NELA
National Emergency Laparotomy Audit

Moving beyond audit: using evidence and data to improve care

Since its introduction, the National Emergency Laparotomy Audit (NELA) has raised the profile of this high-risk surgery and encouraged measurement of outcome and process data, so we 'know how we're doing'. Some hospitals have used these data impressively to lead improvement. We look at the winners of the AAGBI NELA poster prize [1] to see how application of improvement methodology has helped the winning submissions to use their NELA data to improve care.

All these hospitals have used their NELA data, together with established quality improvement methods, to improve care. Collecting data can be arduous, but to collect data and not use it is wasted effort and lost opportunity. The data are not the endpoint, but a launch pad to improvement.

Congratulations again to the NELA poster prize winners for their hard work and excellent results. Look out for the NELA prize at next year's WSM, highlighting the best examples of application of NELA data to improve care.

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Dr Martin Shao Foong Chong,
Dr Britta O'Carroll-Kuhn (abstract no. 157)

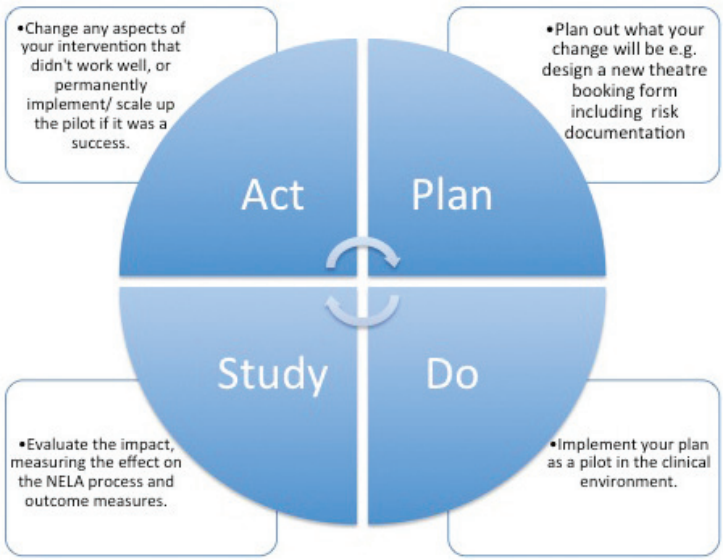
NELA implementation of peri-operative care recommendations for patients undergoing emergency laparotomy. An ongoing quality improvement project in a district general hospital

The Kingston Hospital team showed that by improving the reliability of their pathways they have also improved 30-day mortality for all patients, particularly in those over 80. They used several PDSA cycles to guide an increase in consultant anaesthetist and surgeon supervision, ITU admissions and time to CT scan. They showed that improving their adherence to process measures improved mortality (our most important outcome measure). They achieved this impressive result by concentrating on each part of the process separately, addressing and improving each problem in turn, using the data to guide them in cycles of improvement.

Woolf et al. [2] use calculated examples to show that we would save far more lives by improving healthcare delivery, rather than prioritising technical innovations. This is especially true in complex pathways like emergency laparotomy; with many different teams and elements involved, there are many points at which patient care can break down and move away from what we know is the gold standard. Of course, trying exciting new things is more appealing to most of us than working on system fidelity and reliability: but how much more coverage would be given to Dr Chong and Dr O'Carroll-Kühn's 20% reduction in mortality if it was achieved by using an innovative new piece of equipment or fluid regime?

'Health, economic, and moral arguments make the case for spending less on technological advances and more on improving systems for delivering care' Woolf, 2005

What is a PDSA cycle?
A Plan- Do- Study- Act cycle is the description given to an iterative cycle of change used in the IHI 'Model for Improvement'. The project team tests their change idea by Planning it, implementing it (Do) and evaluate (Study) the impact, then crucially alter their intervention based on what they have found in real life testing (Act). They then undergo the same process again, maybe multiple times, until they have refined their improvement idea to perfection. It is a tried and tested method used to ensure change ideas work in the real world.



Dr Flora Bailey,
Dr Tabitha Tanqueray (abstract no. 156)

NELA at Homerton Hospital: creating a new culture in peri-operative care

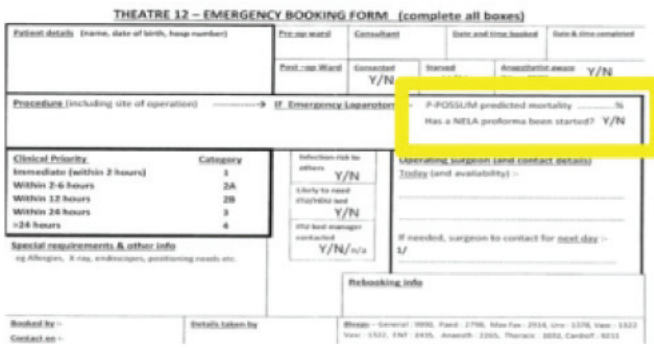
Homerton Hospital used a range of teaching and engagement techniques to encourage their colleagues to adopt the NELA guidelines. It's easy to say we should all change to adopt best practice, but why is making this change so hard in real life? The National Institute for Health and Care Excellence undertook a literature review [3] of which interventions were most effective at changing a clinician's behaviour. Unsurprisingly, they found that passive interventions like disseminating guidelines were usually unsuccessful (and yet the group email lives on!). More successful strategies included active education initiatives, frequent patient specific reminders, feedback of results, and local champions.

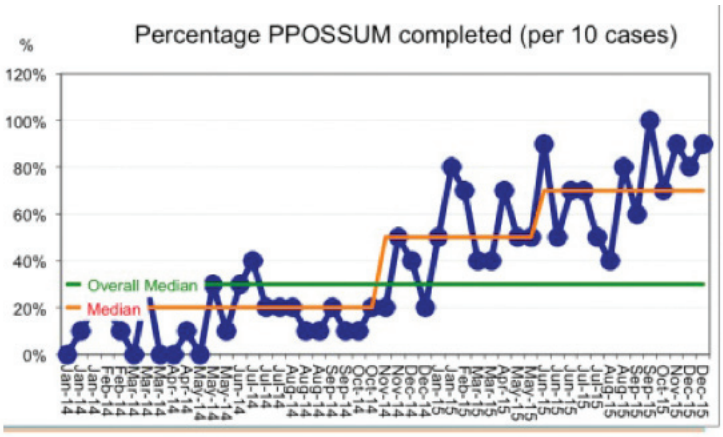
Teams should tailor their approach to their local environment. Multifaceted interventions involving several strategies, like the Homerton's strategy, were found to be most successful in the review and also for Dr Bailey and Dr Tanqeray. They elected NELA champions, created posters and reminder notices for the in-theatre environment to prompt action at the right time and gave regular feedback highlighting areas for improvement. Once they had gained everyone's 'buy in' by using a multifaceted approach, they were able to improve documentation of risk scores, use of goal directed therapy, ITU admissions and postoperative lactate measurement.

Dr Susan Hayward, Dr Helen Bryant,
Dr Patrick Tapley, Dr Laura Tompsett,
Dr Jenny McLachlan (abstract no. 159)

A simple solution to improving risk assessment scoring for laparotomy cases using quality improvement methodology

University Hospital Southampton's poster focused on improving pre-operative risk assessment. They got a marked improvement in risk assessment from adding a P-POSSUM documentation box to the booking form (Figure 1 and other interventions to encourage completion. The poster has an impressive run chart showing their incremental and sustained improvement (Figure 2). Note that the run chart has a data point for every 10 patients. It might appear to the research-trained mind that this sample size is too small. Etchells et al. wrote a review in 2015 [4] describing small sample data collection for quality improvement. They detail how onerous data collection can cause quality improvement projects to fail, and that small data samples are pragmatic and can allow rapid improvement. They advocate several simple rules to keep your small data sample representative (consecutive patients, strict data collection and exclusion). By following this guidance and displaying data over time on a run chart (time series), Dr Hayward and the team were able to be confident their intervention was having the desired response, and that the improvement was real and sustained.





What is a run chart? A run chart is a line graph of your measure (y axis), plotted over time (x axis), usually displayed with a horizontal line displaying the median of the data. This format is helpful to spot patterns or trends over time, and we can use simple run chart rules to determine if changes are likely to random or not.

References

1. Abstracts of the AAGBI WSM London, 13–15 January 2016, London, UK. *Anaesthesia* 2016; 71 (suppl): 1–88.
2. Woolf SH, Johnson RE. The break-even point: when medical advances are less important than improving the fidelity with which they are delivered. *Annals of Family Medicine* 2005; **3:** 545–52.
3. Robertson R, Jochelson K. Interventions that change clinician behaviour: mapping the literature. *National Institute of Clinical Excellence*, 2006. https://www.nice.org.uk/Media/Default/About/what-we-do/Into-practice/Support-for-service-improvement-and-audit/Kings-Fund-literature-review.pdf
4. Etchells E, Ho M, Shojania KG. Value of small sample sizes in rapid-cycle quality improvement projects. *BMJ Quality & Safety* 2016; **25:** 202–6.