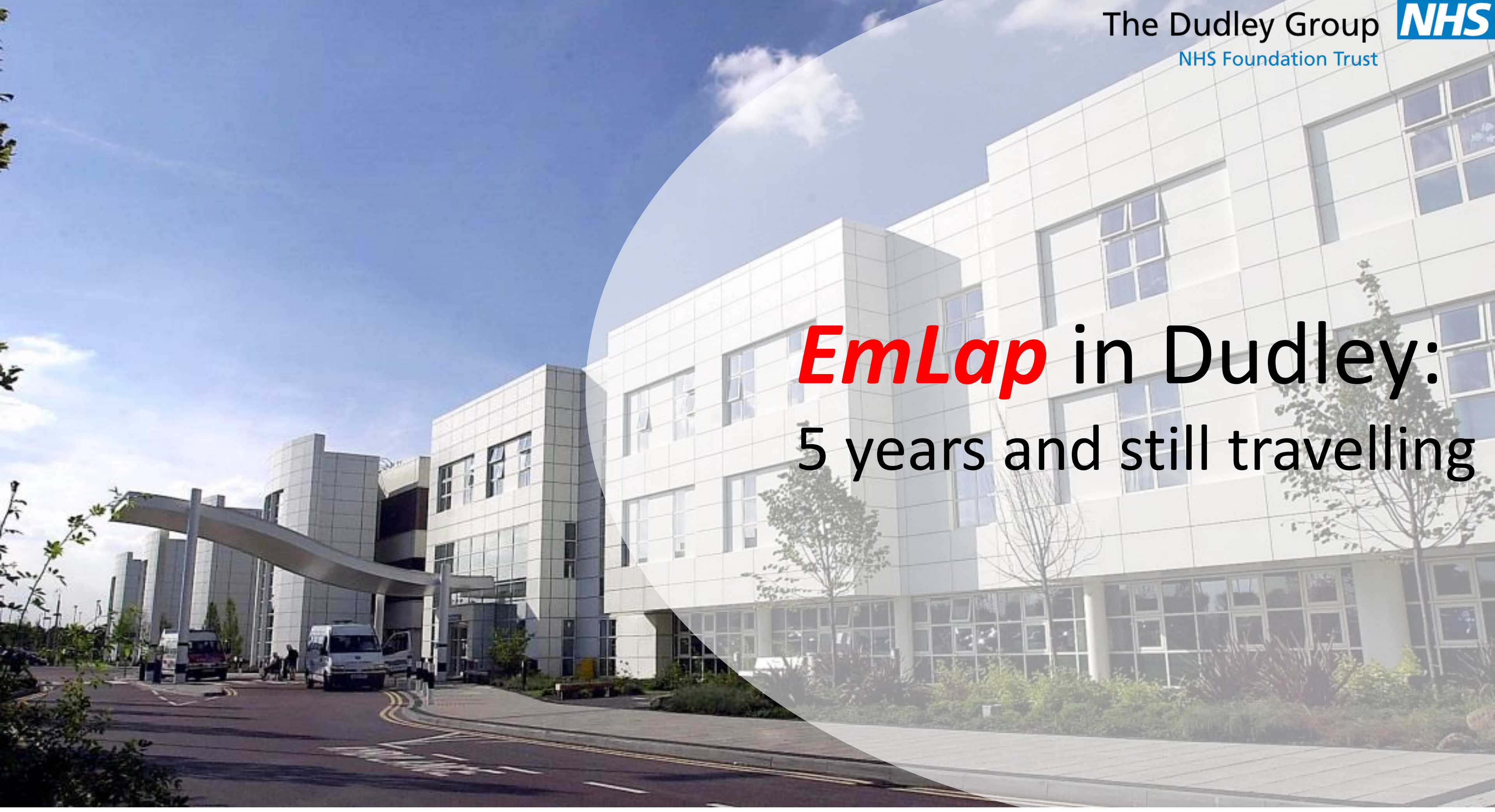


NENC AHSN ELC Meeting

10th July 2019

Dr Julian Sonksen

On behalf of the ***EmLap*** Group and NELA departmental leads

Maintaining momentum in a challenging environment

- Be alert,
- Look out … national policy, ne…
- Think of t…
  - *'A sour… want to go'*
  - Latch o…
  - Speed …
- Also be re…
  - Acknov…
  - Celebra…
  - Refresh…

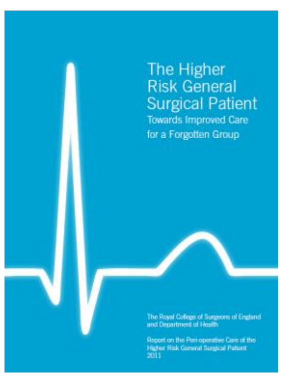
Evidence for the ELC programme

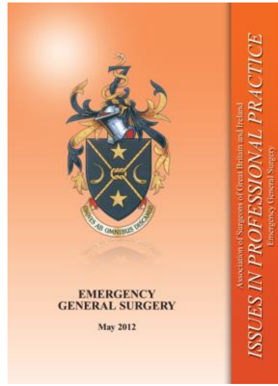
- **‘WHY DON’T MERCEDES BENZ PUBLISH RANDOMIZED TRIALS?’**
  - Timothy O’Brien, Richard Viney*, Alan Doherty* and Kay Thomas
  - ***2010 British Journal of Urology International***

‘The new Mercedes E class has just been released and buyers can be confident that the new version will be better than the old; safer, quicker, more comfortable, more reliable, and technologically more advanced than the previous version. In short, the quality of the product will be better. The consumer, even a urologist, can be confident of this without needing to access The European Journal of Automotive Engineering to read the results of a randomized controlled trial (RCT) of the old version against the new, replete with p-values, CIs and statistical significance’

Nov 2013: Lean Action Days

- Feb 2011
- Nov 2013
- Context at the time
  - National awareness
  - Patient Stories
  - Clinician Concerns, RCA
  - Local Audit





Patient Stories and Audit

Cumulative Median Time from Recognition of Sepsis (hours)

Median (hours)

	Median (hours)
Time to Blood cultures	0.0
Time to Lactate	2.0
Time to 1L resus	6.7
Time to 3L resus	16.7
Time to 1st Abx	5.0
Time to Senior Surgeon input	4.7
Time to Consultant Surgeon	14.1
Time to CT order	11.1
Time to CT report	35.3
Time to Booked for theatre	39.7
Time to Anaesthetic Start	52.2
Time to ITU admission	55.0

Median (hours)

Outcome 1: This is 'index condition'

- The Acute Abdomen is often a time critical emergency…
  - Should be treated as such
    - Resources
    - Pathways
    - Target treatment times

- Delay…
    - Physiological deterioration
    - Loss of functional reserve and onset multi-organ impairment
    - Increase complications and mortality[1]
    - 'Delay costs lives'

1. **RCS** Emergency Surgery Policy Briefing Sept 2014

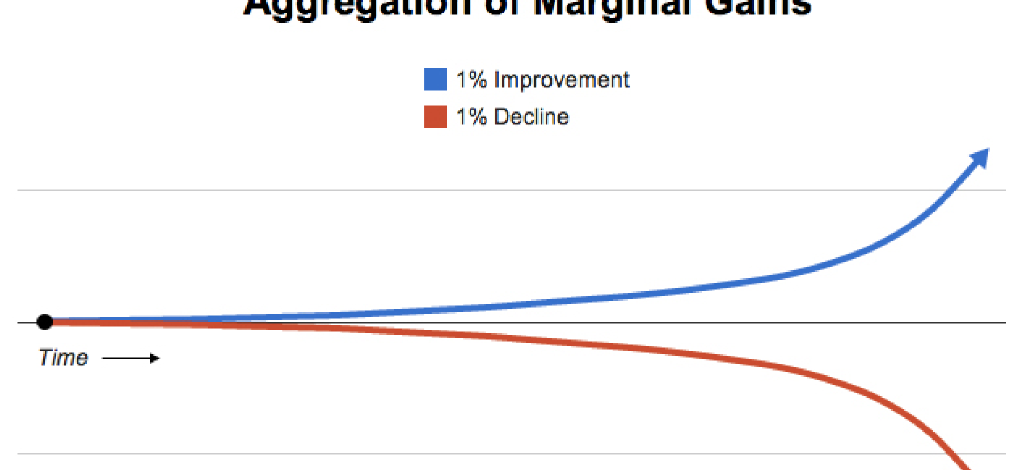
Outcome 2: understanding our service

- Service usually good
- Change will require a whole systems approach

"As a complex organisation we are bound by invisible fabrics of interrelated actions… since we are part of that lacework ourselves, it is doubly hard to see the whole pattern. Instead we tend to focus on snapshots of isolated parts of the system and wonder why our deepest problems never get solved… The essence of ***mastering systems thinking lies in seeing patterns where others see only events and forces to react to****"*

Outcome 3: Change is achievable

- No silver bullets
  - Faith in service and ourselves
  - Realistic change possible..



"Success is a few simple disciplines, practiced every day; while failure may be tiny errors/omissions, repeated every day."

  - Urgent care ≠ hurried care…

"Urgency means paying the details the attention they deserve, with the respect they deserve, without delay."

Outcomes 4: Our way forward

- Local priorities for intervention
  - 1. Access to Senior Review
  - 2. Access to CT scanning
  - 3. Access to theatre
    - Make these things easier for staff to achieve, and more reliable… for patients to receive
  - 4. Awareness, status and priority of patients with acute abdomen
- Name… ***EmLap***
- Team...

Burning Ambition: *EmLap* Team

Other Key members of *EmLap* team

Jenny Wright	NELA lead	Tim Usher	Senior Radiographer
Peter Waterland	Surgical SpR	Louisa Adams	Theatres
Peter Doyle	ED Consultant	Tina Sheldon	Switchboard Manager
Lynn Badger	ED Sister	Paul Bytheway	Executive lead
Daniel Peters	GM	Jane Taylor	Medical Illustration
Liz Brookes	SAU	Chris McAvoy	Data Analyst
Stephen Garratt	Em Surgery Coordinator	Kustav Mukerjee	Data Analyst

The next 15 months!

- How to achieve local priorities
  - Escalation/priority processes
- How would we know if they were happening or not?
- How could we ensure 'priority processes' not abused?
- How will we feedback progress to staff?
- Write the paper pathway!
- Pilot

Process redesign

- **1. Early Senior Review : 2222 EmLap referral**
- **2. Prompt CT scanning : CTabdoEmLap**
- **3. Prioritised theatre booking : EmLap priority Th booking**

  – Set standards…
  – Negotiate escalation policies
  – Audit progress…

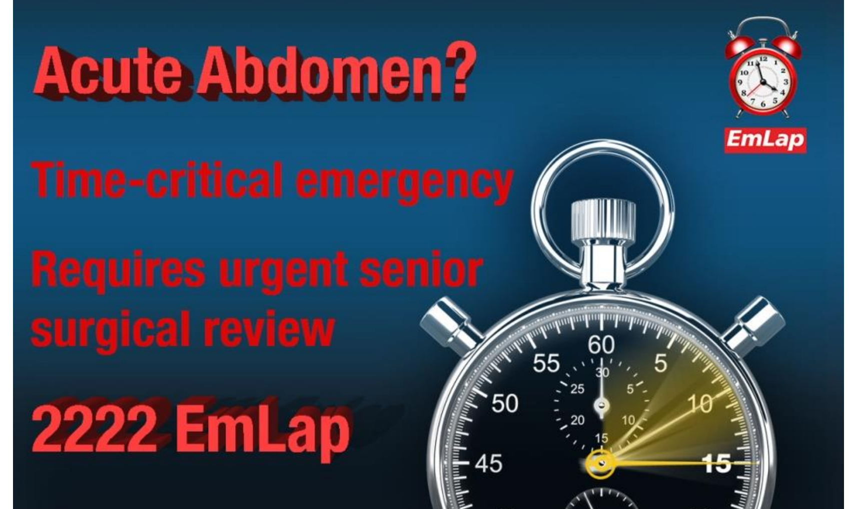
- Embed ‘e-tags’
- KPI’s
  – DtT time
  – CT times
  – NELA/EPOCH (later)

Language of EmLap

- These are a complex patient group
  - Urgent need for senior surgical opinion at the bed-side

- Time critical emergency…

- Early intervention saves lives



Language of EmLap

EmLap

The Dudley Group NHS
NHS Foundation Trust
High Risk Emergency Laparotomy Pathway

Acute abdominal pain?
High risk features?
Think EmLap

Start the clock
- Start the pathway immediately
- Call 2222 and request an 'EmLap referral' fast bleep to surgical registrar
- Have your extension number, location and patient name ready

Time is critical

Patients with acute abdominal pain and high risk features may need an emergency laparotomy

Find the pathway document on the Hub under Documents/Clinical Forms *EmLap*

Think *EmLap*
'Timely, detailed care'

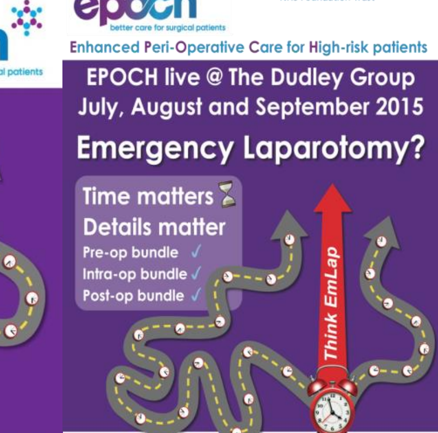
epoch better care for surgical patients

Emergency Laparotomy?

Time matters
Details matter
Pre-op bundle ✓
Intra-op bundle ✓
Post-op bundle ✓

Think EmLap

Enhanced Peri-Operative Care for High-risk patients



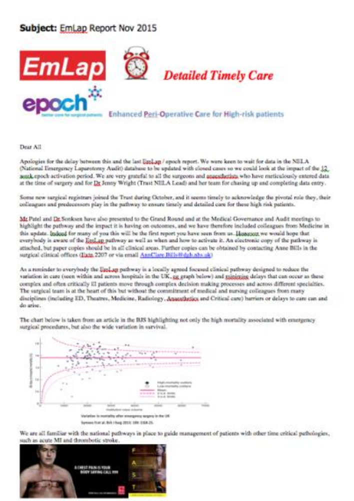
'Door to theatre time'

'Think *EmLap*'

'Timely detailed care'

Launch: Feb 2015

- Go Big
  - Ward to Board
  - Comms
  - Events
  - Depart meetings
  - EPOCH..
- Feedback..



Subject: EmLap Report Nov 2015

EmLap *Detailed Timely Care*

epoch Enhanced Peri-Operative Care for High-risk patients

Dear All

Apologies for the delay between this and the last EmLap / epoch report. We were keen to wait for data in the NELA (National Emergency Laparotomy Audit) database to be updated with closed cases so we could look at the impact of the 12 week epoch activation period. We are very grateful to all the surgeons and anaesthetists who have meticulously entered data at the time of surgery and for Dr Jenny Wright (Trust NELA Lead) and her team for chasing up and completing data entry.

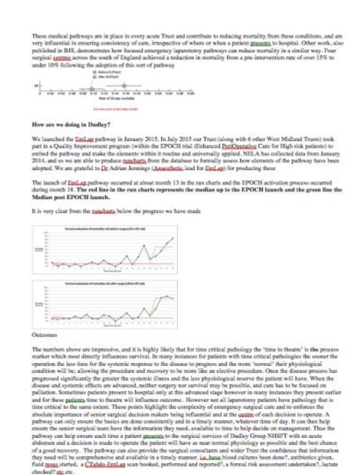
Some new surgical registrars joined the Trust during October, and it seems timely to acknowledge the pivotal role they, their colleagues and predecessors play in the pathway to ensure timely and detailed care for these high risk patients.

Mr Patel and Dr Sonksen have also presented to the Grand Round and at the Medical Governance and Audit meetings to highlight the pathway and the impact it is having on outcomes, and we have therefore included colleagues from Medicine in this update. Indeed for many of you this will be the first report you have seen from us. However we would hope that everybody is aware of the EmLap pathway as well as when and how to activate it. An electronic copy of the pathway is attached, but paper copies should be in all clinical areas. Further copies can be obtained by contacting Anne Bills in the surgical clinical offices (Extn 2207 or via email AnnClare.Bills@dgh.nhs.uk)

As a reminder to everybody the EmLap pathway is a locally agreed focused clinical pathway designed to reduce the variation in care (seen within and across hospitals in the UK, eg graph below) and minimising delays that can occur as these complex and often critically ill patients move through complex decision making processes and across different specialties. The surgical team is at the heart of this but without the commitment of medical and nursing colleagues from many disciplines (including ED, Theatres, Medicine, Radiology, Anaesthetics and Critical care) barriers or delays to care can and do arise.

The chart below is taken from an article in the BJS highlighting not only the high mortality associated with emergency surgical procedures, but also the wide variation in survival.

We are all familiar with the national pathways in place to guide management of patients with other time critical pathologies, such as acute MI and thrombotic stroke.



These medical pathways are in place in every acute Trust and contribute to reducing mortality from these conditions, and are very influential in ensuring consistency of care, irrespective of where or when a patient presents to hospital. Other work, also published in BJS, demonstrates how focused emergency laparotomy pathways can reduce mortality in a similar way. Four surgical centres across the south of England achieved a reduction in mortality from a pre-intervention rate of over 15% to under 10% following the adoption of this sort of pathway

How are we doing in Dudley?

We launched the EmLap pathway in January 2015. In July 2015 our Trust (along with 6 other West Midland Trusts) took part in a Quality Improvement program (within the EPOCH trial (Enhanced PeriOperative Care for High risk patients) to embed the pathway and make the elements within it routine and universally applied. NELA has collected data from January 2014, and so we are able to produce runcharts from the database to formally assess how elements of the pathway have been adopted. We are grateful to Dr Adrian Jennings (Anaesthetic lead for EmLap) for producing these

The launch of EmLap pathway occurred at about month 13 in the run charts and the EPOCH activation process occurred during month 18. **The red line in the run charts represents the median up to the EPOCH launch and the green line the Median post EPOCH launch.**

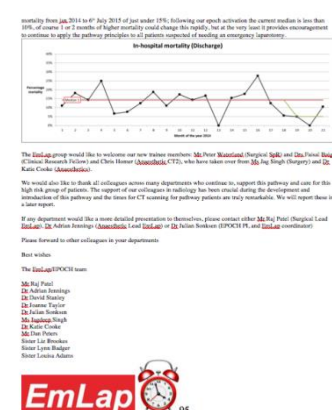
It is very clear from the runcharts below the progress we have made

Outcomes

The numbers above are impressive, and it is highly likely that for time critical pathology the 'time to theatre' is **the** process marker which most directly influences survival. In many instances for patients with time critical pathologies the sooner the operation the less time for the systemic response to the disease to progress and the more 'normal' their physiological condition will be; allowing the procedure and recovery to be more like an elective procedure. Once the disease process has progressed significantly the greater the systemic illness and the less physiological reserve the patient will have. When the disease and systemic effects are advanced, neither surgery nor survival may be possible, and care has to be focused on palliation. Sometimes patients present to hospital only at this advanced stage however in many instances they present earlier and for these patients time to theatre will influence outcome. However not all laparotomy patients have pathology that is time critical to the same extent. These points highlight the complexity of emergency surgical care and re-enforces the absolute importance of senior surgical decision makers being influential and at the centre of each decision to operate. A pathway can only ensure the basics are done consistently and in a timely manner, whatever time of day. It can then help ensure the senior surgical team have the information they need, available to time to help decide on management. Thus the pathway can help ensure each time a patient presents to the surgical services of Dudley Group NHSFT with an acute abdomen and a decision is made to operate the patient will have as near normal physiology as possible and the best chance of a good recovery. The pathway can also provide the surgical consultants and wider Trust the confidence that information they need will be comprehensive and available in a timely manner. i.e. have blood cultures been done?, antibiotics given, fluid resus started, a CTabdo EmLap scan booked, performed and reported?, a formal risk assessment undertaken?, lactate checked? etc etc.

So does our pathway influence clinical outcomes?

This is a question we are asked frequently. We have avoided looking at this because the numbers for any one Trust are low and it will take a large scale study like EPOCH and annual sequential reports from NELA to help answer these questions. Nonetheless we have access to the epoch run chart for mortality for our Trust, which is copied below. This shows a median



mortality from Jan 2014 to 6th July 2015 of just under 15%; following our epoch activation the current median is less than 10%, of course 1 or 2 months of higher mortality could change this rapidly, but at the very least it provides encouragement to continue to apply the pathway principles to all patients suspected of needing an emergency laparotomy.

In-hospital mortality (Discharge)

The EmLap group would like to welcome our new trainee members: Mr Peter Waterland (Surgical SpR) and Drs Faisal Baig (Clinical Research Fellow) and Chris Homer (Anaesthetic CT2), who have taken over from Ms Jag Singh (Surgery) and Dr Katie Cooke (Anaesthetics).

We would also like to thank all colleagues across many departments who continue to, support this pathway and care for this high risk group of patients. The support of our colleagues in radiology has been crucial during the development and introduction of this pathway and the times for CT scanning for pathway patients are truly remarkable. We will report these in a later report.

If any department would like a more detailed presentation to themselves, please contact either Mr Raj Patel (Surgical Lead EmLap), Dr Adrian Jennings (Anaesthetic Lead EmLap) or Dr Julian Sonksen (EPOCH PI, and EmLap coordinator)

Please forward to other colleagues in your departments

Best wishes

The EmLap/EPOCH team

Mr Raj Patel
Dr Adrian Jennings
Dr David Stanley
Dr Joanne Taylor
Dr Julian Sonksen
Ms Jagdeep Singh
Dr Katie Cooke
Mr Dan Peters
Sister Liz Brookes
Sister Lynn Badger
Sister Louisa Adams

EmLap 95

EmLap post launch time-line

- 2015 Feb: Launch Event
  EmLap added to Th DB
- 2015 July: EPOCH Launch
- 2015–present: NELA/*EmLap* Analyst support
- 2015 Oct: Medicine Governance meeting
  Hospital Grand Round
- 2015 12 Th DB alert Th 4 staff of booking
- 2016-present: FY 1 and FY 2 teaching **annual**
- 2016 April: HSJ Value award **'Highly commended'**
- 2016-present: Quarterly NELA newsletter

Awareness / Feedback Work

NELA NOW
Russells Hall Hospital NELA Newsletter
No

The HOT Topic

The Third Patient Report

The Third Patient Report has now been published including data collected from December 2015 – November 2016.

More info at the joint anaesthetic/surgical audit meeting in January 2018!

Nationally

- 30 day mortality rate has fallen from 11.8 to 10.6 since 2013
- That represents around ***300 lives saved each year***.

But wh

- Hosp

We are ra
- Elder busin appro
- Pre-o revie than

We are ra average)
- Arriva suital proba error. who I into t

NELA NOW
Russells Hall Hospital NELA Newsletter
November Edition

EmLap/NELA Checklist

Watch out for the new checklist which has recently been launched in Theatre 4 and will be used by the Lead Theatre Practitioners to prompt people when dealing with these patients.

IN OTHER NEWS

NELA Risk Calculator

NELA have produced a new risk assessment tool based on audited data which should provide a more accurate assessment compared to existing tools.

The tool is available on the website and as an 'app'.

Trainee Prize!

And the Winner is

For the most cases initiated in a month:
- *September 2017* – **Dr Kapil Savjani**
- *October 2017* - No winner due to minimal patients
- *November 2017* – Watch this space…

New Trainee Leads

New NELA trainee leads are:

Dr Nadim Kozman (Anaesthetics)
Dr Nusrat Iqbal (Surgery)

EmLap post launch time-line

Theatres Database

The Dudley Group NHS
NHS Foundation Trust

Home ▸ Emergency bookings ▸ View booking ▸ Confirmation   Logged in as: dgh\ajen00

Emergency booking confirmation

This patient should be on the EmLap pathway. The P-POSSUM calculated mortality risk is:

14.8%

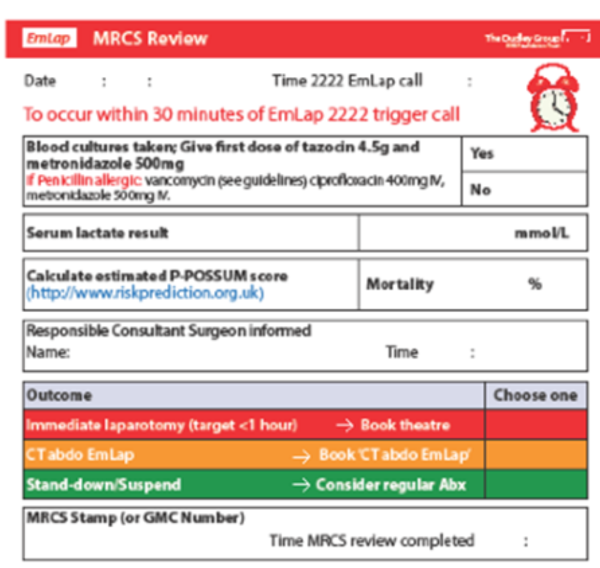
The patient requires the following management:

- Blood cultures taken; Give first dose of tazocin 4.5g and metronidazole 500mg.
  If Penicillin allergic: vancomycin, ciprofloxacin 400mg IV, metronidazole 500mg IV.
- Check serum lactate.
- Notify the **Consultant** Surgeon that they should be present during surgery as they are high risk.
- Notify the junior anaesthetist that the **Consultant** Anaesthetist should be present during surgery.
- Book a SHDU bed (x2620).
- Ensure all other preoperative tests are ready (G&S, ECG, bloods, consent, etc.).
- Discuss this risk score with the patient.

✔ I have read and acknowledge these instructions

The Dudley Group NHS Foundation Trust – Where people matter

Awareness / Feedback Work



EmLap MRCS Review

Date : : Time 2222 EmLap call :

To occur within 30 minutes of EmLap 2222 trigger call

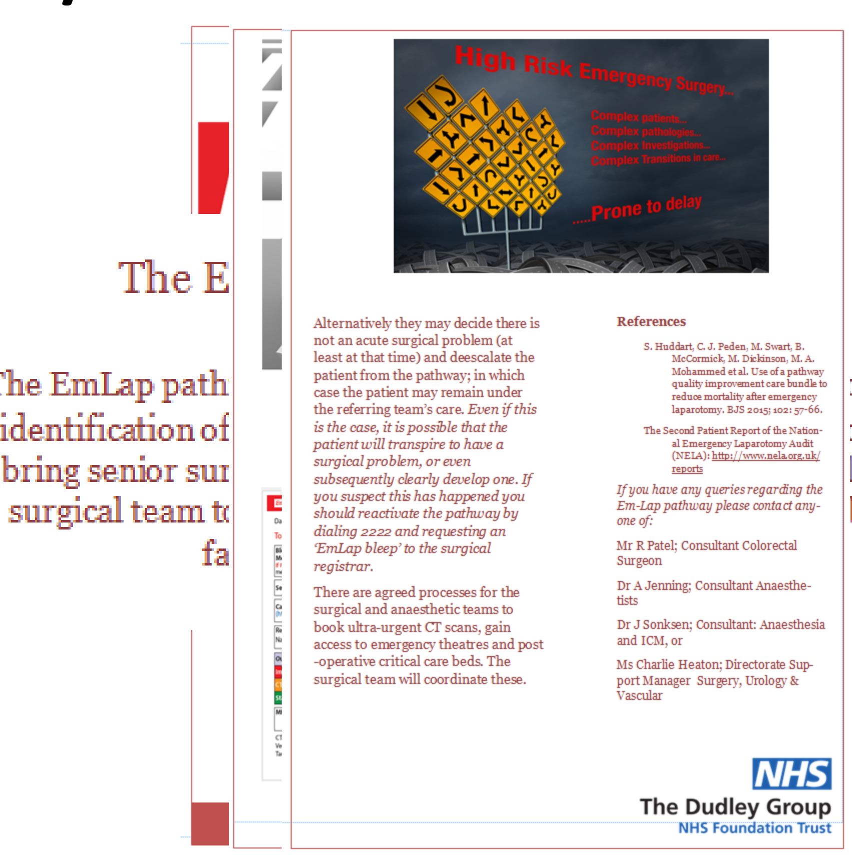
Blood cultures taken; Give first dose of tazocin 4.5g and metronidazole 500mg If Penicillin allergic: vancomycin (see guidelines) ciprofloxacin 400mg IV, metronidazole 500mg IV.	Yes / No
Serum lactate result	mmol/L
Calculate estimated P-POSSUM score (http://www.riskprediction.org.uk)	**Mortality** %
Responsible Consultant Surgeon informed Name:	Time :

Outcome	Choose one
Immediate laparotomy (target <1 hour) → Book theatre	
CT abdo EmLap → Book 'CT abdo EmLap'	
Stand-down/Suspend → Consider regular Abx	

MRCS Stamp (or GMC Number) Time MRCS review completed :

CT GUIDE: Book 'CT abdo EmLap' on Soarian.
Verbally alert Radiologist/radiographer (10 pm - 8 am via off-site provider).
Target - CT scan within 2 hours, report within 1 hour.

V1.0 EmLap 2.0 sticker Jan 2017. Review date: Oct 2019.



Alternatively they may decide there is not an acute surgical problem (at least at that time) and deescalate the patient from the pathway; in which case the patient may remain under the referring team's care. *Even if this is the case, it is possible that the patient will transpire to have a surgical problem, or even subsequently clearly develop one. If you suspect this has happened you should reactivate the pathway by dialing 2222 and requesting an 'EmLap bleep' to the surgical registrar.*

There are agreed processes for the surgical and anaesthetic teams to book ultra-urgent CT scans, gain access to emergency theatres and post-operative critical care beds. The surgical team will coordinate these.

References

S. Huddart, C. J. Peden, M. Swart, B. McCormick, M. Dickinson, M. A. Mohammed et al. Use of a pathway quality improvement care bundle to reduce mortality after emergency laparotomy. BJS 2015; 102: 57-66.

The Second Patient Report of the National Emergency Laparotomy Audit (NELA): http://www.nela.org.uk/reports

If you have any queries regarding the Em-Lap pathway please contact any-one of:

Mr R Patel; Consultant Colorectal Surgeon

Dr A Jenning; Consultant Anaesthetists

Dr J Sonksen; Consultant: Anaesthesia and ICM, or

Ms Charlie Heaton; Directorate Support Manager Surgery, Urology & Vascular

NHS The Dudley Group NHS Foundation Trust

WHO sign out: *EmLap*

WHO Surgical Safety Checklist
(adapted for England and Wales)

National Patient Safety Agency
National Reporting and Learning Service

SIGN IN (To be read out loud)

Before induction of anaesthesia

Has the patient confirmed his/her identity, site, procedure and consent?
- ☐ Yes

Is the surgical site marked?
- ☐ Yes/not applicable

Is the anaesthesia machine and medication check complete?
- ☐ Yes

Does the patient have a:

Known allergy?
- ☐ No
- ☐ Yes

Difficult airway/aspiration risk?
- ☐ No
- ☐ Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?
- ☐ No
- ☐ Yes, and adequate IV access/fluids planned

PATIENT DETAILS

Last name:
First name:
Date of birth:
NHS Number:*
Procedure:

*If the NHS Number is not immediately available, a temporary number should be used until it is.

TIME OUT (To be read out loud)

SIGN OUT (To be read out loud)

EmLap Sign out - before any member of the team leaves the operating room

Registered practitioner verbally confirms with the team:

- ☐ Has estimated blood loss been calculated?
- ☐ What was the degree of peritoneal soiling? *(None / seruos fluid / localised pus or blood)*
- ☐ Has the end of surgery lactate been checked?
- ☐ Has an end of surgery P-POSSUM been calculated?
- ☐ Is team aware of patient's mortality risk?

EmLap post launch time-line

- 2018 7: COTE service starts
- 2019 2: Auto-email. FLO-ELA and COTE
- 2019 3: Replaced P-POSSUM with NELA scoring
- 2019 5: ***EmLap-CT*** times updated

Measuring and auditing change

- Internally collected date
  - E-tags
  - Switchboard
  - EPR
  - Th DB (bespoke)
- NELA
  - EPOCH
  - NELA reports / Dashboard
  - ELC Run Chart Tool

Yr 1 *EmLap* KPI's….. Timeliness

35

30

0

50

45

40

0

Surgery within 6 hours of decision to operate (Time to OT)

Hours

Median 1

Sequential Cases

0 1 2 3

Historical   Pre-EmLap   Post-EmLap   CTabdo-EmLap

Number of e-sags

Door to theatre time; on and off pathway

Book to report CT times

Update audit of ‘door to theatre’ time

- 1st July 2015 – 16th June2019
- 733 cases on our DB and NELA
- 716 cases with ‘Arrive ED and ‘Start anaesthetic’
- Compare (5 cohorts)
  - ‘All comers’ (716 cases)
  - No e-tags = no evidence ever on pathway (285 cases)
  - 2222-EmLap e-tag (154 cases)
  - 2222-EmLap + CT-EmLap (81 cases)
  - 2222-EmLap + CT-EmLap + EmLap Th Booking (64 cases)

'Door to Theatre time'

Median Door to Theatre Time

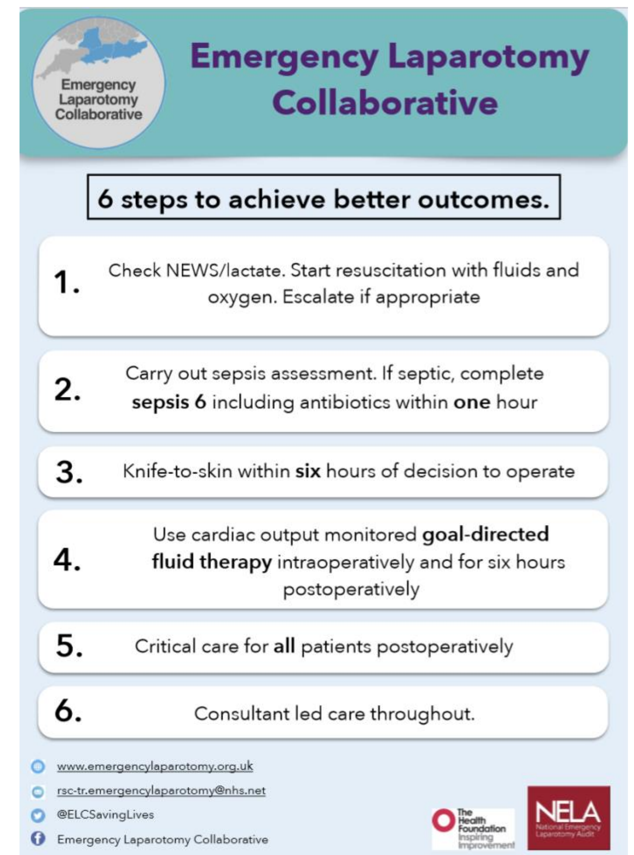
Door to Theatre (DtR) time

	All comers	No pathway markers	2222-EmLap only	2222-EmLap + CT-EmLap	2222-EmLap + CT-EmLap + Booked as
	32.5	48.42	15.82	11.8	11

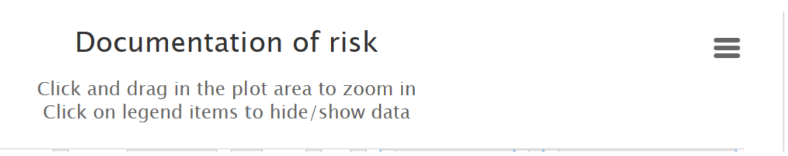
Number of tags	DtT time (hrs)
0	46
1	38
2	20
3	13

ELC process measures: the 6 Step Pathway

- Time epochs
  - T_0 = Start NELA (EmLap run in (Dec 2013)
  - T_1 = EmLap Launch (Feb 2015)
  - T_2 = 2 years of 'embedding' (Feb 2017)



ELC-1: Check lactate / document risk



Median

Pre-op Blood Lactate

100%
80%
60%
40%
20%
0%

First Change
Second Change

Dec-13 Feb-14 Apr-14 Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17 Feb-18 Apr-18 Jun-18 Aug-18 Oct-18 Dec-18 Feb-19

1. Check NEWS/lactate. Start resuscitation with fluids and oxygen. Escalate if appropriate

ELC-2: Sepsis / antibiotics pre-op

Median

Antibiotics prior to surgery

100%
80%
60%
40%
20%
0%

First Change

Second Change

Dec-13 Feb-14 Apr-14 Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17 Feb-18 Apr-18 Jun-18 Aug-18 Oct-18 Dec-18 Feb-19

2. Carry out sepsis assessment. If septic, complete **sepsis 6** including antibiotics within **one** hour

The Dudley Group NHS
NHS Foundation Trust

Use of LiDCO: FLO-ELA

Median

Goal Directed Fluid Therapy

100%
80%
60%
40%
20%
0%

First Change
Second Change

Dec-13 Feb-14 Apr-14 Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17 Feb-18 Apr-18 Jun-18 Aug-18 Oct-18 Dec-18 Feb-19

4. Use cardiac output monitored **goal-directed fluid therapy** intraoperatively and for six hours postoperatively

ELC-5: Post-op Critical Care

Median

........Critical Care admission (>5%)

First Change

Second Change

100%
80%
60%
40%
20%
0%

Jan-14 Mar-14 May-14 Jul-14 Sep-14 Nov-14 Jan-15 Mar-15 May-15 Jul-15 Sep-15 Nov-15 Jan-16 Mar-16 May-16 Jul-16 Sep-16 Nov-16 Jan-17 Mar-17 May-17 Jul-17 Sep-17 Nov-17 Jan-18 Mar-18 May-18 Jul-18 Sep-18 Nov-18 Jan-19

5. Critical care for **all** patients postoperatively

ELC-6: Consultant led care

Median

Median

Consultant or Post CCT delivered Anaesthesia

Consultant or Post CCT delivered Surgery

First Change

Second Change

100%
80%
60%
40%
20%
0%

Dec-13 Feb-14 Apr-14 Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17 Feb-18 Apr-18 Jun-18 Aug-18 Oct-18 Dec-18 Feb-19

6. Consultant led care throughout.

Time to Theatre (All):

Decision to operate

Median

Time to Operating Theatre (ALL)

20 18 16 14 12 10 8 6 4 2 0

First Change

Second Change

1 20 18 15 19 12 14 16 16 16 26 13 17 12 15 18 17 9 23 26 12 32 17 21 18 12 16 22 17 22 22 23 32 17 11 22 24 18 9 15 12 18 17 22 14 17 8 11 18 17 11 10 18 12 28 14 18 19 12 16 13 10 7

Dec-13 Feb-14 Apr-14 Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17 Feb-18 Apr-18 Jun-18 Aug-18 Oct-18 Dec-18 Feb-19

3. Knife-to-skin within **six** hours of decision to operate

Immediate (<2hrs) and Urgent 2A (2-6hrs)

Median

……..Time to Operating Theatre - Immediate(<2 hours)

5
5
4
4
3
3
2
2
1
1
0

First Change
Second Change

2 1 3 2 2 2 1 2 4 3 3 3 1 1 3 4 9 2 4 2 3 1 1 2 1 1 1 1 1 1 3 1 1 1 2 1 4 2 2 1 2 2 2 1 2 1 1 1 2 1

Jan-14 Mar-14 Jun-14 Sep-14 Nov-14 Jan-15 Mar-15 Jun-15 Sep-15 Nov-15 Jan-16 Mar-16 May-16 Aug-16 Nov-16 Jan-17 Mar-17 May-17 Jul-17 Sep-17 Dec-17 Feb-18 Apr-18 Aug-18 Jan-19

Median

……..Time to Operating Theatre - Urgent 2A(2–6 hours)

10
9
8
7
6
5
4
3
2
1
0

First Change
Second Change

1 4 5 6 4 8 6 7 8 5 9 1 6 8 3 4 6 18 2 6 8 6 8 3 11 4 3 9 13 7 17 13 3 7 13 8 4 6 1 7 7 7 4 6 4 9 8 8 3 5 7 9 13 8 11 9 2 8 6 3 3

Jan-14 Apr-14 Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17 Feb-18 Apr-18 Jun-18 Aug-18 Oct-18 Dec-18 Feb-19

Urgent 2B (6-18) and Expediated2A (>18h)

Median

........Time to Operating Theatre - Urgent 2B(6–18 hours)

20 18 16 14 12 10 8 6 4 2 0

First Change

Second Change

1 1 6 5 5 4 5 6 13 4 4 6 2 4 10 4 8 3 3 13 6 7 6 5 2 15 8 9 6 12 10 3 6 11 8 6 2 5 6 5 6 7 7 4 3 3 5 3 3 3 2 10 4 5 3 4 5 2 2

Jan-14 Apr-14 Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Jan-18 Mar-18 May-18 Jul-18 Oct-18 Dec-18 Feb-19

Median

........Time to Operating Theatre - Expedited(>18 hours)

50 45 40 35 30 25 20 15 10 5 0

First Change

Second Change

2 1 6 1 3 1 5 2 3 1 2 4 5 3 1 6 5 3 4 1 4 2 1 2 2 4 3 3 3 3 2 3 2 1 2 3 4 4 3 4 1 5 1 1 5 2 3 1 6 1 5 1 6 4 7 4 2 3 1

Feb-14 Apr-14 Jun-14 Aug-14 Oct-14 Jan-15 Mar-15 May-15 Jul-15 Sep-15 Nov-15 Jan-16 Mar-16 May-16 Jul-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17 Feb-18 Apr-18 Jun-18 Aug-18 Oct-18 Dec-18 Feb-19

ELC Outcomes: Crude In Hospital Mortality

Median

In-hospital mortality (crude)

First Change

Second Change

ELC Outcomes:
Hospital Length of Stay

Median

Length of Stay in hospital

First Change

Second Change

COTE

Median

Geriatrician Input Post Op

Impact LOS over next 2 yrs?

Impact of change takes time

'The Agg nal Gains'

Individual
Marginal Gain
Individual
Marginal Loss
Time
Increase in Marginal Gains
Decrease in Marginal Gains

"WE ARE ALWAYS STRIVING FOR IMPROVEMENT, FOR THOSE 1% GAINS, IN ABSOLUTELY EVERY SINGLE THING WE DO."

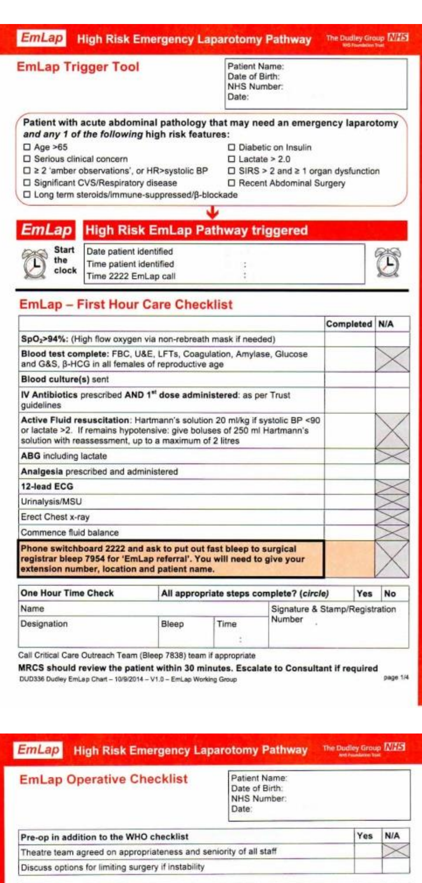
Dave Brailsford

The marginal choice mal impact at the start. The 1% improvemen es over time, creating a much larger risk tha

EmLap

EmLap

The Dudley Group
NHS
NHS Foundation Trust



EmLap High Risk Emergency Laparotomy Pathway — The Dudley Group NHS

EmLap Trigger Tool

Patient Name:
Date of Birth:
NHS Number:
Date:

Patient with acute abdominal pathology that may need an emergency laparotomy *and any 1 of the following* high risk features:

- ☐ Age >65
- ☐ Serious clinical concern
- ☐ ≥ 2 'amber observations', or HR>systolic BP
- ☐ Significant CVS/Respiratory disease
- ☐ Long term steroids/immune-suppressed/β-blockade
- ☐ Diabetic on Insulin
- ☐ Lactate > 2.0
- ☐ SIRS > 2 and ≥ 1 organ dysfunction
- ☐ Recent Abdominal Surgery

EmLap — High Risk EmLap Pathway triggered

Start the clock

Date patient identified
Time patient identified :
Time 2222 EmLap call :

EmLap – First Hour Care Checklist

	Completed	N/A
SpO_2>94%: (High flow oxygen via non-rebreath mask if needed)		
Blood test complete: FBC, U&E, LFTs, Coagulation, Amylase, Glucose and G&S, β-HCG in all females of reproductive age		☒
Blood culture(s) sent		
IV Antibiotics prescribed **AND 1st dose administered:** as per Trust guidelines		
Active Fluid resuscitation: Hartmann's solution 20 ml/kg if systolic BP <90 or lactate >2. If remains hypotensive: give boluses of 250 ml Hartmann's solution with reassessment, up to a maximum of 2 litres		☒
ABG including lactate		☒
Analgesia prescribed and administered		
12-lead ECG		☒
Urinalysis/MSU		☒
Erect Chest x-ray		☒
Commence fluid balance		☒
Phone switchboard 2222 and ask to put out fast bleep to surgical registrar bleep 7954 for 'EmLap referral'. You will need to give your extension number, location and patient name.		☒

One Hour Time Check	All appropriate steps complete? *(circle)*		Yes	No
Name		Signature & Stamp/Registration Number		
Designation	Bleep	Time :		

Call Critical Care Outreach Team (Bleep 7838) team if appropriate

MRCS should review the patient within 30 minutes. Escalate to Consultant if required

EmLap High Risk Emergency Laparotomy Pathway

EmLap High Risk Emergency Laparotomy Pathway — The Dudley Group NHS

EmLap MRCS Checklist

Patient Name:
Date of Birth:
NHS Number:
Date:

High Risk EmLap Pathway – MRCS Duties	Yes	No	N/A
Check all appropriate first hour management steps complete			
Ensure appropriate fluids including maintenance, resuscitation and electrolyte replacement prescribed			
Correct coagulopathy as required: discuss with anaesthetist/haematologist			
Maintain normothermia active warming, warmed fluids			
Active glucose management: VRII if BM>12			
Calculate estimated P-POSSUM score: The Hub>More links>Surgical Risk Predictor (P- POSSUM) (*http://www.riskprediction.org.uk*). Document mortality risk estimate	Score %		
Trigger ICU review or MET call if appropriate at any time			

Outcome of MRCS review (one of the following)	Tick 1
EmLap pathway patient: Immediate laparotomy: target <1 hour to theatre Confirm with Consultant Surgeon and notify all appropriate staff– go to pre-op ward checklist	
EmLap pathway patient: **CT scan required:** Consultant Surgeon agreed Always book 'CT abdo EmLap' on Soarian and verbally alert Radiologist/radiographer (10 pm – 8 am via off-site provider) Target: CT scan within 2 hrs, report within 1 hr	
Non-operative/ unlikely to need operation – confirm with Consultant, and then step down from High Risk EmLap pathway Make appropriate action plan (restart EmLap pathway if high risk features develop)	

MRCS review post CT
Discussed with Consultant Surgeon at :
Working Diagnosis post CT:

Outcome following discussion with Consultant Surgeon (one of the following)	Tick 1
Laparatomy /Operative intervention required Date and time consultant decision to operate Time: : Target: operation within 6 hours of decision to operate; go to pre-op ward checklist	
Non-operative; step down from High Risk EmLap pathway; make appropriate management plan. Restart pathway if high risk feature develops.	

MRCS check	All appropriate steps complete? *(circle)*		Yes	No
Name		Signature & Stamp/Registration Number		
Designation	Bleep	Time :		

EmLap High Risk Emergency Laparotomy Pathway — The Dudley Group NHS

EmLap Pre-Op Ward Checklist

Patient Name:
Date of Birth:
NHS Number:
Date:

Responsibility of MRCS, (who can delegate tasks) immediately following decision to operate

	Completed	Designation	Initials
Inform on-call anaesthetist (bleep 7018) of patient presence including High Risk status, observations, P-POSSUM score & Lactate.			
Inform theatre co-ordinator (bleep 7224)			
Provide patient and relatives with oral and written information about treatment			
Critical Care bed arranged			
Valid G&S available			
Blood products arranged			
Blood results reviewed			
Comments			

Responsibilities for on-call anaesthetist	Yes
Perform prompt anaesthetic assessment; optimize for theatre	
Inform Consultant Anaesthetist of EmLap patient and planned time of surgery	
Liaise with theatre co-ordinator to ensure case is appropriately prioritised	
Comments	

Anaesthetist Name	All appropriate steps complete? *(circle)*		Yes	No
Name		Signature & Stamp/Registration Number		
Designation	Bleep	Time :		

EmLap High Risk Emergency Laparotomy Pathway

EmLap High Risk Emergency Laparotomy Pathway — The Dudley Group NHS

EmLap Operative Checklist

Patient Name:
Date of Birth:
NHS Number:
Date:

Pre-op in addition to the WHO checklist	Yes	N/A
Theatre team agreed on appropriateness and seniority of all staff		☒
Discuss options for limiting surgery if instability		

Intra-operative in addition to other trust standards	Yes	N/A
'Suction above the cuff' ETT if ICU ventilation likely		
Fluid therapy guided by cardiac output monitoring (LiDCO)		
Low tidal volume protective ventilation		☒

End of Surgery Bundle (within the last 30 minutes of surgery)		Yes	N/A
Arterial blood gases to assess lactate, acid-base status and the P:F ratio			
Post Surgery P-POSSUM (↑5% mortality defines high risk)	Score		%
Intra-operative fluid requirements documented			☒
Reverse muscle relaxant			
NELA data recorded			☒
Post op destination (circle one)	ICU	SHDU	Ward

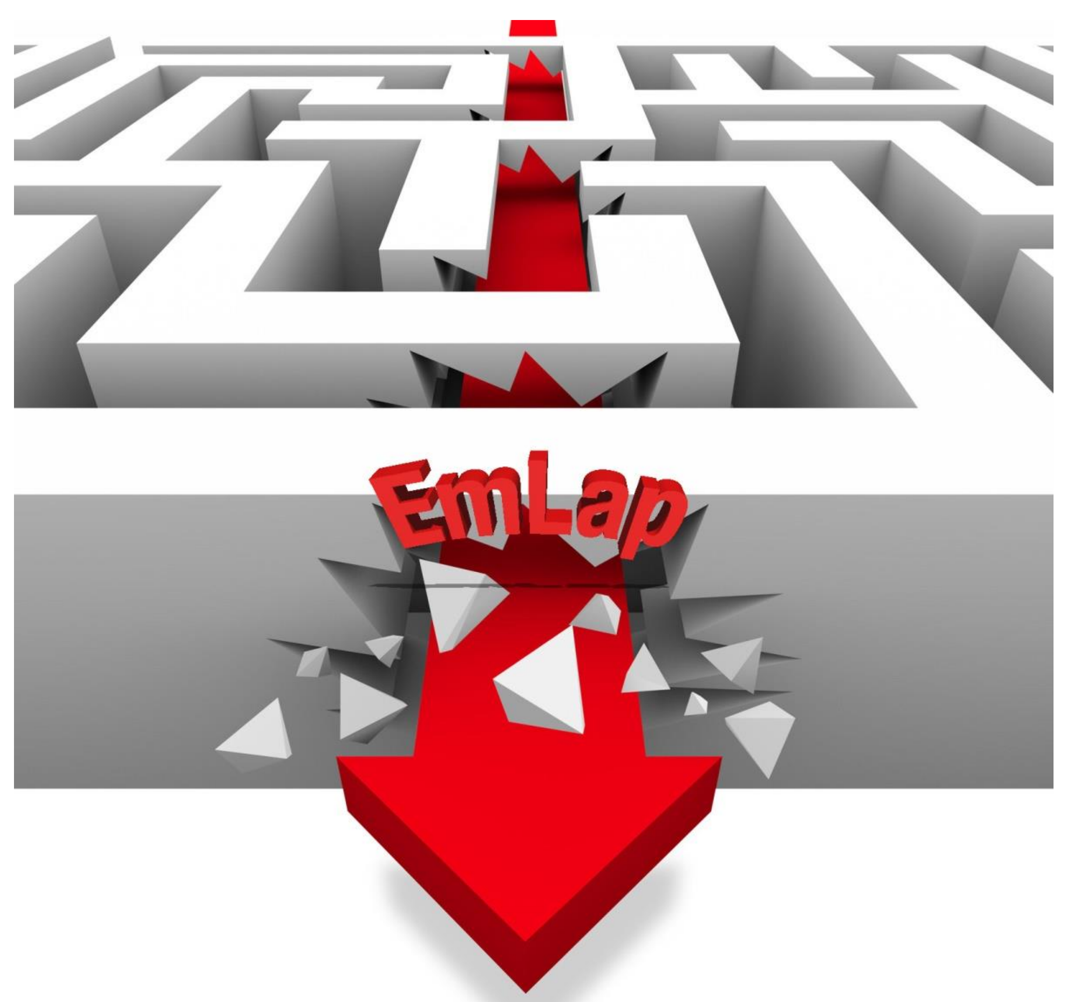
Anaesthetist Name	All appropriate steps complete? *(circle)*		Yes	No
Name	Time :			
Designation	Bleep	Stamp or signature & Registration Number		

EmLap Post-Operative Checklist

Surgical post operative management plan written and includes	Yes	N/A
Antibiotics prescribed		
VTE prophylaxis prescription		
Nutrition plan		

Anaesthetic post op management plan written and includes	Yes	No	N/A
CXR ordered with plan to review			
Post-operative fluids prescribed			☒
Post-operative pain relief prescribed			☒
Post-operative nausea & vomiting prophylaxis prescribed (see medical notes for details)			☒
Post op review completed within 24 hours			☒
If hand over to ICU required systematic hand-over given			

EmLap High Risk Emergency Laparotomy Pathway


EmLap

Senior or Junior Review
CT Scan
Theatre Access
EmLap

EmLap

Common | Patient Based | Order Sets | Search

All | Meds | Labs

Favorites

- Bronchoscopy
- Cardiac Physiology
- Cardiology
- CT Scanning
- Dementia Referral

- [ ] CT Abdomen & pelvis
- [ ] CT Abdomen & pelvis with contrast
- [ ] CT Abdomen & Pelvis with contrast 1hour
- [x] CT Abdomen EmLap
- [ ] CT Abdomen with contrast
- [ ] CT Adrenal Both
- [ ] CT Adrenal with contrast Both
- [ ] CT Angio aortic arch & carotid Both
- [ ] CT Angiogram Aorta

Radiology

Is this request justified? Please view RCR Guidelines

Items in Orange MUST be Entered/Confirmed

Priority Routine

Appt required as?

Clinical Details

Requested By Julian Sonksen, D

Requesting Unit Critical Care - ITU

Active

CT Abdomen EmLap !

EmLap TARGET - CT Scan completed within 2 hours of referral. Report available within 1 hour of scan

The MRCS or Consultant Surgeon must discuss the case directly with a Consultant Radiologist

Monday to Friday 09:00 - 17:00

1. Contact the CT Team Leader on extension 2043 and notify them that a CT-EmLap request is being made.
2. Ask the CT Team Leader to put you through to the Radiologist supervising the list.
3. Inform the Radiologist that you are making a CT-EmLap request, discuss the potential diagnosis and agree the scan required (ensure you obtain their name to complete the request form).

Out of hours and weekends

1. Contact the On-Call Consultant Radiologist via switchboard to discuss the case.
2. The Radiologist will make contact with the on-site radiographer to authorise the investigation.

Name of Radiologist authorising request

LMP Date

Special Instructions

On Pill?

Hysterectomy?

Order & Finish | Cancel | Help

Allows e-tag, and facilitate audit

New OOH Radiology service:

Contact via switch and they will also arrange with radiographer