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## 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:  $\leq 18$  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)

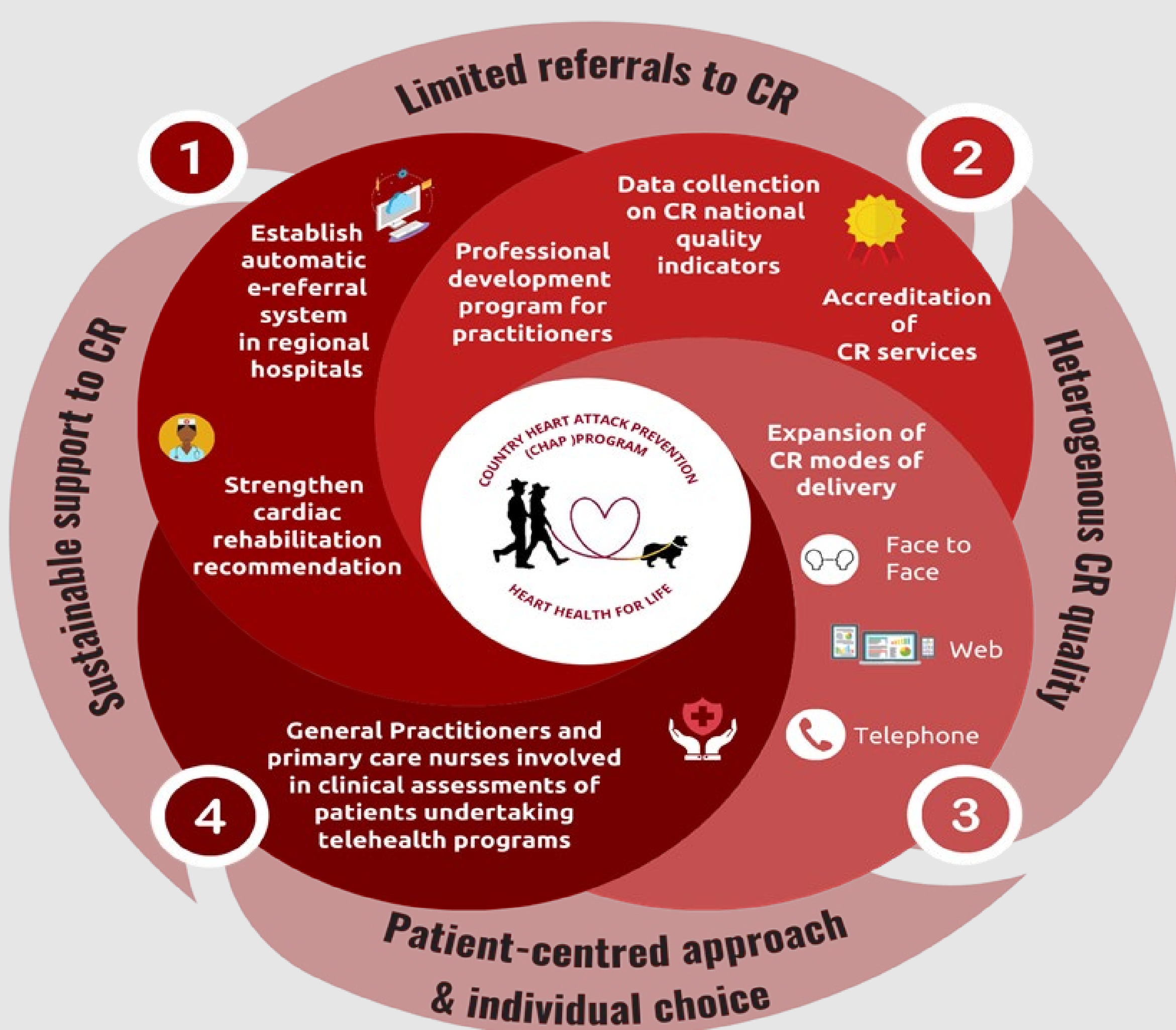
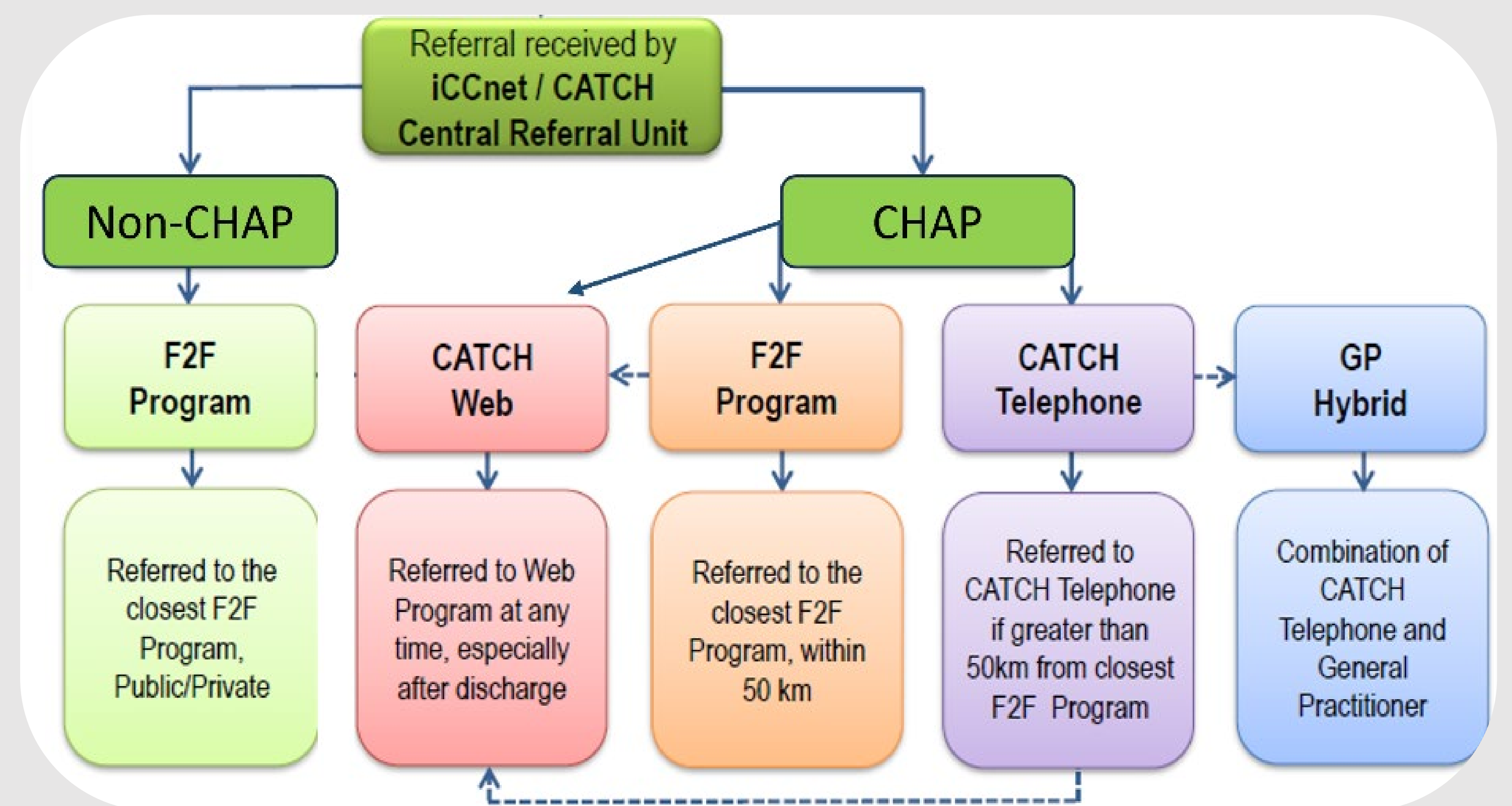


Figure 1: CHAP model of care response to four main barriers to CR implementation

- Primary outcomes: CR attendance/completion
- Secondary outcomes: 12-month CV hospitalisations, CV deaths and ED visits; patient satisfaction
- Statistical analysis: Associations between CHAP and primary and secondary outcomes tested through conditional logistic regression models (attendance and completion as response variables) and stratified Cox regression models stratified (clinical outcomes as response variables). All models were adjusted for clinical and socioeconomic characteristics.



## 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

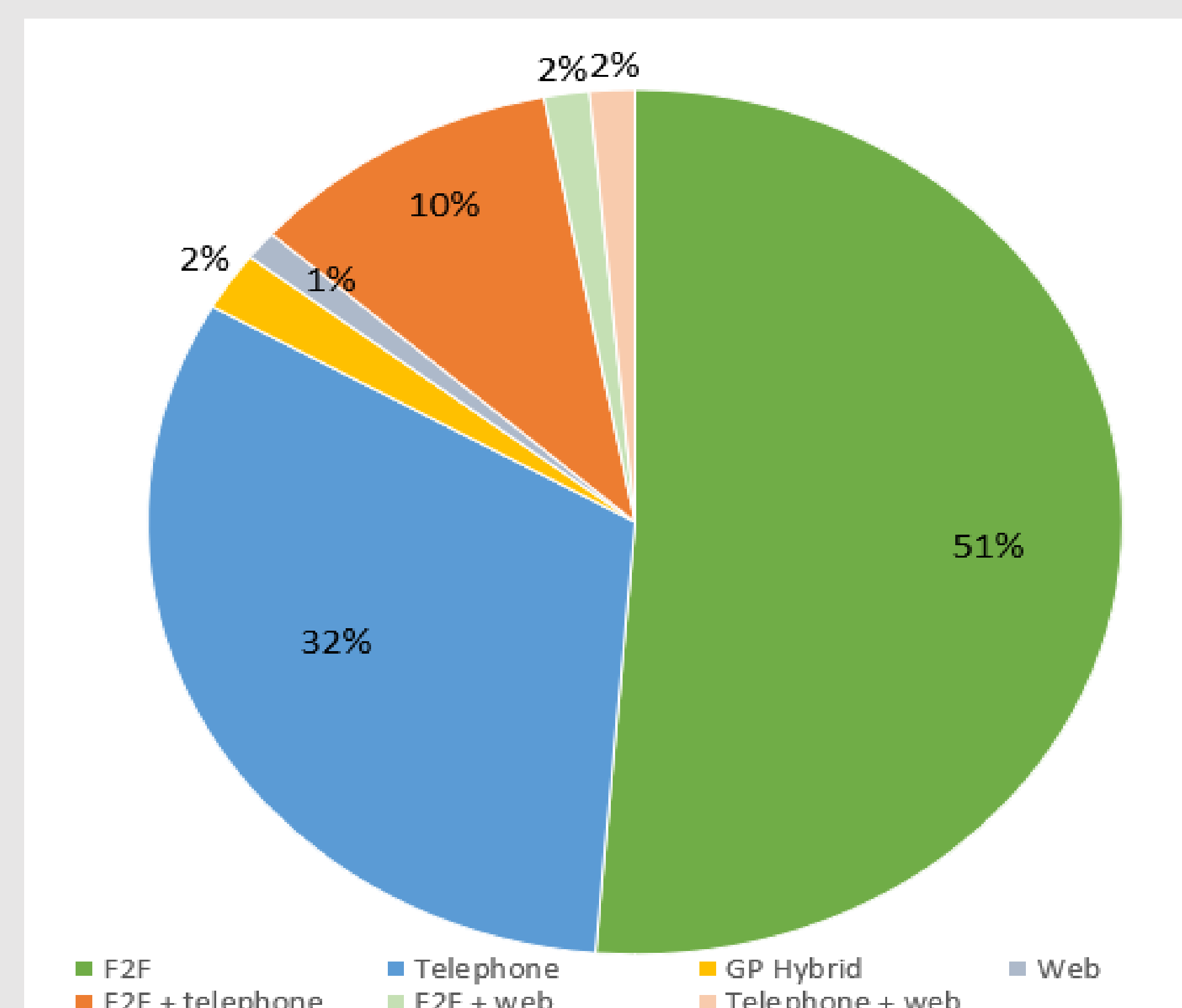


Figure 2: Adoption of CR modes of delivery in CHAP

- 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.