2014 Gage Awards

Reference #	7490088
Status	Complete
Name of hospital or health system	Riverside County Regional Medical Center
Name of project	RCRMC's Multidisciplinary Approach to Successful SSI Suppression
CEO name	Lowell Johnson
CEO approval	Check here to confirm that your CEO approves of this project being submitted for a 2014 Gage Award
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Within which of the two categories does your application best align?	Quality

1. Provide a brief description of the project. (This section should resemble an abstract for a poster presentation or an abstract for a peer reviewed journal. Include an objective, data sources, study design, findings, and conclusions.)	In 2009, the medical leadership at Riverside County Regional Medical Center (RCRMC) made a decision to implement and enforce national protocols aimed at curtailing surgical site infection (SSI). The effort was spurred by concerns about patient morbidity and mortality, the high cost of treatment and recognition that RCRMC's SSI ratio was more than 200 percent above the National Healthcare Safety Network (NHSN) baseline. National standards such as chlorhexidine skin preparation, surgical site clipping and antimicrobial prophylaxis were instituted with the full expectation that SSI rates would soon comport to national benchmarks. They did not. RCRMC's SSI ratios continued to soar over 200 percent above baseline. The persistently elevated ratios became a focal point for hospital practitioners, who were determined to defy public perception that safety net institutions did not have resources or quality initiatives to counter an ensconced public health challenge. In 2011, a team of surgeons, anesthesiologists, OR nurses, infection prevention experts, housekeepers and researchers was convened to launch a ground-up assault on RCRMC's SSI problem. The team ultimately expanded to include RCRMC's diabetic management team, which had initiated a simultaneous population health program to better control the array of diabetic co-morbidities, including heightened likelihood of healthcare acquired infections. The team focused on multiple factors that contribute to SSI. It removed its focus from statistics and focused instead on promoting a culture that is patient centric and fosters accountability and disclosure of falls out from the protocols. Discussions and reviews shifted from statistical analyses to the harm done to a person –the individual. Physicians and nurses championed the importance of compliance and enforcement among all staff members, from housekeeping to surgeons. Patients were called upon and educated about their role in preventing SSI, from maintaining healthy glucose levels to antibacterial bathing in the preoperative period, through surgery and then recovery. The team deployed a 32-element bundle comprising national protocols and other evidence-based practices it independently identified as effective in suppressing SSI. Compliance and transparency have proven particularly important at RCRMC, which is a teaching institution and has a revolving door of students and residents. Deploying a multipronged attack on SSI –beginning with medical management and antibacterial protocols before a patient entered the hospital throughout the operative period- proved successful at RCRMC. Between 2011 and 2013 the hospital saw its surgical site infection rate plummet by 76.26 percent – to well below the NHSN baseline. The effort, which is ongoing, has yielded an improved patient experience, increased patient safety and a reduction in the costs associated with treatment of SSI.
1A. Attachment, if applicable (Applicable examples include a peer reviewed journal article, other content published in the literature, or a presentation at a national meeting)	044-PreventionSSI-Bundle-v.3-2011.ppt (2757k)

2. Describe the methods use in this project. Include where, why, and how the project was accomplished.	RCRMC achieved reductions in surgical site infection by collectively engaging patients, care givers and health care professionals in combating SSI. The goal was and remains to improve patient outcomes and decrease the costs associated with protracted hospitalizations and poorer outcomes precipitated by SSI. With those goals in mind, the SSI reduction team went to work. Infection prevention experts staked out operating rooms to monitor traffic and record the number of times a operating room door was opened during one surgery; sometimes it opened as many as 80 to 90 times and most openings were unnecessary. Traffic restrictions were put into place to reduce the likelihood of infectious materials being swept in and out of the operating room. Surprise inspections continue to be regularly carried out to ensure maintained compliance. Surgical attire was reviewed and dress codes were adopted that prohibit any jewelry and require long sleeves to prevent skin from sloughing and being blown into surgical wounds. Personal surgical garments were banned in favor of hospital-approved surgical garments. Strict guidelines that require regular air exchange in the operating room were developed and enforced. Spread sheets are recorded to document compliance with the 32-point bundle RCRMC put into place. Patients receive nasal swabs prior to surgery to screen for potentially deadly bacteria. Patients undergoing elective procedures are coached about maintaining healthy blood glucose levels before, during and after the surgical procedure. Diabetic patients, who are especially prone to surgical site infections, receive heightened attention to ensure they are as healthy as possible when undergoing surgery. Those patients, whose hemoglobin A1C and blood glucose levels are elevated may be asked to postpone surgery for the window of time that allows them to achieve values that reduce their likelihood of infection at the surgical site and promote the likelihood of a healthier outcome. There is no doubt that developing and deploying an effective SSI bundle has been instrumental in RCRMC's success. There is no doubt that patient education and engagement have played an important role in reducing SSI. There is also no doubt that sending diabetics to surgery with healthy glucose levels – and maintaining them throughout the surgical period – sets the stage for fewer incidents. But the importance of the cultural shift to achieve significant SSI reduction at RCRMC cannot be understated. The operating room went from being the suite where surgeon is "king" and patients are statistics to an environment where each member of the team –housekeepers to surgeons and diabetes management– serve an important role in enforcing compliance and ensuring each patient achieves the best possible outcome. This new culture is driving RCRMC to continue achievement in SSI reduction and translate that success into other areas of patient care.

3. Describe the results of the project. What data was used to support improvement results?	Between 2010 and 2013, RCRMC metamorphosed from a hospital with significant ratios of surgical site infection to a hospital that successfully curtailed a costly and potentially deadly public health problem. Data reported to the Centers for Disease Control and Prevention indicate that RCRMC's standardized infection rate declined by 76.26 percent between 2010 and 2012. RCRMC reported 1,953 surgeries to the CDC in 2010 and experienced 90 surgical site infections. Among the 3,703 surgeries performed at RCRMC in 2012, 45 surgical site infections occurred. In the 2013 YTD, RCRMC reported 2,782 procedures and 36 surgical site infections, resulting in a SIR of 0.71 in stark contrast to the 2010 SIR of 2.89. RCRMC is continuing its drive to suppress SSI even further.
3A. Attachment, if applicable (Only graphically displayed data such as charts will be accepted. Data should include baseline and improvement data)	SSISIRrateQ32013.ppt (734k)
4. Describe what happened as a result of the project. Was the improvement related to the intervention? Can the project be duplicated by other organizations?	The project resulted in a continued successful effort to suppress surgical site infections, recognizing that maintaining a high rate of compliance is an ongoing challenge. Decreasing SSIs has improved quality, patient experience and enhanced institutional pride at every level, from housekeepers to nurses and surgeons. The project has resulted in improved patient care, heightened patient safety and reduction in the associated costs of treating patients with SSI. This project has been shared with other safety net institutions across the country. RCRMC's success can, indeed, be duplicated in other hospital settings as long as there is a collective determination to identify the primary entry points of SSI and an institutional willingness to tackle them head on with appropriate bundles. Transparency and recognition when a fall out occurs are absolutely required for the long term success. RCRMC has learned so much from its own SSI project that the hospital has begun to replicate the approach to address other healthcare associated infections such as urinary catheter associated urinary tract infections (CAUTI). RCRMC views its success in SSI reduction as its new threshold for patient care and expected outcomes. Hospital clinicians keep a constant eye out now for other areas where the project can be replicated and where improvements can and should be made.

5. Describe how patients, families, and if appropriate, community was included in the work.	Education and participation in self management by patients, their families and caregivers have been integral to RCRMC's success in suppressing surgical site infections. Preoperative patients are seen in appointment three days prior to surgery instead of merely being contacted by telephone with surgical instructions. At their pre-surgical appointment, patients are given packages of the antimicrobial skin liquid soap Hibiclens and instructed how to properly shower on each of three nights prior to surgery. They are educated through frank discussion about the risk of surgical site infection and the important role their compliance plays in achieving an optimal surgical outcome. Patients and their family members have been receptive, appreciative and largely compliant with RCRMC's approach to controlling surgical site infection through education and home-based preoperative anti-bacterial skin preparation.Patient engagement and involvement in blood glucose management throughout the peri-operative period has also been a successful tool in RCRMC's surgical site infection reduction. It is well documented that diabetics, even those with mildly elevated glucose levels, suffer more infections and face longer hospitalization and recovery times than non-diabetics. Approximately 7 percent of Riverside County's 2.3 million residents suffer from diabetes. Patients who need non-emergent surgery with poor glycemic controls will likely be rescheduled while hemoglobin A1C and blood glucose levels are closely tracked and stabilized to reduce the risk of surgical site infections and promote a better outcome. Patient education and participation have been instrumental in RCRMC's success at achieving dramatic decreases in the incidence of a potentially life threatening healthcare problem.
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