Shortlisted

Administering the National Emergency Laparotomy Audit in the context of a previously successful quality improvement care bundle - the loss of marginal gains.

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NELA trainee poster prize

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Introduction

The Royal Devon & Exeter NHS Foundation Trust (RD&E) provides care for 400,000 people. The 2012 Emergency Laparotomy Network report[1] and local audit showed high mortality in patients undergoing non-elective laparotomy. We enrolled our Trust in a 4-centre quality improvement program, ELPQuIC (Emergency laparotomy pathway quality improvement care bundle). And implementation of this bundle was associated with a 15.6% to 9.6% reduction in the pooled P-POSSUM-adjusted risk of death at 30 days[2]. National Emergency Laparotomy Audit (NELA)[3] began in December 2013 and we have used our Trust NELA data to compare our current performance with that achieved during the 8-month ELPQuIC intervention. NELA is designed to audit delivery of clinical care for high-risk patients, allowing comparison to other units and drive improvements. Throughout the data collection period, regular PDSA (Fig.1) review was conducted in order to try to improve the care we deliver.

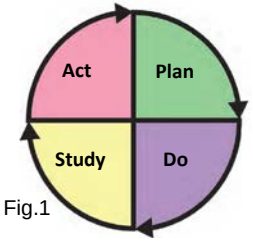

Fig.1

Results

Fig.2 Pre-ELPQuiC, ELPQuiC and NELA data

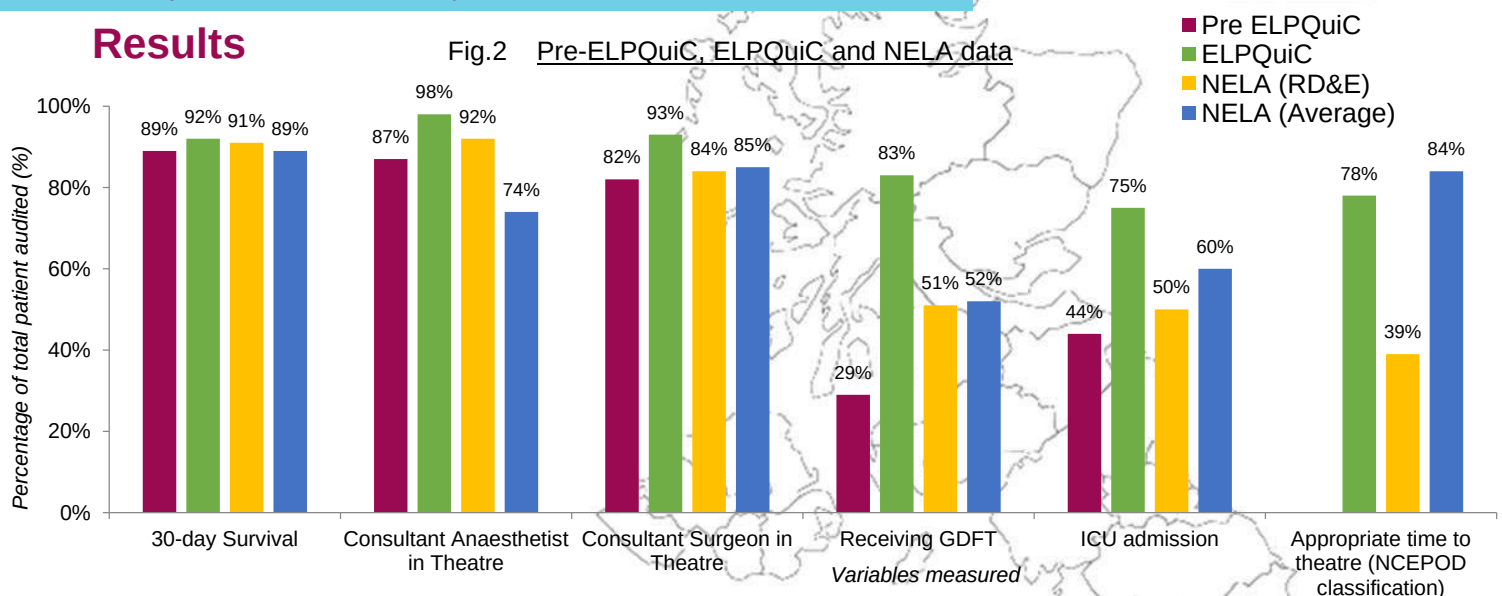

Table.1 Study Demographic Data

Demographic	ELPQuiC	NELA RD&E	NELA National
Total number of patients	97	220	20000
Patients per month	12.1	18.3	-
% of patients with PPOSSUM > 5%	59%	62%	37%

Table.2 Further standards audited in NELA

Standards	NELA (RD&E)	NELA (Average)
Perioperative risk of death recorded by admitting surgeon	58%	56%
Proportion patients reviewed by a consultant surgeon within 12 hours of admission	46%	48%

Discussion

Our results (Fig.2) show we have failed to maintain the gains made in critical areas of our practice during the ELPQuIC intervention. We have also observed a rise in mortality, but not to the levels seen prior to ELPQuIC.

The graph of time from booking to surgery appears to show a major decline in our performance, however this performance data is unreliable since surgical estimation of case urgency is rarely documented in the notes and no booking time was recorded for 41% of cases. This may reflect a real issue; in our Trust CEPOD for plastics runs between 1pm and 6pm with general cases that cannot be done in the morning waiting until the evening. A redesign of theatre allocation will soon rectify this issue. To improve data collection we have mandated an assessment of urgency on the CEPOD booking form. Availability of consultant surgeons to address emergency work was another issue identified during ELPQuIC. This will be addressed by job plan changes to allow a 'Surgeon of the week' who is liberated from all other commitments.

Our capacity to admit patients has been stretched, particularly in view of the observed increase in numbers of emergency laparotomy patients (Table.1). However the NELA data shows that of those patients considered high risk at the end of surgery (mortality risk over 10%) 87% were admitted to ICU. Although 58% of patients had some degree of risk identification, only 18% had formal estimation of P-POSSUM documented preoperatively. We believe that a formal estimate of risk at the time of the decision to operate enhances the urgency with which teams act to improve the time-critical aspects of a patients care, e.g., transit to theatre, senior anaesthesia and surgical leadership. Again, we have added mandatory P-POSSUM score to the CEPOD theatre booking form for laparotomy patients and will perform future audit to assess the impact of this. We plan to re-launch ELPQuiC with similar, clear targeted process measures and regular PDSA review to continue to drive improvement. Finally, the difficulty of ensuring engagement with NELA, even with regular intervention, illustrates the need for a pathway based sustained quality improvement initiative to ensure best practice.

References

1.Saunders DI, Murray D, Pichel AC, Varley S, Peden CJ. Variations in mortality after emergency laparotomy: the first report of the UK Emergency Laparotomy Network. Br J Anaesth 2012; 109: 368–375.

2.Huddart S, Peden C, Swart M et al. Use of a pathway quality improvement care bundle to reduce mortality after emergency laparotomy. British J Surg. 2015; 102: 57-66

3.NELA project team, First patient report of the National Emergency. Laparotomy Audit. RCoA London 2015

[Fig.1] Peden C [ed]. Quality improvement in anaesthesia. RCoA London. 2012