

A better way to assess and document for patients presenting to A&E with Cranio-maxillofacial Trauma through the implementation of a standardised proforma

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INTRODUCTION

- Assessing a patient with maxillofacial trauma can be overwhelming,¹ and stressful environments lead to omissions and errors.² The utility and efficacy of checklists and proformas is well-established³, with notable examples such as the WHO surgical safety checklist becoming mandatory.

AIMS

- To **assess** the **current standard** of assessment and documentation for trauma patients.
- To **develop** and **implement** a **trauma assessment proforma** to guide, standardise and improve documentation and assessment.

WHY IS THIS NEEDED?

- Improved consistency** of assessment and medical records.
- Improved communication** within and between teams.
- Reduced omissions** and **preventable errors**.
- Increased cognitive bandwidth** during busy on-calls.
- Facilitates future **audit** and **quality improvement**.

MATERIALS/METHOD

- Stage 1** - Initial **focus groups** with DCTs, StRs and Consultants to highlight areas for improvement. **Literature review** and discussion to establish desirable clinical record.
- Stage 2** – **Audit** to establish baseline clinical record standard.
- Stage 3** – **Design and Implement proforma**.
- Stage 4** – **Audit** to assess compliance and improvement in clinical record standard.
- Stage 5** - Follow-up **focus groups** to assess impact on communication and clinician satisfaction. Proforma **revision** and **reassessment** as needed.

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Oral and Maxillofacial Surgery - Cranio-maxillofacial Trauma Proforma
NB: This document should be saved as a 'consultation' and NOT as a 'progress note'

Presentation
 Walk-in to A&E Brought in by ambulance
 Attended alone Attended with Other - Who? ***

History

Presenting Complaint

History of Presenting Complaint

Date and time of Injury
** ** **

Mechanism of Injury
 Interpersonal Violence Sporting Injury
 Fall Motor Vehicle/Bike/Scooter
 Pedestrian vs vehicle Workplace Injury

Loss of consciousness? Yes No
Memory of event? Yes No
Teeth/fragments accounted for? Yes No N/A
Police Informed/Involved? Yes No Unclear
Was alcohol involved? Yes No N/A
Medical cause for fall ruled-out? Yes No N/A
Has the C-Spine been cleared? Yes No Unclear
Was a weapon used? Yes No Unclear

Details: _____

Medical History
Conditions - _____
Regular Medications - _____
Allergies - _____
Previous Surgery - _____

Social History
Lives with - _____
Smoking Smoker Ex-smoker Never Smoker
Alcohol Dependent Within Guidelines (<14 unit/week) Non-drinker
Recreational Drugs - Yes No

Details: _____

Safeguarding Concerns - Yes No

Details: _____

Prisoner - Yes No
No Fixed Abode - Yes No
Package of care at home Yes No

Eyes
Gross Acuity Acceptable Reduced* No response*
Colour vision Acceptable Reduced* No response*
PEARL (pupils) Yes No**
Diplopia Yes* No**
FROM (Eye movements) Yes No**
Subconjunctival haemorrhage Yes* No
Gross Hyphema Yes* No
Globe Rupture Yes* No
Proptosis Yes* No
Clinical enophthalmous Yes* No
Eye pain/vomiting/bradycardia Yes* No
Foreign body Yes* No
Laceration of the eyelid(s) or canalicular apparatus (canthus) Yes* No

Nothing Abnormal Detected
 Yes No

Comments: _____
(If there are any abnormal eye signs*, highlight this text, and type ".eyes" then perform a detailed eye assessment)

Mandible & Maxilla
Trismus Yes No
Ability to close mouth Yes No
Sublingual Haematoma Yes No
Occlusal Step/discontinuity Yes No
Gross mobility of bony segments Yes No
Gingival lacerations Yes No
Fractures open to skin Yes No
Lower lip numbness (ID nerve injury) Yes No
Evidence of infection at fracture site Yes No

Nothing Abnormal Detected
 Yes No

Comments: _____

Dental
Dentition: Dentate Edentulous
Dentures: Yes No
Dental condition: Good Fair Poor
Dental Trauma: Yes* No

Comments: _____

Dental Trauma
(If there is any dental trauma, highlight this text, and type ".teeth" then perform a detailed dental assessment)

Investigation

Imaging
OPG Xray
Dental decay:
Roots/Fractured teeth:
Fracture lines:
Other comments: _____

CT Facial bones/Mandible Report:
Report here***

Bloods
@RESUFAS(T,WHITECELL,CRP,HAEMOGLOBIN,HCT,MCV,PLATELET)@
@RESUFAS(SODIUM,POTASSIUM,UREA,CREATININE,EGFR)@
@RESUFAS(ALANINETRANS,ALKALINEPHOS,ASPARTATE,BILIRUBIN,CALCIUMALBAD)@

Comments:***

Impression
1. _____

Discussions
Discussions here***

Admission Checklist (For guidance only, delete if not needed)
Added to OMS Epic list/handover
Epic TCI order for operation
Added to CEPOD Board
Discussed with CEPOD coordinator
VTE risk assessment completed
Antibiotics (if appropriate) N/A
Chlorhexidine Mouthwash N/A
Analgesia
Consented Yes No
Should the patient be kept NBM? Yes No

Plan
1. _____

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Bleep 3221: Inpatient enquiries 8-5
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WHY IS THIS PROFORMA AN IMPROVEMENT?

- The proforma is **fully digital** and was designed and implemented on our EHR system – **Epic**.
- It can be **accessed anywhere** on a phone, tablet, laptop or PC.
- It is accessed through a **'smart-link'**, the user simply types **'omfstrauma'** and the proforma is **instantly ready to use**.
- The **clinical assessment process** is laid out for the user to follow from **start to finish**. This is particularly helpful for junior staff members with **less experience**.
- Several important fields **'auto-complete'** from digital data, e.g. **vital signs, blood results and radiographic reports**.
- The **design** follows **best-practice guidance** for medical record keeping from the Royal College of Surgeons.
- The proforma is **flexible** and allows for more **detailed assessment** when required e.g. Detailed eye or dental assessment.
- This proforma can be used directly for referral to our trauma clinic and eliminates the need to write a fresh referral.
- Diagrams and clinical photography** can be easily incorporated into the record using the **Epic phone application – Haiku**.
- This standardised approach results in **predictable assessment and communication**

RESULTS/STATISTICS

- The **attainment** score for records that **did not** use a proforma was poor - **39%**
- The **attainment** score for records that **did** use the proforma was good - **90%**
- Compliance** with using the proforma during the second audit cycle was reasonable at **71%**
- First** audit cycle – **43 records** - **Second** audit cycle – **39 records**
- Males – **62** - Females – **20**
- Most common injuries** – Facial Lacerations **n=33**, Mandible Fracture **n=14**
- The proforma will be reassessed in a **third audit cycle** at **6 months**

CONCLUSIONS

- First Audit** - significant heterogeneity in documentation when no proforma was used, the range of attainment scores varied from **5% - 79%**.
- Second Audit** - The proforma improved attainment scores from **39% to 90%**.
- Compliance** – **71%** of records in the **second audit** used the proforma.
- Barriers** – Some felt that the proforma was **'too long'**, **'did not fit with the normal workflow'** or was **'overkill'** for cases such as simple lacerations.
- Adaptation** - The proforma was adapted during the study to simplify and shorten it. **Additionally**, a second, focussed proforma was created for simple facial lacerations. These steps improved satisfaction and compliance significantly.

KEY MESSAGES

- A trauma proforma is a cost-effective and predictable way to improve communication and documentation quality whilst increasing cognitive bandwidth, reducing errors of omission, and facilitating future audit.**
- It is important to ensure that proformas are simple, concise and user-friendly.**

REFERENCES

- Stancliffe H, Little R, Keith D, Durham J. **An evaluation of senior house officer training in oral and maxillofacial surgery.** Br Dent J 2011; 211: 75–80.
- Batley H, Cousins G, Elrasheed A. **Dental core trainee emergency workload and patterns in a district hospital oral and maxillofacial unit: a prospective snapshot audit.** Faculty Dental Journal July 2014; 5, (3)
- I. A. Walker, S. Reshamwalla, I. H. Wilson, **Surgical safety checklists: do they improve outcomes?** BJA: British Journal of Anaesthesia, Volume 109, Issue 1, July 2012, Pages 47–54

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