Reducing Costs Whilst Improving Care: Launching a Trauma Triage Clinic at Kingston Hospital, UK

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Declaration of Interest

I declare that in the past three years I have:

- Held shares in: N/A
- Received royalties from: N/A
- Done consulting work for: N/A
- Given paid presentations for: N/A
- Received institutional support from: N/A

Background

- Trauma (fracture) clinics are some of busiest in the hospital
  - 1.8 Million in England per year[1]
- Increasing trauma clinic demand with less serious injuries being referred
  - Not sustainable
- Several studies have demonstrated that certain injuries do not require follow up x-rays or review

1. NICE guidelines. Fractures (non-complex): assessment and management (February 2016). Accessed online https://www.nice.org.uk/guidance/ng38/resources/fractures-noncomplex-assessment-and-management-pdf-1837399081669.

Background

- Glasgow Royal Infirmary
    - 60% ED and TTC discharge rate
- Brighton - Royal Sussex County Hospital
    - Reduction in OP appointments by 57%
    - Saved >£250,000 per year

Kingston Hospital

- District general hospital
- Serves approx 350,000 people
- 600 to 800 trauma clinic patient referrals per month

Previous Trauma Clinic Model
Kingston Hospital

- Waiting times 14 days
- Next available appointment rather than clinical need
- Problems with delayed presentation of some injuries
- Overbookings
- Clinic delays - associated with poorer patient treatment satisfaction[1]

1. Levesque J, Bogoch ER, Cooney B, Johnston B, Wright JG. Improving patient satisfaction with time spent in an orthopedic outpatient clinic. Can J Surg. 2000; 43: 431-436.

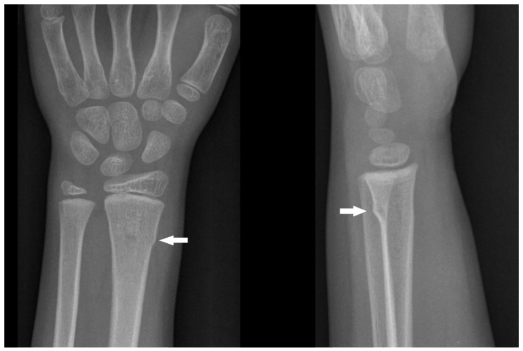
British Orthopaedic Association Guidelines[1,2]

- Case review by a trauma orthopaedic consultant within 72 hours
- Direct review or review of case notes and imaging
- If not direct review then the outcome should be conveyed to the patient by appropriately trained staff who have the option of offering an immediate clinical review if felt necessary

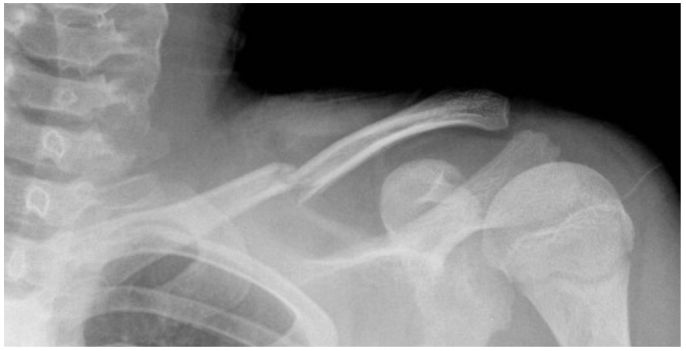
1. British Orthopaedic Association Standards for Trauma (BOAST). BOAST 7: Fracture Clinic Services (August 2013). Accessed online https://www.boa.ac.uk/publications/boast-7-fracture-clinic-services/
2. BOA Virtual Fracture Clinic Statement (October 2015). Accessed online https://www.boa.ac.uk/latest-news/virtual-fracture-clinic-statement/

Introducing a trauma triage service

1. Which injuries do not require trauma clinic follow-up?
2. What is the workload / financial burden of managing these injuries?
3. How should the trauma triage service be designed so as to be safe and efficient?



Distal radius buckle fractures



Paediatric clavicle fractures

Mallet finger

5th metacarpal fractures

Weber A fractures

Minimally displaced radial neck fractures

Toe phalynx fractures

Base 5th metatarsal fractures

What is the workload / financial burden of managing these injuries?

- Trauma clinic audit - May 2017
  - Identify number of unnecessary clinic appointments and x-rays
  - Calculate overall cost per patient
  - Use this information to calculate savings after introduction of trauma triage

What is the workload / financial burden of managing these injuries?

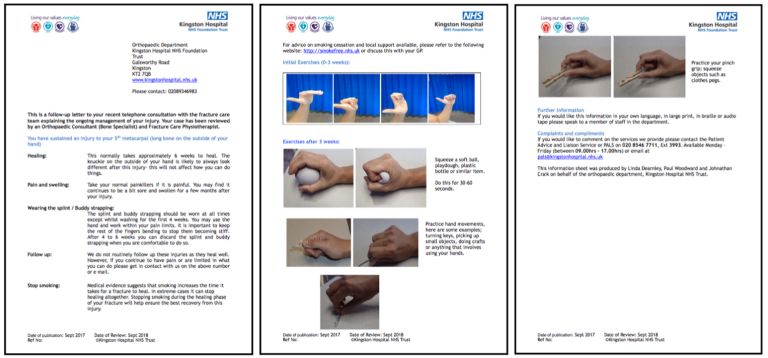
- Trauma clinic May 2017
    - 686 trauma clinic referrals
    - 516 x-ray visits
- Injuries not requiring follow-up
    - 90 Patients (13.1% of all referrals)
    - 164 clinic visits not required (90 new, 74 FUs)
    - 45 x-rays visits not required

What is the workload / financial burden of managing these injuries?

- Costs
  - New trauma clinic appointment = £196
  - Follow-up trauma clinic appointment = £83
  - X-ray visit (2 views) = £32
- Total cost managing these patients/month
  - £25222 (90 new appointments, 74 follow ups and 45 x-rays)
  - £280 (€312) per patient

Trauma Triage clinic design

- Patients referred to TTC from Emergency Department
- Team of 2 Physiotherapists (1/2 day) and 1 Orthopaedic consultant
- Review all case notes and x-rays
- 3 possible outcomes
    - Follow-up in trauma clinic
    - Discharge to physios / hand therapists
    - Discharge with telephone and postal advice
- All triage information input into trauma database
- Audit after introduction: 4 week period - 354 patients



Trauma Triage Guidelines

01/12/2017

Kingston Hospital NHS
NHS Foundation Trust

Guidelines for the management of patients in the Virtual Fracture Clinic
Department of Trauma and Orthopaedics
Kingston Hospital

Mr R Geliet & Mr J Craik

Introduction

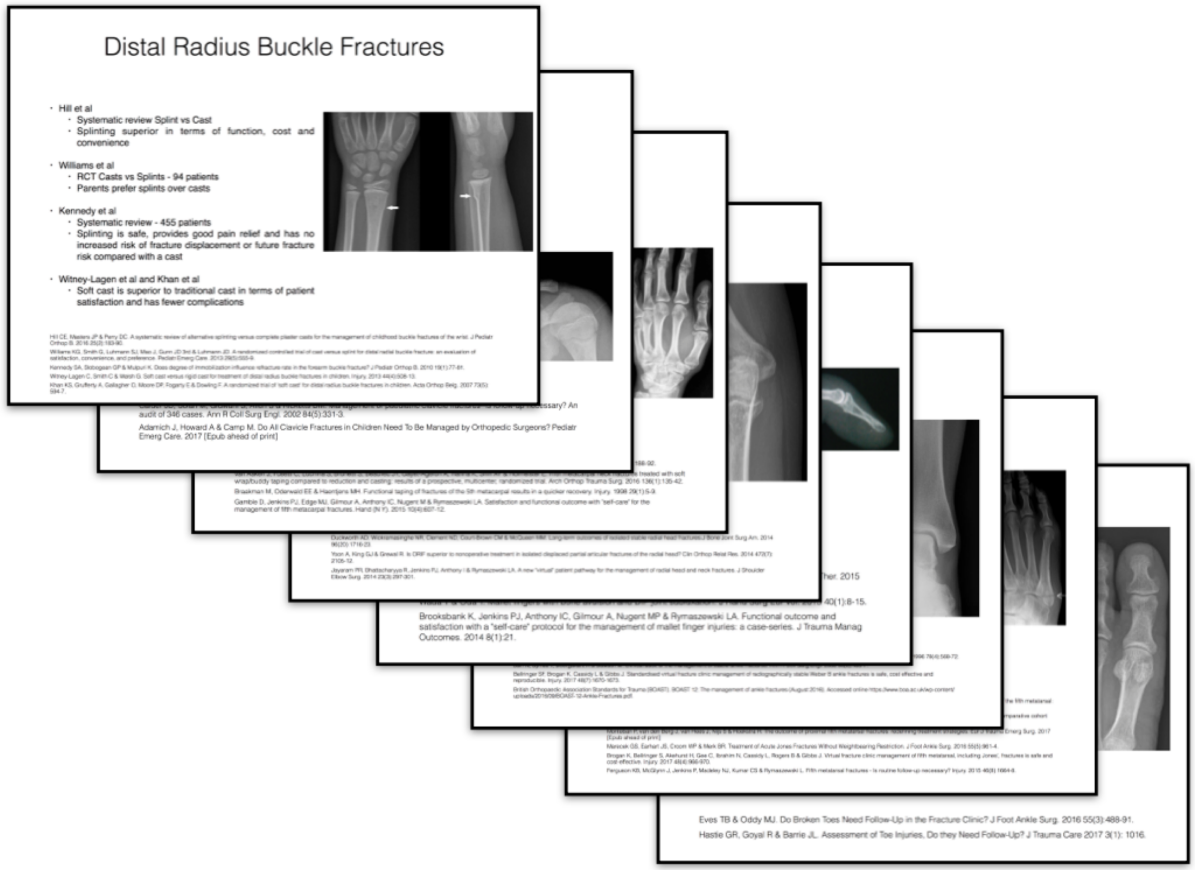
The cost of healthcare has risen significantly in the past 20 years due to a combination of an ageing and expanding population, an increase in the prevalence of chronic diseases and rising costs towards funding medical advances and novel therapies. The NHS Five Year Forward View aims to save approximately £9 billion in efficiency savings at a provider level by 2020/2021[1]. One option for improving efficiency in orthopaedics would be to reduce unnecessary patient investigations and follow-up in the fracture clinic. This would result in direct resource savings as well as limit patient disruption with days off work and children missing school. In addition it would allow greater time to be spent with more complex and challenging cases, and enable workforce reallocation to other healthcare services. A further benefit would be seen with improving compliance with British Orthopaedic Association guidelines, which recommend that all patients referred to fracture clinic have their case reviewed by an orthopaedic consultant within 72 hours of initial presentation[2,3]. This is a target that is often difficult to achieve with the traditional model of fracture clinic design with face-to-face review of all emergency department (ED) referrals.

Changes to the fracture clinic pathway

Virtual clinics were first introduced in the late 2000s and have existed in a number of specialities for some time[4-8]. The model was conceived as it was felt many patients did not need to attend clinic for on-going medical decisions to be made. The clinic was designed so that a clinician could review previous correspondence and available results in order to make a clinical decision that was communicated to the patient by phone, letter or video conferencing without the need for further patient hospital attendances.

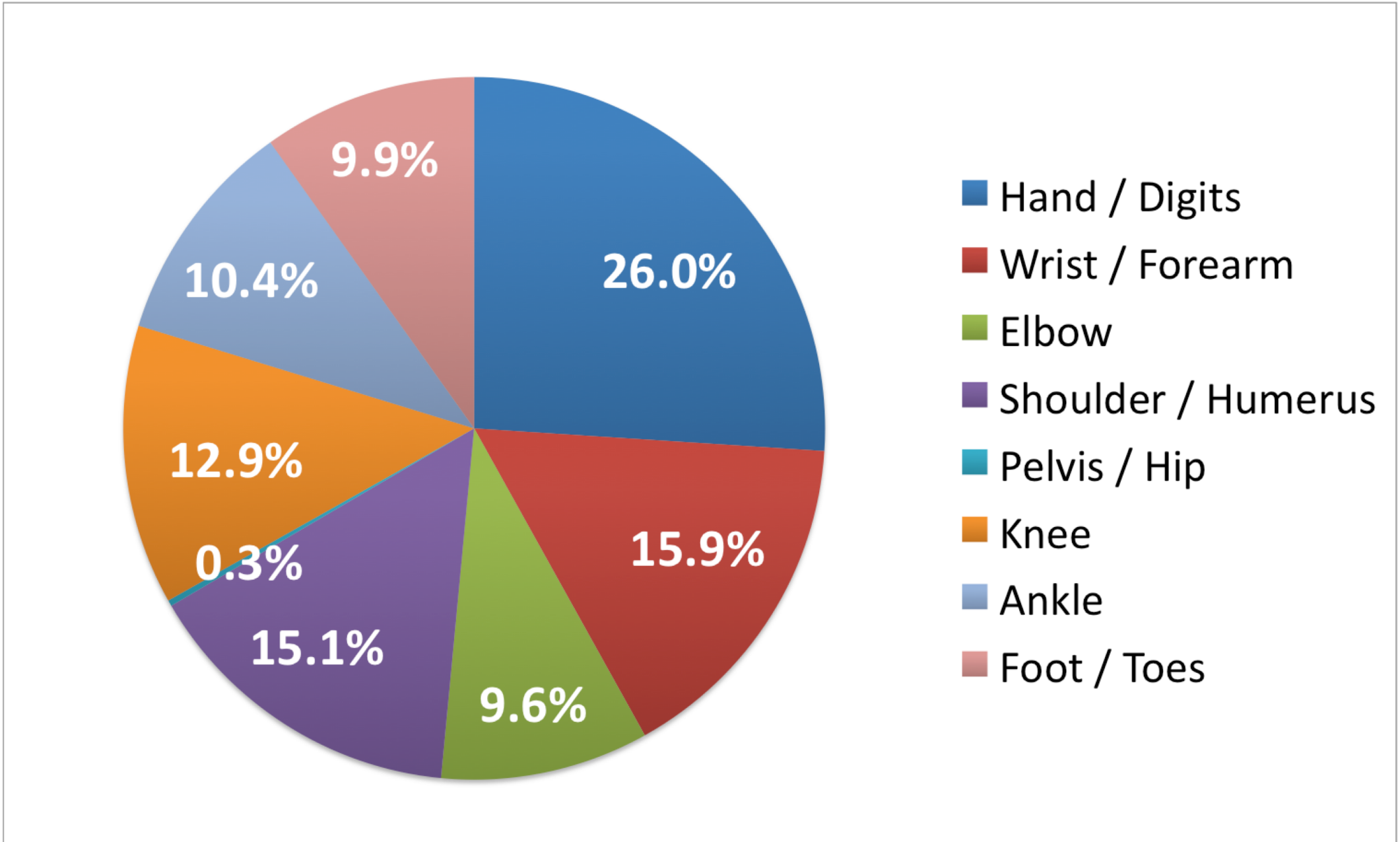
In orthopaedics, the idea of patient self directed treatment is not new. It was noted by Charnley in the 1950s that there was a tendency to over treat patients who have sustained a fracture[9]. Over the past 10-15 years a number of papers have brought into question the need for outpatient clinic appointments following specific injuries (see below). These studies have largely shown that patient's perform just as well and seem just as satisfied with these self-directed treatment options. The blue print of this pathway is that patients are seen in ED, an injury is diagnosed and patients are provided with a sling or removable boot, cast or splint. Patients are then given some advice regarding their injury including suggested exercise routines and when their splint can be removed. The patients are also provided with a contact number in case any more information is required or an issue arises in their recovery process. The research suggests that this is a safe, effective, and cost reducing way of treating patients that maintains a high level of satisfaction.

The most notable of the early research into virtual fracture clinics was performed at the Glasgow Royal Infirmary, UK. This research eventually led to the 'fracture clinics for the



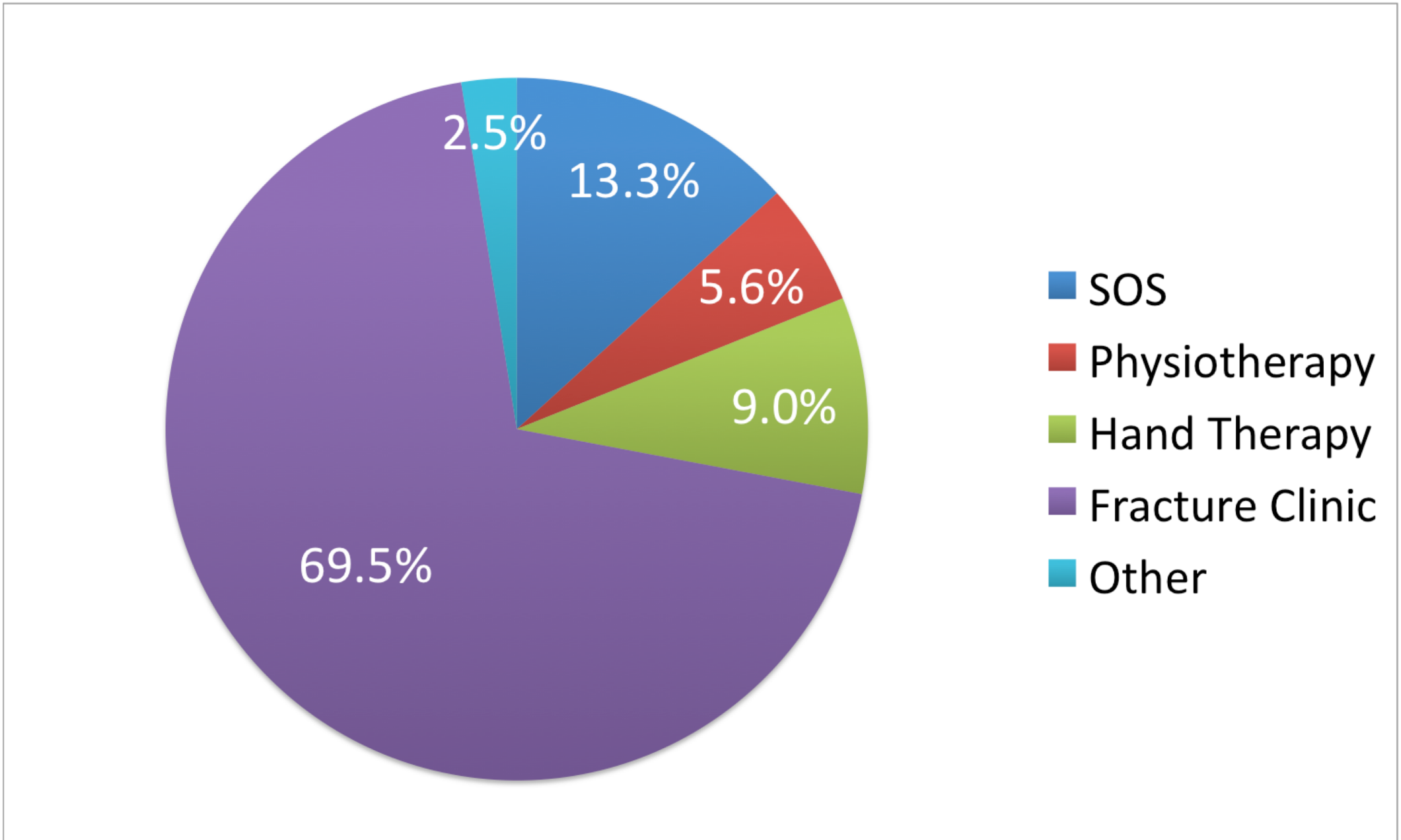
Trauma Triage Data

Type of injuries



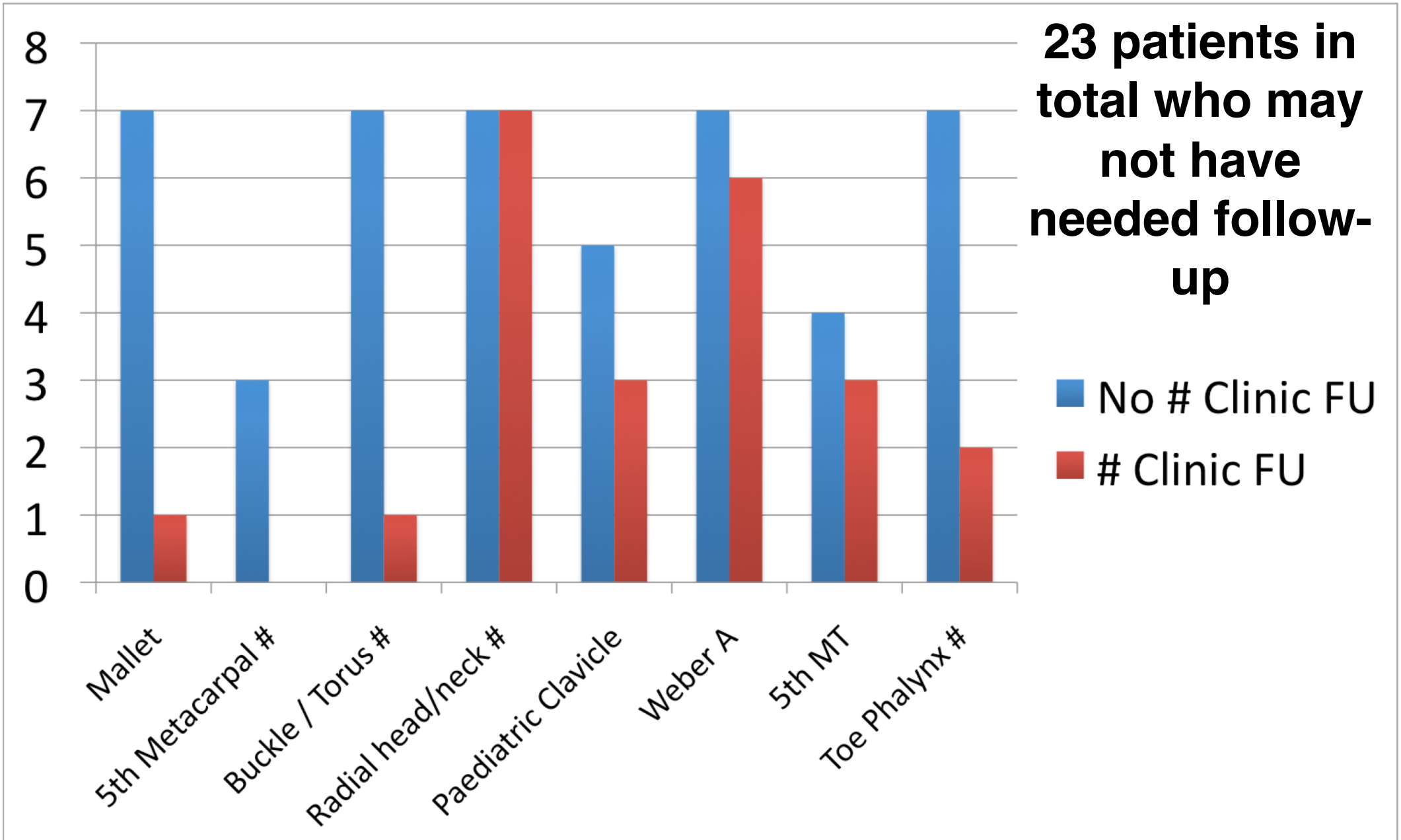
Trauma Triage Data

Triage Pathway



Trauma Triage Data

Pathway of Evidence Based Discharges



Cost savings

- Triaged to hand therapists / Physios or discharged
    - 98 patients
    - 98 x £280 = £27440
- Cost of trauma triage (1 Full time physio & Consultant time per month) = £8000
- Total Saving
    - £27440 - £8000 = **£19440 (€21634)**
    - If discharge all evidence based injuries (Extra 23 patients)
    - +£6440 (Total = £25880)

Summary

- Service now in line with BOA guidelines
- 100% consultant review within 72 hours
- Less patient disruption
- Greater patient safety
- Cost savings
- Database - Future audit and research

Thank You