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Present and future configuration of health and social care services to enhance robustness in older age

Future of an ageing population: evidence review

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Present and future configuration of health and social care services to enhance robustness in older age

Louise Robinson

Director, Newcastle University Institute for Ageing and Professor of Primary Care and Ageing, Newcastle University

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Executive summary

Living longer is now inevitable. Ageing presents societal opportunities, an experienced workforce who contribute both economically and socially through informal care of family members, but also considerable challenges for current and future care provision. Several issues strongly influence a person's physical and mental robustness as they grow older, resulting in reduced quality of life, increased mortality and greater risk of admission to hospital and residential/nursing home care. These issues include multi-morbidity, frailty, dementia and social isolation. In addition, informal carers play a crucial role supporting older people to remain independent; it is imperative their health is also maintained.

The aim of this Evidence Review is to critically examine the current provision of community-based health and social care services and via review of high-quality evidence, make recommendations for future service configuration to help more people reach older age in robust health. Key findings are:

- Multi-morbidity (the co-occurrence of two or more chronic diseases in an individual) is inevitable with age. Most primary-care-based chronic illness management is based on a single disease paradigm, which leads to fragmented and ineffective care. Research is urgently needed to identify more-efficient and person-centred ways of managing people with multi-morbidity.
- Frailty is a state of vulnerability, due to cumulative age-related decline in many systems, whereby a minor incident triggers a major change in health. Although no one tool exists to identify pre-frail and frail older people in community settings, evidence-based guidance is now available for primary care, with strong evidence that comprehensive geriatric assessment is an intervention that reduces adverse outcomes in these groups of older people.
- Dementia is the most costly of all chronic illnesses. Increasing age is the greatest risk factor for dementia. Although a cure eludes us, evidence is increasing about how to delay the onset of dementia and also how to reduce disability once dementia is diagnosed, through cost-effective drug and non-drug interventions. Unfortunately, unacceptable geographical variations in both the quality and quantity of post-diagnostic support services persist in England.
- Social isolation and loneliness appear to have as negative an impact on health and mortality with increasing age as vascular risk factors and thus adversely affect use of healthcare services. Although the evidence base on interventions to address these important issues has increased, there are few cost-effectiveness data on approaches such as individually targeted befriending services and group-based and community services.
- Over the last two decades there has been a major transfer of chronic-disease management from secondary to primary care: the majority of older people now receive the majority of their healthcare from their GP and community care services. With numbers of older people increasing and GP recruitment declining, it is imperative we improve the efficiency and morale of primary and community care services. Increased provision of community-based geriatric teams and intermediate care services would not only improve the well-being of our ageing population but also provide much-needed support to our gatekeeper services.

- In the longer term, a review of our NHS workforce, their roles and responsibilities and current training is required to ensure it adequately meets the needs of our rapidly ageing population. GPs and community nurses in particular must be equipped with the knowledge and skills appropriate to care for older people. In addition, specialist colleagues in, for example, geriatrics, rehabilitation and old-age psychiatry will need to adopt more flexible ways of working across traditional professional boundaries to address the complex challenges of old age, multi-morbidity, frailty and cognitive impairment.
- The ultimate long-term goal of policy makers and service commissioners will be to ensure community-based health and social care work in a more-integrated way to allow older people to remain independent and living in their own homes for as long as possible. Primary-care-led clinical commissioning groups have considerable potential to facilitate innovative yet efficient care systems to transform a 20th century NHS into a 21st century National Care Service fit for purpose.

I. Introduction

In the 1960s, when the Beatles released their classic song *When I'm Sixty-Four*, life expectancy for men in England and Wales was around 70 years of age. The age of retirement, at 65 years, was regarded as the transition to old age. Fifty years later, life expectancy in this country is, on average, nearly 80 years for men and 82 years for women; those aged over 85 are the fastest growing sector of the population. With life expectancy in the UK continuing to increase at the rate of more than 2 years per decade, increasing longevity is inevitable. The new ageing challenge for the 21st century is how we increase the proportion of those extra years spent in optimum health and thus facilitate independence, reduce care costs and improve economic and social productivity.

The World Health Organization defines 'active ageing' as the process of optimising opportunities for health, participation and security in order to enhance quality of life as people age; the word 'active' refers to continuing participation in social, economic, cultural, spiritual and civic affairs as well as remaining physically active (World Health Organization, 2002). Health in later life reflects the interaction of a wide range of factors: biological, genetic, behavioural, social and environmental. Improved scientific understanding of the biological process of ageing indicates that it is more malleable than initially thought (Kirkwood, 2005). Adverse factors, including social inequality and unhealthy lifestyles, result in the premature development of age-related illness; equally evidence suggests that beneficial lifestyle factors can extend healthy living for longer.

In England, the largest financial allocation from the Treasury is to healthcare (£107 billion), with nearly half that figure allocated to acute and emergency care, 30% to primary care and 10% equally to community care, mental health and prescribing (NHS England and BMJ, 2014). Our rapidly ageing populations have considerable implications for this budget. In 2004, there were 461 million people aged 65 years and over worldwide. This figure is estimated to increase to 2 billion by 2050 (Kinsella and Phillips, 2005), leading to a probable increase in age-related illnesses such as dementia and osteoarthritis. In 2010, the UK costs of dementia care were estimated at £20 billion and predicted to rise to £27 billion by 2018; 40% of this is from community care/care home costs (House of Commons All Party Parliamentary Group, 2011). However, identifying more cost-effective methods of community care is not our only concern. The National Audit Office (2010) report on dementia found poorly integrated health and social care despite a National Dementia Strategy in England (Department of Health, 2009). Ensuring high-quality, cost-effective healthcare that ensures patient satisfaction and meets the demands of the population is the fundamental organising principle of our National Health Service (NHS).

The aim of this Evidence Review is to critically examine the current provision of community-based health and social care services and, through review of high-quality evidence, make recommendations for future service configuration to help more people reach older age in robust health. The review is structured into three sections: in Section 2, the current configuration of health and social care services in England is described; Section 3 reviews the factors that influence robustness of both physical and cognitive health as people age, while Section 4 recommends areas for future research and discusses ways in which community services, from both a medium- and longer-term perspective, could be adapted to allow more older people to remain in more robust health, and to continue to live in their own homes for as long as possible as they grow older.

2. Current organisation of health and social care services in England

This section describes current community-related health and social care services in England, including key drivers that have influenced service development.

2.1 General practice and primary care

In the UK, primary care, or the first point of contact for patients in a healthcare system, is largely provided by the general practitioner (GP). The concept of free healthcare for all arose from the 1911 National Health Insurance Act, with the 1948 National Health Act introducing a system whereby GPs became self-employed, paid via capitation and items of service fees, and were required to provide 24-hour care. The terms 'primary care' and 'general practice' are often used interchangeably. The term 'primary care', thought to originate from the USA, introduced a broader approach to healthcare in general practice with an equal emphasis on health promotion and disease prevention, in addition to acute and chronic illness management.

The training of GPs and the quality of general practice are the responsibility of the Royal College of General Practitioners (RCGP). GPs now increasingly work in large, multidisciplinary teams that usually include a practice manager, nurse practitioners with limited prescribing responsibilities, and practice nurses who often specialise in chronic illness care of, for example diabetes. Community nurses and health visitors may be co-located or linked with a group of practices. Team working is essential in order to manage the complex demands of an ageing population with multiple health problems and the need to deliver care as close to a patient's home as possible.

Over the last two decades there has been a major transfer of chronic-disease management from secondary to GP only or shared care. In 2004, the implementation of a new General Medical Services contract further emphasised the central role of primary care in chronic-disease management with the introduction of essential, or core, primary care services and additionally remunerated optional, or enhanced, services. Quality achievement in both clinical and non-clinical care via financial rewards was introduced through the Quality and Outcomes Framework (QOF) (NHS Confederation, 2011), with quality markers focused on evidence-based, chronic-disease care.

In England, the 2012 Health and Social Care Act resulted in the most radical changes to date in the way in which GPs work. GPs now combine healthcare provision with service commissioning, previously the responsibility of Primary Care Trusts (PCTs) (Department of Health, 2011); new GP-led Clinical Commissioning Groups (CCGs) are now responsible for shaping services to meet local population need. Their work is overseen by a Health and Wellbeing Board; this brings together local health and social care commissioners and patient representatives to ensure more effective and integrated care for those with long-term illness. Other new influential organisations include independent consumer organisations such as HealthWatch, which ensure greater public and patient involvement in service delivery, and Public Health England, an executive agency of the Department of Health with responsibility for addressing health inequalities.

2.2 Specialist secondary care for older people

The concept of **geriatric medicine** developed in the mid-1940s and brought a holistic approach to the maintenance of physical health and function in older people through a combination of acute treatment with functional rehabilitation. Thereafter patients aged 65 years and over were referred to geriatric medicine instead of general medical services. The 1990s saw the introduction of community-based, in addition to hospital-based, geriatrician posts, usually funded by PCTs. Some community posts also had multidisciplinary teams attached, with nursing, social care and therapy expertise. More recently the concept of **interface geriatrics** was introduced, whereby geriatricians have both acute and community care responsibilities with posts usually funded jointly by acute trusts and PCTs (Conroy *et al.*, 2010).

In the 2013 census by the Royal College of Physicians, 27 out of the 425 consultant geriatrician respondents (about one-third of the total number of geriatricians sampled), identified themselves as community geriatricians, with a mean of 4.2 community-based sessions (personal communication, Dr Zoe Wyrko; British Geriatrics Society in association with Royal College of General Practitioners and Age UK, 2014). Of these 27 posts, 12 were funded by acute trusts, 10 by CCGs and five by community trusts; an additional 43 geriatricians, who did not define themselves primarily as community physicians, had sessions funded by community trusts. In addition, a further 111 doctors undertook community sessions funded by acute trusts. As yet, there are no accurate data on the number and composition of community-based geriatric teams.

The mental well-being of older people is largely the responsibility of primary care teams, which increasingly incorporate practice-based counsellors within their team and have direct access to psychological services. Specialist support is provided through community mental health teams, including community psychiatric nurses and old-age psychiatry expertise; a referral point of over 65 years of age also applies.

2.3 Social care

Social care covers a range of services to help people maintain their health and independence in the community including home and personal care, day services, respite care and residential and/or nursing care. In the UK, the White Paper on Health and Social Care aimed to improve service provision by increasing user choice and creating more integrated services. New initiatives included the introduction of a personal integrated health and social care plan, the establishment of joint health and social care teams and the introduction of personal budgets, whereby people who require social care can opt to receive payments directly and purchase services themselves, enabling greater choice and control. Evidence has shown that personal budgets have the potential to achieve greater efficiency while giving people greater control and satisfaction (Alakeson, 2007; Carr, 2010).

2.4 Integrated health and social care

At a policy level, integrated care has been put forward as a key area to improve care (Ham *et al.*, 2011; The King's Fund, 2011); from the user perspective, a lack of joined-up care is “the biggest frustration for patients, service users and carers” (National Voices, 2011). Integration of health and social care can occur at two levels: vertical, across the primary/secondary healthcare interface, and horizontal, through better integrated health and social care. The aims of a more-integrated healthcare system have been summarised as: improved self-management, better primary and secondary prevention, optimising medicines management, reducing unplanned admissions and overall improvement in management for physical, mental and end of life care (Imison *et al.*, 2011). Currently there is no ‘one-model-fits-all’ approach to integration, with evidence to date showing that organisational integration is “neither necessary or sufficient to deliver the benefits of integrated care” (Goodwin *et al.*, 2012).

An ageing population means more social care needs alongside increasing prevalence of chronic diseases, with older frail people needing significant improvements in care (Care Quality Commission, 2011). Research has confirmed that older people are the group most likely to suffer problems with co-ordination of care and service transitions (Ellins *et al.*, 2012; Haggerty 2012). An integrated system for an older person usually has a single point of entry, with a case manager who assesses need, shares information and co-ordinates formal and informal care (Goodwin *et al.*, 2014). Curry and Ham (2010) undertook a review of several programmes specifically of older person's care in integrated care systems including the US Programme for All-inclusive Care for the Elderly, Canada's System of Integrated Services for Aged Persons (SIPA) and the UK Torbay Care Trust. Their review concluded that such models have “the potential to reduce hospital use, achieve high levels of patient satisfaction, and improve quality of life and physical functioning” (Curry and Ham, 2010). However in terms of cost-effectiveness, a recent systematic review found little evidence of benefit in the short term (Mason *et al.*, 2014).

2.5 Intermediate care services

Intermediate care (IC) comprises a range of rehabilitation and care schemes designed to help patients avoid hospital admission and facilitate earlier discharge home after admission; they also help delay or avoid entry into residential care. Most schemes last between 1 and 6 weeks and involve cooperative working with key agencies including primary and secondary care, social services, and voluntary and private sector organisations. Examples of IC include ‘hospital at home’ and rapid response nursing schemes that provide intensive, home-based nursing care. IC provision is also supported by specialist community outreach teams (geriatrics rehabilitation and palliative care) and day hospital assessment and care.

IC services can be classified into four groups: crisis response, re-ablement, home-based IC and bed-bound IC. There is wide variation in the scale and nature of IC service configuration in England, with current costs totalling £3 million per 100,000 population; such services are increasingly funded by joint health and social care budgets (38% of total cost in 2014). The 2014 National Audit of Intermediate Care has found that despite excellent patient feedback and outcomes, there is still a considerable shortfall in the provision of IC care services. The audit summarised data from an extensive number of participants: 12,022 service users, 75 commissioners and 124 care providers. In terms of Patient Reported Outcome Measures, over 90% of service users of both home-based care and bed-bound care maintained or improved their level of functioning, with 89% reporting they were treated with dignity and respect. Only

10% of the 60,000 discharged from 60 crisis response teams in the 2014 audit needed acute hospital admission (NHS Benchmarking Network, 2014).

Calculated costs per episode of care are £1,045 for home-based IC; £1,722 for re-ablement and £5,549 for bed-based IC; the latter cost is similar to the costs of a continued care bed in an acute hospital but includes the advantages that the patient is receiving rehabilitation and a hospital bed is more appropriately freed up for emergency care. Despite user success and demonstrable cost-effectiveness, requests for an urgent increase in IC provision to meet increasing demand remain unmet; in the words of Professor John Young, National Clinical Director for the Frail Elderly and Integration, “intermediate care services are stuck” (NHS Benchmarking Network, 2014).

3. Ageing: opportunities and challenges for 21st century community care

Opportunities arising from our ageing populations include an experienced workforce that continues to contribute economically and also socially through the informal care of both grandchildren and older family members. However several health and social issues present critical challenges to older people maintaining their health and well-being as they grow older. These include deterioration in:

- physical health and functioning via the onset of multi-morbidity and frailty;
- mental well-being through cognitive impairment and dementia; and
- support networks resulting in loneliness and social isolation.

Changes in one or more of these can lead to increased vulnerability with older people becoming housebound and at greater risk of admission to hospital or residential or nursing care. Current evidence on the management of these challenges is summarised below.

Where possible, included evidence comes from high-quality systematic reviews (or reviews of reviews); in the absence of such reviews, evidence from randomised controlled trials, controlled before-and-after studies, or cohort studies has been used.

3.1 Multi-morbidity

Multi-morbidity is defined as the co-occurrence of two or more chronic diseases in an individual (van den Akker *et al.*, 1996); the related term 'co-morbidity' is reserved for morbidity co-occurring in relation to a specific index disease (Feinstein, 1970). Prevalence estimates for multi-morbidity range from 20% to 30% in 'all age' populations and 55% to 98% in older populations (Marengoni *et al.*, 2011); in the oldest old – those aged over 85 years – multi-morbidity is inevitable (Collerton *et al.*, 2009). The co-occurrence of multiple diseases is associated with a range of adverse outcomes including disability, poor quality of life, high healthcare use and mortality (Boyd *et al.*, 2008; Marengoni *et al.*, 2011; France *et al.*, 2012). Different categories of co-morbidities appear to have different implications for healthcare use and costs (Brilleman *et al.*, 2013).

In the UK, current approaches to chronic-disease management are largely based on the single disease paradigm emphasised, for example, through the introduction of a QOF in primary care. This approach has been shown to lead to fragmented, costly and ineffective care (Fortin *et al.*, 2007; Vogeli *et al.*, 2007). A systematic review evaluating the effectiveness of randomised controlled trials of complex intervention, aimed at improving outcomes in patients with multi-morbidity in community settings, found mixed results (Smith *et al.*, 2012). Current research is exploring more effective ways for GPs to manage multi-morbidity (Huntley *et al.*, 2012; Salisbury 2012) and how national guidance can be adapted to accommodate the multi-morbid paradigm (Guthrie *et al.*, 2012).

3.2 Frailty

Frailty has been defined as a state of vulnerability, due to cumulative age-related decline in many physiological systems, whereby a relatively minor stress triggers a disproportionate deterioration in health status (Clegg *et al.*, 2013). Trigger events include a new drug or infection with a change from independent to dependent and/or lucid to delirious. Common clinical presentations include delirium, falls, immobility and non-specific systems such as fatigue and exhaustion. Between a quarter and one-half of people over 85 years are estimated to be frail, with research revealing this group to be at substantially increased risk of falls, disability, long-term care and death (Fried *et al.*, 2001; Song *et al.*, 2010). The pathophysiology of frailty has been described in detail (Clegg *et al.*, 2013). The two main models of frailty are summarised in Table 1: the phenotype model (Fried *et al.*, 2001) and the cumulative deficit model (Rockwood *et al.*, 2005). Both models demonstrate overlap in their identification of frailty and have considerable statistical convergence (Rockwood *et al.*, 2007).

Table 1: The two main models of frailty

	The phenotype model (Fried <i>et al.</i> , 2001)	The cumulative deficit model (Song <i>et al.</i> , 2010)
Model	Five variables (patient characteristics): <ul style="list-style-type: none"> • unintended weight loss of > 4.5 kg • self-reported exhaustion (3–4 days of the week minimum) • low energy expenditure * < 383 kcal/week (men) and < 270 kcal/week (women) • slow gait speed (timed up and go test – walk 4.57 m) • weak hand grip strength 	30 variables (initially 92): <ul style="list-style-type: none"> • contains a large number of physical variables but also mental (low mood) and laboratory values
Score	3+ – frailty 1–2 – pre-frail 0 – robust	Simple calculation: No. of deficits/possible total number = frailty index
Strengths	<ul style="list-style-type: none"> • Can be used in clinical practice 	<ul style="list-style-type: none"> • Developed from large Canadian cohort study ($n = 10,263$)
Limitations	No inclusion of other key factors which may influence frailty: <ul style="list-style-type: none"> • sensory deficits • cognitive impairment • subjective health • social/environmental factors 	<ul style="list-style-type: none"> • Impractical in a primary care/community clinical setting • Clinical Frailty Scale developed by the team but can only be used after comprehensive geriatric assessment (CGA)

A recent systematic review confirmed the association between frailty and a number of adverse outcomes including increased disability, admissions to hospital and care homes and mortality (Clegg *et al.*, 2013). A key responsibility for community health teams should be to accurately and feasibly identify the frail older person and also those who are pre-frail in order to prevent further deterioration. There is as yet no single valid and practical tool for community use. However recent evidenced-based guidance from the RCGP provides a practical system for the detection of frail and pre-frail older people within primary care (British Geriatrics Society in association with Royal College of General Practitioners and Age UK, 2014).

Regarding the management of frailty, evidence is strongest for CGA in terms of both the accurate grading of frailty level and also in improving adverse outcomes. Research evaluating both hospital-based CGA (on specialist geriatric wards) and community-based CGA has shown important benefits. In the former, frail older people are more likely to return home, are less likely to experience cognitive or functional decline and have lower in-hospital mortality rates (Ellis *et al.*, 2011). In the latter, studies have revealed an increased rate of people continuing to live at home and a reduced rate of falls (Stuck *et al.*, 2002; Beswick *et al.*, 2008). Systematic reviews have demonstrated that exercise can improve mobility and functional ability as well as having beneficial effects on the immune system and on cognitive health (Plassman *et al.*, 2010). However, the type of exercise intervention, its duration and level of intensity remain undetermined. In terms of diet and dietary supplements, there is currently insufficient high-quality evidence to recommend their use in routine practice (Clegg *et al.*, 2013).

3.3 Cognitive impairment and dementia

Dementia leads to progressive decline in memory, communication and the skills needed for independent living; in addition, people with dementia usually have existing physical co-morbidity (Bunn *et al.*, 2014). Family carers of people with dementia have higher levels of depression and physical illness than other carers (Brodaty *et al.*, 2003). For the NHS, dementia is the most costly of all chronic illnesses. National policy initiatives including the English National Dementia Strategy (Department of Health, 2009) and the 2011 Prime Minister's Dementia Challenge have emphasised the right of people with dementia and their families to live well, with a focus on earlier diagnosis and better quality care and a societal responsibility to create dementia-friendly communities to facilitate independence and reduce social isolation. Following this policy drive, average national dementia diagnosis rates rose from 42% to 55% in 2014 but people are still experiencing unnecessary delays to diagnosis (Manthorpe *et al.*, 2011).

Evidence is increasing about how to prevent the onset of dementia and also in reducing 'disability' once dementia is diagnosed. A recent two-decade comparison from the Medical Research Council Cognitive Function and Ageing cohort studies (CFAS) revealed a decrease in the prevalence of dementia; in 1991 dementia prevalence in a cohort of over 13,000 people was 7.2% and predicted to be 8.3% in 2011; results from the second cohort found a lower than expected prevalence of 6.5% (Matthews *et al.*, 2013). Interventions to maintain, or prevent loss of, cognitive function with age can be targeted at three levels: primary, secondary and tertiary prevention. Evidence to date on the effectiveness of primary prevention approaches is listed.

Primary prevention of dementia: summary of evidence on interventions to stop healthy people developing dementia

- **Exercise:** short-term benefits – group- and home-based exercise reduces risk of falling (Gillespie *et al.*, 2012), but mixed results from systematic reviews regarding primary prevention of dementia (Rolland *et al.*, 2008; Plassman *et al.*, 2010).
- **Cognitive activity and cognitive training:** low-quality evidence (from observational studies) suggests short-term benefits (Plassman *et al.*, 2010; Martin *et al.*, 2011); however strongest evidence to date from 10-year ACTIVE study follow-up (three types of training with a no-treatment control), which found sustained improvement in cognitive function and positive effects on driving (McAvinue *et al.*, 2013).
- **Social engagement:** Evidence supports general health benefits in engagement in social relationships with socially isolated people having 2–4-times-increased all-cause mortality (Fratiglioni *et al.*, 2004) but no evidence to date for dementia prevention.
- **Mental health:** depression consistently associated with increased risk of dementia (Byers and Yaffe, 2011; Gao *et al.*, 2013).
- **Diet and nutrition:** Mediterranean diet appears to reduce risk of developing dementia (Plassman *et al.*, 2010; Sofi *et al.*, 2010); no high-quality evidence that dietary supplementation prevents dementia.
- **Medication:** no high-quality evidence to date that any specific medications protect or prevent dementia.

UK-based epidemiological studies suggest that national initiatives to embed vascular prevention into primary and community care for people at risk of developing dementia, for example QOF targets for diabetes, heart and stroke disease, have led to a reduction in dementia prevalence (Matthews *et al.*, 2013). Recent systematic reviews have also found that certain drug and behavioural interventions are both clinical and cost-effective for people with dementia (Alzheimer's Disease International, 2011; Cooper *et al.*, 2012; Knapp *et al.*, 2013). Knapp *et al.* (2013) included existing reviews (56) and empirical studies (29) and found that the acetylcholinesterase inhibitors (in mild to moderate dementia) and memantine (in moderate to severe dementia) were cost-effective. There was also sufficient evidence to conclude that some non-drug interventions were more cost-effective than usual care; these included cognitive stimulation therapy (CST), tailored activity (exercise programmes) and occupational therapy. Despite this evidence base, there are wide geographical variations in the provision of effective behavioural therapies like CST in routine practice, despite national guidance strongly recommending CST for people with dementia to maintain quality of life (NICE/SCIE, 2006).

3.4 Social isolation and loneliness

Social isolation refers to a state of imposed isolation from normal social networks often due to deteriorating health or impaired mobility, whereas loneliness is reported as a subjective negative feeling (Windle *et al.*, 2011). Both states have been shown to negatively influence both mortality and physical and mental health. A meta-analytic review reported a 50% reduction in the likelihood of mortality for individuals with strong social relationships exceeding the impact of risk factors such as cigarette smoking and obesity (Holt-Lunstad *et al.*, 2010). Research has also shown increased rates of hypertension and disability (Cornwell and Waite, 2009; Hawkey

et al., 2010; Lund *et al.*, 2010); depression (Heikkinen and Kauppinen, 2004; Cacioppo *et al.*, 2006) and dementia (Fratiglioni *et al.*, 2000; Wilson *et al.*, 2007; James *et al.*, 2011).

In terms of prevalence, social isolation among older adults had been estimated to be between 7% and 17%, depending on the definition and outcomes measure used (Iliffe *et al.*, 2007; Hawthorne, 2008; Tomaszewski and Barnes, 2008). British community studies report rates of severe loneliness among adults aged 65 years and over of 5–16% (Victor, 2005), with numbers growing (Beaumont, 2013). Both factors have also been shown to influence healthcare utilisation. Studies from the USA have demonstrated higher rates of emergency hospital admissions and a four- to five-fold increase in rehospitalisation within a year (Mistry *et al.*, 2001; Molloy *et al.*, 2010); however UK evidence for greater use of primary care services is less conclusive (Iliffe *et al.*, 2007). Lonely older adults are also more likely to have earlier entry into care homes (Russell *et al.*, 1997).

In terms of preventing loneliness and social isolation, a broad range of interventions, directed at either an individual, group or community level, have been developed (Cattan *et al.*, 2005; Dickens *et al.*, 2011; Windle *et al.*, 2011). Although the evidence base has increased considerably in the last 20 years, there are still considerable gaps, especially in the area of cost-effectiveness. In terms of clinical effectiveness, there are encouraging results from individual befriending interventions on mental health and quality of life (Mead *et al.*, 2010) and evidence that group-based programmes reduce secondary care service use in trial settings (Cohen *et al.*, 2006; Pitkala *et al.*, 2009). There are few cost-effectiveness data; however a decision-modelling exercise estimated that individual interventions, such as befriending and community navigators, could be cost-effective when factoring in proven benefits such as improved quality of life (Knapp *et al.*, 2010).

3.5 Caring for the carers

Informal carers play a crucial role in allowing older people to remain independent and living in their own homes for as long as possible; in a study exploring the health of the oldest old, the majority of their care was provided by family and friends (Collerton *et al.*, 2009). It is thus crucial to maintain the health and well-being of family carers in order to allow older people to continue living independently. In England, GPs are encouraged to be proactive in supporting carers' physical and mental health. Practices are rewarded for implementing a management system that includes a protocol for the identification of carers and a mechanism for the referral of carers for social services assessment (Cameron *et al.*, 2011).

A meta-analysis of psychosocial interventions for carers of people with dementia revealed that such interventions can reduce psychological morbidity for carers and help their relatives stay at home longer; interventions that were intensive, individualised and also included people with dementia as well as their carers, were the most successful (Brodaty *et al.*, 2003). A systematic review explored in detail the effects of combined carer/patient interventions on the health and well-being of both groups (Smits *et al.*, 2007). These programmes improved the general mental health of carers and were often effective in delaying admission to care homes; however effects on carer burden and coping, physical health and survival were less conclusive (Smits *et al.*, 2007).

4. Recommendations for future care and research

Living longer is now inevitable; in the 21st century the key challenge for healthcare, and society in general, is how to ensure those extra years are spent in a state of optimum health and well-being. This review has described some of the key challenges to maintaining robustness of both physical and mental health as we age, namely multi-morbidity, frailty, dementia and social isolation, and evaluated the evidence base around the prevention and management of these issues.

4.1 Gaps in the evidence base and areas for future research

National epidemiological cohort studies, such as the CFAS, continue to provide essential information on whether the nature of the physical and mental health of our older populations is changing over time, and empirical data to accurately influence future service provision. It is imperative that such key 'national resources' continue to be funded to allow longer-term follow-up. With recent results demonstrating a reduction in the prevalence of cognitive impairment, probably due to the introduction of large-scale, preventative care initiatives into GP remuneration schemes, such studies have the potential, with additional support and resource, to be transformed into intervention cohorts to evaluate the effectiveness of secondary and tertiary prevention approaches to reducing dementia. Research is also required to develop accurate and feasible risk prediction tools to identify those at greatest risk of dementia and who would most benefit from such interventions (Harrison *et al.*, 2014).

In terms of facilitating both physical and cognitive robustness in later life, evidence reveals that one particular intervention, exercise, has considerable potential to maintain both physical health and cognitive well-being. However further research is needed in terms of identifying the type, level and duration of exercise specifically needed and, more importantly, how we can engage older people in sustained exercise, and other healthy lifestyle behaviours. A series of extensive systematic reviews led by Cambridge University (personal communication, Professor Carol Brayne and Dr Louise Lafortune, 2014) will be completed in 2015. These will provide long-overdue evidence summaries on whether (i) interventions delivered in older age increase uptake and maintenance of healthy behaviours to influence successful ageing, and (ii) they also prevent and/or delay the onset of cognitive decline. In terms of interventions to enhance social engagement in later life, better quality trials, with embedded cost-effectiveness studies, of promising interventions such as befriending are urgently needed.

Multi-morbidity is inevitable with increasing age. Following a decade where the emphasis on improving quality standards in primary care has been focused on a single disease paradigm, research is needed to describe the most common patterns of multi-morbidity and the most efficient and effective ways of delivering primary care to older people while maintaining patient satisfaction and safety. In 2015, the National Institute of Health Research (NIHR) launched a specific funding programme addressing this very area (www.nihr.ac.uk/funding-opportunities).

In terms of preventing frailty, research is still needed to determine why some people are at more risk of becoming frail and what constitutes the most cost-effective 'intervention' to prevent the pre-frail becoming frail. A recent review summarising evidence to date provides practical guidance on how to assess frailty in community settings (British Geriatrics Society in association

with Royal College of General Practitioners and Age UK, 2014). However further research is required to determine whether accurate and valid research tools developed from very large cohort studies, such as the Rockwood Frailty Index, can be translated into feasible and practical tools for use in the community following the successful example of the Q-risk score for cardiovascular risk assessment, which is now embedded into routine care. A NIHR-funded programme of research is currently exploring the development of an electronic frailty tool utilising existing primary care databases (Bates *et al.*, 2014).

4.2 Recommendations for community-based healthcare service configuration by 2025 and 2040

“General practice is the jewel in the crown of the NHS. Save it. Build it.” (Don Berwick, President, US Institute for Health Improvement, Berwick, 2008)

The majority of older people receive the majority of their healthcare from their GP and community services. In the last two decades, primary care services have absorbed a considerable increase in workload, especially in the areas of health prevention and chronic illness care, while overall financial remuneration has steadily declined; consequently there is now a rising GP recruitment and retention crisis (Hann *et al.*, 2009). This review has identified areas which could address in the next decade both the efficiency and morale of our primary gatekeeping services and also facilitate a more robust population of older people who live independently for as long as possible.

The introduction of quality-improvement initiatives such as the QOF has had a significant effect on patient morbidity, especially vascular-related illness. Research confirms multi-morbidity is inevitable with increasing age; such national care schemes need to adapt beyond a single disease paradigm and encompass a more holistic, person-centred approach to the care of older people. The QOF begins to address this via palliative care indicators; this scheme could be replicated to focus on frailty, with reimbursement for identification of frail older patients, creation of a GP frailty register with annual assessment and review of patients on the register and their main carers, and appropriate referral for evidence-based interventions such as CGA, which have been shown to prevent further deterioration.

Notwithstanding, from the data presented in this report, current levels of community-based geriatric services may not be adequate to meet the needs of our rapidly ageing population. Newly formed CCGs have a key role in commissioning appropriate specialist services for older people; the configuration of such services may differ across regions but should include adequate provision of CGA to meet local population demand and needs. The urgent recommendation to increase IC services, based on convincing and accurate data from national audit reports, must no longer be ignored if we wish to provide adequate community-based assessment and treatment to ensure older people with complex needs are maintained in their own homes for as long as possible and thus allow our acute hospital services to reserve their beds for the acutely ill.

Closer, more-integrated working between specialist old-age psychiatry services and geriatrics is also urgently required as older people, especially the oldest old, will undoubtedly have a combination of multi-morbidity with cognitive and sensory impairment. Traditional professional boundaries require review, with approval, and not resistance, from their governance organisations. Blurring of traditional clinical responsibilities, for example geriatric-led cognitive assessment for the frail and very old who will invariably also have complex physical issues,

is essential to address current patient need and should be welcomed and not challenged by medical specialities. A spirit of collaboration and not competition is required from our specialist service providers!

“People want co-ordination. Not necessarily (organisational) integration. People want care. Where it comes from is secondary.” (National Voices, 2012)

From a longer-term perspective, two key areas of NHS care require detailed consideration to address current socio-demographic changes: firstly, workforce configuration and professional training, and secondly, the creation of a more-integrated community-based health and social care workforce.

It is clear that the role of a GP and the size and configuration of their primary care team is changing (Jones, 2014). A 21st century GP needs to combine knowledge and skills from both geriatrics and old-age psychiatry to detect and manage the physical and mental frailty that is inevitable with increasing age. Research reveals, however, that current undergraduate medical training is inadequate to meet these needs (Tullo *et al.*, 2010, 2011). In addition, geriatric training is not a compulsory part of current GP vocational training, although additional expertise can be acquired via courses (e.g. Diploma in Geriatric Medicine) or via posts such as a GP with Special Interest. In 2012, the RCGP recommended extending GP training to 4 years to create GPs fit to care for our ageing populations (Gerada *et al.*, 2012). As yet there are no plans for implementation of these recommendations; action on them would seem highly appropriate in light of the findings of this review.

The role of nurses in primary care has expanded considerably over the last decade, with nurse practitioners and chronic illness nurse specialists now common in GP practice. In terms of the latter, such nurses are usually employed by the GP practice but, in some cases, such as Parkinson’s disease nurse specialists, they may work for the acute hospital trust but have community sessions enabling them to liaise with GPs and community nurses and deliver shared care to patients with complex needs. The creation of a specialist geriatric nurse practitioner, acting as a central case manager, could provide a crucial co-ordinating link between primary and community care teams, secondary geriatric services and longer-term care facilities. Such a role was recommended over a decade ago by the British Geriatrics Society in a review focused on improving healthcare in care homes (Royal College of Physicians, 2000).

Over the previous 20 years, primary care teams have expanded considerably, with many having additional counselling and therapy services on site, and have established closer working relationships with community-based specialist teams in geriatrics, mental health and palliative care. However the demands of caring for increased numbers of older people with complex health and social care needs will necessitate more-integrated, cost-effective care in the future. A single pooled budget, combining health and social care funding, was the main conclusion of a recent report from the King’s Fund (Commission on the Future of Health and Social Care in England, 2014). In the meantime, initiatives such as GP Federations and the new Better Care Fund in England, a pooled resource to be used for partnership working across health and social care to enable community living for longer, may help us towards this. The future goal of policy makers and commissioners should be focused on how we can transform a 20th century NHS into a 21st century integrated National Care Service fit to meet the needs of our ageing population.

5. Conclusion

“Achieving integrated care would be the biggest contribution the health and care services could make to improving quality and safety.” (National Voices, 2011)

Several issues strongly influence a person’s physical and mental robustness as they grow older, reducing their quality of life, increasing mortality and increasing their risk of admission to hospital and residential/nursing home care. These include multi-morbidity, frailty, cognitive impairment, dementia, loneliness and social isolation. Informal carers play a crucial role in supporting older people to remain living in their homes; it is imperative that their health and well-being is also maintained to enable them to carry on in their caring role.

The majority of older people receive the bulk of their healthcare from their GP and community care services. With recruitment of GPs steadily declining, it is crucial over the next decade to improve both the efficiency and morale of primary and community care through the establishment of specialist networks and services targeted at both meeting the needs of our ageing society and also supporting our front-line community services. In the short term, there must be adequate provision of community-based geriatric teams and IC services. From a longer-term perspective, the health and social care workforce of the future must be equipped with the knowledge and skills appropriate for our changing socio-demographics; working in a more-integrated manner, in inter-disciplinary teams funded from a single pooled budget, appears to be the ultimate goal to achieve efficiency, quality and patient safety.

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