Optimizing Pre-Operative Cardiac Surgery Patients using a Digital Platform Technology and a Multidisciplinary Team Approach

OBJECTIVE: Restrictions to care access due to the pandemic along with increasing complexity and comorbidity of patients awaiting cardiac surgery provides unique challenges for patient's caregivers, and health care providers. The University of Ottawa Heart Institute has developed a novel multidisciplinary digital platform, the Prehab Automated Follow-Up (AFU) Program, which delivers patient/caregiver teaching regarding risk factor mitigation, tracks patient symptoms and screens for optimization using best practice guidelines. The AFU Program aims to improve patient outcomes and safety.

METHODS: Patients awaiting elective cardiac surgery are enrolled and screened via automated telephone conversation accordingly to best practice, which includes Enhanced Recovery After Surgery Guidelines (2019) and a Short Form-12 preoperative assessment. Following this screen, patients are referred to for an in-person assessment by an appropriate multidisciplinary team member namely, a diabetes specialist, physiotherapist, dietician, smoking cessation, social worker, vocational counsellor, and/or psychologist.

RESULTS: Since initiation in February 2021, the Prehab AFU Program enrolled over 854 patients. Preliminary data shows a total of 508 multidisciplinary team referrals to optimize patients based on the AFU screening platform. Prior to program initiation, there were zero in person multidisciplinary team referrals for preoperative optimization. Comparing preprogram February 2020 to 2021 to post program February 2021 to February 2022 data, we observed a 2.5 % decrease in readmission rate within 30 days, a 0.5 day decrease in average length of stay and a 2.5 % decrease in surgical site infection rate. Early data shows the PreHab AFU program could decrease hospital length of stay; decrease surgical site infection rates; and decrease re-admission rates, thereby increasing patient quality of care.

CONCLUSION: A Cardiac Surgery PreHab AFU program could reduce adverse health outcomes for patients by identifying and optimizing risk factors, increasing patient quality of care. The AFU program provides patient/caregiver engagement through educational support and multidisciplinary team counselling. This can reduce fear, fatigue, discomfort, enhance recovery and thus decrease length of stay and complications postoperatively (Engelman et al., 2019).

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