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Implementation of an oral and maxillofacial surgery trauma team in a major trauma centre

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Abstract

In 2010, King's College Hospital in London was designated as a major trauma centre. To deal with the increasing number of patients, an integrated oral and maxillofacial team of the week was established in 2012 to provide a consultant-led, emergency service dedicated to acute care, and it was anticipated that this would reduce the duration of stay by 0.3 bed-days. To assess the effect of the new system, we compared the duration of stay between 1 October and 31 January 2011-2012 with the same period in 2012-2013. We also assessed the activity and training of registrars, and the department's perception of the post of trauma registrar. The mean total duration of stay had decreased significantly by 0.84 days ($p = 0.03$), the mean delay to operation had decreased by 0.3 days, and the mean postoperative stay had decreased by 0.5 days. During one week, the trauma registrar did 12 operations at various sites in the hospital. The new system was a cost-effective way of improving emergency OMFS care and it can be recommended to other centres with similar profiles.

Keywords: Trauma team; Consultant-delivered service; Free at the point of delivery

Introduction

Since the establishment of the four major trauma centres in London in 2010, 22 major trauma networks have been developed across England, and oral and maxillofacial surgery (OMFS) is a designated specialty at the core of each one. They were set up as the result of a national review and an estimated improvement in survival.[1–3] Led by consultants, they treat seriously-injured patients 24 hours a day, seven days a week, and in the two years since their inception, the survival of seriously injured patients in London has improved overall by 30%.[4]

The new structure increased the number of emergency cases at King's College Hospital and added to the workload in OMFS so, to maintain high standards of care, it was necessary to reorganise the delivery of emergency treatment. It was also necessary to minimise the effects on elective surgery by separating the emergency and elective pathways, and to maintain income.[5]

Previously, the emergency system had relied on an on-call consultant, specialist trainee, and senior house officer (SHO). Apart from that of the SHO, ongoing service commitments, which included clinics and multidisciplinary meetings, as well as elective main theatre, day surgery, and local anaesthetic lists, were maintained.

In the past, emergency CEPOD operations (Confidential Enquiry into Perioperative Deaths) were done by whoever was free, which may or may not have been a member of the on-call team, and some less urgent operations had to be postponed because no surgeon was available. This caused dissatisfaction among patients, and resulted in the inefficient use of the emergency theatre, and an increase in the duration of stay, which had a potential impact on elective lists and the availability of beds.

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As part of the restructuring of the Trust as a major trauma centre, a business case was submitted for a new maxillofacial consultant. It was anticipated that the number and complexity of trauma cases would increase and that with the new appointment, the duration of stay could be reduced by 0.3 days. This estimated reduction was based on the increased availability of surgeons, which would lead to fewer postponed operations, earlier assessment of patients by the consultant, and consultant-led operations. Care by consultants has been reported to shorten hospital stay and improve outcome.[6–8]

We aimed to evaluate the effect of the new system on duration of stay, to assess the activity of the trauma registrar, and to gauge the department's perception of the trauma registrar post.

Methods

To restructure the maxillofacial on-call system in October 2012, the service commitments of the on-call consultant and specialist trainee were cancelled, reduced, or covered by a floating specialist trainee, as appropriate. Fig. 1 shows the rota before the introduction of the new system and Fig. 2 shows the rota for the OMFS trauma consultant of the week (1 in 8) and trauma registrar (1 in 6), both of whom were dedicated to the provision of emergency care (8am to 5pm, Monday to Friday). Out of hours, the on-call system continued as before.

An existing senior clinical Fellow took on the role of floating registrar to cover the usual timetable of the dedicated trauma registrar (to ensure work in each of the five surgical firms on a rotation) and a trauma week of their own. This optimised elective training in the subspecialty and concentrated the experience of emergency and trauma cases under the direct supervision of a consultant during the day.

We retrospectively calculated the duration of stay for all non-elective admissions coded as "oral surgery" or "maxillofacial surgery" over a four-month period before and after the introduction of the new system (1 October to 31 January 2011-2012 and 2012-2013) (Table 1) using the PIMS (Patient Information Management System, iSoft, CSC, Aldershot, UK) and Galaxy theatre management software (iSoft). Statistical analysis was done with the help of SPSS Statistics for Windows version 22.0 (IBM Corp, Armonk, USA), and the Mann–Whitney U test was used for comparison.

We prospectively monitored the activity of the trauma registrar using a diary kept during a working week (Monday to Friday, 8am to 5pm), which listed the operations and where they were done, and logged the interactions between the on-call SHO and the OMFS trauma consultant.

To identify the department's perception of the post of trauma registrar we sent an online survey to all consultants and SHOs. It covered the periods immediately before and after the introduction of the new system, and included questions about support, training, ease of contact, and overall improvement to the department.[9]

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
0730-1330	SHO 1	SHO2	SHO 1	SHO 2	SHO 1		
1300-2030	SHO 3				SHO 4		
2000-0800	Night SHO 1	Night SHO 2	Night SHO 3	Night SHO 4	Night SHO 5	Night SHO 6	Night SHO 7
0800-1700	StR 1	StR 2	StR 3	StR 4	StR 5	StR 6	
1700-0800	StR 1	StR 2	StR 3	StR 4	StR 5		
0800-0800	Consultant 1				Consultant 2		

Fig. 1. Rota before the introduction of the trauma team system.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
0730-1330	SHO 1	SHO2	SHO 1	SHO 2	SHO 1		
1300-2030	SHO 3				SHO 4		
2000-0800	Night SHO 1	Night SHO 2	Night SHO 3	Night SHO 4	Night SHO 5	Night SHO 6	Night SHO 7
0800-1700	Trauma StR					StR 2	
1700-0800	StR 1	StR 2	StR 3	StR 4	StR 5		
0800-0800	Consultant 1				Consultant 2		

Fig. 2. Rota after the introduction of the trauma team system.