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Title

The challenge of ageing populations and frail people: can primary care adapt?

Standfirst

Health care systems worldwide are having to adapt to ageing populations and increasing numbers of older people with frailty with complex health and social needs, and in the UK primary care is at the frontline of policy attempts to meet this challenge, but achieving the goal of making frailty an integral part of primary care practice is not without considerable challenges.

Introduction

Healthcare systems worldwide are challenged to meet the needs of increasingly ageing populations, characterised more by multimorbidity and declining physical and mental function than by the individual acute diseases for which these systems were originally designed.[1] Especially problematic is increasing numbers of frail elderly people; a condition characterised by age-related decline across multiple physiological systems,[2] resulting in high vulnerability to adverse health outcomes, including dependency, need for long-term care and mortality.[3]

Responding to these challenges, healthcare policy in the UK and many other countries[4], has increased its focus on the complex interplay between the multiple health problems frequently encountered in older people, and the need to develop integrated and multidisciplinary health and social services. In the UK National Health Service (NHS), primary care is mainly delivered by General Practitioners (GP or family doctor) as medical generalists, who also act as gatekeepers to specialist service providers. Primary care is typically the first point of contact for NHS patients – the vast majority of the population - and thus is seen as the natural hub for much of this integrated activity. The great majority of GPs work in group practices of several GPs supported by ancillary medical and administrative staff, with practices themselves organised into Clinical Commissioning Groups (CCGs) responsible for the planning and commissioning of local health care services. Although practices are independent contractors, almost all practice funding comes from the UK Government through the General Medical Services (GMS) contractual arrangement.

The UK primary care model, with its emphasis on holistic care and centralised policy levers, would appear well-suited to the adaptions needed to meet the changing health care needs of an ageing population. In this context the 2017 GMS contract for England introduced a new requirement for general practices to identify and appropriately manage all patients aged 65 or over with moderate or severe frailty.[5] This development echoes expanding international activity around primary care-based frailty screening and assessment, using a wide variety of frailty measures[6], foremost in Canada[7], Europe[8] and Scandinavia.[9] However, to the best of our knowledge the UK is first to implement frailty screening and stratification at the national policy level, although previously the Netherlands conducted a four-year national research programme into improving frailty care.[10]

Under the UK contract changes, all patients identified with severe frailty should receive annual falls and medication reviews and appropriate interventions provided (Box 1). Practices are also encouraged to “go further” by organising comprehensive geriatric assessments and personalised care planning where appropriate.[11] The long-term goal is to establish frailty assessment as an integral part of routine primary care practice and improve the ability of GPs to organise high quality

care for their more complex older patients, both within primary care and in collaboration with other services. The British Medical Association has tried to reassure GPs that the work around frailty will not increase overall bureaucratic burden and will not undermine professional autonomy in the management of frail patients.[12] Further, the National Institute for Health and Care Excellence (NICE) has proposed that increased costs from longer appointments, training and treatment optimisation will be offset by factors such as fewer unnecessary appointments, prescriptions and unplanned admissions.[13]

Box 1: 2017/18 GMS contract change on the identification and management of frailty. Text from the official contract outcomes letter from the NHS Medical Directorate to all primary care providers

> Practices will use an appropriate tool, e.g. Electronic Frailty Index (eFI) to identify patients aged 65 and over who are living with moderate and severe frailty. For those patients identified as living with severe frailty, the practice will deliver a clinical review providing an annual medication review and where clinically appropriate discuss whether the patient has fallen in the last 12 months and provide any other clinically relevant interventions. In addition, where a patient does not already have an enriched Summary Care Record (SCR) the practice will promote this by seeking informed patient consent to activate the enriched SCR.
>
> Practices will code clinical interventions for this group appropriately. Data will be collected on the number of patients recorded with a diagnosis of moderate frailty, the number of patients with severe frailty, the number of patients with severe frailty with an annual medication review, the number of patients with severe frailty who are recorded as having had a fall in the preceding 12 months and the number of severely frail patients who provided explicit consent to activate their enriched SCR. NHS England will use this information to understand the nature of the interventions made and the prevalence of frailty by degree among practice populations and nationally. This data will not be used for performance management purposes or benchmarking purposes.

However, successful implementation of this agenda has important challenges, including the acceptability to primary care professionals and patients of frailty as a relevant concept, robust and efficient assessment of patient frailty, effective use of that information to improve care planning and patient outcomes, and convincing already over-stretched[14] primary care professionals that this approach will ultimately reduce, or at least not increase, their workloads.

Prevalence of frailty in the UK

Estimated prevalence rates of frailty in the population vary widely depending upon the measure used.[15] For GMS contract purposes NHS England uses estimates based on the electronic Frailty Index (eFI)[16] and the ResearchOne database, suggesting that 3% of people 65 and older are severely frail, and another 12% moderately frail.[16] Replicating this in the Clinical Practice Research Datalink (CPRD) primary care database, we found similar rates: 2.7% and 10.2% respectively (Table 1). Based on this, the average GP practice of 7,000 patients, will have around 30 severely and 100 moderately frail patients.

Table 1: Frailty categories and prevalence rates in people aged 65 to 95 on 1st January 2015, from analysis of the Clinical Practice Research Datalink

Frailty category	eFI score range	Prevalence (on 1st Jan 2015)	
		n	%
Fit	0-0.12	591,527	61.3
Mild	>0.12-0.24	248,986	25.8
Moderate	>0.24-0.36	98,096	10.2
Severe	>0.36	25,877	2.7

Challenges to the adoption of the frailty agenda in primary care

Acceptance of frailty as a relevant concept for primary care

Frailty is not the only approach to targeting elderly patients with complex needs. Frailty replaced a previous initiative in the GMS contract focused on patients at risk of an unplanned hospital admission - highly unpopular with GPs for various reasons.[12] Another advocated approach is to focus on multimorbidity - people with two or more chronic conditions - and NHS England has published guidelines for multimorbidity management in primary care.[17] Overlap between these groups is less than one might expect: using ResearchOne, more than half the patients in the top 2% of eFI scores are in neither the top 2% of multimorbidity counts nor top 2% of unplanned admission risk. Nevertheless, implementing different schemes and guidelines for each group seems unduly complex and inefficient, especially as they share several core management elements (medicines review, personalised assessment, care planning). Around 27% of adults have multimorbidity,[18] therefore additional factors, including frailty, risk for unplanned care or management complexity, should also be present,[17] further blurring distinctions between the groups. Although frailty is the more complex concept, this approach does have a stronger theoretical basis related to its origins in geriatric medicine.[19]

Frailty aligns well with the generalist perspective of primary care and can motivate a constructive dialogue between the primary care team, the patient and key carers around frailty-appropriate care and support needs. However, GPs may feel that they are already aware of their relevant patients and are meeting their needs, without labelling them frail. They may even view frailty as unnecessary medicalisation or over-simplification of a patient's medical complexity.[20] A frailty label also carries significant stigma for many people through association with loss of independence and end of life,[21] and can deter people from seeking support or make them fear being denied sought-after care.[21] This can close discussion down, instead of opening it up. These challenges around the language of frailty will likely require a longer-term focus, but there are precedents in the evolution of public understanding and acceptance of diagnoses such as cancer or dementia.

Frailty also focuses purely on health deficits, an approach criticised for under-valuing the role of cognitive, material and social capacities on an individual's ability to manage their health and on clinical decisions about their care.[22] Thus two equally frail people may have quite different access to social network support, or abilities to manage their treatment burdens. However, rather than making frailty identification irrelevant, this instead re-emphasises the importance of using frailty not as a label but as an opportunity for a holistic discussion around care needs and the support and

services required, in the broadest possible sense - not only health but also personal, public, private, voluntary and community resources.[23] The argument for placing frailty in this broader context has strong theoretical underpinnings in the cumulative complexity and minimally disruptive medicine literature.[22 24] Although this goes well beyond what most GPs have traditionally seen as their role and what practices are currently set up to do, it would seem essential to the goal of providing the best possible personalised care.

Identification of frail patients

Frailty is a complex medical condition and identifying the appropriate individuals can be problematic. NHS England recommends a two-stage process: an initial screen followed by direct clinical verification. The eFI is suggested as an "appropriate tool" for screening use[11] and generates a frailty rating (fit, mild, moderate or severe - Table 1) from a patient's primary care electronic health record (EHR), based on the accumulation of up to 36 health 'deficits' (Box 2). Now available in all general practices in England, the eFI can rapidly screen all registered patients using their health care records alone. The tool has demonstrated moderate to good discrimination for the outcomes of mortality, unplanned hospitalisation and nursing home admission.[16]

Box 2: List of the 36 deficits making up the electronic Frailty Index

Activity limitation	Ischaemic heart disease
Anaemia and haematinic deficiency	Memory and cognitive problems
Arthritis	Mobility and transfer problems
Atrial fibrillation	Osteoporosis
Cerebrovascular disease	Parkinsonism and tremor
Chronic kidney disease	Peptic ulcer
Diabetes	Peripheral vascular disease
Dizziness	Polypharmacy
Dyspnoea	Requirement for care
Falls	Respiratory disease
Foot problems	Skin ulcer
Fragility fracture	Sleep disturbance
Hearing impairment	Social vulnerability
Heart failure	Thyroid disease
Heart value disease	Urinary incontinence
Housebound	Urinary system disease
Hypertension	Visual impairment
Hypotension/syncope	Weight loss and anorexia

The accuracy of the initial screen will be a major factor in the overall efficiency of the identification process. Screening tools other than the eFI can be used, and may identify quite different sets of individuals,[25] but no consensus exists on which performs best. However, most UK practices are using the eFI. Anecdotal reports from GP colleagues and early pilots of the eFI[26], have indicated that whereas classifications do not always correspond with subsequent clinical judgement, the degree of mismatch may be within acceptable limits.[26]

Even so, improvements in screening accuracy could produce substantial efficiency gains. The eFI analyses a patient's entire EHR, but the CPRD reveals a strong association with length of registration, implying under-estimation for short records (<10 years) and/or over-estimation for long records (Figure 1). All deficits are treated as non-resolvable, thus conditions recorded many years previously but not since, including some acute events such as UTIs, count towards the current frailty score. Hence criteria for the recency and frequency of codes might improve alignment with clinical diagnosis. Efficiencies might also be gained by introducing differential weighting of the included deficits and setting the thresholds for frailty more on clinical, rather than the current statistical, criteria. To these ends we are currently engaged in a study using a panel of GPs to evaluate modifications to the tool with the aim of improving its efficiency as a screening instrument.[27]

Frailty and care management

Accurate identification is important, but has little point unless it makes a difference to patients. The minimum contract requirement that all severely frail patients receive annual medication and falls reviews is arguably already expected under NHS quality standards.[28 29] To have a transformative impact on patient care, practices will need to commit to "go further". The main NHS England recommendation, depending upon individual need, is a brief comprehensive geriatric assessment (brief CGA) and personalised care plan[11], with multidisciplinary CGA or less intensive GP-led "holistic medical review" where appropriate. The supporting evidence base, however, is not strong. A well-conducted review of CGA in community-based people with multimorbidity found clinically important benefits for mortality and care home admissions, but limited impact on quality of life and no benefit for unscheduled care or functional outcomes,[17] while an earlier meta-analysis of 24 trials of geriatric assessment of people selected as frail, reported a small effect on hospital admissions only.[30] Three later randomised trials of CGA within the Netherland's frailty care programme found almost no clinical benefits.[31] Available evidence for cost-effectiveness is inconsistent and inconclusive.[17 31 32]

However, most of this evidence is weak and NHS England recommends further research based on the potential benefits for some critical outcomes.[17] Benefits may also be more certain for more resource-intensive interventions[17] and for some patient sub-groups.[30] Developing greater understanding of approaches that work and for whom, will nevertheless take considerable time. More immediately, finding ways to streamline frailty-related work would help. Examples are replacing condition-specific annual reviews by a single holistic review for those with severe frailty, and a primary care nursing role for frail people, as exists in some other countries and with which some UK services are experimenting.[33] The expansion of clinical pharmacists within general practice teams and nursing homes can facilitate greater use of medication review, while more efficient means of delivering CGA and care planning could also help, such as geriatrician "outreach" clinics within primary care and involvement of carers and the voluntary sector in care planning.[34 35] Utilising frailty information more directly in management decisions might also bring efficiencies.[19] Adequate discussion is beyond the current article, but one example would be specific guidelines for sub-groups of frail older people, such as people with type 2 diabetes.[36] Such initiatives may already be happening at local levels, but frailty could offer opportunities on a national scale.

Conclusion

The goal of making frailty an integral part of primary care practice provides opportunities for beneficial change but is not without considerable challenges (Box 3). Further developments can help

overcome many current limitations and obstacles, but in the over-stretched UK primary care system, the acid test is likely to be whether GPs find that a focus on frailty helps to reduce, rather than increase, professional burden in dealing with their most complex patients, whilst also benefiting their older patients living with frailty.

Box 3: Potential benefits and disadvantages of frailty in primary care

Potential benefits

- Help primary care professionals focus on managing the person as a whole rather than on care for single diseases
- Provide an opportunity for constructive dialogue with patients and family/carers about care goals and the services required, in the broadest sense.
- Improve co-ordination of care and outcomes for older people living with frailty
- Help reduce professional burden in dealing with complex patients
- Decrease treatment burden for patients and unnecessary or harmful testing and medication
- Help distinguish patients who are more, and less, likely to benefit from specific interventions, regardless of age.
- Help identify those at risk of increasing frailty and offer preventative programs

Potential disadvantages

- May increase practice workload without adequate compensatory benefits
- May not produce the anticipated improvements in clinical outcomes or quality of life for patients
- May be viewed as over-medicalisation and over-simplification of complex problems
- Negative connotations to the label “frail” may undermine acceptance and interfere with the care planning process
- By itself does not take into account a patient’s personal and social capacities
- More efficient means are needed for robustly identifying frail patients and for planning and delivering frailty-appropriate care

Key Messages:

Increasing numbers of frail older people are a major concern to health services worldwide, and in the UK primary care is at the frontline of policy attempts to meet this challenge, but achieving the goal of making frailty an integral part of primary care practice is not without considerable challenges.

To be motivated to do more than just the minimum required under the new General Medical Services contract, GPs may need convincing that this will help to reduce, rather than increase, professional burden in dealing with complexity, whilst also benefiting their older patients living with frailty.

Future developments should focus on increasing efficiencies in the identification of frail patients and in the planning and delivery of frailty-appropriate care, taking account of individual patient capacities and circumstances as well as frailty status.

Contributors and sources

The idea for this article originated from an ongoing research programme around patient frailty. HvM and TB are academic GPs experiencing first-hand the implementation of the frailty agenda in their practices. AC is a Consultant Geriatrician who led the original development of the eFI and was involved in the planning of the frailty element of the new GMS contract. DR is PI on an ongoing study to improve the current electronic Frailty Index, on which SP leads the statistical analysis. DR, SP, HvM and DA conceived of the article. DR wrote the manuscript with contributions and comments from SP, AC, HvM, EK, DA and TB. SP performed the statistical analysis. DR is guarantor of the article.

Competing interest statement

All authors have completed the Unified Competing Interest form (available on request from the corresponding author) and declare: no support from any organisation for the submitted work [or describe if any]; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years, no other relationships or activities that could appear to have influenced the submitted work.

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