Cost-Effectiveness of the Postoperative Recovery@Home Program in Reducing Catastrophic Health Expenditures in Rural Uganda

Chelsia N. Melendez, BA[1]; Jotham Azirembuzi, RN[3]; Ambrose Nuwahereza, BA[3]; Reetwan Bandyopadhyay, BA[3]; Ivan Mudembula, BSN[2]; Brian Kisomose, MS[3]; Anna T. Kalumuna, MS[3], Michael L. Marin, MD FACS[2]; Linda L. Zhang, MD[2]

1 Icahn School of Medicine at Mount Sinai; New York USA
2 Icahn School of Medicine at Mount Sinai-Mount Sinai Health System; Department of Surgery; New York USA
3 Kyabirwa Surgical Center; Jinja Uganda

BACKGROUND

- In rural Uganda, 29% of surgical patients face catastrophic health expenditures (CHE) despite free surgical care.
- The majority rely on subsistence farming and informal labor, increasing their vulnerability to financial hardship post-surgery.
- Postoperative complications, particularly wound-related issues, contribute significantly to financial distress.
- The Recovery@Home program employs visiting nurses to provide home-based postoperative care, aiming to reduce complications and financial burden.

METHODS

Study Design

- Retrospective study from January-May 2024 at Kyabirwa Surgical Center, Eastern Uganda.
- Visiting nurses provided health monitoring, patient education, and remote physician consultations.
- Data on healthcare costs, wage losses, and 30-day postoperative complications were collected via a mobile app.
- CHE defined using WHO's threshold: healthcare costs exceeding 10% of household income (>50,000 UGX/month).
- Uganda Bureau of Statistics reports small-scale farmers and informal laborers earn ≤500,000 UGX/month.

Analysis

- Logistic regression estimated the odds of CHE occurrence.

RESULTS

Program Participation *n=139*

- 92 (66.2%) fully completed all home visits.
- 29 (20.9%) partially completed with some visits.
- 18 (12.9%) did not participate due to logistics, personal choice, or lost follow-up.

Financial Risk & Protection

- Postoperative complications significantly increased the risk of catastrophic health expenditures (CHE):
- Patients with complications were 4.21× more likely to experience CHE ($p < 0.001$).
- Recovery@Home participants had an 84.1% lower CHE risk compared to non-users (OR = 0.159, p = 0.005), demonstrating strong financial protection
- Wage loss decreased by 80.4% for those in the program (OR = 0.196, p = 0.029), helping patients avoid lost income due to prolonged recovery.

Complication Reduction

- The program significantly lowered post-op complications, preventing financial and health burdens:
- Wound complications were reduced by 90.7% (OR = 0.093, p = 0.015), suggesting improved wound care and early intervention.
- Overall complications dropped by 96.5% (OR = 0.035, p = 0.005), highlighting the program's role in preventing adverse outcomes.

RESULTS

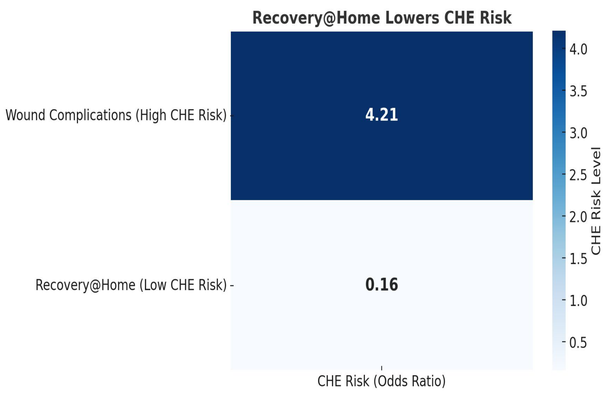
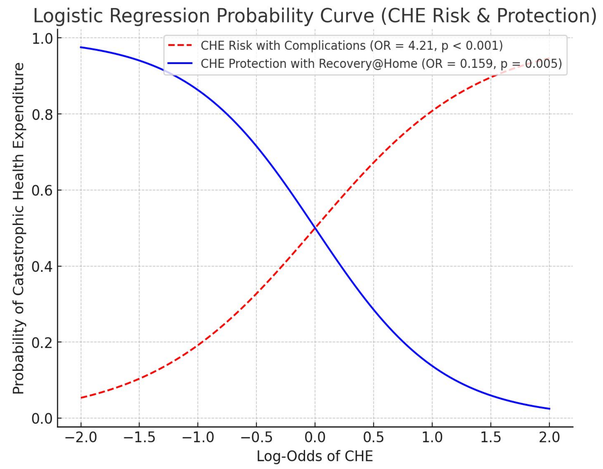


Figure 1. Heatmap on the effect of the Recovery@Home App with CHE



Graph 1: Logistic regression: Probability CUrve CHE and Mobile App

RESULTS

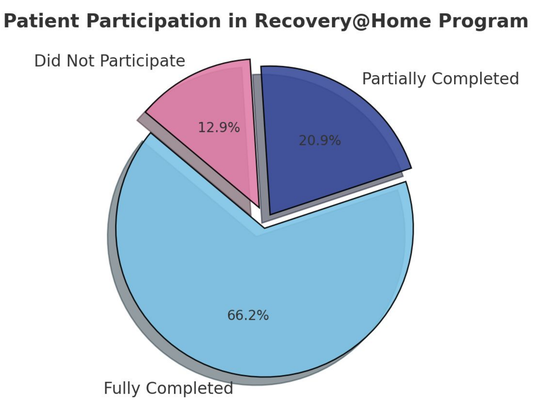


Figure 2: # of Mobile App Participants

CONCLUSIONS

- The Recovery@Home program effectively reduces postoperative complications, thereby significantly lowering the risk of catastrophic health expenditures and wage losses.
- This model provides a cost-effective and scalable solution to improve postoperative care in low-resource settings.
- Future research should explore long-term financial and health outcomes.

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