BACKGROUND: The Michigan Surgical & Health Optimization Program (MSHOP) is a multimodal surgical prehabilitation program. Enrollment in MSHOP has been associated with significant reductions in length of stay (LOS) and cost of care. It remains unclear whether a relationship exists between patient participation level in program interventions and the cost-saving impact.

METHODS: We completed a retrospective analysis of patients enrolled in MSHOP between September 1, 2014, and December 31, 2015. Patients were categorized into two groups according to their degree of participation in the program: engaged or not engaged. We defined engaged patients as those who recorded steps in our system a minimum of three times per week for the majority (≥50%) of weeks they were enrolled in the program. Univariate analysis was used to compare hospital costs and expected payer payment for surgical admissions within each participation group. Five program intervention variables were regressed against actual cost using a linear mixed model to determine the intervention-specific effect on engaged patients.

RESULTS: A total of 82.7% of patients (N=370) were engaged in MSHOP. For engaged patients, the median actual cost (IQR) was $18,448 (range, $12,128–$26,955), and the median expected payment (IQR) was $22,397 (range, $14,736–$31,104), P<0.0001. No significant differences were observed in patients who were not engaged in the program. In multivariate analysis, total days enrolled and average weekly step count were associated with significant reductions in total cost among engaged patients (P=0.0029 and P=0.0296, respectively).

CONCLUSION: Patients who take an active role in surgical prehabilitation amplify the cost-savings impact compared to patients who merely enroll and participate.