ISSUES IN PROFESSIONAL PRACTICE

EMERGENCY GENERAL SURGERY

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**FOREWORD**

*Issues in Professional Practice* (IIPP) is an occasional series of booklets published by the Association of Surgeons of Great Britain and Ireland to offer guidance on a wide range of areas which impact on the daily professional lives of surgeons. Some topics focus on clinical issues, some cover management and service delivery, whist others feature broader aspects of surgical working life such as education, leadership and the law.

This IIPP focuses on *Emergency General Surgery* (EGS). Emergency General Surgery is a large and essential service which is the core activity for many acute hospitals, typically representing 50% of all general surgical activity. Despite this, it is an under-resourced area of surgical activity and, increasingly, it is being recognised that patient outcomes are not always what they should be. In the last decade, numerous professional documents, including those from ASGBI, RCS England and NCEPOD, have indicated that the standard of care of surgical emergencies could be improved.

The Association’s Director of Emergency Surgery, Mr Iain Anderson, is a long-term advocate of EGS, arguing that it has become the “Cinderella” of surgical specialties. In this IIPP he outlines in detail results for EGS, resources required to optimise the care of emergency patients and outlines different options for providing this care. This IIPP, should, therefore, be compulsory reading for all clinicians and managers involved in the care of surgical emergencies.

The Association hopes that this publication, and others in the series (all accessible at: [www.asgbi.org.uk/publications](http://www.asgbi.org.uk/publications)), will provide concise advice and guidance on major current issues, and grow into a helpful and accessible resource to support your professional practice.

Suggestions for any potential topics for future booklets in the *Issues in Professional Practice* series would be welcome.

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1. Summary

1.1 Outcomes from Emergency General Surgery (EGS) are at best variable and need improving. There is a good opportunity to do this presently and to improve efficiency at the same time.

1.2 Resources for EGS are inadequate and must be urgently addressed. This includes theatre and critical care access, interventional radiology support, bed location and staffing. Essential resources for these are now defined.

1.3 Consultant surgeons are committed and contributing more to EGS than five years ago, but the current model is inefficient and may not be sustainable. The previous ‘team model’ has dissolved but not been satisfactorily replaced. Given the nature of the workload, all general surgeons should have the opportunity to cease night cover for emergencies from the age of 55 years. Their continued input to EGS at other times remains essential, but the role must evolve with age.

1.4 Key national standards, which will improve patient care, are now defined and should be adopted. Resources may be needed to implement them.

1.5 Several differing models of care are being described. It is clear that one model will not fit every hospital.

1.6 There is a need both for services to be adequately specialised, but also available in reasonable proximity to patients’ homes.

1.7 Effective sub-specialisation must include emergencies, in a way often hitherto lacking, and greater cohesion between the professional surgical bodies would better serve the needs of patients, trainees and consultants.
1.8 Training in EGS needs to be improved, as concerns that trainees and CCTs are ill-equipped to cope independently with the spectrum of EGS are often voiced. Trainees need documented experience, in depth as well as breadth, and their skills should match societal needs in general and emergency surgery. Training in EGS should receive greater priority from trainees and trainers and become much more of a focus for both. An experience during training of at least 100 emergency laparotomies should be an absolute minimum. All new consultants should have a named mentor for EGS.

1.9 Emergency surgery would be improved if its status better reflected its risk, difficulties and challenges. Professional recognition and remuneration are two ways to achieve this; both are presently neglected. Hospital tariffs should also be used to reward and encourage best practice, as has happened successfully with common emergencies in other disciplines.

1.10 Every EGS unit should have an identified clinical lead and an identified responsible senior manager. Each unit should review its service provision and resources and establish priorities for improvement. ASGBI should facilitate the discussion and dissemination of successful solutions developed locally.

1.11 The current model of service delivery is outmoded, and there are now major underlying decisions to be made which will influence delivery of acute surgical services in the longer term. These relate to sustainability of consultant delivered services now the team structure has dissolved and there are competing demands on a single duty consultant’s time. It remains unexplored how these pressures are reconciled with less experienced younger consultants and, in future, a later-retiring senior consultant population.
2. Overview

Emergency General Surgery (EGS) is a large and vital service, fundamental to an acute hospital, and typically representing 50% of general surgical activity in most hospitals [1]. However, despite significantly greater input from consultant surgeons in recent years, the EGS service is under considerable pressure from a variety of sources and patient outcomes are not what they should be [2,3]. In the last decade, numerous professional documents, including those from ASGBI, RCS England and NCEPOD have indicated that the standard of care of surgical emergencies could be better [3,4].

While elective services have benefitted from sub-specialisation and cancer targets in particular, the same does not hold for EGS, which has remained very much a service “added-on” to elective ones. Emergencies account for 80% to 90% of general surgical deaths, and complication rates of emergencies would exceed those of a similar elective operation by two- to four-fold. Outcomes (mortality rates) for emergency surgery vary by a factor of 3 between hospitals, supporting the view of the profession that the EGS service could be significantly improved. The relative death rates for emergencies and electives mean that emergencies exert a much greater influence on published outcome figures, but also offer much greater scope for future improvement.

In addition to major cases with critical illness, EGS faces a large and growing workload in patient assessment for acute abdominal pain and the need to modernise management of urgent biliary disease and peri-anal abscesses. While a few hospitals have redesigned services to cope with increased numbers or reduce hospital stay, many others have yet to modernise these services and, therefore, have not realised the related gains in service efficiency.

A major ASGBI survey of consultant surgeons showed that unhelpful effects have been exerted on EGS by a range of factors including junior doctor numbers and their hours of work, loss of team structure and continuity, bed pressures,
poor theatre access, inadequate interventional radiology and healthcare targets, notably the “four-hour wait” for A&E. Furthermore, there is very considerable doubt whether the present training system and the consequent production of specialists adequately prepares tomorrow’s consultants for EGS.

The recent public and professional focus on outcomes requires that we now attend to the problems of EGS, as the mortality and morbidity of emergency general surgery are unacceptable. It is clear to all that the EGS service is not as patient-centred as it could be, and standards of care have now been advocated [2, 3]. However, achieving these will require some degree of service redesign, and there are several options for this. Doing so in a sustainable way will need consideration of factors which facilitate service delivery such as patient location and issues such as job plans, work intensity and junior support. These issues are laid out below to assist colleagues improve patient care by developing local services to achieve that more effectively. Many of these problems are being faced in other countries, and international perspectives are included. Outcomes from EGS are now in the public domain bringing increased expectations from patients and managers. Coming changes in commissioning may offer the prospect of change within a relatively short timescale and, unless we take a lead in this process nationally and locally, we risk having ineffective or unworkable changes imposed upon us.
3. The current EGS service: background and problems

3.1 The 2007 ASGBI Consensus Statement on Emergency General Surgery stated, “For much of the past decade, the surgical Specialty Associations and the Surgical Royal Colleges have advocated the separation of acute and elective surgery. Political focus has been almost exclusively on the need to reduce waiting times. This has resulted in a target mentality to the provision of healthcare and a massive injection of resources into elective surgery. In contrast, there has been significant underinvestment in the provision of emergency surgical services for many years.” That statement remains pertinent, although the political focus has recently changed to outcomes.

3.2 General surgery is a historical term, the spread of which currently includes gastro-intestinal surgery, endocrine surgery, torso trauma and hernia surgery. In some hospitals, breast, transplant and vascular surgeons still undertake some general surgery and may contribute to EGS, although these disciplines are increasingly separate. This separation has been driven by a desire for improved outcomes through specialisation, although neither the provision of specialist on-call cover nor the impact of withdrawal of manpower from EGS has been cleanly resolved.

3.3 It should be recognised that EGS is one of the principal diagnostic and therapeutic services in every acute hospital, and all hospitals need access to EGS to assess and manage surgical emergencies or complications arising in other patients. EGS still takes a substantial portion of relatively unselected and unwell patients, provides urgent diagnosis and then treatment or referral to many others services.

3.4 The spectrum of EGS is considerable, but several groupings can be identified. Painful but relatively
minor perineal conditions including abscesses are common, and could often be managed more effectively. Growing numbers of patients with undiagnosed acute abdominal pain are referred and often the diagnostic pathway is slow and costly. Biliary disease is a common sub-set of this group, representing in the region of 33% of the unselected take, and effective units have highly developed systems to manage these patients. Resource limitation prevents others achieving this. Another sub-set is appendicitis and related conditions, but the principal group leading to morbidity and mortality are those requiring emergency laparotomy. This diverse group still carries a mortality of 15% but does not attract attention or support commensurate with the risk or cost. Trauma is an important but extremely small part of EGS numerically to which regionalisation is currently bringing real risks as well as prospects of improvement. Complications of elective surgery occurring out of hours are extremely significant, as these life-threatening events are often managed by surgeons from an entirely different speciality.

3.5 One notable deficiency of recent sub-specialisation has been the failure, to date, to extend the benefits reliably to these highest risk patients who present as emergencies or who develop complications out of hours. It is known that it is more the success with which complications are managed, rather than their initial frequency, which identifies hospitals with good outcomes [5] and it is now realised that this has a significant effect in common aspects of our practice, perhaps typified by colorectal cancer surgery with its significant (20%) rate of emergency surgery for resection or complications [6].

3.6 It is known that, around the country, facilities for emergencies are inadequate, with serious deficiencies in access to theatre in 55% of units and a comprehensive interventional radiology service is available in only 19% of units. Only 55% of
surgeons believe they can care well for their emergency patients. Surgeons are clear that pressures in the NHS currently work against emergencies and in favour of elective cases, but find they are unable to argue the case for change effectively at local level. Many surgeons feel that helpful changes would include national standards of practice and of service delivery, proper theatre access and increased separation of emergency and elective work.

3.7 Management of EGS patients is made inefficient by widespread location around the hospital due to lack of dedicated acute beds, lack of continuity - other than at consultant level - and inconsistent access to rapid diagnostic imaging. Bed pressures can mean that ill or incompletely assessed patients are scattered around the hospital on inappropriate wards, thereby exposing the patients to delay and unnecessary risk. Often, this is the consequence of Trust policies designed to meet elective targets.

3.8 A significant number of new pressures have come to bear on emergency general surgery. These include hours of work, training, experience, subspecialisation, targets in other departments (four-hour wait in A&E), elective workload pressures and bed numbers, to name but a few. Without exception, emergency surgery provision has been impacted upon rather than being prioritised, which is surprising given the relative risk to the patient.

3.9 In the last six years, HES data indicate that the numbers of patients requiring emergency surgical assessment by EGS have increased significantly, probably by about one-third. Out of hours GP services, four-hour wait target in A&E, patterns of junior working and patient expectation have all probably contributed. Some areas report a small, but significant, increase in inter-hospital transfers from District General Hospitals to Acute Teaching Centres for specialist care. With advancing age, elderly
patients with major conditions are increasingly more likely to present emergently than electively. Future EGS numbers are modelled to increase by 3% per year. The introduction of the four-hour wait target for A&E precipitated admission of incompletely assessed patients to the EGS service, including some medical, urological and gynaecological patients but often without discernible accompanying resource.

3.10 The EGS team is now reduced in size and experience. A typical EGS team comprises consultant (CCT holder), specialist registrar (MRCS holder), core surgical trainee and foundation doctor. Most EGS teams (66%) have three tiers of juniors on-call during daytime, but the skill mix has become more variable with not all being surgeons in training. At night, 58% have only one or two tiers of cover, but that cover is now shared. This represents a very real reduction in the emergency surgical workforce compared to 20 years ago. Registrars are less experienced and cannot offer continuity of care due to rota regulations. Locums cover one in five shifts which, however good the locum, will not facilitate good team working and efficient bed management. It is no longer routine for basic trainees to come to theatre at night, and many cover more than one major specialty simultaneously. It is clear that changes to junior hours and experience have brought about a big and unrecognised shift of work to the consultant. At one stage, two or three junior doctors would all contribute to that on-going care provision; not now, it seems. For the difficult out of hours emergency laparotomy, the team is changing from three committed surgeons, who know each other and the patient, to two surgeons. At times, this must impact on outcomes. It certainly impacts on the experience gained by the basic trainee. When the entire team is needed for complex surgery, there will be no surgical staff available to cover wards or A&E. In the present era of strict protocols and defined availability, this deficit needs addressing.
3.11 Whereas, thirty years ago, emergencies were largely carried out by junior surgeons out of hours, consultants now play the largest part. Their role has increased enormously to the point where they carry much of the continuity and major decision making as well as practical hands-on roles. Most consultants (75%) provide greater input to emergencies now when compared to 2005, and 85% consider the support they receive from juniors to be a factor in this, particularly in relation to continuity of care and (operative) inexperience. Consultants are now the major service providers during working hours, with 95% leading the post-take round, and 86% providing on-going continuity of care. Consultants are now involved in the majority of major emergency cases, again a significant change in practice. Few other specialties continue to load the pressures of unselected referrals of substantial numbers of patients, critical illness, prolonged periods on-call (to provide continuity) and the need for frequent consultant-led complex interventions on consultant staff. Demitting from night on-call beyond a certain age remains uncommon in EGS, unlike other specialties. Furthermore, the loss of vascular and breast colleagues from the consultant EGS rota will effectively reduce numbers by 40% in some hospitals.

3.12 Most hospitals make some provision for daytime emergency operating, and 70% of consultants will be free from other daytime duties when on emergency duty. Greater consultant involvement has allowed better team management of critically ill patients in many units. Passing unstable patients to the next duty team appears to confer advantage to patient and surgeon. Recent professional documents lay out standards of care, but the means of delivering these reliably are only now being explored.

3.13 However, this limited development of emergency surgery contrasts markedly with that of elective surgery in the last decade, where, for example,
colorectal and upper gastrointestinal surgery, through their respective associations (ACPGBI and AUGIS), has greatly advanced the practice of elective cancer surgery in particular such that it is now of extremely high quality. These organisations acknowledge the need for high quality emergency services but without, to date, clear guidance as to how the highest risk cases (emergencies and out of hours complications, including cancer cases) should be managed. An upper GI colleague wondered why they were, “currently ‘not allowed’ to do a low-risk elective colonic resection, but can crack on with a high risk emergency malignant bowel obstruction or take back a rectal anastomotic leak?” Both organisations have called for sub-specialty rotas as have Cancer MDT peer reviews ostensibly to provide seamless 24/7 specialist care for elective patients. Given that surgeons from these disciplines come together to provide the emergency service and provide out of hours care, there should be greater cohesion in planning services and, in particular, defining sensible and achievable lines of responsibility to the benefit of all patients, including those at highest risk.

3.14 Changes to hours of work by junior doctors over the last 20 years have reduced their effective exposure to emergency cases by approximately 50%. This, combined with early sub-specialisation during training, now leads many senior surgeons to voice considerable concerns about whether new CCT holders have adequate depth and breadth of experience to cope optimally with EGS and the torso component of major trauma. Although the curriculum and exam system are under review, there is no confidence yet that the problems have been addressed. Major EGS cases carry a remarkable variety of nuances and problems which can probably only be adequately mastered by experience. It is difficult to see how any exam system can successfully and safely replace that practical experience and assure competence to the public.
Different hospitals have very different specific needs due to patient numbers and the spectrum of specialties present or absent. From large teaching hospitals to small rural ones, each type carries a significant proportion of the overall workload. Designing systems that can address these specifics will be key to improving outcomes, particularly for EGS. There will be inevitable service balances to be reached between the degree of specialisation, accessibility for patients, 24-hour cover and high quality emergency care for the cases which carry higher risks. While progress has been made with some aspects of these issues, other aspects have not received the same prominence, and the present unbalanced approach to sub-specialisation, which focuses on relatively low risk elective work, is probably sub-optimal in terms of outcomes overall. The number of cases with which an EGS team, and its related necessary services, can effectively cope has not been explored in relation to outcomes and manpower. Notwithstanding this, merging services has been repeatedly advocated as a solution to current problems and, in some places, implemented with management led ‘efficiencies’ through consolidation of EGS Consultant numbers on-call at any one time. Simply reducing the number of staff involved in a stressed service will have a negative effect on quality and outcome.

4. Outcomes from emergency laparotomy

Outcomes from EGS show it to be high risk. Emergencies account for over 80% of deaths in general surgery, and probably closer to 90%. The capacity to save lives through improved services is, therefore, far greater in emergency than elective practice. This will reflect in the published Standardised Mortality Rate (SMR) figures for hospitals and units. Most of this stems from patients having, or considered for, emergency laparotomy.
4.2 Emergency laparotomy for often critically ill patients is common, with over 30,000 performed annually in the UK. The need for intervention can be obscured, and delay directly influences outcomes. Considerable skill and experience is needed to manage these patients well.

4.3 The average mortality of emergency laparotomy runs at 15% to 20%, but rises to 25% to 40% in the over 80 years age group. Emergency colonic resection in a typical patient group (over 69 years with complicating factors) carries a mortality of 23%. One-third of emergency laparotomy patients are admitted to intensive care post-operatively and one-third still return to the ward. By comparison, elective cardiac surgery carries a mortality of less than 3%, but the patients are routinely admitted to intensive care.

4.4 Analysis of HES data shows that mortality for emergency surgery for a range of common emergency procedures varies between two- and three-fold between hospitals within the same health region. Similar patterns are reflected nationally for emergency laparotomy on voluntary multicentre audit.

4.5 The recognition that hospital mortality is 10% higher for patients admitted at weekends, has contributed to calls for a maximum period of 12 hours after admission before patients see a Consultant. Medical teams have adopted this to some extent and pressure is growing for surgical teams to match this.

4.6 Outcomes are directly affected by delay in resuscitation or definitive treatment. For example, patients with septic shock whose treatment pathway is delayed by 12 hours can expect a tripling of mortality. Complications and costs follow suit.

4.7 Consultant input among contributors to a voluntary audit of emergency laparotomy showed that, in daylight hours, 75% of cases were staffed by consultant anaesthetists and surgeons. Between 8.00pm and 8.00am, consultant rates fell by approximately 10% for surgeons and 20% for
anaesthetists, despite these patients presumably being sicker. Consultant input and recognition of severity of illness were targeted by the audit as future areas for improvement.

4.8 Additional and unnecessary costs are currently generated in EGS through expensive ICU treatment of potentially avoidable complications, prolonged hospital stay for investigations and unnecessary admission to allow theatre access for low priority cases. Systems of care are described to address each of these, but are seldom applied coherently as yet.

4.9 Outcomes have been criticised by professional associations and Colleges, on repeated occasions by independent professional bodies such as NCEPOD and are a common topic of discussion amongst colleagues. The Department of Health has commented on recent outcomes and professional recommendations and the deficiencies have been prominent in written and live media. “Everyone knows” that the EGS service has problems.

4.10 The current model of service delivery is outmoded, and there are now major underlying decisions to be made which will influence delivery of acute surgical services in the longer term. These relate to achieving better outcomes but also to accessibility, efficiency and the sustainability of consultant delivered services in the absence of a strong team structure. There are competing demands on a single duty consultant’s time, and it remains unexplored how these pressures are reconciled with less experienced younger consultants and, in future, a later-retiring senior consultant population.

5. Changing EGS for the better

5.1 Improving EGS will not be easy and will require concerted efforts at local and national levels. There
is no doubt that EGS deals with sick and high risk patients under unfavourable and pressurised circumstances which have deteriorated in the last few years. Consultant staff remain highly committed and are involved much more than hitherto and probably more than many colleagues from other disciplines. There are multiple issues causing short and longer term pressures, and most have the potential to confound advances in each other. Tempting as it may be to ignore the problems of EGS, the public and the rest of the profession expect our professional group to recommend modern and workable solutions and to work towards them. In practice, the lead for this will need to come from ASGBI in conjunction with ACPGBI and AUGIS. A glance at numbers of general and specialist patients and anticipated consultant vacancies leads rapidly to the conclusion that there is presently a greater need for emergency and general surgical skills. The issue is how and when those are combined with specialist skills.

5.2 There is a need to define and adopt standards of care for patients, effective mechanisms of service delivery and to be provided with the resources needed to achieve these. Defining these will allow providers, purchasers and managers of health care to agree common and explicit aims, ideally in conjunction with patient representatives.

5.3 EGS is a topic raising challenges internationally.

5.3.1 In Australia, a recent process has defined the EGS workload for a hospital so resources (especially operating theatre time) can be allocated appropriately. Length of consultant duty periods are matched to workload and intensity.

5.3.2 Finland has developed a prioritised and audited system for major and critically ill patients led by specialists in EGS.
5.3.3 In recent years, two ASGBI Visiting Fellows (senior surgeons from Finland and Denmark) have been asked to assess our EGS services. Comments made have included:

- Increase the number of surgeons (the UK has 30% of the number in Scandinavian countries).
- Adopt systematic team care rather than individual surgeon-led care.
- Accept EWTR where it avoids excessive tiredness – possibly now more relevant to consultants than juniors.
- Leadership of EGS could be improved and any negative impact of sub-specialty interests reduced.
- Improve funding generally, and develop defined EGS wards particularly.

5.4 The status of EGS and appropriate remuneration of EGS should be recognised as being fundamental to successful service delivery and development. Ideally, both should match the risk, arduousness and complexity of the surgery. The current system provides little disincentive for consultants to demit from emergency surgery. Current job planning can recognise the increasing time spent but not the intensity or knock-on effects of EGS duty. It is not possible to make blanket statements about how many PAs should be allocated for duty, but the ASGBI supports regular job-planning and the due recognition of work scheduled or unscheduled as laid out in the contract. Where duty periods are spent primarily on-site, that time is clearly scheduled. All staff retain the right to practice within European law and have a duty to avoid endangering patients through inappropriately long or arduous duty periods.

5.5 Developing tariffs for hospital remuneration based on high quality care has successfully influenced practice in fractured neck of femur. The model should be extended to aspects of EGS.
6. Mechanisms of service delivery

6.1 Future models will need to be based around service delivery provided and led by qualified surgeons (Consultants/CCT holders). Middle grade staff should also have defined qualifications (MRCS) and manpower must be sufficient for safe function. In recent years, colleagues report that a “We never close” philosophy has, on occasion, taken precedence over professional views of patient safety. Where manpower is insufficient or the hospital’s capability exceeded, the unit should temporarily close to further admissions or “triage and transfer” to a near-by competent facility. Alternatively, a robust policy to mobilise increased resource and reduce elective work temporarily akin to a mass casualty event could be deployed, although this should be an extremely rare occurrence which should be formally declared and mandate a major organisational review. The interests and safety of patients must take precedence at all times.

6.2 Inadequate or inconstant junior support places greater strain on the Consultant, and greater consultant involvement in the above pattern cannot compensate for lack of adequately experienced junior support. Junior staff rotas must support an effective EGS service: perhaps the recent focus has leant too much towards gaining elective experience.

6.2.1 Dependent on the intensity and volume of workload, a duty team typically needs at least three, and preferably four, personnel (CCT, MRCS, core and foundation). Even this staffing level will only afford minimal cover (usually at FY or CT grade) for other emergencies when major surgery is underway. Busier and specialist units need more staff than this, and increasingly that will often mean having more than one consultant available and a consideration of specialist rotas. Deficits in cover resulting from reduced numbers should be documented with senior management.
6.2.2 Junior patterns of work should be configured to offer longer periods of attachment to EGS. This will aid continuity of care and the gaining of experience and responsibility. Attachment for periods of two or more weeks during “daylight hours” would be a step forward.

6.2.3 Effective care models (beds in one place, adequate theatre access, good radiology support, good IT) will mitigate the impact of increasing workload, and should be addressed urgently.

6.3 Several mechanisms of delivery are being explored. Different models may suit different hospitals, but common threads emerge. Adequate resource and commitment from all involved is fundamental to achieving successful outcomes. A common feature of most is the “Surgeon of the Week” model, where the on-call consultant and team are free from all elective responsibilities and available solely to attend to EGS. Over 70% of units have adopted this to facilitate reliable senior input to assessment, operating and continuity. Except in particularly low volume units, staff on EGS duty should be free of all other commitments.

Several issues can arise:

- Too long a period on-call leaves the surgeon with a huge workload at the end of the week and the week following. Finishing on a Friday can create problems for the weekend team, and some units start duty periods on different days. Many teams opt for a four day/three day weekend split, although this is at the risk of reduction in weekend cover for patients belonging to the outgoing team, unless there is efficient hand-on.

- Too short a period on-call can, in some systems, challenge successful continuity of care. Problems may be inappropriately passed, rather than grasped, if there is insufficient “buy-in” to the duty period.
• On the other hand, handing on unstable or unsorted patients to the next team is important to maintain senior input from fresh and available senior staff.

• Some units have a different Consultant “babysitting” one or more nights of the duty week. This ensures compliance with European working hours regulations, as well as helping the duty consultant stay fresh. Handing over late in the evening achieves these aims while minimising the likelihood of the night watchman being involved in work that could have been done at another time. If substantially involved after midnight, the ASGBI advises that activities the following day should be appropriately curtailed.

• A handful of units have now adopted some form of night shift. In one, this takes the form of a scheduled evening shift from 5.00pm until 10.00pm, where the consultant makes a round, helps in theatre and sees new patients as needed. That surgeon is then on-call overnight and off duty the following day.

• Good teamwork, and good relations with colleagues who all support the service, is fundamental to all these models.

6.4 The rising number of emergency admissions with abdominal pain can be managed more effectively in a number of ways:

• Some can avoid admission if seen by an adequately senior surgeon either in the Emergency Room or in a ‘hot clinic’ (which present tariff arrangements may favour). Preliminary data suggest that at least 15% of EGS admissions could be managed this way.

• Hot clinics held daily can also be used for re-assessment of patients.

• More reliable urgent access to basic imaging (US and CT) can speed diagnosis and either treatment
(typically for biliary disease) or discharge. Imaging slots can be paired with the hot clinic.

- Adequate dedicated and staffed “urgent” but scheduled theatre space can allow abscesses to be admitted as day cases for drainage the next day and an increased number of cholecystectomies to be undertaken during the initial episode.

- However, a drive to keeping EGS patients out of the hospital must not disadvantage the emergency patient and prolong the time to diagnosis or effective treatment.

7. Separating upper and lower GI

7.1 There is much less true elective general surgery performed at large teaching hospitals than in the past. With increasing specialisation, most surgeons in these institutions perform only their specialist work, and this can sit uncomfortably with a non-specialised on-call rota, particularly for younger and less generally trained colleagues. Furthermore, the large number of ‘general’ surgeons ‘available’ in the biggest centres is also of concern where numbers may allow a 1 in 14 EGS Rota, or even less. Can surgeons really stay current across the broad range of emergency surgical conditions, especially in sub-specialties different from their own, on this low frequency of on-call?

7.2 Some 10% of units have adopted a split between upper and lower GI, in order to facilitate sub-specialist care for emergencies and complications as well as elective care. This makes most sense in units with larger caseloads, or in cities where the teams are located on different sites. However, these services must also be consultant based, as trainees are not (sufficiently) sub-specialist to achieve much benefit in patient outcome if not closely supervised.

7.3 The pattern varies. Some units have one upper GI team on-call and one lower GI team, with an
arbitrary division of labour somewhere in the small intestine. Other units define the split between general on-call (which all traditional general surgeons take their turn of) from specialist on-call where another specialist is available to cover occasional complex issues with which the general on-call surgeon is uncomfortable, and to respond to issues with specialist elective patients out of hours. In the largest units, this can mean different specialists on-call for HPB, colorectal and oesophago-gastric. This approach has many attractions, as all general surgeons (perhaps with hernia or endocrine interests, for example) can then continue to maintain their general skills and share the workload of the general aspects of EGS.

7.4 Most surgeons still consider themselves general surgeons with a sub-specialty interest. However, there is no doubt that younger consultants, on average, possess a narrower and more specialised skill set than their senior colleagues did at analogous stages in their careers, and may consider themselves as specialists rather than generalists. Specialist practice within major centres can rapidly ‘de-skill’ Consultants in both general skills and advances in treatment in other surgical specialities that may be appropriate for emergency care, for example laparoscopy for diverticulitis or stenting for colonic tumours. This may disadvantage the EGS patient who is admitted on the ‘wrong’ day.

7.5 There are data which suggest that non-elective colorectal resection and laparoscopic cholecystectomy can be undertaken more effectively by sub-specialists, perhaps with better outcomes. However, data available to date has not consistently separated emergency (within six hours, at night if necessary) from urgent cases. This appears to be an important difference, which also has ramifications for experience and residual emergencies. The outcomes of those cases which cannot wait for routine working hours will inevitably be the worst, so solutions need to include, rather than exclude, those patients.
8. Emergency surgeons

8.1 Increasing numbers of units have expressed interest in dedicated Emergency Surgeons, and a few have tried or established them. Although some posts have been appointed to, a defined pattern of work does not yet exist, probably reflecting differing needs among hospitals. There is a need to achieve agreed basic parameters to safeguard the interests of all.

8.2 Some EG surgeons, perhaps nearer the end of their careers, have adopted a successful daily triage role, using their experience to assess surgical patients following admission overnight, and at the “front door” during day time. This can reduce unnecessary admissions and prioritise care for the critically ill.

8.3 Other EG surgeons fulfil the role for one day each week, deliver an urgent but scheduled list during the day following, and conduct elective duties otherwise.

8.4 The elective activities undertaken by Emergency Surgeons need more consideration and greater support from the specialty associations (AUGIS and ACPGBI) if sustainable and rewarding careers are to be developed. EGS generates a large workload in gallbladder surgery, and it follows that an elective practice could major in biliary and hernia work. However, this might lead, over time, to relative deskilling in intestinal resection, which is the highest risk part of emergency surgery. From the EGS perspective, the ideal solution would permit core general skills to be retained by all general surgeons for the majority of their career. Those would include surgery and related management skills for haemorrhage, obstruction or infarction from mid stomach to upper rectum, most biliary surgery and an appropriate role in modern trauma management [7].

8.5 Ongoing commitment to support EGS by all surgeons appears essential, as is the need for adequate resources. Where this has not been achieved, trials have proved unsuccessful. While more senior surgeons may wish to demit from unselected night
cover, the withdrawal of influential seniors from EGS may serve to undermine its value, rather than supporting it at this phase where it is already in a degree of disrepair. All general and GI surgeons should remain involved in the EGS service, although some may play a greater part. Using the experience of senior staff successfully, without exhausting them, is a future challenge requiring attention.

9. Merging hospitals

9.1 Merging hospitals has been repeatedly advocated within the profession, and by politicians, as a solution. The success or failure of this could be anticipated to depend on several factors which would vary between units.

9.2 Geographical proximity: a stronger case can be made for units close to each other and with good transport links, especially if one unit is small.

9.3 Poorly organised split-site working is considered to risk leaving important gaps in cover and continuity on both sites. Where consultants work on two sites of a single Trust, merging EGS to a single site again makes more sense, but effective systems and job plans are needed to remove the adverse impact of split-site working.

9.4 Unmanageable numbers of patients are a real concern of larger mergers between hospitals. Beyond a certain numerical level (numbers +/-or complexity), conventional systems will be steadily overwhelmed, lose efficiency and risk increased errors and adverse outcomes. This is largely unexplored; the surgical approach is to “cope”, but outcomes may suggest otherwise. When surveyed, few ASGBI members (<5%) felt their EGS system could cope with more than 25 patients per day. Creating large units may simply require a doubling up of staff and resource, thus negating efficiency but still leaving many patients with greater distances to travel. Detailed modelling of proposed future mergers would seem essential. For example, one large unit now reports
having 60 patients on the service at any time for one EGS consultant and approximately 160 completed consultant episodes for a 7-day on-call period. The associated governance risk is appreciable.

9.5 With sub-specialisation or rationalisation of EGS, it is essential that receiving hospitals have sufficient capacity to accept referred patients without delay. This is often not the case presently, and reflects the failure of hospitals to follow the advice of separating emergency from elective services (and giving elective patients priority) or to run bed occupancy levels on the 80% model. There is major work to be done here, as any system which defines who should be treated where, and by whom, cannot work if the process repeatedly stalls at the first hurdle.

9.6 A strong case might be made for defining different types of hospital based upon patient risk and complexity. It will be clear there is a case for sub-specialisation, but offset by the need for local services where possible and a distribution of work which allows surgeons to maintain skills safely. In line with the concept of the general GI surgeon, EGS could be delivered in most existing acute hospitals, but cases at higher risk, whether newly admitted emergencies or complications of elective surgery, could be transferred as necessary for specialist surgical input, interventional radiology or advanced critical care. Thus, the low risk hospital might, for example, offer elective GI surgery for low risk cases and an EGS service which assesses locally the increasing number of patients referred. It would treat those at low risk, but be paired with a higher risk hospital where major emergencies, and higher risk elective cases, would be treated in an environment with different staff ratios, sub-specialisation and resources justified by the greater likelihood of need.

10. The view from smaller and remote hospitals

10.1 Smaller and remote hospitals have particular issues which are worthy of note. They tend to have much more of a ‘Consultant delivered’ service, have fewer
junior staff, and those that are there are usually early on in their training. It would, therefore, be rare for any laparotomy not to be either directly performed by, or directly supervised by, a Consultant Surgeon and a Consultant Anaesthetist. Decisions about overall care of the patient are invariably taken both at a higher level, and possibly earlier, too. Senior involvement at an early stage is pivotal to the care of the more seriously ill, and the smaller hospital has a possible advantage here.

10.2 In some smaller hospitals the night cover for surgery (from about 9.00pm) will be provided by a Consultant Surgeon and a Core Trainee, as the volume of work cannot sustain the valuable training hours of a Specialist Registrar. In practice, this arrangement can be sustained without compromise of patient care in the vast majority of cases.

10.3 Provision of EGS services is still by many non-GI specialists (breast and vascular, for example). Whilst this situation may be becoming rarer (especially as vascular services separate off from general surgery), it will take some time before there are enough pure GI surgeons to provide 24/7 cover in the smaller hospitals. Some non-GI surgeons greatly enjoy their emergency work, despite suggestions otherwise. We are probably moving towards the perceived ‘ideal’, but radical and sudden change in policy would not be practical.

10.4 Suggested division of emergencies between UGI and LGI teams would not be practical in smaller hospitals, where there might be 4-5 LGI consultants, but few, if any, UGI specialists (other than those doing benign and non-resectional work). The surgeons providing the emergency surgical service will be well trained in emergency abdominal (GI) surgery, even if their predominant elective work is not so directed. Whilst this situation gives many the ammunition to suggest that these smaller hospitals should not be doing surgical emergencies, the practicality for a significant population group (more than 150,000 in
some cases) is not sustainable, given that rural infrastructure can mean journey times of up to two hours or more to a larger centre.

10.5 Volume of work will usually be less. On the positive side, taking time to be able to triage, assess and investigate cases is an advantage, where otherwise the sheer volume of work can dilute the ability to provide intense individual attention. On the other hand, however, experience is necessarily diluted and the opportunity to draw on previous exposure to rarer pathology is reduced.

10.6 Some more specialised aspects of care may not be available 24 hours a day. Whilst HDU, ICU and CT would be accessible at all times, interventional radiology may not be. Cases requiring such services can usually be transferred out, albeit the nearest centre providing those services may be more than one hour away. The advice obtainable from more specialised centres will, however, be readily available, and transfer can be often avoided by the use of such remote expert help.

11. Standards of care for the higher risk patient

11.1 ASGBI members report that they find it difficult to effect change in their hospitals, and many support defined standards of care and resource in order to provide a benchmark against which they can campaign. Standards for the timely delivery of care to emergency general surgical patients at higher risk have recently been described by RCS England with active input and strong support from ASGBI [3]. Timeliness of care directly influences major outcomes: mortality among certain groups of high risk patients might be halved by ideal, as opposed to “routine”, care. Timeliness applies to diagnosis and resuscitation and for definitive intervention, whether that is by surgical, radiological or medical means.

11.2 The standards define the need for consultant availability for emergency care 24-hours a day,
seven days a week, location of at-risk emergencies in a single site, genuine availability of emergency theatre and defined rotas for interventional radiology. These principles are fundamental to modern safe and reliable unscheduled care. Many hospitals have moved substantially in this direction, but remaining ones should follow and adjust job plans accordingly. Key standards follow.

11.3 Each unit should have a defined pathway for Unscheduled Adult General Surgical Care. All patients should have a clear diagnostic and monitoring plan documented on admission. The monitoring plan must match competency of the doctor to needs of the patient. The pathway should include the timing of diagnostic tests, timing of surgery and post-operative location for patients. Specimen pathways are available from ASGBI.

11.4 Prompt recognition and treatment of emergencies and complications is essential to improve outcomes and reduce costs. Surgical patients often require complex management, and delay worsens outcomes. The adoption of an escalation strategy which incorporates defined time-points and the early involvement of senior staff (of defined grade) when necessary are strongly advised. Early resuscitative steps are defined. For critically ill patients with sepsis, these should include among a range of measures, for example, measuring serum lactate and administering broad spectrum antimicrobials within one hour. An incomplete response to resuscitation within one hour, particularly if the patient remains hypotensive or with organ dysfunction, requires an escalation of care and involvement of seniors. For definitive treatment to occur within the recommended timeframe, it will be clear that each phase of treatment must be expeditious. Hospitals should audit the stages of the pathway to minimise the avoidable delays which are currently recognised.

11.5 Moving a patient to critical care does not treat the source of sepsis and the focus must remain on timely definitive care. This needs to be balanced with
appropriate but rapid pre-operative resuscitation. If the patient becomes hypotensive, fails to respond to resuscitation or otherwise deteriorates, then immediate treatment is necessary.

11.6 Trusts should ensure emergency theatre access matches need, and ensure prioritisation of access is given to emergency surgical patients ahead of elective patients whenever necessary as significant delays are common and affect outcomes. The necessary timescale of intervention is defined below. Doctors should be aware of these timescales when determining the urgency of assessment and intervention, which are a maximum. Some patients will have surgical considerations mandating more urgent intervention.

11.6.1 Patients with continuing major haemorrhage require immediate surgery.

11.6.2 Those with septic shock require immediate broad-spectrum antibiotics, fluid resuscitation and source control. Delay to source control of more than 12 hours after onset of hypotension, when compared with a delay of less than three hours, could be expected to increase mortality from 25% to more than 60%. Control of the source of sepsis by surgery or other means should be immediate and underway within three hours.

11.6.3 Patients with severe sepsis (sepsis with organ dysfunction) should have surgery or equivalent (e.g. radiological drainage) within six hours from the onset of deterioration.

11.6.4 Where it is elected to observe and resuscitate the patient for a few hours until morning, surgery should assume priority over elective procedures. Neither observation nor resuscitation should delay source control for more than six hours. Evidence suggests that further delays at this point are common.
11.6.5 Source control for patients with sepsis but without organ dysfunction should always be carried out within 18 hours.

11.6.6 Patients that require source control but have not mounted a systemic inflammatory response are clinically appropriate for NCEPOD classification “Expedited”.

11.6.7 Definition is simplest for haemorrhage and sepsis, but the principles and timescales are clear. In time, general surgeons should clarify indicative timescales for most other common emergencies also.

11.7 Theatre booking systems should be modified so that each patient is identified by priority (1 to 5). The system should be audited regularly by a theatre user group with senior manager input.

11.8 Hospitals should provide adequate emergency theatre access free from predictable obstruction or restriction caused by over-running elective work or manpower shortage. This is not infrequently seen at late afternoon/early evening. The provision of protected, and separately staffed, consultant-based theatre access from 3.00pm to 10.00pm would make a considerable impact on delays and outcomes. Several hospitals have reviewed and remodelled their theatre resource allocation by way of multi-user planning events. In one hospital, remodelling produced four hours extra emergency theatre access per day, and this increased the category 3 cases dealt with within three hours from 38% to 82%.

11.9 Hospitals should also ensure that there are clear arrangements in place for interventional radiology, especially out of hours. For many, this will be via a network of cover across multiple hospitals.

11.10 Each patient should have their expected risk of death estimated (P-Possum or similar) and documented prior to intervention and due adjustments made in urgency of care and seniority of staff involved.
11.11 High-risk patients are defined by a predicted hospital mortality ≥5%; they should have active consultant input in diagnostic, surgical, anaesthetic and critical care elements of the pathway.

11.12 Surgical procedures with a predicted mortality of 10% should be conducted under the direct supervision of a Consultant Surgeon and Consultant Anaesthetist, unless the responsible Consultants have satisfied themselves that their delegated staff have adequate competency, experience, manpower and are adequately free of competing responsibilities. In practice, this will include almost all emergency laparotomies, and it is clear from audit and from colleagues in many units that it is now unusual for trainees to conduct emergency major cases unsupervised.

11.13 Risks should be jointly re-assessed at the end of surgery, using an “End of Surgery Bundle” to determine optimal location for immediate post-operative care, as underestimating the need for critical care at this stage is associated with a mortality of 35%.

11.14 All high-risk patients should be considered for critical care and, as a minimum, patients with an estimated risk of death of ≥10% should be admitted to a Critical Care location.

11.15 Trusts should examine their critical care provision and, in particular, provision of level 1 and 2 as means to prevent problems, optimise outcomes and limit costs. Options are described elsewhere [3].

11.16 EGS units should engage actively with Care of the Elderly Services to optimise care for their many older patients as recommended by NCEPOD [8].
12. Training

12.1 Two significant changes have occurred in recent years. Firstly, hours of exposure for juniors have fallen by at least 50% and experience has suffered commensurately. Secondly, trainees’ patterns of work make continuity of care, experience and responsibility almost unachievable for them. Added to these, there is a strong perception that elective specialist knowledge is the prime target of training, and that time spent on emergency duty is of lower priority and worth. These have had the effect of producing trainees who, at CCT, are under-prepared for duty on the consultant on-call rota. Many colleagues express serious concerns regarding this, and advise that many units are building up problems which maybe unsustainable or incompatible with optimal outcomes.

12.2 With a moving target, it is difficult to be didactic on training needs, but certain principles seem self-evident.

12.2.1 There is a current and growing pressure to appoint emergency general surgeons. This reflects Trust priorities based on the growing realisation that emergency surgery is under-provided for and impacts very significantly on outcomes. It is compounded by current stagnation in job prospects for specialist GI surgeons of all disciplines.

12.2.2 Whatever the target consultant career within general and GI surgery, an adequate general training, including emergencies to an appropriate level, should take priority over, and if necessary precede, specialist training. The old term of “emergency safe” may have gradually come to reflect acceptance of “emergency not as good as could be” and should be discarded. We should be striving for ‘emergency excellence’ and at least the same standard as for elective practice. Better emergency training will establish a sound basis for
future specialisation and give the surgeon future job security through plurality of potential.

12.2.3 There is an urgent need to define basic requirements for emergency experience. ASGBI believes this should be no fewer than 100 emergency laparotomies by CCT, with at least 50 as prime operator. This reflects the need for breadth and depth of experience. This should be complemented by training committees examining logbooks before CCT and recommending specific placements to enhance experience in specific aspects of emergency surgery in which the trainee has limited experience.

12.2.4 Attaching greater priority to emergency surgery training is also needed. This could be done through longer internal attachments to emergency duty (perhaps two to four weeks daytime consecutively), some means of recording proficiency at managing the take (which should progress through training) and the development of fellowships in emergency surgery.

12.2.5 The timing of specialty placements in training should be reconsidered. For example, observing vascular surgery as a junior trainee will be unlikely to impart as many useful emergency skills within a given time as a final year trainee might glean. Other disciplines already use a model of attachments to non-core areas during final training.

12.2.6 Given time limits and sub-specialisation, the format of training may need to become increasingly differentiated depending on final post. This can only best happen in later stages of training and, ideally, following proleptic appointment. There is already a
model for this in the training of the small numbers of remote and rural surgeons, where a much broader skill set is needed, and perhaps some of the principles need to be extended at least to smaller district hospitals.

12.2.7 There is a need for general and GI surgery to focus training time primarily on the needs of the future general and GI surgeon. The value of time spent in other disciplines early in training is evident, but may be a luxury we cannot presently afford.

12.2.8 The existing trend to support new consultants’ initial on-call periods, by doubling them up with senior colleagues, should become more formalised. Established consultants should be able to refresh key skills periodically, perhaps by spending a day with a colleague from another discipline. For example, the colorectal surgeon could usefully refresh thoracotomy or gastric approaches with an upper GI colleague, or mobilisation of the liver (for packing) with an HPB colleague. ASGBI could facilitate this.

12.3 Possible patterns for the post of “Consultant General Surgeon with an interest in Emergency Surgery” should be discussed and agreed with some urgency between ASGBI, AUGIS, ACPGBI and the SAC in General Surgery on behalf of the Surgical Royal Colleges. This will support patients and appointees and focus training.

In developing parameters and career profiles for Emergency Surgery, there is a need to consider several factors. These include job sustainability (in human terms), career progression, development and maintenance of skills and the optimal use of accrued clinical experience. Without this, the posts will be unattractive and may not fulfil the necessary operative role.
12.3.1 Unless appointees have access to elective major abdominal (laparotomy/ laparoscopy) work, their skills will likely atrophy within a handful of years. Colonic resection and incisional hernia work probably represent the two main potential sources. To achieve this, some revision of colorectal cancer resection guidance may be necessary, perhaps similar to that adopted in Ireland where rectal cancer is more centralised than UK but colonic cancer less so. This is not to suggest that colon cancer resection should be unregulated, but simply acknowledges that data supporting specialisation are much weaker for colon than rectum, that existing rules make no real provision for the substantial proportion of colon cancer cases operated emergently (or for colon cancer complications) and that, as surgeons, we have a need to devise an affordable and workable solution that encompasses all of GI surgery, both elective and emergency. There is also a need to better differentiate between experience needed to accrue skills and that needed to maintain skills.

12.3.2 Biliary conditions account for such a preponderance of emergency admissions that a comprehensive biliary surgical skill-set seems essential.

12.3.3 Enhanced training in surgical critical care, complications and trauma also matches the needs of EGS.

12.3.4 Together, these skills could be addressed within post-CCT training for EGS posts and, at this stage, enhanced training in the GI specialties other than the candidate’s primary elective interest could be given.

12.4 Successful and sustainable use of the skills of experienced senior surgeons has been discussed above. A lesser frequency of primary on-call, an
age limit to unselected night cover, and pairing with less experienced colleagues are all possible solutions. With later retirement, an evolving role will be integral to many aspects of a surgical career. Training should meet present societal needs for a resilient service, but also incorporate some degree of future-proofing for both service and surgeon.

13. Age and the Surgeon

13.1 While the difficulties of the trainee and CCT have received attention, the enormous changes to which consultants have recently been subjected have generally passed quietly by. However, there are significant issues. For all their admirable qualities, surgeons are as prone as the next to the effects of ageing. These include the well characterised fall-off in eyesight, stamina, memory and, perhaps most importantly where on-call is concerned, capacity for physical recovery and speed thereof. The above-documented recent changes in on-call have made the consultant both head cook and bottle washer, and the ability for the team to leave the senior surgeon in bed, well rested, to make key decisions and come only for the most challenging cases, are long gone. These changes are recent and the implications are not thought through. Nor are surgeons always best at knowing when their skills have atrophied: a state of play sometimes more visible to colleagues. Combine these truisms with a job where outcome depends both on complex cognition and coordination, and it becomes self-evident that working 50 and 60 year olds in ways which do not maximise their strengths and guard their weaknesses is foolhardy. Many other medical professionals limit hours or age for on-call. For example AAGBI (Association of Anaesthetists of Great Britain and Ireland) published the document *Fatigue and Anaesthetists* in 2004, with the recommendation that: “There should be a review of on-call responsibilities for anaesthetists over 55 years of age”. Some non-medical professionals have arrangements in place to stop high-pressure duties with advancing years: pilots are prevented from...
flying in Command or acting as First Officer when 65-years of age, but there are more subtle differences here. Many stop long before this, and pilots never fly alone. Nor do they pop back out of bed after a full day to take the night flight to Hong Kong. On safety grounds alone, ASGBI strongly supports surgeons having the option to demit from night call from the age of 55 years. With modern rotas, there are many ways to keep older surgeons involved with EGS at other times.

13.2 While specialisation is preferable in the conduct of elective surgery, EGS needs a broader experience and more individual (rather than MDT) decision-making. Because of this, the older general surgeon remains in demand for this task, but this broadly trained general surgeon is ageing fast. The last of these multi-system experienced surgeons are getting near to 50 years old. What this does give us is a cohort of experienced seniors who are well placed to bolster the service through the period of change which is clearly needed (and possibly in a variety of directions in different sized hospitals). To do so, they will need much more support than is currently available in order to make the process successful and sustainable. In addition to an age limit to unselected night cover, a lesser frequency of primary on-call, and/or pairing with less experienced colleagues, are all possible solutions. With later future retirement, an evolving role will be integral to many aspects of a surgical career.

14. Making progress locally

14.1 Raising the profile of EGS locally can only help identify it as a priority. Even when the Trust is cash-strapped, there is still competition for resource re-allocation. As a minimum, each surgical unit should consider its mechanism of delivery of services and how it might be improved.

14.2 There is no doubt that many emergency services are under-resourced often in key areas such as
manpower, beds, theatre access and access to supporting services. There is no real doubt that the shortfall costs the NHS money through unnecessary bed days and an increased rate of complications. Resources needed vary between units and models of care, but certain key resources are summarised here (see Table 1).

**Table 1: Key resources needed**

- Adequate theatre access: real, prioritised and staffed, especially pm and early evening.
- Adequate senior availability within job plans.
- Surgeons with adequate skill sets.
- Adequately staffed junior team.
- On-call and team structure which provides support and continuity of care.
- Adequate critical care facilities across the spectrum (level 1 through 3).
- Access to skilled interventional radiology including out of hours (network).
- Separate emergency and elective services and beds.
- Adequate access to specialist beds if you refer to other hospitals.
- On-call frequency and pattern aligned sustainably with patient load.
- Identified clinical and management leadership.

**14.3** Describing necessary consultant manpower is less straightforward for EGS than for elective practice, as it depends on the model employed, junior support, degree of service specialisation and ability to access theatre effectively. However, it is obvious that it is not possible to operate within defined timescales, assess patients within defined timescales, deal with unforeseen critical events (perhaps including trauma call) and all with a team structure often substantially less experienced than in the past.

**14.4** Achieving more resources for EGS is not easy, but current national prominence (from the top of the Department of Health) does offer some prospect of positive response to cases made constructively. ASGBI is pleased to advise, but the drive for
change will have to be made locally. A number of units have entered successful dialogues with managers and other staff involved in EGS to map out new structures and distribution of resource between elective and emergency care. In some areas, commissioners are showing significant interest in reshaping emergency services. This may help ensure adequacy contractually across a range of measurable parameters. For example, that might usefully range from time to theatre to adequate bed provision for transferred emergency patients.

14.5 Fundamental to arguing the case for resources is knowledge about local outcomes. HES/Dr Foster type data provide an independent and comparative view, but local internal audit will complement this. Several units have reported finding strong indicators for change by doing so. Future local audit can be conducted usefully against described key standards and a national audit of emergency laparotomy is evolving.

14.6 Achieving change to EGS services and maintaining the required profile requires identifiable leadership. Each Trust should have an identified surgeon and senior manager responsible for EGS who can champion the cause of these relatively neglected patients.

14.7 ASGBI is particularly interested to hear of difficulties which members may have in advancing their EGS service within their hospital and will be happy to offer support.
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