

## EDITORIALS

# If Mohammed won't come to the mountain, the mountain must go to Mohammed

The health care of nursing home residents causes deep unease in every practitioner who works with older people. The problem for frail older people in many western countries is that once they move out of the community and into a residential facility, for a range of complex reasons, their access to consistent high-quality medical care and multidisciplinary teams (palliative, geriatric and rehabilitation) dramatically diminishes [1, 2].

The solution to this problem vexes many western countries. In January 2011, the Australian Productivity Commission released a Draft Report 'Caring for Older Australians' calling for an overhaul of Australia's aged care system and whilst not their main focus, they identified access to appropriate health care as a problem [3]. A submission from the Australian Medical Association summarised the obstacles to providing reasonable medical care in residential aged care settings, including a lack of registered nurses with whom to coordinate care, increasing use of agency staff with a concomitant absence of continuity of care, an absence of information technology including software appropriate to GPs needs, strong financial disincentives to provide care in the setting, poorly equipped clinical treatment rooms which limited the treatments that could be provided. The Productivity Commission has recommended (Draft Recommendation 8.5) that subject to further evaluation an expansion should occur of 'the use of in-reach services and the development of regionally or locally based visiting multidisciplinary health care teams'.

Will this work? Or, in the language of industrial redesign, are specialist outreach (or inreach) models essentially a 'workaround'. i.e. a temporary fix that implies a genuine solution? Are they a creative way of dealing with the reluctance of medical and allied health staff to work in residential care settings and with complex frail older patients? While often creative, 'workarounds' [4] are brittle and do not respond well to further pressures.

An Irish group provides one of the few 'real life' randomised evaluations of a regular structured specialist geriatric outreach programme being provided by a hospital clinician group into continuing care wards [5]. Their approach highlights the problems of outreach for clinical departments who are at the coal face of priority setting. When allocating specialised workforce resources across acute, rehabilitation and continuing care settings, there is a

complex decision about what is a sufficiently good outcome to justify ongoing investment. Multidisciplinary interventions are expensive and a nursing home population is likely to make small 'gains' when assessed with outcomes such as number of medications, mortality and trips to the Emergency Department.

In a randomised controlled trial of 225 older people living on two Irish continuing care wards, they examined whether providing a multidisciplinary (pharmacists, nurses geriatricians) specialist assessment and medication review produced better outcomes at 6 months than general practitioner oversight [5]. At 6 months, the differences were minor, but those receiving the intervention had a small reduction in medication use while those in the control group had a small increase in medication use. The authors argue that mortality, functional outcomes and hospital transfer rates did not change, so there was only a weak case for regular structured input from a specialist group to be provided to long-term continuing care residents. They identified timing was an issue as on average their participants had been in continuing care for >2 years. The authors' concluded that rather than directing resources at a comparatively stable group, the specialist team should be available for consultation when needed. Multidisciplinary assessments by either a geriatrician or an old age psychiatrist at the moment when older people are being considered for continuing care has been shown to produce fewer trips to the Emergency Department and to reduce costs to the NHS even after taking into account the significant costs of medical assessment. [6].

The Irish study is consistent with the comparatively small number of randomised controlled trials examining specialist inreach approaches into residential care settings which often focus on medications. Essentially, improvements in process outcomes such as prescribing are easier to achieve than patient-level outcomes such as falls or hospital readmissions [7–11]. Many of these studies have the typical flaws seen when clinical units do poorly funded evaluations of their own programmes such as small sample sizes, inadequate follow up periods, problems with generalisability and failure to do an adequate economic analysis. But the key problem is that health-related quality of life for nursing home residents is very poorly understood. For decision-makers and regulatory authorities, the incremental cost per QALY is still the standard approach for economic

evaluations but QALYs have been criticised as ageist and there is an argument that the QALY should be adjusted for the nursing home population [12].

If nursing homes and very frail older people are here to stay, if inreach (or specialist outreach) models while better than nothing are a ‘workaround’ what should be done? Is it time we to address the fundamental problem of the workforce’s reluctance to work with this group and tackle the mismatch between current health professional training and twenty-first century health service needs.

The Australian Productivity Commission has made another potentially important recommendation—the establishment of a national network of ‘Teaching Aged Care services’ (Draft Recommendation 11.4) across Australia which will potentially deliver fundamental changes.

The recent report of the Global Commission on Education of Health Professionals for the 21st Century [13] focused on the need for higher levels of social accountability from our educational institutions and the need for greater connections between health and education systems. They described a ‘slow-burning crisis’ emerging from the mismatch of professional competencies and patient needs and called for profound changes in the way we train future health professionals. Nowhere is the disjunct between health professional training and actual need more obvious than in the care of frail older people with dementia and nursing home residents. No matter how many financial incentives we introduce to attract doctors to visit nursing homes, their engagement is poor. However, it is difficult to expect graduating medical students, allied health and nurses to embrace working in aged care settings with patients with dementia if we continue to train predominantly in hospitals where their encounters with this group are often negative. On graduation, students expect to work in settings for which they are trained. So, the suggestion that we harmonise the education of health professional students with the health service models we want them to work in and establish a network of national well-funded teaching aged care services has merit.

Driven by government funding, niche rural medical schools are springing up across the globe to train doctors, nurses and allied health staff in rural settings with the belief that they will stay and accommodate staff shortages in rural and remote communities [14]. So, it is possible that government funding will incentivise the universities to shift towards training for interprofessional team work in aged care networks (nursing home and community).

Some of the frailest members of our community live in nursing homes and while no one is arguing that nursing home spaces should morph into hospitals, accessing health care is strongly related to wellbeing. In 2008, nursing home residents were evocatively described as the ‘lost tribe’ by Stott *et al.* [15], wandering outside the main health and research systems. If health professionals will not go to nursing homes, perhaps, its time to lead this ‘lost tribe’ to the heart of health professional training and ask the universities to move their campuses.

## Conflicts of interest

None declared.

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*Age and Ageing* 2011; **40**: 292–293  
doi: 10.1093/ageing/afr036  
Published electronically 31 March 2011

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## Non-pharmacological treatments for orthostatic hypotension

In a recent issue of *Age and Ageing*, Fan *et al.* report negative results in a randomised controlled trial on the use of sleeping in the head-up position (SHU) in the treatment of orthostatic hypotension (OH) [1]. We ask if this treatment or other non-pharmacological therapies should be recommended for use in elderly patients?

Postural or Orthostatic Hypotension is a common clinical problem affecting elderly people. It affects approximately 20% of people over 65 years rising to just over a quarter aged over 85 years [2]. Defined as a fall in blood pressure of  $\geq 20$  mmHg systolic or  $\geq 10$  mmHg diastolic within 3 min when standing from supine [3], it been associated with falls, previous myocardial infarction and transient ischaemic attacks as well as systolic hypertension, ECG abnormalities and carotid stenosis [2].

Standing from supine and its associated blood pressure changes require an effective neurohumoral response with functioning renal and cardiovascular systems. Pooling of approximately 500–1,000 ml of blood in the capacitance vessels of the pelvis and legs and the resulting drop in blood pressure reduces firing of carotid and aortic baroreceptors. Messages relayed via the nucleus tractus solitarius result in reflex reduction in vagal tone and sympathetic activation of  $\beta$ -adrenergic receptors. Peripheral vasoconstriction and increased stroke volume results in increased cardiac output [4]. Disruption of any of these systems may lead to symptoms associated with OH.

Causes of OH in the elderly are generally divided into primary causes of autonomic dysfunction such as Parkinson's disease and multiple system atrophy, and secondary causes such as diabetes, stroke, CKD, infections and certain treatments for hypertension. Importantly older people will have many risk factors that predispose to OH, such as vascular stiffening [5] and decreased baroreceptor sensitivity [6]. Salt and water loss associated with nocturnal polyuria leading to intravascular volume depletion is a particular problem when autonomic failure is present [7] hence treatments that aim to correct this are potentially effective.

Overall management of OH requires a careful geriatric assessment in conjunction with allied health colleagues. Avoiding precipitating factors such as sudden postural

change, large meals, hot baths, alcohol and culpable vasodilating medications forms part of the initial treatment strategy. The role of modern antihypertensives in exacerbating OH is controversial. It has been demonstrated that the incidence of OH is reduced after long-term antihypertensive treatment of all classes [8]; however, those that act by peripheral vasodilatation may well exacerbate symptoms especially in the short term.

Non-pharmacological methods for treating OH form an important part in limiting blood pressure reduction on standing. Liberal addition of salt to the diet with the addition of salt tablets aiming for a minimum intake of 150 mmol per day is important to correct salt depletion due to polyuria and poor oral intake [9]. Although exercise can exacerbate symptoms, a programme of moderate exercise training has been shown to improve orthostatic tolerance and symptoms [10]. Abdominal binders, if tolerated are more effective than stockings and work by reducing venous pooling in the splanchnic circulation [11]. Physical manoeuvres that help to raise blood pressure by increasing venous return and increasing peripheral resistance include crossing legs on standing, squatting or bending forwards with the hip flexed [12].

SHU was first described by MacLean and Allen in 1940 in a group of patients with pure autonomic failure who demonstrated significant improvements in symptoms [7]. The main physiological response to SHU seems to be the reduction in nocturnal polyuria. A decrease in renal arterial pressure due to the legs sitting below the heart leads to activation of the renin–angiotensin pathway and vasopressin release [13]. Studies demonstrating the efficacy of this treatment up to now have included only small numbers (less than 12) in younger patients (under 65) with primary autonomic failure [14–16]. Generally higher degrees of head-up tilt were used (10–12) in these studies than is commonly used in practice [17].

Fan *et al.* have demonstrated in this trial that despite promising results from observational studies, in a heterogeneous group of older people effectiveness of SHU is more variable [1]. Older people with impairments of other homeostatic mechanisms and not just the autonomic system will be less able to mount an appropriate