A simple solution to improving risk assessment (pPOSSUM) scoring for laparotomy cases using quality improvement methodology.

Susan Hayward BM BSc FRCA (ST5), Helen Bryant (ST7), Patrick Tapley (ST4), Laura Tompsett (ST6), Jenny McLachlan Consultant Anaesthetist.
Shackleton Department of Anaesthetics, University Hospital Southampton, Southampton

NELA trainee poster
ePoster No.: 159

Introduction

Wide variation in mortality has been reported following emergency laparotomy[1] The National Emergency Laparotomy Audit (NELA) aims to improves the processes of care and outcomes through the collection of high quality data, which can be analysed at a local level and used to influence change[2]. The EPOCH trial (Enhanced Peri-Operative Care for High-risk patients) promotes some Quality Improvement methods including the use of continuous measurement to provide evidence of benefit[7].

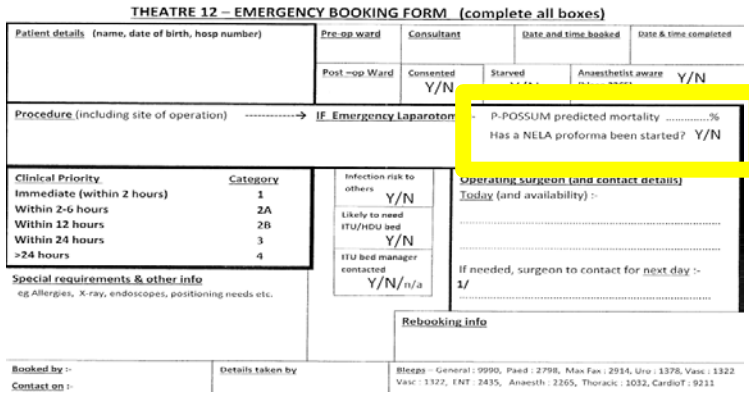
Targeting areas of quality are vital [6] It is important to be clear in your aim. To know what are you are trying to accomplish, how you prove that change is an improvement and have a clear understanding of all elements of the process to plan change[5].

Analysis of data during the first 6 months of NELA in our large teaching hospital showed that formal risk assessment using P-POSSUM was rarely performed and poorly documented. Formal assessment and documentation of risk using P-POSSUM is a key element of the process of care for patients undergoing emergency laparotomy.

Stakeholders from various disciplines agreed the areas of focus and the need to improve Risk assessment and documentation of P-POSSUM[3]

Figure 1. Quality dimentions[6]
Figure 2. Our new booking form
Figure 3. Run chart of results

Methods


THEATRE 12 – EMERGENCY BOOKING FORM (complete all boxes)

Patient details (name, date of birth, hosp number) | Pre-op ward | Consultant | Date and time booked | Date & time completed
Post –op Ward | Consented Y/N | Starved | Anaesthetist aware Y/N
Procedure (including site of operation) ----------> IF Emergency Laparotom
P-POSSUM predicted mortality .....%
Has a NELA proforma been started? Y/N

Clinical Priority	Category
Immediate (within 2 hours)	1
Within 2-6 hours	2A
Within 12 hours	2B
Within 24 hours	3
>24 hours	4

Infection risk to others Y/N
Likely to need ITU/HDU bed Y/N
ITU bed manager contacted Y/N/n/a
Operating surgeon (and contact details)
Today (and availability) :-
If needed, surgeon to contact for next day :-
1/
Special requirements & other info
eg Allergies, X-ray, endoscopes, positioning needs etc.
Rebooking info
Booked by :-
Contact on :-
Details taken by
Bleeps :- General : 9990, Paed : 2798, Max Fax : 2914, Uro : 1378, Vasc : 1322 Vasc : 1322, ENT : 2435, Anaesth : 2265, Thoracic : 1032, CardioT : 9211

Following engagement work and process mapping, plan do study act (PDSA) cycles were completed [5].

August 14 - Education day with presentations on risk assessment

End Oct 14 - Alteration of emergency theatre Booking form to include a space for P-POSSUM documentation

End Nov 14- Promotion of app for P-POSSUM calculation

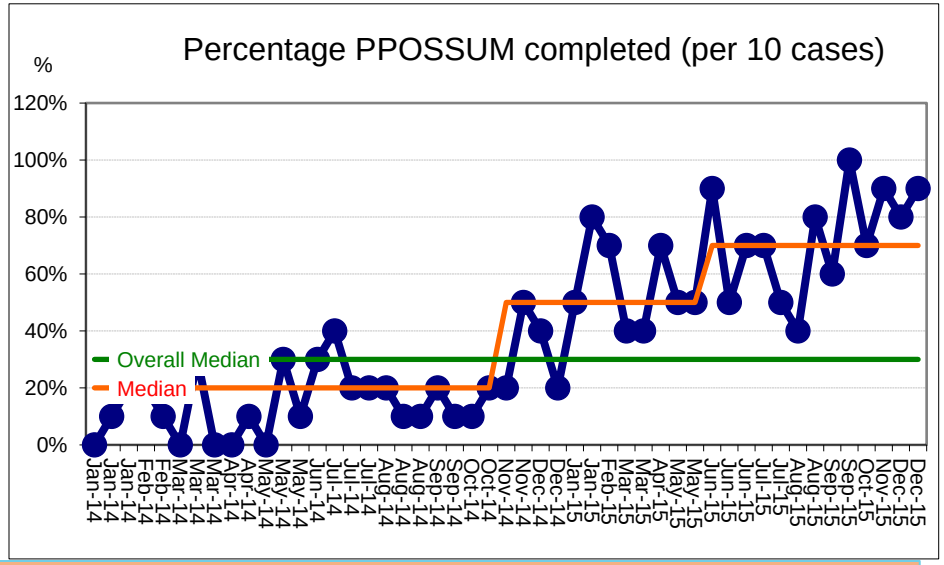
- Weekly emails to remind all of the need for risk assessment

June 15 - introduction of a 'No score -No booking' policy

Results

The run chart below displays P-POSSUM documentation in a continuous way by reviewing data every 10 patients, by date of admission.

Statistically significant improvement is shown in November 2014 and June 2015 due to the changes, with the proportion of patients having formal risk calculated and recorded increasing from a median of 20% to 60% then 70% following the changes.



Discussion

Formal assessment of risk using P-POSSUM has become a key element of the peri-operative care of patients undergoing emergency laparotomy. It helps to inform consent for all patients and to ensure timely interventions and targeting of particular resources for higher risk patients. At our hospital, a number of simple interventions led to a significant improvement in P-POSSUM calculation and documentation. These were a change in the emergency theatre booking form, promotion of P-POSSUM calculator smart phone applications and regular emails. The improvement was demonstrated on runcharts by seven consecutive points above the median line. We believe this is sustainable due to support from the multidisciplinary team and also transferable to other trusts. Stakeholder input is vital throughout and empowerment of involved staff. We are aware that limitations might include increased reporting and the Hawthorne effect.

References

1. Saunders DI, et al Variations in mortality after emergency laparotomy: the first report of the UK Emergency Laparotomy Network. Br J Anaesth. 2012;109:368–375. 2. National Emergency Laparotomy Audit (NELA) http://www.nela.org.uk 3 Prytherch D, et al POSSUM and Portsmouth POSSUM for predicting mortality. Physiological and Operative Severity Score for the enUmeration of Mortality and morbidity. Br J Surg. 1998;85:1217–1220. 4. Huddart S et al.Use of a pathway quality improvement care bundle to reduce mortality after emergency laparotomy. Br J Surg. 2015 Jan;102(1):57-66. doi: 10.1002/bjs.9658. 5 http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx 6. http://www.bridgingthegap.scot.nhs.uk/values-and-principles,-policy-and-practice/the-healthcare-quality-strategy.aspx 7 http://www.epochtrial.org/