

Advancing surgical outcomes by providing patients with core elements and standardized pre-operative wellness education

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Background

Twenty to 50% (1) of surgical patients experience post-operative complications, resulting in prolonged length of stays (2), increased morbidity and mortality (3), infections and decreased quality of life. Infections are the most common complication (4) and are estimated to cost \$10 billion per year to the healthcare industry (5). In 2011 IU Health initiated efforts to improve pre-surgical wellness by expanding our pre-surgical assessment and interventions program. The initial step was to prescribe an immunonutrition drink which has arginine, omega 3 fatty acids, and nucleotides, not glutamine, which have demonstrated a 41% reduction in infectious complications⁴ (4), decreased mortality, infections, and length of stay in patients⁶ (6). The patient was required to purchase the product as no insurance program would cover the cost of a short term oral nutrition drink. The results of the initial program were consistent with the evidence based literature and showed significant improvement in wound healing, LOS and infection rates. Using the initial data, we obtained executive level support and an IU Health financial grant to refine a standard IU Health POWERR (Peri-Operative Wellness Enhanced Rapid Recovery) education process and a POWERR "Tool Kit". The tool kit includes a 5 day supply of the immunonutrition drink, incentive spirometer, chlorhexidine soap bath, and Mupirocin and is provided to the patient without charge along with education in the PAT (Pre-Admission Testing) clinic. This trial was conducted in 2015 to 2016 and included 6834 elective adult surgical patients treated at University and Methodist hospitals on our academic health campus. We have tracked compliance and outcomes and identified that providing a pre-surgical wellness kit with the immunonutrition, at no cost to the patient, has further improved the surgical outcomes and engagement with providers and patients.

Methods

A retrospective chart review of the patients at Methodist and University Hospitals in Indianapolis, IN who participated in the PAT clinic between late 2015 and all of 2016. The PAT clinic staff (RNs) encouraged exercise, smoking cessation, and provided a pre-surgical education package with the POWERR tool kit, prior to an elective surgery. Patients were queried about compliance with the POWERR tool kit components on the day of surgery during the admission nursing assessment. A review of LOS, SSI, CAUTI, CLABSI, MRSA, VAE and CDIFF infection was done. Statistical analysis was conducted through Fisher exact test with a two sided p-value <.05.

Results

The percentage of the patients receiving at least 1 component of the POWERR program is 91.1%. The patient overall compliance rate is 57% with 47.1% for immunonutrition, 49.5% for

IS, 52.8% for chlorhexidine bathing and 68% for Mupirocin. A global analysis of the data indicates a statistically significant decrease in the post-surgical complication rates for patients who were compliant with the pre-surgical components. The global harm event rate was reduced by 39% with POWERR compliance.

Conclusion

At our institution initiation of the POWERR program and patient compliance with the interventions, the global harm event was found to be significantly decreased. Therefore, all patients who are undergoing elective surgery will benefit from immunonutrition, pre-surgical education and interventions that will significantly decrease their risk of post-operative complications.