

## Fast track medical records in maxillofacial trauma – Role of standardized pro forma

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### Abstract

Maxillofacial trauma and associated injuries pose a multitude of challenging scenarios in the emergency room in terms of both diagnosis primary and definitive treatment. Quick and prompt assessment is the need of the hour then. This study is aimed at designing a maxillofacial trauma pro forma that can aid in rapid assessment and examination of the patient in turn reducing the time wasted in the casualty and swift treatment response. **Study Design:** Three hundred and forty eight patients were assessed using the pro forma as part of the study. Time taken for complete case history recording and the quality of the details gathered from the patient using the pro forma as compared routine history taking were recorded and analysed. **Result:** All inclusive, the pro forma proved to be a better tool for the emergency room both in terms of time taken (3.627 min) and completeness and accuracy of the history taken as opposed to the conventional case history taking. **Conclusion:** The maxillofacial trauma pro forma can be indispensable handy tool in assessment of Maxillofacial trauma and associated injuries as it can reduce the time taken and improve accuracy of the details procured by the patient thus aiding in rapid diagnosis and swift treatment .

**Keywords:** Maxillofacial Trauma, Pro forma, Rapid Diagnosis.

### Introduction :

The emergency room can prove to be an intimidating arena for a novice maxillofacial surgeon. Not only is the resident expected to manage and stabilize the patient but simultaneous, quick retrieval of key data and recording of the same is crucial in such situations. The maintenance of complete and chronological medical records while treating maxillofacial trauma patients is a task that has to be dealt with in a hostile environment and is usually done by the overworked young maxillofacial surgeon. It is invariably noted that a great deal of time is lost while recording these clinical details and key points may be overlooked or omitted. Similar findings have been reported by audits conducted in other parts of the world as well (Solberg et al, 1995 and Robinson, Harrison & Lambert, 1996) .

In the Indian subcontinent there is an acute deficiency of primary trauma centres and the ones that are established are usually overburdened. In such conditions the completion of medical records and clinical notes is usually delegated to the junior-most residents, whose insufficient clinical experience may lead to mistakes and omission of certain critical details.

To overcome these problems the need of the hour is to have compact, well designed and standardized medical admission pro forma to reduce the workload of the trauma admissions team while enabling accurate recording of the essential details. Sherman and Kouchar (2013) implanted a pre-validated pro forma in the setting of maxillofacial trauma, it was noted that it greatly improved the quality of the records and reduced the workload on the doctors.

Similarly, in our institution various incidents were noted wherein some indispensable details were either missed or over looked by the resident assimilating the clinical details in emergency situations. The pro forma used by Sherman and Kouchar (2013) was altered to the needs of the local population in order to assess improvement in time taken and objectivity of the data collected while recording the clinical notes of maxillofacial trauma patients.

## Materials and Methods :

We modified the maxillofacial trauma pro forma, which was first introduced by Sherman and Kouchar in the year 2012, as per the needs of the local population. It was validated by subject experts and traumatologists to improve the accuracy of the same. The study spanned over a period of 1 year and 7 months (June, 2016 to December, 2017) and was undertaken by the Department of Oral and Maxillofacial Surgery, A. B. Shetty Memorial Institute of Dental Sciences, Mangalore, Karnataka, India and included 348 subjects.

Two investigators (junior residents), equal in qualification and clinical experience, were assigned the task of examination of all maxillofacial trauma patients who presented to the Department of Emergency Medicine, K. S. Hegde Charitable Hospital, Mangalore, Karnataka, India. The investigators examined the trauma patients simultaneously followed by recording of clinical details. The first investigator recorded the details as per standard procedure in the form of clinical notes whereas the second investigator utilized the modified maxillofacial trauma pro forma. The first investigator was blinded to the pro forma.

The pro forma had the following components: demographic details of the patient, the cause of injury, a detailed description of the facial and oral injuries sustained, any treatment provided in the emergency room and any further treatment planned for the patient.

Both the investigators recorded the time taken to enter the complete clinical details of the patient, by entering their start and finish times while recording data in their respective formats. Satisfactory completion of the same was verified by a senior resident. The aim of this study was to establish if the time taken to complete the modified maxillofacial trauma pro forma was significantly less compared to regular clinical notes and to verify if some key points were being overlooked while assimilating the data using the clinical notes, thereby improving the efficiency of the maxillofacial trauma team. Data was analysed using paired t-test for continuous data.  $P < 0.05$  was considered to be significant. SPSS software, IBM SPSS Statistics for Windows, Version 22.0 Armonk, NY: IBM Corp was used to analyse the data.

## Results :

A total of 348 patients were examined and their clinical details recorded during the course of the study. The age of the patients varied between 2 to 85 years (Mean  $33.75 \pm 14.465$ ) and 80.7 % of the patient population comprised of males. The mean time taken while recording the regular casualty notes was 22.647 minutes (Std. Deviation 6.358 min) and 10.96 minutes (Std. Deviation 3.627 min) while filling the maxillofacial trauma pro forma. Data was analysed using the paired t – test and the time taken while filling the pro forma was seen to be significantly less as compared to regular casualty notes, with a p value of less than 0.001 (Table 1, Figure 1, Table 2).

Table 1: Time taken to record clinical details

Assessment Tool	N	Mean (Min)	Std. Deviation (Min)
Casualty notes	348	22.647	6.358
Pro forma	348	10.96	3.627

Figure 1: Time taken to record clinical details

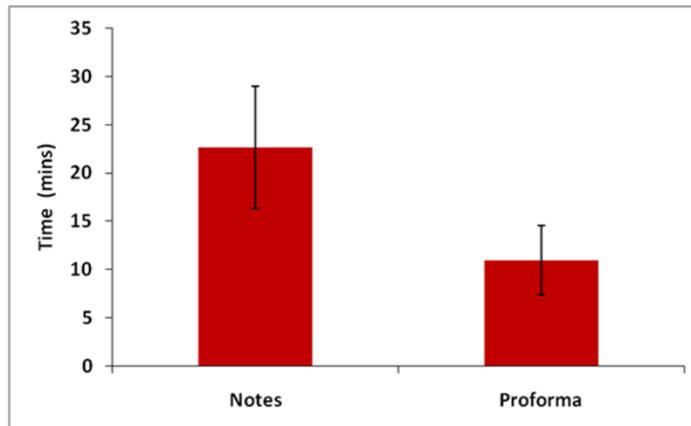


Table 2: Comparison between the tools

Notes-Pro forma	Paired Differences		t	P
	Mean	95% Confidence Interval of the Difference		
		Lower	Upper	46.773
	11.6868	11.1953	12.1782	

<sup>a</sup> p value of < 0.005 is considered statistically significant.

The senior resident while examining the clinical notes recorded by the first investigator noted that there was a tendency to omit certain points while recording the cause of the accident like if a seat belt was worn or not, if the victim was riding a two-wheeler or if he/ she was a pillion passenger and if a helmet was worn or not. Similarly, while describing the facial injuries some of the key points that were overlooked were details like the margins of the wound, exposure of the bone, any major structural damage and any associated paraesthesia. This shortcoming was not seen in the history recorded by the second investigator as all these points were listed out in the pro forma and described in detail.

### Discussion :

Maxillofacial surgery has shown considerable growth as a speciality in the past decade. In the 21<sup>st</sup> century where malpractice suits and litigations have become a commonplace, the importance of recording clinical details impeccably cannot be understated. Due to the growing workload and a relative shortage of residents, this part of the procedure is often overlooked and dealt with some amount of negligence (Rao et al 2011).

Therefore, stress should be laid on introduction of comprehensive structures for systematic history recording. It has been noted in the past that while recording history certain important points in the history, clinical examination, radiographic findings and details of the trauma sustained may be omitted. This can lead to considerable set-backs in terms of patient care and management.

In an attempt to address this problem and improve the specificity of data that is collected we used a printed and pre-validated pro forma in the maxillofacial trauma setting. Our aim was to determine if a considerable amount of time was saved while using such a tool, without compromising on the quality of data. It was seen that a substantial amount of time was saved while using the pro forma and the quality of the data collected was satisfactory.

In the field of emergency medicine where time is of the essence similar printed pro forma have proven to be extremely beneficial. The use of same should be extended to our speciality as well which will not only benefit

the quality and the quantity of the data recorded but will also provide additional medico legal cover besides reducing the evaluators fatigue.

**Conclusion :**

Prompt diagnosis and swift treatment ensures better prognosis when treating patients of maxillofacial trauma. Time is of the essence in such scenarios and every second counts. The use of preformed pro forma can help in these crucial situations by reducing the time taken to delineate the history. It also is immensely resourceful in collecting complete details of the traumatic episode and patient related history as it guides the examiner and prevents missing any vital information. These pro forma can also be digitized and stored thereby aiding in record keeping.

Hence the modified maxillofacial trauma pro forma utilized in the present study can be used as an efficient handy tool in assessment of trauma patients in an emergency room setup.

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None

**CONFLICTS OF INTEREST :**

The authors have no conflicts of interest to declare.

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