NELA
National Emergency Laparotomy Audit

An emergency laparotomy (emergency bowel surgery) is a surgical operation for patients, often with severe abdominal pain, to find the cause of the problem and treat it. General anaesthetic is used and usually an incision made to gain access to the abdomen. Emergency bowel surgery can be carried out to clear a bowel obstruction, close a bowel perforation and stop bleeding in the abdomen, or to treat complications of previous surgery. These conditions could be life-threatening. The National Emergency Laparotomy Audit was started in 2013 because studies showed this is one of the most risky types of emergency operation and lives could be saved and quality of life for survivors enhanced by measuring and improving the care delivered.

Report findings at a glance

Results from 2017–2018, the fifth year of the National Emergency Laparotomy Audit

Principal performance statistics are available here

1. National **30-day mortality rate** has remained static for the last two years

9.6%

2. Improvements in care have reduced patients' average hospital stay from **19.2 days** in **2013** to **16 days** in **2018**

19.2 days
16 days

3. **77% of patients** now receive **a preoperative assessment of risk** (up from 75% last year, and 56% in Year 1)

4. **95.5% of high-risk patients** had **consultant surgeon** input before surgery

90% of high-risk patients had **consultant anaesthetist** input before surgery

5. **77.5%** of high-risk patients admitted to critical care

6. **88.5% of patients** received a preoperative CT scan

62% of these patients had their scan reported by a consultant radiologist

7. Both **anaesthetic and surgeon consultant presence** intraoperatively is at 83%, but only **70.2% out of hours**

8. **Over 1/4 of patients** needing the most **urgent of surgery** did not get to the operating theatre in the **recommended time frame**

9. **84% of patients** **with sepsis** reached theatres in the appropriate **timeframe**

10. **Time to antibiotics in patients with sepsis** remains poor with **80.6%** not receiving antibiotics **within one hour**

11. **55% of patients** are over the age of 65, but **only 19% of these** had a formal assessment of their frailty

Only 36.9% of frail patients over 65 had geriatrician input

55%
over 65

12. **301 people with learning disabilities or autism**

had an emergency laparotomy and their 30-day mortality was 10.3%. They were as likely to receive consultant care and access to critical care

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RCOA Royal College of Anaesthetists | NIAA HSRC Health Services Research Centre | Royal College of Surgeons ADVANCING SURGICAL CARE | HQIP Healthcare Quality Improvement Partnership

3.1 Who has emergency laparotomy surgery?

Patients undergoing emergency bowel surgery are a markedly heterogenous group both in demographics and indications for surgery.[5] However, they almost all have the same needs with regard to prompt diagnosis and treatment of any sepsis or underlying disease, assessment of risk, provision of care according to risk, and access to theatre without delay. By analysing patient and surgical characteristics NELA can investigate processes of care and outcomes, and highlight if there is variation for any specific patient group (eg older patients) or for different operations performed. For patients, this means that they can be assured that providers are continually assessing whether their patients are receiving the best possible patient centred care.

Whilst patients needing emergency bowel surgery are heterogenous in their demographics and pathology, they all need the same processes of care to be reliably delivered in order to achieve the best outcomes.

24,328 patients were entered into the audit, from **179 hospitals** in England and Wales

45.5% assessed as high-risk with a NELA predicted **mortality risk of ≥5%**

51% Female
49% Male

Over 70
45% >70 years
67 was the median age

55% had existing **co-morbidity** with an **ASA ≥3**

49% required surgery **within six hours**

94% have **emergency laparotomy** after an emergency admission to hospital

4 The emergency laparotomy patient perioperative journey

1 Arrival
Most patients are admitted to hospital after initially being seen and assessed in the Emergency Department.

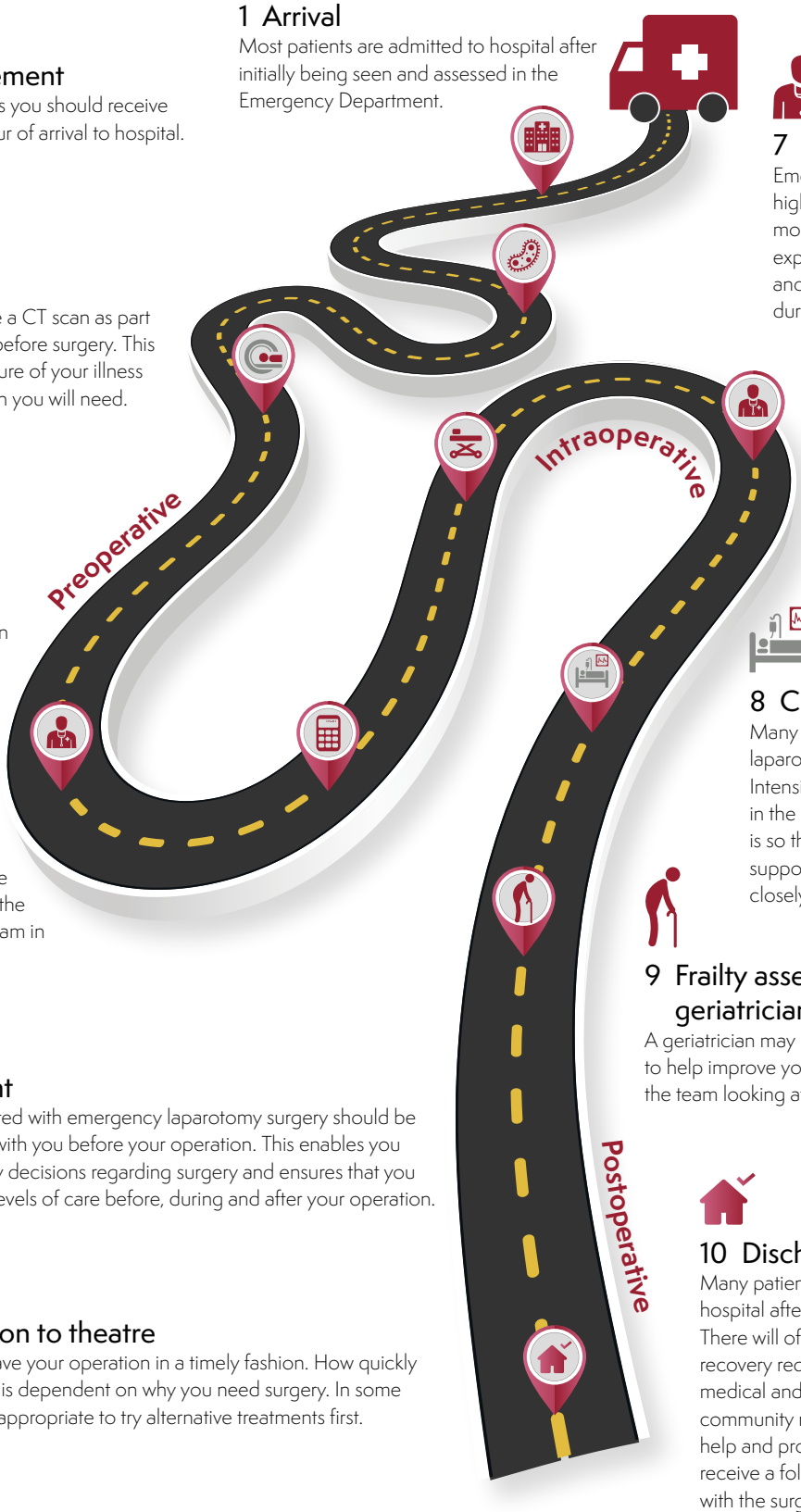
2 Sepsis management
If you have signs of sepsis you should receive antibiotics within one hour of arrival to hospital.

3 Radiology
Most patients will receive a CT scan as part of the initial assessment before surgery. This helps to establish the nature of your illness and guide what operation you will need.

4 Consultant review
Most patients will be seen by a consultant surgeon and anaesthetist prior to their operation. Any questions or concerns can be discussed.
In the most unwell patients who need immediate surgery this discussion may take place with another member of the surgical or anaesthetic team in order to avoid a delay.

5 Risk assessment
The risk of death associated with emergency laparotomy surgery should be assessed and discussed with you before your operation. This enables you to be fully involved in any decisions regarding surgery and ensures that you receive the appropriate levels of care before, during and after your operation.

6 Timely admission to theatre
It is important that you have your operation in a timely fashion. How quickly you have your operation is dependent on why you need surgery. In some circumstances it may be appropriate to try alternative treatments first.



7 Consultant presence
Emergency laparotomy is often high risk surgery. This means, that in most cases you will benefit from the expertise of a consultant anaesthetist and consultant surgeon will be required during your operation.

8 Critical care
Many patients who have an emergency laparotomy will be cared for in the Intensive Care or High Dependency Unit in the initial period after their surgery. This is so they can receive specialist organ support if necessary and be monitored closely for any possible complications.

9 Frailty assessment + geriatrician review
A geriatrician may review you during your hospital stay to help improve your recovery after surgery as part of the team looking after you.

10 Discharge and future recovery
Many patients will have had a long stay in hospital after an emergency laparotomy. There will often be an additional period of recovery required after discharge. The hospital medical and nursing teams, your GP and community nursing teams will be able to help and provide support. You should receive a follow up appointment with the surgical team.

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11 Using NELA; impact beyond quality improvement and audit

NELA is more than 'just an audit'. As the world's largest data set, holding information on over 120,000 patients who have emergency laparotomy surgery, it is a powerful and important resource that can be used to support improvement work, assurance work and research that enhances the care of patients undergoing emergency laparotomy.

Nine peer reviewed publications based upon detailed analysis of NELA data

There are ten more ongoing research projects using the NELA dataset

NELA data has been presented at over 40 conferences and meetings across the world

NELA is cited in over 48 papers

The findings of NELA has underpinned the development of national guidance on the **care of high-risk patients** (Anaesthesia Clinical Services Accreditation (ACSA)/ Guidelines for the Provision of Anaesthetic Services (GPAS)/Royal College of Surgeons Higher Risk General Surgical Patient)

Development of a nurse specialist role;[19] in recognition of the need for continuity of care, the role of emergency laparotomy specialist nurses has begun to evolve[20]

NELA perioperative medicine teams with specific goals of **improving outcomes for patients** who have had emergency laparotomy have been established

Projects around the world are beginning to collect data and report on the **outcomes of patients in recognition of the need to ensure the right care**, at the right time for emergency laparotomy patients. Jersey/Scotland/Isle of Man/Australian and New Zealand Emergency Laparotomy Audit (ANZELA)/Emergency Laparotomy and Laparoscopic Scottish Audit (ELLSA) now have projects underway