
BACKGROUND
The Michigan Surgical Home and Optimization Program is a structured, home-based, preoperative training program targeting physical, nutritional, and psychological guidance. The purpose of this study was to determine if participation in this program was associated with reduced hospital duration of stay and health care costs.

METHODS
We conducted a retrospective, single center, cohort study evaluating patients who participated in the Michigan Surgical Home and Optimization Program and subsequently underwent major elective general and thoracic operative care between June 2014 and December 2015. Propensity score matching was used to match program participants to a control group who underwent operative care prior to program implementation. Primary outcome measures were hospital duration of stay and payer costs. Multivariate regression was used to determine the covariate-adjusted effect of program participation.

RESULTS
A total of 641 patients participated in the program; 82% were actively engaged in the program, recording physical activity at least 3 times per week for the majority of the program; 182 patients were propensity matched to patients who underwent operative care prior to program implementation. Multivariate analysis demonstrated that participation in the Michigan Surgical Home and Optimization Program was associated with a 31% reduction in hospital duration of stay (P < .001) and 28% lower total costs (P < .001) after adjusting for covariates.

CONCLUSION
A home-based, preoperative training program decreased hospital duration of stay, lowered costs of care, and was well accepted by patients. Further efforts will focus on broader implementation and linking participation to postoperative complications and rigorous patient-reported outcomes.