Paediatric STAG

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Introduction

- Background to development of paediatric STAG
- Paediatric STAG
  - Inclusion/ Exclusion criteria
  - Paediatric data set
  - KPIs
- RHSC data

Background NPF/ MTOG

- *Quality Framework for Major Trauma Services, Report to NPF – September 2013*
- '….overall conclusion is that there is an urgent need for mandatory collection of paediatric trauma data and this should be developed via STAG'
- 'For paediatric trauma a new specific component of STAG should be developed.'
- 'The challenges of methodology should not preclude collecting injury data.'
- 'This work should be prioritised.'
- '…mandatory prospective collection of paediatric trauma data is essential to permit accurate planning of paediatric trauma services.'

Inclusion/ Exclusion Criteria

- Cause for debate

Aligned to that for adult audit:

- All trauma patients 0-16 years
- Fulfil length of stay criteria
  - 3 or more days for direct admissions or combined hospital stay of 3 or more days for transfers
  - OR patients that die in hospital within 3 days of attendance
- AND fulfil injury criteria (same as for adult STAG)

Paediatric Data Set

Closely aligned to adult form for ease of use

- Paediatric specific
  - Weight (estimated or actual)
  - Heart rate
  - Temperature
  - Age appropriate GCS
  - Lactate
  - Fluid prehospital and ED in mls/Kg
  - Blood/ blood product prehospital and ED in mls/Kg
  - NAI- Yes/No/Suspected

KPIs

- Closely aligned to adult KPIs for direct comparison
- Consultant led reception in a Major Trauma Centre
  - Tarn report 'Severe Injury in Children 2012'- low number of severe injuries occurring at night has implications for cost-effectiveness of staffing on site paediatric trauma expertise overnight
  - PEM consultant led reception 8am to 12MN with consultant attendance within 30 minutes out with these times
- Administration of tranexamic acid
  - ANY child receiving blood products should receive tranexamic acid within 3 hours from injury
- Time to secondary transfer- align with paediatric retrieval team
  - Time from referral to mobilisation of team <60 minutes (90% target)
  - Time from referral to team arrival with patient <3 hours for road/ mainland response (90% target)
  - Time from referral to team arrival with patient <4 hours for island/ air response (90% target)

RHSC Glasgow Data

- June, July & August 2015

Demographics

- 25 cases met inclusion criteria
  - 6 in June
  - 6 in July
  - 13 in August
- Age range 7 weeks to 15 years; mean 6.6 years
- Total of 4 cases wold have previously been included in ‘adult STAG’
- Male: Female 16:9

ISS & Categorisation

25 cases: ISS range 1 to 35

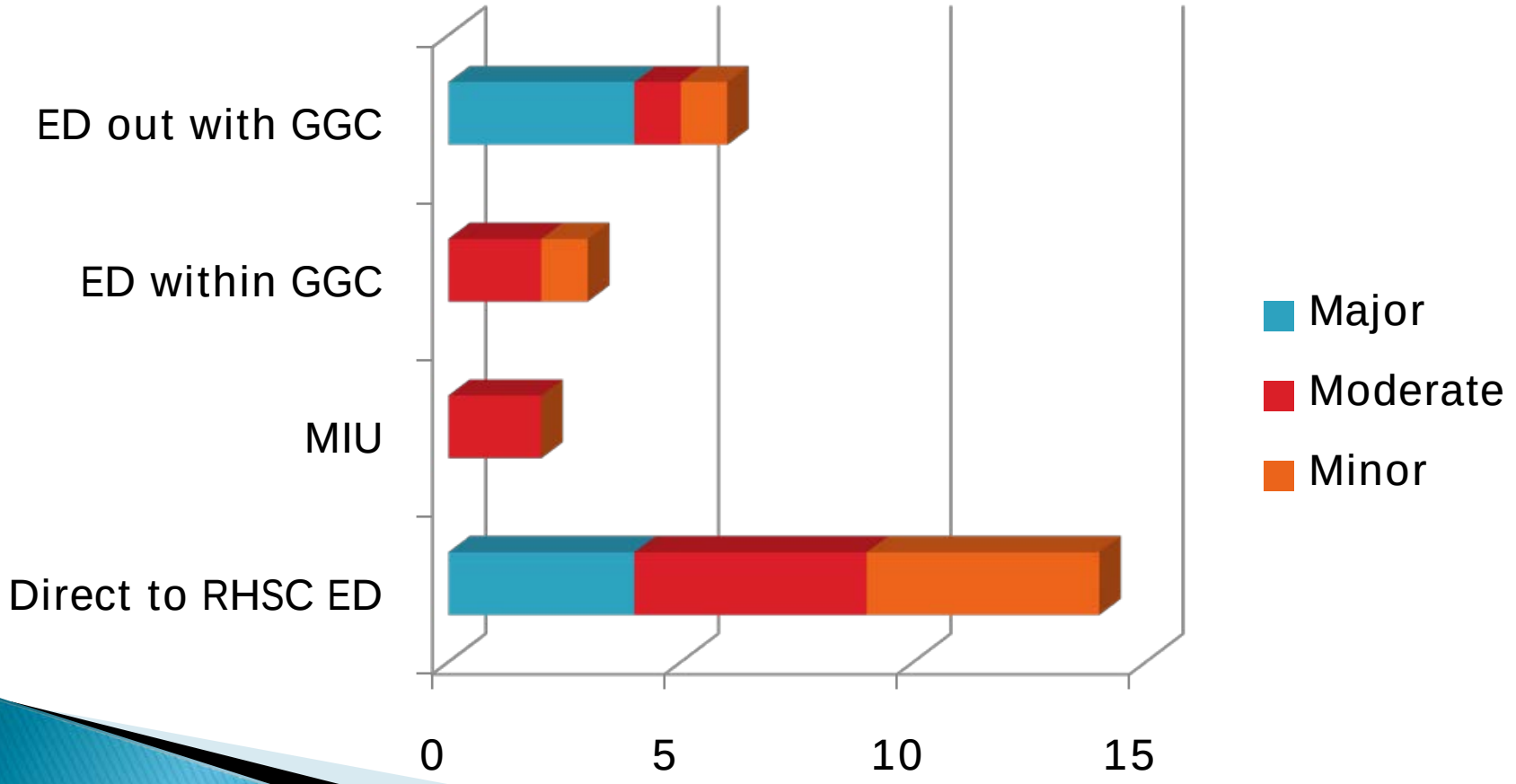
- Major ISS >15
  - 8 cases (32%); mean age 7.5 years; Male: Female 5:3
- Moderate ISS 8-15
  - 10 cases (40%); mean age 4.9 years; Male: Female 5:5
- Minor ISS<8
  - 7 cases (28%); mean age 7.5 years; Male: Female 6:1

Arrival

- All arrived between 0800-0000 hours
- Average transfer time (arrival to 1st site to arrival RHSC) 271 minutes

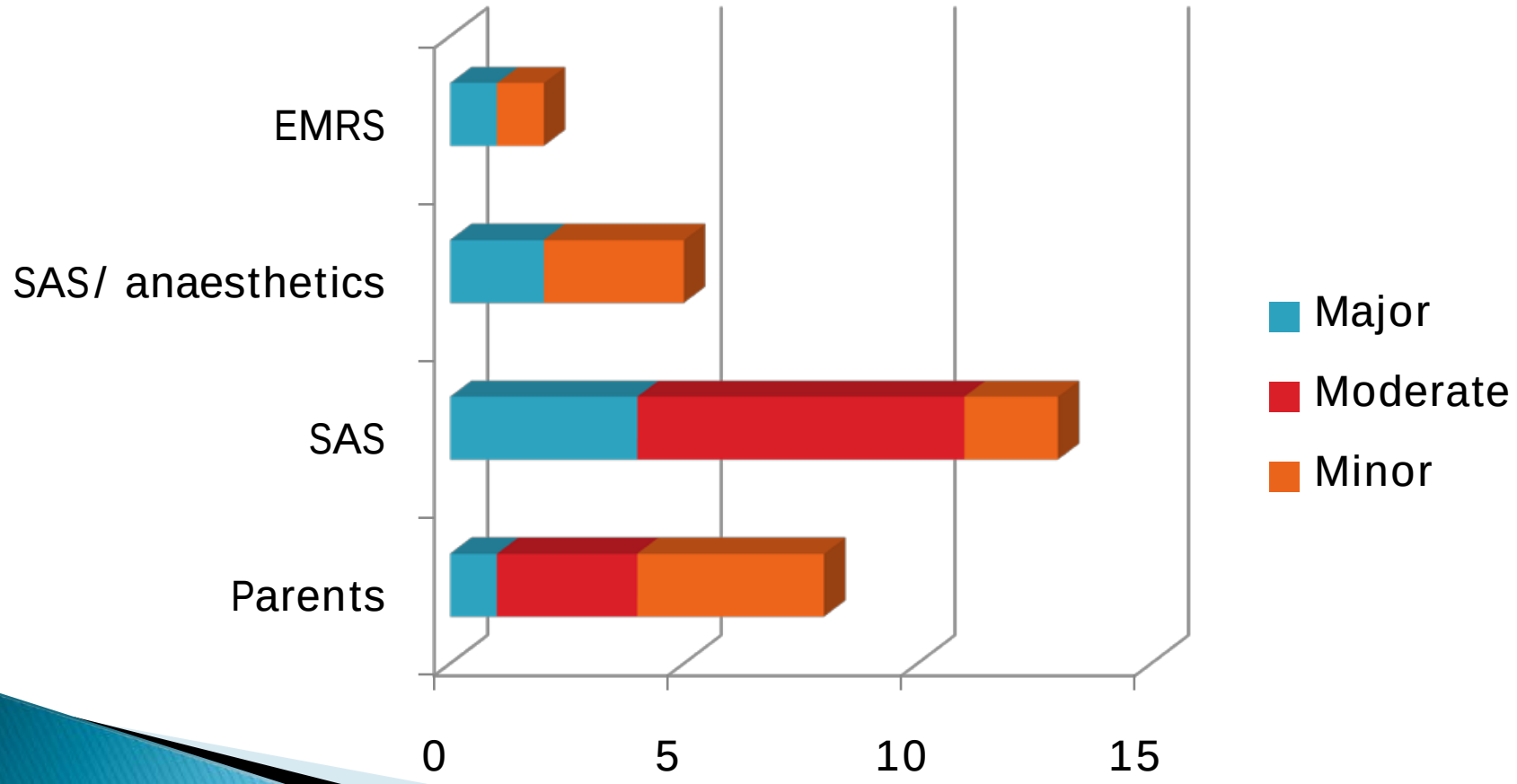
Source

6 (24%) from ED out with GGC
3 (12%) from ED within GGC
2 (8%) from MIUs
14 (56%) presented directly to RHSC ED

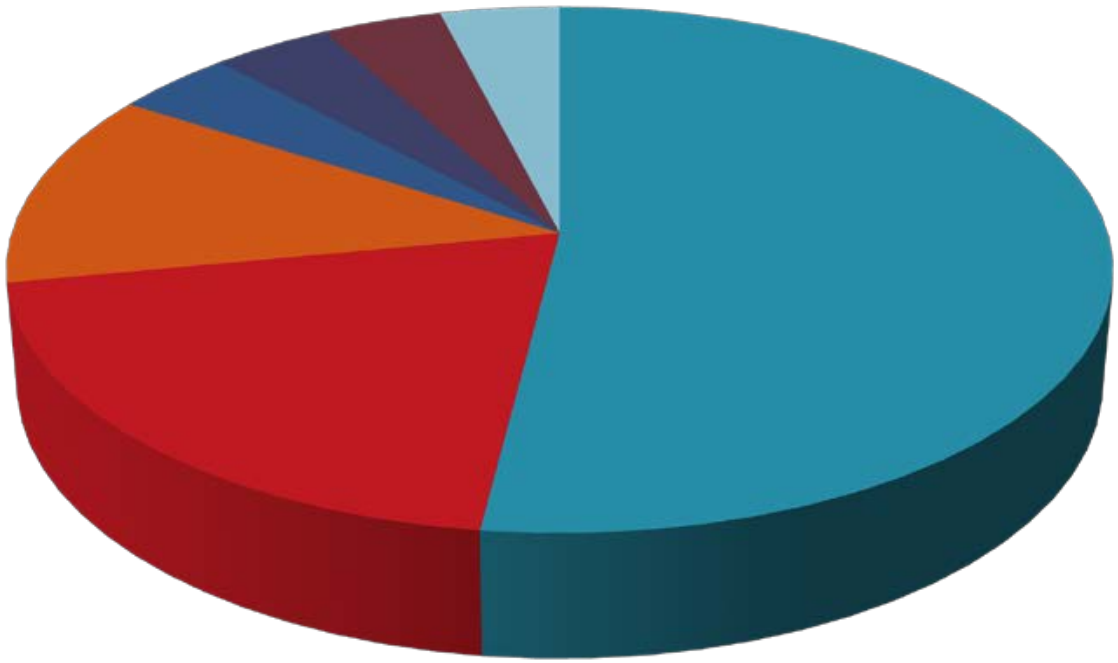


Mode of Arrival

2 (8%) EMRS from scene
2(8%) SAS with anaesthetic team
13 (52%) SAS
8 (32%) brought by parents (half of all direct trauma presentations to RHSC ED)

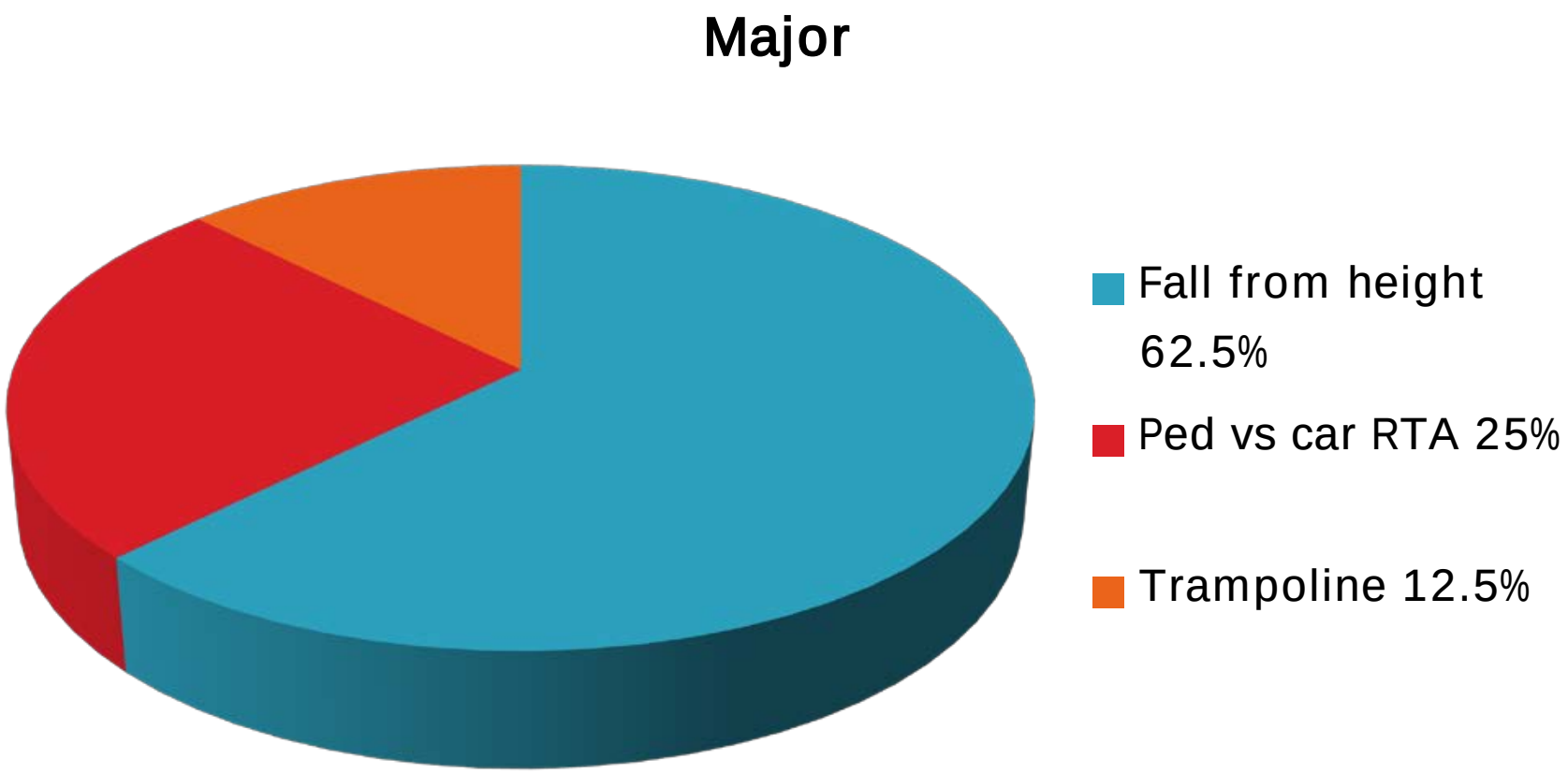


Mechanism of Injury

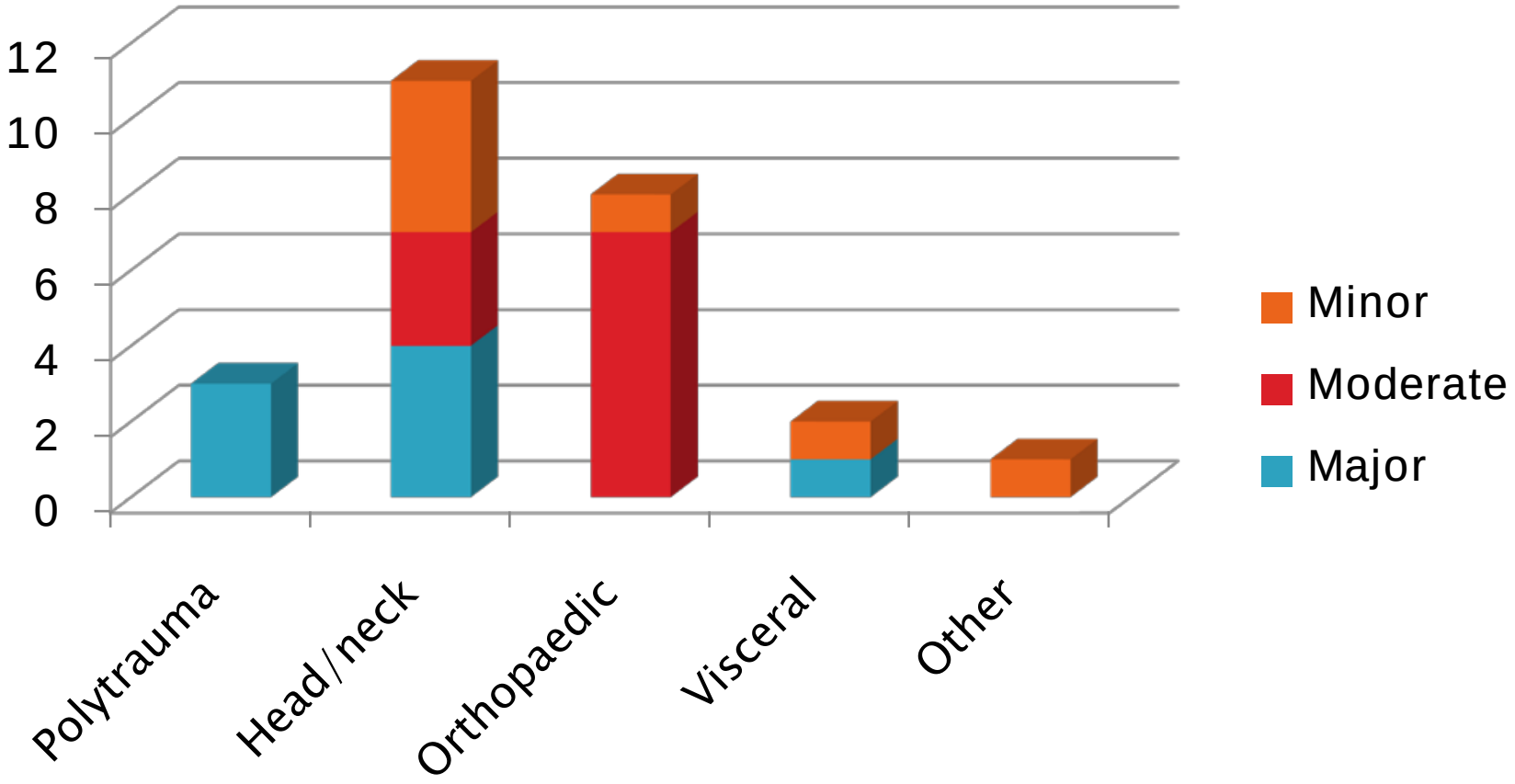


- Fall from height 52%
- Ped Vs Car RTA 20%
- Bike related injury 12%
- RTA passenger 4%
- Struck by object 4%
- Trampoline injury 4%
- Sports injury 4%

Mechanism by category



Types of Injuries by category



Imaging

- 16 (64%) patients had a CT
  - ‘pan scan’- 6
  - CT head- 8
  - CT abdo- 2
- 1 urgent MRI
- 11 (69%) CTs and 1 MRI performed at RHSC
  - 1 CT for transfer from out with GGC
  - Rest all de novo presentations to RHSC
    - Average time from arrival to ‘pan scan’- 99 minutes (3)
    - Average time from arrival to CT brain- 140 minutes (6)
    - Time from arrival to CT abdo- 64 minutes (1)

Imaging

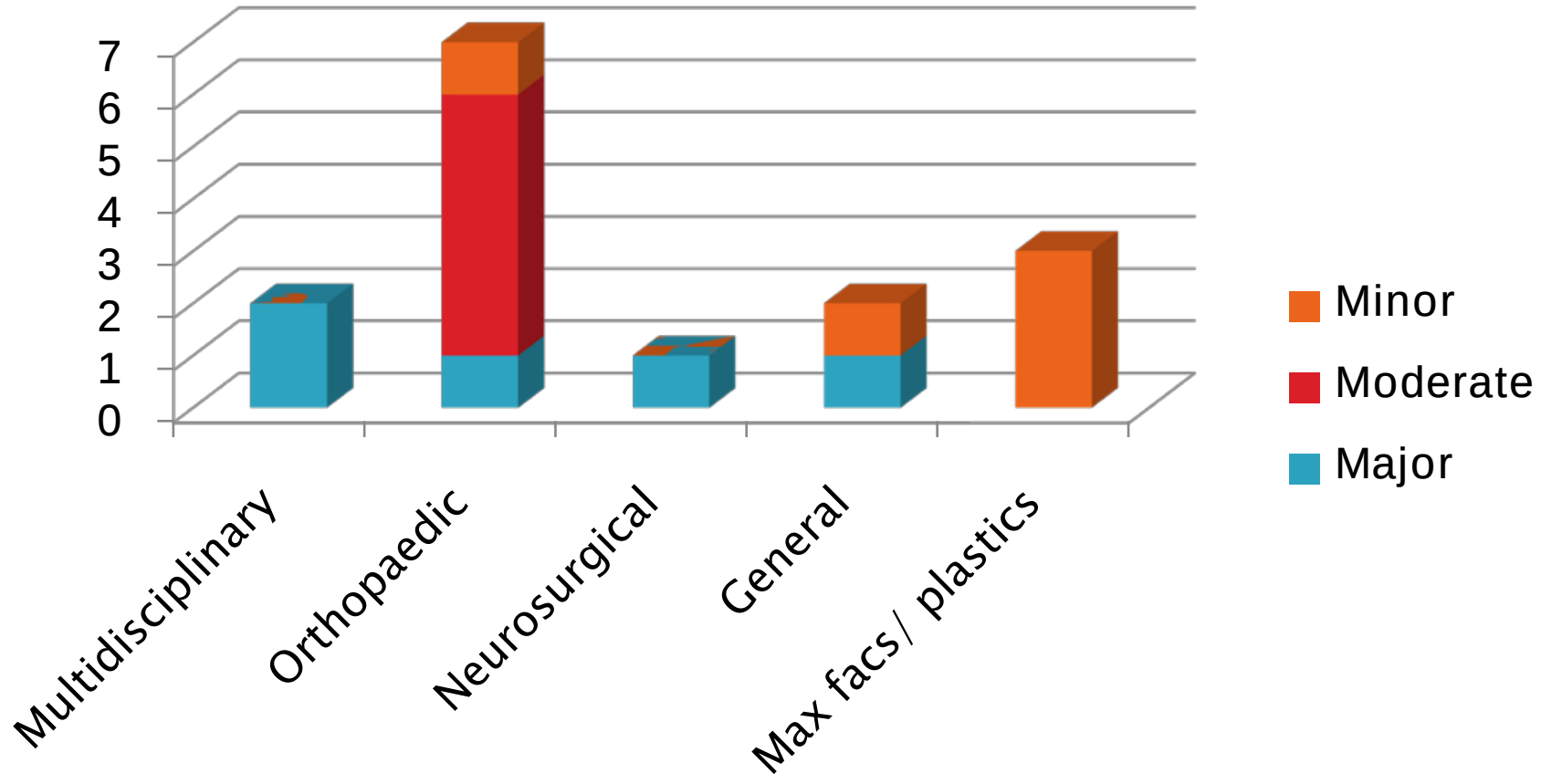
- 1 transferred to RHSC for imaging and definitive management- 201 minutes from arrival at base site to pan scan at RHSC (41 minutes from arrival at RHSC)
- 5 (31%) CT scans performed at base site prior to transfer to RHSC
  - All out with GGC
  - Average time from arrival to pan scan- 101 minutes (2)
  - Average time from arrival to CT brain- 89.5 minutes (2)
  - Time from arrival to CT abdo- 210 minutes (1)

Outcomes

- All alive at 30 days
- 15 (60%) went to theatre
- LOS 3 days to 39+ days: Mean 10.6 days
  - Major 17.9 days; moderate 8.2 days; minor 5.7 days
- 2 (4%) with significant TBI referred to neuro-rehab

- 4 (8%) underwent investigation for NAI in line with GGC under 1 policy
  - 3 no evidence NAI
  - 1 concerns raised and case conference awaited

Theatre


7
6
5
4
3
2
1
0
Multidisciplinary
Orthopaedic
Neurosurgical
General
Max facs/ plastics
Minor
Moderate
Major

Conclusions

- Early days of data collection and one site only
- Represents RHSC 'busiest' time of year for injuries
- Estimate 100 cases per annum from RHSC will meet entry criteria
- Estimate 30+ cases major trauma RHSC- apply to Edinburgh and Aberdeen ~ 100 cases per annum
- Indication of burden on services
  - CT scanning
  - Theatre time orthopaedics
  - LOS general and neurosurgical cases
  - Rehabilitation
- Address issues with data set/ entry criteria/ KPIs

Questions?