

Clinical Evidence Series

Telemonitoring for perioperative care of outpatient bariatric surgery: Preference-based randomized clinical trial



What's different

Instead of routinely staying in the hospital overnight following bariatric surgery, eligible patients could go home the same day and wear a remote monitor for seven days as part of a telemonitoring pathway. The monitor tracked heart rate, breathing rate, activity, and body position so the clinical team could review recovery information.



Interpretation

A same-day discharge pathway supported by wearable remote monitoring may help eligible patients transition home after bariatric surgery.



Key takeaways

The telemonitoring pathway supported by remote monitoring reduced total hospital days by 58% following bariatric surgery.



Background

- Bariatric surgery volumes continue to increase, creating pressure on hospital resources, bed capacity, and healthcare costs
- Although same-day discharge may improve efficiency and patient convenience, concerns remain regarding timely detection of early postoperative complications such as bleeding or anastomotic leak
- Changes in heart rate and respiratory rate often precede clinical deterioration, creating an opportunity for remote physiologic monitoring after discharge
- Continuous wearable monitoring may facilitate safer recovery at home while supporting clinician oversight



Objectives

Evaluate the feasibility and clinical outcomes of a same-day discharge bariatric surgery pathway supported by seven days of continuous remote monitoring compared with standard overnight hospitalization.



Study design and methods

- Preference-based non-inferiority randomized clinical trial conducted at the Catharina Hospital Eindhoven, Netherlands
- 202 adults undergoing primary gastric bypass or sleeve gastrectomy were enrolled
- Standard Care: discharge on postoperative day 1
- Telemonitoring Pathway: same-day discharge plus seven days of remote monitoring with the Healthdot wearable sensor
- Primary outcome: 30-day Textbook Outcome, including mortality, complications, readmission, and prolonged hospitalization



Results



Clinical outcomes:

Textbook Outcome was achieved in 94% of telemonitored patients and 98% of standard-care patients ($p = 0.22$).



Hospital utilization:

Same-day discharge was achieved in 65% of telemonitoring patients and reduced hospitalization days by 61% ($p < 0.001$) and by 58% with readmission days included ($p < 0.001$).



Patient experience: Patient satisfaction and post-discharge opioid use were similar between groups with no serious telemonitoring-related events reported.