

Benefits Realized with Use of Antimicrobial Surgical Prophylaxis Order Form

Approximately 500,000 surgical site infections (SSIs) occur each year in the United States. Patients who develop a SSI are 5-times more likely to be readmitted to the hospital and twice as likely to die as patients who do not develop a SSI. Several guidelines for antimicrobial surgical prophylaxis exist with considerable agreement regarding antibiotic choice, dose, and timing. At The Nebraska Medical Center, an Antimicrobial Surgical Prophylaxis Order Form for all adult, inpatient surgical procedures was developed as part of the Antimicrobial Stewardship Program and was implemented institution-wide in August 2005. The purpose of the effort was to enhance patient safety and maximize the prevention of SSIs by standardizing the ordering of pre-operative and post-operative antimicrobials for prophylaxis.

A study was conducted over a 15-month period (6 months prior to implementation, 9 months post-implementation) to assess the impact of the order form on a variety of outcomes. The results demonstrated a significant increase in the percentage of patients who received the appropriate antibiotic for their procedure (62% vs. 85%, $p < 0.001$), the appropriate dose of antibiotic based on their weight (62% vs. 90%, $p < 0.001$), and the appropriate duration of antibiotic (78% vs. 89%, $p < 0.001$). Additionally, the average cost of the antibiotic prophylaxis was significantly less following implementation of the form (\$46 vs. \$40, $p = 0.02$). When this incremental savings is multiplied by the thousands of procedures performed at the Nebraska Medical Center yearly, substantial cost savings are accrued.

After implementation of the form, the rate of use was 70%, and compliance with the form recommendations was 66%. Thus, we have room for improvement with regard to using the form and abiding by the form recommendations. Those patients for whom the form was used but the recommendations on the form were not followed received the appropriate antibiotic choice, dose, and duration at rates similar to or worse than the pre-implementation period. Interestingly, the average cost of antibiotic prophylaxis in the non-compliant group was 32% more than the cost associated with use of and compliance with the form.

Please congratulate yourself on these positive results if you are one of the many surgeons, anesthesiologists, nurses, pharmacists, or other staff members who helped make this effort a success. Thank you for all of your hard work and persistence toward the best care for our patients!