

Consultant-based otolaryngology emergency service: a five-year experience

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Abstract

Objective: To present our experience of running a consultant-based otolaryngology emergency care service for more than five years.

Materials and methods: In 2003, we developed a system of consultant-based emergency service: consultants spent a week on-call providing a dedicated emergency service, with routine commitments cancelled.

Results: Our new system had advantages over traditional working practices in terms of consultant involvement, trainee education, continuity and efficiency. It also reduced disruption to elective commitments for both consultants and registrars. This system was fundamental to the successful review of all urgent (and in future elective) cases within target periods. Only 31 per cent of new referrals to the consultant emergency clinics required a further appointment. Good teamwork and flexibility in working arrangements have been essential to the success of this service.

Conclusion: Given that health service changes have reduced junior trainee working hours and numbers, and that patients increasingly expect to be treated by trained doctors, our new consultant-based emergency service has merit. Although implementation in other units may differ, we recommend this new service, for the above reasons.

Key words: Otolaryngology; Emergency Medical Services; Scotland; Health Care Reform; Work Schedule Tolerance

Introduction

In 2004, our group reported a pilot model for a consultant-based otolaryngology emergency service.¹ We hoped that this new working pattern would improve the quality of emergency care in our department.

We now present our experience of more than five years of such consultant-based emergency service delivery.

Our original design, and subsequently implemented changes, have been of interest to other departments. In the current article, we summarise this information, and we explore our model's effectiveness, efficiencies and limitations, based on our experience. We hope this article will be useful to others aiming to change their own structures for emergency service delivery. It may also be of interest to medical students, Hospital at Night nurses, managers, ward nurses, and anyone else wishing to better understand the workings of a surgical department.

Background

Prior to 2002, our department in Dundee took a traditional approach to emergency service provision,

with consultants, registrars and senior house officers available on-call for 24 hour periods, addressing emergency duties as they were able, alongside the demands of their normal working week. Generally, this was a small additional burden: much of the emergency work was delegated to trainee doctors, with the consultant and even the registrar providing indirect supervision of the junior doctors, who would address immediate patient concerns pending senior review.

Stimulus for change

After the European Working Time Directive of 1993² became law in the UK as the Working Time Regulations,³ in 1998, it was necessary to reduce the total working hours of junior doctors. The Hospital at Night programme⁴ was initiated by the NHS Modernisation Agency,⁵ aiming '...to reduce dependency on training grade doctors for providing cover at night in order to reduce their working hours and eliminate sleep deprivation without damaging their training'.⁶

This programme has generally been successful in its stated aims, with junior doctors working in a different

way, often covering multiple specialties whilst on-call, with a great reduction in continuous hours of cover. An evaluation of this programme by Mahon *et al.*,⁶ summarised by the Department of Health,⁷ found that the Hospital at Night programme had ‘...helped improve patient care during the night by prioritising acutely ill patients, and ensure[d] that patients [were] treated more quickly and [were] seen by doctors who [were] more alert’, that it had ‘...had no negative impact on doctors’ training’, and that it had ‘...not affected the achievement of national performance targets in the areas of [accident and emergency department] waiting times, cancelled operations and inpatient waiting times’.

Although the Hospital at Night programme was adopted in Dundee with enthusiasm, there were necessary reductions in out-of-hours junior doctor staffing, and also cross-cover of otolaryngology patients by junior doctors from outside our department.

We were anxious to ensure that the continuity of patient care was preserved, especially for emergency cases. At the same time, although Mahon *et al.*⁶ reportedly found no negative impact, there remained concerns that training had been affected, arguably not so much by the Hospital at Night programme as by the European Working Time Directive in general.

One of the many bodies voicing concern was the Scottish Audit of Surgical Mortality.⁸ In their 1997 report, they noted that ‘...trainees now have much shorter hours and less operative experience than their predecessors and will soon be consultants themselves’. In the same report, they suggested that consultants should have a greater input into emergency cases, and recognised the implication that the normal consultant elective workload would need to be reduced. This advice was reinforced by the Chief Medical Officer for Scotland,¹ who recommended that consultants should have greater involvement in emergency care, and should cancel elective commitments during on-call periods.

As a result of the above changes, we felt that our working practice was no longer efficient, and we reviewed our on-call structure and emergency service provision. We aimed to provide a better and more efficient service to patients through nearly cost-neutral changes, with more direct consultant input, improved clinical handovers and better use of staff resources.

Soon after we commenced our new service in 2003, the Modernising Medical Careers programme⁹ was introduced, with recruitment to foundation programmes in 2005 and to specialty training in 2007. This led to the loss of senior house officer doctors. Many of our own senior house officers had three or more years’ experience. In their place, we have had some excellent Foundation Year doctors, but with a different skill set, who only ever acquire four months’ experience in our specialty. Consequently, our on-call registrar could no longer expect the bulk of our emergency care to be within their juniors’ capabilities. There was no solution

other than more direct involvement of senior trainees in the care of both ward and emergency patients. However, we felt it essential to ensure that senior trainees were not taken away from their own educational opportunities in elective theatre as a result.

In April 2004, the New Consultant Contract became available to all consultants in Scotland.^{10,11} The new contract recognised that service commitments included time spent working with emergencies and weekend ward rounds whilst on-call. This new contract allowed us to include emergency work (when averaged over time) as a programmed activity, within each week’s service commitment.

Despite all the challenges presented by recent changes, we believe that our emergency services provision model has actually enhanced educational opportunities for both senior ENT surgical trainees and Foundation Year doctors, and has also improved patient care.

The Dundee model: consultant-based emergency care

Our ENT emergency care model was based on consultants taking a week at a time away from their elective surgical commitments in order to directly participate in emergency care. The elements of our department’s emergency care provision are summarised below.

Emergency on-call consultant

Each week’s consultant emergency service provision is divided between one consultant who is on-call for week days (from Monday 08:30 to Friday 13:00) and another who is on-call for weekends. Consultants do six to seven weeks (and weekends) of on-call service a year, with 30 to 35 emergency clinics a year (see below).

Emergency and on-call registrars

There are two designated ‘emergency registrars’ who, for six months at a time, are responsible for the department’s emergency care provision. The first registrar covers Monday to Wednesday, the second Thursday and Friday. Between them, they cover all of the emergency ward rounds and clinics – approximately 200 clinics per year, including approximately 600 elective (i.e. ‘soon’ or ‘urgent’) referrals. In their remaining time, they are scheduled (in the same way as their colleagues) for elective clinic and operating theatre lists, continuing professional development and educational sessions. When one of the emergency registrars is away, the other cancels some elective commitments to continue the emergency clinic provision. The remaining registrars only contribute to emergency care during evenings and nights on-call, on a non-resident basis.

Foundation Year doctors

The Foundation Year doctors are responsible for day-to-day care of ward patients. Their duties alternate

between ward cover, pre-operative assessment, administration, continuing professional development, and time in the elective ENT clinic and operating theatre.

On the ward, Foundation Year doctors maintain the more immediate care of patients, keeping track of interventions and investigations and forming a first point of contact for ward staff concerns. They are encouraged to perform any initial assessment and management within their ability, bearing in mind that many have useful recent general medical experience.

The Hospital at Night team

Any ward problems between 20:30 and 08:00 are addressed by the Hospital at Night team. This consists of one Foundation Year doctor and, usually, a Hospital at Night nurse, both of whom also provide cover for plastic surgery and neurosurgery. The Hospital at Night team lack an ENT Foundation Year doctor on approximately one-third of nights, although they do have access to the ward list and receive a selective handover.

Emergency referrals

We receive emergency referrals from general practitioners, other specialty doctors, and local accident and emergency or minor injury units. Referrals are made by telephone, and directed to an on-call pager holder. The call is taken by the emergency registrar between 08:00 and 12:30, then the on-call consultant until 17:00, the on-call registrar from 17:00 until 20:30, and then the Hospital at Night team for the remainder of the night. Internal calls are always directed to the emergency or on-call registrar or consultant.

Most referrals are added onto the list of an available clinic, with appropriate urgency, often the same or the following day. After accepting a referral, a clinic booking slip is completed detailing the patient's demographic information, provisional diagnosis, referral source and appointment date. The referring clinician is expected to send a referral letter, either with the patient, via fax or inserted into the patient's medical record. The referral slips are left in a dropbox in the registrars' office, and taken by the emergency registrar to clinic each morning, where notes will be requested where possible. Truly urgent referrals will be seen without delay on the ward, or occasionally by arrangement in the accident and emergency department, where resuscitation facilities and staff are more available, with a view to admission. The accident and emergency department also has a system of direct access to our otolaryngology emergency clinics.

Otolaryngology emergency clinics

Each emergency clinic commences between 09:30 and 10:00, to allow time to complete the morning ward round. The emergency clinic runs five days a week, is never cancelled, and has two 'lanes' (staffed by a consultant and a registrar), except on Tuesdays, when

TABLE I
EMERGENCY CLINIC 2007 WORKLOAD: URGENCY & REFERRAL SOURCE

Referral source	Urgency level (pts (n))			Total (pts; n (%))
	Routine	'Soon'	Urgent	
Primary care	87	440	1232	1759 (64)
Secondary care, local*	13	89	381	483 (18)
Accident & emergency		1	422	423 (16)
Self-referral†	1		40	41 (1.5)
Other	1	7	13	21 (0.7)
Secondary care, non-local‡		3	4	7 (0.3)
Prison**			1	1 (<0.1)
Total	102	540	2093	2735 (100)

*Within National Health Service (NHS) Tayside. †By self or relations, friends or carers. ‡Outside NHS Tayside. **Including penal establishments. Pts = patients

there is one lane only (as our regular head and neck clinic uses the clinic space). Three elective urgent or 'soon' referrals are booked first in each clinic lane. Emergency patients are asked to attend later, at 10:30, and are warned that they could be waiting for up to two hours to be seen, although this is uncommon.

Our emergency clinic attendees' referral sources and outcomes for 2007 are shown in Tables I and II.

Morning ward round

At 08:30 each morning, a ward round is held.

This starts with a 'virtual ward round' in our seminar room, attended by the consultant on-call, emergency and on-call registrars, Foundation Year doctors, senior charge nurse, ward pharmacist, and medical students. This is essentially a forum for discussion of each case, considered in the order they will be encountered on the ward, initiated with a case presentation by an on-call doctor. Provisional management decisions are

TABLE II
EMERGENCY CLINIC 2007 OUTCOMES, BY APPOINTMENT TYPE

Outcome	Appt type (pts; n (%))		Total (pts; n (%))
	New	Return	
Discharged	1052 (38)	492 (31)	1544 (35)
Further appointment	850 (31)	597 (37)	1447 (33)
Later admission arranged	340 (12)	120 (7.5)	460 (11)
Did not attend*	129 (4.7)	179 (11)	308 (7.0)
Ref to other clinician or hospital	166 (6.0)	69 (4.3)	235 (5.4)
Awaiting test results	91 (3.3)	35 (2.2)	126 (2.9)
Cancelled by pt	41 (1.5)	67 (4.2)	108 (2.5)
Admitted from clinic	65 (2.3)	10 (0.6)	75 (1.7)
Other	35 (1.3)	31 (1.9)	66 (1.5)
Could not wait†	5 (0.2)		5 (0.1)
Total	2774	1600	4374

*115 re-booked; †two re-booked. Appt = appointment; pts = patients; ref = referred

made, pending discussion with each patient. Each attendee is provided with a ward list, maintained by the ENT Foundation Year doctors under the supervision of the on-call registrar. All emergency patients are discussed, as well as post-operative patients who have stayed, or will stay, for more than one night. Preparation for the virtual round is paramount – the patient list must be available, along with provisional plans and the results of all recent investigations.

The actual ward round follows, seeing the same patients. This involves the on-call consultant, emergency registrar, Foundation Year doctors covering the ward, senior charge nurse and ward pharmacist. The on-call consultant leads the round, the Foundation Year doctor updates the case notes, and the pharmacist reviews the patient's prescription charts, while each patient is informed of their current situation and involved in their management decisions.

Afternoon commitments

The on-call consultant's afternoons are spent in emergency service provision, referral triage, meetings with patients, parents and relatives, and/or performing their own elective surgical lists. When on-call during the day, our emergency consultants remain within our base hospital at all times, and are available to give advice to general practitioners and colleagues.

Afternoon ward round

The afternoon ward round takes place around 17:00, when the on-call consultant, the emergency registrar and the on-call registrar meet with the senior charge nurse to discuss any problematic issues, taking appropriate action as needed.

Local anaesthetic nasal manipulations list

Every Friday afternoon, we have a local anaesthetic operating theatre list for nasal reductions, usually involving three to four cases. These are added to the theatre list by our waiting list coordinator, who is usually contacted by telephone after each case is reviewed in one of the emergency clinics. The list is run by the Foundation Year doctors, under the supervision of the registrar on-call for that evening and the consultant on-call for the weekend. Cases not suitable for local anaesthetic reduction are added to our elective (often paediatric) theatre lists, but such cases are infrequent.

Handovers

In addition to daily ward rounds, each grade of doctors maintains their own continuity of care. On-call consultants conduct informal handovers (often in a head to head meeting) on Friday afternoons and Monday mornings.

The emergency registrars handover to the on-call registrar at the afternoon ward round. 'Hand-backs' each morning are often very brief, and are done before the morning ward round to allow the recently on-call registrar to prepare for their elective sessions that day.

Thursday morning ward rounds are attended by both emergency registrars to allow a full handover of issues.

The Foundation Year doctors maintain continuity from day to day, keep an accessible ward list, and give the Hospital at Night team (doctors and nurses) a selective handover of cases most likely to be problematic.

Foundation Year doctor and Hospital at Night inductions

As described, continuous periods of junior doctor service within a specialty have now been shortened to four months, and out-of-hours service is often provided by Hospital at Night nurses or junior doctors coming from outside our specialty. In order to facilitate a degree of specialty service from these clinicians, a good induction programme is essential.

For some years now, we have run our own three hour induction course, held on an evening soon after the junior doctors rotate into their new specialties. The course curriculum includes the presentation and management of common otolaryngology emergencies and post-operative scenarios, as well as local hospital administrative systems, examination skills, and familiarisation with departmental equipment and facilities. The course is routinely offered to all junior doctors either new to or continuing on in otolaryngology, oral and maxillofacial surgery, plastic surgery, neurosurgery, haematology, oncology, and ophthalmology, as well as to Hospital at Night nurses.

The course is organised by the otolaryngology registrars, and takes the form of a one hour presentation, a dinner and small group sessions. Course evaluations have demonstrated a very high satisfaction level amongst attendees.

Discussion

Since our 2004 report of the pilot version of our new consultant-based emergency service system, further challenges and opportunities have presented themselves.

Ninewells Hospital has remained an 862 in-patient, teaching hospital with 26 adult ENT beds, although three are now dedicated to day-case surgery. There is now a dedicated children's surgical unit, with four day-case beds. In-patient paediatric cases transfer on the evening of surgery to the in-patient ward (in which our department has a variable bed allocation).

There have remained seven full-time-equivalent consultants, although we now have an additional registrar (bringing the total registrar number to seven, with two contributing to service in our neighbouring health board (National Health Service Fife) but with on-call service based at Dundee). We have one less junior doctor, bringing the total number to four.

There have been definite advantages to our new consultant-based approach to otolaryngology emergency services provision. However, there have also been problems in implementing and maintaining the system.

The emergency clinics have been central to bringing direct consultant involvement to the bulk of our emergency service. However, this has required each consultant to cancel one in every seven weeks of elective surgery commitments. This was initially a contentious issue, with significant managerial reluctance. However, by booking three urgent or 'soon' referrals to each emergency clinic, 27 new referrals were seen each week (15 by the consultant and 12 by the registrar), and out-patient service was actually enhanced. The system was soon implemented, with a significant beneficial effect as regards elective referral targets. Service provision from the new clinic has also been more consistent than that from an elective clinic: the consultant lane has never been cancelled, and the registrar lane very rarely (only occasionally for teaching days or induction sessions).

Some other specialties no longer provide a direct route of contact for a specialist opinion, instead adopting triage nurses or e-mail referral systems. We however have maintained a system in which the on-call pager is directly answered by the emergency registrar or on-call consultant. We know that this service is valued by our local general practitioners, and that it has prevented unnecessary admissions.

Although we have little previous data for comparison, we suspect our emergency service is also more efficient than previous systems in which junior doctors reviewed patients as ward attenders. Only 31 per cent of new referrals to our new emergency clinic have required further appointments (see Table I).

Our new system utilises dedicated on-call consultants and emergency registrars, thereby ensuring that nobody suffers from the unexpected interruption of elective surgery commitments by emergency service requirements. In addition, the remaining registrars can look forward to six months of specialist ENT experience during which they will not be called during the day to address telephone enquiries or emergency or ward problems.

The emergency clinic itself offers important educational opportunities. It can be more variable from day to day than typical clinics, often offering the time and cases required for formal teaching, as well as the opportunity for workplace-based assessments (such as Direct observation of procedural skills (DOPS), Clinical evaluation exercise (Mini-CEX) and Case based discussion (CBDS)).

The value of our new emergency service system is not limited just to junior doctors. The senior author is a sub-specialist in adult and paediatric otology, and has found that the new emergency clinics provide him with continuing experience of fibre-optic endoscopic procedures, as well as the opportunity to keep in practice with the more general side of both elective and emergency otolaryngology.

In our original emergency system, there was only a single emergency registrar, a responsibility which proved rather arduous. Our new system splits the

week, so that even the emergency registrars have their most valuable elective theatre periods protected. In addition, where an emergency registrar is contributing to a major afternoon theatre case, the on-call consultant will usually hold their emergency pager. The emergency registrars are usually scheduled for three or four theatre half-day sessions per week, reduced to two when one of them is away.

The emergency registrars and on-call consultant are always scheduled to be based in our main hospital. This has negated the problem of addressing on-call commitments while based in peripheral clinics (i.e. the modern 'hub and spoke' service model).

Some of the problems with the new system have been addressed predominantly by vigilance, and occasionally by accepting limitations. Some patients have arrived without a written referral, or occasionally without any prior contact with the department. Very occasionally, case notes have not been obtained in time. Some patients (especially post-operative reviews, e.g. for splint or pack removal) have been booked on the emergency clinic when elective clinic slots have not been readily available for them. Occasionally, an urgent elective patient who has arrived late has not been identified as such, and has waited for a prolonged period with the emergency cases. The average waiting time for emergency cases has been less than one hour.

Our consultants' on-call rota for each year is agreed in the November of the previous year, based on the consultants' personal and external commitments. When these have been changed for some reason, and a consultant's elective service commitment has not been cancelled (a rare omission), this may result in the on-call consultant being double-booked for emergency and elective sessions. Clear communication and good administrative systems are essential to avoid this. When such a problem has occurred, good teamwork has usually provided a solution.

Our morning ward round system is really a separate concept which could be explored in its own right. The initial virtual ward round has proven to be an effective means of keeping all relevant staff involved and informed, as well as educated. The vast majority of those involved have felt that it has significant advantages over a traditional ward round, in which the patients are often overwhelmed by the consultants and their entourage,¹² the educational benefit for doctors is doubtful,¹³ and the peripheral members struggle to hear patient discussions and management decisions.

The obvious limitation of the virtual ward round is the lack of patient involvement. This is immediately addressed by the subsequent actual ward round involving the on-call consultant, emergency registrar, Foundation Year doctor covering the ward, senior charge nurse and ward pharmacist. This system does prolong the time spent on rounds, which is only possible due to the later start of the emergency clinics.

However, efficiencies in repetition mean that the actual ward round can be relatively brisk. The actual ward round includes a much smaller entourage than is traditional; we have found that this improves our ability to talk clearly with patients, address their concerns and discuss recommended management plans.

The emergency ward rounds review not only the emergency patients but also all patients admitted for more than one night, including many of the most complicated head and neck cases. The head and neck team remain directly involved, but the emergency round ensures continuity for these most critical cases.

Shortened work periods and non-specialist night-time cover have led to increasing fragmentation of clinical responsibilities. However, such changes have been a direct stimulus for our new service arrangements, which aim to optimise the continuity of patient care through our implementation of formal handovers at all levels, written ward lists and increased senior involvement, with a single consultant responsible for the full working week or weekend.

- **The Dundee model of consultant-based otolaryngology emergency service is described, including**
- **Working-week blocks for consultant on-call service**
- **Elective surgery session cancellations**
- **Daily emergency clinics with some elective (urgent and 'soon') cases**
- **Morning 'virtual' plus actual ward rounds**
- **Effective communication via ward lists, rounds, and good handover at all levels**
- **Efficient teamwork, with flexibility and communication**

We have already alluded to the protection of training afforded to registrars relieved of emergency commitments, and also to the emergency registrars themselves. Other educational advantages have included the enhanced teaching value of ward rounds and emergency clinics, with better continuity of emergency care involvement for the emergency registrars (and of elective care involvement for the other registrars). There has also been greater flexibility within our timetable to take advantage of trainee-specific learning opportunities.

As discussed earlier, junior doctors now only work for four months in otolaryngology, and Senior House Officer posts have been removed. As a consequence, new registrars may have no more than four months of directly relevant experience; in contrast, the previous system had allowed some junior doctors to obtain three or more years of ENT experience prior to registrar appointment. This situation has necessitated a greater level of supervision for new registrars. Our new

emergency system has met this need through the creation of emergency registrar positions, with clinic and theatre sessions providing guaranteed consultant supervision (adjustable according to each individual's level of experience).

At the same time, the changes effected by the Modernising Medical Careers programme do expose a much broader group of junior doctors to ENT. Many of these doctors will go on to train in general practice, anaesthetics, emergency care and other specialties in which ENT experience is highly beneficial.

Our department has always worked well as a team, without the rigid structure of consultant defined 'firms'. Registrars within the department rotate through rhinology, otology, head and neck, general ENT, 'emergency one', and 'emergency two' positions. However, in each position the registrars' time is split between two consultants, including a few time-tabled clinic and theatre sessions with other specialties (including oral and maxillofacial surgery and dermatology). This flexibility has been essential in providing balanced opportunities for the registrars, including good elective theatre exposure for the emergency registrars, who cover very few elective clinics. Such flexibility has also permitted small changes in the session by session commitments of each registrar, according to requirements, every six months, facilitating the accommodation of less than full-time trainees, senior registrars seeking sub-specialist experience, and very junior trainees in their first exposure to ENT.

Conclusion

We describe our department's emergency otolaryngology service provision model, which has improved patient care, training opportunities (at all trainee levels) and service efficiency.

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