NELA Data Requests and collaborations – UPDATED 28-07-2020

The table below contains NELA Collaborations and accepted data requests. For each project, we list a title, contact name and email - We also provide a brief description of the project. (This will be updated on an on-going basis).

We hope that this a valuable source for you to see how NELA data is being used:

If you are interested in one of the studies in the list below, please use the contact us and we will be able help.

Project / Analysis Title	Contact name	Information	Lay Summary
Thirty-day mortality in patients undergoing laparotomy for small bowel obstruction	Oliver Peacock	Working with the Association of Surgeons of Great Britain & Ireland (ASGBI) **UPDATE – Report has been published in the British Journal of Surgery (BJS) (30 March 2018).** Descriptive analysis on Small and Large bowel obstruction. Detailed analysis of Small Bowel Obstruction (SBO) secondary to adhesions modelling to determine optimal time to theatre.	Small bowel obstruction (SBO) is a common indication for emergency laparotomy. There are currently variations in the timing of surgery for patients with SBO and limited evidence on whether delayed surgery affects outcomes. The aim of this study was to evaluate the impact of time to operation on 30-day mortality in patients requiring emergency laparotomy for SBO.
Short-term outcomes after emergency surgery for complicated peptic ulcer disease from the UK National	Jane Blazeby Ben Byrne	Working with Association of Upper Gastrointestinal Surgeons (AUGIS) **UPDATE – Published in BMJ Open on 20 August 2018** Descriptive analysis of patient characteristics, care provision and unadjusted outcomes. Examining factors	This study used national audit data to describe current management and outcomes of patients undergoing surgery for complications of peptic ulcer disease (PUD), including perforation and bleeding. It was also planned to explore factors associated with fatal outcome after surgery for perforated

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Emergency Laparotomy Audit: a cohort study		associated with mortality in patients with perforated peptic ulcer disease	ulcers. These analyses were designed to provide a thorough understanding of current practice and identify potentially modifiable factors associated with outcome as targets for future quality improvement.
NELA Subtotal Colectomy for Colitis	Rich Guy	Working with Association of Coloproctology of Great Britain & Ireland (ACPGBI) Descriptive analysis of patients undergoing subtotal colectomy to determine pathology, timing and nature of surgical procedures and patients outcomes.	Inflammatory Bowel Disease is made up of two distinct conditions; ulcerative colitis and Crohn's disease. These conditions consist of chronic relapsing inflammation of the bowel due to as yet unknown causes. Ulcerative colitis is limited to the large bowel and Crohn's disease can involve any part of the gastrointestinal tract. The first line of treatment is medication. However, emergency surgery may be required to remove the large bowel (subtotal colectomy) in some patients. The indications for subtotal colectomy, in the emergency setting, are inflammation of the large bowel (colitis) resistant to medical therapy, severe dilatation of the colon (toxic megacolon), a perforation of the bowel, or severe bleeding. This project aims to understand how care for patients with colitis who require a subtotal colectomy is being delivered across England. We seek to describe the process factors involved in these patients' care pathway as well as the national outcomes following surgery. Over the three year period, 1204 patients were recorded on the National Emergency Laparotomy Audit (NELA) as having undergone a subtotal colectomy for colitis.

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			We hope that this project will help us understand what care is being delivered well and the key areas for quality improvement in this specialised group of patients
NELA Hartmann's Procedure	Hugh Paterson, Paul O'Loughlin	Working with Association of Coloproctology of Great Britain & Ireland (ACPGBI) Descriptive analysis of Hartmann's patients to determine pathology, evaluating care and resultant surgical procedures.	To be added
Enhanced Peri-Operative Care for High-risk patients (EPOCH)	Rupert Pearse	EPOCH is a randomised stepped wedge cluster trial of a quality improvement intervention to implement an integrated care pathway in patients scheduled for emergency laparotomy surgery. It involved ninety NHS hospitals which were organised geographically into fifteen groups or 'clusters' of six. The trial will took place over an 85-week period starting in Spring 2014 and collected around 27,000 patients during this time. www.epochtrial.org	To be added
FLuid Optimisation in Emergency LAparotomy trial (FLO-ELA)	Mark Edwards	FLO-ELA is the FLuid Optimisation in Emergency LAparotomy trial. It is a large pragmatic clinical trial which aims to find out whether cardiac-output guided haemodynamic therapy given to patients during and shortly after emergency bowel surgery could save lives, when compared with usual care. The trial is being run in 100 UK hospitals and will study nearly 8000 patients. www.floela.org	We aim to trial a treatment used to guide the dose and timing of fluid administered into the bloodstream to patients during and shortly after surgery. We will trial this treatment, called "goal - directed haemodynamic therapy" (GDHT), in patients undergoing emergency bowel surgery (laparotomy).

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Emergency Patient Reported Outcomes EmPROMs	Esther Kwong	This study is under way and looking to develop a new a method of measuring the impact of care received by patients during emergency surgery using PROMs in England. This study, funded by the Economic and Social Research Council is being conducted jointly with the National Emergency Laparotomy Audit (NELA), at the London School of Hygiene and Tropical Medicine.	Measuring the quality and value of healthcare is vital for all health systems worldwide, including the NHS. Patient Reported Outcomes Measures (PROMs) have been seen as one of the ways the NHS can improve quality and measure effectiveness of care. However, there are areas such as in emergency admissions to hospital whereby current NHS PROMs collection does not cover and the methods for doing so pose a challenge. Emergency admissions account for 40% of hospital admissions and are an area of increasing need. This is also an area where the NHS knows least about the quality, and whether we are using resources effectively. PROMs, by measuring the patients' reported health change allows the NHS to measure clinical effectiveness from the patients' perspective, and provides an additional understanding of the quality of health services provided. This study assesses the feasibility of collecting a retrospective PROM with emergency laparotomy in-patients and a 3-month follow-up PROM to determine change in the health of patients following emergency hospital care.
Emergency Laparotomy Collaborative (ELC)	Nial Quiney Geeta Aggarwal	The Emergency Laparotomy Collaborative (ELC) is a two-year quality improvement project aimed at improving standards of care and outcomes for patients undergoing emergency laparotomy. https://emergencylaparotomy.org.uk	To be added

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Adoption of Lung Protective Ventilations Strategies in Patients Undergoing Emergency Laparotomy (ALPINE)	Ximena Watson	The aim is to determine current ventilator strategies in Emergency Laparotomy patients across roughly forty London hospitals and assess whether there is a link between non-compliance of PLV and developments of postoperative pulmonary complications. http://www.uk-plan.net/ALPINE	We are doing this project through the Perioperative London Audit network (PLAN) and in collaboration with NELA. We have recently been awarded a grant to do this. We are aiming to audit how patients undergoing emergency abdominal surgery are being ventilated and whether they have adopted lung protection strategies. We then aim to follow these patients up and look to determine if there is a link between the development of post-operative lung complications and mechanism of ventilation. We are adding specific non-mandatory questions to the existing Section 8 aiming to design a non-mandatory section 8 on the NELA proforma to collect our data for the proposed study.
Getting It Right First Time (GIRFT)	TBC	GIRFT is a national programme designed to improve medical care within the NHS by reducing unwarranted variations. By tackling variations in the way services are delivered across the NHS, and by sharing best practice between trusts, GIRFT identifies changes that will help improve care and patient outcomes, as well as delivering efficiencies such as the reduction of unnecessary procedures and cost savings. http://gettingitrightfirsttime.co.uk/	To be added
National Audit of Small Bowell Obstruction (NASBO)	Matt Lee	NASBO is the National Audit of Small Bowel Obstruction. Emergency surgery and nutrition are two areas often neglected in the surgical literature. Laparotomy for small bowel obstruction accounted for 49% of all surgical interventions in the first NELA report. There is also heterogeneity in these patients, as some have clear indications for early intervention, others may be managed	

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		successfully with a conservative approach, and some may pass from the conservative to operative group. http://nasbo.org.uk/	
Emergency Laparotomy and Frailty (ELF)	TBC	To evaluate whether the use of a recognised frailty score (Rock Wood 7 point scale) correlates with outcomes following emergency laparotomy in patients aged 65 and over. https://nwresearch.org/our-projects/emergency-laparotomies-frailty-as-a-predictor-of-outcome-in-the-elderly-elf/	
Laparoscopy in Emergency General Surgery **North West Collaborative**	Mr Nick Heywood nheywood@doctors.org.uk	The aim of this service evaluation project is to explore the variation in practice for the use of laparoscopy in emergency general surgery. This will be assessed by reviewing the existing data within the NELA database to look at the UK-wide variation in practice for the use of open and keyhole emergency surgery.	
NELA NBOCA	ACPGBI Kate Walker Kate.walker@lshtm.ac.uk	Can audit data be linked using information other than patient identifiers? Can audits be indirectly linked through their existing link with HES?Are patients captured into each dataset representative of those eligible?Risk factors for mortality in bowel cancer in patients undergoing emergency surgery? Processes of care in bowel cancer patients undergoing emergency surgery	

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Timing of surgical source control and outcomes: should we operate between midnight and 6am?	Hannah Boyd-Carson/Iain Anderson	Using perforated PUD cohort investigating if timing of surgical intervention impacts on post operative outcomes using a multivariate analysis	Using perforated PUD cohort investigating if timing of surgical intervention impacts on post operative outcomes using a multivariate analysis
Impact of pre operative anaemia on outcomes following Emergency Laparotomy	Hannah Boyd-Carson/Matt Oliver	Investigating how pre operative anaemia impacts on mortality, length of stay and unplanned return to theatre using a multilevel regression analysis.	Preoperative anaemia is associated with poor surgical outcomes in patients undergoing elective surgery, but its impact in patients undergoing emergency surgery is less known.
Perioperative factors predicting poor outcome in elderly patients following emergency laparotomy.	Hannah Boyd-Carson/Sonia Lockwood		Univarite regression analysis looking at pre operative physiology and surgical findings and how these impact on subgroups of the over 70s.

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Impact for surgical training and service provision, learning from the National Emergency laparotomy Audit:	Hannah Boyd-Carson		Investigating whether specialist interest of consultant surgeon, trainee involvement intra operatively and out of hours operating has impact on post operative outcomes. Does the emergency operative experience of general surgical trainees marry with the emergency laparotomy cases being performed in the United Kingdom. An ISCP log book analysis.
Association between surgeon special interest and mortality after emergency laparotomy	Hannah Boyd-Carson		Approximately 30 000 emergency laparotomies are performed each year in England and Wales. Patients with pathology of the gastrointestinal tract requiring emergency laparotomy are managed by general surgeons with an elective special interest focused on either the upper or lower gastrointestinal tract. This study investigated the impact of special interest on mortality after emergency laparotomy.
Perforated Peptic Ulcer; time to rethink our priorities?	Hannah Boyd-Carson		Delay to theatre for patients with intra-abdominal sepsis is cited as a particular risk factor for death. Our aim was to evaluate the potential relationship between hourly delay from admission to surgery and postoperative mortality in patients with perforated peptic ulcer (PPU).
The relationship between socioeconomic	Tom Poulton		I am using data collected from hospitals all over England to investigate whether patients in different socioeconomic groups have different outcomes after undergoing an emergency

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deprivation and hospital structures, standards of care, and outcomes surrounding emergency laparotomy			laparotomy. If socioeconomic deprivation is associated with adverse outcomes, I'm interested in finding out whether meeting certain recommended standards of care around the time of the operation are associated with any change in the effect, or whether the difference is due to other factors outside of the control of the medical staff during the hospital admission. From a health service perspective, I am also looking into whether the proportion of most-deprived patients treated within different hospitals is associated with any differences in the way hospitals are structured and services are provided. This may have implications for how the finite resources within the NHS can best be allocated to ensure those with the greatest need are able to access the level of care they require.
Unplanned admissions to critical care within seven days of emergency laparotomy: an analysis of emergency laparotomy patients from	Sara Cook		Critical Care (also known as Intensive Care) is the area within a hospital that cares for the sickest patients. Patients who undergo emergency laparotomy are reviewed by surgical and anaesthetic doctors before their surgery to assess what their chances of dying is from the operation. National guidelines recommend that patients who are at high risk of dying (risk >=5%) go to Critical Care to be looked after immediately following their surgery (planned admission to critical care). Some patients who undergo emergency laparotomy are assessed to not be at high risk of dying and therefore these patients may go directly to the ward for their immediate care

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the NELA audit patient database			after surgery rather than to critical care. Most commonly, as patients get better after their operation they are moved from the critical care area to the ward (if they have been to critical care) to eventually be discharged from the hospital. On some occasions, patients on the ward who have undergone emergency laparotomy become unwell again after their operation, some become so sick that they need to go to Critical Care for very close monitoring and support of their organs such as their heart, lungs or kidneys. This is termed as an 'unplanned admission to critical care'. Analysis of patients who have undergone emergency laparotomy over the last 4 years, tells us that patients who had an unplanned admission to critical care within seven days of their original emergency laparotomy had a greater chance of dying within 30 days of their operation (risk of dying 17.5%) than those patients who did not have an unplanned admission to critical care (risk of dying 8.1%). 40% of the patients who had an unplanned admission to critical care needed to have another operation (unplanned return to theatre). There is currently very little information available about the patients who have unplanned admissions to critical care after their emergency laparotomy. This analysis plans to look more closely at the information that is available in the NELA patient database and in the ICNARC (Intensive Care National Audit and Research Centre) patient database to try and find out more about who were the patients that needed to have an unplanned admission to critical care within seven days

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			of their operation (for example what age were they, were they more likely to be male or female, what type of operation did they have etc), when (how many days) after their original emergency laparotomy did they have an their unplanned admission to critical care and why did they have their unplanned admission to critical care (e.g they developed a pneumonia, their kidneys stopped working properly etc). It is hoped that with learning more about who the patients are most likely to need an unplanned admission to critical care following their emergency laparotomy operation, that we can better inform healthcare teams that care for these patients, and implement changes that may possibly improve the outcomes of these patients.
Seasonal variation in mortality following emergency laparotomy: A retrospective review of the NELA database	Michael Berry		The pressures on healthcare services over the winter period are well described and heavily mediatised. Large amount of process data is collected both nationally and by local NHS Trusts highlighting the increased demand. The number of urgent elective operations cancelled, emergency department admissions and intensive care bed occupancy all peak during winter months. How greater strain on hospital resources influences outcomes, is poorly understood. The primary aim of this retrospective database analysis is to establish if mortality following emergency laparotomy displays a seasonal effect.

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			We will go onto to define seasonality, characterise seasonal variation in strain on NHS resources and examine if these are linked to 30-day all-cause mortality post emergency laparotomy.
Contemporary machine learning approaches to improve risk prediction for emergency laparotomy	Jakob Mathiszig-Lee		Use of modern machine learning methods to improve risk prediction for emergency laparotomy.
Development and validation of a novel patient-centred composite outcome measure following emergency laparotomy surgery	LJ Spurling		Due to the large scale of NELA, the outcomes we can measure are limited to mortality and total time spent in hospital following the emergency surgery. While both are important, they are limited and for many patients, give little indication related to quality of recovery or the nature of subsequent problems. Recently, there has been work to introduce more patient-centred measures of recovery and risk. One of these is the days alive and out of hospital (DAOH) measure. It is a composite measure of initial hospital stay following surgery, any subsequent hospital admissions and of mortality.

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			It is known that the population having emergency laparotomy surgery is very different to that having elective surgery or enrolled into clinical trials. We aim to develop this measure specifically for this population, with the aim of providing a powerful summary measure that can be employed at scale, communicated to patients and used to facilitate quality improvement.
Nature of care received in a critical care environment following emergency laparotomy	LJ Spurling		High-risk patients are typically cared for in a critical care unit. Many patients having emergency laparotomy fall within this high-risk group. The standard of care against which NELA measures performance is that high-risk patients be admitted to a critical care bed after surgery. What is not clear is what types of care are received during these stays. We aim to describe the nature of care offered to these patients. This in turn, will aid decision making following emergency surgery.
Factors influencing critical care admission decisions following	LJ Spurling		Critical care beds are a finite and precious resource. There are frequently competing demands for the same bed and difficult decisions to be made over its appropriate use. We seek to identify the most influential factors determining critical care admission in this population.

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emergency laparotomy			
Management & Outcomes of Perioperative Anaemia in emergency Abdominal Surgery (MOPAAS)	Matt Oliver	MOPAAS is a snapshot survey of contemporary perioperative anaemia workup & management in emergency laparotomy. It represents a collaboration between anaesthetists and haematologists. NELA teams at sites across England have contributed data. Analysis is now underway. This project relates directly to the NELA dataset analysis (in press) investigating associations between preoperative anaemia and adverse outcomes after emergency laparotomy.	The overall aim of this audit is to characterise the management of perioperative anaemia in patients undergoing emergency abdominal surgery in relation to Muñoz's international consensus statement The primary aims of this audit are to identify how current investigation & management of anaemia compare to recent recommendations, focusing on key subgroups and including management on hospital discharge
Adverse outcomes following laparotomy at the extremes of age	Hannah Javanmard-Emamghissi	Our intention would be to examine differences in risk prediction scores, return to theatre, unplanned return to ITU, and mortality between these subgroups. Other outcomes of interest would be which operative findings or operative procedures have the best and worst outcomes for these subgroups.	The aim of this proposal is to perform subgroup analysis looking at the presentations and outcomes of the elderly patient (70-79), older elderly patient (80-89) and super elderly patient (90+) undergoing emergency laparotomy.

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		The older surgical patient (>70 years of age) can be challenging to manage, as they are more likely to have multiple co-morbidities, polypharmacy, cognitive impairment, post-operative delirium, and frailty, often in combination. The challenges that these patients pose are spread across multiple domains and specialities including surgery, medicine, medical ethics and the expectations of the general population. The older surgical patient also has the poorest outcomes. The fifth NELA report has shown us that they have hospital stays a mean of 6 days longer than their younger counterparts, have a greater chance of an unplanned return to theatre and a nearly three times greater risk of death in the first month after surgery.	
Surgical futility and its association with frailty in the emergency laparotomy patient	Hannah Javanmard-Emamghissi	Surgical futility is poorly defined. Only one paper (Chiu 2019) has examined the outcomes for patients with predicted extreme risk of mortality following emergency laparotomy, which found that for patients with a greater than 75% predicted 30 day mortality using the NSQIP risk prediction tool have nearly a third mortality within 48 hours. It is being increasingly recognised that quality of life, and end of life decision making are areas of extreme importance to patients and their relatives. Increasing emphasis (RCS *The High-Risk General Surgical Patient* and the ASGBI *Surgery in the Older Frail Patient: Challenges and Considerations*) is being put on investigating the outcomes	The aim of this piece of work is to explore the concept of surgical futility. We intend to examine the patients that undergo emergency laparotomy who have extremely high predicted 30-day risk of death NELA score and the patients that undergo emergency laparotomy and die on table for overlap, with the aim to identify 1-5 variables that are associated with extremely poor outcomes ie. Futility.

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		of our older and frail patients to allow for open, frank, evidence- based, and informed conversations about the realities of emergency surgery.	
Defining the problem of frailty in the emergency laparotomy patient	Hannah Javanmard-Emamghissi	The Royal College of Surgeons "*The High-Risk Surgical Patient"* (2018) advocates that all patients over the age of 65 have an assessment of frailty prior to emergency laparotomy. This is because smaller scale studies like The Emergency Laparotomy and Frailty (ELF) study have shown worse outcomes in frail patients, independent of age. The first ELF study was of just 900 patients from 49 centres around the UK. The number of patients operated on in the over 65 age group in the 5th year of the NELA report was over 13000 with a total of 179 centres. At this point in time there are reports of varying incidences of frailty in the older person ranging from 9-12% at 70-79 to 26-31% at 80-89. Currently study this large has looked at the post-operative outcomes, return to theatre and short- and long-term mortality of these vulnerable patients.	We are aiming to investigate the presence of frailty in the emergency in laparotomy patient: it's prevalence, severity and impact on outcomes following emergency surgery.