A discussion of the British Society of Gastroenterology survey of emergency gastroenterology workload

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ABSTRACT – An electronic survey of 188 acute NHS hospitals was carried out to assess the provision of out-of-hours services for gastrointestinal emergencies in England. The response rate was 167/188 (89%) for the main questionnaire and 157/188 (84%) for a supplementary questionnaire. The survey revealed that the majority of gastroenterologists (135/157, 86%) participate in acute general medicine. A rota for out-of-hours endoscopy was in place in only 82/167 (49%) of hospitals. Trained nurse endoscopy assistance was available in 51/82 (62%) of those hospitals with a formal rota. Two thirds of gastroenterologists were telephoned up to five times each month for advice when not on call; 64% felt their emergency endoscopy service provision was unsatisfactory and 38% thought it was unsafe. This paper concludes that there is serious under provision of services for patients presenting with gastrointestinal emergencies in England.

KEY WORDS: British Society of Gastroenterology guidelines, gastrointestinal bleeding, general internal medicine, emergency endoscopy, out-of-hours endoscopy rota

Introduction

Upper gastrointestinal (GI) bleeding, acute colitis and decompensated liver disease are emergencies that need urgent gastroenterological attention. In the case of acute GI bleeding, a meta-analysis as early as 1992 demonstrated endoscopic therapy significantly reduced rates of further bleeding, surgery, and mortality.[1] In the case of fulminant colitis and decompensated liver disease, although there are no controlled studies, it would seem reasonable that early specialist input in these life-threatening conditions improves outcome as this has been shown in other areas.[2,3]

In 2001, the British Society of Gastroenterology (BSG) made recommendations concerning the essential elements of an emergency endoscopy service.[4] These included consultant delivery, trained endoscopy nurse assistants and appropriate equipment. The National Confidential Enquiry into Patient Outcome and Death (NCEPOD)[5] report of 2004, analysed the circumstances surrounding the death of patients within 30 days of endoscopy. It highlighted the high rate of death associated with emergency GI endoscopy. Furthermore, delays in endoscopy resulted in suboptimal care and death. In 2005, NCEPOD produced another report examining outcomes in acute medical patients.[6] Among the key recommendations was that of increased direct consultant involvement in the general internal medicine (GIM) take. As the majority of gastroenterologists already provide cover for acute general medicine[7] this may be compromising the provision of specialist out-of-hours GI care. Indeed, prior to 2002 half of hospitals had no emergency on-call rota, and emergency endoscopy when carried out was often done by inexperienced staff in unfamiliar surroundings.[8] In October 2005, a survey of lead clinicians for endoscopy in England was carried out to assess the current level of out-of-hours GI workload and to determine what steps need to be taken to provide a safe and satisfactory emergency GI service in the context of increasing GIM intensity.

Method

An electronic questionnaire survey was sent to endoscopy leads in all the acute NHS hospitals in England in October 2005. Each endoscopy lead was sent an email with a link to an online questionnaire. Two reminders were sent out to participants who failed to respond. In March 2006 a supplementary questionnaire was sent to the participants looking in more detail at how onerous the on-call commitment was.

Results

From a total of 188 questionnaires sent to endoscopy leads in England, 167 responses (89%) were received. Of these, 157 (84 %) responded to the supplementary questionnaire.

Delivery of out-of-hours gastroenterology services

The median catchment population for hospitals surveyed was 200,000–300,000 (range <100,000 to

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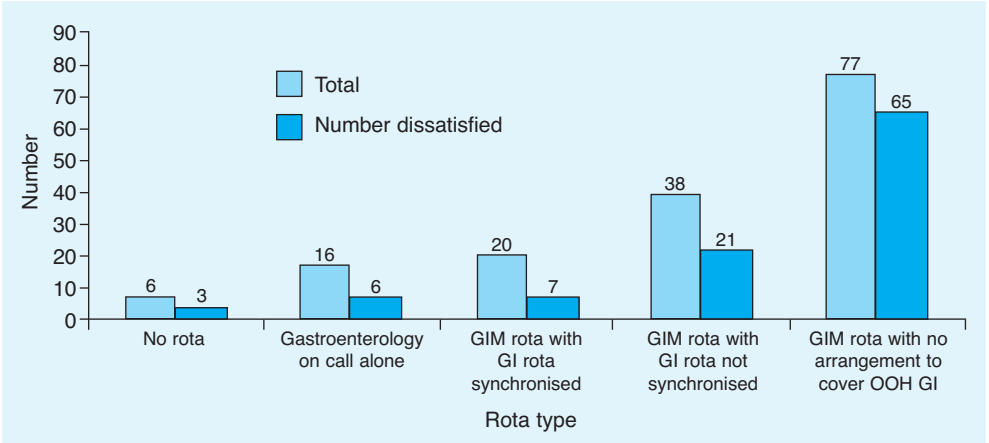

Fig 1. Rota type of respondents and frequency of unsatisfactory endoscopy arrangements within their hospital.
GI = gastrointestinal;
GIM = general internal medicine;
OOH = out of hours.

>400,000). The median number of diagnostic upper GI endoscopies carried out per annum was 1,000–4,000 (range <1000 to >10,000). Only 49% of hospitals (82/167) have a formal out-of-hours GI rota. The rota types which gastroenterologists work and their level of dissatisfaction with emergency endoscopy arrangements are shown in Fig 1.

Most gastroenterologists undertake GIM with informal arrangement to cover out-of-hours endoscopy. The most common frequency of on-call GIM was 1:12 and that for on-call GI was 1:6. These frequencies also applied to the GIM rota and GI rota when not synchronised. Out-of-hours GI workload is illustrated in Fig 2.

When not on call, 104/157 (66%) respondents were telephoned for advice between one and five occasions per month. About 10% of such calls resulted in a return to the hospital. The source of referrals was described accurately by 150 respondents. Gastrointestinal bleed-related enquiries were involved in 73% of cases, liver disease in 10%, general gastroenterology in 9%, inflammatory bowel disease (IBD) in 7%, and finally 1% for unspecified other reasons.

There was no formal rota covering emergency endoscopy in 85/167 (51%) hospitals. The constraints to having a formal rota included funding 49/85 (58%), availability of endoscopists 48/85 (57%), availability of nursing staff 35/85 (41%) and GIM workload 33/85 (39%). In the 85 hospitals without a formal GI on call rota, if a patient required emergency endoscopy, searching for an endoscopist via switchboard occurred in 60/85 (71%), transfer to a neighbouring hospital with endoscopy in 6/85 (7%), waiting for the next scheduled endoscopy list in 7/85 (8%) and other unspecified action in 12/85 (14%). Out of 167 hospitals, 85 (51%) would consider developing a GI rota with neighbouring hospitals, the majority of these (72%) preferring the endoscopist to travel between sites rather than transferring the patient (52/72).

Medical and nursing staff providing emergency endoscopy

The emergency endoscopy service was provided by consultant gastroenterologists in 152/167 (91%) hospitals. Consultant surgeons contributed to the service in about half (49%). Gastroenterology registrars participate in the on-call rota in 25/167 (15%) hospitals but these registrars had mandatory supervision provided in only four cases (16%). Endoscopy trained nurse assistants were available in 51/82 (62%) of the hospitals with a formal out-of-hours rota.

Infrastructure and organisation

Emergency endoscopy was carried out in a variety of locations within the hospital, often with an overlap depending on the clinical situation. The most common sites were the endoscopy unit

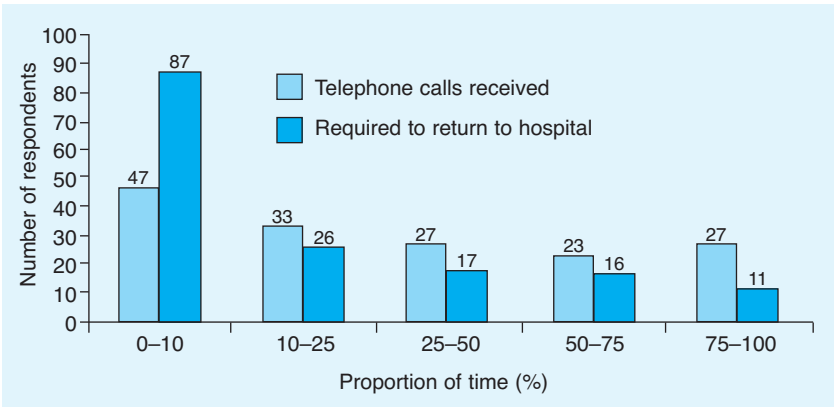

Fig 2. Proportion of time gastroenterologist contacted by phone or required to return to hospital out of hours.

(104/167 cases, 62%), in theatre (98/167 cases, 59%), in intensive therapy unit (ITU) (23/167 cases, 14%) and on the ward (4/167 cases, 2%). Sixty-two per cent were satisfied with the local arrangement and those who were unsatisfied usually carried out the procedures in the operating theatre. Out-of-hours ITU support was available in 143/167 (86%) hospitals, interventional radiology in 92/167 (55%) and transjugular intrahepatic portosystemic shunt placement capacity in 25/167 (15%). The equipment available for emergency endoscopy is shown in Table 1.

Remuneration for out-of-hours gastroenterology work

Only 75/167 (45%) of the endoscopy leads had out-of-hours GI work specified in their contracts. With regards to remuneration, 73/167 (44%) received none, 49/167 (29%) received an on-call supplement, 34/167 (20%) received one programmed activity, and 3/167 (2%) received intensity payment. No information was given by 8/167 (5%).

Clinical governance

Out of 167 units, 147 (88%) had a protocol for GI bleeding. When asked whether their hospitals provided a safe and satisfactory emergency endoscopy service, 63/167 (38%) of the participants felt their service provision was unsafe and 106/167 (64%) felt their service was unsatisfactory. The highest levels of dissatisfaction were among those without a formal out-of-hours GI rota; 65/77 (84%) $p<0.001$. When asked what they would consider to be important in delivering a good out-of-hours GI service, the majority responded with the need for experienced endoscopy nurse assistance. Other requirements are listed in Table 2.

Discussion

There is good evidence that emergency endoscopy reduces blood transfusion requirements, surgery rates, length of hospital stay and mortality.[1,9,10] In 2001, the BSG listed several requirements for a safe emergency GI bleeding service.[4] The results of our survey show that many hospitals are failing to achieve the expected standards. The main areas of concern can be divided into five areas:

Out-of-hours gastrointestinal rota

Fifty-one per cent of acute hospitals do not have a formal rota covering out-of-hours GI emergencies and instead transfer responsibility for finding an available endoscopist to switchboard staff. Gastrointestinal emergencies (including patients with IBD, liver disease and general gastroenterology disorders) are unpredictable and can take a minimum of two hours to manage satisfactorily. They require senior input (not just telephone advice but also physical presence) and often present a challenge to general physicians as 66% of gastroenterologists are regularly contacted even when not on call. Despite these gaps in service, financial considerations often prevent formation of a proper out-of-hours rota even when consultants show a commitment towards taking on an increased workload. Currently 73/167 (44%) of the respondents receive no remuneration for their out-of-hours work and more than half do not have this work specified in their contract. Instead, half the hospitals in England are providing a service that relies on goodwill and availability of the consultant staff and which seriously undermines clinical governance. This is unsustainable from a patient safety and staff morale perspective.

General internal medicine and provision of an out-of-hours gastrointestinal rota

The bulk of gastroenterologists continue to provide GIM cover. In hospitals with a formal out-of-hours GI rota, the median frequency of GI on call was twice that of GIM. This reflects fewer numbers of consultants able to participate on a GI rota. Considering this work is unpredictable and in the majority of cases consultant delivered, developing an out-of-hours GI rota while fully immersed in GIM will be challenging. It is unsurprising that dissatisfaction with the out-of-hours GI service was most noticeable in those with GIM involvement and only an informal arrangement to cover GI emergencies.

Experienced endoscopy nursing assistance

This was rated as the most significant part of the emergency endoscopy service by respondents but one third of acute trusts with a formal out-of-hours GI rota did not provide such assistance for emergency endoscopy.

Table 1. Equipment available for out-of-hours endoscopy in 167 hospitals.

Equipment	Available	Not available
Injection	167	0
Band ligator	150	17
Heater probe	68	99
Argon laser photocoagulation	73	94
Clip-fixing device	107	60
Diathermy	85	82

Table 2. Respondents' requirements for high quality out-of-hours endoscopy.

Requirement	Average score (0–10)
Experienced nurse to assist	8.9
Consultant delivered service	8.0
Video endoscopy available	7.9
Intensive therapy unit availability	7.1
Interventional radiology availability	4.5

Clinical governance

The majority of out-of-hours endoscopy is done in either endoscopy suites or in theatre. Problems with the latter include difficulties in accessing theatre space (due to other emergencies) resulting in delays and inexperienced/untrained staff assisting with unfamiliar equipment. Combined endoscopic therapy is now the accepted standard for managing major acute GI bleeding.[11] Yet 59% of trusts do not have access to a heater probe and 36% do not have clip-fixing devices available. The finding that 106/167 (64%) endoscopy leads rate their provision of emergency endoscopy unsatisfactory, with 63/167 (38%) feeling it is unsafe, is alarming.

Potential solutions

Providing a safe out-of-hours GI service should not be viewed as an aspiration. It raises serious clinical governance issues for hospitals to accept emergency patients without having a formal system to deal with GI emergencies. Different solutions are possible depending on local circumstances but they all require serious engagement by senior management with the consultant staff involved in delivering them. Risk registers have a critical role to play in this process. It will be impractical to implement any of the solutions suggested below without having dedicated additional resources.

When developing an out-of-hours GI rota the following models should be considered:

- in-house rota within one hospital: existing hospitals that receive emergency admissions should formalise their out-of-hours GI rota. Endoscopists asked to participate should have this reflected in their job plan.
- linked units: combine the out-of-hours GI rota between neighbouring units. In this model, the on-call endoscopist and GI nurse travel to the hospital admitting the patient. There would have to be training of participants to enable them to work in an unfamiliar environment.
- 'hub and spoke arrangements': regional centres should be created where patients with GI emergencies can be admitted directly or transferred once stabilised. Focusing the care of patients with GI bleeding in such centres will have consequences for the workload and training of GI surgeons and gastroenterologists.

Mandatory components of any out-of-hours GI rota include:

- experienced endoscopist
- endoscopy nurse assistant
- access to appropriate therapeutic endoscopy equipment
- backup of ITU and surgical services.

Different types of arrangement will suit different settings but these are the three main workable models.

Options for general internal medicine

Each of the above solutions will require robust job planning for participating endoscopists. In many cases it will be necessary for there to be a significant reduction in commitment to the acute medical or surgical take. This will be more feasible with the increasing numbers of acute physicians being trained and is compatible with both the 2004 and 2005 NCEPOD reports.

Conclusion

This paper reports the continuing lack of a universally safe and satisfactory GI emergency service across England nearly 15 years after the BSG first produced its recommendations.[12] Remaining as we are with the majority of hospitals relying on goodwill and chance cannot continue. Gastrointestinal rotas for consultants must be formally established and properly resourced. It is also essential to ensure that experienced endoscopy assistants and basic equipment is available out-of-hours. A safe GIM service relies on there being an effective out-of-hours GI service.

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