage, you may bathe normally (keep any skin graft dry). After showering, please dry the surgical area and proceed with your wound care.
•Always wash your hands thoroughly with soap and water before and after touching or changing the dressing.
•Keep the dressing clean and dry while it's in order to avoid infection.
•In case of a graft, keep it dry at all times; leave open to air, do not clean or apply ointment to the area
•If you have Steri-strips/paper stitches over the wound, continue to apply them as directed for at least 4 weeks after removal of the sutures or after the ends have been snipped. This will reduce the tension on the wound and improve scarring.

**Life Style Modification**
☐Excessive trauma or physical activity may cause the surgery site to begin bleeding the first few days after surgery.
☐Please do not participate in any heavy activities until instructed to do so by your doctor.
☐Avoid Alcohol as it may increase your risk for bleeding.
☐Smoking directly interferes with healing and therefore should be avoided after surgery.

**Medications**
☐You may experience mild to moderate pain following your surgery. Please take your prescribed analgesics at the first sign of mild-moderate discomfort. This helps your pain medication to be the most effective for reduction of your symptoms.
☐Please take your antibiotic (if prescribed) until completely gone following your surgery. If you experience any side effects (rash, nausea, vomiting, diarrhea), please let your doctor know.
☐Please restart your blood thinners the day following surgery unless you have experienced excessive bleeding or unless otherwise directed by your medical doctor. Take other medications as normally directed by your physicians.

**Call for Help**
Please contact our hospital IMMEDIATELY if you notice any signs of infection. These include FEVER, INCREASED PAIN, REDNESS, and or PUS or SMELLY DRAINAGE from the wound.

Human Care Medical Charitable Trust
Adjoining MTNL, Building, Main Road,
Sector 6, Dwarka, New Delhi – 110 075
1800 3001 4000
011 4040 7070



**Preoperative Bathing Protocol**

Preoperative bathing is considered a good clinical process to clean and reduce the bacterial load on the skin (Skin decolonization).

**Recommended solution**-chlorhexidine gluconate (CHG 4% combined with a detergent)

**Frequency**- 2 preoperative baths (The night before surgery and the morning of surgery)

**Quantity required per bath**- 50ml

Instructions for preoperative showers for patients.

1. Use regular soap and shampoo to wash face & hair if required.
2. Wet sponge. Pour 50 ml CHG solution onto sponge/Gumzee pad & squeeze to make suds.
3. Use a back and forth gentle scrubbing motion to wash the body beginning at neck & working down to feet. Wash genital and anal areas last.
4. When application is complete, give one minute pause before rinsing.
5. Use warm water to thoroughly rinse the cleanser from the body.
6. Use a clean towel to pat your skin dry.
7. Do not apply deodorant, body lotion or powder. Dress in clean clothes.

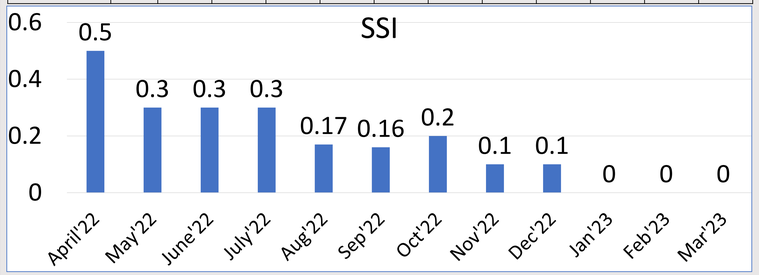
Repeat steps 1 to 6 for each shower/bath

## GRAPHS AND TABLES

### Surgical Site Infections Rates

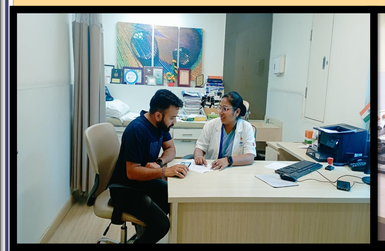
*No. of surgical site infection in a month/No. Of surgeries performed in that month X 100*

| | Apr'22 | May'22 | June'22 | July'22 | Aug'22 | Sep'22 | Oct'22 | Nov'22 | Dec'22 | Jan'23 | Feb'23 | Mar'23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Numerator | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Denominator | 551 | 628 | 614 | 612 | 591 | 609 | 489 | 583 | 598 | 500 | 476 | 585 |
| Rate | 0.5 | 0.3 | 0.3 | 0.3 | 0.17 | 0.16 | 0.2 | 0.1 | 0.1 | 0 | 0 | 0 |




## DISCUSSION

One-to-one conversation and education session was done by the surgeon and diabetic educator on prevention of SSI. In addition to helping patients feel more comfortable, it also encourage them to self-monitor their medications and blood glucose levels





### Recommendations with Rationales

| S.no | Recommendation | Rationale |
|---|---|---|
| 1 | Recommendation 1: Preoperative showering and bathing<br>**What can the patient do?**<br>Shower or bathe (full body) with either soap (Antimicrobial or non-antimicrobial) or an antiseptic agent on the night before and/or in the morning of the day you are scheduled for surgery. | To reduce the bacterial load on the skin. |
| 2 | Recommendation 2: Diabetes Mellitus<br>**What can the patient do?**<br>❖ If you have diabetes see your doctor at least one month before your scheduled surgery<br>❖ It is crucial to maintain stable blood glucose levels before, during and after surgery<br>❖ When hospitalised inform your doctor or nurse about your routine insulin regime. | There is a significant association between hyperglycemia and SSIs. SSI is increased by hyperglycemia, which impairs numerous host defense mechanisms. |

## CONCLUSIONS

Health care organizations and patients are both affected by SSIs; Therefore the implementation of diverse multidisciplinary prevention strategies is essential.Patient engagement in preventing SSI might be an effective and useful strategy adding to the already existent surgical site care bundles. Despite this, this topic has yet to be sufficiently researched to support the effectiveness of patient-focused interventions in preventing surgical site infections. Guidelines for SSI prevention could be improved by patient engagement.

## REFERENCES

1.European Centre for Disease Prevention and Control. Surveillance of surgical site infections in Europe 2010–2011. 2013.
2. Antimicrobial Resistance & Infection Control · May 2017, Patient engagement with surgical site infection prevention