# Does level of frailty influence preemtive planning of treatment escalation for community hospital inpatients?

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**Abstract**

Community hospital patients generally have multiple comorbidities and varying levels of dependence. The prevalence of frailty is therefore likely to be high. Whilst these patients are usually clinically stable when admitted, their health can deteriorate. This deterioration can often be addressed in the community hospital but sometimes for optimal management it is necessary for the patient's treatment to be escalated to an acute setting. The risks of such transfers for people with frailty are high and sometimes outweigh the benefits, and outcomes may be better if the transfer does not happen. Patients with frailty should be involved in discussions about potential deterioration and plans for appropriate escalation of treament should be planned in a preemetive manner.

This study aims to retrospectively evaluate the care of 100 community hospital patients to assess if there is an association between

level of frailty and the preemetive planning of treatment escalation and provide guidance for future practice to help avoid unhelpful escalation of treatment and improve patient outcomes and experience.

# 1 Introduction

The population of the UK is getting older and this is trend is forecast to continue. In 2016 18% of the population was over 65 years old, with 2.4% over 85 years old. Both these figures are expected to grow over the next 20 years (Office for National Statistics, 2017). Frailty is widely agreed to be a condition where the maintenance of homeostasis becomes vulnerable to small stressors (Vellas et al., 2016). Examples of such stressors include changes in environment and minor illness. The consequences of exposure to these include delirium, significant reduction in mobility, falls, increased dependency, non-specifc failure to thrive and death (British Geriatrics Society, 2014; Vellas et al., 2016; Oliver et al., 2014). The prevalence of frailty amongst the ageing population is high (Clegg et al., 2013), with about 10% of those aged over 65 and up to 50% of those aged over 85% having frailty (British Geriatrics Society, 2014). These figures are thought to be higher still in the group of people that are housebound, have care at home or live in a care home (Oliver et al., 2014).

The author is an advanced nurse practitioner (ANP) in a community Trust. The Trust has community hospitals which have wards for inpatient rehabilitation and medical stepdown. There are 12 wards accross 8 community hospitals. Each ward has an ANP who works on the ward to provide medical management of the patients during the hours of Monday to Friday, 0900 to

1730. Outside of these hours, medical care is provided by the out of hours (OOH) general practitioner (GP) service.

Most patients are admitted to the community hospital wards for either rehabilitation or medical stepdown. The majority of these patients come following an acute admission where they have been stabilised medically but are often deconditioned as a result of acute illness and are not ready to go home. At this stage their needs include ongoing medcial treatment and monitoring and further assessments and treament such as physiotherapy and occupational therapy to prepare them for discharge home.

Some patients are admitted directly from home because they have medical or rehabilitation needs that cannot be met at home but do not require an admission to an acute hospital. A minority of patients are admitted for paliative care.

When patients are admitted to one of these wards they have a comprehensive geriatric assessment (CGA) (British Geriatrics Society, 2014) performed by the multi-disciplinary team (MDT). An international meta-analysis found that, when compared with general medical care, CGA was effective at keeping older people alive and living in their own homes at twelve months post admission with a number needed to treat of 33 (Ellis et al., 2011).

The author expects that many of the patients admitted to the wards have frailty. The numbers of patients with frailty is not known, however the patients are assessed for frailty and the patients admitted are old. During the last financial year the average age was 81 and 49% of patients admitted were aged 85 or over. Many have care needs as seen above.

Although the patients are usually clinically stable when they arrive on the

ward, their condition can deteriorate. This is usually managed in the community hospital ward environment. The patients can have investigations including blood tests, plain xrays and electrocardiograms (ECG) usually without leaving the community hospital. They can also recieve treaments such as intravenous (IV) fluids, IV antibiotics and even blood transfusions.

Sometimes the deterioration is such that, for optimal management, services are required that can only be offered in secondary care. When this is the case a decision has to be made, weighing up the proposed and likely benefits of transferring the patient as an urgent or emergency case to an acute hospital with the risks that this presents to the patient. During the in-hours period this decision is made by the ANP who may liaise with the consultant geriatrician. During the OOH period the nurses make a telephone referral to the OOH GP.

This decision making is difficult for the OOH GP who usually does not know the patient. Also the patient is acutely unwell and may not be able to participate in discussions about their care. If it is nighttime it may be difficult to contact relatives to have such discussions. In these circumstances it could be argued that the safest option is to admit the patient to the ED where their condition can be further assessed and closely monitored.

There is evidence that patients with frailty often have poor outcomes, including death, following admission to acute hospital (British Geriatrics Society, 2012; Wallis et al., 2015). This is recognised by the ANPs and for some frail patients they will have discussions with the patient and their family about the relative risks and benefits of a potential admission to an acute hospital and what they would want to happen in the event of deterioration in their health. This way a person-centered plan can be made before any

deterioration happens.

When patients deteriorate during the OOH period and the patient gets sent to the acute Trust, the ANP reviews what happened to see if the admission could have been avoided. There are times when the ANP feels that, in those particular circumstances, the risks to the patient of the acute admission outweigh the benefits due to their frailty, and that the patient should have had preemtive planning of escalation of care earlier in their stay to avoid this acute admission. It appears that there are patients who do not get preemtive planning of treament escalation when they really should.

The level of frailty of patients is recorded but not formally used to guide planning of treament escalation. This project aims to examine if frailty guides preemetive planning of treatment escalation in these community hospital inpatients.

# 2 Literature review

A literature review was performed using the London South Bank University Library online catalogue. The search engines used were CINAHL Complete and MEDLINE. The search terms used were "frailty assessment", "frailty outcomes" and "frailty interventions".

## 2.1 Assessing frailty

An international systematic review found that at least 10% of people aged over 65 had frailty and of those aged 85 or over at least 26% were frail

(Collard et al., 2012). There are various methods and tools used to assess frailty. Some of these count the number of deficits from a particular set that a person has. Sternberg et al. (2011) suggest that such a tool is not practical for use in a clinical setting, being more suitable to assessing populations for strategic planning. Other tools require numerous specific measurements to be taken, again making them less suitable for clinical use (Martin and Brighton, 2008) and possibly more suited to research purposes (Ensrud et al., 2008). Romero-Ortuno et al. (2016) argue that this fragmentation should not be viewed as a problem as each frailty assessment tool is suited to a different purpose.

In both the clincal area which the author works and the emergency department at the local acute Trust, frailty is assessed using the Clinical Frailty Scale (CFS). See appendix A. The CFS is a tool that has been validated for use in cinical practice (Rockwood et al., 2005). It rates frailty based on the person's level of independence and dependence, giving them an ordinal postion on the continuum from very fit and completely independent, CFS of 1, to very severely frail and completely dependent, CFS of 8. There is also a CFS of 9 for those who are terminally ill. The CFS is based on clinical judgment of the patient and is therefore suited to clinical use, certainly after the patient has had a CGA (British Geriatrics Society, 2014).

Generally, the majority of the population of community hospitals is frail older people (British Geriatrics Society, 2012). The CFS score has recently been introduced to the community hospital wards in the author's Trust. The score is not being used for any specific purpose, it is just being entered into the patients' notes for people to refer to. These scores are not being collected, but the author suspects that the proportion of inpatients who are at least

moderately frail, with CFS at least 6, will be quite high. Specifically because CFS is partly based on a person's ability to carry out activities of daily living (ADLs) and instumental activities of daily living (IADLs) and one reason that many patients are admitted to the community hospital is that they need rehabilitation to be able to carry out ADLs and IADLs. Indeed in a study to assess the prevalence of frailty in France, Le Cossec et al. (2016) found that dependency on others for IADLs was an independent determinant of frailty.

## 2.2 Consequences of frailty

By definition, frailty is a state where a small change, intrinsic or extrinsic, can lead to multiple consequences (Collard et al., 2012). These can be severe, including death. An examination of all bereavements of adults in England that were not due to accident, homicide or suicide for a four month period in 2012 was carried out (Office for National Statistics, 2013). It found that the proportion of deaths that were not due to cancer or any cardiovascular disease (CVD) was 42%. In the over 80 age group this was 80%. The most recent edition of this survey from 2015 found that the overall proportion of non-cancer and non-CVD deaths was slightly higher at 46% (Office for National Statistics, 2016), but did not provide a breakdown by age group. They did however report that 60% of their sample were aged over 80.

How many of these deaths were due to frailty is not know, however a Canadian study that examined all deaths in Alberta found that frailty was the cause of 30% of mortality (Fassbender et al., 2009).

A national guide for emergency and urgent care of older people (British Geri-

atrics Society, 2012) reports that many older people are admitted to hospital only to die within hours. This is particularly true for people admitted during the out of hours period. Whilst this does not quantify the sequelae of frailty, there is literature that supports this. Wallis et al. (2015) performed a retrospective study looking at outcomes of hosptial admission for people aged 75 and over, in relation to CFS. They found that increased frailty was an independent predictor of both 30-day readmission and in-patient death, with nearly a quarter of people with CFS of 8 dying during the admission. This supports the work of Kang et al. (2015) whose Chinese study also found that frailty was independtly associated with an increased risk of inpatient death, and also significantly increased the risk of readmission and 3-month mortality for those who survived to hospital discharge.

The effect of frailty on those discharged from hospital was also studied by (Kahlon et al., 2015), who also found that frailty significantly increased the risk of both readmission and death within 30 days of discharge.

## 2.3 Interventions for frailty

Frailty is clearly a problem, so what should be done about it? Older patients should be screened for frailty at every contact with a health professional (British Geriatrics Society, 2014), and this is already happening in the community hospital wards. There is a consensus that frailty should be viewed as a syndrome with multiple domains and therefore there should be an MDT approach to it's management (Vellas et al., 2016).

The CGA is a multidisciplinary, evidence based strategy to guide the management of frailty that is viewed as best practice (British Geriatrics Society,

2012; British Geriatrics Society, 2014; Oliver et al., 2014). Patients in the communtity hospitals already recieve this regardless of their CFS score.

We have seen how frailty combined with acute illness carries a high risk of death, and British Geriatrics Society (2012) reports that end of life care in older people with frailty is something that is often not adequately considered. Oliver et al. (2014) support this by asserting that people with frailty are often not involved in planning their end-of-life care. They suggest that the reasons for this include factors such as the trajectory, with frailty often being a more gradual decline without sudden landmark moments. This contrasts with conditions such as terminal cancer where there is a defining transition to an end-of-life phase. This can mean that entering such a phase is not recognised and therefore planning is overlooked.

Should the recognition of a high level of frail act as an event to signify that a person is entering an end-of-life phase? Having found that frailty in the context of acute coronary syndrome is associated with poor outcomes, Kang et al. (2015) recommend that a high CFS should trigger the consideration of escalation pathways (Kang et al., 2015). This supports the recommendations of British Geriatrics Society (2012) who assert that over-investigation and uncessary interventions in the frail elderly population are costly to both the individual and the health economy. They go on to advise that in such patients, their preferences for their future care should be ascertained early. Oliver et al. (2014) reinforce this by highlighting the importance of gathering this information before the person loses the capacity to make decisions about how their care should progress. The later work of Romero-Ortuno et al. (2016) adds weight to this argument. Having identified the increased risk associated with frailty and hospital admission, they recommend that frailty

generally should trigger personalised planning of care and it's escalation.

# 3 Aim and objectives

## 3.1 Aim

The overall aim of this study will be to examine if there is a relationship between level of frailty of community hospital in-patients and the consideration of preemtive planning of escalation of their treatment.

## 3.2 Objectives

1. Ascertain the prevalence of levels of frailty within the local community hospital population, and identify the proportion of patients with frailty that do not have a pre-existing plan for treament escalation.

2. Identify how many of these patients have subsequent consideration of preemetive planning of treament escalation during their in-patient stay.

3. Formulate local recommendations for practice to help reduce unhelpful acute hospital admissions for people with frailty through more effective preemtive planning of treatment escalation.

# 4 Study design

The objectives require collection of numbers and proportions of patients that meet objective criteria. A quantitative design will be appropriate to this approach (Parahoo, 2014).

The study aims to examine the association between variables of the level of frailty and whether preemtive planning was carried out. It therefore seems appropriate to use a correlational design. It will be a retrospective observational cross-sectional study: current in-patient casenotes will be reviewed. To achieve objective 1 data will be obtained by reviewing the case-notes of patients, examining the initial MDT assessments to ascertain CFS score, whether a treament escalation plan was in place prior to admission and other aspects of the patient and their admission that could be relavent to preemetive escalation planning. For objective 2, the entire case-notes of patients will be reviewed to ascertain whether preemetive planning of treament escalation was considered during the stay.

# 5 Sample

Time for data collection is limited due to the timescale for the dissertation. Therfore the sampling method needs to capture as many patients as possible in a short time. To facilitate this a convenience sampling method will be used.

An electronic patient record (EPR) is currently being rolled out across the Trust. Currently eight out of the twelve wards have this implemented, so all

the patient records for patients on these wards are accessible by the author remotely. This accounts for 148 of the total of 214 beds: 69%.

The size of the sample will be 100 patients. To obtain this sample, the first 100 patients discharged from EPR wards on or after 1 December 2017 will be included. This method allows the full duration of the admission to be studied. The average length of stay (LOS) is 20.4 days.

# 6 Research instrument

The data collection tool that will be used is provided in appendix B.

# 7 Procedure

For each member of the sample, the EPR will be reviewed. For objective 1 the initial admission and clerking documentation will be reviewed to obtain record the CFS score and the other relevant data. This will be recorded in the tool.

To collect data for objective 2, all patients who do not have a pre-existing plan will then have their EPR searched for the duration of their admission. The record will be searched for the following terms:

- acute
- escalation
- advanced care plan

- deterioration

Where one of these terms is found, the record will be read in context to assess if escalation planning was being considered. If preemtive planning of treatment escalation was considered at least once during the admission then this will be recorded as "YES" in the data collection tool. Otherwise "NO" will be recorded in that collumn.

# 8 Data analysis

*I need some help with this section*

# 9 Ethical considerations

This proposal will be submitted to the research department at the Trust to gain their approval for the study to be conducted. The result of this correspondence will be included in this document as an appendix.

Biggam (2015) identifies five ethical principles that research should maintain:

1. Do no harm
2. Impartial
3. Transparent
4. Confidential
5. Voluntary

## 9.1 Do no harm

This study will not influence the care or treament of any current patients therefore there is no possibility of it causing harm to patients.

## 9.2 Transparent

This document sets out clearly how the study will be conducted.

## 9.3 Impartial

The author is an employee of the Trust where the study will take place. If any bad practice is discovered as part of the work undertaken then the relevant manager will be informed. It is not expected that the author is related to any of the patients whose notes will be examined as part of the study. If it transpires that such a relationship exists then that patient will be excluded from the study to eliminate any possiblity of bias.

## 9.4 Confidential

To ensure that the confidentiality of patients is maintained during this study there will be no recording of patient identifying data outside of the EPR. Each patient record will be allocated a study ID number which will be recorded in the data collection tool, see appendix B. This will anonymise the records.

The data collection tool will be an electronic Microsoft Excel 2010 spreadsheet which will be stored on a Trust owned laptop which is encrypted and

password protected. A backup of the data will maintained on a secure Trust server which will be accessed over the secure Trust network. The data will be destroyed one year following completion of the study; May 2019.

## 9.5 Voluntary

This project looks at retrospective data following patient discharge to evaluate an aspect of patient management. As such, this criteria is not relevant.

# 10 Timetable

Here is the proposed timtable for completion of this dissertation:

| | | |
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| Wednesday 24/01/2018 | Submit to School ethics committee | Complete introduction, literature review, methods and methodology |
| Thursday 08/02/2018 | Ethics committee sits | |
| Thursday 22/02/2018 | Get results of ethics committee | |
| Monday 26/02/2018 | Collect data | |
| Friday 02/03/2018 | | |
| Saturday 03/03/2018 | Run statistics | |
| Sunday 04/03/2018 | | |
| Monday 05/03/2018 | Write up findings and conclusions | |
| Tuesday 17/04/2018 | | |
| Wednesday 18/04/2018 | Submit full draft to supervisor | |
| Friday 18/05/2018 | Final submission | |

# 11 Planned style of dissertation

A traditional style of dissertation is planned.

# References

*(this formatting needs looking at – not currently to LSBU standards. )*


Biggam, J. (2015). *Succeeding with your Master's Dissertation: A step-by-step handbook*. 3rd ed. Maidenhead: McGraw Hill Education.

British Geriatrics Society (2012). *Quality Care for Older people with Urgent and Emergency Care needs "Silver Book"*. British Geriatrics Society. URL: `http://www.bgs.org.uk/campaigns/silverb/silver_book_complete.pdf` (visited on 10/12/2017).

British Geriatrics Society (2014). *Fit for Frailty Part 1*. best practice guidance. British Geriatrics Society. URL: `http://www.bgs.org.uk/campaigns/fff/fff_full.pdf` (visited on 18/10/2017).

Clegg, A., Young, J., Iliffe, S., Rikkert, M. O. and Rockwood, K. (2013). 'Frailty in elderly people'. In: *The Lancet* 381 (9868), pp. 752–762.

Collard, R. M., Boter, H., Schoevers, R. A. and Oude Voshaar, R. C. (2012). 'Prevalence of frailty in community-dwelling older persons: a systematic review'. In: *Journal of the American Geriatrics Society* 60 (8), pp. 1487–1492.

Ellis, G., Whitehead, M. A., Robinson, D., O'Neill, D. and Langhorne, P. (2011). 'Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials'. In: *Bmj* 343, p. d6553. DOI: `https://doi.org/10.1136/bmj.d6553`.

Ensrud, K. E., Ewing, S. K., Taylor, B. C., Fink, H. A., Cawthon, P. M., Stone, K. L., Hillier, T. A., Cauley, J. A., Hochberg, M. C. and Rodondi, N. (2008). 'Comparison of 2 frailty indexes for prediction of falls, disability, frac-

tures, and death in older women'. In: *Archives of internal medicine* 168 (4), pp. 382–389.

Fassbender, K., Fainsinger, R. L., Carson, M. and Finegan, B. A. (2009). 'Cost trajectories at the end of life: the Canadian experience'. In: *Journal of pain and symptom management* 38 (1), pp. 75–80.

Kahlon, S., Pederson, J., Majumdar, S. R., Belga, S., Lau, D., Fradette, M., Boyko, D., Bakal, J. A., Johnston, C., Padwal, R. S. and McAlister, F. A. (2015). 'Association between frailty and 30-day outcomes after discharge from hospital'. In: *Canadian Medical Association Journal* 187 (11), pp. 799–804.

Kang, L., Zhang, S.-Y., Zhu, W.-L., Pang, H.-Y., Zhang, L., Zhu, M.-L., Liu, X.-H. and Liu, Y.-T. (2015). 'Is frailty associated with short-term outcomes for elderly patients with acute coronary syndrome?' In: *Journal of geriatric cardiology: JGC* 12 (6), p. 662.

Le Cossec, C., Perrine, A.-L., Beltzer, N., Fuhrman, C. and Carcaillon-Bentata, L. (2016). 'Pre-frailty, frailty, and multimorbidity: Prevalences and associated characteristics from two French national surveys.' In: *Journal of Nutrition, Health and Aging* 20 (8), pp. 860–869. ISSN: 17604788. URL: https://search.ebscohost.com/login.aspx?direct=true&db=edselc&AN=edselc.2-52.0-84989154356&site=eds-live.

Martin, F. C. and Brighton, P. (2008). 'Frailty: different tools for different purposes?' In: *Age and Ageing* 37 (2), pp. 129–131. DOI: 10.1093/ageing/afn011.

Office for National Statistics (2013). *National Bereavement Survey (VOICES),2012*. URL: http://webarchive.nationalarchives.gov.uk/

20131102085602/http://www.ons.gov.uk/ons/dcp171778_317495.pdf (visited on 10/12/2017).

Office for National Statistics (2016). *National Bereavement Survey (VOICES),2015*. URL: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthcaresystem/bulletins/nationalsurveyofbereavedpeoplevoices/england2015 (visited on 21/12/2017).

Office for National Statistics (2017). *Overview of the UK population: July 2017*. URL: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/overviewoftheukpopulation/july2017 (visited on 03/01/2018).

Oliver, D., Foot, C. and Humphries, R. (2014). *Making our health and care systems fit for an ageing population*. URL: https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/making-health-care-systems-fit-ageing-population-oliver-foot-humphries-mar14.pdf (visited on 17/12/2017).

Parahoo, K. (2014). *Nursing research: principles, process and issues*. 3rd ed. Basingstoke: Palgrave Macmillan.

Rockwood, K., Song, X., MacKnight, C., Bergman, H., Hogan, D. B., McDowell, I. and Mitnitski, A. (2005). 'A global clinical measure of fitness and frailty in elderly people'. In: *Canadian Medical Association Journal* 173 (5), pp. 489–495.

Romero-Ortuno, R., Wallis, S., Biram, R. and Keevil, V. (2016). 'Clinical frailty adds to acute illness severity in predicting mortality in hospitalized older adults: an observational study'. In: *European journal of internal medicine* 35, pp. 24–34.

Sternberg, S. A., Schwartz, A. W., Karunananthan, S., Bergman, H. and Mark Clarfield, A. (2011). 'The identification of frailty: a systematic literature review'. In: *Journal of the American Geriatrics Society* 59 (11), pp. 2129–2138.

Vellas, B., Cesari, M. and Li, J. (2016). *The White Book on Frailty*. IAGG. URL: `http://www.garn-network.org/documents/WHITEBOOKONFRAILTY-USVERSION_000.pdf` (visited on 16/12/2017).

Wallis, S., Wall, J., Biram, R. and Romero-Ortuno, R. (2015). 'Association of the clinical frailty scale with hospital outcomes'. In: *QJM: An International Journal of Medicine* 108 (12), pp. 943–949. URL: `https://academic.oup.com/qjmed/article/108/12/943/1889634`.

# A Clinical Frailty Scale

## Clinical Frailty Scale*

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 **Severely Frail** – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. **Terminally Ill** - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail.**

**Scoring frailty in people with dementia**

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.



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# B Data collection tool

| Study ID | Escalation plan on admission? | Escalation plan considered during stay? | Gender | Age | CFS | Initial presenting complaint | Readmitted during stay? |
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