

Details of EPOCH Quality Improvement Programme delivery

Nominated QI Leads were informed 14 weeks before the date of activation to the quality improvement intervention. Five weeks before activation QI leads were sent a 'pre-activation' checklist (see below), which included the requirement to review five sets of notes from recent patients to establish current performance and identify gaps in care delivery. A notes review tool was provided (see below), and each hospital presented their findings at the initial cluster meeting. The nominated QI leads at each hospital were the conduit through which the EPOCH quality improvement intervention, and therefore the improvements in care, were delivered. A training package was designed for hospital QI Leads and their colleagues, the main content of which was delivered at an initial one-day cluster activation and training meeting (see below). The training was designed specifically to support the uptake of the six quality improvement strategies (Table 1) that would enable the translation of the programme theory into practice, and employed a mixture of didactic, workshop and discussion sessions. Publicity resources, such as pens, lanyards and mugs were distributed to each team on the day, to be shared with colleagues to raise awareness about participation in the EPOCH study.

A Virtual Learning Environment (VLE) housed all training resources and acted as a repository for all the tools and documents required to enact the EPOCH quality improvement strategies. This was created to support QI leads who had attended the training and desired further quality improvement resources, as well as ensuring that QI leads and other team members who could not attend the training meeting could view all the necessary presentations and resources. In particular, the site housed a tool developed to allow the creation of time-series charts, using local NELA data, to allow QI leads to monitor key care processes during the improvement period. It also incorporated an interactive 'route-map', providing evidence sheets for each of the clinical recommendations within the EPOCH pathway (See below). All hospital QI leads were automatically registered for the VLE five weeks prior to activation and could request additional colleagues and team members to be registered.

Once a cluster was activated, telephone and email support for the intervention was available. Separate email contact, including a regular newsletter, was maintained with all hospitals (both activated and those in-waiting) by the trial manager. Each hospital was offered a small amount of funding (£3700 GBP) for QI leads to spend on relevant activities. Half-day follow-up meetings (see below) were added soon after commencement of the study, to offer teams formal opportunities to share successes and challenges as they progressed, supported by advice from the programme leads. All clusters were offered a follow-up meeting. Two further, optional, large-scale meetings were held (in December 2014, June 2015) to allow all activated teams to come together to learn more about quality improvement and each other's successes and challenges (see below). These meetings employed a mixture of didactic, workshop and discussion sessions and were designed to be both motivational and educational. A shared learning and sustainability event was held in March 2016 after the intervention period had ended and the trial was in follow-up, to support teams in their on-going quality improvement work.

Example of page from EPOCH Virtual Learning Environment, with pre-activation instructions

The screenshot displays the EPOCH Virtual Learning Environment interface. At the top left is the EPOCH logo with the tagline "better care for surgical patients". The breadcrumb navigation shows: Home > My courses > QI Lead Resources > Pre-activation. A "Turn editing on" button is visible in the top right. The left sidebar contains a "Navigation" menu with sections for "Home" (My home, Site pages, My profile), "Current course" (Pre-activation, Participants, Badges, General, Pre-activation activities, Your site assessment - Readiness for change, An interactive guide to the EPOCH Care Pathway rec..., Further resources), and "My courses". Below this is an "Administration" menu with options like "Turn editing on", "Edit settings", "Users", "Unenrol me from Pre-activation", "Filters", "Reports", "Grades", "Badges", "Backup", "Restore", "Import", "Publish", and "Reset".

Pre-activation activities

In this container you will find the resources you require to get started with your 5 EPOCH pre-activation activities. In summary we ask you to:

1. Complete the [pre-activation questionnaire](#) and return by e-mail to qi@epochtrial.org
2. Perform a notes review of 5 recent emergency laparotomy patients. **Summarise this data in a 5 minute "Where we are now" presentation to be shared at the activation meeting. In this presentation, prepare up to 3 slides on: the areas identified for improvement and the perceived barriers to and opportunities for EPOCH at your hospital.**
3. Set up a meeting with key stakeholders, to occur shortly after activation
4. Start spreading the word about EPOCH and building support amongst colleagues and stakeholders. E-mail qi@epochtrial.org with details of where to send your A2 EPOCH posters to
5. Obtain senior leadership support for EPOCH to get the resources you need to drive improvement effectively

Further details are provided in the EPOCH [Pre-activation checklist](#)

 [Pre-activation checklist](#)

This checklist details the 5 major pre-activation tasks that we ask you to do before your activation education meeting

 [Pre-activation questionnaire](#)

 [Notes review tool](#)

 [EPOCH Flyer Colour](#)

Use this flyer to spread the word about EPOCH. A2 sized posters will be mailed out to you prior to activation.
N.B. *To avoid unnecessary stress to patients and relatives, distribute within staff only areas.*

 [EPOCH Presentation](#)

This presentation can be used when discussing EPOCH with colleagues or senior management.

 [Activation meeting timetable](#)

Timetable - Cluster activation and training meeting

Time	Duration	Session	Speaker / Workshop Lead	Participant resources to take away	Notes
9.30	10.00	<ul style="list-style-type: none"> Coffee Registration Complete pre-course questionnaires 			Questionnaires
10.00	15	<ul style="list-style-type: none"> Introductions and learning objectives for the session. 			
10.15	15	<i>EPOCH - brief overview of the trial</i> <ul style="list-style-type: none"> Trial design, outcomes etc 			
10.30	60	<i>Site presentations: "Where we are now"</i> <ul style="list-style-type: none"> Each site presents data on current performance 	Participants		
11.30	15	<i>Coffee</i>			
11.45	20	<i>Presentation: ELPQUIC – experience and results of implementation</i> <ul style="list-style-type: none"> Carol presents The Emergency Laparotomy Quality Improvement Collaborative (ELPQuIC) results 	Carol Peden	Available on EPOCH VLE	
12.05	30	<i>Q&A: The EPOCH pathway & recommendations</i> <ul style="list-style-type: none"> Q&A on the recommendations, using the routemap to clarify any concerns or doubts 	Mandeep Phull-Kerr/Tim Stephens	Available on EPOCH VLE	Routemap hardcopy
12.35	15	<i>Workshop: Segmentation</i> <ul style="list-style-type: none"> Teams brainstorm what will be initial improvement area <ul style="list-style-type: none"> 3 - 4 areas and 3 steps toward change for each Teams will feed back ideas after lunch 		An 'action plan' for weeks 1-4	Scan / photograph these and refer back to them at follow-up meeting
12.50	30	Lunch			
13.20	10	Outline of how to improve: (5 mins) <ol style="list-style-type: none"> Data Engagement 	Tim Stephens / Carol Peden		

3. Testing changes					
13.30	20	<i>Presentation: Data for Improvement presentation</i>	Carol Peden	Available on EPOCH VLE	
13.50	30	<i>Workshop: Data for Improvement</i> <ul style="list-style-type: none"> • Show group run-chart maker • Go through data to be extracted from NELA dataset • Demonstrate how to use the run-chart maker • Discuss how best to share data to drive improvement 	Tim Stephens	Pre-made Excel workbook available for participants on EPOCH VLE	
14.20	20	<i>Activity: The Improvement Cycle</i>			Need spare paper for exercise
14.40	20	<i>Presentation: The Improvement Cycle</i> <ul style="list-style-type: none"> • This session will provide an overview of and scientific basis for the improvement cycle and explain why it is at the heart of QI methodology 	Carol Peden	Available on EPOCH VLE	
15.00	10	<i>Coffee and cake - to enjoy whilst completing workshop below</i>			
15.10	30	<i>Workshop: The Improvement cycle</i> <ul style="list-style-type: none"> • Teams plan out first 3 changes based upon PDSA method • Use PDSA paperwork. Carol / Tim as roving facilitators 	Tim Stephens / Carol Peden	PDSA paperwork; also available on EPOCH VLE	
15.40	10	<ul style="list-style-type: none"> • Q&A session 	Tim / Carol / Participants		
15.50	10	Evaluation and distribution of site activation packs and certificates		Site packs	

Timetable - Cluster follow-up meeting - ½ day

Time	Duration	Session	Speaker	Notes
13.00	30	Welcome and lunch	Tim	
13.30	15	Overview of trial progress and news/updates	Tim / Carol	
13.45	60	Successes and challenges so far - teams present and open discussion	Teams	Teams asked to prepare 3 slides: <ol style="list-style-type: none"> 1. Where are we now (with data) 2. Successes so far 3. Challenges so far
14.45	15	Coffee		
15.00	30	Successes and challenges continued (depending on no. of attendees)		
15.30	30	Open session - based upon learning / coaching needs of group OR action planning - teams define activity for next few months	Tim / Carol	Pre-prepared sessions about data analysis and engaging colleagues available as required Action planning session available as required
16.00		Close		

EPOCH Pre - activation checklist:

- Complete the pre-activation questionnaire and return by e-mail to qi@epochtrial.org
- Perform a notes review & create a 5 minute “Where we are now” site presentation to be shared at the activation meeting
 - * Obtain and review 5 sets from recent emergency laparotomies - [a convenience sample is OK](#)
 - * Use the EPOCH Notes Review Tool provided to help you with this
 - * Use the review to:
 - * To identify care that is different from the EPOCH Care Pathway
 - * To identify care that is different from your expectations of how care should be delivered
 - * If possible, do this together with your other EPOCH QI leads, otherwise do individually and discuss
 - * [This data will form the basis of your “Emergency Laparotomy - Where we are now” presentation](#)
 - * In this presentation, include your thoughts on the major perceived barriers and opportunities for EPOCH at your hospital
- Set up a meeting with key stakeholders, to occur shortly after activation
 - * We suggest inviting the following colleagues: (ideally at least 1 person from each staff group)
 - * General and emergency surgeons – consultant grade and senior trainees
 - * Anaesthetists – consultant grade and senior trainees
 - * Intensivists – consultants and senior trainees
 - * Emergency department representation (consultant, senior trainee or senior nurse)
 - * Medical team representation
 - * Clinical leads or directors
 - * ODPs & Theatre nurses
 - * Ward staff representation (Sister, Matron etc)
 - * Service managers
 - * Patient representatives
 - * A member of your hospitals safety or improvement team

It is important that the right people are in the room for this, set the meeting well in advance.
- Start spreading the word about EPOCH and building support amongst colleagues and stakeholders
 - * EPOCH posters will be mailed out to you soon. Please put up in suitable staff-only locations
 - * There are also flyers available to print, both colour and optimised for B&W.
- Get senior leadership support for EPOCH to get the resources you need to be effective
 - * Meet with your clinical lead to discuss the possibility of allocating specific time to you for EPOCH QI activities.
 - * Find an executive sponsor who will help you drive this at board level.

EPOCH All Active Sites Quality Collaborative meeting *Friday 12th of December - 9.30 until 15.45*

The Education Academy, Royal London Hospital, Turner Street, London E1 1BB

This day will be a learning and review meeting for all sites activated during 2014.

Timetable	
Time	Session
9.30 - 10.00	Registration <i>Tea/coffee and pastries</i>
10.00 - 10.30	Welcome Keynote lecture – “How to make change happen when change is hard” <ul style="list-style-type: none"> • Dr. Kevin Stewart - Director of the Clinical Effectiveness and Evaluation Unit, Royal College of Physicians
10.30 - 11.10	Workshop – “QI research - what does it mean to me?”
11.10- 11.35	Break
11.35 - 12.30	QI Leads presentations – “What I have learnt from EPOCH so far”
12.30 - 13.40	Lunch <i>Incl. opportunities for meeting colleagues and reviewing poster presentations</i>
13.40 - 14.30	Debate – “This house believes that data is the key to QI success” <ul style="list-style-type: none"> • Dr. Dave Murray - Consultant Anaesthetist and Clinical Lead for NELA vs. • Jonathan Bamber - Research Manager, The Health Foundation
14.30- 14.45	Run-chart “15 minute master-class” <i>Effectively analyse your data for trends in just a few easy steps</i>
14.45 - 15.00	Coffee and cake
15.00 - 15.20	QI Surgery - <i>Bring your questions and problems to the QI Drs.!</i>
15.20 - 15.30	Summing up - “What we have learnt from our first year of running EPOCH” <ul style="list-style-type: none"> • Dr Carol Peden - Consultant in Anaesthesia and Critical Care Medicine and EPOCH QI Lead
15.30 - 15.45	Poster prize, evaluation and close

EPOCH All Active Clusters Quality Collaborative meeting

11th June 2015 - St. Bartholomews Hospital

19th June 2015 - Bradford Teaching Hospital

09.30 - 16.00

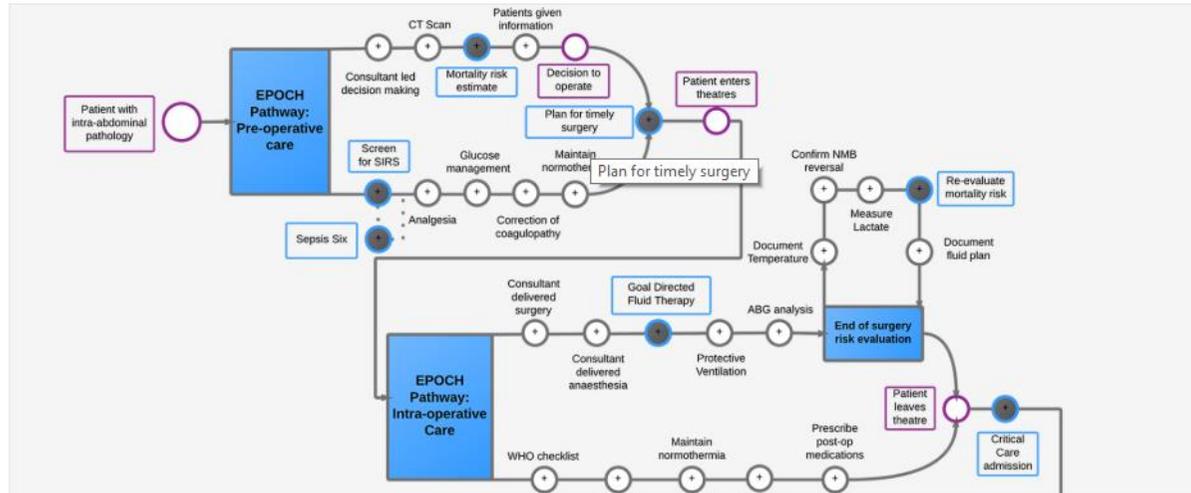
Session	Time	Presenter (¹ London ² Bradford)
Registration and coffee	9.30 - 10.00	
Welcome	10.00 - 10.20	Prof. Carol Peden / Tim Stephens
NELA update	10.20 - 11.00	¹ Dr. Matt Oliver (NELA) ² Prof. Carol Peden
Improving Sepsis Care	11.00 - 11.45	¹ Sarah Stanley (RFH, London) ² Philip Stanley (BTH, Bradford)
Group work	11.45 - 12.10	All
Lunch	12.10 - 13.10	
World Café session (Sharing success stories)	13.10 - 14.40	^{1,2} Alex Venditelli (The Salon:Collective), Tim and Carol, All
Coffee	14.30 - 14.50	
Interpreting your NELA Data	14.50 - 15.30	¹ Tim Stephens ² Dr. Dave Saunders (RVI, Newcastle)
Open session	15.30 - 15.50	
Q & A	15.50 - 16.15	Carol Peden / Tim Stephens
Final words, Evaluation and close	16.30	Carol Peden / Tim Stephens

EPOCH Notes Review tool	
Pre-op decision making Y/N/NA/NK*	
Consultant review documented	
Timely CT scan (within 2 hours of decision to perform test)	
Documented mortality risk estimate pre-op using P-possum	
Patients & relatives provided with written information	
Pre-op interventions Y/N/NA/NK	
Sepsis Six 1. O2 /2. Fluid bolus /3. Blood cultures /4. Abx / 5. Lactate measured /6. Fluid balance)	
Analgesia within 1 hour of first assessment	
Screening for and correction of coagulopathy	
Normothermia maintained	
Active glucose monitoring & management	
Surgery within 6 hours of decision to operate	

Intra-op basic care Y/N/NA/NK	
WHO checklist performed	
Normothermia maintained	
Appropriate antibiotic therapy given	
Active glucose monitoring & management	
Appropriate post-operative medications prescribed by peri-op team? • Analgesia • Nausea & vomiting prophylaxis • VTE prophylaxis	
Intra-op advanced care Y/N/NA/NK	
Consultant delivered surgery	
Consultant delivered anaesthesia	
Fluid therapy guided by cardiac output monitoring	
Low tidal volume protective ventilation used	
Arterial blood gases and serum lactate measured	
Admitted to Critical Care ≤6hrs post-op	
End of surgery risk evaluation Y/N/NA/NK	
Serum lactate measured	
Full reversal of NMB confirmed	
Core temperature documented	
Mortality risk estimate re-evaluated	
Fluid management plan documented	

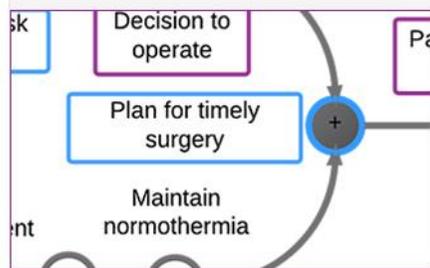
Post-op care checklist Y/N/NA/NK	
Chest physiotherapy review on day one after surgery	
Nutrition: early review with consideration of benefits of enteral feeding	
Analgesia: early review by acute pain team	
Continued antibiotic therapy (where indicated)	
Microbiology review	
Prophylaxis for post-operative nausea & vomiting prescribed	
VTE prophylaxis prescribed	
Normothermia maintained	
Active glucose management	
Daily haematology & biochemistry until mortality risk is low (senior opinion)	
Critical Care Outreach review on ward	
Early Warning Scores used	

***Y=Yes N=No NA = not applicable / appropriate
NK = not known**



Example of Interactive EPOCH Routemap on the Virtual Learning Environment: each node on the routemap would link to a page with an explanation of and evidence for the intervention.

Here “Plan for timely surgery” is selected.



You are logged in as Tim Stephens (Log out)

Home ► My courses ► QI Lead Resources ► Pre-activation ► Plan for timely surgery

Navigation

- Home
 - My home
 - Site pages
 - My profile
- Current course
 - Pre-activation
 - Participants
 - Badges
 - General
 - Pre-activation activities
 - Your site assessment - Readiness for change
 - An interactive guide to the EPOCH Care Pathway rec...
 - Further resources
 - Plan for timely surgery**
 - My courses
- Administration
 - Page module administration
 - Edit settings
 - Locally assigned roles
 - Permissions
 - Check permissions
 - Filters
 - Logs
 - Backup
 - Restore
 - Course administration

Plan for timely surgery

Recommendation:

We recommend that surgery takes place at a time that is appropriate to the patient's clinical need. For emergency cases this should happen *within six hours* of the decision to operate.

Who: The decision to operate must come from a consultant surgeon, who may need to discuss this with a consultant anaesthetist with regards to time required for appropriate preoperative preparation. Resuscitation can often take place concurrently with joint surgical and anaesthetic input. Once the decision has been made to operate, clear communication between the surgeon and other members of the perioperative team is required to plan effectively for timely surgery.

What: The overall aim of this recommendation is the avoidance of non-clinical delays to surgery. For emergency laparotomy cases, the patient should be in the operating theatre *within six hours* of the decision to operate. Changes to your current system may be required to facilitate this. For expedited cases, timely surgery should be defined by consultant opinion or local guidance. Both a documented consultant decision of when surgery is to take place and good communication, teamwork and prioritisation within the perioperative team will be essential to ensure unnecessary delays to surgery are minimised. In cases where peri-operative resuscitation is required we would recommend, whenever possible, that resuscitation occurs simultaneously with planning for surgery, to minimise delays.

When: Planning for timely surgery must commence as soon as a surgically treatable cause of acute abdomen has been identified and a decision to operate has been made.

Why: Surgery at a time that suits the patients clinical need and when clinically indicated allows:

- Reduction in the morbidity and mortality associated with delays in surgery
- Appropriate triage to theatre of emergent cases
- Time for perioperative optimisation

Measure of reliability:

Your National Emergency Laparotomy Audit (NELA) data set identifies date and time of the decision taken to operate and date and time of entry into the operating theatre. This should be one of your set of time series audit charts for tracking improvements.

Links to evidence base:

Anderson et al. (2011) The Higher Risk General Surgical Patient. RCS / DoH: London [pdf]

Screenshot Added



EPOCH Trial Exit Questionnaire

1. Instructions and purpose

Thank you for taking the time to complete this exit questionnaire. The data you submit will allow us to place into context the results from the main study. As such, your answers are vital to the interpretation of our data.

Some specific points to note:

1. Completion of this questionnaire should be led by the PI or the QI Lead most involved in the running of EPOCH at your site. However, all those involved in EPOCH QI activities should ideally be given the opportunity to contribute to responses.

You may find completing the questionnaire as a team offers the chance to reflect on progress to date.

2. The first section is about the clinical interventions within the EPOCH Pathway. (*This section will take the longest to complete.*) The following sections focus on the QI activities undertaken as part of the study. There will be then be an opportunity to give the EPOCH Team some feedback.

The final section of the form is about the person completing this form and any others who have contributed.

3. This questionnaire should between 15-30 minutes to complete, depending on how many questions you answer.

We appreciate this is a significant time commitment. Questions with a red * are required responses (you cannot progress until answered) with all others being optional. Progress can be saved at any time, if you need to stop and continue at a later date.

Although the questionnaire is not anonymous, no individual hospital level data will be presented or published.

Thank you again for your valuable input.

Carol, Rupert, Tim AND The EPOCH Trial team

1. Hospital (study site) name *

2. The EPOCH Clinical intervention

During the trial, hospitals were given some flexibility as to what clinical interventions & care processes to focus on.

In this first section please indicate which clinical interventions and processes from the EPOCH pathway were included in your hospitals improvement activities, once you started the EPOCH study period.

You will then be asked to describe which interventions you found easy to implement and which were more challenging.

2. Using the list below, please indicate which of the pre-operative EPOCH Care Pathway interventions and processes you attempted to improve or implement during EPOCH *

	Attempted to improve / implement during EPOCH	Did not attempt to improve / implement during EPOCH	Did not attempt to improve / implement: already reliably delivered prior to EPOCH
PRE- OP Consultant- led decision making	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRE-OP CT Scan within 2 hours of decision to image	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRE-OP Documented mortality risk estimate using formal risk estimate tool (e.g. P- Possum)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRE-OP Patient and relatives given written and oral information about treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRE-OP Timely surgery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRE-OP Screening for Sepsis and use of Sepsis 6 as appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Attempted to improve / implement during EPOCH	Did not attempt to improve / implement during EPOCH	Did not attempt to improve / implement: already reliably delivered prior to EPOCH
PRE-OP Analgesia within 1 hour of first medical assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRE-OP Screening for coagulopathy and correction as appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRE-OP Maintenance of normothermia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRE-OP Active glucose control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. The EPOCH Clinical intervention

3. Using the list below, please indicate which of the intra-operative EPOCH Care Pathway interventions and processes you attempted to improve or implement during EPOCH *

	Attempted to improve / implement during EPOCH	Did not attempt to improve / implement during EPOCH	Did not attempt to improve / implement: already reliably delivered prior to EPOCH
INTRA-OP Consultant delivered surgery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Consultant delivered anaesthesia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Fluid guided by CO monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Low tidal volume protective ventilation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Serum lactate analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Plan for Critical Care admission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP WHO checklist performed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Screening for Sepsis and use of appropriate antibiotic therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Maintenance of normothermia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Active glucose management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTRA-OP Post- operative analgesia and VTE / N&V prophylaxis prescribed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. The EPOCH Clinical intervention

4. Using the list below, please indicate which of the 'End of Surgery ' EPOCH Care Pathway interventions and processes you attempted to improve or implement during EPOCH *

	Attempted to improve / implement during EPOCH	Did not attempt to improve / implement during EPOCH	Did not attempt to improve / implement: already reliably delivered prior to EPOCH
END OF SURGERY Document core temperature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
END OF SURGERY Confirm neuromuscular blockade reversal using stimulation device	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
END OF SURGERY Re-check serum lactate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
END OF SURGERY Re-calculate mortality risk estimate using formal tool (e.g. P- Possum)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
END OF SURGERY Document fluids given and fluid plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. The EPOCH Clinical intervention

5. Using the list below, please indicate which of the post-operative EPOCH Care Pathway interventions and processes you attempted to improve or implement during EPOCH *

	Attempted to improve / implement during EPOCH	Did not attempt to improve / implement during EPOCH	Did not attempt to improve / implement: already reliably delivered prior to EPOCH
POST-OP Early pain team review	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP Continued antibiotic therapy with microbiology input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP Early nutrition review (surgical / dietician led)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP Physiotherapy on Day 1 after surgery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP Maintenance of normothermia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP Active glucose management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP Daily bloods taken until considered low risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP Nausea and vomiting prophylaxis given	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP VTE prophylaxis given	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST-OP Critical Care Outreach Team review on ward	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use this space to add any further information you feel is relevant regarding the clinical interventions

A large, empty rectangular box with a thin blue border, intended for the user to provide additional information about clinical interventions. The box is currently blank.

6. The EPOCH Clinical intervention

6. Please indicate statement most closely fits your hospitals improvement or implementation activity during EPOCH *

- We introduced a single pathway of care (across Pre, Intra and Post operative phases)
- We introduced separate pathways or care bundles for 2 or more phases of the patient admission (e.g. a pre-op pathway plus an intra op care bundle)
- We introduced separate pathways or bundles for one phase of the patient admission (e.g. pre-op or post op only)
- We focused on introducing individual / separate interventions
- Other (please specify):

7. The EPOCH Clinical intervention

7. Please tell us which interventions were easiest to implement / improve and why this was

8. Please tell us which interventions were most challenging to implement / improve and why this was

***Well done! That is the hardest and longest part completed.
Now onto some questions about your QI activities.
The majority of these are simple Yes / No or multi-choice questions.***

8. Quality Improvement (QI) activities

This second section will cover what QI activities and strategies were used by you and your colleagues when improving care for Emergency Laparotomy patients

9. At your site, was a formal team created to work on QI activities related to EPOCH?

Definition of QI Team:

A group of individuals that work together on the QI project. The team is defined by their shared goals and mutual accountability for the QI project outcome. QI team members are typically responsible for planning and conducting tests of change and/or data collection and management. Members of the QI team may be anyone within the healthcare team, such as doctors, nurses, AHPs, pharmacists, managers, administrative staff. *

Yes

No

Other (please specify):

9. Quality Improvement (QI) activities (continued)

10. Please indicate the approximate size of your QI Team, including yourself *

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- >10

11. Which professions and disciplines were involved in your QI Team, including yourself?

*

- Surgeons
- Anaesthetists
- Intensivists
- Radiologists

- Acute Medicine
- Emergency Medicine
- Healthcare of the Elderly physicians
- Surgeons in training
- Anaesthetists in training
- Other doctor in training
- Nursing - theatres
- Nursing - ward / critical care
- Nursing - research (any speciality)
- Operating Department Practitioners
- Other Allied Health Professionals
- Service / departmental managers
- Senior / executive management
- Audit / data staff
- Other (please specify):

10. Quality Improvement (QI) activities (continued)

12. Please indicate which of the methods below best describes your NELA data collection process

N.B. If your process has changed significantly over time, please indicate which method is in use now and use the comment box to briefly describe this change. *

Mostly prospective - the majority of data are collected concurrently and in real time during the peri-operative period by members of the team delivering patient care

Mostly retrospective - the majority of data are collected after the peri-operative period by members of the team responsible for that patient care episode

Most retrospective - the majority of data are collected after the peri-operative period by other staff not directly involved in that patient care episode

Other (please specify):

Comments:

13. Who enters most of the data into the NELA online portal? (you may choose up to 3 options) *

EPOCH QI Leads

NELA Leads

Other clinicians (Consultant grade)

Other clinicians (in training)

Nursing staff - clinical

- Nursing staff - research
- Allied Health Professionals
- Audit / data staff
- Other (please specify):

Comments:

**14. Were data collected on care processes NOT captured by NELA?
e.g. Sepsis screening ***

- Yes
- No

If YES, please describe briefly:

15. Prior to starting EPOCH did you or your colleagues download and analyse your local NELA data *

- Yes
- No

Other (please specify):

If YES, please describe briefly:

16. After starting EPOCH did you or your colleagues download and analyse your local NELA data? *

Yes

No

11. Quality Improvement (QI) activities (continued)

17. What methods did you or your colleagues use to analyse and display your local NELA data? *

Run charts

Statistical Process Control (SPC) charts

Bar charts

Pie charts

Summary statistics

Red Amber Green ('RAG') status charts

Other (please specify):

12. Quality Improvement (QI) activities (continued)

18. Please indicate approximately how frequently you or your colleagues analysed your local NELA data? *

- Weekly
- Fortnightly
- Monthly
- Bi-monthly
- Every 3-4 months
- Every 6 months
- Only once - did not update
- Other (please specify):

13. Quality Improvement (QI) activities (continued)

19. Please use the scale below to rate your agreement with the following statement:
"I / we found run-charts helpful when analysing and interpreting our NELA data" *

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

It would be helpful if you could provide a brief reason for your rating

14. Quality Improvement (QI) activities (continued)

20. Did you feedback your NELA data and analysis to colleagues during EPOCH? *

Yes

No

Comments:

15. Quality Improvement (QI) activities (continued)

21. Please take a moment to describe how you feedback data to colleagues.

Please include:

1. Who you feedback data to;
2. How frequently you did this;
3. What methods you used (e.g. email, EPOCH meetings, departmental events/meetings, posters)
4. Any other activities relevant to feedback of NELA data to colleagues *

22. Please use the scale below to rate your agreement with the following statement:
"I / we found run-charts helpful when feeding back NELA data to other colleagues" *

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- Did not use runcharts

It would be helpful if you could provide a brief reason for your rating

**23. Please use the scale below to rate your agreement with the following statement:
"From my / our experience during EPOCH, feeding back data to colleagues can be an effective strategy to motivate those colleagues to improve care " ***

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Please provide a brief reason for your rating

16. Quality Improvement (QI) activities (continued)

24. Please summarise any board level support you received during the study period

17. Quality Improvement (QI) activities (continued)

**25. Did you hold a stakeholder meeting as one of your QI activities?
e.g. a meeting for all professionals involved in the care of EmLap patients ***

Yes

No

If YES, please describe briefly:

26. Did you or your colleagues use the "Plan Do Study Act" (PDSA) cycle approach during your QI activities? *

Yes, often

Yes, occasionally

No

18. Quality Improvement (QI) activities (continued)

27. Please use the scale below to rate your agreement with the following statement:

" I / we found the PDSA cycle to be a helpful approach to implementation / improvement" *

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Comments:

19. Your experience of improving care

Nearly done!

In this section, please take a moment to tell us your thoughts on what has worked and not worked for you during EPOCH

28. Reflecting on your experience with EPOCH, please tell us what are the 2 things that you would definitely continue doing if you were to do EPOCH again. *

29. Reflecting on your experience with EPOCH, please tell us 2 things you would do differently if you were to do EPOCH again. *

30. The EPOCH Theory of Change was based upon several key interventions. From your experience with EPOCH please rank these in order of importance. N.B. The 4 choices will move with your ranking decisions. *

Using data to drive improvement

Creating the motivation and will to change amongst stakeholders

Fostering inter-professional collaboration and team working

Using QI methods (such as the PDSA cycle) to improve care

Comments:

31. You can use this space to tell us more about the barriers and enablers of improvement you have experienced during EPOCH

20. Feedback to the EPOCH Trial team

32. Please rate the support available to you during the EPOCH Trial from the trial team *

Very good

Good

Acceptable

Poor

Very poor

33. Please tell us what we did that you found helpful

34. Please tell us what we could have done better

35. Please enter your email address here *

36. If others contributed to these responses please list their name and profession or job title here.

37. Would you be willing to be contacted by the EPOCH Trial team to discuss your answers in more detail?

Yes

No

