Clinical effectiveness and implementation evaluation of a 4-step large scale translation model compared to usual care on cardiac rehabilitation attendance and completion in rural Australia: The Country Heart Attack Prevention (CHAP) Project

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The CHAP project was funded by the NHMRC Partnership grant (GNT 1169893). Contact: chapproject@flinders.edu.au; chapproject.com.au; @chap_project

Background:
- Rural areas have poorer cardiovascular (CV) outcomes
- Cardiac rehabilitation (CR) utilization remains low globally and in rural areas.

Aim:
To evaluate the clinical and implementation outcomes of the CHAP model of care in rural South Australia.

Methods:
- Prospective cohort study: CHAP vs non-CHAP
- Eligibility criteria: <=18 years; Referrals to CR through the Integrated Cardiovascular Network (iCCnet) Country Access to Cardiac Health (CATCH) central referral system due to coronary heart disease, revascularization procedures, heart failure, atrial fibrillation, arrhythmias management or valve procedures
- CHAP group: Living in Rural South Australia and exposed to the CHAP model of care
- Non-CHAP: Age, sex and diagnosis-related code-matched referrals living in metropolitan South Australia and not exposed to the CHAP model of care
- The Model for Large Scale Knowledge Translation (Pronovost et al., BMJ, 2008) was used to develop the CHAP model of care to address four main barriers to CR implementation previously identified (Figure 1)

Results:
- 1,913 referrals in CHAP matched to 1,913 in non-CHAP
- Mean age 69.8 (SD 11.8) years; 30.2% females
- Coronary heart disease was the main single diagnosis in both groups (30.2%)
- F2F was the preferred mode of delivery followed by telephone (Figure 2)
- Only 2.2% of the referrals received the telephone program with GP support (GP Hybrid)- Figure 2
- CR attendance was similar in CHAP and non-CHAP (24.2 vs 23.8%; p=0.85; OR 1.14, 95%CI 0.90-1.46; p=0.160)
- CR completion was higher in CHAP (77.1 vs 57.5%; p<0.001; OR 1.68, 95%CI 1.31-2.17; p<0.001)
- CV readmissions did not differ between CHAP and non-CHAP (HR 1.06, 95%CI 0.87-1.30; p=0.54)
- CV mortality did not differ between CHAP and non-CHAP (HR 1.02, 95%CI 0.95-1.11; p=0.54)
- ED visits did not differ between CHAP and non-CHAP (HR 1.07, 95%CI 0.96-1.19; p=0.22)
- Patient satisfaction was higher in CHAP than non-CHAP (85.9% vs 77.1%; p<0.001)
- The automatic referral system and the integration of the web program with the CR referral system were not implemented due to resources diverted to the pandemic response

Conclusion: CHAP improved CR completion in rural South Australia with similar clinical outcomes and higher patient satisfaction than non-CHAP. Further improvements will require implementation of an automatic referral system, expansion of primary care support to CR and digital integration.