Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

Problem:

1. Surgical site infections continued to remain higher than the NHSN (National Healthcare Safety Network) mean, despite implementation and compliance in all SCIP measures, up to and including chlorhexidine (CHG) wipes prior to scheduled cases, and one time use in urgent or emergent cases when able.

2. Most of the infections were superficial.

3. There was not a standardized approach to incision care from dressing type, use and application, post-operative care, showering, etc.

Review:

1. In-depth deep dive review of every infection for previous three years was performed. Commonalities identified in the cases. Findings of co-morbidities were in order of frequency:
   a. Body Mass index >30 and >35 (90%)
   b. Anemia (Hgb <10, preoperatively and or postoperatively) (60%)
   c. Emergent cases (50%)
   d. Previous cesarean section (50%)
   e. Smoking (25%)

2. An in-depth literature review was done.

3. Consultation with Wound Ostomy Certified (WOC) Nurse group.


5. Cost comparison for 100% use of patients with the more expensive dressing advanced wound care all in one dressing compared to the average national cost of one infection. The result was that if the use of the more expensive dressing saved one infection annually, then the cost of the more expensive dressing would be made up.

Initial Plan:

1. Provide a simple all in one dressing for patients not meeting co-morbidity criteria.

2. Provide an advanced wound care all in one dressing for patients meeting outlined co-morbidity criteria based on site findings and literature review. (See fig 2)

3. Use only all in one dressings, following all manufacturer guidelines for their application and use.
   a. Non-criteria standard simple dressing will stay on for 24 hours.
Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

b. Criteria based dressing will stay in place for 7 days.

4. Provide education on aseptic technique for application and reapplication of dressing for all staff.

5. Create and provide a patient education handout, specific to the advanced wound care dressing. (Fig 1)

6. Create and provide a pre-surgical showering and hygiene handout. (Fig 4)

7. Enhance clinical documentation of incision care in the electronic medical record

Learning:

1. After one year of implementation and operationalization of the incision care standardization, it was observed that 80% of cesarean section patients met criteria for the advanced wound care dressing.

2. Of the infections in the first year, many of the infections that occurred were in patients who did not have co-morbidities.

3. Nearly a 50% reduction in superficial surgical site infections was observed in the first year after implementation.

4. A student project included calling post-operative patients who had received the advanced wound care dressing to determine the ease of use, compliance and satisfaction of the patient with the dressing.

   a. Patients who had previous cesareans reported that this dressing was more comfortable

   b. A few patients were not clear on when to remove the dressing and left on too long or removed early. Most followed the instructions without difficulty

   c. Patients were overall very satisfied with their experience with incision care

5. Physician feedback was learned at a OB/Gyn provider meeting. Physicians expressed a significant level of satisfaction with how the incisions are healing and appearing at the two week incision check appointment and the six week postpartum appointments.

Final Plan:

1. Use the advanced wound care antimicrobial all in one dressing for all patients, following all manufacturer guidelines for its application and use. (exception: Silver allergy- if allergy present, to use the same dressing without silver)

2. Provide education on aseptic technique for application and reapplication of dressing for all staff.

3. Adjust orders and nursing standards to reflect the new standards for incision care. (Fig 3)
Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

Border Ag Dressing

Border Ag is a dressing that has been ordered by your healthcare provider to promote wound healing. This dressing will not stick to your wound.

- You may shower with this dressing in place

Removing your soiled dressing:
- You may remove the dressing on the 7th day
- Remove dressing by gently lifting a corner and then peeling away from your wound

When to call the health care provider
- If any change in the wound is a concern
- If the drainage from the wound increases
- If you have a sudden increase in pain, or new pain in your wound
- If the area around the wound gets red, swollen or painful to touch
- If the wound color changes from pink or red to a tan, brown or black color
- If you get a fever, or if the wound odor gets worse
- If you have questions
Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

Fig 2 – Original First Year Policy Criteria based

I. PURPOSE:
To implement dressing based on patient risk factors, standardize incision care, and decrease/eliminate post-op cesarean infections.

II. POLICY: Dressings used for cesarean section incisions, with and without risk factors...

III. DEFINITIONS:
Aseptic Technique: The use of surgical practices that restrict microorganisms in the environment and prevent contamination of the surgical wound. Aseptic technique is employed to maximize and maintain asepsis, the absence of pathogenic organisms, in the clinical setting. The goals of aseptic technique are to protect the patient from infection and to prevent the spread of pathogens.

IV. GUIDELINES:
A. Use (transparent island dressing) on patients without risk factors:
   1. Transparent Island dressing to remain in place for a minimum of 24 hours, with a goal of attaining 48 hours.
   2. Remove and replace dressing if less than 24 hours since surgery and dressing is saturated 75% or more; OR if the edges of the dressing are no longer adhered; OR there is fluid/blood leaking.
   3. Change the dressing using aseptic technique.
   4. Patient may shower after 24 hours while the dressing is on and intact.
   5. Do not use any other tapes or adhesives on the original dressing except prescribed pressure dressing.
   6. For oozing or actively bleeding incision: Apply pressure dressing.
   7. Once dressing is removed, if there is a skin fold or moisture is collecting in the incision area, use wicking material.
   8. Once dressing is removed observe incision twice daily.
   9. Call physician if: redness at or around incision site; swelling; drainage; foul odor; fever; pain.

B. Use Foam with Ag (silver) for patients with any of the following criteria:
   1. Uncontrolled Diabetes
   2. Anemia (hb < 12), Blood or Hematological Disorders – Severe anemia, Antithrombin C, Protein S, Anticardiolipin, Sickle Cell, etc.
   3. Body Mass index of 30 or greater
   4. Smoker
   5. Multiple Cesareans – History of 2 or greater 2 previous cesareans, prior to the upcoming or present
   6. History of wound infections/healing problems – i.e. Seroma and or hematoma formation, infections, dehiscence, etc.
Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

Fig 2 Cont.

7. Emergent/Urgent cesarean with ANY of the following:
   a. Prolonged rupture of membranes
   b. Preterm Premature Rupture of Membranes
   c. Diagnosis of Chorio
   d. Prolonged labor with ROM and internal monitors
   e. Oozing incision

C. Contraindications for Use:
   1. Do not use if you have known sensitivity to silver.
   2. Do not use Ag during radiation treatment or examinations e.g. X-ray, ultrasound, diathermy or Magnetic Resonance Imaging.
   3. Do not use Ag together with oxidizing agents such as hypochlorite solutions or hydrogen peroxide.

D. Care of the Dressing and Incision:
   1. with Silver Island Dressing to remain in place for 7 days.
   2. Lift dressing as needed based on abnormal symptoms or physician request to observe incision.
      a. This is done by gently rolling the dressing back on itself from top toward bottom to peel back the upper 50% of the dressing,
      b. Once you have visualized the incision, gently unroll the dressing back into place.
   3. Remove and replace dressing any time during hospitalization:
      a. If dressing is saturated 75% or more with blood or body fluid
      b. If the dressing completely falls off
      c. If there is blood or body fluid leaking from edges
   4. Change the dressing using aseptic technique, when changing is required.
   5. Patient may shower any time while the dressing is on and intact.
      a. Assess dressing prior to shower.
      b. Instruct patient to not have the shower stream in direct contact with the dressing/incision as they cleanse themselves.
      c. If the dressing becomes wet during a shower it will dry out within 30 minutes if left intact. If the patient is uncomfortable with moisture apply interdry over the dressing to further absorb the moisture to the external portion of the dressing.
   6. May use other tapes or adhesives on the original dressing to re-adhere corners if they become loose.
   7. For oozing or actively bleeding incision: Apply pressure dressing.
   8. Wicking material may be used over and in addition to the foam dressing with Ag (silver) for moisture.
   9. If the following symptoms are present: redness at or around dressing; swelling; drainage; foul odor; fever; pain, lift dressing per policy recommendations, observe incision and call physician with findings.
   10. Nurse to provide education on wound care, dressing removal on day 7 with patient instruction sheet.

E. Pressure dressing for oozing or actively bleeding incision:
   1. Apply 2 ABD’s to and over the intact dressing. If the dressing is >75% saturated, change dressing prior to application of pressure dressing via aseptic technique.
   2. Apply foam tape that places pressure on the incision to control bleeding.
Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

Fig 3

Original: 10/14
Minor Review: 9/15
Full Review: 11/14
Replaces: 9/15

Responsible Person: Chair, WCC Clinical Practice Committee
Approving Committee: SCH Women and Children's Clinical Practice Committee
FBC Medical Director
Department of OB/GYN

Type: Protocol

I. PURPOSE
To implement dressing, standardized incision care to decrease/eliminate post-op cesarean infections.

II. POLICY
Standardized dressings and care are used for cesarean section incisions.

III. DEFINITIONS
A. Aseptic Technique
   1. The use of surgical practices that restrict microorganisms in the environment and prevent contamination of the surgical wound. Aseptic technique is employed to maximize and maintain asepsis, the absence of pathogenic organisms, in the clinical setting. The goals of aseptic technique are to protect the patient from infection and to prevent the spread of pathogens.

IV. GUIDELINES
1. Use Foam with (Ag) silver for all patients (use Tegaderm or other acceptable alternative if silver allergy)
2. Contraindications for Use:
   a. Do not use if you have known sensitivity to silver
   b. Do not use Ag during radiation treatment or examinations e.g. X-ray, ultrasound, diathermy or Magnetic Resonance Imaging
   c. Do not use Ag together with oxidizing agents such as hypochlorite solutions or hydrogen peroxide
3. Care of the Dressing and Incision:
   a. Document on dressing application with date of removal (7 days later).
   b. With Silver Island Dressing to remain in place for 7 days
   c. Lift dressing as needed based on abnormal symptoms or physician request to observe incision
      1) This is done by gently rolling the dressing back on itself from top toward bottom to peel back the upper 50% of the dressing
      2) Once you have visualized the incision, gently unroll the dressing back into place
   d. Remove and replace dressing any time during hospitalization:
      1) If dressing is saturated 75% or more with blood body fluid
      2) If the dressing completely falls off
      3) There is blood or body fluid leaking from edges
   e. Change the dressing using aseptic technique, when changing is required
   f. Patient may shower any time while the dressing is on and intact
      1) Assess dressing prior to shower
Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

Fig 3 Cont.

2) Instruct patient to not have the shower stream in direct contact with the dressing/incision as they cleanse themselves.
3) If the dressing becomes wet during a shower it will dry out within 30 minutes if left intact. If the patient is uncomfortable with moisture apply [blackout] over the dressing to further absorb the moisture to the external portion of the dressing.
g. May use other tapes or adhesives on the original dressing to re-adhere corners if they become loose.
h. For oozing or actively bleeding incision: Apply pressuring dressing.
i. Wicking material may be used over and in addition to the foam dressing with Ag (silver) for moisture.
j. Call physician if: redness at or around incision site; swelling; drainage; foul odor; fever; pain.
k. Clinical nurse to provide education on wound care, dressing removal on day 7 with patient instruction sheet.

4. Pressure dressing for oozing or actively bleeding incision:
a. Apply 2 ABD’s to and over the intact dressing. If the dressing is >75% saturated, change dressing prior to application of pressure dressing via aseptic technique.
b. Apply foam tape that places pressure on the incision to control bleeding.
c. Check skin integrity every 4 hours.
Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

Fig 4

Showering To Reduce Germs On Your Skin Before Surgery

Wash with antiseptic solution
Washing your skin with 4% Chlorhexidine Gluconate (CHG) solution will reduce the number of germs on your skin and decrease the chance of infection. Please follow the instructions below to clean your skin before surgery.

- DO NOT SHAVE any part of the body (except men can shave their faces) for at least two days prior to surgery.
- Purchase two 4-ounce bottles* of Chlorhexidine Gluconate (CHG) antiseptic soap, also called "Hibidens," at your local pharmacy. DO NOT use this product if you are allergic to CHG.
- Shower the night before AND the morning of surgery with CHG antiseptic soap.
- DO NOT use CHG soap near your eyes, ears, mouth or vagina.
- This product may cause discoloration of towels/washcloths.

The night before surgery
- In the shower, wash your body with your regular soap first. Wash and rinse your hair using your normal shampoo and conditioner.
- Make sure you completely rinse the soap, shampoo and conditioner from your hair and body.
- Now wet your entire body. Then turn the water off in the shower or move away from the water spray.
- You will use 1 bottle (4 ounces) for each shower. With a clean wash cloth, apply the antiseptic CHG soap solution to your body starting at the neck. Lather your entire body from the neck down. Continue to stay out of the water spray as you lather. Gently wash your body with the lather.
- Then gently scrub the areas where the incision(s) will be located for about 5 minutes. See diagram for location.
- Once you have completed the scrub, rinse the CHG soap off your body completely using shower water.
- If you have burning, redness or itching that does not stop, rinse immediately and do not reapply.
- DO NOT wash with regular soap or shampoo and conditioner after you have used the antiseptic CHG soap solution. DO NOT apply deodorants, lotions, moisturizers, makeup, powders or sprays. Doing so would decrease the effectiveness of the CHG soap.
- Pat yourself dry with a clean, freshly washed towel.
- Dress in clean, freshly washed clothes.
- Sleep on freshly washed sheets.

*It is OK to buy one 8-ounce bottle and use half the bottle for each shower.

INSTRUCTIONS
FOR THE MORNING OF SURGERY
ARE ON THE BACK OF THIS SHEET

Page 1 of 2
Reduction of Surgical Site Infections in the Cesarean Section Patient through Incision Care

Fig 4 Cont.

The morning of surgery
- DO NOT wash with regular soap or shampoo and conditioner during this shower. Doing so would decrease the effectiveness of the CHG soap.

- Wet your entire body in the shower, then turn the water off or move away from the water spray.

- You will use 1 bottle (4 ounces) of CHG soap for this shower. With a clean wash cloth, apply the antiseptic CHG soap solution to your body starting at the neck. Lather your entire body from the neck down. Continue to stay out of the water spray as you lather. Gently wash your body with the lather.

- DO NOT use CHG soap near your eyes, ears, mouth or vagina.

- Gently scrub the areas where the incision(s) will be located for about 5 minutes.

- Once you have completed the scrub, rinse the CHG soap off your body completely using shower water.

- Pat yourself dry with a clean, freshly washed towel.

- DO NOT apply deodorants, lotions, moisturizers, makeup, powders or sprays.

- Dress in clean, freshly washed clothes.