

# ORGANISATIONAL REPORT OF THE NATIONAL EMERGENCY LAPAROTOMY AUDIT



The Royal College  
of Anaesthetists



**EXECUTIVE SUMMARY**

May 2014



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We would also like to acknowledge the Emergency Laparotomy Network (ELN) and its members for their enthusiasm in carrying out the first multicentre audit of outcome following emergency laparotomy.<sup>1</sup> This was instrumental in raising awareness of the variation in mortality following emergency laparotomy and provided valuable information that contributed to the commissioning of the National Emergency Laparotomy Audit.

# EXECUTIVE SUMMARY

The National Emergency Laparotomy Audit (NELA) was established to examine the inpatient care and outcomes of patients undergoing emergency laparotomy in England and Wales and to then provide comparative data to hospitals, thereby promoting local quality improvement. The Audit was commissioned by the Healthcare Quality Improvement Partnership (HQIP), funded by NHS England and the Welsh Government and began in December 2012. The commissioning of NELA is a landmark in the ongoing 20 year journey to improve the quality of care that these patients receive. It represents a natural development of the work of the multidisciplinary Emergency Laparotomy Network (ELN) in highlighting the variation in quality of care and outcomes across NHS hospitals.

A proportion of emergency general surgical (EGS) patients have life-threatening intra-abdominal conditions requiring prompt investigation and management. Unlike elective presentations, there is often limited time in which to optimise these patients before surgery. Emergency laparotomy is a term used to describe the group of abdominal surgical procedures that are commonly performed at short notice to treat these conditions; there are, however, occasions when non-surgical intervention may be more appropriate.

Approximately 30,000 patients undergo an emergency laparotomy each year in England and Wales. Post-operative complications and death are unfortunately common; several studies in recent years have shown that 15% of all patients die within a month of having an emergency laparotomy, and that this varies by hospital and patient group.

Concerns about the quality of care received by patients requiring an emergency laparotomy have been raised repeatedly over the last 20 years. This has culminated in the publication of a variety of multidisciplinary recommendations and standards that are intended to safeguard the quality of care of all patients undergoing emergency laparotomy. These standards should be adhered to by every hospital where emergency laparotomy is performed (the full list of standards is shown in Appendix 1 of the main report). These include:

- The timely review by a senior surgeon following admission.
- A formal assessment of risk of death.

- A pathway of defined peri-operative care.
- The prompt administration of antibiotics.
- The ready availability of diagnostic investigations.
- Prompt access to an operating theatre.
- Surgery performed under the direct care of a consultant surgeon and consultant anaesthetist.
- The admission of high-risk patients to a critical care unit following surgery.

Patient outcomes are generally improved with prompt investigation and treatment, which can only be achieved through the appropriate prioritisation of resources. The clinical pathway is complex, requiring input from clinicians across multiple specialties. This brings challenges in itself, both in terms of delivery of care on a day to day basis, and also bringing about long-term service improvement. Change will require co-ordinated improvement across multiple areas.

Emergency laparotomies are performed at 191 English and Welsh hospitals. All 191 hospitals have registered with NELA and identified clinical leads. In October 2013, 190 hospitals provided information regarding their structures and processes of care that relate to the treatment of patients undergoing emergency laparotomy. The high level of engagement with this audit is testament to the readiness of clinicians and managers across specialties to engage with this challenging issue.

These self-reported data indicated that the provision of facilities required to perform emergency laparotomy varies substantially between hospitals. Many hospitals meet several of the key recommended standards of care. However, in some cases, the organisation of services falls short of the recommended standards. As this Audit represents the first systematic assessment of these issues, this shortfall is perhaps understandable, and provides the opportunity to bring about much needed improvement.

The immediate availability of operating-theatre, imaging and laboratory facilities and of appropriately trained staff is fundamental to the prompt and effective care of emergency general surgical patients. However, 24-hour availability of these essential resources varies widely.

- Four out of five hospitals admitting unscheduled adult general surgical patients provide one or more fully staffed operating theatres in which emergency laparotomy may be performed at all times.
- 24-hour contemporaneous CT reporting is available at 9 out of 10 hospitals.
- 24-hour on-site interventional radiology (a non-surgical treatment) is not provided at two-thirds of hospitals.

- 24-hour on-site endoscopy (a non-surgical treatment) is available at two-thirds of hospitals.
- 24-hour availability of consultant advice for biochemistry, haematology and transfusion services is available at 9 out of 10 hospitals.

There are diverse models of clinical staffing and organisation of essential supporting clinical services. The recommended four-tier surgical EGS rota is in use at all times at less than half of hospitals; the number and type of consultant surgeons on the rota varies widely. The provision of consultant anaesthetists dedicated to emergency theatres varies by time of day and between institutions. During weekday daytime hours three-quarters of hospitals have dedicated consultant anaesthetist sessions to support operating theatres for EGS cases.

In addition to the prompt availability of these fundamental facilities and staff, patient outcomes are influenced by the treatments received and the timeliness with which they are delivered. Clear pathways have been developed for the care of the unscheduled surgical patient to facilitate timely senior review, formal assessment of risk, consultant-delivered peri-operative care and transfer to critical care. Such pathways have been implemented in only one-third of institutions, although pathways for severe infections (sepsis) are available at 84% of hospitals.

Half of the hospitals had recently audited the adequacy of emergency theatre provision. It is reassuring that all 191 hospitals have registered to provide the patient level data that is currently being collected.

Additional information about individual hospitals' provision is available in Appendix 2 of the main report.

Hospitals are currently collecting data on individual patients and a report describing the patterns of care will be published in summer 2015. This report will provide comparative information on processes of care and outcomes at a hospital level. The data submitted to the Audit by a hospital is currently available to its clinicians and managers to download on-demand. This information can be used to inform local quality improvement programmes that can and should be implemented now. The responsibility for implementing these quality improvement programmes lies with local Clinical Commissioning Groups (CCGs) and Trust Boards, as well as clinical managers and front line clinicians across multiple specialties. We hope that the current high level of engagement for this difficult multidisciplinary topic will continue in order to bring about the required improvements in the quality of care received by patients requiring emergency laparotomy.

# RECOMMENDATIONS

The provision of essential facilities and staff required for the high quality care of patients requiring emergency laparotomy does not meet current standards at many hospitals. This requires urgent action in order to ensure safe care is being delivered. We make 11 key recommendations to address this, and comment on who needs to be involved in improving quality of care.

## **What facilities are required?**

Hospitals should review the adequacy of their own facilities and infrastructure to ensure that individual standards of care are met and that the care of emergency laparotomy patients is appropriately prioritised. Participation in the ongoing patient data collection will allow this to be assessed.

- 1 Hospitals should ensure 24-hour access to fully staffed operating theatres so that surgery can take place without undue delay.
- 2 Surgical staffing levels should be sufficient to safely cover acute and inpatient clinical workloads. A four-tier surgical rota is recommended.
- 3 Consultant anaesthetists must be available to provide direct care at all times. During daytime hours this is facilitated by ensuring that emergency theatres are staffed by consultant anaesthetists with job-planned sessions.
- 4 Critical care and outreach services need to be staffed at adequate levels to ensure 24-hour specialist input.
- 5 Emergency and elective surgical workload should be organised within a hospital so that the care of EGS patients may be appropriately prioritised without competition for facilities from the elective workload. Hospitals should explore which models of care are most appropriate for local circumstances.
- 6 A sustained multidisciplinary effort is required to provide 24-hour interventional radiology which is essential for units providing an EGS service.
- 7 Every hospital providing emergency laparotomy care should ensure 24-hour availability of essential support services including experienced radiology and pathology reporting.

- 8 Routine daily input from elderly medicine should be available to elderly patients undergoing emergency laparotomy.
- 9 Pathways for the care of unscheduled surgical patients, and for the early identification and management of sepsis should be universally incorporated into the routine care of all EGS patients. Pathways facilitate the reliable delivery of optimal care to all emergency laparotomy patients.

#### **Action by multidisciplinary teams**

- 10 Multidisciplinary reviews of processes and patient outcomes (morbidity and mortality meetings) should be held for all emergency laparotomy patients. This is a basic requirement of professional practice.
- 11 Structured handover of care is required at all times by all clinicians treating emergency laparotomy patients. This is a basic requirement of professional practice.

#### **Who needs to be involved in improving quality of care?**

##### **1 Local clinical teams**

Some of these issues may be addressed within the hospital by teams with direct responsibility for providing clinical care. In many cases, this will require a co-ordinated multidisciplinary approach in order to determine why a particular element of care is not available or not provided. This will also need to include the relevant medical managers, supported by local quality improvement/service improvement teams. Specialties that need to be involved include:

- Surgery
- Anaesthesia
- Critical Care
- Radiology
- Endoscopy
- Pathology
- Elderly Medicine

##### **2 Commissioners and trust boards**

Some areas will require discussion at a higher level, as additional services may need to be commissioned in order to meet standards. Some solutions may require the pooling of local resources and development of networks with other hospitals. This is particularly relevant where the workload for an individual hospital is insufficient to sustain a service in its own right, or where minimum numbers of clinicians are required in order to provide sustainable rotas.

### **The importance of patient data collection**

This organisational audit report does not provide patient level outcome data, and hence the interpretation of some data is limited. Patient level data is currently being collected and is available on-demand for hospitals to download in order to inform local quality improvement programmes. All hospitals should ensure full, ongoing participation in the collection of patient data for the National Emergency Laparotomy Audit. Regional Quality Observatories can play a role in the analysis and monitoring of care at hospital and regional level. Patient level data will also allow identification of hospitals with the best outcomes, in order that best practice may be shared throughout the NHS.

Care of the patient undergoing emergency laparotomy requires a multidisciplinary approach. All of these disciplines need to be involved in improving the quality of care delivered. We are reassured by the high level of engagement to date, which suggests that the existing concerns about emergency laparotomy care are appreciated by many others. We hope to see clinical and non-clinical colleagues working with each other across specialties to collect data and bring about improvements in the quality of care for this high-risk group of patients.



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