



## Major Trauma in Older People

### **Introduction**

Average life expectancy at 65 is already around 18 years for men and 20 for women. By 2030, there will be a projected increase of around 50% in the number of people over 65 in the UK and 100% for those over 85.

Older people with trauma who would formerly have been denied surgical intervention or expert care are now more likely to receive it and teams are more prepared to operate. However, this approach needs to extend beyond patients with fractures of the proximal femur to all types of major trauma, including head injury.

When it comes to older patients with major trauma, there are of course times where differentiation based on their complex medical needs is perfectly appropriate and both legally and morally justifiable. Services with the right specialist skills including access to geriatricians and comprehensive geriatric assessment are crucial. And there are times where it will be appropriate to offer less interventionist or intensive approaches to older people who are unlikely to benefit or risk being harmed.

However, preventable harm can also result from unjustifiable delays in access to treatment for older people with major trauma including head injury. Paradoxically, older patients with less reserve are more likely to suffer harm from delays in accessing evidence-based treatment on specialist units. And for people who are chronologically older but biologically still fit and well, there can be no excuse for discriminatory access to care, based on their age alone.

### **Key Points – Major Trauma in older people – TARN 2017**

- The typical major trauma patient in the TARN data has changed from being young and male to being older with a lower degree of male predominance.
- Older major trauma patients have a similar injury severity and distribution of injury to younger patients.
- Traumatic Brain Injury is the commonest cause of death.
- A fall of <2m is the commonest mechanism of injury in older patients, in contrast to the predominance of road traffic collisions in younger patients.
- Current prehospital triage systems are not good at identifying older major trauma patients.
- Lack of early identification means that initial treatment is more likely to be in a Trauma Unit, and to be undertaken by a more junior doctor.
- Older patients are much less likely to be transferred to specialist care and have longer times to both investigation and intervention.

- Older patients are more likely to die, but those who survive do not have a large incidence of disability compared to younger people.
- The death rate increases steeply in older patients from discharge to 1 year – which needs to be taken into account when assessing research outcomes.
- There is little seasonal variation in major trauma in older people.
- Comorbidity (as measured by the Charlson Comorbidity Index) has an adverse effect on outcome, but it is likely that other factors associated with age have a greater effect. Research is needed to determine the effect of frailty.

### Clinical Care of the older trauma patient – TARN findings

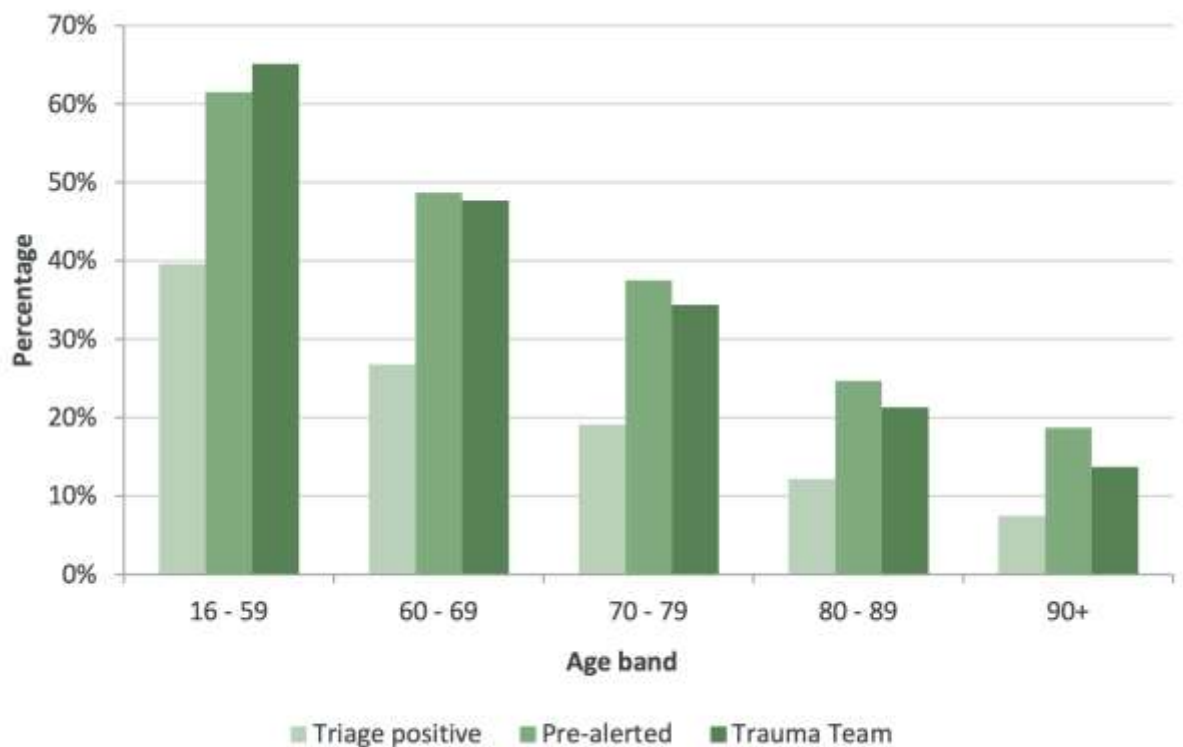


Figure 9: Percentage of patients and triage status (Appendix 2, Table 9)

Pre-hospital triage appears to be far less reliably applied to older people. Few older patients with major trauma are “triage positive” (trigger a primary transfer from the site of injury to a Major Trauma Centre based on the ambulance service tool to identify major trauma patients).

The consequence of the above cascade of events is a delay in treatment offered to older people with major trauma.

## Grade of most senior clinician treating patients on arrival

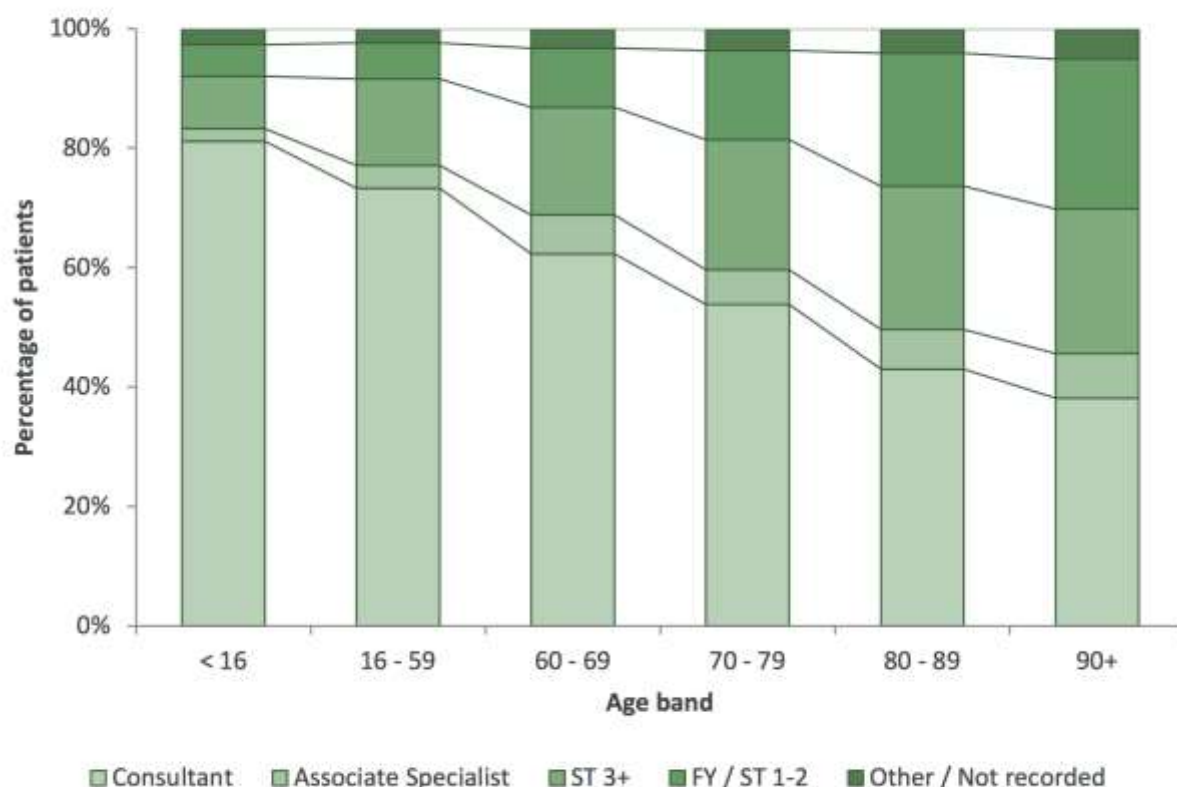


Figure 10: Age and seniority of initial treating clinician (Appendix 2, Table 10)

Half of all older patients directly admitted with major trauma are seen by a consultant on arrival in the Emergency Department (see Table 10). There is a clear trend related to age, with older patients not being identified early (low level of pre-alert) and so being initially treated by more junior doctors. It is likely that a more junior initial assessment leads to delays in investigation and treatment (see later sections).

The times to surgery in the major trauma patient are longer for older people, with some categories of surgery happening very much later (for example, time to neurosurgery is more than 3 times as long as for younger patients).

Older patients have fewer operations carried out by a consultant than younger patients. There is either a difference in perception about the appropriate level of surgeon needed to undertake surgery in older people, or there may be difference in the type of surgery needed by older patients (although it seems unlikely that older people have simpler operations after major trauma and thus need less experienced surgeons performing the procedure).

## Body area injured

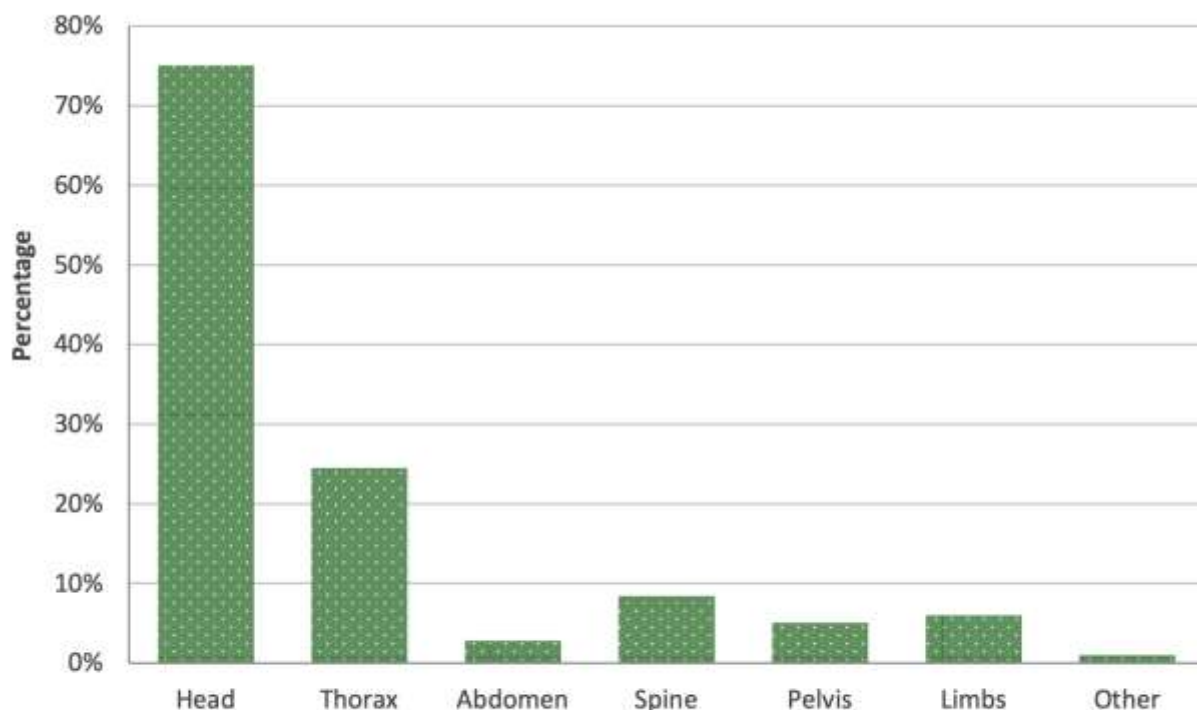


Figure 15: Prevalence of body area injured in 60+ patients (Appendix 2, Table 14)

Traumatic brain injury is by far the commonest type of injury sustained by older people with major trauma. The same pattern is seen in all groups of older patients.

If initially admitted to a Trauma Unit older patients with serious intra-cranial injuries (AIS 3+) are much less likely to be transferred to a specialist centre for treatment. There is no information in the database to assess how transfer decisions are made, whether co-morbidity and the potential for rehabilitation is assessed and whether or not these decisions not to transfer were appropriate.

The injury mechanism in patients who die from major trauma shows a dramatic change with age. In older patients low falls (<2m) become increasingly dominant and road traffic collisions account for a much smaller proportion of deaths. This gives a significant injury prevention problem in older people, as even the best falls prevention programmes have only had a modest effect on the number of falls.

## **Conclusions**

The most important underlying finding of this report is the difficulty that current systems appear to have in the early identification of older patients with major trauma, probably because current trauma triage is directed to identifying high energy transfer trauma.

Shortcomings in the early identification of major trauma in older people leads to a low rate of positive prehospital triage with low rates of bypass to a Major Trauma Centre (MTC); low levels of pre-alert; low levels of trauma team activation and initial management by relatively junior doctors. This lower level of early activation of the trauma care system seems to lead to delays in both investigation and management.

Trauma systems will need to adapt to anticipate increasing numbers of older trauma patients presenting to TUs with late identification, yet still allow for rapid initiation of major trauma protocols wherever the patient is identified (prehospital, emergency department or ward), with rapid movement to a Major Trauma Centre if required.

There are two distinct types of major trauma - high energy transfer trauma in younger patients and low energy transfer trauma in older patients. Each of these types account for about half of major trauma cases. This report suggests the need for both a review of the current arrangements and further research to define the optimal system for the delivery of high quality care to the severely injured older person.

## **Actions**

(i) Heightened awareness of this population with low severity of mechanism of injury, late identification and prolonged investigation / treatment phase.

(ii) Education both prehospital with consideration of an appendix for the elderly within the trauma triage tool. Launch an in hospital campaign to include promotion of older persons trauma courses, local presentations and resus posters.

(iii) Use of a Silver trauma safety protocol – see resus poster in appendix.

(iii) Consideration of unique arrangements required within the NI Major Trauma Network to facilitate timely access to trauma care; in particular early senior review, investigation and transfer to MTC despite late identification if appropriate.

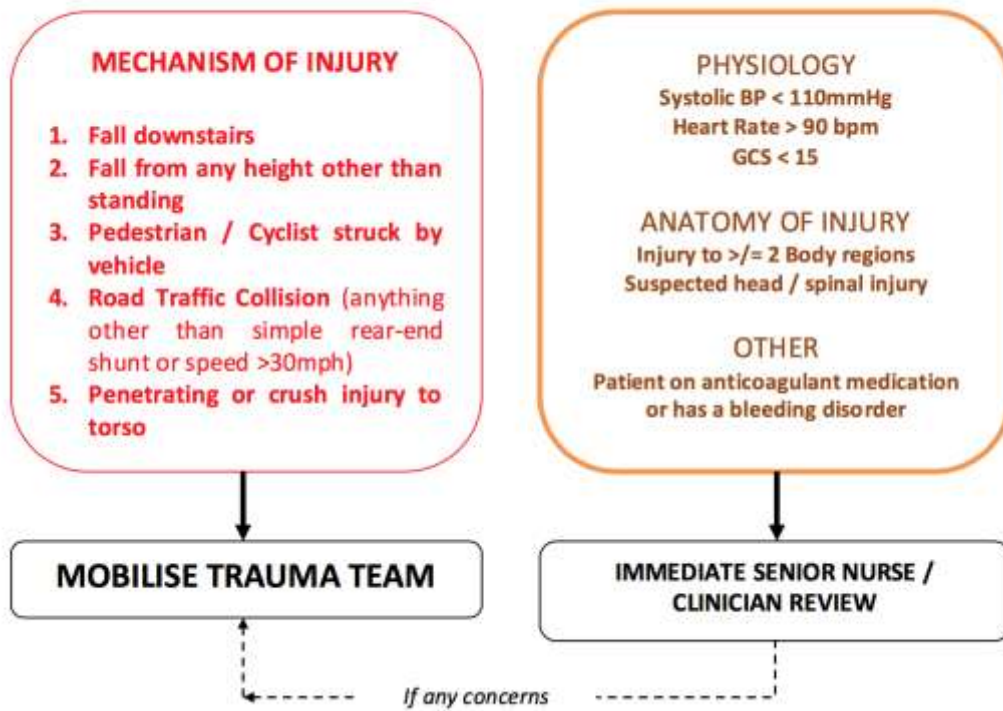
(iv) Reconsider Trauma team activation criteria in the older person.

## **References**

1. Heartlands Elderly Care, Trauma & Ongoing Recovery Project Manual V01
2. TARN Major Trauma in older people report 2017
3. Silver trauma safety net 2018, Midlands Critical Care and Trauma Networks

## Appendix

### Patient Arrives via Ambulance or Self-Presents – Assessment within 15 minutes



# HECTOR

Heartlands Elderly Care Trauma &  
Ongoing Recovery Programme



# Silver Trauma Simulation Course

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Silver Trauma is a new course at King's College NHS Foundation Trust, that recognises the increase in silver, or geriatric trauma. With an increasingly aging population, the impact of this will only increase over time.

This course is useful for every clinician group including Physiotherapists, Doctors, Occupational Therapist, Nurses, Falls Co-ordinators, Health Care Assistants, Anaesthetists, Operating Department Practitioners and Orthopaedic Surgeons.

The course will cover many important clinical areas including:

- Impact of anticoagulants including warfarin
- Potential for head/c-spine injuries after fall down the stairs
- Blunt chest trauma
- Non accidental injury (area covered as inadequate in CQC report)
- Prescribing and medication history
- Ongoing rehabilitation

Dates at Denmark Hill Weston Education Centre:

22 October 2018

PRUH Dates: TBC

Enquiries: [kch-tr.conferencecentre@nhs.net](mailto:kch-tr.conferencecentre@nhs.net)





## Silver Trauma Safety Net



Aged 65 years or over?

Trigger a Silver Trauma Primary Survey by a senior Doctor with any of the following:

### PHYSIOLOGY

SBP<110mmHg in the presence of significant injury\*

Anticoagulant Medication in the presence of injury\*\*

\*Excludes minor abrasions, lacerations, haematoma or fractures distal to ankles / wrists  
\*\*common drugs include Warfarin, Rivaroxaban, Apixiban, Fragmin, Aspirin PLUS clopidogrel.

### ANATOMY

Injury to 2 or more body regions\*

Suspected shaft of femur #

Open Fracture\*

\*Excludes injuries distal to ankles / wrists

### MECHANISM

Fall down stairs\*

Pedestrian vs bicycle or car

Road Traffic Collision\*\*

\*Greater than 3 steps  
\*\*>30mph, entrapment>30minutes, ejection, death in same incident