Practice review

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Management of older people living with frailty at the emergency department: A guide for emergency practitioners

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INTRODUCTION

Emergency Departments (EDs) are increasingly seeing more, seriously unwell older people, who often present with non-specific complaints. Such presentations are recognised as manifestations of frailty. The ED practitioner's challenge is to unpick this constellation of physical, psychological, functional and social issues to arrive at a carefully elucidated and stratified problem list that will enable a holistic treatment package to be described. This assessment and treatment paradigm is increasingly taking place in the context of limited resources and increasing demand. This practice review provides a framework that should support ED practitioners to better assess and treat older people at the ED.

First, a case history is described of the ED assessment of Mrs. Smith – initially **without** the help of a framework applicable for older people. Second, two major themes related to older people and ED assessment are introduced: frailty and non-specific complaints. Third, the case history of Mrs. Smith is presented again in the textboxes 1 till 5-this time **with** the help of the principles of frailty assessment and comprehensive geriatric assessment (CGA), which are further explained in the text.

CASE HISTORY

In the early hours, 86 year old Mrs. Smith was brought to the ED by the paramedics. She lives alone and was found by a neighbour who checks in on her on a regular basis. She was found minimally responsive, lying on her left side on the floor; the house was in a mess.

The ABCDE assessment of the paramedics revealed an increased respiratory rate, low blood pressure and a low body temperature. At the ED, a primary survey was conducted, the left leg was shortened.

Mrs. Smith was struggling to give her own medical history, express pain or answer questions from the emergency practitioners. Her medical history from hospital records included atrial fibrillation, gall- and kidney stones, colonic resection and cellulitis. The last recorded medication on the hospital system from a year ago included an anticoagulant, allopurinol, sotalol, colchicine and omeprazole.

The triage nurse used the Manchester Triage System (MTS) to classify Mrs. Smith as urgent, meaning she should be seen within an hour. Physical examination, blood tests and lower limb X-ray were performed.

After six hours in the ED, Mrs. Smith was admitted to a surgical ward with working diagnoses of peritrochanteric femoral fracture and operation was scheduled for the next day. Later that evening, she became restless and agitated, and received antipsychotics. The following morning, she was found to be pyrexial, hypotensive and tachycardic with reduced consciousness. Mrs. Smith was examined by the surgical team, new blood tests were performed later that day combined with chest x-ray and urine screen. The lab results came back with raised infection markers. The internal medicine team was consulted to advice about the infection treatment. Urosepsis was suspected and antibiotics were started. The surgery was postponed for four days.

FRAILTY AND NON-SPECIFIC COMPLAINTS AT THE ED

Frailty

Frailty is an age-related phenomenon characterised by an increase in an individual's vulnerability to develop increased dependency and/or mortality when exposed to apparently minor stressors [2]. A fit older person will, after minor stress have a small deterioration in function, but will soon recover. An older person with frailty will have a larger deterioration after the same minor stressor event, which might lead to functional dependency, and not returning to baseline.

Frailty reflects a longitudinal process where the intrinsic capacities of an individual slowly dwindle. [3] [4] [5].Intrinsic capacities are the composite of all physical and mental reserves that an individual can draw upon. Those living with frailty are known to be at greater risk of death, iatrogenic harms, prolonged stay in the hospital, falls and delirium [6, 7]. If discharged from the ED, re-attendance is more frequent, especially amongst those with limited support [8]. Due to pre-existing functional, cognitive and/or sensory impairment, older people with frailty and acute illness often have delayed presentations, through inherent reticence, reduced access to support or even neglect. This means that the impact of an acute event will already have started to manifest in terms of functional impairment or delirium, which could be exacerbated by enforced bedrest.

Non-specific complaints (NSCs)

Up to 21% of older people present at the ED [9] with non-specific complaints, which can be caused by numerous underlying conditions [10]. These non-specific complaints do not immediately lead to a clear diagnosis. Examples of non-specific complaints include weakness or fatigue, altered mental status (delirium) or falls. Most often these complaints are related to a combination of infection, imbalance of water and electrolytes, heart failure, anaemia, malignancies, and cognitive impairment [11] on the background of chronic disease such as renal impairment, heart failure or dementia. A particularly dangerous example of non-specific presentation is the use of 'acopia' or 'social admission' as a reason for admission. Such patients often have a complex interaction of comorbidities, polypharmacy and environmental factors. Approximately 50% of older patients who present themselves with a NSC at the ED, have an acute medical problem, which can be easily missed if clinicians' diagnostic antennae are not switched on[12]. Non-specific presentations are akin to 'emergence' in complex systems and cannot be addressed by addressing every component part. Instead, holistic approaches, using over-arching principles are required [13]. Older people value holistic care during their ED attendance, with clear communication, regular attention to comfort and involvement of primary caregivers appearing to be of particular importance [14, 15].

Sepsis is a common cause of NSCs, but both over- and under-diagnosed. Fever can be absent in 30% of older people with sepsis, but presence of fever points to bacteraemia in 90% of older people [16]. Older people with suspected sepsis present to the ED with twice as many signs of acute organ dysfunction compared to younger people [17]. However, the organ dysfunction might not be recognised, for example in patients with delirium super-imposed upon dementia. Inappropriate interpretation of vital signs and symptoms in the prehospital setting by either the patient (or their family) or by primary care teams, is common [17]. When emergency practitioners are not aware of the various outcomes of non-specific complaints it might lead to under recognition or underestimation of serious diseases which inevitably lead to longer hospital stay, re-admissions and higher mortality [18]. Those with severe frailty and sepsis have mortality rates as high as 31% at 30 days [19].

Falls are another non-specific complaint commonly seen in older patients living with frailty. Falls are usually the expression of an accumulation of deficits and their interaction.

To stay upright sensory input (vision, proprioception, and vestibular function) needs to be integrated with cognitive function and effector mechanisms (strength and balance). First and foremost it is important to rule out the more serious or urgent causes from the less urgent. Think of cardiovascular or neurologic disorders or electrolyte imbalances. Traumatic injuries as a result of the fall should be treated. Medication list should be checked for drugs that could have contributed towards the fall, as well as a brief check of cognitive function. A presentation to the ED with a fall might be the only opportunity to prevent more serious injuries and further functional decline[11].

IMPROVING THE MANAGEMENT OF OLDER PATIENTS WITH FRAILTY AT THE ED.

Triage

When a patient arrives at the ED, it is common practice that they are quickly assessed and prioritised. The triage systems used for this assessment are designed to identify the most urgent cases and

ensure they receive priority treatment. However, triage systems that are based on typical symptoms or signs do not take account of increased vulnerability due to frailty, non-specific complaints (as delirium), altered physiological response, comorbidities or polypharmacy [20]. Under-triage increases the risk of poor outcomes for older patients presenting to the ED. Clinical experience with the use of these triage tools shows that patients with frailty and non-specific complaints can be under-triaged [21]. This will result in longer waiting times and treatment delays.

Another approach towards triage tools is to include the clinical judgement of the emergency practitioner. To our knowledge, only one of the triage systems (ESI) specifically includes increasing the acuity by having the option of factoring in a “high risk situation”. However the use of clinical judgement should be encouraged in all triage systems. Good clinical decision making is not only based on rational and analytical thinking but also requires an intuitive, humanistic approach [22]. The importance of the intuition of nurses and doctors is generally recognised. An effective clinical decision-maker is for example a nurse who can, differentiate between the well-looking-ill and ill-appearing-well. Clinical intuition can capture early signs of deterioration before vital parameters start to indicate a cause for concern. Clinical decisions, such as triage, should use rational knowledge which is the backbone for clinical decision making, but also include judgement of subtle changes in breathing, circulation, temperature, mentation, agitation, pain, not enough progress in treatment, indications of the patient of not feeling well or impending doom, or subtle changes in behavior observed by a clinician [23]. When working with older patients with frailty, the combination of analytical thinking combined with an intuitive approach gives the triage emergency practitioner more room to identify non-specific complaints and high-risk situations. This line of thought holds promise for the future but requires further research.

In our case, the recognition of the case’s frailty might have led to a different triage decision:

> Mrs. Smith was seen on ED arrival by the triage nurse. The triage nurse was well trained by the Advanced Nurse Practitioner (ANP) of the geriatric ED team to recognise and interpret high-risk situations and delirium. They were aware of the negative outcomes for older patients with acute illness, which are highly influenced by an appropriate treatment in the first hours of presentation. Using the ESI tool, which allowed for the “high risk situation option”, the nurse determined that Mrs. Smith needed to be seen within 10 minutes.

Frailty assessment at the ED

Formal frailty assessment is an important process to identify those in need of further assessment and enhanced care. While a 2015 meta-analysis [24] did not find that frailty was a good predictor of short-term adverse outcomes after an ED visit, more recent studies have found that the Clinical Frailty Score is associated with short and longer term mortality [25, 26]. The role for frailty assessment is not screening, but risk stratification – identifying those cohorts of older people who are at the highest risk of adverse outcomes in whom frailty attuned care may be more suitable than disease specific pathways.

Frailty assessment allows faster and more focused use of time, personnel and resources for those patients who need it most [24, 25, 27, 28]. Clinical Frailty Scores [29], and assessments of mobility and delirium may influence clinical decision-making. Examples of other ED frailty assessment tools that predict the risk of mortality, functional decline or admission include interRAI ED, APOP, ISAR, and Silver code. Combined with acuity assessments, a better understanding is provided about complexity and vulnerability [27, 30]. However, more research is needed about geriatric assessment in the ED [31]. Several studies have now shown the feasibility of providing frailty assessment in the ED, either at triage or shortly after the patient is placed in a treatment area [32].

Increased levels of frailty should trigger the use of Comprehensive Geriatric Assessment (CGA) [25, 27, 28]. CGA performed during hospital admission increases the likelihood that the patient is able to return to their own living environment and less in need of admittance to a nursing facility [28]. The process of CGA should start as early as possible during ED presentation.

At the time of triage, Mrs. Smith was also screened for frailty by the triage nurse. She was identified as 'mildly frail' using the CFS, and according to local hospital standards the geriatric ED team was consulted. Jointly, the emergency physician and the ANP of the geriatric ED team started to assess Mrs. Smith, using the principles of CGA. They soon found out that Mrs. Smith lives independently. With age she found cooking more difficult, so organised 'meals on wheels'. Together with her social network, (a neighbour and her daughter) she set up a system that made sure people would keep an eye out for her. With these adjustments her diminishing intrinsic capacities were balanced with the compensation of social support.

Comprehensive Geriatric Assessment

CGA is a multi-dimensional diagnostic and therapeutic process. Different models of CGA have evolved in different settings to meet different needs. Commonly, this holistic approach consists of an assessment of the medical, psychological/cognitive, functional and social capabilities and limitations of an older patient living with frailty. The aim is to ensure problems are identified, quantified and managed appropriately, in accordance with the person's desired health outcomes and care preferences. Besides the multi-dimensional assessment, other key-features of CGA are specialty expertise, coordinated multi-disciplinary meetings, formulation of a plan of care around patient-centred goals and successful delivery of the plan including review of progress and care-planning. Older people who are admitted to the hospital and receive CGA are more likely to survive and return home, and less likely to be admitted to a nursing home [11, 28].

CGA at the ED will lead to interventions in the ED that can be used to prevent or limit delirium, to prevent functional decline and to improve transitions of care [35] [36]. While it might not always be possible to conduct full CGA in the ED; it is preferable to, as a start, address at least the 5Ms of Geriatrics besides the medical problems [1, 11]:

- Mind – addressing dementia, delirium & depression. During the stay at the ED and possible admission, it is desirable to have a good understanding of the mental capacities of the patient as this might influence mental competence and decision making processes, expression of pain or other physical complaints. Also, when direct discharge to the home environment is considered, it is good practice to assess whether the patient is able to manage the new sickness or injury well at home. Delirium should be distinguished from cognitive impairments as it is an independent predictor of morbidity and mortality associated with poor outcomes. Different assessment tools exist and could be helpful (4AT, SQiD, AMT-10, bCAM) However, medical expertise and knowledge about these very common conditions should be expected from every ED practitioner.
- Mobility – maintaining mobility and avoiding falls: Older people frequently attend the ED with fall. Three questions should be answered. Why did they fall? What injuries occurred related to the fall and how can future falls be prevented? For all older people who require hospital admission the risk of falling should be assessed. A positive answer to one of the next three questions should trigger the implementation of falls prevention into the care plan of hospital admission. When desired, further assessment of the patient's mobility can be assessed during admission or at the outpatients department later in time. "Have you had two or more falls in the last year? Have you presented acutely with a fall or have you got problems with walking or balance?"
- Medications – reducing unhelpful polypharmacy: To properly assess older people at the ED an accurate and up-to-date medication list is crucial. It is very helpful to have the pharmacy services involved at the ED. The medication list should be checked for inappropriately prescribed drugs. The STOPP/START criteria are a commonly used tool to be able to perform the checks. All emergency practitioners should be aware of the age-related physical changes and organ dysfunction related to pharmacokinetics, pharmacodynamics and interactions, especially AntiCholinergic Burden. The current medication list should also be checked in the light of coexisting diseases, concurrent medications, functional and cognitive capabilities, therapeutic expectations and the new presenting symptoms.
- Multi-complexity – addressing the multifaceted needs of older people (medical, psychological, social, functional and environmental) single organ assessment will not be enough for older people living with frailty. All the active issues should be listed and prioritised. Some require urgent attention, some can wait but should not be forgotten. Multi-comorbidities implies polypharmacy which requires careful medical management.

- Matters most - ensuring that a person's individual, personally meaningful health outcomes, goals, and care preferences are reflected in treatment plans.

The emergency physician and the Geriatric ED team review the earlier vital signs recorded by the ambulance and lists these under the heading medical: a lowered body temperature, raised respiratory rate, low blood pressure. Blood tests are taken for differentials and electrolytes. The ANP conducts the 4AT score, which indicates the likely presence of a delirium. A review of the diagnostic process so far raised the suspicion of an additional illness. Urine screen and blood- and urine cultures were performed and x-thorax was ordered. Based on the positive urine screen test and clinical condition urosepsis was suspected and IV fluids and antibiotics were started within an hour of presentation.

The Geriatric 5M's
Mind
Mobility
Medications
Multi-complexity
Matters most

Figure 1 [1]

Applying the principles of CGA at the ED can facilitate a start of a balanced treatment plan based on patient centred goals which might facilitate early supported discharge. The case description in the textboxes is one example of how it is possible to assess older people with frailty holistically in the ED. Many other examples are available of how to operationalise this concept and will be dependent on local factors[33, 34].

Shared decision-making

Shared decision-making involves patients, proxies and their health care providers jointly assessing treatment and care options to respect and accommodate the patient's preferences, priorities and goals. The process is based on individual values as people have the right to self-determination and autonomy. It might also lead to better outcomes for patients [37]. At an advanced age, especially when intrinsic capacities are diminishing and frailty is present, perspectives on life might not be what ED practitioners assume. When there is a discrepancy between trying to preserve independence but a growing sense of dependence, some older people experience inability and unwillingness to connect to one's actual life. Daily experiences become increasingly incompatible with older people's self-esteem [38]. This phenomena and physical complaints such as pain, chronic diseases as heart failure, COPD, cancer or dementia might alter people's perspective on extending life. Maintaining independence might be considered more valuable then extending life [39]. These experiences and perspectives will influence choices of treatment of older people when acute illness presents itself. When shared decision-making is applied, these values are explored and incorporated in the treatment choices. Guidelines are available to help the ED practitioner apply these principles to their practice [40].

Shared decision-making requires a shift in ways of working, from a biomedical focus to a more person-centered focus. It requires the emergency practitioner to create trust, engender confidence and to make the older person and/or proxy feel respected and understood [37]. It could mean a wish to not be resuscitated is expressed or intubation and ventilation is no longer desired when the need arises.

Some older patients might not wish to receive IV fluids, or antibiotics or actually might not want to be at the hospital at all. Frameworks such as CGA allow ED practitioners to undertake a holistic assessment enabling such issues to be addressed in the context of the whole person. Considering 'what matters most' to the patient and their loved ones is a basic and fundamental pillar of geriatric care [1].

When these principles are applied, not only is optimal care provided, but over-investigation and inappropriate interventions might be avoided. The end of life may be imminent (in which case decision-making should be clearly focused on palliative needs), or it could be in the next few weeks or months: for example, in one study 11%-31% of people with CFS scores 7-9 died during admission [41]. Starting the conversation in the urgent care setting might be appropriate, with follow up advance/future care planning discussions being led by those that know the patient best.

An accurate medication list is requested through the pharmacy services. The local pharmacist informs the hospital pharmacist that Mrs. Smith had not collected her prescribed medications in the last month. Whilst the emergency physician was undertaking medical checks, the ANP made enquiries at the General Practitioner practice of Mrs. Smith. The ANP was made aware of a do-not-resuscitate order documented in the GP's files. Mrs. Smith's daughter was indicated as her proxy in case of her being unable to express her own medical wishes. The ANP also inquired about recent medical history, allergies and the living situation of Mrs. Smith and professional help available at home, as well as the cognitive capabilities, mobility and dietary issues. During multidisciplinary discussion in the ED this information contributed to a treatment plan for admission. As her daughter was not yet present, it was stipulated that the treatment plan needed to be re-evaluated on her arrival.

Multi-disciplinary approach

Typically, CGA involves a team of people from various disciplines (e.g. medicine, physiotherapy, occupational therapy, Advanced Nurse Practitioner or Physician Assistant, nursing, social work, clinical pharmacy) working towards a shared common goal using standardised assessment tools, pathways and documentation [28]. Part of a CGA is a multi-disciplinary discussion to assess the treatment- and care options. In the ED this type of meeting is important and beneficial to the patient. The team involved with the patient at the ED should work within a flattened hierarchy that facilitates mutual trust and encourages constructive challenge.

In the ED, decisions will be made about which other services will need to be involved during hospitalisation, or which post-discharge support will be needed, for example falls or memory clinic, community care services of palliative care teams. The result of CGA may allow clinicians to think about the different possible approaches and may provide an opportunity for shared decision-making and advance care planning in an early stage of the acute care episode. It can guide decisions about disposition from the ED. Decisions to admit or discharge patients from the ED are generally based on expected short-term outcomes of the presenting complaint, but can be enhanced by taking into account other adverse outcomes, such as readmissions, functional decline and/or mortality. Internationally and nationally the availability of resources regarding a geriatric ED team will differ. It could be suggested that the knowledge about properly taking care of older people at the ED will

stimulate activity to promote for structural changes within the institution. However, every ED practitioner could benefit their practice by enhancing their medical knowledge about taking care of older people at the ED. Also on-the-job training or discussing patient cases, by working together with geriatric-trained clinicians available in the hospital could benefit every ED practitioner. Figure 1 lists several considerations for improving care that are relatively easy to implement in clinical practice.

Care at discharge

It has been suggested that before ED or hospital discharge, people should be asked if they are ready to go home. There is known to be a discrepancy between the patients and doctors perceptions of whether or not someone is fit for discharge. If the patient feels that they are not ready, the probability for readmission increases [42]. Many people experience the transition from hospital to home as impactful. When asked, older people report feeling fatigued, anxious and they experience functional decline while awaiting recovery [43]. Therefore, it is important that older people living with frailty are able to access transitional care. The follow up of the holistic assessment in the ED will depend upon whether the patient is admitted or not. At discharge a handover to the general practitioner is important as well as communicating the outcomes of the CGA to other community teams. When the patient is discharged, an option could be to have a nurse-led, structured support post-discharge team in place. Transitional care has been shown to reduce readmissions and mortality after acute hospitalisation [44]. Another option could be an out-patient follow up clinic in co-operation with the general practitioner. If the patient is admitted to hospital the geriatric clinical team could follow up on the initial findings from the CGA in the ED.

It is decided at the multidisciplinary discussion at the ED that Mrs. Smith needs to be treated on the trauma ward. The surgical team will work together with the geriatric team. Based on the information gathered by the geriatric ED team, an individualised treatment plan is prepared, including alterations to the earlier prescribed medications. A nursing plan for the ward is advised and all is handed over to the surgical team, geriatric clinical team and ward nurses. The dietician and physiotherapist are consulted at the start of the admission. Also, the discharge team of the hospital is notified of the admission of Mrs. Smith because it is thought that rehabilitation will be needed at discharge. Mrs. Smith recovers from her delirium having had infection, dehydration, anti-cholinergic burden and small vessel disease being identified and managed in the ED and is soon fit enough for surgery. The ward nurses, physiotherapist and dietician work hard with Mrs. Smith to limit functional decline and weight loss. After a week Mrs. Smith is discharged to a geriatric rehabilitation facility.

Summary/Conclusion

A holistic approach, starting with triage algorithms sensitive to the higher risk of patients living with frailty, frailty assessment and followed by assessment with the help of the principles of Comprehensive Geriatric Assessment, is crucial to properly assess older people with frailty in the ED. Multi-morbidities, nonspecific complaints, frailty, functionality and the social environment need to be assessed in coherence with each other. Multi-disciplinary care, a tailor-made treatment plan, based on

what the person values most, will help the emergency department practitioner to deliver appropriate and valuable care during the ED stay, but also in transition from hospital to home.

Figure 2

Considerations for clinical practice when working with older people at the ED:

- Allow the next of kin to accompany the patient, to reduce anxiety and restlessness and improve the quality of assessment and communication
- Involve the next of kin in making the patient comfortable and at ease at the ED
- Make sure the patient wears their glasses and hearing aids
- Apply falls prevention measures
- Reduce pain as soon as possible and monitor throughout ED stay
- When allowed, let patient eat and drink
- When allowed, make sure patient sits up straight, in a suitable chair
- Help patient with their orientation: reduce background noises, treat the patient in a room with day light, have a clearly visible clock available
- Monitor symptoms of a delirium throughout ED stay
- Speak calm and clear and make sure patient can see your mouth when talking
- Preserve the patients dignity, and talk to, not over the patient, even when significantly cognitively impaired
- In case of discharge home, check patients mobility and provide the necessary devices e.g.: a walking aid. Involve next of kin when discharged home
- Ask patient and next of kin if they feel ready to go home before discharge
- Let patient and next of kin repeat to you whatever you explained about their condition, treatment and follow up. Have attention for repeating of necessary instructions
- Put the instructions in writing too and give these to the patient
- When patient is transferred to a care facility or to a home care team make sure the handover notes are given timely to the medical and nursing team. An additional phone call is highly recommended to improve the quality of handover.

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VH, BB, AJ and CS made substantial contributions to the conception and design of the work. VH did the drafting and revisions. All authors reviewed the article and made contributions to the final version of the article. BB and CS did the final approval of the version to be published. All authors had full access to all the data in the study and take responsibility for the integrity and accuracy of the data.

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