

Redesigning care for frail older people: The impact of an elderly care pathway on admission avoidance, length of stay and readmission rates

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Abstract

Background: Increasing age predisposes elderly persons to long-term medical conditions, frailty, and geriatric syndromes such as pressure ulcers, falls, incontinence, delirium and functional decline. Increased hospital stays also have adverse effects on frail older people. Strategies are needed to ensure that elderly people are seen by the appropriate professionals to reduce adverse effects. This study aimed to assess the impact of an elderly care pathway in an emergency department (“front door”) on admission avoidance, length of stay in hospital, and 30-day readmission rate.

Methods: In this single case study, quantitative data on frail elderly persons aged 75 years and over seen by the Acute Elderly Unit (n = 605; AEU group) were compared with those seen by a general medical team (n = 327; non-AEU group) at Barking Havering and Redbridge University Hospitals NHS Trust, UK, to calculate the average length of hospital stay and readmission rates. Members of the elderly care multidisciplinary team were also interviewed, and data analysed using thematic analysis.

Results: Length of stay and admission prevention were higher in the AEU group than the non-AEU group.

Conclusions: To facilitate quality care for frail older persons, an elderly care pathway is needed that includes early discharge planning, a person-centred approach, intensive multidisciplinary team involvement and joined-up working.

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Introduction

Background

Increasing age brings an increased risk of long-term medical conditions, frailty, dementia, dependence and disability [1]. Frailty can be seen, in itself, as a risk factor for the progression of medical conditions [2]. Elderly persons who present in the Emergency Department (ED) are more likely to be admitted into hospital [3, 4]. With each hospitalization spell, the frail older person is prone to an increased risk of hospital-acquired infections [5]; deconditioning

(functional loss following a period of bed rest/inactivity) [6]; falls [7]; pressure ulcers [8]; malnutrition [9]; incontinence [10]; and adverse effects [11]. The older and more frail the patient, the more likely it is that they will experience functional deficit during hospitalisation [12, 13]. Length of stay in hospital is a further contributory factor that can predispose frail older persons to an increased risk of adverse outcomes.

Strategies to improve elderly patient care

Reducing length of hospital stay

An elderly person must be medically, therapeutically and socially fit before they can leave hospital. From a therapy standpoint, they should be back to baseline, or a decision made as to a new baseline. From a social perspective, the patient must have an appropriate destination before they can be discharged.

Patient characteristics, organisation of hospital care and provision of services on discharge are three key factors influencing delayed discharge, which is where a patient continues to occupy a hospital bed after they have been deemed clinically fit [14], and length of stay (LoS) [15].

A prolonged LoS predisposes the elderly patient to adverse outcomes, which further lengthens their stay in hospital and has costly implications for the healthcare service. In 2014, patients spent 71,872 delayed days in hospital, with this number rising to 90,840 in August 2014 at a cost of £275 per day [16].

An integrated approach is needed across hospital and community settings in order to reduce unnecessary use of acute hospital beds [17]. Indeed, areas with well-integrated and structured services for the elderly have lower rates of hospital bed use [18]. This, in turn positively impacts on patient experience and reduces readmission rates.

Readmissions

The older the patient, the more likely they are to be readmitted more than once within a year [19]. Readmission in the 30 days following hospital discharge is a frequent occurrence, which involves the risk of functional decline, particularly among frail subjects [20], and is costing the UK National Health Service (NHS) £1.6 billion per year [21]. Though older people can have multiple comorbidities that make their readmission rates higher, preventable readmissions may be caused by patient and community level factors that are beyond the hospital's remit [22]; for example a failure to address older persons' social and functional needs [23] or to follow-up after discharge within a short time-frame [24].

Service redesign

Healthcare organisations must respond to changing societal needs and improve the services they deliver to improve patient care [25]. In the UK, where 11.4 million people are aged 65 years or older [26], an NHS priority is to devise cost-effective geriatric care initiatives.

Specialist ED geriatricians can reduce the number of elderly patients admitted by directing them to appropriate community or hospital services. On elderly patients' arrival in the ED, a comprehensive geriatric assessment (CGA) should be done to avoid or reduce the effect of potential adverse outcomes [27], to avoid repeat ED attendances [23], and to improve patient outcomes [28].

However, in a systematic study of the role of CGA for frail older people who were discharged from acute hospital care or ED, Conroy et al. found that there was no clear evidence of benefit for CGA interventions [29]. Likewise, a study by Basic and Conforti found that an elderly specialist nurse providing geriatric assessment in the ED had no impact on admission rates, LoS or functional decline [30].

Demand management through admission avoidance

Demand management, according to the NHS Institute for Innovation and Improvement, is understanding demand and using planning to ensure patients receive the most appropriate care in the right setting. One suggested approach is to reduce unplanned hospital admissions, for example by developing community services to support older people in their own homes or place of residence. A randomised controlled trial comparing elderly patients receiving hospital discharge team support with a control group found that the home-treated cohort had a lower readmission rate and lower LoS than the control group [31]. Moreover, Edwards suggests that a significant number of patients who occupy hospital beds can be cared for in other settings if they were available and accessible [32] and a study of adults aged 67 years and older found that a high continuity of care was associated with a reduction in admissions into hospital [33].

What is a ‘frail-friendly front door’?

Queen’s Hospital (Barking Havering and Redbridge University Hospitals NHS Trust; BHRUT) has introduced a Frail Older Persons’ Advice and Liaison (FOPAL) team according to the ‘frail-friendly front door’ model introduced by the University Hospitals of Leicester NHS Trust. When frail patients arrive at BHRUT EDs, they are categorised based on their presenting symptoms and investigative reports and sent to either a short-stay elderly unit or a general ‘care of the elderly unit’ for longer stays. These elderly patient services form an important pathway that maintains flow and avoids bottlenecks in the ED and the wider healthcare organisation [34].

Elderly care pathway

Making the ED elder-friendly means first recognising that the treatment of elderly patients can be complex and must be looked at from a psychological, social, medical and functional viewpoint. At BHRUT, a Community Treatment Team (CTT) is assigned to see ED patients that are medically fit for discharge to assess whether they will need a period of rehabilitation or care in the community. If the decision to admit is made, then the patient is transferred to the Elderly Receiving Unit (ERU) where he or she will be given a CGA and be further assessed for suitability for either the Elderly Short Stay Unit (ESSU), or Acute Elderly Unit (AEU). At every stage, the frail elderly patient has access to a geriatrician, therapist, social workers and nurses experienced in caring for the elderly. Figure 1 depicts this elderly care pathway.

Aims and objectives

The aim of this study was to assess the effectiveness of BHRUT’s ED elderly care pathway in terms of admission avoidance, length of stay in hospital, and 30-day readmission rates of elderly patients presenting with medical conditions. We hypothesised that early and continuous access to a geriatric specialist team in the ED would reduce elderly hospital admissions and decrease their length of stay and 30-day readmission rates. Our objectives were to demonstrate the importance of early access to geriatricians ‘at the front

door’ to improve the quality of care given to frail older people.

Methods

Research design

Quantitative analysis was performed on 605 elderly patients in the AEU group and compared to data collected from a control group of 327 elderly patients who were seen by the general medical team (non-AEU group). A single case study type with an embedded unit was chosen.

Research ethics

Ethical approval was not needed because there was no direct contact with patients. Access to patient data was granted by the Queen’s Hospital Audit Department. Interview participants (hospital staff) provided verbal consent and were assured anonymity.

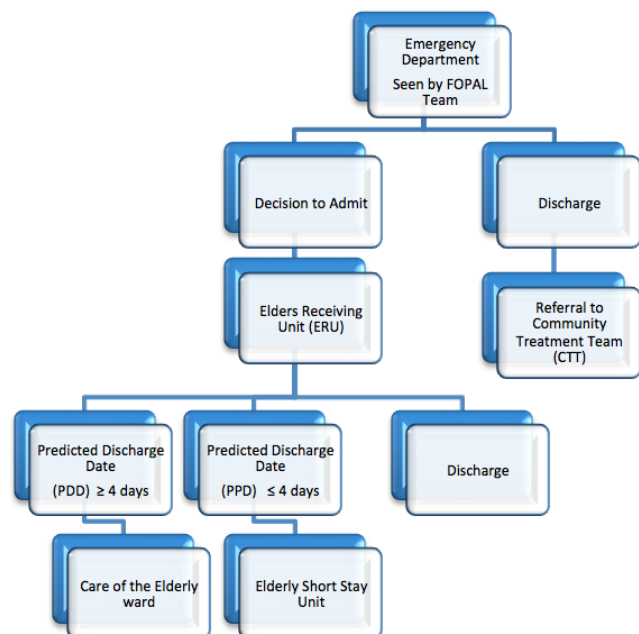


Figure 1. Elderly care pathway in hospital

Data collection

Patient data

Elderly patients aged 75 years and over who had a general medical condition and access to a geriatric specialist team were chosen. A scoring system of 0–6 was used, whereby patients scored 1 point for readmission to hospital within 6 months, needing assistance with activities of daily living, having sensory impairment, and being malnourished, or having a low body mass index or significant weight loss. A further 2 points were added if patients had reduced mobility from baseline, recurrent falls, confusion including dementia, polypharmacy, significant comorbidities, and incontinence. Patients calculated by the FOPAL team – including geriatricians, elderly care nurses, occupational and physiotherapists and a social worker – as having a frailty score of 3 and over were included in the AEU group. Frailty scores for the non-elderly care (non-AEU) group were unknown – the FOPAL team did not assess these patients.

Patients were excluded from the study if they were admitted under the: Surgical Team; Coronary Care Unit; Stroke Unit; Clinical Oncology; Clinical Haematology; Ear, Nose & Throat; Neurology; High Dependency Unit; or Intensive Care Unit.

The first quantitative data set was extracted from a list of patients seen by the FOPAL team in the ED, combined with the admissions of patients to the ERU within a 2-month period in May and June 2014. The Electronic Patient Record (EPR) System (Medway) was used to track the patients' pathway in hospital. Information collated was age, sex, admission date, AEU destination, ED discharge, ERU discharge, discharge date, LoS, and 30-day readmission.

The second quantitative data set compared patients admitted to the Medical Assessment Unit who were not seen by a geriatric specialist team during the same time frame. This patient list was generated from Medway. Exclusion criteria remained the same as with the previous group.

Interviews

Seven members of the elderly care multidisciplinary team (MDT) were interviewed by telephone with a

combination of closed and open questions (see Appendix 1). They consisted of three elderly care senior sisters, one geriatrician, and three social workers. Verbal consent was gained prior to the interview. The purpose of the interview was explained and an assurance of anonymity of their name was given. Appendix 2 provides a list of code abbreviations.

A thematic approach was used to analyse the qualitative data derived from the interviews (see Figure 2). A list was made of items that appeared numerous times in the responses and these were coded using the 'Insert' then 'Comment' icons in the Microsoft Word application. The technique used to analyse both qualitative and quantitative data was a pattern matching logic.

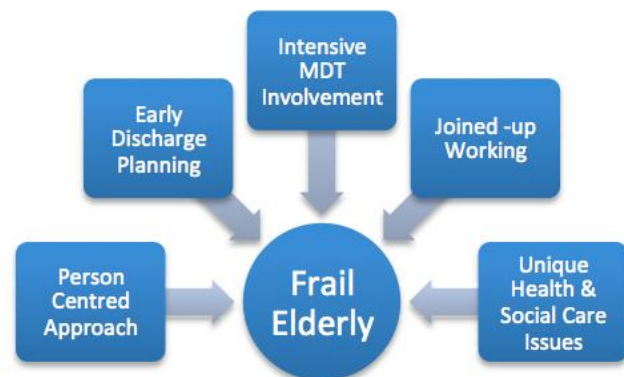


Figure 2. Schematic diagram of thematic analysis of care of frail elderly

Results

All participants answered 'yes' to the question, "Do you think it is useful to have a separate pathway for the elderly?" Five overarching themes were generated from qualitative analysis of the interviews of the MDT, with some overlap between themes.

Redesigning care for frail older people

Age

The average age in the AEU group was 86.7 years, while the average age in the non-AEU group was 83.0 years. Participants felt that the geographic distribution

of elderly people was a factor for redesigning care strategies, as a high number of elderly people in an area would warrant a need to redesign care for the elderly, e.g.,:

“There is a high elderly population in this area and you will have an increase in A&E attendances.”

Another reason given for redesigning care for frail older persons was their unique health and social care issues:

“Traditional care pathways do not meet the needs of frail older people. If they are not seen by people who are specialised in this area, this would lead to long length of stay and readmissions and eventually poor outcomes.”

Participants believed that elderly patients had multiple comorbidities and complex needs, often presenting with reduced functional and cognitive abilities, including memory and mobility problems, and a lack of coping skills:

“They are complex patients with multiple issues ‘frequent flyers’ into hospital.”

“Their needs are quite different. They come in with dementia, memory loss, mobility problems. Can’t cope at home. Because of their age, they live alone and feel lonely and don’t want to go back to their own.”

Length of stay

Figure 3 shows the LoS of patients who followed the elderly care pathway compared with those who did not. The average LoS in the AEU group was higher than that of the non-AEU group.

Early discharge planning was one of the overarching themes identified for reducing LoS. Participants believed that the timely completion of paperwork would facilitate discharges:

“By completing section 2 and 5 at an early stage instead of at last minute. By completing paperwork for discharge in time.”

“We had a lady once who fell whilst she was waiting for her package of care to be in place. Sections 2 and 5 were sent together. She suffered a fracture. This increased her length of stay in hospital.”

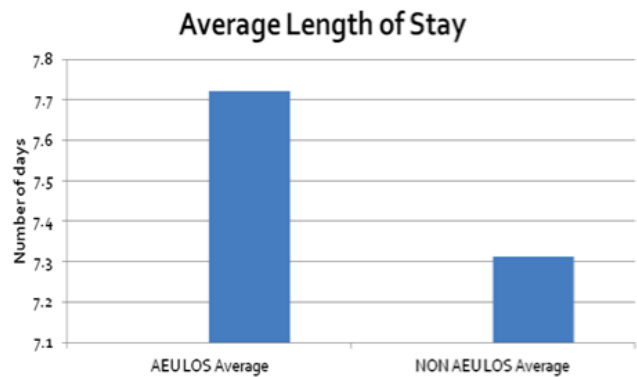


Figure 3. Average length of stay in AEU & non AEU group

Comprehensive history-taking was highlighted by participants as a way to reduce the LoS of frail older people:

“Get a proper history e.g., patient comes from a residential home but ‘nursing home’ is written on his notes. If on the day of discharge you decide to ring the home to let them know he is coming this can throw a spanner in the works because residential homes like to assess patients first before they take them back. This could delay the discharge.”

“Early prognosis is one of them. If we can predict at an early stage what help they would need, the paperwork can be done early.”

“Getting a good collateral history from the family to establish baseline”

Early social worker and therapy involvement was another factor identified in attempting to reduce LoS:

“A lot of time is spent ordering and waiting for equipment. If this can be done at a very early stage then length of stay can be reduced, e.g. telecare and equipment. Sometimes the process is long - winded. If that is looked into then length of stay can be reduced. Early access to social services so the social worker can review and make a plan of care early. Sometimes the discharges are complex and take a lot of time to organise.”

In addition, early family involvement was identified to reduce LoS:

“Ask family, discuss with family about discharge destination and coping at home. Need a designated discharge team on the ward to help with discharge planning.”

Intensive MDT involvement was another overarching theme identified to reduce LoS, as well as nurses working proactively to seek out accurate information for the MDT board rounds and a high consultant presence:

“Also I think there should be consultant-led care on a daily basis on all care of the elderly wards. There should be a high consultant presence. This will help facilitate discharges.”

“It was handed over that the patient was from Havering but in fact the patient was out of area. It is easier to sort out a discharge when a patient lives in the borough, in my experience. When it is out of area they often say they have not received the paperwork.”

Social care strategies, such as availability of housing in the community, were seen as necessary because of the length of time it takes for paperwork to be processed for care home placements:

“By providing interim places for elderly patients waiting for patient work to be completed. These take time.”

Preventing admissions in frail older people

Of the ED patients seen by the geriatric specialist team, 36% were discharged before being admitted to the elderly care wards and 64% of patients were admitted to elderly care wards. In comparison, 92% of the elderly patients seen by the general medical team (the non-AEU group) were admitted to wards.

Admission avoidance strategies such as joined-up working were highlighted as necessary to reduce admissions in frail older persons. These include discharge to assess robust social service involvement in the ED and in the community, clinician involvement, and adequate housing. Assessing

patients in their own homes and having strong input from social services were seen as ways to avoid admissions:

“People don’t realise that frail older people will come in frequently through the front door and strategies need to be in place to manage that, e.g., discharge to assess. People can be assessed in their own homes. They don’t have to come into hospital to wait for a package of care. There should be rapid social services access at the front door. Social services that can rapidly assess people so they don’t have to be admitted.”

“If there were more interim places, this may cut down the number of admissions because a lot of the time people come into hospital because they are not coping at home. Social reasons are why people come into hospital, not health reasons. Health and social care should be working together.”

Community clinician involvement was outlined by all participants as needed to prevent admissions:

“Services to be in place like community matrons or ICM [integrated case management]. System in place to look at the ‘frequent flyers’ where they meet with patients and family to discuss why they come into hospital.”

“GP [general practitioner] can see. A simple UTI [urinary tract infection] can be handled by the GP in the patient’s home or care home.”

“There should be a FOPAL service in the community also, to join up with the social care agencies. The carers are the ones ringing for the ambulance. If the carers notice a change in patients’ oral intake or their behaviour then they can ring the FOPAL so they can review patients first before calling for the ambulance.”

Reducing 30-day readmissions

Reducing the 30-day readmissions elicited overlapping responses with those preventing admissions, but the themes generated were: a person-centred approach, supported discharge planning with MDT involvement, and a medication review by the geriatricians:

“Getting it right before they leave hospital... Seeing them from a holistic standpoint and anticipate their needs.”

All participants highlighted the need for supported discharge planning, including strong MDT involvement. In an attempt to reduce readmissions, patients should be sent home with medication compliance aids and discharge support information, if needed, such as telephone numbers in the community to call if they need any help:

“A befriending service and somewhere they can ring if there is any problem. Numbers for social services to ring if they are not coping at home with the current package of care.”

Participants suggested that sound communication between primary and social care was needed, with referrals to community clinicians to ensure a seamless transfer of patients into the community from hospital:

“Poor communication leads to readmissions. There should be good communication between primary and secondary care to explain their journey in hospital and what care is needed on discharge. Once the GPs have this info they will be able to monitor those patients in the community on discharge from hospital.”

“Once the course of antibiotics is finished, the doctors say they can go home. Sometimes they need someone to follow-up like repeating and checking bloods. It may be increased resources for the community matrons.”

“Getting the discharge right. Make sure appropriate referrals are done. A copy of the discharge letter is given to patients although one is sent electronically. Ensure that the follow-up outpatient appointments are made such as memory clinic, falls clinic... Make sure that they have package of care on discharge or, if they have refused, numbers of who to ring in the community is given to them. Making sure they have support.”

In terms of reducing 30-day readmissions, family involvement and support is crucial. Participants felt it

was valuable to engage with the family especially when prognosis is poor:

“Introducing the Gold Standard framework, advance care planning. Using PEACE [Proactive Elderly Advanced CarE] AND PELC [Palliative and End-of-Life Care] care plans for treating patients in the community if they have a terminal condition. Patients who are at end-stage dementia, not eating and drinking – which is expected as it is a progressive disease. We discuss with the family the option of managing at home or the care home so they do not need to come back into hospital. Patients whose prognosis is poor and we foresee them coming back in soon, we get palliative involved.”

Carer involvement is also very important. They should be considered as part of the team because they see the patients everyday in their homes and should be able to highlight their concerns to other professionals:

“When a patient who was previously independent is discharged, a re-ablement package of care is given as a temporary measure to get over the spell of illness. If patients are not assessed properly and there is not enough joined-up service with the community, patients tend to come back into hospital quicker.”

Discussion

Members of the MDT personnel interviewed in our study unanimous agreed that an elderly care pathway at the Barking Havering and Redbridge University Hospitals NHS Trust was useful. This is partly because of the high geographic distribution of the elderly population in this area, and empirical evidence showing that frail older persons are more likely to be admitted. Havering has an age profile that is older than London as a whole [35]. In this study, the average age of elderly persons seen by the geriatric team was higher than those seen by the general medical team. Although age is not a prime etiologic risk factor for frailty, Tchkonja et al. argue that it is the largest risk factor for most chronic diseases [36], and older people are more at risk of emergency hospital admissions [3].

Impact of geriatric team in ED

The presence of a geriatric specialist team in the ED acts as a gatekeeper; this study showed that a significant number of elderly patients were discharged from the ED or from the ERU by the geriatric team. This result supports a previous study, which showed that a geriatrician in the ED was effective in preventing admissions [37]. However, it was difficult to compare the quantitative data from the AEU group to the non-AEU group because of the absence of the frailty score, which would show underlying comorbidities of patients in the non-AEU group. This finding of a lower admission rate shows the effectiveness of this pathway in avoiding admissions. Nevertheless, one might argue that patients in the general medical team group needed a spell of hospitalisation, but the geriatric team were more likely to plan care accordingly, making use of outside agencies if needed.

There are a number of barriers to preventing hospital admissions. One is the lack of community resources such as community matrons, community treatment team nurses, or community therapy. If the geriatric team is not able to arrange effective follow-up in the community, then preventing ED admission may prove difficult.

Managing length of stay

This study showed that the average LoS on the elderly care unit was 7.7 days, whereas on the general medical wards it was slightly lower at 7.3 days. Although the difference is minimal, it does not lend support to this study's proposition that geriatric input would lead to a lower LoS. It also fails to support a previous study, which found that care in elderly units produced a shorter length of stay [38].

Early discharge planning is an enabler for LoS reduction. Sheppard et al. support this argument, as they believe that early discharge planning saves lives [39]. Taking a comprehensive history of the elderly patient is important and should include input by the family to help understand the patient's baseline functions, and to discuss discharge destinations to facilitate early referrals to social workers and therapists.

Intensive MDT involvement is an enabler for reducing LoS. Nurses should complete the paperwork needed to facilitate discharges in a timely manner, and facilitate early mobilisation in an attempt to maintain patients' functional ability. The presence of senior clinicians is essential for decisions to be made regarding discharges. A study found that average LoS was significantly improved by daily consultant supervision [40].

There are some barriers to reducing LoS. Often, patients who are medically fit cannot be discharged safely because of their social circumstances. They may be waiting to go into a care home, for equipment to be put in place at home, or for a home package of care to be established. As a result, longer hospital stays can put them at greater risk of physical and mental deterioration [41]. These barriers can be eliminated by early discharge planning, measuring performance, and putting strategies in place to overcome them.

A Foundation Trust Network 2012 report showed that Trusts adopting integrated working practices with outside agencies tended to have lower LoS for older people. Furthermore, the Trusts with the shortest lengths of stay for older people tended to perform early specialist care assessments [42]. GPs, community nurses, community matrons, social workers, and therapists need to work in close collaboration to review high-risk patients and develop strategies to deal with them. Philp et al. found evidence to support effectiveness of admission prevention strategies such as care coordination, preventive health checks and care home liaison team [17]. However, in the study by D'Souza and Guptha, no evidence was found to support the idea that enhancing care in the community for frail older persons is effective in reducing hospital admissions [43].

It can be argued that adequate housing is an effective way of keeping patients out of hospitals. Frail elderly patients who can no longer cope at home would require adjustments to their home situations or placement into a care home facility. Interim places in the community should be made available until paperwork can be completed.

Successful discharges

The elderly care team in this study was able to discharge 65% of their patients without them returning to hospital within 30 days. One limitation is that this research did not differentiate between medical and surgical reasons for returning to hospital so as to determine whether they were preventable or not. A strategy to reduce readmissions is supported discharge planning with MDT involvement, linking the hospital and community for the joined-up working of different organisations for a common aim [44]. A study on advance care planning and readmissions concluded that it may reduce inappropriate readmissions [45].

Hesselink et al. believe that healthcare providers can reduce hospital readmission rates and adverse events by focusing on high quality discharge information and an effective and timely handover from primary to secondary care [46]. A patient may be discharged with support information such as telephone numbers to call if required, a medication review by geriatricians to prevent polypharmacy, and GP involvement. However, if the discharge letter is not comprehensive or does not give clear instructions, then these patients are more likely to return to hospital. We recommend a GP incentive scheme for initiating care planning in the community.

Conclusions

Admission avoidance, LoS, and readmissions are key parameters to focus on when dealing with frail older people. This specialised group needs professionals who understand the implications of prolonged hospital stays and undertake holistic assessments to plan and deliver care accordingly. By defining and understanding the service concept, a pathway for frail older persons in hospital can be designed to deliver quality care. We recommend that hospitals serving an area with a high elderly population should adopt an elderly care pathway.

One of the key findings of this study is that all members of the elderly care MDT agreed that a separate pathway is needed for frail older persons. This pathway is important because of a high geographic distribution of elderly persons in the area and also because of the unique health and social care

issues that frail older persons present with, including multiple co-morbidities, and reduced functional and cognitive abilities.

Working closely with practitioners in both hospital and community settings can provide the stability and support needed to manage frail older persons in the community.

Having a sound knowledge of the frail older person is important in planning and executing their care in hospital and improving the quality of care they receive. For patients with a poor prognosis, care planning is necessary to ensure their end of life is peaceful.

Limitations

There were several limitations to this study. One is that the assessment for readmissions did not differentiate between avoidable and unavoidable admissions. Because of time restraints, an in-depth analysis of the reasons why patients were admitted into hospital within 30 days of discharge was not possible. Another limitation is that the number of elderly patients seen by the geriatric team was twice the size of the elderly patients seen by the general medical team. Furthermore, the frailty scores of elderly patients seen by the general medical team was not assessed. Because this was a retrospective study, data on functionality, if not documented in the patients' notes, were difficult to obtain.

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