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# A feasibility study of team-based primary care for chronic disease management training in rural Australia

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# A feasibility study of team-based primary care for chronic disease management training in rural Australia

## **Abstract**

Increasing rates of chronic disease management (CDM) are projected to contribute to significant effective shortfalls in the primary care workforce in Australia.<sup>1</sup> Additionally, rural Australia carries a higher burden of chronic illness<sup>2</sup> and has existing medical workforce shortages.<sup>3</sup> Therefore, it is imperative that rural primary care maximises the efficiency of the CDM it provides.

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**Authors' contributions**

**Conception and design of the work**

Bonney 70%; Bridget Dijkmans-Hadley 15%; McKinnon 5%; Seidel 5%; Phillipson 5%

**Acquisition of data**

McKinnon 40%; Seidel 40% and Dijkmans-Hadley 20%

### **Analysis of data**

Bonney 60%; Seidel 20%; Dijkmans-Hadley 15% and Phillipson 5%

### **Drafting the manuscript**

Bonney 80%; Dijkmans-Hadley 20%

### **Revising and critically reviewing**

Dijkmans-Hadley 25%; McKinnon 25%; Seidel 25% and Phillipson 25%

All authors have approved the final version and agree to be held accountable for the accuracy and integrity of the work

### **Disclosure statement**

The findings of this research have not been published in full or part elsewhere

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### **Conflict of interest**

The authors have no conflicts of interest to declare in this research

# **A feasibility study of team-based primary care for chronic disease management training in rural Australia**

## **Introduction**

Increasing rates of chronic disease management (CDM) are projected to contribute to significant effective shortfalls in the primary care workforce in Australia.<sup>1</sup> Additionally, rural Australia carries a higher burden of chronic illness<sup>2</sup> and has existing medical workforce shortages.<sup>3</sup> Therefore, it is imperative that rural primary care maximises the efficiency of the CDM it provides. Primary care is also responsible for providing training for future general practitioners (GP registrars). In addition to their training roles, GP registrars (GPRs) represent an important component of the rural medical workforce.<sup>4</sup> However, GPRs see relatively fewer patients with chronic diseases than established GPs.<sup>5</sup> This reduces training opportunities in CDM and potentially impedes GPRs contributing to CDM within practices. The authors are unaware of any Australian research involving interventions to enhance the involvement of GPRs in CDM. This mixed-method pilot-study aimed to ascertain the feasibility of an intervention of support for GPR CDM training in a rural setting to inform the design of future fully-powered trials.

## **Participants, methods and results**

The intervention was a model where patients ‘shared continuity’ of their type 2 diabetes (T2D) management between their regular GP and a GPR/practice nurse team.

GPR/nurse visits were scheduled every three-four months with explicit oversight and/or review by their regular GP each visit. In 2013, 37 consenting patients with type 2

diabetes (T2D) were recruited from two rural training practices (RA 3). Patients were randomised within each practice to an intervention or control arm of normal care over an eight-month period. The study was approved by the Human Research Ethics Committee of [blinded for review].

Data were available for 30 patients at the end of the trial: 14 (six female) intervention and 16 (eight female) control. To assess the feasibility of the intervention, 23 participants underwent semi-structured telephone interviews. Five GPRs (four female) consented to pre- and post-trial interviews regarding educational outcomes. Two male GPs and five female PNs were interviewed regarding trial practicalities and five control patients (three female) and six intervention patients (four female) consented to post-trial interviews to gauge their satisfaction.

Changes in the mean clinical parameters were compared using repeated measures general linear models (GLM), adjusting for the patients' practice, age and sex. Interview transcripts were thematically analysed.

There were no significant between-group differences in adjusted baseline parameters. Mean HbA1c increased in the intervention arm (0.4%; 95% CI -0.3%, 1.2%) and decreased in controls (-0.1%, 95% CI -0.1%, -0.1%). There was a significant difference in the adjusted difference in HbA1c change ( $p=0.02$ ). See Table 1.

The interviews with the GPRs indicated limited CDM exposure prior to the trial and an increase in CDM exposure and confidence by trial completion. Overall, all interviewees were receptive to the trial procedures and saw benefits from participation. While patients accepted their role in facilitating training for GPRs, there was a perception that some of the inter-personal interactions were sub-optimal. Of note, patients were unsure of the roles of the GPRs in both practices.

### **Comment**

This pilot intervention was associated with GPRs experiencing improved self-reported exposure to, and confidence in, CDM. However, there was a statistically significant deterioration in glycaemic control in the intervention group. Supervised, team-based care for CDM within rural practices is a plausible educational model for GPR training and could augment the provision of rural CDM in primary care. However, we urge caution in its implementation. The study indicated a large scale trial is feasible and is required to robustly test clinical and educational outcomes. If implemented either as research or as an educational or workforce intervention, this model of care requires thorough preparation, communication and training for all parties.

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Parameter	Intervention=I Control=C	N	Baseline mean	Sig.	Mean change over trial	Lower 95% CI	Upper 95% CI	Sig.
Age (years)	I	14	72.0	-	-	-	-	-
	C	16	70.8	p=0.61	-	-	-	-
BMI (kg/m <sup>2</sup> )	I	14	30.7	-	-0.2	-0.2	0.0	-
	C	15	30.8	p=0.96	-0.2	-0.4	0.1	p=0.64
HbA1c (%)	I	14	6.6	-	0.4	-0.3	1.2	-
	C	16	6.2	p=0.13	-0.1	-0.1	-0.1	p=0.02*
Systolic blood pressure (mmHg)	I	14	143.9	-	-4.4	-4.9	-3.8	-
	C	16	136.7	p=0.35	-4.9	-4.9	-4.8	p=0.05
Diastolic blood pressure (mmHg)	I	14	75.4	-	-4.6	-15.0	5.9	-
	C	16	75.7	p=0.93	-6.9	-14.0	0.6	p=0.27
Total cholesterol (mmol/L)	I	14	3.9	-	-0.1	-0.4	0.1	-
	C	15	4.5	p=0.18	-0.4	-0.6	-0.2	p=0.13
Triglycerides (mmol/L)	I	14	1.9	-	0.0	-0.3	0.2	-
	C	15	1.6	p=0.31	0.0	-0.1	0.1	p=0.27

Table 1 Comparison of mean baseline parameters and mean changes in parameters over the trial

\*=statistically significant at p<0.05