Integrated Care for Older Adults Living with Frailty

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**Abstract**

Provision of health and social care to our ageing population is one of the biggest challenges faced by health care systems today. Older adults living with frailty have complex care needs secondary to multimorbidity, polypharmacy, physical dysfunction as well as social and psychological factors. Consequently, they are often subject to dysfunctional and fragmented care that carries a high predisposition to lower treatment and care plan adherence as well as more adverse drug reactions. The main principle for delivering effective integrated care is through a patient-centred approach, with improved co-ordination amongst health care professionals. By minimising variation in the approach to care delivery, patient care and experience can improve. Favourable outcomes from integrated care models depends on the application of multicomponent strategies with vertical and horizontal integration of objectives identified by shared decision making and Comprehensive Geriatric Assessment. In this brief review, we describe frailty; the methods used for screening and discuss successful models of integrated care.

**Keywords**

Older people, frailty, integrated models of care, shared decision making, comprehensive geriatric assessment

**Key points**

* Frailty is a multisystem clinical disorder commonly seen in older adults that requires a holistic and integrated approach to management
* Early identification of individuals living with frailty across health care settings allows implementation of treatment and preventative strategies to maximise independence
* Patient centred shared decision making driven by processes such as Comprehensive Geriatric Assessment are highly effective in reducing adverse outcomes for patients living with frailty and are associated with better patient satisfaction
* Integrated care involves efficient coordination between primary and secondary care including social services and third sector partners
* Widespread implementation of integrated care models across health and social care settings might promote healthy ageing and improve clinical outcomes

**Introduction**

Frailty is a common clinical syndrome commonly seen in older adults where the ability of individuals to cope with every day acute or external stressors is compromised. This is due to increased vulnerability brought about by decline, loss of physiological reserve and function across multiple organ systems including skeletal muscle and bone, the cardiorespiratory, immune, and endocrine systems. Other important contributors to developing frailty span non-physical domains e.g., cognitive, social, and psychological. Frailty represents a considerable global healthcare burden with prevalence estimates in those aged 80-84 years to be 15.7%, increasing to 26% in those aged >85 years. In the UK, NHS England estimate that 1.8 million people in the UK aged >60 years are living with frailty.

Individuals living with frailty have complex care needs are frequent users of health and social care services through use of multiple prescribed medications, frequent unplanned hospital admissions, prolonged hospital stays and higher requirements for formal care. Any stressor (e.g. infection, change in functional or social circumstance, medication change) can lead to a dramatic and disproportional change in health. The loss of the body’s built in physiological reserves can lead to wide range of common healthcare problems, such as a loss of strength, reduction in mobility, falls, reduced appetite, undernutrition, incontinence, sensory decline, depression, and anxiety (Figure 1). Accumulating dysregulation across multiple systems negatively impacts on previously normal homeostatic mechanisms, and so frail patients often fail of return to a previous level of functioning after exposure to a stressor.

**Identifying frailty**

Established international models of frailty identification which can be assessed through physical assessment include:

* The Fried phenotype model: based on the presence of three out of five of weight loss, exhaustion, poorer grip strength, slow gait speed, low levels of physical activity and low energy expenditure
* The Clinical Frailty Score (CFS): a simple tool based on the multidisciplinary assessment of individual patient factors followed by assignment of a frailty category ranging from 1 (fit) to 7 (severe frailty)
* Frailty indexes: representing the accumulation of age-associated deficits or conditions spanning physical, social and psychological health including laboratory diagnoses. An index is derived by dividing deficits by the total number tested. The more deficits the higher the score; a frailty index that ranges from 0.7-1 is indicative of a poorer prognosis.

These are amongst a plethora of other frailty measurement systems each validated in local settings and have been shown to predict hospitalisation, institutionalisation, and mortality.

**Managing frailty**

Overwhelming evidence suggests that managing a patient with frailty requires a more holistic approach to managing the cause, or combination of causes, that has led to the frailty. Older people living with frailty can experience a marked decline in quality of life and adverse outcomes from poorly co-ordinated and fragmented health care.

Due to the disproportionate use of health and social care by individuals living with frailty, early routine identification and stratification of frailty across a variety of healthcare settings is crucial. This is both to facilitate appropriate immediate clinical management and also enable the implementation of potential preventative or mitigating multicomponent strategies by the multidisciplinary team. Exercise and nutrition-based intervention have the most evidence base, but others include social and psychological interventions (1, 2).

Assessment and management can be facilitated through processes such as Comprehensive Geriatric Assessment (CGA). This is an evidence-based multidimensional and interdisciplinary assessment of medical, psychological, and functional capabilities aimed at developing an integrated plan for treatment, care and follow up of older persons. CGA embodies the core principles of integrated age friendly care, ‘what matters most?’ and shared decision making. Disease specific models of care that do not take comorbid conditions or indeed frailty into account can contribute to fragmented out-of-hospital health care delivery with resultant increase in complex care needs, polypharmacy, adverse drug reactions and low adherence to treatment and care plans.

NHS England underscore the importance of delivering a functionally integrated urgent care service simultaneous to the development of evidence-based guidelines for persons with multiple comorbidities.

**Integrated care**

The main aim for integrated care is to improve patient care, health care delivery, patient and health care staff experience and minimise variability through better coordination of the multidisciplinary team (MDT) (Table 1). Integrated care can take place across various settings within the health sector e.g., between primary and secondary care or as integration of health with social services or third sector services for the care of patients with long term conditions. It can vary in intensity from full integrative processes, which create new organisational models, or partial processes improving better coordination or reorganisation of services between two sectors. The multidimensional nature of this process highlights the complexity and sophistication that is involved in building and implementing integrated care models. Despite increased awareness, there is still a lack of good quality evidence evaluating the effectiveness of integrated care models. However, there are various models in practice with each varying slightly in their own design and delivery but with the same end goal.

**The Vanguard programme** was part of the NHS five year forward view. This focused on better integration of various elements of community services and moving specialist care into the community in order to offer better joined up care through Multispecialty Community Providers (MCPs). In areas where Vanguards were established, there were comparatively lower emergency hospital admissions and inpatient bed days than the rest of England in 2016.

**The virtual ward (VW)** is an exemplar model where the MDT work closely with social care staff and the primary care team to improve services for patients while also alleviating pressures on general practitioners (GP). The virtual ward also facilitates the delivery of acute care in the community without necessitating an admission to the hospital. Patients on the VW are managed according to their health care need that can range from inappropriate polypharmacy management, gait and balance problems, falls, undernutrition, pressure ulcer care, loneliness, and anxiety to name a few. This approach has seen reductions in unplanned admissions within localities (3). The VW model also facilitates better working relationships and anticipation of health care demand between the primary care team and care homes. This also gives an opportunity for the physician to discuss health care needs with other specialists as well as family members and care givers. The VW can also facilitate a safe discharge from hospital as well as support older patients through transitions between health care settings. For example, recognising that hospital discharge is an important but under recognized stressor for older people, in the same way an infection or fall can lead to a disproportionate change in health. More recently, the VW model was adapted during the COVID-19 pandemic supervised by secondary care for high acuity and complex patients who have been discharged from hospital earlier on in their disease trajectory.

**The case management model** requires identification of older people living with frailty who are at high risk of health crisis and would benefit from proactive preventative care. A case manager, who can be any member of the skilled MDT, is assigned to the patient and regularly reviews patient centred goals and actions for treatment and care identified through shared decision making and CGA. This model facilitates effective communication and coordination of care as the case manager can ensure that the goals and actions remain responsive to the patients’ needs over time. Most integrated models highlight the importance of a case manager responsible for coordinating patient care (4). Patients often find themselves in an uncertain zone between primary and secondary care described above and the case manager can bridge the gap between services where healthcare delivery is fragmented (5). Importantly, the case manager is a direct link to the primary care team and the VW and their involvement in the patient’s journey has been associated with high levels of patient satisfaction.

Older people who are multimorbid and who are also living with frailty, whilst comprising approximately 5% of the total NHS hospital patients, use up to 40% of NHS hospital beds. Case management appeared to be the ready-made solution to reduce a high number of hospital admissions. The introduction of the case management model across nine primary care networks in England in 2003 was associated with a decrease in hospital admission by approximately 30% and also a decrease of 4.9% in hospital-bed days. Case management has been integrated into all successful trials of integrated models. Conversely, some literature suggests that there has been an increase in emergency admission rates in areas where case management has been implemented. More recent meta-analyses looking into the effectiveness of case management found a distinction between community-initiated versus hospital- initiated case management, with the latter showing evidence of reduction in unplanned readmissions. Despite these conflicting accounts, qualitative analysis of responses from staff and carers appear to show patient benefit from case management in terms of better quality of life and functional ability.

**The Urgent Response Service (URS)** is an integrated model adopted by Solent NHS Trust that involves specialists from the whole MDT including Geriatricians, who respond to adults with acute health crisis. The goals are: 1. to avoid hospital admissions; and 2. to facilitate supported early discharge and utilise several methods for patient review ranging from tele-video technology, face to face home visits or through virtual ward rounds. Similar schemes exist nationally under the label of Rapid Response teams and Frailty Support Teams that can integrate the falls service, therapy teams, in-house carers and clinicians e.g., GPs, Advanced Clinical Practitioners, Consultant Nurses and Geriatricians.

**The ‘Hospital at Home’** scheme is an example of an enhanced service driven by Advanced Clinical Practitioners that provides day-to-day medical and nursing care. This service allows the patient who was previously in an acute hospital to be cared for at home, including the administration intravenous therapy such as diuretics and antibiotics. Patients can either be identified at the ‘front door’ or appropriately selected from the in-patient ward and discharged home to be ‘admitted’ to a virtual ward where they managed as if they were in hospital under the care of a physician.

**Advanced Care Planning**

Older people living with frailty are susceptible to frequent heath crises and often it is crucial to determine whether care is to be delivered in a hospital or in the community. These decisions can be facilitated by advanced care planning. Advanced Care Plans (ACP), which can be written by any member of the MDT, enable patients, their families, and carers to prioritise care by expressing future wishes and needs. ACPs are dynamic plans that should be adapted and reviewed in accordance with changes in patient circumstance or decisions. For example, as individuals become increasingly frail, with declining functional levels and more disability, the focus of treatment is likely to switch from a curative goal to a more symptom-directed, palliative one. ACPs are beneficial guides for all health care staff, especially out of hours practitioners who are unlikely to have prior knowledge of the individual, who are called for persons reaching the end of their life and wish to remain at home.

**The role of the primary care physician**

General Practitioners and the primary care team have in depth knowledge of their patients and are experts in chronic disease and lifestyle management. They are ideally placed to impact the frailty trajectory before a disabling process is established. Although they are key and equal partners in developing a CGA, the wealth of information they hold on patient’s baseline function and support network is often poorly communicated to secondary care. Equally, information about the patient from secondary care is not always conducive for effective patient management in the community. More collaborative working, clear articulate communication, and better understanding between specialists across this arbitrary primary-secondary care divide is pivotal to supporting shared decision making and implementing effective integrated care (Table 1). Schemes, such as the GP-Consultant Liaison, are invaluable in developing working relationships, promoting harmony and fostering better understanding of the challenges across health care settings (<https://www.england.nhs.uk/publication/the-wessex-model-for-workplace-exchanges-learning-and-next-steps-from-the-consultant-gp-exchange-southampton-2018/>) (5).

**Conclusions**

Health systems across the UK need to adopt and increase the use of integrated care models for better patient management. Demographics, logistics, workforce constraints and finance play pivotal roles in their delivery. The execution of one model will vary between localities, and even within the same Integrated Care System (ICS), though in clinical practice it is imperative that all models remain adaptable to the needs of the patient. However, in the models for integrated care described, a notable and consistent shortfall is the availability and underuse of clinical case managers, as well as advanced clinical practitioners to coordinate health and social care delivery to the patients living with frailty. These patients have complex needs spanning several domains and as such have an unpredictable illness trajectory. Workforce development, MDT working, education and training are key to the delivery of good models of integrated care.

**Figures and tables**

*Malnutrition*

*Weight loss*

*Mortality*

*Increased health and social care costs*

*Decreased physical capability*

*Falls*

*Institutionalisation*

FRAILTY

*Mood disorders*

*Disability*

*Recurrent hospital admissions*

*Delirium*

*Polypharmacy*

*Fragility fractures*

**Figure 1 Consequences of living with frailty**

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| **Table 1 Principles of delivering a high-quality integrated care model for individuals living with frailty** |
| 1 | Encourage patient-centred care and promote self-management  |
| 2 | Cultivate trusting MDT relationships |
| 3 | Drive effective communication, understanding and commitment amongst health care professionals |
| 4 | Efficiently coordinate care between the primary care and secondary care teams, case managers, community health, social care practitioners and third sector partners e.g., Age UK, Red Cross  |
| 5 | Embed principles of shared decision making and goal setting identified through CGA within all models |
| 6 | Use shared records and embrace newer technologies e.g., tele-health |
| 7 | Encourage use of Advanced Care Plans, which are readily visible to multiple health care professionals |
| 8 | Encourage patient, family, and care giver engagement |
| 9 | Embed education and training programmes for all staff |
| 10 | Secure ring-fenced financial investment |
| MDT: Multi-disciplinary team. Commonly comprises but not limited to Matrons, Practice nurses, Advanced Clinical Practitioners, Health Care Assistants, Physiotherapists, Occupational Therapists, Dieticians, Social Workers, GPs, and Physicians. CGA: Comprehensive Geriatric Assessment |

**REFERENCES**

1. Ruiz JG, Dent E, Morley JE, Merchant RA, Beilby J, Beard J, et al. Screening for and Managing the Person with Frailty in Primary Care: ICFSR Consensus Guidelines. J Nutr Health Aging. 2020;24(9):920-7.

2. Woolford SJ, Sohan O, Dennison EM, Cooper C, Patel HP. Approaches to the diagnosis and prevention of frailty. Aging Clin Exp Res. 2020.

3. NHSEngland. <https://www.england.nhs.uk/integratedcare/resources/case-studies/older-people-living-with-frailty-on-virtual-ward-keeps-them-well-at-home-and-out-of-hospital/> [2020] [

4. Monaco A, Palmer K, Marengoni A, Maggi S, Hassan TA, Donde S. Integrated care for the management of ageing-related non-communicable diseases: current gaps and future directions. Aging Clin Exp Res. 2020;32(7):1353-8.

5. NHS England. <https://www.england.nhs.uk/gp/gpfv/workload/interface/> [