4 *Meeting the needs of frail older patients*

SHERENA NAIR[1], DAVID OLIVER[2], ALISON CRACKNELL[3]

[1] Elderly Medicine Registrar, Leeds Teaching Hospitals NHS Trust
[2] Clinical Vice President, Royal College of Physicians, London
[3] Consultant Medicine for Older People and Honorary Clinical Associate Professor, Leeds Teaching Hospitals NHS Trust

Introduction

The current challenge

All European countries are experiencing rapid demographic transitions, with an increase in the proportion of over 65-year-olds and the most rapid increase in people over 80 years of age (Creighton, 2014). This means that, increasingly, the business of acute hospitals is the care of older people, often with frailty, dementia or multiple long-term conditions complicating their acute illness. Without a radical shift in care models, at scale and surpassing anything we have yet seen, this will continue to be the case for the foreseeable future. There has been a general reduction in hospital beds and increases in ambulatory and community treatment but there remain gaps in services that fail to meet the needs of frail older people, which often result in hospital attendances (NHS Benchmarking, 2013; Cowling et al., 2014; Radvansky, 2014; Melzer et al., 2015). Particular challenges arise for those with frailty, chronic multiple conditions, and those with dementia, adding to the complexity of treatment and care needs of older people (Melzer etv al., 2015).

Some of the key challenges facing hospitals caring for older people with frailty include unmet care needs, health inequalities, and a lack of quality service models and integration between services (European Institute, 2012). There is wide variation in the nature and scope of services addressing the needs of frail older people, with some countries such as Austria having recognized geriatric medicine as a subspecialty of internal medicine only from 2011 (Ekdahl et al., 2012). While

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

countries are acknowledging the need for better integration of services, implementation of more integrated care models has been slow (Curry & Ham, 2010; Shah et al., 2010).

The challenge of frailty

Frailty is defined as a state of increased vulnerability and a disturbance in homoeostasis where a stressor event can lead to dramatic changes to the health status of an individual, which result in increased dependency levels, mobility problems, a change in cognition, such as delirium, and marked levels of functional decline (Clegg et al., 2013) (Figure 4.1; Box 4.1). Frailty is also associated with increased mortality and morbidity, and it is a strong predictor of care home utilization and death (Clegg et al., 2016). There are two common models for defining frailty as a clinical entity and these are increasingly important as ways of segmenting and addressing the needs of hospital patients (Oliver, 2016c). These rest on an identifiable "frailty phenotype" (Fried model) based on the

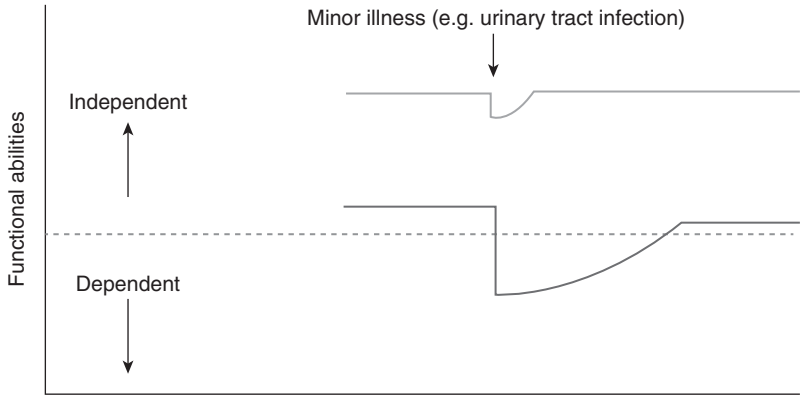

Figure 4.1 Vulnerability of frail older people to a sudden change in health status following a minor illness

Note: The top line represents a fit older person who, following a minor stress such as a urinary tract infection, experiences a relatively small deterioration in function and then returns to homoeostasis. The lower line represents a frail older person who, following a similar stress, experiences a larger deterioration which may manifest as functional dependency and who does not return to baseline homoeostasis.

Source: Clegg et al., 2013

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

Box 4.1 Common presentations of frail older people

Frailty syndromes (how people with frailty present to services)

- "Non-specific" – e.g. fatigue, weight loss, recurrent infection
- Falls/collapse
- Immobility/worsening mobility
- Delirium ("acute confusion")
- Incontinence (new or worsening)
- Fluctuating disability
- Increased susceptibility to medication side effects – e.g hypotension, delirium

presence of three or more characteristics or a "frailty index" (Rockwood & Mitnitski, 2011; Clegg et al., 2016) based on an accumulation of deficits. There is an overlap between frailty, multiple co-morbidity and age-related disability (World Health Organization, 2015; National Institute for Health and Care Excellence, 2016), although it is now possible to identify people with frailty in community settings using existing primary care data (Clegg et al., 2016) (Table 4.1), at the hospital emergency front door or on the inpatient wards, where simple pragmatic case-finding tools are often employed (Royal College of Physicians, 2013; British Geriatrics Society, 2014a; Health Improvement Scotland, 2015).

Adequate assessments and interventions for frailty are important. Survival plots using primary care data in England suggest that those with severe frailty are at higher risk of dying by a factor of five (Bates et al., 2014). A ten-year prospective cohort study involving community-dwelling older people identified frailty to be the leading cause of death, accounting for 28% of deaths compared to organ failure (21%), cancer (19%), dementia (14%) and other causes (15%) (Clegg et al., 2013).

Falls are a common reason for admission to hospital and have come to the attention of policy-makers and payers. Frailty is known to be an independent predictor of falls, and figures over the last five years show that Ireland had spent an estimated €520 million on falls, while in the Netherlands fractures were estimated to have led to 80% of fall-related costs, amounting to approximately €540 million between 2007 and

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

Table 4.1 *Adjusted 1, 3 and 5 year hazard ratios for outcomes of mortality, unplanned hospitalization and nursing home admission for older people with mild, moderate and severe frailty*

Outcome	Mild frailty (HR, 95% CI)	Moderate frailty (HR, 95% CI)	Severe frailty (HR, 95% CI)
1 year mortality	1.92 (1.81–2.04)	3.10 (2.91–3.31)	4.52 (4.16–4.91)
3 year mortality	1.77 (1.71–1.83)	2.78 (2.68–2.89)	3.99 (3.79–4.20)
5 year mortality	1.72 (1.68–1.77)	2.64 (2.57–2.72)	3.83 (3.68–3.99)
1 year unplanned hospitalization	1.93 (1.86–2.01)	3.04 (2.90–3.19)	4.73 (4.43–5.06)
3 year unplanned hospitalization	1.78 (1.74–1.82)	2.63 (2.55–2.71)	3.76 (3.60–3.94)
5 year unplanned hospitalization	1.71 (1.68–1.74)	2.50 (2.44–2.56)	3.43 (3.31–3.58)
1 year nursing home admission	1.89 (1.63–2.15)	3.19 (2.73–3.73)	4.76 (3.92–5.77)
3 year nursing home admission	1.67 (1.56–1.80)	2.60 (2.40–2.82)	3.55 (3.19–3.96)
5 year nursing home admission	1.59 (1.51–1.67)	2.30 (2.18–2.44)	3.12 (2.88–3.38)

Note: For all outcomes the comparator is fit older people. All data adjusted for age and sex. NB: Hospitalization outcome for external validation cohort includes only those practices (n = 158) with Hospital Episode Statistics (HES) linked data. CI: confidence interval; HR: hazard ratio.

Source: Clegg et al., 2016

2009. In England alone, falls in older people have been estimated to cost the National Health Service £2 billion annually (Fenton, 2014). Across Europe and other high income countries, the estimated costs of falls to health care services are significant.

Minimizing harm in frail older people in hospital

Older people are at significant risk of "harm" often associated with their care and medicalization of their illnesses. Polypharmacy, falls, hospital-acquired infections, malnutrition and immobility are some of

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

the common problems that arise, which can lead to increased morbidity and mortality of older patients admitted to hospital (Barber et al., 2009; Oliver, Foot & Humphries, 2014). Bed rest in itself has also been associated with a range of harms where 10 days of bed rest in healthy older adults can lead to a 14% reduction in leg and hip muscle strength, and a 12% reduction in aerobic capacity (Oliver, Foot & Humphries, 2014). Older people often already have decreased physical function which may be negatively affected by hospitalization. They also have poorer functional outcomes and are less likely to recover from their problems in hospital (Covinsky et al., 2003; Kleinpell, Fletcher & Jennings, 2008; Mudge, O'Rourke & Denaro, 2010).

Models of pre-hospital care

The role of primary care in care coordination and urgent access

Frail older people pose a challenge to primary care although family physicians are ideally posed to incorporate the identification and management of frailty in their practice (Lacas & Rockwood, 2012). Countries are increasingly implementing more proactive personalized care planning, care coordination and case management to enhance primary care services for (frail older) people with one or more long-term conditions (Coulter et al., 2015). These care provisions are often provided by specialist nurses and therapists as well as volunteers in the care sector (Kringos et al., 2013; Bienkowska-Gibbs et al., 2015). At the same time, when the health or independence of older people rapidly deteriorates, it is important to ensure rapid access to urgent care, including effective alternatives to hospital (Oliver, Foot & Humphries, 2014; NHS Benchmarking, 2015). The following sections describe selected models that are being implemented in different settings to meet this need in particular.

Rapid community response teams

Older people with frailty are at a higher risk of unplanned hospital admissions (Boutsioli, 2012; Sona et al., 2012; Wittenberg et al., 2014). In England alone, up to 42% of emergency admissions in 2011 came from care homes with older people who were within the last six months

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

of their life; these patients also often had multiple admissions in the year leading up to death (Smith et al., 2015).

Rapid response teams can offer specialist advice and improve the care for frail older people with long-term conditions (Oliver, Foot & Humphries, 2014; Wittenberg et al., 2014; NHS Benchmarking, 2015). These services may variously include geriatricians, GPs, specialist nurses, physiotherapists, occupational therapists, and sometimes others such as pharmacists, social workers, personal care assistants or generic rehabilitation assistants to address the complex medical needs of frail older people where time is of the essence, and without which the episode may result in hospital admission. These teams can also collaborate with ambulance organizations to divert patients to the community rapid response team and towards the community team. They are most likely to be effective when able to see patients within hours and when they have a range of skills within the team (NHS Benchmarking, 2016; Shepperd et al., 2016).

Ambulatory care clinics

Ambulatory care clinics are defined as units that provide preventative intervention and chronic disease management services for frail older people who may be at risk of future hospital admission (Oliver, Foot & Humphries, 2014). Ambulatory care clinics can be located in hospital outpatient settings or in primary care, and led by GPs or specialist clinicians with a range of multidisciplinary staff that can include pharmacists and social workers to optimize care of the frail older patient. Ambulatory care clinics or "one-stop" frailty clinics are an emerging service in France that provides assessment, management and support for older people with the aim of preventing and minimizing disability among those who are fit enough to attend such services (Tavassoli et al., 2014) and uses a collaborative approach with primary care and other allied professionals (Box 4.2). The overall evidence for impact of such service models remains weak, although a recent randomized controlled trial in Sweden demonstrated improved survival, and reduced length of stay in hospital without increasing cost up to three years after assessment (Ekdahl, Alwin & Eckerblad, 2016). In the United Kingdom, rapid access ambulatory care clinics in community hospitals have shown that frail older patients who are referred from primary care, ambulance services and community teams can be seen more quickly and closer to home,

Box 4.2 Gerontopole frailty clinic

A geriatric frailty clinic (structured as a day hospital unit) was established in 2011 in Toulouse, France, for frail people above the age of 65 years, who were referred by their GP, geriatrician or specialist to undergo a multidisciplinary evaluation to assess frailty and underlying risk factors for disability. During a two-year period the clinic assessed over 1000 people and a personalized prevention plan was developed to optimize their care in the community. The unit was led by a physician with ad hoc training in geriatrics at the university hospital outpatient clinic. The physician coordinating the evaluation was supported by other health care professionals (in particular, nurses, nutritionists, neuropsychologists and physical therapists) in the development of a personalized plan of intervention. This was then shared with the person's GP in order to make them aware of the recommendations and promote adherence to the preventive programme. A month after the assessment at the clinic a nurse would make a follow-up call to the patient to ensure that the interventions agreed had been undertaken; if a further deterioration in health was detected at this time, further action/plans were put in place to remedy the situation, where possible through the local GP responsible. This service focuses on secondary prevention for frail older people still completely autonomous in their basic activities of daily living. It was found that almost 94% of patients referred to the service were either frail or pre-frail, according to Fried's definition of frailty.

Source: Tavassoli et al., 2014

with a MDT addressing complex care needs effectively, and figures show that only up to 20% of those referred are transferred on to the nearest acute centre, with 56% discharged home or to their previous care setting (Koduah et al., 2014).

Community hospitals and intermediate care units

In Europe, community hospitals are increasingly being (re)considered as a means to address the care needs of older people in particular and are predominantly staffed by GPs and nurses, with some specialist input

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

(Winpenny et al., 2016). These often provide pre- and post-hospital care and so bridge the gap between care received for an acute illness prior to discharge to home (Oliver, Foot & Humphries, 2014). One recent example is the introduction, in 2012, of municipal acute care beds in Norway, which are organized as part of the municipal health services together with GPs, local emergency services, long-term care services and other parts of social care (Swanson & Hagen, 2016). They are targeted at stable patients who need monitoring or close follow-up from acute illnesses, often exacerbated by chronic medical conditions. Evidence from community hospital-type set-ups are mainly observational in nature, and evaluation of their effectiveness is still lacking (World Health Organization, 2015).

Models of hospital care

Across Europe frail older people account for approximately 20% of total attendance to emergency departments (Sona et al., 2012). The majority of people over 50 years old attending emergency departments have multiple long-term conditions (Quality Watch, 2015). One important response is hospital care based on comprehensive geriatric assessment as the underpinning tenet of assessment and management. The models described in this section can be found in different European countries, although we also consider successful models from other developed health care systems such as the United States.

Comprehensive geriatric assessment for frail older inpatients

Comprehensive geriatric assessment (CGA) is a process of assessing an older person's medical, psychological, physical and social functioning to inform the use of specific interventions and then develop and implement a plan for ongoing treatment and follow-up. There is good evidence from meta-analysis of numerous studies from several European countries that comprehensive interdisciplinary assessment of older people presenting to hospital delivers long-term benefits in terms of survival and the ability to remain in their own homes with less cognitive decline (Ellis et al., 2011). Because this is an iterative process rather than a discrete event, a CGA initiated in hospital can be continued in a person's own home to fully assess the need for support and so enable the frail older person to remain within their own environment (Ellis et al., 2011).

CGA is multidisciplinary, although outcomes are best with a specialist geriatrician leadership or input team on admission of the patient (Ellis et al., 2011; Oliver, Foot & Humphries, 2014). In the United Kingdom standards of care and assessment have been set out by national leadership bodies (British Geriatrics Society, 2014b; Health Improvement Scotland, 2015). Across Europe CGA is gaining momentum and is being used to assess and optimize frailty for a variety of medical and surgical conditions, and as a predictor of adverse outcomes. For examples, see Kristjansson et al. (2010) and Molina-Garrido & Guillén-Ponce (2011).

A recent review of the practice of CGA in high income countries in Europe, North America and Taiwan showed that only 32% of interdisciplinary geriatric consultation teams had used any formal CGA screening aid in intervention decisions. Also, while nurses formed key members of teams, their roles and responsibilities tended not to be clearly identified (Deschodt et al., 2016). There is a need to place implementation barriers of CGA into local contexts and so effectively address its effectiveness, culture change, educational needs of practitioners, research and evolving requirements of service provision (Gladman et al., 2016).

Specialist models of acute hospital care for people with frailty

Acute frailty services are specialist units that focus on specialized and tailored care for complex frail older people at, or close to, the hospital front door and with a focus on older people in the first phase of hospital admission. Where possible, they aim to assess and stabilize patients with a view to early discharge before they move to "deeper" wards within the hospital (Acute Frailty Clinical Network, 2015; Royal College of Physicians, 2015; Oliver, 2016c). There are different models in various acute settings but the most common models include: emergency department-based models and acute frailty units (Van Craen et al., 2010; Deschodt et al., 2013; Conroy et al., 2014).

Emergency department-based geriatrics and frailty services provide specialist geriatric input in decision-making for frail older people who attend the emergency department; other objectives include providing a multidisciplinary assessment using CGA and initiatives to reduce admission rates (Blakemore, 2012). Specialized nurses, who are experienced in falls, dementia, mental health and continence, are often available within these teams to provide support in hospital and coordinate better specialist care in the community at discharge. The overall evidence for emergency

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

frailty units remains weak, with the majority of care models being trials of transitional care, which is a relatively novel concept of providing care for older people (Conroy & Chikura, 2015). Implementation of such care models in the emergency department remains challenging because of the complexity involved in identifying frailty, including the lack of standardized frailty instruments and poor understanding of frailty and the absence of clinical guidelines of frailty management in the emergency setting (Dent et al., 2016).

Acute frailty units, also referred to as "acute geriatric evaluation and management units", are inpatient wards at or close to the hospital "front door" that admit frail older people for assessments, treatment, review and rehabilitation through the use of CGA (Van Craen et al., 2010). A meta-analysis by Van Craen et al. (2010) of American, Austrian, German and Norwegian studies found that acute frailty units showed a significant positive impact on functional decline at discharge and institutionalization at one year. It also demonstrated that multidisciplinary CGA added value to those who were admitted to hospital by meeting the specific needs of frail older people and resulting in higher satisfaction of care provided to the patient.

European countries are at different stages in the development of acute frailty or acute geriatric units, which tend to be concentrated in larger cities, mainly because of the uneven distribution of geriatricians (Kolb, Topinkova & Michel, 2011; Ekdahl et al., 2012) and poor availability outside major centres. Whereas geriatric medicine is the largest internal medical speciality in the United Kingdom (Royal College of Physicians of London, 2015) and acute frailty units are found in small and medium-sized hospitals (Acute Frailty Clinical Network, 2015; NHS Benchmarking, 2016), it is not as well established in many European countries (EUGMS Survey, in press). For example, in Denmark and Sweden specialist geriatric units tend to be based at tertiary hospitals where frail older people undergo assessments that aid further planning of care. In smaller hospitals, geriatric care is embedded within general internal medicine departments on the whole (Kolb, Topinkova & Michel, 2011; Ekdahl et al., 2012).

Delirium units and teams

Delirium units often coexist with dementia wards because of the common coexistence of the two conditions and similar management strategies

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

that are employed to support patients (Lam et al., 2014). Delirium is so widely prevalent among older hospital inpatients that it is unlikely that specialist delirium units could ever look after all patients or that it is possible or desirable to cohort them all in one clinical area (National Institute for Health and Care Excellence, 2010; Oliver, 2016a). And so, it is equally important to ensure that all staff caring for frail older people are able to recognize, prevent and manage delirium and that specialist teams are able to provide support and training of other staff.

One example is the Hospital Elder Life Programme (HELP), which was developed in the USA in 1993; it involves the use of a "multicomponent strategy" with multidisciplinary specialist teams who provide structured support to older people with delirium (Young & Inouye, 2007). HELP has been implemented in more than 11 countries across more than 100 sites (Steelfisher et al., 2013). It has been shown to be cost- and clinically effective, with reduced rates of delirium and functional decline, including the prevention and exacerbation of chronic medical conditions, with improved satisfaction among providers, patients and family (National Institute for Health and Care Excellence, 2010). Health Improvement Scotland is driving a national programme to prevent, recognize and improve outcomes in people with delirium and to share best practice (Health Improvement Scotland, 2016). The European Delirium Association now also has a network to share best practice and research across Europe.

Geriatric–surgical collaboration and liaison for frail older people

Not all frail older people are admitted under geriatric medicine and therefore it is crucial to provide CGAs where possible to optimize the care and health of older people admitted under different specialties. The more familiar and most widely developed liaison service across Europe is orthogeriatric collaboration with available evidence demonstrating cost-effectiveness and significant associations with reduced mortality rates in frail older people with fragility fractures (Sabharwal & Wilson, 2015; Knobe & Pape, 2016; Ozalp & Aspray, 2016). In Germany and Austria the explicit implementation of geriatric trauma centres has been developed where hip fracture patients are co-managed with common ward rounds between geriatricians, orthopaedic surgeons and specialized nurses (Kammerlander et al., 2011; Pape et al., 2014). In the United Kingdom the development of a fracture liaison service has been

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

promoted as a "model of best practice" to provide optimum care to frail older people with hip fractures; a recent analysis of data from 11 hospitals in England points to significant improvements in mortality post surgery (British Orthopaedic Association, 2007; Hawley et al., 2016).

General surgical liaison is now a growing field in the United Kingdom, after its initial liaison model was developed specifically to address the needs of older people undergoing surgery, known as the proactive geriatric liaison with older people undergoing surgery (POPS) model (Harari et al., 2007). A survey of 161 hospitals in the United Kingdom showed that there are varying levels of geriatric-led perioperative services being provided across the country, with a combination of preoperative and postoperative services being offered that covers both acute and elective surgery, although barriers include funding, workforce issues, and a lack of inter-specialty collaboration (Partridge et al., 2014).

Other European countries are at different stages of developing medical liaison services as there is clear recognition of the value of geriatric input into the management of complex medical issues. Belgium introduced the "Geriatric Health Care Programme" in 2007 by adopting the development of a geriatric unit that also provides internal and external liaison services to frail older people on non-geriatric wards through similar tenets of CGA and MDT working (Van Den Noortgate & Petrovic, 2009; Baitar et al., 2015). In Ireland the older person assessment and liaison service (OPAL) showed that the service model provided timely CGA, and facilitated effective discharges from hospital, which may be further enhanced by efficient referrals and assessment processes through the use of clinical nurse managers (Hayes et al., 2016).

The role of outpatient clinics

Outpatient clinics in secondary care serve to bridge the gap between hospital care and the community once a patient has been discharged from hospital. They may also assume the role of "specialist" clinics that assess and treat specific conditions such as Parkinson's disease, respiratory or cardiology conditions, as well as falls and syncope clinics. Falls (prevention) clinics have been shown to reduce the incidence of injurious falls among older people by providing specific interventions around falls prevention with the support of physiotherapists and occupational therapists (Moore et al., 2010; Palvanen et al., 2014). Outpatient falls and syncope clinics are sometimes defined as day clinics, where assessments

involve addressing underlying medical conditions to be treated, which are followed by further assessments by the physiotherapist and occupational therapists before an intervention is put into place (Lamb, Gates & Fisher, 2007). Outpatient clinics may also provide day services such as blood transfusion and chemotherapy where appropriate to enable patients to return home without needing inpatient admissions for such procedures. However, the provision of such assessment and follow-up does not necessarily have to happen on hospital sites, especially when travel and repeat attendances could be disruptive and distressing to older people with frailty. In some cases, hospital specialists and skilled MDTs can provide outpatient services in community and primary care settings closer to patients' homes, often in collaboration with primary care teams (British Geriatrics Society et al., 2012; King's Fund, 2014; Gordon, 2015).

End of life care

A study examining the place of death in older people with dementia-related diseases across 14 countries showed that in Europe the proportion of deaths in hospital ranged from 1.6% in the Netherlands to 62.3% in Hungary (31.7% in England, 35.9% in France, 32% in Italy, 33.6% in Spain, 21.6% in Belgium) (Reyniers et al., 2015). A qualitative systematic review of integrated palliative care in Europe found that a palliative care framework is necessary to improve symptom control, lessen care-giver burden, improve continuity and coordination of care, reduce admissions, increase cost-effectiveness and enable patients to die in their preferred place of care (Siouta et al., 2016). In 2010 the National Gold Standards Framework in End of Life Care Centre, a volunteer sector organization in the United Kingdom, was formed to provide support, training, and innovation in delivering better end of life care through advance care planning, with the goal of improving the quality and coordination of care, reducing hospitalization, and enabling more people to live and die at home (Gold Standards Framework, 2012). A 2015 audit on death and dying by the Royal College of Physicians of London (2016) found that of the 93% of patients whose death was predictable and documented, only 54% of case records showed that the needs of the person were asked about, with only 24% of patients having clinically assisted (artificial) hydration; 34% of cases had documented evidence about the need for clinically assisted (artificial) nutrition. Only 67% of hospitals reported that they implemented change to their service by

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

taking into account bereaved family and friends' requests about patient care in their final days (Royal College of Physicians of London, 2016). Between 2005 and 2012 improvements in coverage of palliative care services had been made mostly in western European countries compared to central and eastern European countries, with still significant gaps across services (Centeno-Cortes et al., 2016). There is only one chance to get end of life care right and often this is unfortunately not the case. With a limited number of hospice beds and palliative care specialists available, advance care planning and addressing end of life issues earlier is pivotal, and if the patient does end up in hospital in their final days, then every effort should be made to get it right from the start (Oliver, 2016d; Royal College of Physicians of London, 2016).

Care of older patients with dementia and mental health problems in general hospitals

Dementia encompasses a group of organic brain diseases and the most common forms are Alzheimer's dementia, vascular dementia, mixed dementia (having Alzheimer's and vascular components), Lewy bodies and fronto-temporal dementia (Hackman et al., 2013). The personal, social, and economic costs of dementia are substantial, often complicated by multiple co-morbidities or frailty. The global estimate of older people living with dementia is expected to increase to 81 million by 2040, of whom 30% will be living in Europe (Kaplan & Berkman, 2011). Hospital patients with dementia are typically more frail, and at risk of significant complications of hospital-acquired infections, delirium, loss of function and unplanned readmissions (Hermann, Muck & Nehen, 2015). They can find hospital admission confusing, which can have a negative impact on their health and well-being both physically and mentally. Many who present with delirium are subsequently found to have dementia after discharge from hospital, with the two often coexisting (Jackson et al., 2016).

Countries across Europe have developed national strategies towards the diagnosis and management of dementia in hospitals and the community (Royal College of Psychiatrists et al., 2013). Specialized and appropriate care in hospital is vital for diagnosis and for supporting frail older people with dementia and their families towards a life that is disability-free and productive as far as possible. The main models of care delivered in acute hospital settings include specialist dementia wards,

liaison psychiatry teams who provide diagnosis and support to patients, and dementia specialist nurses who work both in the hospital and in the community setting. The following discusses each approach in turn.

Specialist dementia wards

Specialist dementia wards have been in development across European hospitals to cater for the needs of older people with dementia (Wilkinson & Hendriks, 2015; O'Connor et al., 2016). Although such specialist units have not demonstrated measurable impact on hospital and primary care utilization, mainly because patients tend to be at the end of life, the experience of patients and their carers were reported to be significantly better compared to care received on general wards (Goldberg et al., 2013). Goldberg et al. (2013) also demonstrated, in a randomized controlled trial of specialist and mental health units, that patients had more positive interactions and engagement with the staff, families perceived the management of confused patients to be more empathetic, and discharge planning was seen to be more efficient. There is variability in terms of the number of beds available in these facilities and length of stay. Components of care include therapy involvement, spaces for patient interaction, a routine that meets the needs of patients with cognitive deficits, volunteer workers, and specialist staff who provide care and tailored plans for individual patients that take into account their social and cultural backgrounds (Hermann, Muck & Nehen, 2015).

Liaison psychiatry for older people

With so many older hospital patients having dementia or mental problems accompanying their other complaints, there is no prospect of all patients being admitted to specialist units, so other models of specialist input matter. Liaison psychiatry or liaison psychological medicine is defined as a specialty that manages people who present with mental and physical symptoms concerned with the interplay between physiological, psychological and social determinants that cause ill health. Liaison psychiatry teams often consist of a MDT which includes psychiatrists, nurses, support workers and therapists (Royal College of Psychiatrists et al., 2013), and liaison psychiatry for older adults is provided either by psychiatrists with an interest in old age psychiatry or by specialist nurses. Liaison psychiatry for older adults (LPOA) has become embedded

in many European hospital settings as part of the routine assessment to improve the quality of life of older people (Mukaetova-Ladinska, 2006). For example, an LPOA service in a tertiary hospital in Portugal found that delirium and dementia accounted for more than 60% of the diagnoses and although the referring complaint was mostly "mood disturbances", it was found that only 24% of these patients had depression, highlighting the poor diagnostic experience of referring clinicians (Nogueira et al., 2013).

Evidence on liaison mental health services points to some benefits for people with dementia, for example increased referral rates for cognitive assessment, better detection and diagnosis, and greater staff confidence in caring for patients with dementia. However, a literature review of dementia care in general hospitals showed that, despite individual case studies demonstrating local benefit, trial evidence around mental health liaison is lacking. Quality of inpatient care improves as a result of these services, but the impact on cost-effectiveness and length of stay remains uncertain (Dewing & Dijk, 2014).

Specialist dementia nurses

The care delivered by specialist nurses has been identified to be of key importance in supporting people with dementia. There has been increasing interest in many settings in developing specialist nurse roles as one approach to improving the care of people with dementia in hospital (Griffiths, Bridges & Sheldon, 2013), and across European countries specialist nurses are being widely used to support frail older people with dementia in acute hospitals and the community (Hermann, Muck & Nehen, 2015). A scoping review of the role of the dementia specialist nurse in acute care working directly with people with dementia and their families for a significant period of time found this model to benefit older people with dementia in hospital and their families (Griffiths, Bridges & Sheldon, 2013).

Models of post-hospital care

Transitional care arrangements that constitute post-hospital care can put pressures on frail older people, and need to be timely and safe to ensure effective and efficient transfers (Allen et al., 2014). Across high income countries various models of post-hospital care are emerging to

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

bridge the gap between hospital and people's homes, with core elements including anticipatory care targeting older people, MDTs, and enhanced interagency working to promote improved outcomes (Philp et al., 2013). These services aim to allow people to leave hospital sooner, reduce the chance of readmission and improve their short- and medium-term health outcomes. This section focuses on a range of models that have been implemented across European countries and describes discharge-to-assess and early discharge approaches, while also considering the role of community geriatricians and of primary care in promoting and supporting post-hospital care in the community. It is sometimes the same teams or referral hubs providing pre-hospital or "step up" care and admission prevention (see Section 2) that are able to provide this transitional or "step down" care and such an arrangement allows for simplicity and continuity of care.

Discharge-to-assess models and early supported discharge

In a discharge-to-assess model, a patient whose acute health needs have been stabilized is subsequently discharged home for rapid assessment of their needs in their own home environment and follow-up of ongoing care by community-based clinicians (Andrew & Rockwood, 2014). An older person who is deemed medically stable for discharge from the emergency department or acute medical unit ward but still requires ongoing support is discharged home with a team of multidisciplinary therapy staff for assessment. A plan of support is put in place immediately; should the patient fail the assessment at home, they would then return to hospital (Silvester et al., 2014). In the United Kingdom a number of local quality improvement studies have shown the benefits of early senior review linked to these models in terms of reduced admission rates, reduced bed occupancy, and higher rates of discharge home within 24 hours of presentation (Fox et al., 2013; Health Foundation, 2013). However, the majority of studies are single case based and there is little robust evidence from controlled trials. Data from such quality studies suggest that effective discharge-to-assess models require timely expert assessment on initial acute presentation to hospital and adequate capacity for medical and nursing care, therapy support, and social care for providing assessment and support at home (Silvester et al., 2014).

Early supported discharge (ESD) enables patients to return home earlier and receive rehabilitation within their own homes. Unlike

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

discharge-to-assess, it tends to rely on more traditional assessment of needs in the hospital setting as the basis for defining ongoing clinical and care needs after discharge. This service is more commonly provided for people who have physical disabilities such as post-acute stroke (Fearon & Langhorne, 2012). In contrast to discharge-to-assess models of care, ESD follows after completion of assessments in the hospital and the patient is found to have met the minimum criteria for transfer back to their own home (Kirk, 2013). EDS is comparatively widely implemented across European countries, with much of the evidence originating from northern Europe and a 2012 Cochrane review concluded that among older patients following stroke, those who were discharged with an ESD service had improved physical outcomes, reduced lengths of stay in hospital, lower dependency rates and reported higher satisfaction with services compared to those receiving conventional services (Fearon & Langhorne, 2012; Mas & Inzitari, 2015).

Hospital at home schemes

A number of countries in Europe have developed innovative models of care in the community to bridge the gap between hospital and home, or to provide extra support at home without hospital admission (Jones & Carroll, 2014; Vilà et al., 2015). Examples include the "hospital at home" model and the "virtual community ward", which enable frail older people to continue to be treated within their familiar environments.

In a hospital at home setting, care is provided within a patient's home, with services similar to those provided in hospital but delivered by a community-based team or hospital-resourced outreach staff through domiciliary visits (Shepperd et al., 2010). There is mixed evidence about the effectiveness of hospital at home services. Systematic reviews of single chronic disease management, such as COPD and heart failure, suggest that patients seem to benefit from the service as the readmission rate is reduced and the system is proving to be more cost-effective. In contrast, frail older people with multiple co-morbidities seem to have an increased rate of readmission (Shepperd et al., 2010; Jeppesen & Jae, 2012; Qaddoura et al., 2015).

End life care seems to be better managed using hospital at home type models. For example, a programme in Barcelona, Spain, found such a service to improve end of life care in patients with terminal illnesses,

with up to 72% choosing to remain at home in their final days with support from the community teams (Vilà et al., 2015). A recent systematic review of home-based end of life care found this to significantly increase the likelihood of dying at home compared with usual care, with some evidence of improved patient satisfaction at one-month follow-up (Shepperd et al., 2016).

Virtual and community wards

Virtual wards also replicate a hospital ward. However, contrary to the hospital at home model, which provides acute clinical care, the virtual ward places emphasis on the integration of medical teams, nursing, therapists and social care to provide a proactive approach of care to people at risk of hospital admission (Jones & Carroll, 2014). They can be used to support discharge ("step down") as well as preventing admission. The evidence of the effectiveness of virtual wards in frail older people with complex multimorbidity remains mixed (Bardsley et al., 2013; National Institute for Health and Care Excellence, 2016). Recent evaluations of virtual wards in four parts of England were unable to demonstrate reductions in cost or hospital bed utilization, although there were some reductions in elective activity (Lewis et al., 2013). Similarly, a randomized controlled trial of a virtual ward for high-risk adult hospital discharge patients in Toronto, Canada, did not find a statistically significant effect of a virtual ward model of care on readmissions or death at different points of time after hospital discharge (Dhalla et al., 2014). Lewis et al. (2013) commented, based on the English experience, that where virtual or community wards are developed locally, this should be motivated by patients' needs and the need to provide care closer to home for those at highest risk, rather than because they will deliver savings (Box 4.3).

The role of community geriatricians

We have discussed the role of geriatricians in hospital care but their role in the community is just as important in providing support to community services for frail older people. In some European countries this is the major part of their work, with acute hospital care being more the province of internal medicine physicians (Kolb, Topinkova & Michel, 2011; Ekdahl et al., 2012; Gordon, 2015). The role of community

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

Box 4.3 "virtual ward hub" services for older patients in Bradford, England

In order to improve integration of services, and because of the need to reduce readmission rates, a virtual ward hub was developed by Bradford Teaching Hospitals NHS Trust in 2012 to provide support to frail older patients who were discharged from the elderly admissions unit and general geriatric wards. The service is geriatrician-led, with typical support involving daily nurse visits and therapy staff depending on the needs of the patient and a shared electronic health records system enabling cross-boundary sharing of information and skills to manage a patient within their home. The team consists of 3 advanced nurse practitioners, 4 physiotherapists, 6 nursing sisters, 19 nurses, 18 rehabilitation support workers, and 2 geriatricians. A typical monthly caseload is approximately 40 patients, with multidisciplinary discussions held three times a week. Bed occupancy across geriatric medicine has reduced by 6% (compared to 1.5% across the rest of the hospital), and there has been a perceived reduction of pressure on the acute hospital. This service is continuing to expand with further development of the hub to take on more patients, co-location with social services, and embedding CGA in all their assessments of frail older patients.

Source: Ryland, 2015

geriatricians includes support for people in nursing and residential facilities, support for community case management teams or virtual wards or discharge teams, and close work with primary care teams to support high-risk patients with frailty (Oliver & Burns, 2016). For example, in the Netherlands and Norway community geriatricians provide specialist care to frail older people residing in nursing homes through CGA with a network of multidisciplinary professionals to optimize care (Verenso, 2015). Community geriatrician involvement in care homes has been linked to a reduction in medications prescribed and optimizing drug treatment, thereby reducing risks of readmission associated with adverse drug reactions (Burns & McQuillan, 2011). Evidence suggests that adverse drug reactions are common in the post-hospitalization period

and this needs to be addressed effectively across transitions of care in order to prevent harm and inconvenience.

Intermediate care rehabilitation services

There are several definitions of intermediate care but the common thread underlying them is the provision of health care services to those who require support in the transitions between acute care, primary care and social care. They vary in their provision of support depending on the needs of the patient to optimize and achieve their baseline function where possible or to provide an environment for further assessments such as CGA to take place (Woodford & George, 2010). The following section discusses each category in turn.

Crisis response teams can take the shape of rapid response teams (see above) that provide step up or step down services. Step up services are targeted at older people who require support in their home or in an intermediate care facility, with the aim of avoiding hospital admission where possible and appropriate. Step down services provide a bridge service for transitions from the emergency department or post discharge from hospital (NHS Benchmarking, 2015).

Home-based intermediate care services are provided within a person's home by a multidisciplinary professional team. In Finland such services are provided by a nurse and home-care aid worker, depending on individualized plans devised by the case manager for a period of time until independence has been restored or regular home care has been put in place (Hammar, Rissanen & Perälä, 2009).

Bed-based intermediate care services overlap with other community-based facilities that are situated within nursing homes or local community hospitals and more commonly accommodate frail older people who have been admitted to hospital and require a period of convalescence and rehabilitation prior to discharge to their home.

Rehabilitation services outside hospital focus on providing a suitable environment to promote functional recovery. Delivered by a MDT, these services aim to meet the rehabilitative goals of service users by concentrating on activities that are important to the individual but which may have been missed in a clinical environment (Pearson et al., 2015). Rehabilitation primarily includes physical therapy and occupational therapy to prevent admission to an acute hospital or facilitate a stepped pathway out of hospital.

Workforce planning in caring for frail older adults

One of the key workforce challenges in the care of frail older adults is a shortage of medical and nursing staff within geriatric care (Kolb, Topinkova & Michel, 2011; Heinen et al., 2013). In the United Kingdom geriatrics is the largest internal medicine speciality with the highest number of training posts. But demand for both geriatric medicine posts and acute internal medicine posts is so high that not all posts are filled currently (Royal College of Physicians of London, 2015). Guidance from the Royal College of Physicians recommends a minimum of one consultant geriatrician per 50 000 population for effective facilitation of geriatric care (Fisher et al., 2014). France, Spain and Ireland have a lower number of geriatricians per capita compared to Belgium, Germany and Switzerland, with vast differences in recruitment and structured training programmes (Kolb, Topinkova & Michel, 2011).

With shortages of geriatrics specialist doctors, nurses and allied health professionals, those in other adult clinical areas all commonly encounter older patients with complex co-morbidities, dementia and frailty as a big part of their core role (British Geriatrics Society, 2014a; Oliver, Foot & Humphries, 2014; Quality Watch, 2015). Non-geriatric trained health care professionals do not always have the competence or confidence to manage frail older people (Alzheimer's Society, 2009). Unfortunately, ageist attitudes persist in parts of the workforce, leading to age discriminatory treatment and service models (Centre for Policy on Ageing, 2009; Economist Intelligence Unit, 2012; British Geriatrics Society, 2014b; World Health Organization, 2015; National Institute for Health and Care Excellence, 2016).

Surveys from North America and Europe have shown that there are shortcomings in the undergraduate curriculum of geriatric medicine for doctors in training, and as a result there are initiatives in place to ensure that resources are allocated towards specialist teaching around geriatric medicine, focusing on attitudes towards older patients, and trying to engage these patients in teaching to enable a broader view of managing frail older patients in practice (Oakley et al., 2014). There are now toolkits available that define core requirements for postgraduate training across Europe in geriatric medicine that can help inform a structured curriculum at the European Union level (Singler et al., 2016).

Nursing staff shortages and issues such as attitudes to older people and the lack of training to work with them are also significant problems

https://doi.org/10.1017/9781108855440.004 Published online by Cambridge University Press

(Capezuti et al., 2012; Heinen et al., 2013). Capezuti et al. (2012) found that geriatric-specific nurse training can contribute to successful recruitment of nurses and provide the high level nursing input required for geriatric patients. Staff development in specialist areas such as dementia is needed to improve their knowledge and competence (Page & Hope, 2013; Hermann, Muck & Nehen, 2015). NHS Education for Scotland in partnership with the Scottish Social Services Council developed a framework for all health and social services staff working with people with dementia, their families and carers in 2011, with four levels of training depending on the amount of contact staff had with the patients (Banks et al., 2014).

Advanced nurse practitioners (ANPs) may carry out CGAs and provide advice about acute care, including managing mental health illnesses, as well as playing a part in rehabilitative medicine and supporting clinical governance, education and innovation (Goldberg et al., 2016). A systematic review of the role of ANPs in long-term residential care concluded that they play a positive role in reducing mental health illnesses, improving urinary continence and pressure ulcer care, improving residents' abilities to meet personal goals and in family satisfaction with medical services (Donald et al., 2013).

Geriatricians are unable to look after all patients with frailty and, with an ageing population, frail older people are seen in all specialties such as surgery, general medicine, and mental health (Bagnall et al., 2013; Oliver, Foot & Humphries, 2014). European countries clearly need an increase in the specialist geriatric medicine workforce as increasingly the core business of acute internal medicine, emergency medicine and general internal medicine is geriatric medicine (Cesari et al., 2016). At the same time, there will never be enough geriatricians or specialist nurses and allied health professionals to look after all older people with frailty and so other specialists will need greater competencies (Oliver & Burns, 2016). This has been recognized in plans for European training curriculums by the European Federation of Internal Medicine (2016 and ongoing).

The challenges facing geriatric medicine call for a new way of collaborative and integrated working across disciplines, and key elements to inform this should include: definition of roles of those managing the patient, goal setting with the patient, team communication between geriatricians and the treating team, care planning with relevant guidelines in place, and leadership to oversee that the overall care is safe,

effective and deliverable (Tsakitzidis et al., 2016). The National Institute for Health and Care Excellence guidelines on managing patients with multimorbidity has set out similar messages (Farmer et al., 2016).

Barriers to delivering optimal and integrated hospital and acute care

The quality of geriatric care depends on available resources, structures and a specialized workforce to deliver acute care, rehabilitation, long-term care and palliative care services; however, countries across Europe vary in terms of how well established their geriatric systems are, with some countries having more developed services compared to others (Kolb, Topinkova & Michel, 2011; EUGMS, 2016). But all doctors, nurses and allied health professionals working in acute internal medical and surgical specialties will care for older people with frailty (Oliver, Foot & Humphries, 2014; Oliver & Burns, 2016). Geriatric training curriculums need to change and evolve to reflect the complexities that surround frail older people and the European Union Geriatric Medicine Society (EUGMS) has now set plans in place to develop a curriculum for "geriatric emergency medicine" for this specific purpose (Bellou & Conroy, 2016).

Care for older people is still very much divided into primary care, secondary care and social care, often with a lack of continuity throughout the process of an older person's journey as they transition through any of these systems (Oliver, Foot & Humphries, 2014). One restructuring process that distributed funding and developed an integrated model of health care provision in New Zealand transformed the way older people were cared for, which subsequently improved waiting times, reduced unplanned readmissions and increased the availability of social care to the older population through their "one budget, one system" philosophy (Timmins & Ham, 2013). The province of Quebec in Canada has also been successful in integrating health and social care through structural organizations, contractual agreements, and the sharing of informatics between these systems of care (Vedel et al., 2011).

Improved information systems will be increasingly important but a systematic review (Lluch, 2011) demonstrated that health information technologies are difficult to implement even though evidence suggests that this does improve exchange of data, and subsequently improves the safety and quality of care provided to older people and those with multiple co-morbidities.

System-level changes are required to deliver quality, coordinated and economically viable care to an ageing population that have co-morbidities as the norm rather than the exception (Jeste, 2011). Some authors have suggested that evidence-based practices need to change from traditional randomized controlled trials that are costly and time-consuming to a more pragmatic approach; with quality improvement gaining momentum, implementation research can add great value to innovation and transferability across systems (Balasubramanian et al., 2015; McGrath et al., 2016; Thompson & Jones, 2016). Some countries in Europe are more advanced on their journey to integrated care than others, with governments prioritizing it on national agendas over the last 20 years, and others are less worried and more confident about future challenges (Economist Intelligence Unit, 2012). Finland, for example, has spent the last 30 years developing centralized integrated care approaches aimed at optimizing care for older people, as well as those with issues with mental health or substance misuse and younger children (Mur-Veeman, van Raak & Paulus, 2008). Integration of long-term care to meet the needs of ageing populations will remain challenging but will be an important area for organizational development, training and research in the future (Leichsenring, 2012).

Geriatricians and other staff groups specializing in coordinated care for older people need to lead the way by using their expertise to enter leadership positions and work in partnership with physicians, researchers, and other health care professionals, which is crucial to achieving a critical mass. Together, they can lead a comprehensive national health agenda for frail older people and advocate ground-breaking policy changes (Nikolich-Zugich et al., 2015).

Conclusion

Older people are increasingly the main focus of much of hospital care. Older people with frailty are at high risk of hospital admissions, increased mortality, and care home utilization, and there is much that the design of hospital services and their associated community and primary care services can do to reduce these issues. There are opportunities from a number of new approaches to the management of care for older people and from changes in how professionals work and how they come together in teams more effectively. The acute hospital remains a centre of care provision to the frail and the vulnerable, but it sits within the

wider context of the community and social care arrangement, where integration of care is vital to the provision of holistic care to people with frailty. There are major challenges from workforce shortages and a need to equip a wide range of professionals with the skills to help them care for older people more effectively. A shift in focus is needed in managing the complex pathway of patients through the health care system and, in many parts of Europe, reducing their dependence on the hospital.

References

Acute Frailty Clinical Network (2015). *Improving services for frail older people*. Updated 2015. Available at https://www.acutefrailtynetwork.org.uk/about-us

Allen J et al. (2014). Quality care outcomes following transitional care interventions for older people from hospital to home: A systematic review. *BMC Health Services Research*, 14(1):346.

Alzheimer's Society (2009). *Counting the Cost. Caring for people with Dementia on Hospital Wards*. Available at: https://www.alzheimers.org.uk/sites/default/files/2018-05/Counting_the_cost_report.pdf

Andrew MK, Rockwood K (2014). Making our health and care systems fit for an ageing population: considerations for Canada. *Can Geriatr J* 17(4):133–5.

Bagnall NM et al. (2013). What is the utility of preoperative frailty assessment for risk stratification in cardiac surgery? *Interact Cardiovasc Thorac Surg*, 17(2):398–402.

Baitar A et al. (2015). Implementation of geriatric assessment-based recommendations in older patients with cancer: A multicentre prospective study. *J Geriatr Oncol, 6*(5):401–10.

Balasubramanian, BA et al. (2015). Learning Evaluation: blending quality improvement and implementation research methods to study healthcare innovations. *Implementation Science*, 10(1):1.

Banks P et al. (2014). Enriching the care of patients with dementia in acute settings? The Dementia Champions Programme in Scotland. *Dementia (London, England)*, 13(6):717–36.

Barber ND et al. (2009). Care homes' use of medicines study: prevalence, causes and potential harm of medication errors in care homes for older people. *Qual Saf Health Care*, 18(5):341–6.

Bardsley M et al. (2013). *Evaluating integrated and community based care*. London, The Nuffield Trust.

Bates C et al. (2014). *First National Frailty Workshop: White Paper*, 1–13.

Bellou A, Conroy S (2016). European Curriculum of Geriatric Emergency Medicine (ECGEM), 1–12.

Bienkowska-Gibbs T et al. (2015). *New organisational models of primary care to meet the future needs of the NHS: a brief overview of recent reports*. RAND Europe. Available at: https://www.rand.org/pubs/research_reports/RR1181.html.

Blakemore S (2012). Emergency frailty unit helps get patients home quicker. *Nursing Older People*, 24(2):6–7.

Boutsioli Z (2012). A simple descriptive analysis of hospital admissions' progress: a case study of the Greatest Public General Hospital, Athens, Greece. *Journal of Hospital Administration*, 1(1):36–41.

British Geriatrics Society (2014a). *Fit for Frailty Part 1. Consensus Practice Guidelines for the Care of People with Frailty*. Available at: https://www.bgs.org.uk/sites/default/files/content/resources/files/2018-05-23/fff_full.pdf

British Geriatrics Society (2014b). *Fit for Frailty Part 2. Developing, commissioning and managing services for older people with frailty in community settings* . Available at: http://www.bgs.org.uk/campaigns/fff/fff2_full.pdf

British Geriatrics Society et al. (2012). *"Silver book": quality care for older people with urgent and emergency care needs*. Available at: www.bgs.org.uk/campaigns/silverb/silver_book_complete.pdf.

British Orthopaedic Association (2007). *The care of patients with fragility fracture*. Available at: https://www.bgs.org.uk/sites/default/files/content/attachment/2018-05-02/Blue%20Book%20on%20fragility%20fracture%20care.pdf

Burns E, McQuillan N (2011). Prescribing in care homes: the role of the geriatrician. *Ther Adv Chronic Dis*, 2(6):353–8.

Capezuti E et al. (2012). Nurses Improving Care for Healthsystem Elders – a model for optimising the geriatric nursing practice environment. *J Clin Nurs*, 21(21–22):3117–25.

Centeno-Cortes C et al. (2016). Coverage and development of specialist palliative care services across the World Health Organization European Region (2005–2012): Results from a European Association for Palliative Care Task Force survey of 53 countries. *Palliat Med*, 30(4):351–62.

Centre for Policy on Ageing (2009). *Ageism and Age-Discrimination in health and social care in the UK*. Available at: http://www.cpa.org.uk/agediscrimination/age_discrimination.html.

Cesari M et al. (2016). The geriatric management of frailty as paradigm of "The end of the disease era". *Eur J Intern Med*, 31:11–14.

Clegg A et al. (2013). Frailty in elderly people. *Lancet*, 381(9868):752–62.

Clegg A et al. (2016). Development and validation of an electronic frailty index using routine primary care electronic health record data. *Age and Ageing*, 45(3):353–60.

Conroy S, Chikura G (2015). Emergency care for frail older people — urgent AND important — but what works?, *Age and Ageing*, 44(5):724–5.

Conroy SP et al. (2014). A controlled evaluation of comprehensive geriatric assessment in the emergency department: the "Emergency Frailty Unit". *Age and Ageing*, 43(1):109–14.

Coulter A et al. (2015). Personalised care planning for adults with chronic or long term health conditions. *Cochrane Database Syst Rev*, 3:CD010523

Covinsky KE et al. (2003). Loss of independence in activities of daily living in older adults hospitalized with medical illnesses: Increased vulnerability with age. *J Am Geriatr Soc*, 51(4):451–8.

Cowling TE et al. (2014). Emergency Hospital Admissions via Accident and Emergency Departments in England: Time Trend, Conceptual Framework and Policy Implications. *J R Soc Med*, 107(11):432–8.

Creighton H (2014). *Europe's Ageing Demography*. Available at: https://ilcuk.org.uk/wp-content/uploads/2019/11/Europes-Ageing-Demography.pdf

Curry N, Ham C (2010). *Clinical and service integration: the route to improved outcomes*. London, The King's Fund, 1–64.

Dent E et al. (2016). Frailty in emergency departments. *Lancet*, 387(10017).

Deschodt M et al. (2013). Impact of geriatric consultation teams on clinical outcome in acute hospitals: a systematic review and meta-analysis. *BMC Med*, 11:48.

Deschodt M et al. (2016). Structure and processes of interdisciplinary geriatric consultation teams in acute care hospitals: A scoping review. *Int J Nurs Stud*, 55:98–114.

Dewing J, Dijk S (2014). What is the current state of care for older people with dementia in general hospitals? A literature review. *Dementia (London)*, 15(1):106–24.

Dhalla IA et al. (2014). Effect of a Postdischarge Virtual Ward on Readmission or Death for High-Risk Patients. *JAMA*, 312(13):1305.

Donald F et al. (2013). A systematic review of the effectiveness of advanced practice nurses in long-term care. *JoJ Adv Nurs* 69(10):2148–61.

Economist Intelligence Unit (2012). *A new vision for old age. Rethinking health policy for Europe's ageing society*. Available at: https://www.learneurope.eu/files/5613/7525/7796/Repensando_la_poltica_de_salud_sociedad_europea_envejecida.pdf

Ekdahl A, Alwin J, Eckerblad J (2016). Long-Term Evaluation of the Ambulatory Geriatric Assessment: A Frailty Intervention Trial (AGe-FIT): Clinical Outcomes and Total Costs After 36 Months. *J Am Med Dir Assoc*, 17(3):263–8.

Ekdahl A et al. (2012). Geriatric care in Europe – the EUGMS survey part II: Malta, Sweden and Austria. *European Geriatric Med*, 3(6):388–91.

Ellis G et al. (2011). Comprehensive geriatric assessment for older adults admitted to hospital. *Cochrane Database Syst Rev,* 7:CD006211.

EUGMS (2016). 12th International EUGMS Congress. Lisbon, Portugal.
EUGMS Survey (in press). EUGMS National Societies Profile – questionnaire 2016. Contact: Anne Ekdahl.
European Federation of Internal Medicine (2016 and ongoing). *Internal medicine curriculum project*. Available at: http://www.efim.org/about/ebim-curriculum-project (accessed 6 February 2020).
European Institute (2012). *The future of healthcare in Europe*. Available at: https://www.medischcentrumhuisartsen.be/documents/focus/future-health-care-challenges-in-europe.pdf
Farmer C et al. (2016). Clinical assessment and management of multimorbidity: summary of NICE guidance. *BMJ*, 354:i4843.
Fearon P, Langhorne P (2012). Services for reducing duration of hospital care for acute stroke patients. *Cochrane Database Syst Rev*, 9:CD000443.
Fenton K (2014). The *human cost of falls*. Publisher? Available at: https://publichealthmatters.blog.gov.uk/2014/07/17/the-human-cost-of-falls/ (accessed 25 July 2016).
Fisher JM et al. (2014). Geriatric medicine workforce planning: a giant geriatric problem or has the tide turned? *Clin Med* 14(2):102–6.
Fox G et al. (2013). Introducing interface geriatricians in Leeds. *British Geriatrics Society Newsletter*.
Gladman JRF et al. (2016). New horizons in the implementation and research of comprehensive geriatric assessment: Knowing, doing and the "know-do" gap. *Age Ageing*, 45(2):194–200.
Gold Standards Framework (2012). *NHS National End of Life Care Programme*. Available at: www.goldstandardsframework.org.uk.
Goldberg SE et al. (2013). Care in specialist medical and mental health unit compared with standard care for older people with cognitive impairment admitted to general hospital: randomised controlled trial (NIHR TEAM trial). *BMJ*, 347(1):f4132.
Goldberg SE et al. (2016). Development of a curriculum for advanced nurse practitioners working with older people with frailty in the acute hospital through a modified Delphi process. *Age Ageing*, 45(1):48–53.
Gordon A (2015). Editorial Comment. Specialist services in the community: A qualitative study of consultants holding novel types of employment contracts in England. *Future Hos J*, 2:180–1.
Griffiths P, Bridges J, Sheldon H (2013). *Scoping the role of the dementia nurse specialist in acute care*. University of Southampton, 1–37. Available at: https://eprints.soton.ac.uk/349714/1/dementia%2520specialist%2520nurses%2520appendices.pdf
Hackman E et al. (2013). Reducing patient distress: a model for dementia care. *Br J Nurs*, 22(4):2–6.

Hammar T, Rissanen P, Perälä ML (2009). The cost-effectiveness of integrated home care and discharge practice for home care patients. *Health Policy*, 92(1):10–20.

Harari D et al. (2007). Proactive care of older people undergoing surgery ('POPS'): Designing, embedding, evaluating and funding a comprehensive geriatric assessment service for older elective surgical patients. *Age Ageing*, 36(2):190–6.

Hawley S et al. (2016). Clinical effectiveness of orthogeriatric and fracture liaison service models of care for hip fracture patients: population-based longitudinal study. *Age Ageing*, 45(2):236–42.

Hayes M et al. (2016). An older person assessment and liaison service in an Irish university teaching hospital: a mixed methods critical analysis. *Age Ageing*, 45(s2):ii13–ii56.

Health Foundation (2013). *Improving patient flow: how two trusts focused on flow to improve the quality of care and use available capacity effectively*. London, The Health Foundation.

Health Improvement Scotland (2015). *Older people in acute care (OPAC) standards*. Available at: http://www.healthcareimprovementscotland.org/our_work/person-centred_care/resources/opah_standards.aspx.

Health Improvement Scotland (2016). *Delirium toolkit*. Available at: https://ihub.scot/project-toolkits/delirium-toolkit/delirium-toolkit/ (accessed 6 February 2020)

Heinen MM et al. (2013). Nurses' intention to leave their profession: a cross sectional observational study in 10 European countries. *Int J Nurs Stud*, 50(2):174–84.

Hermann DM, Muck S, Nehen H-G (2015). Supporting dementia patients in hospital environments: health-related risks, needs and dedicated structures for patient care. *Eur J Neurol*, 22(2):239–e18.

Jackson T et al. (2016). Undiagnosed long-term cognitive impairment in acute hospitalised older patients with delirium. A prospective cohort study. *Age Ageing*, 45(4):505–11.

Jeppesen WE, Jae W (2012). Hospital at home for acute exacerbations of chronic obstructive pulmonary disease (Review). *Cochrane Database Syst Rev*, 5: CD003573

Jeste DV (2011). Promoting successful ageing through integrated care. *BMJ (Clinical research ed.)*, 343:d6808.

Jones J, Carroll A (2014). Hospital admission avoidance through the introduction of a virtual ward. *Br J Community Nurs* 19(7):330–4.

Kammerlander C et al. (2011). The Tyrolean Geriatric Fracture Center: an orthogeriatric co-management model. *Zeitschrift für Gerontologie und Geriatrie*, 44(6):363–7.

Kaplan DB, Berkman B (2011). Dementia care: a global concern and social work challenge. *International Social Work*, 54(3):361–73.

King's Fund (2014). *Specialists in out-of-hospital settings*. Available at: https://www.kingsfund.org.uk/publications/specialists-out-hospital-settings (accessed 6 February 2020)

Kirk H (2013). *Early Supported Discharge*. National University Hospital. Available at: http://www.nuh.com.sg/patients-and-visitors/patients-and-visitors-guide/admissions/nuh-2-home/early-supported-discharge.html.

Kleinpell RM, Fletcher K, Jennings BM (2008). Reducing functional decline in hospitalized elderly. In: *Patient Safety and Quality: An Evidence Based Handbook for Nurses*. Agency for Healthcare Research and Quality: Available at: http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=nursehb&part=ch11.

Knobe M, Pape HC (2016). Focus on co-management in geriatric fracture care. *Eur J Trauma Emerg Surg*, 42(5):533–5.

Koduah DY et al. (2014). Reducing inappropriate admissions of older people into acute hospitals: the role of a rapid access clinic in a community hospital. *Age Ageing*, 43(s1):i3.

Kolb G, Topinkova E, Michel JP (2011). Geriatric care in Europe – the EUGMS Survey part I : Belgium, Czech Republic, Denmark, Germany, Ireland, Spain, Switzerland, United Kingdom. *European Geriatric Med*, 2(5):290–5.

Kringos D et al. (2013). The strength of primary care in Europe: An international comparative study. *Br J Gen Pract*, 63(616):742–50.

Kristjansson SR et al. (2010). Comprehensive geriatric assessment can predict complications in elderly patients after elective surgery for colorectal cancer: a prospective observational cohort study. *Crit Rev Oncol Hematol*, 76(3):208–17.

Lacas A, Rockwood K (2012). Frailty in primary care: a review of its conceptualization and implications for practice. *BMC Med*, 10(1):1.

Lam CY et al. (2014). Prospective observational study of delirium recovery trajectories and associated short-term outcomes in older adults admitted to a specialized delirium unit. *J Am Geriatr Soc*, 62(9):1649–57.

Lamb S, Gates S, Fisher J (2007). *Scoping exercise on fallers' clinics: Report to the National Co-ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO)*. London Publisher?. Available at: https://njl-admin-test.nihr.ac.uk/document/download/2089827

Leichsenring K (2012). Integrated care for older people in Europe – latest trends and perceptions. *International Journal of Integrated Care*, 12(Jan):1–4.

Lewis G et al. (2013). Integrated Care Case virtual ward model: lessons in the process of care integration from 3 case sites. *Int J Integr Care*, 13(Nov):1–11.

Lluch M (2011). Healthcare professionals' organisational barriers to health information technologies – A literature review. *Int J Med Inform*, 80(12):849–62.

Mas MA, Inzitari M (2015). A critical review of early supported discharge for stroke patients. From evidence to implementation into practice. *Stroke*, 10:7–12.

McGrath K et al. (2016). Rehabilitating the revolving door: reducing readmissions – a multi-disciplinary quality improvement project. *Age Ageing*, 45(s2):ii1–ii12.

Melzer D et al. (2015). *The Age UK almanac of disease profiles in later life*. Age UK.

Molina-Garrido MJ, Guillén-Ponce C (2011). Development of a cancer-specific Comprehensive Geriatric Assessment in a University Hospital in Spain. *Crit Rev Oncol Hematol*, 77(2):148–61.

Moore M et al. (2010). Translating a multifactorial fall prevention intervention into practice: a controlled evaluation of a fall prevention clinic. *J Am Geriatr Soc*, 58(2):357–63.

Mudge AM, O'Rourke P, Denaro CP (2010). Timing and risk factors for functional changes associated with medical hospitalization in older patients. *J Gerontol A Biol Sci Med Sci*, 65 A(8):866–72.

Mukaetova-Ladinska EB (2006). Towards living long and being healthy – the challenge for liaison psychiatric services for older adults. *Age Ageing*, 35(2):103–5.

Mur-Veeman I, van Raak A, Paulus A (2008). Comparing integrated care policy in Europe: Does policy matter? *Health Policy*, 85:172–83.

National Institute for Health and Care Excellence (2010). *Clinical guideline 103. Delirium: prevention, diagnosis and management*. Available at: https://www.nice.org.uk/guidance/CG103/chapter/Introduction.

National Institute for Health and Care Excellence (2016). *Multimorbidity: clinical assessment and management*. Available at: https://www.nice.org.uk/guidance/ng56

NHS Benchmarking (2013). *National Audit of Intermediate Care Report, p.110*. Available at: www.nhsbenchmarking.nhs.uk/National-Audit-of-Intermediate-Care/year-two.php.

NHS Benchmarking (2015). *National Audit of Intermediate Care*. Available at: http://www.nhsbenchmarking.nhs.uk/CubeCore/.uploads/NAIC/Reports/NAICReport2015FINALA4printableversion.pdf.

NHS Benchmarking (2016). *Older people's care in acute care settings*. Available at: http://www.bgs.org.uk/pdfs/1216_op_benchmarking_report.pdf.

Nikolich-Zugich J et al. (2015). Preparing for an Aging World: Engaging Biogerontologists, Geriatricians, and Society. *JJ Gerontol A Biol Sci Med Sci*, 71(4):435–44.

Nogueira V et al. (2013). Improving quality of care: focus on liaison old age psychiatry. *Ment Health Fam Med*, 10(3):153–8.

Oakley R et al. (2014). Equipping tomorrow's doctors for the patients of today. *Age Ageing*, 43(4):442–7.

O'Connor EO et al. (2016). Making a medicine for the elderly ward dementia friendly-phase 1. *Age Ageing*, *45*(s2):ii13–ii56.

Oliver D (2016a). Delirium Matters. *BMJ*, *353*:i2886.

Oliver D (2016b). *End-of-life care: getting it right for more people, more of the time*. London, The King's Fund Available at: https://www.kingsfund.org.uk/blog/2016/07/end-life-care-getting-it-right.
Oliver D (2016c). Frailty in Acute Care. *BMJ*, 354:i5195.
Oliver D (2016d). *What if there were community services for older people 24/7?* London, The King's Fund Available at: http://www.kingsfund.org.uk/reports/thenhsif/what-if-community-services-older-people/.
Oliver D, Burns E (2016). Geriatric medicine and geriatricians in the UK. How they relate to acute and general internal medicine and what the future might hold? *Future Hosp J*, 3(1):49–54.
Oliver D, Foot C, Humphries R (2014). *Making our health and care systems fit for an ageing population*. London, The King's Fund.
Ozalp B, Aspray TJ (2016). Orthogeriatric medicine and fracture liaison going from strength to strength. *Age Ageing*, 45(2):180–1.
Page S, Hope K (2013). Towards new ways of working in dementia: perceptions of specialist dementia care nurses about their own level of knowledge, competence and unmet educational needs.J Psychiatr Ment Health Nurs, 20(6):549–56.
Palvanen M et al. (2014). Effectiveness of the Chaos Falls Clinic in preventing falls and injuries of home-dwelling older adults: a randomised controlled trial. *Injury*, 45(1):265–71.
Pape H-C et al. (2014). Development of geriatric trauma centers – an effort by the German Society for Trauma and Orthopaedics. *Injury*, 45:1513–15.
Partridge JSL et al. (2014). Where are we in perioperative medicine for older surgical patients? A UK survey of geriatric medicine delivered services in surgery. *Age Ageing*, 43(5):721–4.
Pearson M et al. (2015). Providing effective and preferred care closer to home: a realist review of intermediate care. *Health Soc Care Community*, 23(6):577–93.
Philp I et al. (2013). Reducing hospital bed use by frail older people: results from a systematic review of the literature. *Int J Integr Care*, 13(Dec):e048.
Qaddoura A et al. (2015). Efficacy of hospital at home in patients with heart failure: a systematic review and meta-analysis. *PloS One*, 10(6):1–15.
Quality Watch (2015). *Focus on A&E attendances. Nuffield Trust*. Available at: https://www.nuffieldtrust.org.uk/files/2018-10/qualitywatch-a-and-e-attendances.pdf
Radvansky M (2014). *Effects of demographic changes on hospital workforce in European countries*. Bratislava.
Reyniers T et al. (2015). International variation in place of death of older people who died from dementia in 14 European and non-European countries. *J Am Med Dir Assoc*, *16*(2):165–71.
Rockwood K, Mitnitski A (2011). Frailty Defined by Deficit Accumulation and Geriatric Medicine Defined by Frailty. *Clin Geriatr Med*, 27(1):17–26.

Royal College of Physicians of London (2013). *Acute care toolkit 3: Acute medical care for frail older people*. London, Royal College of Physicians Available at: https://www.rcplondon.ac.uk/guidelines-policy/acute-care-toolkit-3-acute-medical-care-frail-older-people.

Royal College of Physicians of London (2015). *2014–15 Census of consultants and registrars*. Available at: https://www.rcplondon.ac.uk/projects/outputs/2014-15-census-uk-consultants-and-higher-specialty-trainees

Royal College of Physicians of London (2016). *End of Life Care Audit – Dying in Hospital. Healthcare Quality Improvement Partnership*. Available at: https://www.rcplondon.ac.uk/projects/outputs/end-life-care-audit-dying-hospital-national-report-england-2016.

Royal College of Psychiatrists et al. (2013). *National Audit of Dementia Care in General Hospitals 2012–13: Second Round Audit Report and Update*, 2–77.

Ryland E (2015). *Effect of a "discharge to assess" Geriatrician-led Virtual ward promoting integration of services on rates of discharge*. Yorkshire & Humber AHSN.

Sabharwal S, Wilson H (2015). Orthogeriatrics in the management of frail older patients with a fragility fracture. *Osteoporosis International*, 26(10):2387–99.

Shah SM et al. (2010). Identifying the clinical characteristics of older people living in care homes using a novel approach in a primary care database. *Age Ageing*, 39(5):617–23.

Shepperd S et al. (2010). Discharge planning from hospital to home. *Cochrane Database Syst Rev*, 1:CD000313.

Shepperd S et al. (2016). Hospital at home: home-based end-of-life care. Update in *Cochrane Database Syst Rev*, 2:CD009231.

Silvester KM et al. (2014). Timely care for frail older people referred to hospital improves efficiency and reduces mortality without the need for extra resources. *Age and Ageing*, 43(4):472–7.

Singler K et al. (2016). The development of a geriatric postgraduate education assessment instrument using a modified Delphi procedure. *Age Ageing*, 45(5):718–22.

Siouta N et al. (2016). Integrated palliative care in Europe: a qualitative systematic literature review of empirically-tested models in cancer and chronic disease. *BMC Palliative Care*, 15(1):56.

Smith P et al. (2015). *Focus on: Hospital admissions from care homes*. QualityWatch.

Sona A et al. (2012). Determinants of recourse to hospital treatment in the elderly. *Eur J Public Health*, 22(1):76–80.

Steelfisher GK et al. (2013). Learning from the closure of clinical programs: a case series from the Hospital Elder Life Program. *J Amer Geriatr Soc*, 61(6):999–1004.

Swanson JO, Hagen TP (2016). Reinventing the community hospital: a retrospective population-based cohort study of a natural experiment using register data. *BMJ Open*, e012892.

Tavassoli N et al. (2014). Description of 1,108 older patients referred by their physician to the "Geriatric Frailty Clinic (GFC) for assessment of frailty and prevention of disability" at the gerontopole., 18(5):457–64.

Thompson S, Jones R (2016). A Quality Improvement Project to Assess Timing of Initial Investigations in Stroke Medicine. *BMJ Quality Improvement Reports*, 5(1):u209241–w3796.

Timmins N, Ham C (2013). *The quest for integrated health social care – A case study in Canterbury, New Zealand*. London, The King's Fund.

Tsakitzidis G et al. (2016). Outcome Indicators on Interprofessional Collaboration Interventions for Elderly. *Int J Integr Care*, 16(2):1–17.

Van Craen K et al. (2010). The effectiveness of inpatient geriatric evaluation and management units: A systematic review and meta-analysis. *J Amer Geriatr Soc*, 58(1):83–92.

Van Den Noortgate N, Petrovic M (2009). The importance of a geriatric approach in medicine. *Acta Clinica Belgica*, 64(1):7–10.

Vedel I et al. (2011). Ten years of integrated care: backwards and forwards. The case of the province of Québec, Canada. *Int J Integr Care*, 11 Spec Ed(Mar):p.e004.

Verenso (2015). Elderly care physicians in the Netherlands: professional profile and competencies.

Vilà A et al. (2015). Cost-Effectiveness of a Barcelona Home Care Program for Individuals with Multimorbidity. *J Amer Geriatr Soc*, 63(5):1017–24.

Wilkinson A, Hendriks N (2015). Getting to know you the best we can; embedding design in a dementia ward. In: *Proceedings of the Third European Conference on Design4Health*.

Winpenny E et al. (2016). Community hospitals in selected high-income countries: a scoping review of approaches and models. *Int J Integr Care, 16(4):13*

Wittenberg R et al. (2014). *Understanding emergency hospital admissions of older people*. Report no. 6. Oxford, Centre for Health Service Economics & Organisation.

Woodford HJ, George J (2010). Intermediate care for older people in the UK. *Clinical Medicine, Journal of the Royal College of Physicians of London*, 10(2):119–23.

World Health Organization (2015). *World report on Ageing and Health*. Available at: http://www.who.int/ageing/events/world-report-2015-launch/en/.

Young J, Inouye SK (2007). Delirium in older people. *BMJ (Clinical research ed.)*, 334(7598):842–6.