Reducing mortality in emergency surgery: Focussing minds through a national clinical audit in the NHS

Jose Lourtie, head of research for the Royal College of Anaesthetists, explains how the National Emergency Laparotomy Audit is helping hospitals to reduce deaths and deliver better patient outcomes. Supported by the team behind CaseCapture, insights are helping to prove resourcing needs and drive crucial quality improvement.

Concerns around high mortality rates for emergency laparotomy surgery led to the creation of a new clinical audit spanning England and Wales in 2012. The aim: to allow NHS hospitals to better understand and take action to address widespread variation in care.

A decade later, and significant impact has been realised for the safety of tens of thousands of patients who undergo emergency bowel surgery each year.

Improvements in care provision have been informed by the National Emergency Laparotomy Audit, or NELA, managed by the Royal College of Anaesthetists on behalf of the Healthcare Quality Improvement Partnership (HQIP).

"Mortality has reduced from nearly 12% to around 9%," says Jose Lourtie, head of research for the royal college. "That is a big reduction in mortality."

The annual audit, built using bespoke web-tools created by the team behind the CaseCapture clinical audit system, has led to a range of improvements throughout its history, including reduced variation in care, reduced lengths of stay, and improved patient comfort and experience. It has also resulted in substantial cost savings. Back in 2018, the royal college recorded that 108,000 bed days had been saved, equating to £34 million in savings.

"Just the audit existing has focussed minds," says Lourtie. "We are much safer than we were when we first started the audit, despite the challenges and pressures faced in hospitals today."

Evidence for resource

The latest annual report, published in February 2023, shows that emergency laparotomy is still a significant surgical focus in the NHS, with data captured on more than 22,000 procedures in a single year.

Despite significant progress in care standards since measurement began, the latest report also reveals that falling mortality has plateaued in recent years. "That needs to be taken in context with everything else going on, including Covid-19," says Lourtie.

But he adds that the audit provides the evidence clinicians now need to take improvements to the next level: "Now our findings show that we are reaching a point where more resource is required for further reduction in mortality," he says.

"Individual sites can utilise that intelligence. They can take it to their medical directors and say 'we need more resource in our area, because we are no longer showing improvement'."

Such data is also seen by decision makers at a national level: "The report is signed off by NHS England – so they are aware of what the figures are showing", explains Lourtie. "They can see what needs to be improved nationally."

A local quality improvement tool

The audit is about more than highlighting national trends. Regional and local variation highlighted in the audit, continues to allow individual hospitals to improve. Data from 173 hospitals was included in the latest national report. Those hospitals are able interrogate live data, as it is captured.

"Trusts really do enjoy seeing their data live," explains Lourtie. "The tools we use mean that you can compare yourself to hospitals that are like yours, or to the national picture. The visualisation of the

data and what you can pull out has been incredibly useful, and it has become simple to click on the tool to visualise where you sit."

Alerting hospitals to problems early

Hospitals are encouraged to capture data through the web tool as patients progress through the pathway: at pre-op, during the operation, at post-op stages and at discharge.

"If it is live, each site can see in real-time what is happening to this patient cohort," says Lourtie. This also means that problems can more easily be highlighted early to minimise impact on patients.

"We flag when organisations need to improve," he explains. "We provide them with quarterly reports, so they can see if there is an issue. And we have implemented a reporting mechanism, so that if metrics fall below a threshold they trigger an unofficial alert to the organisation's lead, for them to act on quality improvement."

"Sites can then do their analysis and change processes. We as a royal college can make recommendations, but it is for the hospitals to implement change."

An audit technology partner

Having an effective technology partner has proven to be an important part of the audit's success, Lourtie explains.

The people behind CaseCapture, in this case providing bespoke clinical audit tools, "became part of the team", he says. "They have been very responsive from the moment we started the audit. They would attend project team meetings and provide insight. If clinicians were discussing what data they wanted to collect, we had a partner that would advise on what that could look like, and how it could be pushed out."

"The team came with expertise in building audits, and that has meant that those inputting the data have found it simple and easy to use," he adds. "We have been working with the experts in creating tools to collect data at a national level, who know how to make that work within the NHS, which can be a difficult environment to operate from an IT perspective."

PQIP, NAP and other projects

The royal college has continued to engage with the team behind CaseCapture on other important audit projects. This includes the Perioperative Quality Improvement Programme (PQIP), which is used to understand complications, mortality and patient reported outcomes associated with millions of operations carried out in the NHS each year.

The audit is not mandatory, but approximately 140 hospitals participated at the time of the most recent report. "This has allowed us to create improvement tools and to outline priorities nationally and for each site locally," says Lourtie.

The National Audit Project, or NAP, has also been built using CaseCapture. This is providing new understanding on complications of low incidence, but high risk. "A CaseCapture dataset was created so hospitals can log their case, so that it can be examined by a review panel."

And a series of snapshot audits, have also been created to help improve outcomes in particular areas – for example frailty and delirium.

"The team behind CaseCapture have understood the hurdles that need to be jumped over in the NHS, and have given us tools that are easy to use both for data capture and extracting insight," explains Lourtie. "The relationship has endured for a reason."