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The Whittington Frailty Pathway: improving access to comprehensive geriatric assessment: an interdisciplinary quality improvement project

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ABSTRACT

National guidelines mandate identification and tailored management of patients living with frailty who attend the acute hospital setting. We describe using quality improvement (QI) techniques to embed a system that allowed identification of frailty in older patients attending the emergency department (ED), creation of a clinical pathway to facilitate comprehensive geriatric assessment and appropriate same-day discharge of suitable patients. Integration of Clinical Frailty Scale (CFS) scoring within an electronic record system, a continuing programme of education and awareness, and dedicated project staff allows patients to be identified for an ambulatory frailty pathway. Our results show a sustained improvement over 9 months of the project, with 73% of patients over the age of 75 years presenting to ED by ambulance now receiving a CFS score. Over 300 patients have been identified, transferred to ambulatory care and treated via a new frailty pathway, with an admission rate for this cohort of 14%, compared with an overall admission rate of 50% for patients over 75 years. We report a decrease in overall ED admission of 1%. Analysis of patients discharged through this same-day pathway showed a 7-day ED reattendance rate of 15.1% and a 30-day readmission rate of 18.9%, which are comparable with current pathways. Consultant review estimated 87% of patients to have avoided a longer admission. Patient and staff satisfaction indicates this pathway to be feasible and acceptable to users. Our data suggest an ambulatory frailty pathway can deliver significant admission avoidance while maintaining low readmission rates. Similar schemes in other hospitals should consider using QI approaches to implementation of frailty pathways.

INTRODUCTION

The Whittington Hospital is a 470-bedded district general hospital in Islington, North London. It receives over 100 000 emergency department (ED) attendances per year, with patients over 75 years (who represent 4% of the population) making up 10% of these attendances.[1] This older cohort has a conversion rate of ED attendance to hospital admission of 50%, similar to other acute hospitals nearby. This was starkly contrasted to an admission conversion rate of 15% for all age groups attending ED.

National policy,[2] best practice,[3] evidence[4–6] and local knowledge[7] suggest there is a cohort of frail older patients for whom hospital admission could be avoided and ongoing care provided in the community. National guidelines mandate identification and tailored management of frailty in acute hospital settings to improve outcomes,[8] avoid unnecessary admissions and reduce the length of time the patient spends in hospital.[9] By the end of 2019/2020, all hospitals with a major accident and emergency department are expected to provide same-day emergency care services at least 12 hours a day and provide an acute frailty service for at least 70 hours a week.[10]

Comprehensive geriatric assessment (CGA) is a multidimensional assessment and intervention delivered by a multidisciplinary team (MDT)[11] associated with improved outcomes, including in acute settings.[12] Previous work has shown it is possible to embed CGA within EDs with associated improvements in operational outcomes.[4] A typical method for identifying frailty is by using the Clinical Frailty Scale (CFS).[13] This simple tool describes degrees of frailty based on symptoms and functional status on a 9-point scale. Other models of identifying frailty using routinely available data have been described,[14] but are not in current use at our hospital.

Our challenge was to embed a system that allowed identification of frailty in older patients attending ED, creation of a safe clinical pathway to allow CGA and appropriate same-day discharge of suitable patients, and a reliable method of measurement to demonstrate improvement. Previous schemes have not been sustained, and we recognised the

opportunity to use quality improvement (QI) skills within our staff.

CONTEXT

Annual data from ED showed 150–200 weekly ED attendances from patients aged >75 years, with weekly and seasonal fluctuation within expected limits of normal variation. During winter 2017/2018, an occupational therapist (OT) was available to identify older patients with therapy needs at point of attendance. Data from this project showed a frailty prevalence of 53% (Rockwood scores 5 or above) in patients over 75 years attending ED, similar to previous work.[15 16] Due to funding constraints this was not ongoing, but had proved the concept and feasibility of identifying frailty at the front door.

Our ED has 15 assessment spaces in majors, with an adjacent eight-bedded clinical decision unit (CDU). Once a decision has been made to admit a patient, the majority are moved to a 34-bedded medical admissions unit or directly admitted to an inpatient specialist ward. We noticed that 32% of all admissions were for less than 24 hours, and hypothesised that there is a cohort of older patients who take longer than the national 4-hour ED target to fully assess, but who could potentially go home from hospital without admission. Furthermore, a proportion of this group of patients were likely to be frail and would benefit from CGA to address unmet need, integrate with community services and reduce readmissions.

Our key enablers were an MDT workforce including a specialist nurse in older people, skilled therapies input, clinical and leadership colleagues from ED, geriatrics and acute medicine, as well as pharmacy, informatics and project support. A general practitioner (GP) frailty fellow with experience in QI techniques was available to support the project. The Whittington Hospital has an established ambulatory care department,[17] staffed from 08:00 to 20:00, with clinical leadership supportive of transferring stable frail adults from ED to this department for CGA initiation. Safer discharge is facilitated with the help of our virtual ward, including local GPs, and CGA can be completed in the patient's own home by our community geriatrics service.

Our baseline data also showed that for patients over 75 years attending ED and discharged directly, 17% would reattend ED within 7 days (although without manually reviewing notes, it is not possible to comment on whether the same or unrelated problem). We also knew that for patients over 75 years discharged from the hospital within 24 hours after an unplanned admission, 11% will be readmitted within 30 days. For patients discharged from the inpatient geriatrics wards, the 30-day readmission rate is 24% (with an average length of stay of 15 days).

SPECIFIC AIMS AND RATIONALE

Our aim was to use recognised QI tools to implement a frailty pathway into the ED and ambulatory care setting, increasing CFS scoring at the front door and providing an MDT CGA intervention, while paying attention to balancing factors including reattendance and readmission rates. Our driver diagram (figure 1) explains our rationale, along with the change ideas that we developed and planned to implement. This was developed in an iterative manner using the skills and knowledge of all members of our MDT clinical team.

Aims

- To increase the percentage of older patients (over 75 years) attending ED who have a Rockwood CFS completed on attendance to 70% in 9 months.
- To decrease attendance to admission conversion rate by 2% in 9 months.

INTERVENTION AND STUDY

Our frailty pathway launched in April 2018 (online supplementary appendix 1). As described by the National Health Service (NHS) Model for Improvement,[18] we used established QI methods combining measurement and analysis with small tests of change (plan-do-study-act (PDSA) cycles). A core project team met weekly to discuss the data from the previous week and to problem-solve. This meeting was specifically not for discussion of clinical content, but to support the implementation of this change project. Contemporaneous data from the informatics team were displayed using Life QI and Excel statistical process control (SPC) charts. We reviewed what real-life changes had occurred during the week (including staffing, operational, planned and unplanned changes) to assess whether our intervention had resulted in an improvement.

Our first intervention was the creation of a CFS template for our electronic record system (Medway). This can be completed by any staff member at any stage of the patient attendance. As part of this PDSA cycle, we trialled different ways of promoting this to staff. We used posters, which have been amended and redisplayed both physically as laminates above computers in ED and virtually as screen-savers across the trust. Promotion work continued with attendance at daily shop floor clinical gatherings in ED (known locally as '10@10', 10 min at 10:00), use of 'Message of the Month' forums to promote the frailty service and encourage CFS scoring, and training on how to use the assessment tool provided through monthly ED nursing clinical team meetings as well as ad-hoc shop floor training and electronic guides via email. In July, we developed a 'Frailty Highlights' report showing a run chart of how many scores had been completed, which was sent fortnightly by email to clinical, operational and leadership teams. In July, a paper ED checklist was developed to complement the existing hard copy nursing paperwork, which included completion of the electronic CFS as a prompt. This was incorporated into the patient safety checklist, completed for all patients in the ED, by October. In November, the ED admin team began prompting clinicians to complete CFS for any patient over 75 years who had been in the department for more than 1.5 hours without it already completed.

Figure 1 Driver diagram. CFS, Clinical Frailty Scale; CGA, comprehensive geriatric assessment; ED, emergency department.

Our second intervention was the creation of the ambulatory care frailty pathway. Initially patients were informally transferred to the department as part of the existing case load. We made changes to this pathway, including the creation of an electronic case load folder 'Medical Frailty' to distinguish these patients from the routine work of ambulatory care, and confirming of consultant-to-consultant handover between ED and ambulatory care. Operational issues with this pathway were dealt with at the weekly meetings and escalated to managerial support as required.

Our third intervention was about developing support for the service. In August, one of the ED matrons took on a leadership role within the department to promote

the service, encouraging and reminding staff members to use the pathway. Through organisation-sponsored 'Superweeks' allowing focus on a specific clinical area, in July and December, we were able to free up clinician time to support adaptations to the service. In the first 'Superweek', a consultant geriatrician led a daily 14:00 huddle in ED, along with a specialist nurse in older people, therapy and ED nurse colleagues. This became an ongoing part of the service in September. The second 'Superweek' in December allowed the team to introduce a twice-daily huddle (09:00 and 14:00), patient handover was done directly from ED consultant to the geriatrician supporting the service, and frail patients identified out of hours stayed overnight in CDU beds before transfer to ambulatory care in the morning. There was difficulty staffing the service over the December holiday periods due to staff; however, a full-time OT was available from November to support the pathway in ED triage.

MEASURES AND ANALYSES

We included a range of process and outcome measures in response to the views of our different stakeholders.

Our main outcome measure was the recording on the electronic patient record system of a clinical frailty score for patients over 75 years, expressed as a percentage of total ED attendances. This was our measure for tracking whether we could create a reliable system for identifying frailty within ED. This was remotely extracted on a weekly basis by the informatics team. Related process measures were the total number of ED attendances and types of attendance. Additional analyses were done of day and time of attendance to offer insights to guide improvement work.

Our second main outcome measure was on conversion rate from ED attendance to hospital admission for the over 75 years group. These data are routinely collected and offered an easily understood metric to communicate with hospital managers.

Our third principal set of measures was around the activity of the frailty pathway. We tracked the number of patients seen, completion of an electronic CGA template (when became available in November 2018) and the admission rate to hospital of patients assessed on the pathway.

We used time series to display and measure change, analysed using the theory of SPC.[19] This enabled modifications of the improvement activities, based on real-time changes. By using Life QI software, we could distinguish between background or 'common cause' variation in our data and 'special cause' variation. We recognised that unintended adverse effects are particularly likely in frail older people, such as impact on patient experience or an increased occurrence of unplanned hospital readmissions. A retrospective analysis was done on patients seen within the pathway to establish whether they re-presented to hospital after the described intervention. This gave us our main balancing measures of ED reattendance and hospital readmission. Patient and staff feedback was gathered using the Meridian patient survey system[20] and coordinated by the hospital patient experience team during the 'Superweeks'.

RESULTS

We have seen a steady increase in the percentage of patients over 75 years attending ED who receive a CFS score (figure 2.) By week 31 of the project, 73% of patients over the age of 75 years presenting to ED by ambulance received a CFS score. For all over 75 years attending ED through any route, there has been stepped improvement, with a current mean of 47%. Marked weekly improvements in July and December were associated with the frailty huddles and 'Superweeks'. The overall improved performance in November was attributed to the prompting of ED staff by admin support and the OT and consultant geriatrician starting work to support the service. A downward trend is noted in December, coinciding with staff absence.

By January 2019, 319 patients have been identified, transferred to ambulatory care and treated via the pathway. Admission rate for this cohort has remained around 14%.

A retrospective analysis of 53 patients discharged same day through the pathway showed a 7-day ED reattendance rate of 15.1% and a 30-day readmission rate of 18.9%. This readmission rate is higher than for all over 75 years ED attenders but lower than discharges from the inpatient wards. The 7-day ED reattendance rate is similar to that for all over 75 years who are discharged directly from ED (table 1). A notes review by a consultant geriatrician estimated 46 of these 53 patients (87%) to have avoided a longer admission due to the pathway.

Overall ED conversion rate has reduced from 50.77% to 49.15%. Locally, a 1% reduction in unplanned admissions translates to 100 fewer admissions and 738 fewer bed days if sustained for full year. Calculations based on this front door admission avoidance result in saved bed days that conservatively add up to £1 million of annual savings, without including the cost of iatrogenic harm from unnecessary hospital admission or the additional community benefits of addressing holistic needs based on CGA.

Patient and staff experience data were collected during the December 'Superweek' and feedback was overwhelmingly positive. We had 10 patients and 22 staff completing questionnaires. Of the surveyed patients 90% were happy with the experience of the frailty pathway, with 80% feeling the additional time spent to complete a CGA was acceptable and all patients (100%) describing the experience as better or the same as any previous ED attendance. The majority (77%) of staff felt confident about using the Rockwood CFS and 100% of responders felt the frailty team was beneficial to patient flow through ED. Qualitative feedback suggested the team to be helpful as patients were assessed with a wider perspective, medically and socially. Negative comments related to the time-limited availability of the service and difficulties around delay in hospital transport arrangements.

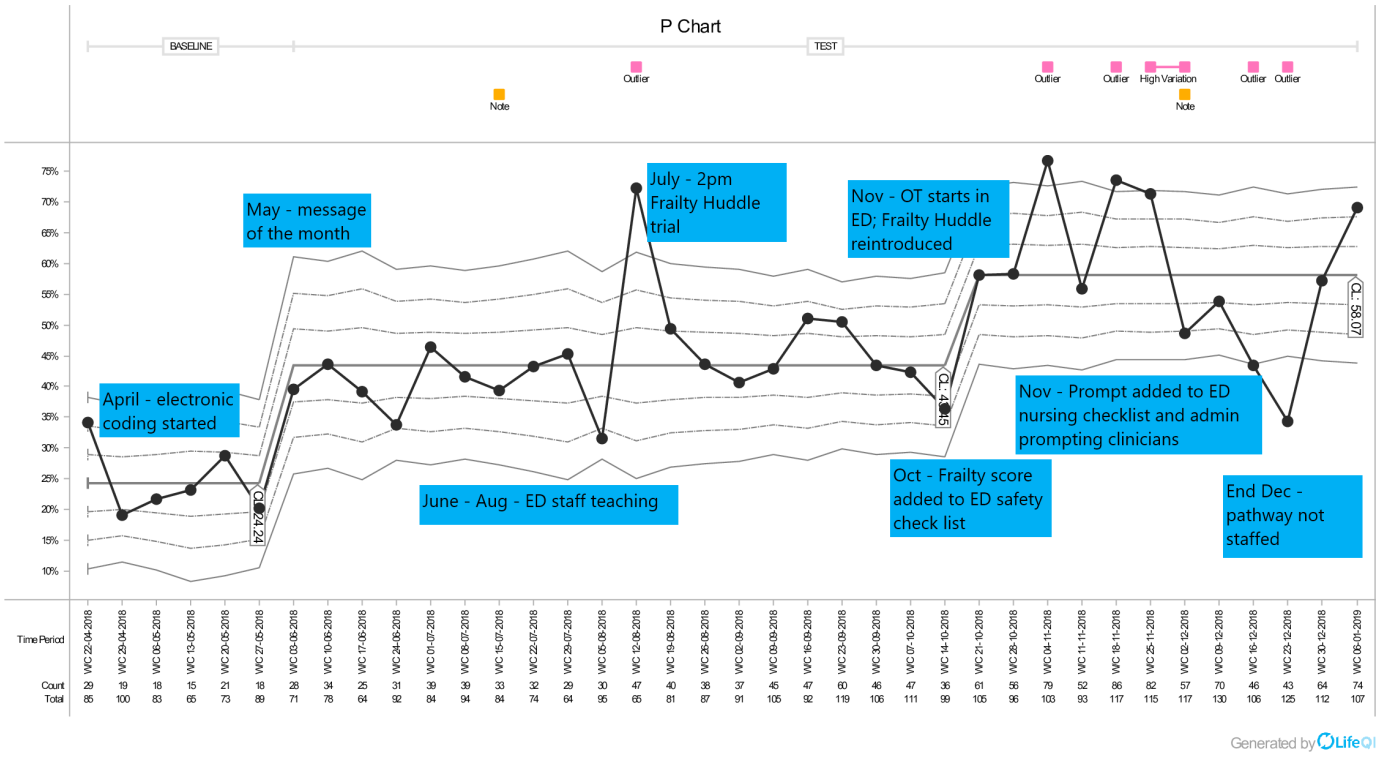

Figure 2 Rockwood CFS added via Medway for all patients over 75 years attending ED. CFS, Clinical Frailty Scale; ED, emergency department; OT, occupational therapist.

DISCUSSION

We have demonstrated that it is possible to introduce Rockwood CFS scoring at the front door of ED for an over 75 years population. This allows patients to be identified as being suitable for an ambulatory frailty pathway. Our results show a sustained improvement, facilitated by the integration of CFS within an electronic record system, a continuing programme of education and awareness, and having dedicated staff available to support the project. Within the first 9 months of the project we did not meet the targets in our stated aims, but have achieved them for specific cohorts (those arriving by ambulance) and made progress in other areas including culture change and integrated working. Our data show that an ambulatory frailty pathway is acceptable to both patients and staff, and it is strengthening organisational values of interdisciplinary working in QI cycles.

Clinical leadership of the pathway has engaged front-line staff, and regular review of data provides supporting evidence both in terms of clinical effectiveness and patient safety. The noticeable drop-off in performance during Christmas and New Year periods and improvement during 'superweeks' indicate the importance of having continued front-line support for the service. It also suggests that at present the system is dependent on individuals, rather than being self-sustained.

A key learning from our experience is that pathways are dependent on enthusiastic, passionate people doing something different to improve patient care. This creates momentum, which if lost is unfortunately very difficult to recapture. To offer admission avoidance, frailty pathways need to be able to manage risk appropriately, which requires senior staff decision making and strong clinical leadership. Evidence for nurse-led innovative care models in the ED setting is unfortunately inconclusive.[21 22] The team's ability to manage risk is dependent on staffing and availability of senior support, which changed over the period of study. Without ongoing consultant doctor input, we expect our pathway to offer benefits of CGA to patients, but to be less able to impact on ED performance and admission rates.

Table 1 Comparison of 7-day and 30-day hospital activity

	7-day ED reattendance (%)	30-day readmission (any ward) (%)
Patients seen on frailty pathway*	15.1	16.3
Patients over 75 years attending ED†	18.9	11
Patients over 75 years discharged after <24-hour admission†	17	10.4
Patients discharged from geriatric hospital ward†	10.6	24.4

*11 September 2018 - 8 November 2018
†2017/2018 financial year.
ED, emergency department.

Limitations

A criticism of front door frailty projects has been whether projects 'cherry-pick' patients who would have been discharged anyway.[5] We have sought to mitigate this by having a consultant geriatrician conduct a notes review, monitoring the admission rate for the pathway and reporting data compared with a number of reference groups (table 1).

We must acknowledge that not all admissions are avoidable, and complex older patients with multiple needs are likely to re-present to acute services on a frequent basis, with readmission rates as high as 40% reported at 6 months.[23]

Other limitations are related to the electronic coding of data. Our reporting can only capture CFS scores added correctly to the electronic system and does not capture any written information. As admissions to CDU are counted as hospital admissions, this may limit our ability to demonstrate an impact of this service on overall ED conversion rates. This suggests a better outcome measure may be to report on bed days; however, as this relies on data following a discharge, it was not possible to monitor in real time. Our data are also unable to capture readmission data for patients whom the team offered advice and input in ED and CDU settings, unless these patients were moved to ambulatory care as part of the pathway.

With the diversion of patients from ED to the ambulatory care space, there are issues in terms of physical capacity and staffing. A useful balancing measure would be the impact on the performance of the ambulatory care department.

Attempts to gain an authentic patient voice in this project were challenging. We attempted to organise a patient focus group early in the project but were unable to recruit patients to attend. Given the characteristics of the patient population group we are working with, we have found that they often required additional time to support completing feedback or input from family or carers who were not always available. We explored using volunteers to help support getting patient feedback, but were unable to support this outside the 'Superweeks'. On a practical level, we found that completing the feedback after a discharge plan had been finalised was taking longer to organise than patient transport was taking to arrive. We are now in a process of discussing creative ideas of how to involve patients/families in the codesign and development of our frailty service.

Working within an acute trust, our data are limited to that obtainable from within our clinical record system. The expected impact of a CGA is on the holistic care of the individual patient and this may result in positive or unintended impact on community services. The impact on local primary care systems was not evaluated in this work.

CONCLUSION

Our data suggest an ambulatory frailty pathway can deliver significant admission avoidance while maintaining low readmission rates.

National guidelines mandate identification and tailored management of patients living with frailty who attend the acute hospital setting. As a full CGA process can take up to 2.5 hours of MDT professional time,[11] trusts will need to find systems to offer the right care for the right patients. Pathways should be explicit if their aim is admission avoidance or the added value of holistic MDT assessment. This will guide choice of outcome measures and the staffing model for the planned service. Similar schemes in other hospitals should consider using QI approaches to implementation of frailty pathways. With the drive in the NHS Long Term Plan to provide front door frailty services and increase use of same-day emergency care,[13] a geriatrician-supported ambulatory pathway seems a practical next step.

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