**Preventing unnecessary post-operative length of stay after ORIF mandible fractures by promoting same day discharges for all suitable patients.**

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**Background**

The shortage of inpatient beds is a problem affecting every NHS hospital across the UK. It leads to patients requiring admission waiting for hours in the Emergency Department, where it is simply not possible to provide optimum patient care.1 Mandibular fractures make up a large percentage of Oral and Maxillofacial Surgery (OMFS) trauma workload. The patients affected tend to be young, otherwise healthy patients and the surgical management predominantly includes open reduction internal fixation (ORIF) under general anaesthetic.2 ORIF of mandible fractures has previously been deemed as a suitable day-case procedure, when the correct patients can be identified.3 Despite this the average post-operative length of stay remains to be 1.4 days (33.6 hours) for patients admitted as an emergency.4 It is therefore, possible that many patients who undergo ORIF of the mandible are spending unnecessary time in a hospital bed, which could be better allocated to other patients.

This project aimed to audit the post-operative management of patients with a mandible fracture treated at King’s College Hospital in London. The gold standard remains that 100% of patient’s suitable for same day discharge do not stay overnight. The data collated has been used to produce resources to encourage change, both locally and eventually nationally, to ensure the most efficient post-operative management of patients with mandible fractures, especially in light of the current bed crisis.

**Method**

Retrospective data were collected across a six-month period (January 2024 – June 2024) for patient’s who underwent surgical management of a mandible fracture at King’s College Hospital in London. Exclusion criteria included any patient that had concurrent injuries (including a head injury) that required inpatient observation or care, any social circumstances that would prolong discharge (e.g. those with no fixed abode or safeguarding concerns) or any medical condition(s) that required referral to another specialty during an inpatient stay. In addition to demographic data, specific time points along a patient’s inpatient stay were collected. These are demonstrated in Figure 1 and were used for analysis to discover where preventable delays were occurring.

**Figure 1.** Time stamps that were collected along the patient journey.

**Results**

A total of 37 patients were identified that met the inclusion criteria. The average age (SD) was 35 (±14) years and 95% of patients were male. Figure 2 shows the distribution of mechanism of injury, with the majority of injuries being caused by an alleged assault.

**Figure 2.** Graph to illustrate the distribution of mechanism of injury across the cohort.

The average length of stay (LoS) across the group was 71.8 hours. The average LoS between admission and procedure was 48 hours. The average LoS between procedure and discharge was 23.5 hours. This project focused on changes to post-operative care only.

There were eight patients (21.6%) who were discharged on the same day as their procedure; three of these were the result of patient choice and the completion of a self-discharge declaration. Analysis of the five remaining same day discharges showed, that all procedures were completed by 11am and all patients had a unilateral fracture. Despite being discharged on the same day, the average post-operative LoS for these five patients remained to be 10 hours. Post-operative imaging was taken on average, six hours post-operatively.

Closer analysis of the patients that had subsequent day discharges showed an average LoS of 21.3 hours. The impact of post-operative imaging was assessed and the average time between the procedures finishing and post-operative imaging was 13.9 hours and an average of 7.4 hours between post-operative imaging and discharge. Only 11 (30%) of patients were discharged before 2pm the subsequent day after their procedure. There was no significant difference between patients who had their post-operative imaging performed on the day of their procedure compared to those who had their imaging performed on the day of discharge.

**Discussion**

Factors that influenced a timely discharge were considered to be managing patient expectations, post-operative imaging, completion of the discharge summary and preparation of discharge medications.

Simple changes were implemented to ensure timely completion of a discharge summary by instructing the OMFS junior doctor to sign this off during the theatre case. This in turn would optimise the preparation of discharge medications and would be done in addition to ensuring a good supply of commonly prescribed medications on the ward.

The project data and current process was discussed at a local audit meeting, which raised the following concerns: is it necessary for patient’s to have post-operative imaging completed prior to discharge? Do patient’s require treatment with intravenous (IV) antibiotics post-operatively?

There is limited research looking at the necessity of routine post-operative imaging after ORIF mandible. Dewi at al. concluded that to date there is no data to support that a plain film post-operative radiograph can be predictive of post-operative complications in the absence of clinical signs and the taking of a post-operative image is requested for medico-legal documentation only.5 The Royal College of Radiologists, the Medical Defence Union and Medical Protection all state that good clinical notes are sufficient, so why are routine images still requested in the absence of clinical concerns?6 A fear of non-conformation is suspected.

With regards to post-operative IV antibiotics, there is evidence to support that limiting antibiotics to peri-operative treatment is not associated with an increased risk of a surgical site infection.7 Previous studies have demonstrated significant variation in prescribing regimes between OMFS units nationally and reinforce that the quality of evidence available regarding antibiotics prophylaxis for mandibular fractures is poor.8 A good quality randomised controlled trial is required and specific light needs to be shone on the necessity of post-operative IV antibiotics and how switching to oral antibiotics only in the post-operative period could lead to a more efficient discharge process, financial savings and better patient care.

It was considered that patients expecting to be discharged the same day as their procedure are more likely to make the necessary arrangements pre-operatively to facilitate their timely discharge e.g. arranging transport home. If presented with the option at 8pm of either a night in the hospital with a complementary breakfast or asking their relative last minute to come and get them, it is no surprise that most patients will chose the former. Patients lack insight into the specifics of the current bed crisis and the domino effect that their unnecessary stay on the ward will have on flow through the hospital. It is the job of the team caring for the patient to ensure they reflect on these implications from the start of the patient journey and that discharge planning is commenced at the decision to admit.

The outcome of this project was the production of an A4 poster (Appendix 1) to encourage all members of the team to reflect on how to reduce post-operative LoS for ORIF mandible patients through the parameters discussed. This is a resource that can be adapted and shared between trusts to encourage positive change on a national level.

**Conclusion**

When the correct patients are identified, surgical management of isolated mandible fractures are a suitable day-case procedure. Despite this, the average post-operative LoS for an otherwise fit and well patient is 23.5 hours. Multiple areas of potential change have been discussed and this raised questions regarding the necessity of post-operative radiographs and IV antibiotics that have the potential to delay discharge. A resource was produced that can be used to raise awareness about unnecessary post-operative LoS and aims to improve patient flow across the hospital.

**References**

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**Appendix 1**

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