



**Improving the identification
and management of frailty**

A case study report of innovation
on four acute sites in NHSScotland

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Photo credits: Joey Hepburn

We would like to thank Joey Hepburn's family for allowing us to use his image in our work.

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Why focus on frailty?

Scotland has an ageing population. The number of people aged over 65 is increasing and this group also represents an increasing proportion of the whole population. By 2035, over 65s will account for over 30 per cent of the population. Over the same period, the number of people over 90 will treble (see Figure 1).¹

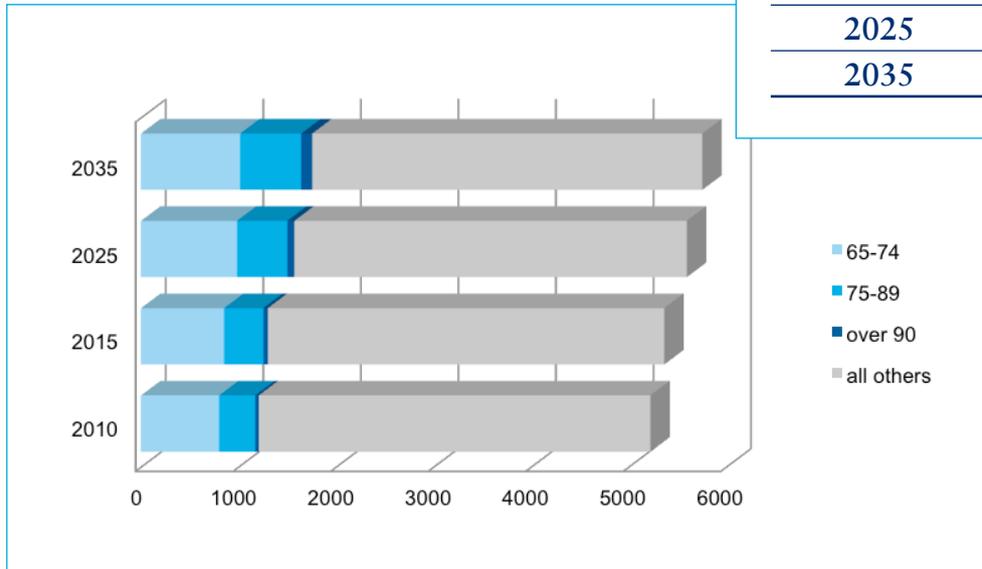
In its report, *Reshaping Care for Older People: A Programme for Change 2011-2021*, the Scottish Government concluded that assuming demand increased in line with the growth in the older population and current service models remained the same, it would need to invest £1.1 billion by 2016 in health and social care services alone to keep pace with demand. Hospitals admit older people more frequently than other age groups and so an ageing population creates additional demand for health and social care services.

Admissions for this older age group are often unplanned (see Figure 2)² and if older people are also frail they are more susceptible to healthcare associated infections, delirium and difficulties in maintaining good nutrition, hydration and skincare. As a result, frail older people usually have longer stays, higher mortality and rates of readmission, and they are more likely to be discharged to residential care.

¹General Register of Scotland, 2011

²Scottish Government, 2012

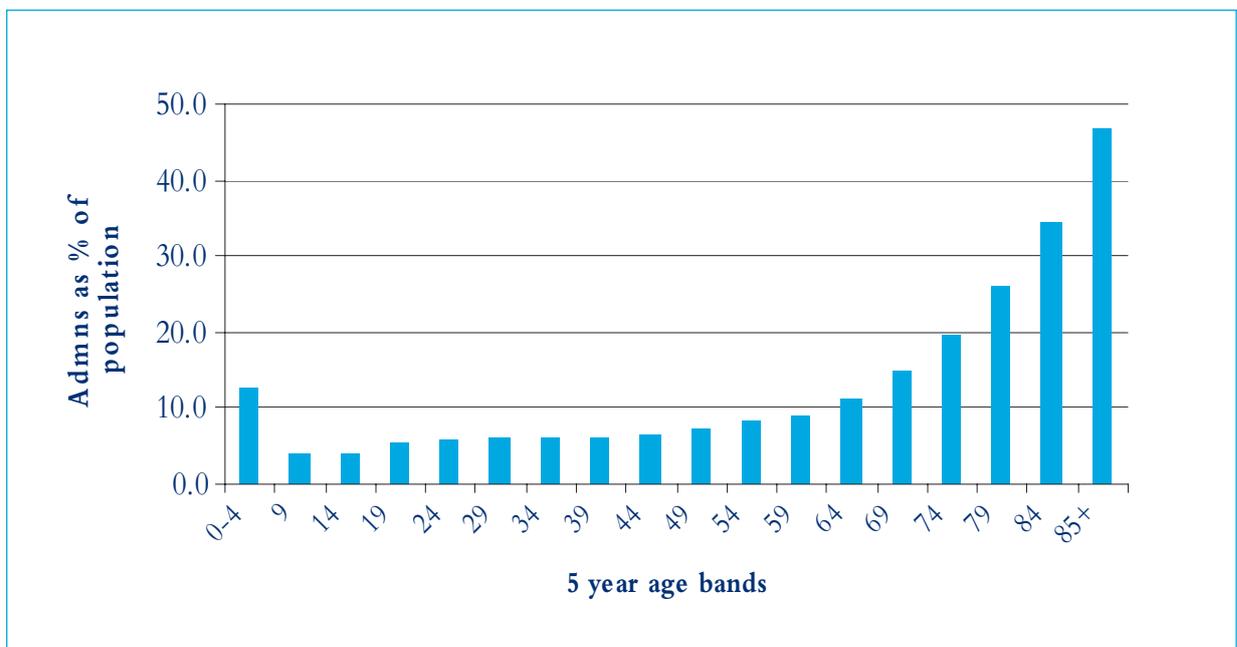
Figure 1: Scotland's population 2010-2035



Over 65s as % of total population	
2010	23
2015	24
2025	28
2035	30.5

Source: General Register of Scotland, 2011

Figure 2: No. of emergency admissions as % of population by age group: Scotland 2008-2009



Source: Scottish Government, 2012

Around 10 per cent of over 65s in Scotland are frail and a further 42 per cent are 'pre-frail'.³ Frailty is a “*decreased ability to withstand illness without loss of function.*”⁴ For many people, increasing age is associated with chronic conditions such as diabetes, heart failure, dementia and chronic obstructive pulmonary disease (COPD). When multiple conditions of this kind combine with an acute illness in a frail person, the result is impaired physical or psychological function. Frailty is often associated with falls, incontinence and difficulty carrying out activities of daily living independently. A small, additional problem can trigger an acute episode of disability in a frail person.

Frailty is a complex, multidimensional problem associated with decline towards dependence and death. However, the evidence shows that when hospitals rapidly identify frail older people and carry out comprehensive geriatric assessment (CGA), outcomes can be improved for these patients.

CGA is a “multidimensional interdisciplinary diagnostic process focused on determining a frail older person’s medical, psychological and functional capability in order to develop a co-ordinated and integrated plan for treatment and long-term follow up.”⁵ CGA means considering a number of different, but co-existing conditions or problems, and requires a specialist team skilled in older people’s care and rehabilitation.

A systematic review of CGA found that older people were significantly more likely to be well and living at home up to 12 months after an unplanned stay in hospital if they had a CGA on a specialist CGA ward.⁶ Compared to frail older patients cared for on general medical wards, those receiving CGA on a specialist ward were less likely to die, deteriorate or be admitted to institutional care. In addition, their mental functioning was more likely to improve.

³ISD Scotland

⁴Rockwood, 1994

⁵Rubenstein, 1991

⁶Ellis, 2011b

Purpose of this report

Against the backdrop of rising unplanned admissions of older people and strong evidence for the benefits of CGA by a multidisciplinary team for frail patients, the Scottish Government provided funding for two years for Healthcare Improvement Scotland in 2012 to improve acute care for older people. The two-year improvement programme ran in tandem with an ongoing programme of inspections of services for older people in hospital also led by Healthcare Improvement Scotland.

The improvement work focused on:

- care co-ordination with a focus on screening for frailty, and
- the identification and management of delirium.

The objective of the frailty element of the improvement programme has been to screen older patients for frailty on admission to hospital, and, where individuals are identified as frail, to carry out a CGA within 24 hours. Working with colleagues from across Scotland, including frailty specialists and improvement advisors, Healthcare Improvement Scotland developed a prototype frailty screening tool (see page 8) and is working with teams in a number of Scotland's NHS boards to test approaches to identifying and managing frailty. The aim of the programme was to ensure that 95 per cent of frail patients have access to CGA, or are admitted to a specialist unit, within 24 hours of admission, by March 2014. The driver diagram on page 9 illustrates

the additional objectives of the frailty improvement programme.

This report focuses on work to identify frailty and ensure rapid CGA in four NHS boards in Scotland: NHS Ayrshire & Arran, NHS Grampian, NHS Lanarkshire and NHS Lothian. The purpose is to describe what is happening in each location, reflect on the factors that have helped make their approaches successful, identify any obstacles the teams encountered and draw out key principles so that other sites may apply learning from this work to their own settings.

Frailty screening tool

Name: _____
 Date of birth: _____
 CHI number: _____

Date: / /
 Zero time: :

Practitioner name: _____ Practitioner signature: _____

Designation: _____

Step 1 **Would this person benefit from Comprehensive Geriatric Assessment?** *Aged 75 and over/age 65+ from nursing or residential care or admitted from community hospital*

		YES	NO
F	Functional impairment in context of significant multiple conditions (new or pre-existing)		
R	Resident in a care home		
A	Acute confusion (Think Delirium), for example the 4AT screening tool - is there a diagnosis of dementia or a history of chronic confusion?		
I	Immobility or falls in last 3 months		
L	List of six or more medicines (polypharmacy)		

Are any of the above criteria met?
 If **YES** to any of the above, move to Step 2

Step 2 **For those potentially being referred for Comprehensive Geriatric Assessment Would this person be better managed by another specialty team at present?** *Indicator for care by another acute specialty regardless of age*

	YES	NO
Need for HDU / ITU (including non-invasive ventilation)		
Suspected new stroke or TIA, consider thrombolysis and care in stroke unit		
Trauma with suspected fracture		
Head injury with loss of consciousness		
Acute abdominal pain with collapse		
Chest pain with suspected MI		
Clear need for other specialty input, for example flare-up of known chronic condition		

Are any of the above criteria met?
 If **YES** to anything in Step 2:

- please ask for specialist multidisciplinary review while in their current unit, but do not transfer directly to the geriatric assessment service

If **NO** to the list in Step 2:

- prioritise for transfer of care to specialist geriatric assessment service

Think Frailty Driver Diagram

Aim	Primary Drivers	Secondary Drivers
<p>To improve the early identification of frailty and ensure that older people who are identified as frail have access to comprehensive geriatric assessment or are admitted to a specialist unit within a day of admission to hospital, by March 2014.</p>	<p>Identification of frailty</p>	<p>Screening on admission to identify frailty</p> <ul style="list-style-type: none"> • Apply the 'Think Frailty Triage Tool' or equivalent screening tool on all older inpatients in acute care to identify those who are frail • Promote the use of patient, family, carer feedback to improve care • Ensure patient requirements are accurately reflected in the care plan
	<p>Care pathway</p>	<p>Care pathways</p> <ul style="list-style-type: none"> • Ensure inpatients identified as frail receive early specialist comprehensive geriatric assessment • Optimise efficiencies in flow, handovers and discharge • Create a culture that involves patients and family in care
	<p>Education, leadership and culture</p>	<ul style="list-style-type: none"> • Develop an infrastructure to support local testing of the 'frailty triage tool' using improvement approaches • Align work with other relevant work streams including wider older people's improvement work, person-centred health and care, patient flow • Optimise opportunities for spread and sustainability • Optimise opportunities to learn from and share good practice • Clinical leadership • Develop measurement framework to guide improvement • Ensure reliable communication across clinical teams of at risk patients

NHS Grampian – geriatric assessment unit

The situation

Until December 2012, the patient pathway for unscheduled care for frail older people in NHS Grampian focused on two acute sites. Woodend Hospital provided the bulk of services as the primary location for geriatric admissions. Before 2008, Aberdeen Royal Infirmary (ARI) offered an overflow facility, but was equipped for geriatric liaison only, with no real process for geriatric assessment. At Woodend Hospital, geriatric assessment was slow and poorly organised, and opportunities for early intervention were missed. For example, physiotherapists did not assess patients until all the medical issues had been resolved and occupational therapists did not assess patients until they were mobile.

The first step towards the complete overhaul of NHS Grampian's approach to services for frail older people and geriatric assessment came when a reduction in junior doctor numbers, as a result of the EU Working Time Directive and a new model of training (Modernising Medical Careers), led to only one ward being available for admissions at Woodend Hospital.

There was a consequent increase in the number of frail older people being admitted to ARI and their care was not managed effectively. NHS Grampian recognised the need for action to improve care for this group of patients and consulted geriatricians and other staff about how to improve. This review concluded that the aim should be CGA on the day of admission to ARI.

Moving to the current model happened in two phases, against a backdrop of reducing bed numbers. Between 2008 and 2013, the number of acute, care-of-the-elderly beds across the two sites fell from 152 to 90.

The task

The consultant geriatricians were clear that frail older people attending for unscheduled care required rapid assessment so, in the first phase of change, a multidisciplinary team for screening and assessing frail older people was established at ARI. In the second phase, beginning in December 2012, Woodend Hospital became the centre for rehabilitation services only and a CGA unit opened at ARI, operating within a new emergency care centre.

The task was to reorganise the approach to:

- **identifying frail older people**
- **ensuring rapid multidisciplinary assessment, and**
- **planning appropriate care and discharge.**

Change programme

At ARI, patients are screened on arrival, either in the emergency department if patients self-referred or in the acute medical initial assessment ward (AMIA) using the Healthcare Improvement Scotland ‘Think Frailty’ criteria. Those meeting the frailty criteria move on, usually within four hours, to the 25-bed geriatric assessment unit (GAU) where the multidisciplinary team carry out a CGA.

The core assessment team comprises:

- **consultant geriatrician**
- **care of the elderly nurses**
- **occupational therapist, and**
- **physiotherapist.**

The goal is early assessment and so the core team is available from 8am to 8pm during the week and between 8am and 1pm at weekends.

Twice each day, the multidisciplinary team meets to review cases and agree a plan for the patient’s care management. The focus of management plans is early discharge from the assessment unit, either home, to an appropriate inpatient bed or to a rehabilitation ward or community hospital.

Outcomes

The result of the new model of ‘front door’ CGA is to create a decision-making hub in which a multidisciplinary team assesses each frail older person on the day they present to hospital.

Applying the ‘Think Frailty’ criteria, 84 per cent of patients admitted to the geriatric assessment unit have been identified as frail. Only 20 per cent of over 75s admitted to general wards meet the frailty criteria, equivalent to one patient every three days who is not admitted to the geriatric assessment unit, but perhaps should be.

On average, around 12 people are admitted to the geriatric assessment unit for CGA every day. The team now expects 4,200 admissions for frail older people to the geriatric medicine department each year compared to 3,200 previously.

Provisional health intelligence data suggest that the early assessment has also affected length of stay, discharge rates and mortality as shown below.

	Woodend Hospital (Dec 11 – Mar 12, before early CGA)	ARI Geriatric Assessment Unit (Dec 12 – Mar 13)
Mean age	83.6	83.9
Mean length of stay (days)	22.5	7.9
Discharge within 24 hours (%)	3	17
Discharge within 48 hours (%)	9	36
Readmitted within 7 days (%) ⁷	3.9	5.6
Mortality (%)	15.4	10.3
Care home discharge (%)	13.1	8.8

⁷The slight increased trend in readmissions is not statistically significant ($p=0.15$).

Changes in mean length of stay, mortality and care home discharge are statistically significant ($p<0.05$).

Early intervention by the multidisciplinary team has resulted in better communication with hospital colleagues, with patients, families and with other agencies. It has also improved information gathering and synthesis allowing faster and more appropriate decisions about individual, patient-centred care and has enabled care plans to be focused on discharge.

Although there is no direct admission route to the geriatric assessment unit, a four-hour waiting time standard operates in both the emergency department and the acute medical initial assessment (AMIA) unit and so frail older people reach their destination ward within four hours if they have to be admitted. As all patients undergo an initial assessment in the emergency department or AMIA, conditions that are more appropriately dealt with by other specialties are identified. Older people without frailty presentations are therefore more rapidly streamed to appropriate, non-geriatric care.

Success factors and obstacles

A crucial factor in achieving positive results from the introduction of front door CGA was having experienced staff on site and available when patients present. The core ARI team comprised a consultant geriatrician, senior therapists and experienced nursing staff. The team had two fixed times each day to discuss patients. They found that by having senior, experienced staff involved in the initial assessment, patients' care was actively managed, judgements could be made about the most appropriate approach for individuals and people were less likely to stay in hospital because that was perceived as the easiest or safest option.

While the data do not deal directly with measures of the quality of care, the ARI team believes that focusing on front door CGA has improved the quality of care by fostering better multidisciplinary team working and patient-centred decision-making.

Two obstacles were identified concerning nursing and allied health professional (AHP) staff numbers and 'downstream' factors relating to local authority home care provision. Working in the geriatric assessment unit is demanding and the nursing establishment in the unit initially did not fully reflect the intensity of the work. The introduction of early CGA means the hospital is dealing with fewer frail older patients in inappropriate beds.

This should relieve pressure elsewhere in the hospital and allow staff to be concentrated in the geriatric assessment unit. However, turnover on the unit and sickness absence are both high and the hospital has found it difficult to fill vacancies and secure temporary cover.

The second obstacle is a shortage of home carers. With the economy of Aberdeen and the surrounding area buoyant, employment is high and local authorities struggle to fill home carer roles. The effect is to delay discharges from both Woodend Hospital and ARI while people wait for local authority social services to make home care arrangements.

In future, the team would like to expand the service at weekends, particularly with physiotherapy and occupational therapy, in order to deliver a robust seven-day assessment service. At the same time, a number of other measures could avoid some admissions entirely and reduce lengths of stay further. These include:

- stronger and closer links with social work, old age psychiatry and intermediate care services in order to prevent discharge delays, and
- the development of alternatives to admission and hospital at home services.

Success criteria and learning points

The key factors enabling the project's success and recommendations for other sites are as follows.

- Plan the redesign and think ahead about how it should work.
- The assessment must take place on the day of admission and before rehabilitation.
- Senior, experienced people, able to make judgements and willing to take a degree of appropriate positive risk, should carry out the assessments.
- One nurse completing a 'tick sheet' is not enough.
- Frequent, multidisciplinary team discussion of each person's care.
- Management plans should focus on discharge.
- Seek support and involvement from social work services from the start.
- Easing pressure on wards 'downstream' by reducing admissions and lengths of stay, may not yield the expected benefits in freeing resources for redeployment in the assessment unit or emergency department.

NHS Lanarkshire – getting it right on frailty

The situation

NHS Lanarkshire has three acute hospitals. All were admitting an increasing number of frail older patients yet, at the same time, the number of care-of-the-elderly beds was falling. Before the redesign of the pathway for frail older people, the emergency receiving ward admitted patients and a consultant geriatrician saw them the day following admission.

In addition, decisions about who was frail and required a CGA varied considerably between the three acute sites and between clinicians on the same site. Decisions also depended on the availability of beds with more patients identified as frail when more beds were available. Overall, receiving wards' assessment of frailty was patchy.

In this context, and in the light of the consequences of frailty in terms of increased mortality, longer stays in hospital and a greater likelihood of institutional care, the care of the elderly team in Lanarkshire saw dealing well with frailty as a key thing to get right. As a result their work has focused on consistently and rapidly identifying frail older people as soon as they present at the hospital, creating capacity for multidisciplinary assessment and active management, and exploring ways of avoiding hospital admissions.

The task

The Lanarkshire team set a goal of improving the early identification of frail older people on arrival at hospital so that all had access to CGA within 24 hours. To achieve that, the team needed:

- a consistent approach to screening in order to identify frail patients earlier and reduce unhelpful variation
- a new approach to the flow of patients through CGA beds in order to increase bed capacity, and
- alternatives to admission to relieve pressure on inpatient specialist services.

Change programme

Acute care for the elderly (ACE) nurses took on the key role in identifying frail patients on admission. Starting on one site and later rolling out to all three, the nurses have a dual function. Firstly, they are responsible for screening patients and identifying those who are frail. Secondly, they make sure patients move on from the receiving ward to the right place, whether that is a CGA bed or another destination, and that there is an effective handover to the relevant service. Initially ACE nurses were present during the day from Monday to Friday, but the service has expanded and now also covers out-of-hours periods and weekends.

An important reason for the ACE nurses to screen for frailty is to reduce the variation in decisions about who is frail and who is not. The nurses assess patients against criteria based on the consequences of frailty such as falls, functional decline or cognitive impairment. When they identify a patient as frail, the nurses refer them directly for early multidisciplinary assessment. Previously, a general physician saw all patients first, with review by the care of the elderly team following later.

In order to improve the flow of patients through the hospital, the care of the elderly team looked at decision-making in relation to admissions, delayed discharges and community care support. As a result, the dynamic of some wards changed so that continuing care wards became intermediate care and step-down wards leading to a better throughput of patients and fewer discharges to institutional care. The key to this change was additional occupational therapists and physiotherapists to facilitate patients' rehabilitation and discharge and a principle of not referring to a care home from an acute bed. Step-down beds offer time, for example for delirium to improve. They also avoid premature decisions on discharge to a care home.

The care of the elderly team worked closely with local authority colleagues on discharge planning so that social care services were not overwhelmed by inappropriate or premature referrals. This meant acute wards examining their referral processes and identifying clinical variability in discharge thresholds.

The aim was to reduce unhelpful variation, relieve the strain on services and encourage medical, nursing and therapy staff to work together to take a multidisciplinary approach to discharge planning.

As part of the new approach to discharge planning, NHS Lanarkshire has created an integrated discharge hub at each of the three acute sites. The discharge hubs link the hospitals with other agencies and have reduced the number of delayed discharges by supporting clear communication and sound decision-making. Ward staff refer to the hub any older person who will require support following discharge. The hub team reviews the referral, discusses discharge with the older person and then arranges the necessary support to facilitate it.

The team considered that all patients appropriate for a specialist bed are by definition frail. They would therefore be at risk from admission to any other ward because the team's staffing meant it could not provide full support for patients 'boarded' elsewhere. As a result, the team agreed on a 'zero-boarding' policy and negotiated that with the bed managers.

Some patients seen at the hospital front door do not benefit from admission and so each of the three acute centres now has an early discharge team. In addition, Lanarkshire has been developing alternatives to admission. These include ASSET which is an age-specialist service emergency team and involves new nursing, physiotherapy and occupational therapy roles. ASSET works as part of the Hospital at Home initiative and links with local authority social care services.

The multidisciplinary ASSET staff aim to visit an older person at home within an hour of their GP contacting the hospital. They screen for frailty using the same criteria as the ACE nurses and arrange a consultant assessment in the patient's home. This usually takes place within two hours compared to 12 hours in a hospital setting. If the consultant feels the person is too ill to be managed at home, they arrange a handover to hospital.

Another aspect of redesigning the frailty pathway involved taking a more active role with frail patients on surgical wards. Previously, surgical teams referred patients to geriatric medicine which introduced delays in the appropriate assessments. The result was significant numbers of older people in need of rehabilitation or having their discharge delayed. Now, therapists and geriatricians meet the senior charge nurses on surgical wards to discuss all patients over 65. This way, the team is reviewing all older people before their surgical colleagues might consider a referral. In addition, nurses now assess older people before elective surgery to identify factors such as cognition, home situation and care needs which might lead to a complex discharge.

Outcomes

ACE nurses and ASSET staff rapidly identify frail older patients, either in the emergency department or at home, through screening against a common set of criteria. Frail patients have a comprehensive assessment within 24 hours of admission and the multidisciplinary team meets daily on the ward to discuss each patient's needs and plan their discharge. Data collected by ACE nurses in the receiving units of the three acute sites in Lanarkshire during November 2013 show, on the day they were seen, the proportion of patients identified as frail and appropriate for a specialty bed and the proportion of those discharged home.

Site	% reaching specialty bed	% discharged home
A	92	18
B	63	5
C	94	17

The anticipatory approach to reviewing patients over 65 in surgical wards has led to a fall in average length of stay for this group of patients. Assessing older patients before elective surgery has also resulted in fewer cancellations and delays, and more rapid discharge after surgery.

ASSET and the Hospital at Home initiative has avoided three out of four potential admissions and so reduced pressure on the CGA beds. At Monklands Hospital, one third of unscheduled admissions come through the Hospital at Home team and two thirds through the emergency department. A further outcome from Hospital at Home is that the therapists on the team have developed additional nurse practitioner skills.

Role blurring of this sort has also happened on the wards where Band 3 and Band 4 nurses have had training to help with the rehabilitation and re-enablement of patients.

NHS Lanarkshire's work to address frailty and redesign the care pathway for frail older people has achieved a 20 per cent reduction in admissions of over 75s in the period from 2009/10 to 2012/13. When the directorate began to focus on frailty and rapid comprehensive assessment, it had responsibility for a total of 650 beds across the three acute centres. Since then, bed numbers have fallen, by 20 per cent in the case of Monklands Hospital, while throughput over the same period has increased.

Success factors and obstacles

Creating a close-knit and effective team has played an important part in achieving NHS Lanarkshire's aims. Team members share the same goal, and also the challenges, of rapid identification of frail older patients and changing the path patients take to assessment and rehabilitation. The multidisciplinary team comprises a number of consultant geriatricians, advanced nurse practitioners, ACE nurses, and allied health professionals. The team also includes a nurse consultant and a consultant allied health professional, both of whom are specialists in the care of older people.

A particular challenge for the team was reducing clinical variability. This involved everyone taking responsibility for making sure that frail patients got what they needed by putting that aim at the centre of the team's ethos and reinforcing it with a feedback cycle showing the benefits of what they were doing.

Involving nurses in the work has been vital to its success, but was initially difficult because of the nurse management structure in a single department across the three acute centres. However, each hospital now has its own nurse manager. In addition, key senior nurses have supported the new approaches, encouraged others to develop new skills, and offered support and mentoring.

With three acute sites, team members are spread thinly. Recruitment of junior doctors is challenging as a consequence of the EU Working Time Directive and Modernising Medical Careers. These two policies mean there are fewer junior doctors in hospitals and fewer opting to work in care of the elderly.

The 'zero-boarding' policy has only been possible because of support from the bed managers and Department of Medicine colleagues. Adhering to the policy has been difficult at times and has relied on the team managing the capacity of the CGA beds so that the need for boarding never arose.

Success criteria and learning points

The key factors enabling the project's success and recommendations for other sites are as follows.

- Effective screening for frailty requires a consistent set of criteria to reduce unhelpful variation.
- Rapid intervention with a multidisciplinary assessment improves flow through specialist beds and leads to better outcomes for patients.
- A zero-boarding policy is difficult to implement, but can be done with the support of bed managers and other colleagues and improves the quality of care for patients.
- Team working is vital. Success depends on a multidisciplinary team with a shared ethos and vision of what is to be achieved.
- Achieving and maintaining good relationships with medical and surgical colleagues needs constant attention. The work of relationship building is never finished.
- Blurring roles and training team members in additional skills has positive advantages for patients, particularly in relation to rehabilitation and re-enablement.
- Things are never 'fixed'. For example, eliminating clinical variation needs constant vigilance.
- The Hospital at Home approach is successful in avoiding significant numbers of admissions.
- Working across multiple sites presents particular challenges.

NHS Lothian – introducing a new screening tool

The situation

NHS Lothian’s interest in frailty is part of the NHS board’s overall Delivering Better Care programme to improve the quality, safety and effectiveness of patient care and patient experience. Work had already been going on in the Medicine of the Elderly (MoE) Directorate to identify frail older patients and manage their journey through hospital. The Delivering Better Care team decided to develop that work to create a screening tool and referral process for use in other departments in response to the Healthcare Improvement Scotland national initiative on improving the identification, assessment and treatment of frailty and delirium.

The task

The Delivering Better Care team set out to refine and improve the existing frail elderly pathway and apply it in new settings in order to identify all frail patients. The project aimed to screen all patients over 65 and refer those identified as frail to the elderly care assessment team (ECAT) within 24 hours of admission to hospital.

Change programme

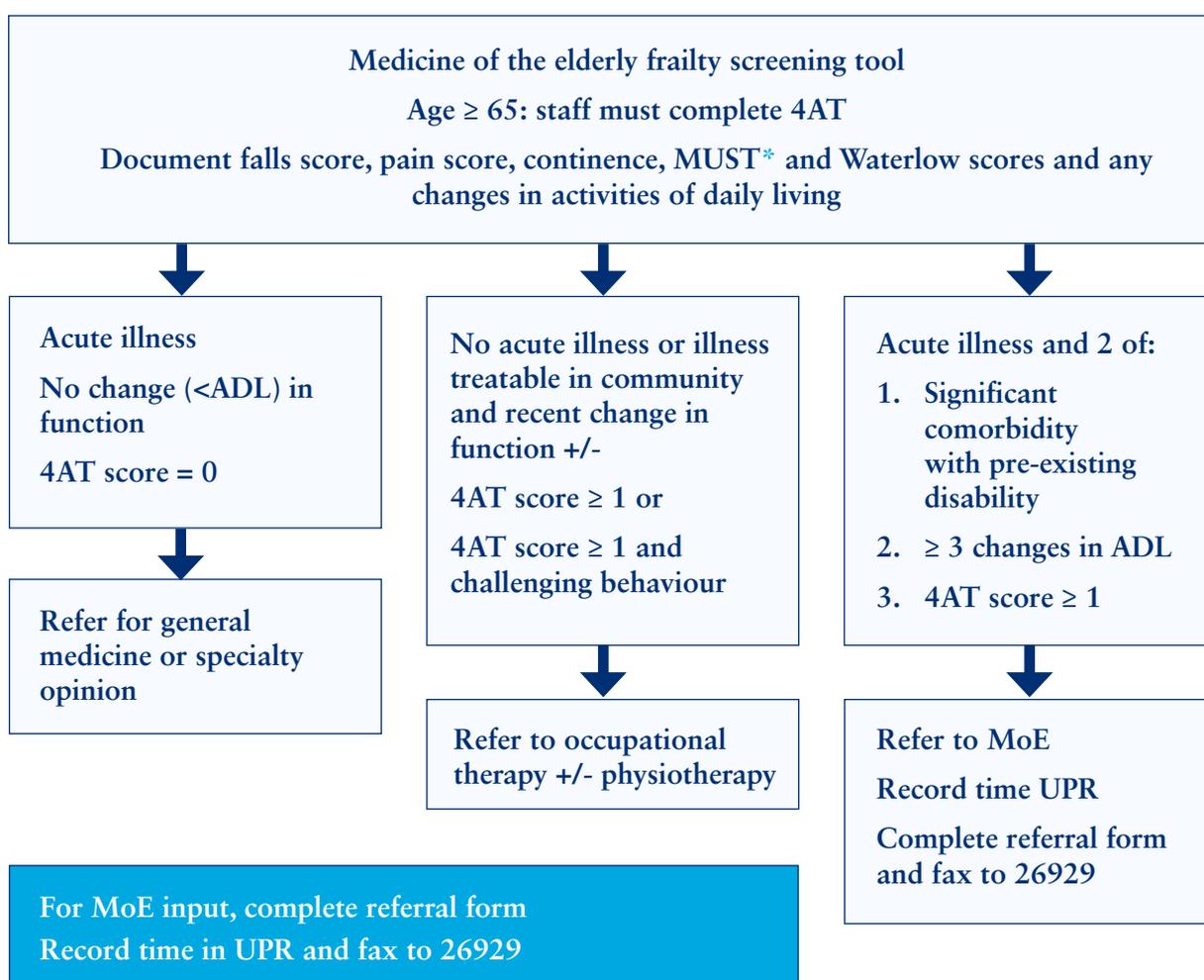
A multidisciplinary team was formed, drawing on expertise from nursing, quality and safety improvement and medicine of the elderly. The project focused initially on the Royal Infirmary of Edinburgh and began with a review of five years’ data from the existing frail elderly pathway. From that, the team produced a set of criteria against which to assess patients and decided to pilot these, within the Surgical Directorate at the Royal Infirmary of Edinburgh, for one month in a six-bed surgical observation unit.

Team members realised that the observation unit was not the best place for the pilot because patients stay for very short periods. They then identified a surgical ward as a possible location and approached the ward charge nurse who was keen to take part in the project.

Following further discussion with nursing management and the surgeons, the project began. The team then:

- reviewed the documents prepared for the initial pilot in the surgical observation ward and concluded they were appropriate for the new test site in the surgical ward without modification, and
- embarked on a comprehensive programme of education for all staff on the ward to explain the purpose of the work, the steps in the pathway and the action required of medical and nursing staff.

NHS Lothian frailty screening tool and pathway



*MUST – Malnutrition universal screening tool

Outcomes

After the first month, ward staff had identified around 30 per cent of patients as frail. However, the project team was aware that medical staff did not always screen every patient over 65, particularly if the ward was very busy, and so some frail patients were being missed. The surgical ECAT nurse and ECAT advanced nurse practitioner realised they needed to communicate closely and regularly to identify frail patients and promote the project. The SECAT enhanced the sharing of information about frail patients which is key to effective CGA.

By the end of the second month, all patients over the age of 65 admitted to the ward were being screened and screening remained at 100 per cent. At the same time, the time from identifying a patient as frail to them seeing the specialist team fell sharply, largely as a result of the SECAT liaison nurse's role. The chart below shows the results.

The SECAT liaison nurse and ECAT advanced nurse practitioner now meet three times a week to discuss patients in SECAT's care. In addition, the SECAT liaison nurse and ECAT advanced nurse practitioner carry out formal reviews which also involve a consultant geriatrician when required.

	Patients screened	Identified as frail	Patients referred	Time to ECAT
September 2013	10	6	6	38 hrs
October 2013	20	14	14	<1 hr
November 2013	20	18	10*	2 hrs

*Of the 18 frail people identified, six had existing care arrangements in place and did not need further intervention, two were receiving palliative care and two were seen by COMPASS, a combined health and social care assessment service working in the community to prevent admission, or re-admission, to hospital.

Success factors and obstacles

The liaison nurse now actively identifies frail patients on admission and specialist assessment by the medicine of the elderly team follows within 24 hours. The result is that frail older patients move on from the surgical ward to appropriate destinations more quickly. In addition, re-admissions and complaints have decreased while relatives' confidence in the care the hospital is delivering has increased. The project has forged strong links between the surgical and medical disciplines.

The project team has rolled out the screening tool and referral process across more wards and acute sites in NHS Lothian. All wards use the same pathway so the approach to frailty screening and assessment is consistent. So far, only the Surgical Directorate has used the screening tool, but the project team intends to introduce it to other directorates.

The team plans to study the impact of this approach to screening and assessment further by looking at how long patients stay in hospital, the frequency of falls and the effect on patients' need for other services. At present, the SECAT liaison nurses screen all patients admitted during the week. Screening at weekends, when the SECAT nurses are not on duty, is the responsibility of the medical staff. However, NHS Lothian is recruiting two further liaison nurses to create a round-the-clock service throughout the week.

While the project was specific to screening over 65s, the frailty tool and referral process provide a generic approach also suitable for patients under 65.

The team planned the initial three-month project carefully and concentrated on persuading the nurses, medical staff and managers of the value of early screening and assessment. Recognising the key role of the surgeons in the success or failure of the project, the consultant geriatrician on the project team discussed the proposals with surgical colleagues and sought their agreement for the study to take place on the ward.

The project team kept the screening tool and referral process simple so that it was quick and easy to do. Providing documentation at all three nurses' stations on the ward meant that no one had to hunt for information, the screening tool or patient record labels because it was all readily available.

Frequent and positive communication played an important part too. Team members visited the ward regularly so that they were a frequent and familiar presence providing active support. They also realised they could retain the support and co-operation of the ward staff by using positive language, demonstrating their enthusiasm for the project and providing facts about the benefits emerging from the work.

New staff on the ward learned about the frailty pathway when they arrived. When the junior medical staff changed half way through the project, the project team had to educate a new group of staff. However, the advantage of the change was that the staff who left the ward, took the information about the project with them which has made it easier to spread the approach to other wards.

Success criteria and learning points

The key factors enabling the project's success and recommendations for other sites are as follows.

- Plan thoroughly, including the membership of the project team.
- Provide information to staff in advance of starting a project so that they have time to become familiar with it before they begin.
- Keep things simple and make the tools easy to use.
- Make sure the information and tools are readily available. Screening will not happen on a busy ward if the tool is not to hand when needed.
- Involve the staff doing the screening and referring so that they feel the project belongs to them and not just to the project team.
- Ensure the use of tools and processes is consistent across all settings.
- Giving people factual information about the project's progress creates a 'positive feedback loop' which builds enthusiasm and a sense of ownership of the project.

NHS Ayrshire & Arran – a new pathway for frail elderly patients in the emergency department

The situation

By the winter of 2012, NHS Ayrshire & Arran had significantly enhanced its Intermediate Care and Enablement Service (IC&ES). This community service offers an alternative to acute hospital admission and provides access to CGA, but despite this, unplanned emergency admissions to the two acute sites in NHS Ayrshire & Arran continued to increase.

During December 2012, an analysis over a 10-day period of unplanned emergency admissions to Crosshouse Hospital uncovered significant issues in terms of the management of frailty. Frail patients stayed in hospital longer, were more likely than others to be admitted to a non-specialist bed and did not have rapid access to a CGA.

A review of admissions data from 2001/02 to 2011/12 showed the number of over 75s admitted to hospital increased each year, as did the time these individuals spent in acute hospital beds. People over 65 represent the minority of emergency department attendances, but form the majority of those admitted to hospital. They also spend longer in the emergency department than younger attendees. The result was poorer outcomes for frail patients and a negative impact on other hospital services from delayed discharges and disruptions to the flow of older patients through the hospital.

The data demonstrated a clear need to reduce unplanned admissions and deal more appropriately with older patients in order to reduce the time they spent in hospital.

The task

A multidisciplinary team based in the emergency department at Crosshouse Hospital embarked on a short pilot study of ‘front door’ assessment of all over 65s with frailty. The core team included:

- consultant geriatrician
- consultant in emergency medicine
- emergency department nursing staff
- specialist nurses from the intermediate care and enablement service
- elderly mental health liaison nurse
- local GP
- pharmacist
- advanced nurse practitioner, and
- administrative staff.

The pilot project took place between 9am and 4pm over one week in mid-May during which the multidisciplinary team worked from the front desk in the emergency department with access to eight care-of-the-elderly inpatient beds and two 23-hour beds in the clinical decisions unit (CDU) adjacent to the emergency department. No additional financial resources were allocated to the project, with all contributions from team members taking place within existing contracted time.

Change programme

The team used a frailty index developed at Crosshouse Hospital to screen all over 65s who attended the emergency department and identify patients for assessment by the multidisciplinary team. Screening took place as soon as people arrived at the hospital. People identified for assessment met one or more of the following criteria:

- a resident in a residential or nursing home
- presenting with new delirium
- impaired mobility
- a fall in the past month (including if the fall was the reason for presentation)
- dementia
- incontinence
- recipient of a social care package, and
- a modified early warning score (MEWS) greater than three.

MEWS is a scoring system designed to indicate the severity of a patient’s condition. In the pilot study, it provided a marker of the individual’s current burden of ill health.

The team automatically excluded patients who had suffered a stroke, needed a high level of care (ITU or high dependency) or if they were on renal dialysis because these individuals have a well-defined care pathway and rapid access to specialist beds. For all other patients, the team applied the index case by case, excluding those with an obvious requirement for specialist care other than CGA, such as recent chemotherapy or a myocardial infarction.

Patients identified as frail then entered the frail elderly pathway developed in the hospital. Following initial screening, the team checked for delirium or cognitive impairment using the 4A test. A crucial part of the pathway is a multidisciplinary team discussion of all the people identified as frail in the initial assessment. Other steps on the pathway involve:

- medicines reconciliation
- medical and functional assessment
- a check of data systems to gather detailed information about the other care services involved with the person
- planning, carrying out and reporting of appropriate investigations, and
- development of an outcome plan.

During the pilot study, the core team also involved a range of other colleagues on site at Crosshouse Hospital or from the local community services. These included:

- a community liaison psychiatrist in elderly mental health
- the Alzheimer's nurse consultant
- the hospital bed manager
- frail elderly care pathway facilitator
- social work colleagues
- the district nurse team leader
- the CDU charge nurse
- care of the elderly ward charge nurses, and
- alcohol liaison services.

In order to co-ordinate the collection and analysis of real-time data, the project also involved the:

- Manager of the Intermediate Care and Enablement Service (IC&ES)
- Emergency Care Quality Improvement Programme (EQUIP) Lead
- Development and Integration Manager for older people's services
- Service Improvement Lead for Patient Access, and
- Clinical Improvement Practitioner.

Outcomes

A total of 119 people over 65 attended the emergency department during the pilot week. Initial screening using the frailty index identified 44 people for assessment by the multidisciplinary team. The chart below shows the results.

From a total of 119 attendances	Suitable patients	Discharged	Admitted	Transferred	Beds available*	Re-admissions over following 30 days
Monday	5	3	2	—	2	
Tuesday	16	12	4	—	8	
Wednesday	6	3	2	1	12	
Thursday	11	4	7	—	7	
Friday	6	4	2	—	10	
Total	44	26	17	1	39	2

* The number of unoccupied beds available each day at 5pm in the acute medical receiving unit.

By rapidly assessing all over 65s who attended during the pilot period, the team was able to discuss care or discharge plans with the carers or family members who came into the emergency department with the patients. The interventions the team made included:

- diagnosis of medical problems
- modification of medications
- end of life care discussions
- arrangement of follow-up investigations
- provision of walking aids
- introduction of, or increase in, social care services, and
- referral to community mental health team.

The rapid screening for frailty and early assessment allowed the multidisciplinary team to increase the discharge rate from the emergency department and improve performance against the four-hour accident and emergency waiting time standard. During the pilot week, patients over 65 arriving at the emergency department had a first consultation in around half an hour (33 minutes) and a review by a care of the elderly consultant in an hour (62 minutes). The mean journey time through the department for this group of patients was two hours, 18 minutes with 95 per cent completing their journey in around five hours (+2 SD of 5.01 hours). Before the pilot started, patients' mean journey time was three hours, nine minutes and it took around seven hours to see 95 per cent of patients (+2SD of 7.01 hours).

Patients under 65 years old also progressed through the emergency department more quickly and fewer patients were admitted to wards other than in the appropriate specialty with the result that overall patient flow through the hospital improved.

The pilot included a qualitative analysis which demonstrated consistently good feedback from patients and carers.

Based on the positive results from the week-long pilot, the multidisciplinary team extended the project to six months.

Success factors and obstacles

Experience of the pilot week, and the first four months of the extended programme, suggest the approach offers a good model of care. Good communication has been key to the project's success. The multidisciplinary team consistently communicated both the need for and the nature of the changes. The team involved the emergency department from the start in planning the project and working from the front desk was an important factor in the project's success. Initially somewhat sceptical, some of the emergency department staff were concerned that the new multidisciplinary frailty team were doing unnecessary work, discharging people they would have sent home anyway. But, as a result of the project, the frailty multidisciplinary team is now embedded in the emergency department. Both teams are positive, satisfaction is high, the evidence for the benefit of comprehensive geriatric assessment as soon as a frail patient presents is convincing and the working culture of the emergency department has changed. These benefits would have been harder to achieve if the frailty team had not been based in the very heart of the emergency department.

Benefits from the pilot have been apparent throughout the hospital. Fewer patients 'board' (admission to another specialty's ward or a general bed) and transfers from the emergency department are appropriate. Discharges home are faster for more patients and the frailty index is now used by all medical specialties.

Implementing the new model of screening, assessment and discharge for frail older people brings some challenges. The new approach is a significant shift away from the usual model of geriatric care, usually seen as a ‘back door’ function in which referrals come from other specialties, assessment is slower and rapid discharge is not usually the norm.

A consequence of locating the frailty team in the emergency department is pressure on staffing. Before starting the pilot, managers and clinical colleagues were not convinced of the benefits of releasing a consultant geriatrician and of locating the new team at the front desk in the emergency department. Taking a consultant away from their usual pattern of work to be present at all times on the floor of the emergency department meant bringing in locum cover. However, after presenting the case for change to the relevant hospital directorate, the multidisciplinary team has had full support from the NHS board’s management which is now looking for longer term solutions to the medical staffing challenges the new model brings.

Experience at the other acute site in NHS Ayrshire & Arran underlines the importance of the consultant geriatrician role. While the initial pilot week and the continuation of the work into the longer six-month project has brought measurable benefit to Crosshouse Hospital, Ayr Hospital has not seen such a marked or obvious improvement.

A consultant geriatrician led the pilot week at Ayr Hospital, as at Crosshouse Hospital, and achieved similar benefits. However, following the subsequent retirement of that consultant, a senior decision-maker is not always present when frail people attend the emergency department. Experience at Crosshouse Hospital demonstrates that the spectrum of destinations is considerably broader when the consultant geriatrician is present on the floor, underlining the importance of this ‘front door decision-maker’. These destinations include two overnight beds in the CDU adjacent to the emergency department, five ‘step-up’ beds leased to the intermediate care team, and direct admission to the care of the elderly ward (bypassing the acute medical receiving unit). Those involved in the project are working to achieve parity between the acute sites.

A specialist nurse from the intermediate care team was part of the initial pilot. However, the team now includes a physiotherapist or occupational therapist instead, making the approach more accessible to other NHS board sites that do not have intermediate care community teams.

Success criteria and learning points

The key factors enabling the project's success and recommendations for other sites are as follows.

- Communicate honestly the need for change and its expected benefits as frequently and widely as possible.
- Involve colleagues on the acute site and in the community, including GPs, as early and as extensively as possible.
- Ensure patients are seen rapidly by senior decision-makers.
- Prepare and present the case for change to the appropriate management team
- Robust leadership is essential.
- Pilot first and roll out the programme in a planned way.
- Securing robust evidence of the benefits requires reliable data gathering and analysis.
- Have a dedicated data analyst if possible.

NHS Ayrshire & Arran – interim economic analysis

The situation

In recent years, increasing pressure on NHS budgets has created a growing demand for evidence to support decision-making. An economic evaluation considering both the costs and outcomes of an intervention is one approach to gathering and presenting evidence. This makes it possible to weigh up whether any benefit from the intervention is worth the cost and provides valuable information to decision-makers as they seek to make best use of limited resources.

Following the initial week-long pilot of a new pathway for frail older people in NHS Ayrshire & Arran, the multidisciplinary team extended the project to six months beginning in September 2013 and Healthcare Improvement Scotland carried out an economic evaluation.

The economic evaluation took the form of a ‘cost consequence analysis’ which lays out all the costs and consequences of the competing interventions, in this case the new frailty pathway and the previous approach. Where possible, the analysis also includes monetary costs. Although costs and benefits are not combined into a single ratio such as cost per QALY (quality adjusted life year), the transparent nature of the analysis is useful for informing decision-makers.

While any further work will include non-monetary consequences, for example patient and family experience, the focus of the interim analysis is the respective costs of each pathway.

The task

In order to assess the cost impact of the new pathway for frail elderly patients, the costs associated with the introduction of the new pathway were compared with the same costs associated with the old pathway. The cost analysis is based on the patient journey outcomes of all over 65s arriving at Crosshouse Hospital emergency department when the multidisciplinary team is in place (9am–5pm).

Comparative data set

The project team collected data on patient journey outcomes for the new pathway over a 14-week period from September 2013 to December 2013. To minimise the risk of chance and bias affecting the analysis, baseline data for the ‘old’ pathway are from the same time period during the previous year.

Hospital stay costs

The costs of a stay in hospital were calculated according to hospital and specialty-specific Scottish cost data from ISD Scotland as applied to the admissions rates, admission ward, length of stay (LOS), and re-admission rates for each pathway.

Staff costs

The multidisciplinary team involved additional staff in the delivery of the new pathway and so the analysis includes the consequent increase in staff salary costs. Hospital stay costs and staff costs were then combined to estimate a total cost for each pathway.

Interim results

This report was prepared before the final data set from NHS Ayrshire & Arran was available, but two interim analyses provide initial results. The first analysis incorporates data on all the hospital outcomes listed above. However, as only short term data are available for many, the analysis represents cost projections only and not firm conclusions. The second analysis covers the outcomes for which 14-week comparative data were available giving more robust results.

Analysis 1

Based on 14-week comparative data, there was a three per cent reduction in emergency department admissions as a result of the new pathway being in place. Although based on very short term data, Analysis 1 also identified a reduction in length of stay associated with the new pathway, a shift towards more appropriate care with fewer patients ‘boarded’ and more admitted to care of the elderly wards, and reduced re-admission rates for those initially presenting at the emergency department during the data collection period.

As a result of the reduced hospital stay and more appropriate care, the new pathway was associated with an estimated annual cost saving of £463,499. When this is offset by the additional staff required to provide the new pathway, the overall estimated annual cost saving was £163,571 (Table 1).

Table 1: Analysis 1 - Estimated cost projections associated with pathways

	Old pathway (£)	New pathway (£)	Difference (14 weeks) (£)	Annual difference (£)
Hospital costs (14 weeks)	5,885,722	5,760,452	-125,270	-463,499
Additional staff salary	0	299,928	n/a	299,928
			Total	-163,571

Analysis 2

Analysis 2 focuses on the three per cent reduction in emergency department admissions achieved in the new pathway according to the comparative data. For outcomes where only short term data are available, the analysis assumes no difference between the pathways. This analysis is therefore a conservative one which does not account for many of the improvements expected from the new pathway.

The results show the new pathway is associated with an estimated annual cost saving of £361,838. When the additional staff required to provide the new pathway are taken into account, the overall estimated annual cost saving was £61,910 (Table 2).

Table 2: Analysis 2 - Estimated cost projections associated with pathways

	Old pathway (£)	New pathway (£)	Difference (14 weeks) (£)	Annual difference (£)
Hospital costs (14 weeks)	3,673,248	3,575,830 ⁸	-97,418	-361,838
Additional staff salary	0	299,928	n/a	299,928
			Total	-61,910

⁸In Analysis 2, the costs for each pathway are much lower than the costs for each pathway in analysis 1. This is expected because Analysis 2 contains ISD average LOS figures for the general population, whereas Analysis 1 contains locally collected LOS data specific to patients aged 65+ for whom average LOS is much greater.

Conclusion

Based on the results of the two analyses, the new pathway is associated with an estimated annual saving of between £61,910 and £163,571. However, the data set is incomplete and robust conclusions depend on further data collection.

The results may underestimate the cost savings associated with the new pathway because the data include all over 65s who attended the emergency department rather than only those assessed and also accepted onto the pathway.

When the final cost analysis is complete, decision-makers will be able to assess whether or not the frail elderly pathway represents a good use of NHS resources by considering the costs alongside the non-monetary consequences of the new pathway. For example, if the frail elderly pathway represents a cost saving and is also beneficial to both patients and families, there would be a compelling case for embedding the new pathway into standard care.

Conclusion

A number of common themes underpin the success of the work described here.

Easy to use screening tool

Adopting a straightforward, quick and easy to use frailty index or screening tool, whether that is the Healthcare Improvement Scotland Think Frailty screening tool or similar local criteria, has been important for all four groups. Focusing its use at the point where older people are first in contact with acute services, either at the hospital front door or at home, plays an important role in enabling rapid referral for comprehensive and multidisciplinary assessment.

Having a consistent set of criteria against which to assess older people for frailty also reduces variability, increases the number of frail patients correctly referred to specialist beds and cuts the number of frail people on other wards.

Team working

Each team underlined the value of building a strong, cohesive and multidisciplinary team in which all members share the same goal and vision of rapid identification of frailty and referral for CGA. A common aim, though not yet realised in all cases, is to expand the team so that a round-the-clock, seven-day-a-week service would be available to patients. This is testament to the benefits the new approaches have achieved for frail older people in terms of lower mortality, shorter hospital stays and fewer discharges to institutional care.

Early interventions by senior decision-makers

The experience in NHS Ayrshire & Arran and NHS Grampian in particular, points to the value of having senior decision makers carry out the frail person's assessment. Less experienced professionals may admit a frail older person because it is perceived to be the only course of action readily available, but it may also be detrimental to the patient's ability to recover from the acute episode. In contrast, senior and experienced clinicians are more likely to use a wider range of options to manage care more actively.

All four sites also found that early intervention with a focus on discharge planning improved the flow of patients, easing pressure on beds or creating additional capacity.

Communication

As might be expected, good communication was also an important contributor to the success of these projects, both communication within teams and communication between the teams and colleagues elsewhere. Particularly helpful was communicating the results achieved by the new approaches to frailty screening and rapid CGA. Feeding back the benefits of the work was a significant factor in securing support from ward staff and hospital or NHS board management.

Demonstrating Outcomes

This report highlights significant improvements and outcomes for frail elderly people coming into hospital. These outcomes include reduction in admissions and re-admissions to hospital, reduction in length of stay, reduction in discharge to care home and reduction in mortality. Gathering, analysing and reporting local data to show improvements and outcomes will be key in informing future service delivery and cost savings, in order to sustain and spread this work.

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Bibliography and references

Cornwell, J (2012), *The care of frail older people with complex needs: time for a revolution*, Report of The Sir Roger Bannister Health Summit, Leeds Castle March 2012, Kings Fund.

Ellis, G *et al* (2011a), “Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials”, *BMJ*, **343**: d6553.

Ellis, G *et al*, (2011b), “Comprehensive geriatric assessment for older adults admitted to hospital”, *Cochrane Database of Systematic Reviews*, Issue 7. Art. No.: CD006211. DOI: 10.1002/14651858.CD006211.pub2.

General Register of Scotland (2011), “Projected population of Scotland (2010-based), by sex and age group, 2010-2035”, www.gro-scotland.gov.uk/statistics/theme/population/projections/scotland/2010-based/tables.html, accessed February 2014

Rockwood, K *et al* (1994), “Frailty in elderly people: an evolving concept”, *Canadian Medical Association Journal*, **150**: 489-495.

Rubenstein LZ, Stuck AE, Siu AL, Wieland D (1991), “Impact of geriatric evaluation and management programs on defined outcomes: overview of the evidence”, *J Am Geriatr Soc* 1991, **39**: 8-16S as cited in Ellis, G *et al* (2011), “Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials”, *BMJ*, **343**: d6553.

Scottish Government (2012), *Reshaping Care for Older People: A Programme for Change 2011-2021*, www.scotland.gov.uk/Topics/Health/Support-Social-Care/Support/Older-People/Reshaping-Care, accessed February 2014.

Online resources

The Knowledge Network, Improving Care for Older People – National Work stream, www.improvingcareforolderpeople.scot.nhs.uk

ISD Scotland; the information and statistics division of NHS National Services Scotland, www.isdscotland.org/Health-Topics/Health-and-Social-Community-Care

Glossary of abbreviations

4AT (4As test)	Screening tool for cognitive impairment and delirium
ACE	Acute care for the elderly
AHP	Allied health professional
AMIA	Acute medical initial assessment
ARI	Aberdeen Royal Infirmary
ASSET	Age-specialist service emergency team
CDU	Clinical decisions unit
CGA	Comprehensive geriatric assessment
COMPASS	Comprehensive assessment service for frail older people; a combined health and social care service working in the community to prevent admission, or re-admission, to hospital
ECAT	Elderly care assessment team
EQUIP	Emergency care quality improvement programme
EU	European Union
GAU	Geriatric assessment unit
ICES (IC&ES)	Intermediate care and enablement service
ITU	Intensive care unit
LOS	Length of stay
MEWS	Modified early warning score
MoE	Medicine of the Elderly
MUST	Malnutrition universal screening tool
QUALY	Quality adjusted life year
SD	Standard deviation (in statistics)
SECAT	Surgical elderly care assessment team



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