



Protocol paper

Nurse led care coordination: Trial protocol and development of a best practice resource guide for a cluster controlled clinical trial in Australian aged care facilities



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ABSTRACT

In this paper we describe (i) the protocol for a cluster controlled clinical trial of nurse led care coordination in residential aged care facilities (RACF); and (ii) the development and content of a best practice resource guide to be implemented as part of this trial. We used published systematic reviews of quantitative studies, existing resources and multidisciplinary expert opinion to develop an intervention for testing in a cluster controlled trial (Australian and New Zealand Clinical Trials Registry Number 12611000933954). The trial will determine whether care coordination of multiple evidenced based strategies can improve quality of life and reduce hospitalization rates amongst people living in RACF. Central to the intervention arm of the trial are two components: (i) experienced nurse practitioners responsible for resident care and (ii) a best practice guide for the care processes being delivered and coordinated by those nurses. In this paper we outline how this practice guide, which is published herein, was refined through consultative processes and practitioner testing.

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1. Introduction

1.1. Background

In Australia, over 150,000 people aged 65 and over live permanently in RACF with 75% requiring high level care (“Residential aged care in Australia 2007–08: A statistical overview,” 2009). The number of people living in RACF will increase as the older population continues to grow; by 2050 a quarter of Australia’s population will be aged 65 and over, double the current proportion, with 2 million people aged over 85.

Optimizing quality of life for people living in RACF involves a holistic approach, of which health related interventions are only one part of a broader picture (Beer, Bosboom, Almeida, & Flicker, 2009; Chan & Pang, 2007; Kane, 2003). Nevertheless, maintenance of wellbeing and minimizing hospitalization in vulnerable older people may be an important contributor to quality of life, particularly as hospitalization in this population is frequent. The incidence of transfer from RACF to emergency department (ED) varies internationally but is at least 30 transfers per 100 RACF beds per year (Arendts & Howard, 2010). In the setting of the study outlined in this manuscript, a rate of 0.75 transfers per RACF resident per year is the norm (Codde, Frankel, Arendts, & Babich, 2010). Transfers occur in unwell patients that require frequent invasive medical intervention (Arendts, Dickson, Howard, & Quine, 2012). Nevertheless, even conservative estimates find that a substantial proportion of transfers to ED are considered avoidable and this figure has varied little over the past 20 years (Codde et al.,

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2010; Kerr & Byrd, 1991). A large number of hospitalizations from RACF occur in what have been called “ambulatory care-sensitive conditions”, a proxy term for “avoidable” (Grabowski, O’Malley, & Barhydt, 2007).

The ED environment is often overcrowded, noisy and unsuited to the needs of older patients (Wilber et al., 2006). The priorities of ED care and the physical design of an ED are often not aligned with needs of people from RACF (who frequently require residential care because of substantial physical, cognitive and functional impairments) (Hwang & Morrison, 2007). ED staff cite having limited time available to assist with the complex care needs and interventions required by older people (such as assistance for safe mobility) or to communicate adequately with a person with impairments (Hwang & Morrison, 2007; Nerney et al., 2001). Consequently, complications frequently arise when patients are transferred from RACF to the ED. Delirium, nosocomial infection and falls are common risks for the RACF patient (Gardam, Amihod, Orenstein, Consolacion, & Miller, 1998; Hwang & Morrison, 2007; Inouye & Charpentier, 1996). Qualitative data clearly indicate that many residents, their family and carers would prefer acute care be delivered in the RACF setting, without the need for ambulance transfer to and from the ED (Arendts, Reibel, Codde, & Frankel, 2010).

A number of individual strategies have been shown, with varying levels of evidence, to reduce RACF to ED transfer (Table 1). These strategies have, to date, been trialed largely as stand-alone interventions – no studies have evaluated a systematic coordinated intervention incorporating two or more of these individual strategies. Care coordination in other settings, however, has been shown to have a modest impact on quality of life and hospitalizations in older people living independently in the community (Landi et al., 1999). Additionally some programs attempt, in a limited way, to address the management of acute illness and injury within RACF (Bellantonio et al., 2008; Hui, Woo, Hjelm, Zhang, & Tsui, 2001; Kurrle, 2006; Montalto, 2001). Evaluation of these programs is limited and mostly descriptive without rigorous clinical, cost effectiveness or qualitative analysis. As such, a knowledge gap regarding the potential of systematic co-ordinated interventions to reduce RACF to ED transfer persists.

1.2. Hypothesis

We hypothesize that a coordinated approach to delivering healthcare to people in residential aged care, individualized to the patients’ needs and using established clinical strategies, will reduce transfers to ED, improve residents’ quality of life and be cost effective. We therefore designed the present study to evaluate the benefits of nurse led care coordination in RACF.

2. Materials and methods

2.1. Trial design and protocol

2.1.1. Study type and setting

A multicentre open label cluster controlled trial will commence in 2012, initially in four RACF in metropolitan Perth, Western

Australia with two receiving the intervention and two acting as control facilities. Depending on recruitment, the study will be expanded to other facilities.

2.1.2. Eligibility criteria

- a. **Inclusion.** Patients will be eligible for inclusion if they are a permanent high level care resident in an accredited facility
- b. **Exclusion.** Patients will be excluded if they meet any of the following criteria
 1. Not eligible for Medicare
 2. Age < 65 years
 3. Patient not expected to survive more than 60 days after enrolment

2.1.3. Consent, enrolment and ethical considerations, trial registration

The study has been approved by the University of Western Australia Human Research Ethics Committee (RA/4/1/5123) and registered with the Australian and New Zealand Clinical Trials Registry (12611000933954).

Potentially eligible patients will be identified through participating RACF and enrolled by trained research staff. Because of the high (>70%) rate of significant cognitive impairment in this population, it is recognized that a large number of patients will be incapable of providing informed consent. Under the direction of the supervising ethics committee and guided by national statements on Ethical Conduct in Human Research, the study will have provision for waiver of consent with next of kin acknowledgement (“National Statement on Ethical Conduct in Human Research”, 2007).

The study Information and Consent Form will contain detailed information regarding the aims of the study, explicitly that the main study hypothesis is that RACF to ED transfer and resident contact with the acute hospital setting can be reduced with the intervention. This presupposes that reducing RACF to ED transfer is a desirable aim, which will be stated in the Form. However all patients in the study, whether in the intervention or control arms, will retain at all times the option to be transferred to ED if they so desire. Similarly, insofar as RACF staff are involved in any decision to institute ED transfer for their patients, enrolment in the study will not take away the right of RACF staff to make decisions in good faith to promote the best interests of their patients.

2.1.4. Intervention

Consenting residents in the intervention facilities will be assigned to nurse practitioners that will be responsible for coordination of their healthcare needs. The nurse practitioners will work with general (primary care) practitioners in a collaborative arrangement as required. In the main, the general practitioner will be the first point of contact for the nurse practitioner where clinical circumstances arise that are outside their scope of practice. The two fundamental components of the intervention will be:

- i. Experienced nurse practitioners responsible for resident care coordination. Care coordination in this study will mean that

Table 1
Strategies for reducing RACF transfer (RCT = randomized controlled trial).

Strategy	Methods	Outcome
Enhanced primary care (nurse practitioner led)	Quasi-experimental cross sectional (Kane, Keckhafer, Flood, Bershadsky, & Siadaty, 2003)	0.4 vs 0.76 ED referrals/patient/year
Advanced care planning	Cluster RCT (Molloy et al., 2000)	0.27 vs 0.48 hospitalizations/patient/year
Clinical pathways (pneumonia)	Cluster RCT (Loeb et al., 2006)	10% vs 22% hospitalization rate per episode of care
Hospice care	Retrospective (Miller et al., 2001)	24% vs 44% hospitalization rate in last 30 days of life
Family education (for advanced dementia patients)	Prospective cohort (Mitchell et al., 2009)	36% vs 64% intervention rate in last 3 months of life
Quality improvement loop	Before–after (Ouslander et al., 2009)	3.1 vs 1.5 hospitalizations per 1000 resident bed-days

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