INTRODUCTION
Surgery causes physiologic stress similar to intense exercise. When the body's aerobic and metabolic demands are not met, organ dysfunction may occur and lead to unfavorable complications, or worse, potential deaths. The severity of this outcome is largely determined by a patient's cardiopulmonary reserve. Current preoperative workup focuses mainly on screening and identifying risk factors. Little attention has been devoted to improve cardiopulmonary reserve beyond counseling. We propose that patients could be optimized for a "surgical marathon" similar to preparing an athlete for a sports competition.

METHODS
Retrospective demographic, (first hour) intra-operative and post-operative data were obtained from patients who underwent colectomy from 2014-2015 and divided into three observational groups: (1) Emergency; (2) Elective Non-Prehabilitation and (3) Elective with Prehabilitation. Enrollment into the prehabilitation program was completely voluntary for both physicians and patients, and referrals were made 4-6 weeks prior to scheduled operation. This program consisted in the following components: 1) MOVE, physical activity measured by a pedometer; 2) BREATHE, pulmonary rehabilitation using an incentive spirometer; 3) EAT, a dietary and 4) RELAX, a stress-reducing coaching program. Progress was followed by nurse coordinators and compliance was measured by the frequency of engagement into the web portal.

RESULTS
Age, gender, ASA-grade, BMI, operative time, IV fluids and blood loss were similar in all three groups. At 1-hour post-anesthesia, positive physiologic responses characterized by higher systolic and diastolic blood pressure(s) and lower heart rate were observed in the prehabilitation cohort. Mortality was similar in all three groups (~3 %). However, the rate of complications was significantly reduced [14.2 vs. 45%; RR: 0.31 (95% CI: 0.13 - 0.71); p = 0.0082] in the prehabilitation group as compared to non-prehabilitation elective patients. This further allowed a significant reduction in the length of stay [5 days vs. emergency (p < 0.05) and 2 days vs. other elective surgery (p=0.11)]. Hospital savings averaged $6800, which amply offset any cost incurred with the program ($600/patient). In addition, the prehabilitation program was viewed favorably by patients, with a compliance rate of 70%.

CONCLUSION
Prehabilitation showed positive physiologic effects during first hour of surgery in colectomy patients. Patients engaged in a systematic optimization program experienced an improvement in their clinical outcomes with hospitals being benefited by a shorter length of stay and a reduction in costs.