
Jodi Schulz, M.D.1, Kyle Traynor, M.D.2, Kristina Butler, M.D.3, Mathew Robertson III, M.D.4, Erd Rivera-Chiauzzi, M.D.5, Alan Wright, M.D.6, Amy Brien, M.D.7, Michelle Wyatt, M.D.7, Susan Skinner, C.N.M.7, Judy Barlow, R.N.7, Laurie Wensink, R.N.7, Bridget Avkainen, Sara Carlson6, Carie Martin-Krajewski, Kate Nesbitt, Becky Walkes, R.N.7, Goldhan Anil, M.D.1, Jamie Bakkum-Gamiz, M.D.2
Mayo Clinic Health System1, Mayo Clinic Rochester1, Mayo Clinic Arizona3, Mayo Clinic Florida4

Abstract

Background: Surgical site infection (SSI) is associated with increased morbidity and cost of care. At Mayo Clinic Rochester (MCR), the gynecologic (GYN) surgery division implemented a surgical intervention bundle that resulted in significant and sustained reduction in SSI rates.

Methods: Given prior successes, a multi-disciplinary, enterprise-wide OB-GYN team was established in July 2015 to reduce SSIs across the Department. Representatives from MCR, Mayo Clinic Arizona (MCA), Mayo Clinic Florida (MCF), and Mayo Clinic Health System (MCHS) were included. Practice gap analyses for GYN type II laparotomies and Obstetrics (OB) cesarean deliveries (CD) were performed. Risk factors for SSI among CD were identified. SSI reduction bundles were developed for GYN and OB. Metrics to establish baseline and post-intervention SSI rates include National Surgical Quality Improvement Project (NSQIP) and Mayo Infection Prevention and Control (IPAC) data.

Results: Review of 2014 NSQIP SSI data indicated room for improvement at all GYN sites throughout the Mayo Clinic Enterprise. IPAC identified a MCR SSI rate of 2.5% for CD in 2014. SSI rates for GYN and CD at MCR and MCHS at 6 and 3 months, respectively, will be determined and compared to baseline rates. The goal is to reduce SSI rates by 50%.

Conclusions: A practice-gap analysis identified actionable SSI rates and risk factors across the Mayo Clinic Enterprise. OB-GYN Department. SSI reduction bundles, tailored to GYN and OB have been developed and are being implemented with a goal of 50% SSI reduction.

Study Aim

Our aim was to build off the past success of the Rochester GYN Department and implement a multidisciplinary bundle of interventions that span the patient’s entire surgical episode across the Mayo Clinic Enterprise for gynecologic surgeries and cesarean deliveries in order to decrease SSI rates.

Background

SSI Causes are Multifactorial

Host Factors

Surgical procedures

Endogenous flora

Intraoperative

Wound classification

Procedure duration

Hemostasis

Donut/mesh grafts

Pedicle

Surgical site

Pathological risk factors

Obesity

Obesity

Diabetes

Diabetes

Immunosuppressants

Immunosuppressants

ASA score

ASA score

Prior operations

Prior operations

Liver

Liver

Injury to cecum

Injury to cecum

Adhesions

Adhesions

Intraperitoneal contamination

Intraperitoneal contamination

Preoperative antibiotics

Preoperative antibiotics

Preoperative fasting

Preoperative fasting

Blood transfusion

Blood transfusion

Surgical site pain

Surgical site pain

Surgical site air

Surgical site air

Surgical site volume

Surgical site volume

Surgical Team & Hospital Practice

Pre-intervention baseline SSI rates were established for GYN using 2014 American College of Surgeons National Surgical Quality Improvement Project (ACS-NSQIP) data. Review of this data found that all GYN sites throughout the Mayo Clinic Enterprise could be improved upon.

Internal infection prevention and control (IPAC) data will be used to determine SSI improvements for Cesarean deliveries in Rochester. Similar data for the MCHS is not readily available.

The GYN surgical services in Arizona and Florida have already implemented most, if not all, of the SSI reduction bundle components.

The SSI reduction bundle components for OB services in Rochester and pilot sites within the MCHS was implemented in early 2016.

Post intervention data will be reviewed several months following implementation to determine if SSI reduction improvements have occurred. For GYN surgery, the goal is to move to the top 3 deciles of NSQIP data. For Cesarean deliveries, the goal is to reduce SSI by 50%.

Methods

Due to previous success in the GYN division in Rochester, a multi-disciplinary group came together in July 2015 to create a similar SSI reduction plan for GYN surgery within the MCHS, MCA, and MCF, as well as Cesarean deliveries in Rochester and MCHS (MCA and MCF do not have OB practices). Using the SSI Reduction Bundle within the MCHS, MCA, and MCF, Cesarean deliveries in Rochester and pilot sites within the MCHS were included. Practice gap analyses for GYN type II laparotomies and Obstetrics (OB) cesarean deliveries (CD) were performed. Risk factors for SSI among CD were identified. SSI reduction bundles were developed for GYN and OB. Metrics to establish baseline and post-intervention SSI rates include National Surgical Quality Improvement Project (NSQIP) and Mayo Infection Prevention and Control (IPAC) data.

Results

Our aim was to build off the past success of the Rochester GYN Department and implement a multidisciplinary bundle of interventions that span the patient’s entire surgical episode across the Mayo Clinic Enterprise. OB-GYN Department. SSI reduction bundles, tailored to GYN and OB have been developed and are being implemented with a goal of 50% SSI reduction.

Conclusions

Risk factors for SSI are multifactorial and often non-modifiable. Implementation of a comprehensive bundle designed to reduce SSI has demonstrated a significant and sustained reduction in SSI within multiple surgical divisions and departments throughout the Mayo Clinic Enterprise.

References