Does a digitally enabled telerehabilitation program reduce hospital admissions and length of stay for private health insurance patients in Australia?

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Introduction: Traditional cardiac rehabilitation (CR) programs are associated with reduced cardiovascular morbidity, hospital admissions and mortality. However, participation continues to be poor. Novel digital health models of care have emerged, providing a new frontier in healthcare delivery, but evidence for their impact on healthcare utilization is limited. We implemented and investigated a telehealth program complemented by a CR mobile app for patients following a hospitalization for coronary heart disease (CHD).

Purpose: To assess whether a digitally enabled CR program is equivalent to traditionally delivered CR (F2F-CR) and whether it reduces rehospitalizations and total hospital days compared to patients who did not undertake CR (no-CR).

Methods: Privately insured patients, following a hospitalization for CHD, were recruited nationally, across Australia, between October 2019 - 2020. Participants received weekly telehealth consultations for 8 weeks, supplemented by a CR mobile app. Using administrative private health insurance claims data, we assessed differences in 90-day and 12-month rehospitalizations and total hospital days for the digital-CR group (n = 138) compared with a) F2F-CR (n = 115) and b) no-CR (n = 266).

Results: Among the cohort, 27% lived in regional/rural areas, 71% were male and the majority were aged over 60 years (83%). The digital-CR group had lower total hospital days relative to the no-CR group in the 12 months post index event (4.5 vs 7.2 days; mean difference 2.8 days; p = 0.019; 95% CI: 5.1-0.5). Readmission rates were lower at 90 days and similar at 12 months post discharge in the digital-CR group compared with the no-CR group, although not statistically significant. There were 0.17 and 0.21 (p = 0.43) readmissions per patient at 90 days post discharge and 1.08 and 1.07 (p = 0.94) readmissions per patient within 12 months in the digital-CR group and no-CR group respectively. There were no significant differences for digital-CR relative to F2F-CR on any measures.

Conclusion: Rehospitalization rates were similar between the groups, whilst the digital-CR group had significantly fewer days in hospital than the no-CR group. Digital-CR may reduce the severity of rehospitalizations highlighted by fewer days in hospital. The digital-CR and F2F-CR outcomes were similar, confirming that digitally enabled CR programs provide similar benefits regarding reduced days in hospital, whilst providing additional benefits of improved access and choice. Digital-CR should be made widely available for cardiac patients post hospital discharge.
Mean hospital days Digital-CR vs F2F-CR

1.23 days mean difference
p=0.12; 95% CI: -0.32 to 2.78