

# Prevention and Management of Cesarean Wound Infection



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## KEYWORDS

• Cesarean • Surgical site infections • Wound • Treatment • Management

## KEY POINTS

- Postcesarean surgical site infections constitute a major health and economic threat.
- The multiple risk factors for postcesarean wound and other infections include patient characteristics and intrapartum management.
- Optimization of maternal comorbidities, appropriate antibiotic prophylaxis, and good surgical technique may ameliorate the risk of subsequent wound infection.
- Clinical suspicion for wound infection should be raised by fever, wound erythema, incisional drainage, and expanding induration.
- Approaches to wound management combine administration of topical/systemic antibiotics, debridement of necrotic tissue, and application of dressings for a balanced moist environment.
- Necrotizing fasciitis represents a severe, rapidly expanding wound infection, which presents an immediate threat to the life of the patient. Early identification and debridement are critical for survival.

## INTRODUCTION

The US Centers for Disease Control and Prevention (CDC) define a surgical site infection (SSI) as an infection at the surgical site within 30 days of the operative procedure, further stratified by depth of infection: superficial incisional, deep incisional, and organ/space (**Box 1**).<sup>1</sup> SSIs place a significant burden on the health care system, representing 21.8% of health care–associated infections, with an estimated 157,500 cases annually in the United States.<sup>2</sup> Prevention of SSIs is a key component of the Joint Commission’s quality improvement initiative through the Surgical Care Improvement Project (SCIP). Cataife and colleagues<sup>3</sup> evaluated the impact of SCIP compliance

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**Box 1****CDC criteria for surgical site infection***Superficial incisional SSI*

Infection occurs within 30 days after the operation and infection involves only skin or subcutaneous tissue of the incision and at least 1 of the following:

1. Purulent drainage, with or without laboratory confirmation, from the superficial incision
2. Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision
3. At least 1 of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat and superficial incision is deliberately opened by surgeon, unless incision is culture negative
4. Diagnosis of superficial incisional SSI by the surgeon or attending physician

*Deep incisional SSI*

Infection occurs within 30 days after the operation if no implant is left in place or within 1 year if implant is in place and the infection seems to be related to the operation and infection involves deep soft tissues (eg, fascial and muscle layers) of the incision and at least 1 of the following:

1. Purulent drainage from the deep incision but not from the organ/space component of the surgical site
2. A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least 1 of the following signs or symptoms: fever (>38°C), localized pain, or tenderness, unless site is culture negative
3. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination
4. Diagnosis of a deep incisional SSI by a surgeon or attending physician

*Organ/space SSI*

Infection occurs within 30 days after the operation if no implant is left in place or within 1 year if implant is in place and the infection seems to be related to the operation and infection involves any part of the anatomy (eg, organs or spaces), other than the incision, which was opened or manipulated during an operation and at least 1 of the following:

1. Purulent drainage from a drain that is placed through a stab wound into the organ/space
2. Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space
3. An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination
4. Diagnosis of an organ/space SSI by a surgeon or attending physician

*Adapted from Mangram AJ, Horan TC, Pearson ML, et al. Guideline for prevention of surgical site infection, 1999. Centers for Disease Control and Prevention (CDC) Hospital Infection Control Practices Advisory Committee. Am J Infect Control 1999;27(2):252.*

on SSIs in 295 hospital groups and found that compliance with measures, including timely administration of prophylactic antibiotics (ie, within 60 minutes of surgical incision) and use of appropriate antibiotics for a specific procedure, had a large reduction in SSIs. Cesarean delivery, one of the most common major surgical procedures performed worldwide, continues to increase in frequency and is an important contributor to SSIs. In the United States alone, cesareans account for approximately one-third of births or 1.3 million cases annually.<sup>4</sup> Postcesarean SSIs are most commonly superficial or deep wound infections and endomyometritis; less common SSIs include

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