East and North Hertfordshire NHS
NHS Trust

Lister Hospital

Anaesthetic Departmental Handbook

A Guide to Anaesthesia, Intensive Care and Labour Ward

February 2024

Version 2.1.1e



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Guide to the Anaesthetic Department

Guide to the Anaesthetic Department

Welcome to Lister

Welcome to Lister Hospital! The anaesthetic department here is a very friendly one (of course we would say that). We hope you have a thoroughly enjoyable time with us, learn lots and can help us to deliver high quality patient care. This handbook aims to give you some of the essential information you need.

Who's who

There are a large number of consultants, staff grade doctors and clinical fellows within the department. A full list of these, along with photos can be found in the appendices (so that you know who you are looking for when you do a list with someone for the first time). Some key departmental people are listed below:

Clinical Director *(anaesthetics)*:	Dr Kathryn King
Deputy CD *(rota)*:	Dr Gary Yap
Deputy CD *(clinical governance)*:	Dr Pranav Kukreja
Clinical Director *(critical care)*:	Dr Sunil Grover
Deputy CD (critical care)	Dr Sunil Jamadarkhana
Departmental clinical leads	See Appendix

Anaesthetic Service Coordinator:	Danielle Pullinger
Assistant Service Coordinator: *(Leave, Sickness)*	Debbie Matthews
Clinical Lead Coordinator:	Sarah Wright
Secretary: *(Critical care & Anaesthetics)*	Debbie Matthews
College Tutor: *(Core Trainees)*	Dr Hassan Iqbal
College Tutor: *(Specialty Trainees)*	Dr Henry Reynolds

Essential telephone numbers and contacts

Phone numbers / extensions		**Bleeps**	
Anaesthetic office	01438 28 4086 *(x4086)*	Anaesthetic Senior Registrar	b 1102
Anaesthetic office (mobile)	****	Anaesthetic Theatre SHO	b 1077
Debbie	****	Anaesthetic Float	b 4087
Theatre coordinator (Band 7)	****	ODP: main theatres	b 1388
Co-ordinating Anaesthetist	****		
		ITU Outreach Consultant ICU SpR (out of hrs)	b 1394
ITU North / Central / South	x4325 / x4085 / x5650	ITU SHO	b 1104
Coffee Room	x5449	ITU NIC	b 5594
Consultant's office	x4538	CCOT	b 1663
		Obstetric Anaesthetic Registrar	b 1056
Door Access codes		ODP: maternity	b 1360
Seminar room	****		
Trainee room	****	Transfusion / Haematology	b 1005 (x5245)
Stairs to sluice	****	Biochemistry	b 4690 (x5461)
ITU staff room	****	Porter	b 1100 (x5311)
(PCA / Epidural codes)	Lv1: **** | Lv2: ****	Radiographer	b 5411

A list of further phone numbers and bleeps can be found in the appendices or by using the '***Induction***' app, which can be downloaded from either the Apple or Android app stores.

Hospital orientation

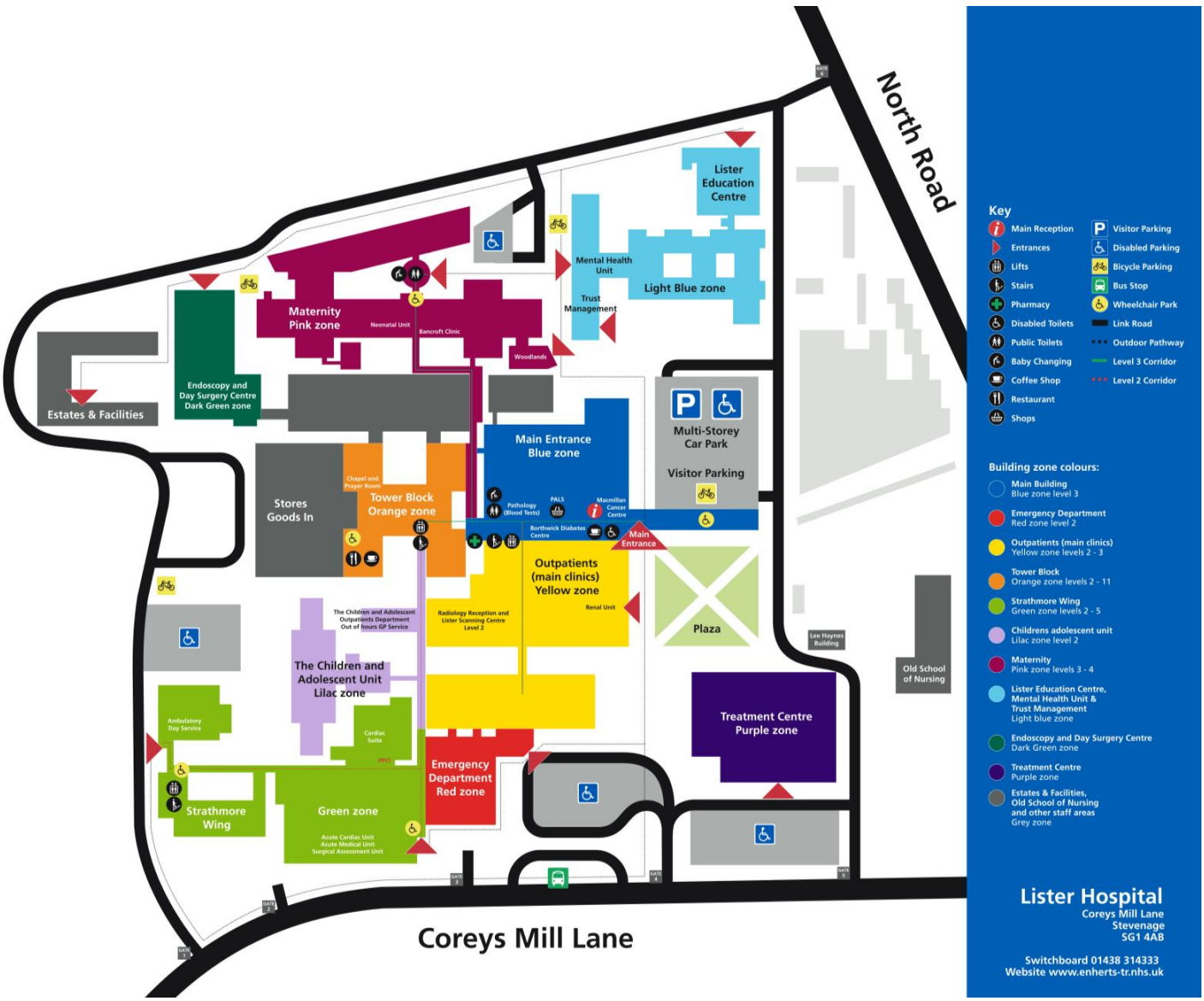
Lister Hospital

Lister hospital is divided in to a number of zones on various floors (or levels). The following places can be found on the following levels:

Level 4: Theatre complex: main theatres, recovery and day surgery unit (DSU)
The anaesthetic department (next to theatres)
Intensive Care divided in to North, Central and South (Orange zone)

Level 3: Main entrance, Shop, Costa Coffee, other outdoor buildings (Education centre)
Maternity unit (Pink zone)
Outpatients, MRI scanner

Level 2: Children's and Adolescent Unit and Bluebell ward (Lilac zone)
A&E (Red zone), Radiology (Yellow zone), Cath labs (Green zone)
Acute coronary unit, located on the first floor of the Green zone
The link corridor to the Treatment Centre



Finding your way around: Level 4

This is where we spend the majority of our time. It contains main theatres, Intensive care, the Day surgery Unit (DSU) and the anaesthetic departmental offices.

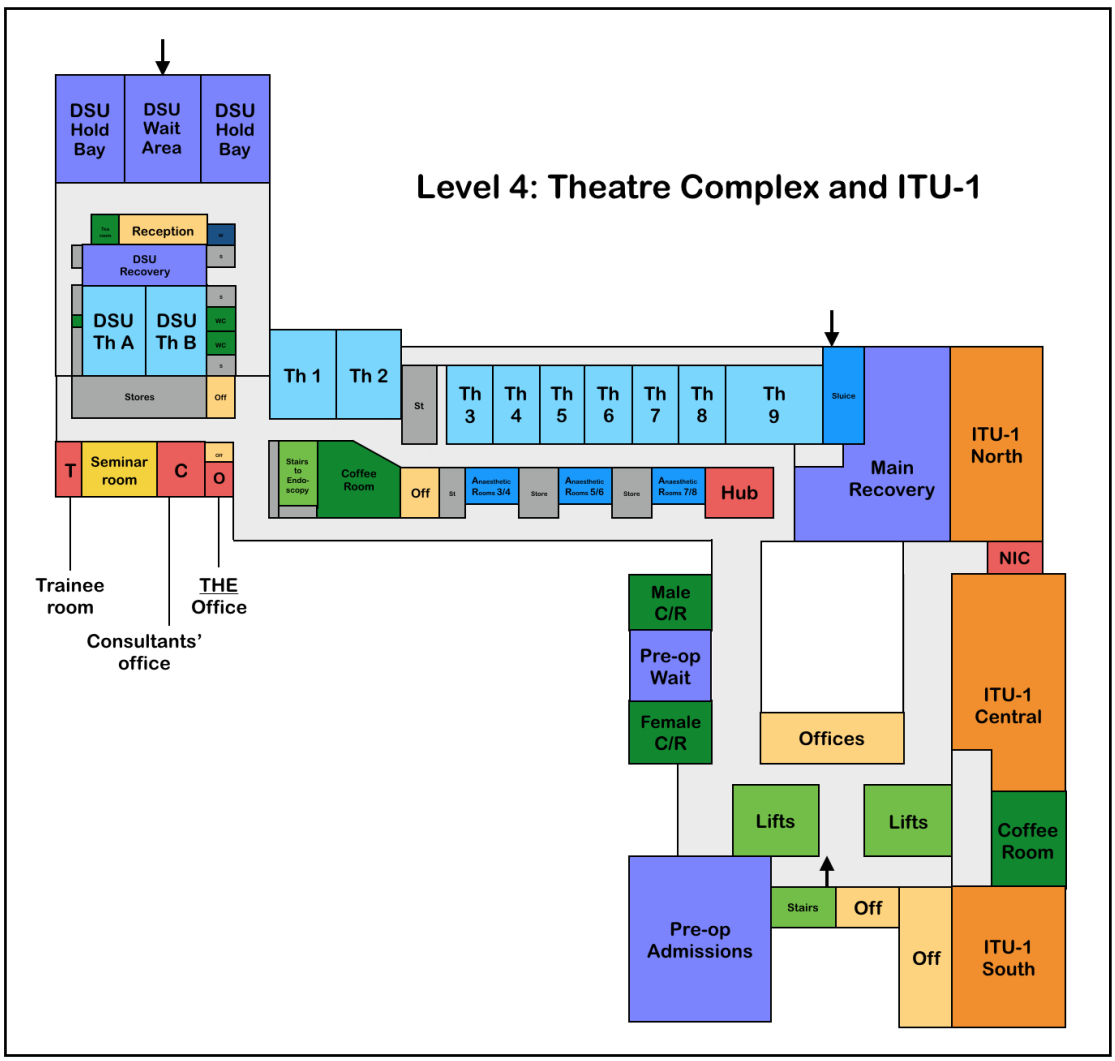
Main theatres are separated from the anaesthetic rooms by the main corridor, with the exception of Theatres 1 and 2 which are conjoined. There are 9 main theatres which largely host particular surgical specialities, as listed below. The theatres' coffee room (with a supply of tea, coffee and milk) is at the end of the corridor (adjacent to theatre 2).

DSU has two theatres and has its own areas for admission and recovery of patients. The corridor from Main theatres in to DSU also has the most conveniently located toilets!

The main anaesthetic offices, including the admin office, consultants' office and trainee room are situated at the end of the main corridor near DSU.

Changing rooms can be found on the corridor between the Tower block (which has access to the main stairs and lifts); scrubs are freely available here. ***ITU*** (divided into North, Central and South) can also be found in the Tower block.

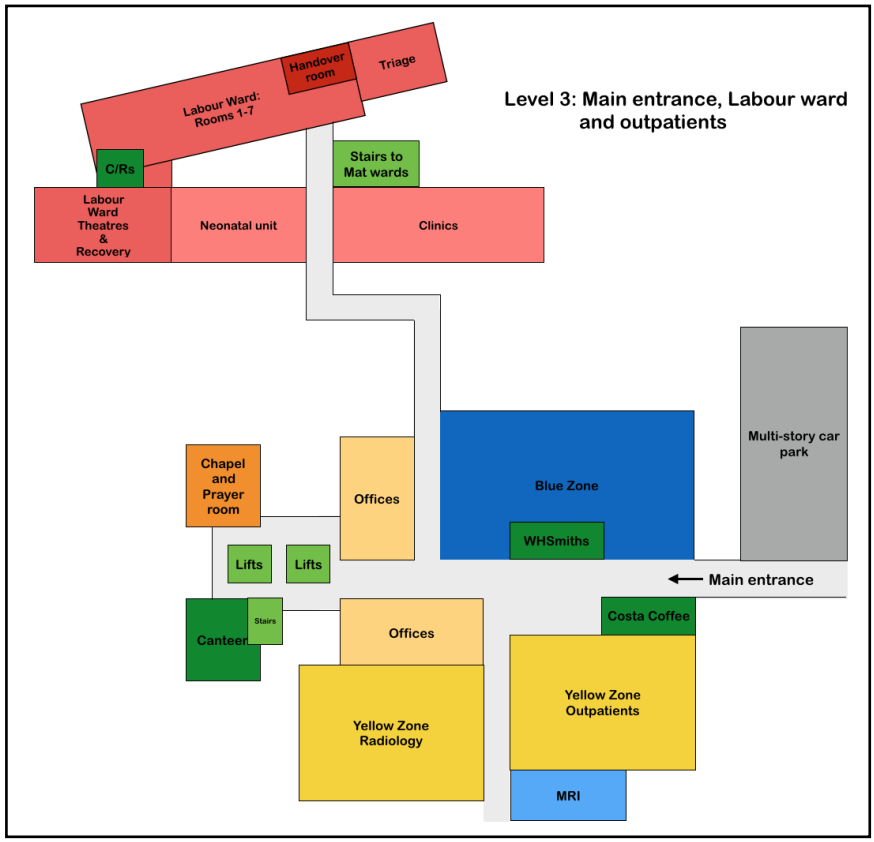
The main stairway and lifts located in the tower block provides the easiest access to Levels 2 and 3 and provide access to the Tower wards.



Theatre specialities

Th 1:	T&O
Th 2:	T&O
Th 3:	Gynae
Th 4:	Plastics
Th 5:	General
Th 6:	Urology
Th 7:	**Emergency**
Th 8:	ENT
Th 9:	Vascular

Finding your way around: Level 3



Level 3 is the ground floor of the main hospital. The main clinical areas which you will likely need to go are:

In the Pink zone:

- ***Labour ward*** and obstetric theatres (in the pink zone)
- The ante-natal ward (***Dacre***) and post-natal ward (***Gloucester***)
- The ***Bancroft clinic*** (obestetric pre-assessment clinic)

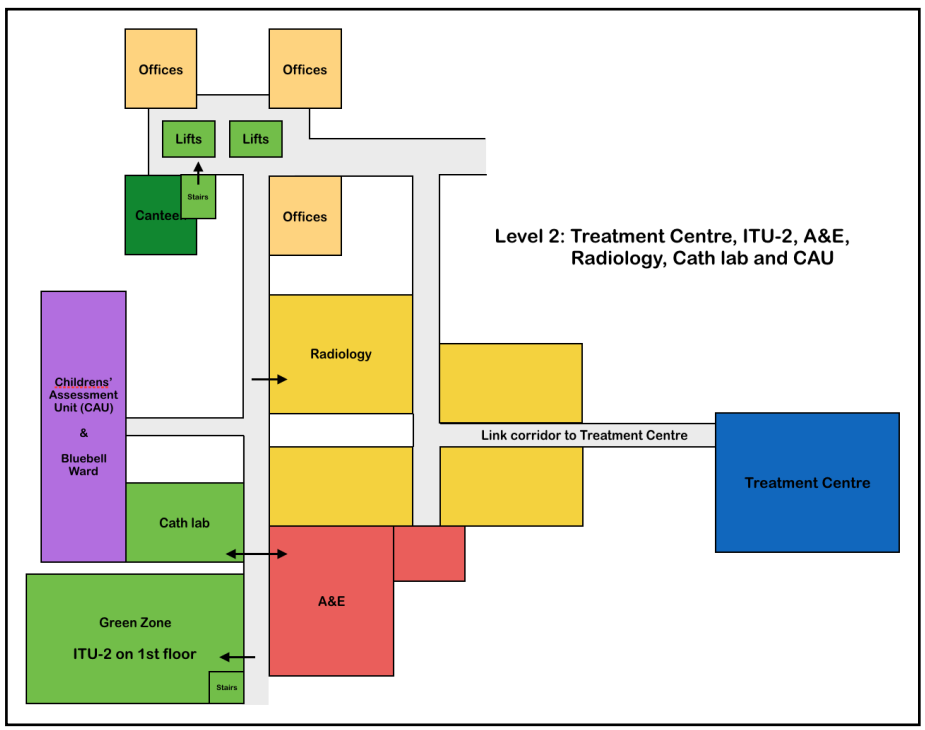
In the Yellow zone:

- ***MRI***

Level 3 also has:

- Costa Coffee
- WHSmith
- A cash machine (at WHSmith)
- Access to the canteen
- Prayer rooms

Finding your way around: Level 2



Level 2 has access to a number of clinical areas, including:

- The ***Treatment Centre*** *(inc. Procedure rooms 1+2)*
- ***ACU (acute cardiac unit)***, in the Green zone (1st floor)
- ***Cath lab***, in the Green zone
- The Paediatric wards (***Bluebell*** and ***CAU***) in the Lilac zone
- ***A&E***, in the Red zone
- ***Radiology*** and CT in the Yellow zone

Level 2 also has:

- The canteen
- The resus team, who can be found in an office near the canteen

Finding your way around: The Treatment Centre

The treatment centre can be a bit of a maze. The **link corridor is found in the Yellow zone on Level 2** (see above map). At the end of this corridor is a lift and stairs up to **Level 4**, where the following are found:

Changing rooms: These are found (along with scrubs) near the entrance to the link corridor

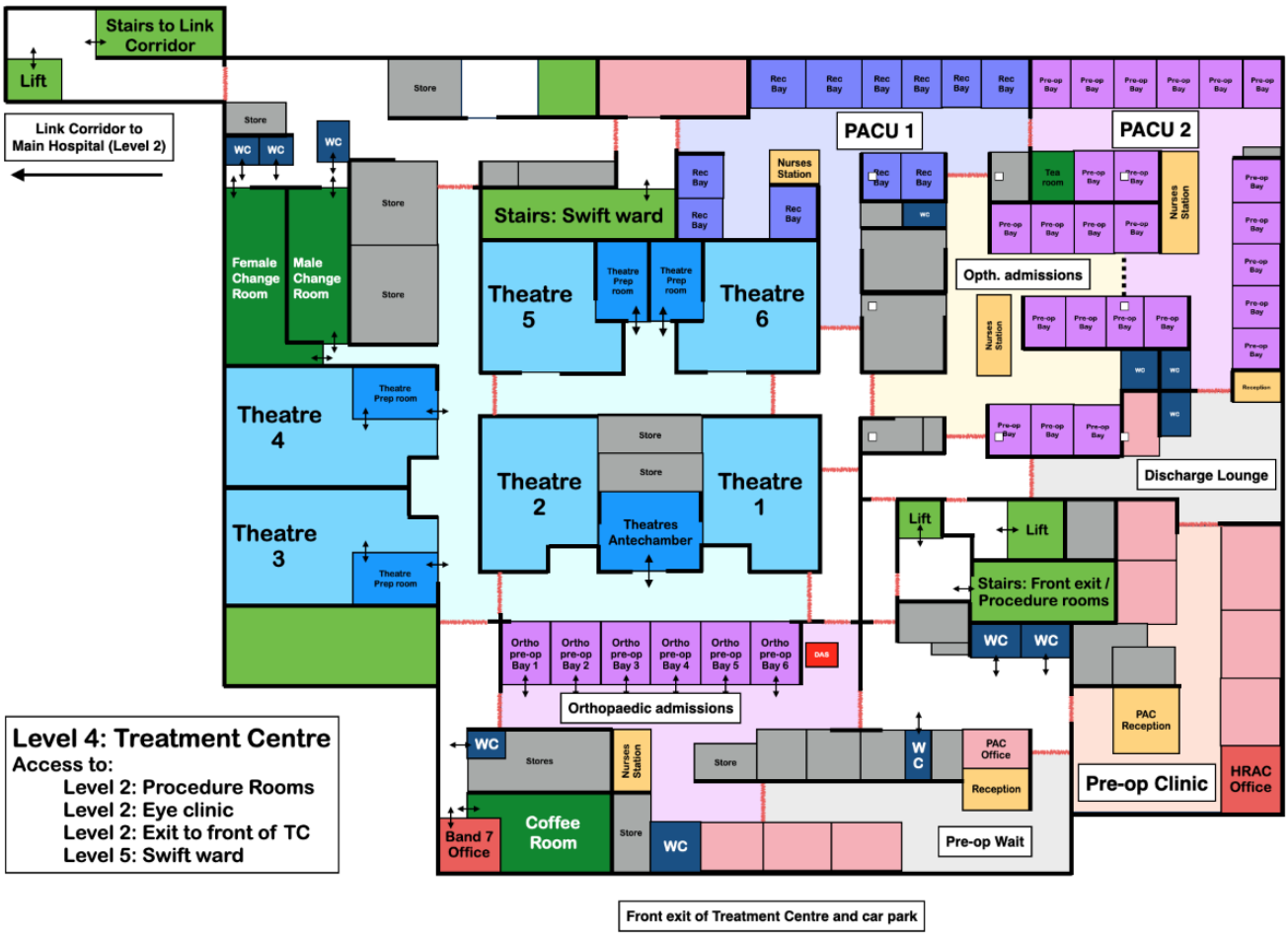
Theatres:

Theatres 1 and 2:	Orthopaedics
Theatres 3, 4 & 5:	Urology / General Surgery / Gynae / ENT
Theatre 6:	Ophthalmology

PACU 1: This is the main recovery area for theatres
PACU 2: This is where non-orthopaedic/ophthalmology patients are admitted pre-op
Ortho admissions: This is where orthopaedic patients are admitted pre-op

Pre-op Clinic: This is where patients come for their nurse led pre-operative assessment and HRAC (High Risk Anaesthetic Clinic) appointments

Coffee room: This is found at the end of the corridor with Theatres 3 & 4



Stairs to Level 2: These can be found on the bottom right quadrant of the map and lead to the **Procedure rooms (1 and 2)**, Eye clinic and the **front entrance** of Treatment centre

Stairs to Level 5: These are found between PACU 1 and the link corridor and lead to **Swift ward**

Departmental orientation

The working day

Anaesthetic days start at 08:00. Morning lists start at 08:30 and afternoon lists at 13:30. It is important to be changed and ready to start seeing patients at 08:00 or 13:00. The consultants will normally also be there then. Team briefs typically take place 5-10 minutes before the list starts.

The anaesthetic day ends at 17:00, though of course you will not be prevented from staying if there is a particularly interesting case on the table!

Those trainees working the evening shift in ITU or Labour ward, should let their consultants know in advance that they will be required to attend handover in those locations at 16:00 and 16:30 respectively.

Where you will work

During your theatre block you will be assigned to a number of different lists. Patients will arrive in different areas depending on where you are assigned:

- **Main theatres:** *Located on Level 4*
  - ***Patient lists are kept in the Theatres hub*** (opposite Th9 Anaesthetic room)
  - ***Patients normally come to the Admissions Unit***. Each theatre has a separate trolley with all of the notes for that day and there are whiteboards that tell you where to find each patient

- **Treatment Centre:** *Located on Level 2 via the link corridor (see map)*
  - **All non-orthopaedic admissions come in to *'PACU 1'***. When you arrive there is a red folder with all the printed lists for each theatre on the nurses' station.
  - ***All orthopaedic patients come in to a separate orthopaedic admissions area,*** near the coffee room, where the notes can also be found

- **Trauma List:** Located in Main Theatre 2 (normally) on Level 4
  - **The patient list is kept in the theatres hub.** The night team should have seen at least the 1st patient, so that you are able to go to the trauma meeting
  - **The patients will either be inpatient, in ED or coming in from home**
  - **It is important to attend the Trauma meeting** at 08:00 in the anaesthetic seminar room (Level 4) to find out about the patients on the day's list

- **Day Surgery:** Located on Level 4
  - ***The patient list is found at the DSU internal reception area***
  - ***Patients come in to the Day Surgery Unit cubicles***
  - ***The notes are found at the patient bedside***
  - ***Day surgery patients have a paper drug chart (rather than electronic)***

- **Emergency List:** Located in Main Theatre 7 (normally) on Level 4
  - ***Meet the on-call team from the previous shift at the theatre handover board*** (in the theatres hub). They will hand over the details of the patients that have been seen and let you know which still need to be seen

- **MRI / Radiology**: These are located on Level 3 and 2 respectively of the Yellow zone.

Occasionally you may have the opportunity to travel for lists that are not on the main site:

- **One Hatfield** hospital: A private hospital that does NHS lists: www.onehatfieldhospital.co.uk
- **Pinehill** hospital (Hitchin): A private hospital that also does NHS lists: www.pinehillhospital.co.uk
- **Hertford/QE2** hospitals: Some pain lists happen here: www.enherts-tr.nhs.uk/hospitals/

Details of working in ITU and Labour ward are covered in their own sections of this guide.

Other useful places/things

Rest areas: There are communal coffee rooms in main theatres, opposite Theatre 2, and in the Treatment centre at the end of the Theatre 3/4 corridor. These have tea, coffee and (usually) milk, as well as toasters and microwaves.

The trainee room is located at the end of the corridor opposite the main theatre corridor and the seminar room (same corridor) can be used for small meetings if not being used.

Printers: There are printers located in the room next to the theatre hub and in the anaesthetic office. You will need a printer code to access the printers (obtained from IT). Select the 'Follow me' print option when printing and you can use your printer code to print from any printer

Emergency equipment / drugs

For the rare circumstances you may need them, the following items can be located in the following places:

Main theatres and Day Surgery:

Difficult airway trolley:	This is found outside the ***back of the Theatre 7 anaesthetic room*** and contains a variety of airway equipment, including an AmbuScope for fibre-optic intubation. Videolaryngoscopes (McGrath) are readily available for routine use and can be provided by the ODP
Scalpel for FoN access:	A size 10 blade can be found on ***the wall of every anaesthetic room***. For use in FONA. Instructions for this technique can be found in the Emergency Guidelines appendices of this handbook
Dantrolene	Found in ***main recovery***
IntraLipid	Found in ***main recovery***

Treatment Centre:

Difficult airway trolley:	This is found on the corridor just outside the orthopaedic admissions area and contains a variety of airway equipment, as listed above for main theatres
Scalpel for FoN access:	A size 10 blade can be found on ***the wall of every theatre near the anaesthetic machine***. For use in FONA. Instructions for this technique can be found in the Emergency Guidelines appendices of this handbook
Dantrolene	Found in ***PACU-1 Pharmacy room***
IntraLipid	Found in ***PACU-1 Pharmacy room***

Rota allocation

The college tutors will meet with you early to determine what training requirements you might have for your time at Lister hospital. Based on this, you will be assigned a number of 'modules' (such as obstetrics, Intensive care, ENT, etc.). The lists you are placed on will reflect these modules, though you may find that you work on a number of lists unrelated to your assigned modules.

Dr Gary Yap is the rota co-ordinator and has the final say. Dr Matt Morris helps to organise and sort out allocations. They will allocate trainees to lists based upon their training requirements and the service needs of the department. Those doing pain clinics may find themselves at the QE2/Hertford.

Rota allocations can be checked using CLWRota, which is available either online or as an app (that can be downloaded from the Apple or Android app stores). CLWRota also allows you to check your allocation of leave, on-call sessions and also provides access to contact any member of the department (consultant or non-consultant anaesthetist). It is best to check before the start of your list as there can be last-minute changes (The app can notify you of these changes albeit delayed). You will be provided with a username and password to this on induction. Access on-line can be found at: https://enherts.clwrota.com

If you have any concerns about the mix of lists you are being assigned, please speak to Dr Matt Morris in the first instance (he is very helpful and accommodating), but please contact either your educational supervisor or college tutor if there are difficulties.

On-call / Service Provision

The on-call system

Out of hours there are 5-6 anaesthetists resident on call at Lister hospital. This team consists of:

On-Call team member	Bleep Number	Roles and Responsibilities
Theatre SHO	#1077	- Emergency List - Cannula Calls - Pain Management – PCA Pumps, Epidural reviews and troubleshooting
Senior Registrar (SR)	#1102	- Primarily supervising Theatre SHO with emergency list - Provides anaesthesia in remote sites and available open second theatre on labour ward if required. - Generally available as means of support to others, both on ITU and on Labour ward
ITU SHO	#1104	- Based in ITU with ITU registrar - Attends Cardiac Arrests + Trauma Calls
ITU Registrar	#1394 (held by the Outreach Consultant AM)	- Based in ITU with SHO - Attends Cardiac Arrests + Trauma Calls - Responsible for ITU referrals - Supported by Senior Registrar
Obstetric Registrar	#1056	- Responsible for maternity - Supported by Senior Registrar
Float (extra tier)	#4087	- Helps out where required (directed by SR) - Non-permanent tier; when extra support needed only

These different tiers are allocated by the college tutors (Drs Henry Reynolds and Hassan Iqbal) taking into accounts of skill mix, your training requirement, and the department's needs.

The on-call rota operates on an eight week rolling timetable. Within that eight weeks you will have four weeks where you will do 7 nights and 7 long days, followed by four weeks of normal (standard NWD) days. The department aims to provide you with a copy of this rota 6 weeks in advance.

Duty hours (on-call):

	Long Day shift (LD)	Night Shift (N)
Theatre SHO / Senior Registrar	08:00 – 20:30	20:00 – 08:30
Obstetric Anaesthetic Registrar	08:00 – 20:30	20:00 – 08:30
Float Registrar	08:00 – 20:30	20:00 – 08:30
ITU SHO / ITU Registrar	08:00 – 21:00	20:00 – 09:00

The on-call doctors are a team

Despite the job roles listed above you are expected to be flexible and endeavour to lighten the workload for one another. Please be prepared to be asked to cover other responsibilities if / when appropriate as decided by the consultants.

Consultants on call

There are two consultants on call: one for ITU (including for sick children) and one for general theatre emergencies (including cath lab, obstetrics and other '*out of theatre*' cases). Before each on call shift, find out who the consultants on-call are for theatres and ITU is. It is good practice and makes it easier in an emergency!

Shift Handover:

For the **theatre team, handover occurs at 08:00 and 20:00** in or around Theatre 7 or next to the whiteboard in the main theatre hub (opposite the anaesthetic room of Theatre 9).

The night theatre team should aim to see as many patients as they can for the morning emergency and trauma lists. Typically the Senior Registrar will see the trauma patients and the Theatre SHO will see the emergency cases. We suggest starting pre-assessment of patients before 07:00. Liaison with the patient's parent team should occur where necessary to ensure the patient is ready for theatre. It is the responsibility of the doctor who has pre-assessed each patient to hand over the information to the incoming day team.

For the **ITU team, handover occurs at 08:00 and 20:00** in the ITU doctors' office, which is located in a room just outside the main entrance to ITU Central and ITU South (near the tower lifts).

For the **Obstetric anaesthetic registrars, handover occurs at 08:00 and 20:00** in the obstetric anaesthetic office, unless there is a case in obstetric theatre.

Swaps

If you need to swap your 'on calls', please be aware that **it is your own responsibility to find cover**. Please adhere to the general rules listed below. Please ask Danielle Pullinger if you require any clarification.

- **Please e-mail the Departmental swap e-mail about any swaps**
- Please also copy the email to your fellow 'swapees' - this is to ensure both parties' agreement
- Please remember that a swap means that you inherit the working commitment of the person you have swapped with and not that you drop your commitment only
- You will then receive a confirmation email within two weeks - if you don't receive this, please resend your original email
- **When swapping night shifts please let us know the arrangement of the off days associated with the night shifts, at the time you send the swap details**
- When making swaps for nights, the off days must be considered as all shifts must be either worked or covered by an approved official leave e.g: if you swap a night with someone who is working a day shift the following day, you will either need to work their day shift for them or take leave
- Please also consider that if you pick up an extra night shift swap for someone else, the department does not give you an automatic 2 days off of post night recovery as the swap is your decision
- Please include the tiers of on-call that are involved in your swaps (e.g. ITU, Obs, etc.)
- The closing date for the swap is **generally** the Thursday 4 weeks in advance (e.g. for swap in the week commencing 4th September, the closing date is 10th August). However, we try to accommodate if possible
- For any last minute swaps, you will need to get permission directly from the rota co-ordinator, Dr Gary Yap.
- While it is possible to swap on-call shifts with a colleague to facilitate leave, it is important to note that **novice anaesthetists can only swap shifts with other novices** (else the skill mix of on-call shifts becomes adversely affected)

Leave information

Annual Leave

Leave entitlement:

Entitlement for leave is dependent on grade and number of years of service to the NHS. Typically (but also subject to individual circumstances):

- Up to ST3: 27 days per year (pro rata)
- ST4 and above: 32 days per year (pro rata)

If you have to complete your e-learning in your own time you will receive 0.5 Lieu days for this. You will be given a blue form by the Education Team to confirm this. You will get your 0.5 lieu day only when you submit this form to the office.

Procedure:
All annual leave requests should be applied for via email and will be processed in strict order of receipt. Leave must be booked with ***6 weeks' notice*** apart from exceptional circumstances and never once the rota has been finalised and you are rostered into a list. Annual leave must be booked as above and will be confirmed via a notification from the CLW rota. If there is no space available in the leave diary the office will let you know as soon as possible. It may take up to a week to respond to your request but is usually sooner than that.

Please remember that your leave requests are only **requests** until you receive confirmed approval so please do not book any flights, holidays, weekends away etc. before you have received confirmation.

Critically Important information:
Please book your leave as early as possible. Historically it is common for many people to leave booking their last days/weeks of leave until the end of the rotation or leave year. At this point there is often no space left in the leave book; if this happens, you lose your leave. **Don't let this happen to you**. Book your leave **NOW!**

Note: Annual leave entitlement for deanery trainees is calculated from the start date and runs for 12 months at a time (e.g. August – July or February – January). So, for example, if you start in August with 25 days annual leave, you should have used these 25 days by the end of July the following year. There is the potential to carry forward 5 days in to the next year; all other days will be lost.

Study Leave

Leave entitlement:
Deanery trainees are entitled to a total of 30 days per year (pro-rata). This includes 5 days of private (exam) study leave every 6 months to be taken directly prior to the exam.

All study leave must be booked via the above leave email ***AND*** backed up with a complete S/L form and supporting evidence of the training you are attending. We have provided an infographic in the appendix detailing the study leave process. You can locate the S/L form on this infographic as well as on the intranet. We also keep some copies in the cabinet in the trainees' office and in the main office. Preferably, send an electronically filled form to the email above to help with saving paper and the environment.

These ***must*** be approved by your education supervisor or college tutor (via a signature on the form)

Procedure:
Please submit a study leave form with details of the course/exam/study leave you wish to apply for. Please also submit a S/L request to Debbie via the e-mail above. All study leave ***must*** be submitted on the correct form or it will be returned to you. All study leave must also be accompanied by some form of evidence of the exam/course. If no accompanying evidence is submitted the application will be returned to you. A complete application will then be approved in the leave diary via the office, then signed off by your college tutor before the leave can be submitted to the Education Centre. In precis, submit your S/L application on paper ***AND*** on to Debbie. Any S/L applications with either of these processes missing will simply not be booked and you will not be able to attend.

Most importantly we want to support your learning and progression and in no way wish to impede the booking of your study leave. We are bound by certain Trust procedures and as long as everyone follows the proper processes we have no problem with granting as much leave as you need.

Note: there is a separate study leave process for non-deanery trainees, clinical fellows and SAS doctors. Speak to Debbie. She will give you two forms to complete: a study leave form to book leave and a separate expense form to claim back expenses.

Sick Leave

If you are unable to come to work due to sickness, **YOU MUST do the following:**

1) **Contact the department as soon as possible by calling 01438 284086** and speak to someone in the office or leave a message on voicemail, whatever time of day or night.
2) **Also contact the Co-ordinating anaesthetist to let them know you are unable to work:**
    a. **In normal hours (08:00 – 17:00), please contact the Co-ordinating anaesthetist** (usually a consultant) on the duty phone: ****
    b. **Out of hours (17:00 – 08:00), please also call the Senior Registrar** on their mobile (which can be found on CLWRota).
3) **As courtesy, please also send a message to the consultant you are working with**

It is your responsibility to inform the department of your absence by 07:30 hrs on the morning of your first day of sickness. ***DO NOT SEND AN EMAIL.***

Please note that if you do not inform us in a timely manner, we are obliged to call you to check if you are ok. If we cannot get through to you, we will then call your next of kin. If we still are unable to get in touch, we will have to inform the police. Clearly, we never wish to do this as the only circumstances in which we would expect to do so is if you are incapacitated.

If your sickness continues past Day 1 you will need to inform us on a daily basis of your sickness status. It is imperative that you inform us when you are fit to return to work even if this is an off day as this is the point at which your sickness period ends. If you are off sick and then go on 3 weeks annual leave and don't report that you are fit and well before you're a/L, you will be recorded as sick for the whole 3 weeks! On your return to work you will need to complete a Return to Work form and have this signed off by a Clinical Manager.

For all other leave (Bereavement, Carers, Maternity/Paternity, Unpaid Leave, etc.) please refer to the Trust Intranet on the HR pages for complete policies.

Training / Education

SHO Teaching

Core trainees (and ACCS) are required to attend a weekly in-house teaching, usually held on Wednesday mornings (time and day may vary). They are organised by Dr. Mo Chaudhury. There will be a senior doctor overseeing each session. The topics are set in advance. Usually, trainees are required to do a short presentation to contribute to the teaching. You are not required to book study leave for this; you will be automatically allocated. Please allocate yourselves on to the teaching for those that are attending. Minimum is 2 people teaching, although if a topic is larger, then you may divide the topic amongst more of yourselves. Please liaise with the senior doctor leading the teaching. Please use the link or QR code provided:
https://tinyurl.com/listeranaestheticscoreteaching

Once you have passed the Primary FRCA (written + viva), you should attend Registrar Teaching instead.

Registrar Teaching

Registrar teaching is held on site on Thursdays and is organised by Dr Sachin Navarange. This is open to all trainees who have passed the Primary FRCA exams.

There are also regional teaching days organised by the individual school. Please note that you must apply study leave to attend. We try to accommodate as many requests as possible.

East of England (regional) Teaching

Regional teaching is held once a month, the details will be given to you in a separate induction (dates are normally available from the EoE Anaesthesia website). **You will need to book study leave for these dates.**

Educational Development Time

We have now incorporated Educational Development Time (EDT) into the rota (2hrs /week for Stage 1 & 2, 4 hrs/week for Stage 3) - this is on-site and for project / professional work re approved by ES.

Unit of Training Sign-offs

As part of your training at Lister hospital you will be allocated a number of modules which you will work towards completing. These modules should allow you to get various HALOs (units of training) signed off.

Sign-off for each particular HALO is dependent upon meeting the requirements for that module. Please see the relevant section in the 'Guide for Anaesthetists in Training' for more information, including the nominated consultant for each HALO sign off. These HALOs should also have been discussed with your ES.

TEG Training

As part of the departmental induction, you should complete the training on using the TEG machine and interpreting its results. This is an incredibly useful skill to have and will make you invaluable during a major haemorrhage!

To complete the TEG training, please use the QR code or log in directly to the ENHT Academy: https://academy.enherts-tr.nhs.uk/login

Clinical Governance Rolling Half Days (CG RHD)

There are 10 sessions per year, once a month except for January and August. These meetings are usually themed (e.g. paediatrics, trauma, etc.). Please speak to Lauren Sowden as to which consultant is leading the meeting if you have something interesting to present. Lauren will send out the agenda one week in advance. Please note that they are usually held in the anaesthetic seminar room.

Intensive Care Educational Opportunities

All Intensive Care meetings are held in the MDT room on ITU-2. All trainees are welcome to attend these. There is a complete timetable to these sessions in the handbook section on 'Intensive Care', but below are a few worth highlighting:

Intensive Care Teaching: This is on ***Tuesdays*** from ***12:30 – 13:30. Everyone is welcome to attend***. As there is no separate Intensive Care teaching within the core trainee or primary teaching sessions, it is well worth core trainees doing their best to attend these teaching sessions

ICU M&M Meeting: This takes place on ***Mondays*** at ***14:00***. This is organised by the consultant of the week (or Kate Flavin), who chairs the meeting and will allocate cases to trainees to present

ICU MDT Meeting: This takes place on ***Thursdays*** at ***13:30*** and is organised by Phil Tolson (the lead physiotherapist)

ICU Radiology Meeting: This is chaired by Dr Jain (consultant radiologist) and is held on ***Tuesdays*** at ***12:00***

ICU Journal Club: This takes place on ***Fridays*** at ***13:30*** and is organised by a senior trainee.

Simulation Training

Various simulation trainings are organised throughout the year by the simulation faculty. They are generally themed (e.g. Obstetrics, airways, etc). You will be given opportunity to attend as candidates appropriate to your level of training. If you are interested to join the faculty, please contact Dr Ewe Teh (Simulation Tutor).

Lister Education Centre (LEC)

This is located at the back of the hospital. You will find the library in here as well. There is also a skills room with a Laerdel SIMMAN.

Pastoral support and wellbeing

It is very important to us that all trainees feel well supported and safe during their time at Lister hospital. The health, wellbeing and psychological welfare of all staff who work in our department is a top priority.

Anaesthesia and intensive care medicine can be challenging and stressful specialities to work in. Additionally, there are times in our lives when, for whatever reason, things are difficult. It is important to remember that seeking support is a sign of strength and maturity and we would encourage anyone who feels they are struggling to turn to one of the many sources of support to help them. ***Remember: it is okay not to be okay!***

Local support options

- Talk to ***anyone you feel comfortable talking to***. That could be another trainee (your mentor is a good first option!), a consultant that you trust or another member of staff
- Your ***Educational Supervisor*** or ***College Tutor*** are always available to discuss difficulties. The college tutors are happy to be contacted directly, either in person, by message or e-mail:
  - Henry Reynolds (STs): **** ****
  - Hassan Iqbal (CTs): **** ****
- Outside of the department, the ***Director of Medical Education*** is also available for support:
  - Kavitha Chawla: **** ****
- Occupational Health

Training school support

- The ***college tutors*** are the schools local representative but there are a number of people above them in the school hierarchy should you are not getting the help you need from them
- The school ***Training Programme Directors*** (TPDs) are a valuable source of support, particularly with issues that impact on training and career development. Aki Pathmanathan is a TPD based here at Lister and is incredibly approachable. He is very receptive to hearing from trainees that require support or feel they need to talk
- Above the TPDs sit ***the Regional Advisors*** (RAs) and ***Head of School***

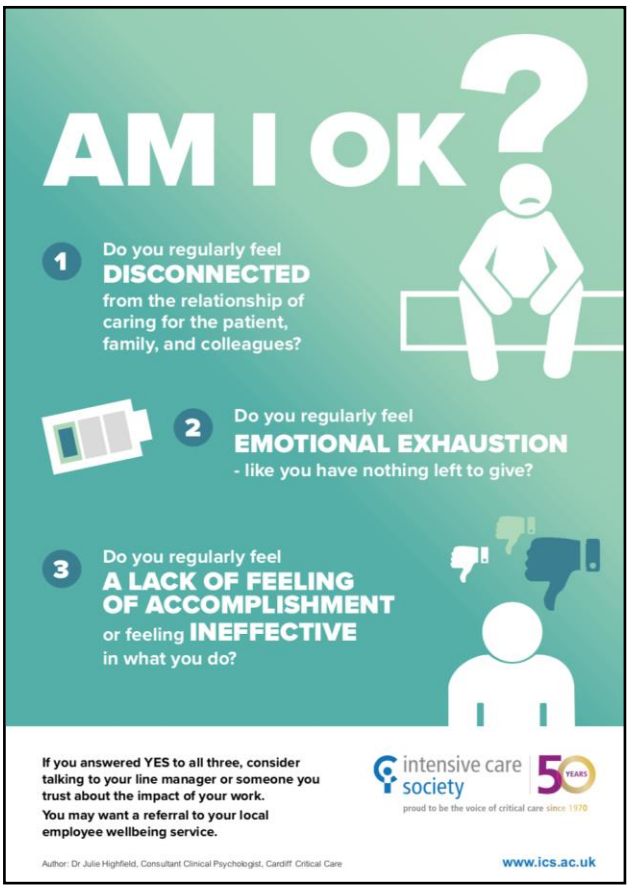
Professional support organisations

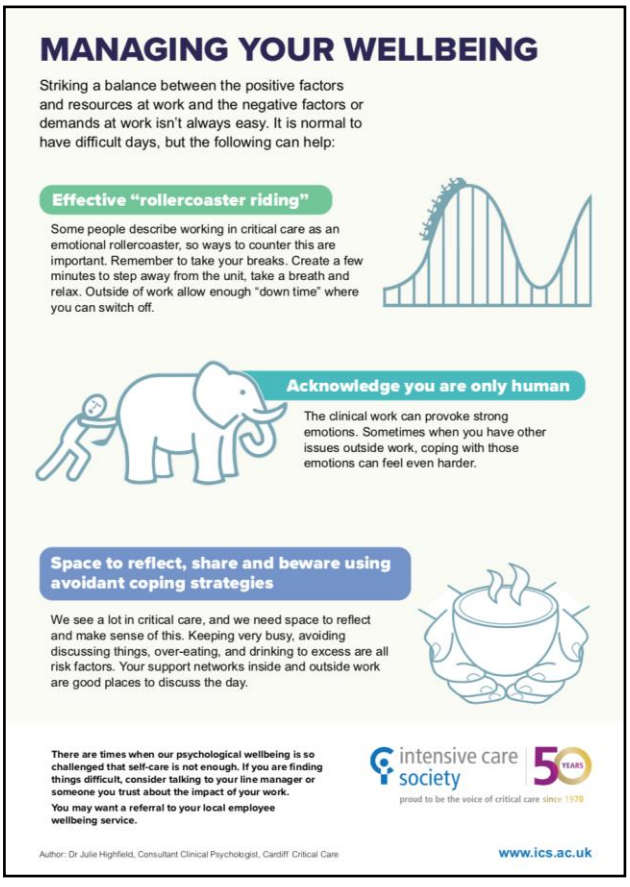
There are a number of support organisations available to support trainees through a multitude of issues. These organisations are increasingly accessible, offer confidentiality and can normally be accessed through self-referral. A list of organisations can be found at: https://www.rcoa.ac.uk/training-careers/training-anaesthesia/support-wellness. Two excellent sources of support are:

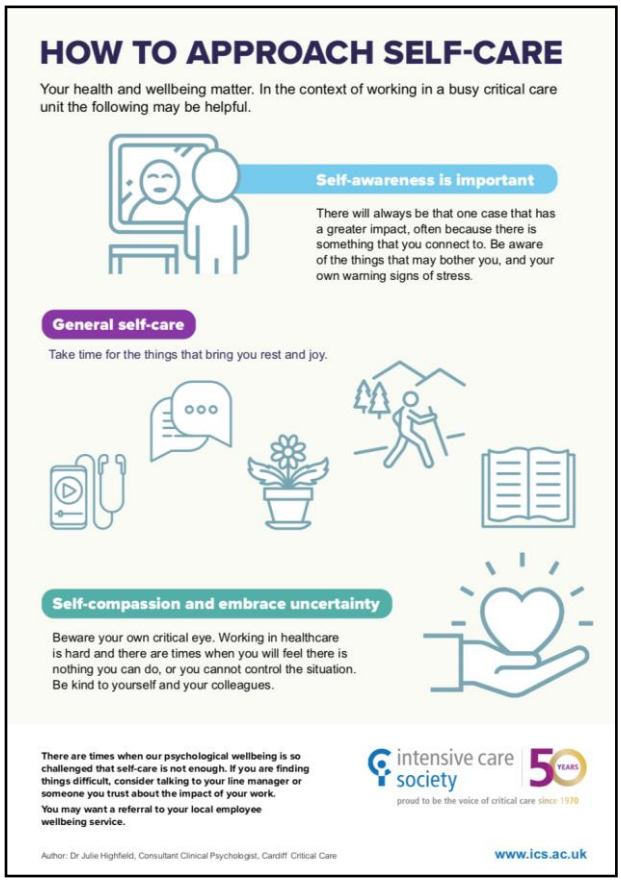
NHS Practitioner Health: The Practitioner Health Programme (PHP) is a free, confidential NHS service for doctors and dentists across England with mental illness and addiction problems. The service can help with issues relating to a mental health concern, including stress or depression or an addiction problem, in particular where these might affect work. The service is provided by health professionals specialising in mental health support to doctors and is available in various locations across England. PHP is now available to doctors throughout England (not just London) and is accessible via self-referral. https://www.practitionerhealth.nhs.uk

EoE Professional Support and Wellbeing Service: This service has access to a number of support measures provided by external providers and includes support for a number of potential areas of difficulty, from psychological support to exam support. Referral can be made through an ES/CT/TPD or by self-referral. https://heeoe.hee.nhs.uk/psw/east-england-professional-support-and-well-being-service

The Intensive Care Society (ICS) have produced a number of posters highlighting issues relating to mental health and wellbeing, which highlight important messages:

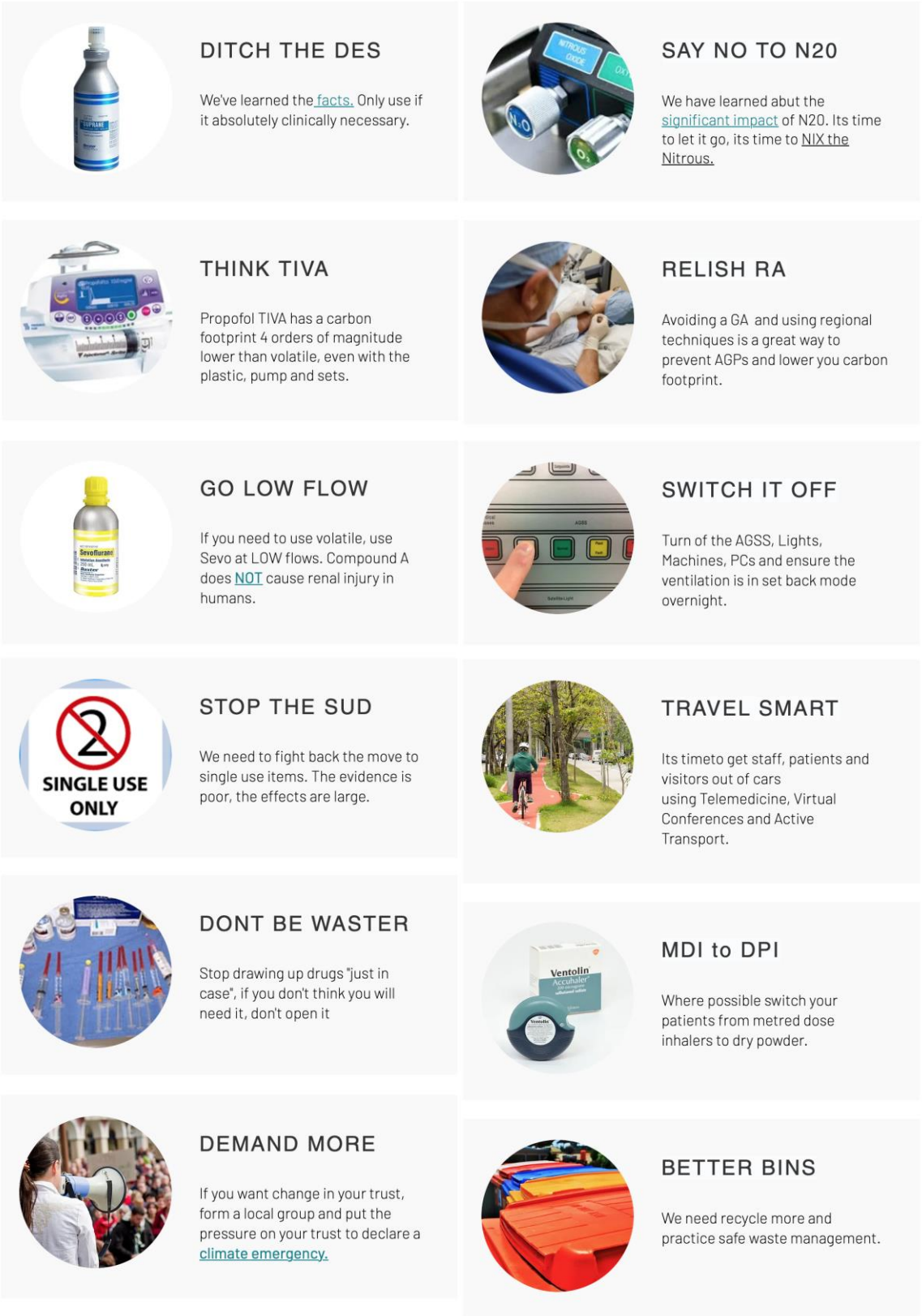






Sustainability

It is increasingly important to think about the environmental impact of our actions, both at work and in our private lives. The department encourages you to think about what actions you can take to promote environmental sustainability in the work place. The poster below has some practical suggestions:



The infographics above are courtesy of **GASP**: Greener Anaesthesia and Sustainability Project
Visit their website for more information: https://www.gaspanaesthesia.com/at-work

Miscellaneous information

Rest facilities

If you are unable to safely travel home after an on-call, there are limited (two) rooms available (in the accommodation block just next to the hospital) for no charge, but with time restrictions. Information on how to access this would have been provided in the Trust Induction. A copy of this policy is available in the appendix.

Accommodation

If you require somewhere to stay outside of this time-frame or for longer, you could book in the accommodation block just next to the hospital. This facility is out-sourced and run by Origin Housing .
They can be contacted on 0203 5030540 or email: lister.lettings@originhousing.org.uk The Origin Housing office is monitored 24/7. The latest prices are £30 per night for a single room and £40 for a double but are subject to change. Further information is available in the main office.

Christmas Dinner

This is subsidised (not fully funded) by the consultants. It is usually held in a venue in Hertfordshire (local pub or restaurant). There will be various prizes awarded for 'achievements' too. It is a fun night and usually well attended.

Guide for Anaesthetists in Training

Guide for Anaesthetists in Training

Welcome to Anaesthetic Training at Lister!

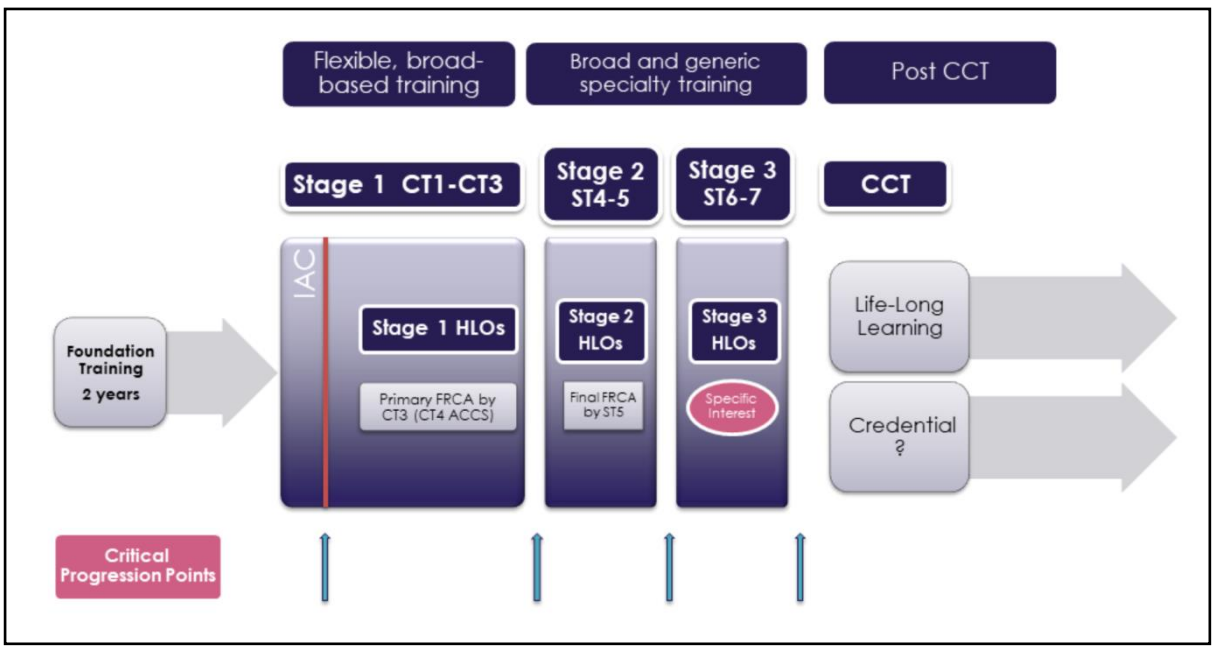
First of all welcome to Lister hospital and the anaesthetic department! We aim to be a friendly and supportive department that delivers high quality training for all anaesthetic, ACCS trainees and any other non-anaesthetic trainees passing through.

We hope that you enjoy your time here, whilst learning new skills, knowledge and developing your non-technical abilities. Please let us, or your trainee reps know, if there's anything you feel we can do to improve your experience.

This section of the handbook is divided in to sections, each aimed at anaesthetists and other speciality doctors at different points in their training:

- **Novice anaesthetists:** those in the first 3-4 months of anaesthetic training, before attaining their Initial Assessment of Competencies (IAC). You should also read the section for 'Stage 1 trainees'
- **ACCS trainees and other non-anaesthetic trainees:** those with a base speciality in Acute medicine or Emergency medicine. You should also read the section for 'Novice anaesthetists'
- **Stage 1 trainees:** those in anaesthetic training, from CT1 – CT3 (SHOs, through to Junior registrars)
- **Stage 2 trainees:** those in anaesthetic training, from ST4 – ST5 (Registrars)
- **Stage 3 trainees:** those in anaesthetic training, from ST6 – ST7 (Senior Registrars)

Each section aims to give helpful advice to those at that particular stage, including information relevant to that stage and also requirements for different aspects of training.



Whatever stage of training you are at, whether you are a first day anaesthetic trainee or are an ST7 on the verge of completing training, meet early with your Educational Supervisor (ES) to ensure that you have the best possible support whilst you are with us at Lister hospital.

A Guide for Novice anaesthetists

Introduction

First of all welcome to a truly great specialty and a great department to work in! The first thing to say is relax and have fun – you are not expected to do anything without support in the first few months. The start of anaesthetic training is all about getting to grips with the basics, without having to worry too much about having direct responsibility for patient care or studying for exams.

The first few months in anaesthesia has an extremely steep learning curve; so please do not be disheartened at the beginning if it is taking a while to get to the hang of things! For many this is a completely new speciality and is completely different from foundation year training so it is only natural for it to take some time to adjust. We are an extremely friendly department so please just ask for help or approach any of us for a chat if you need anything at all.

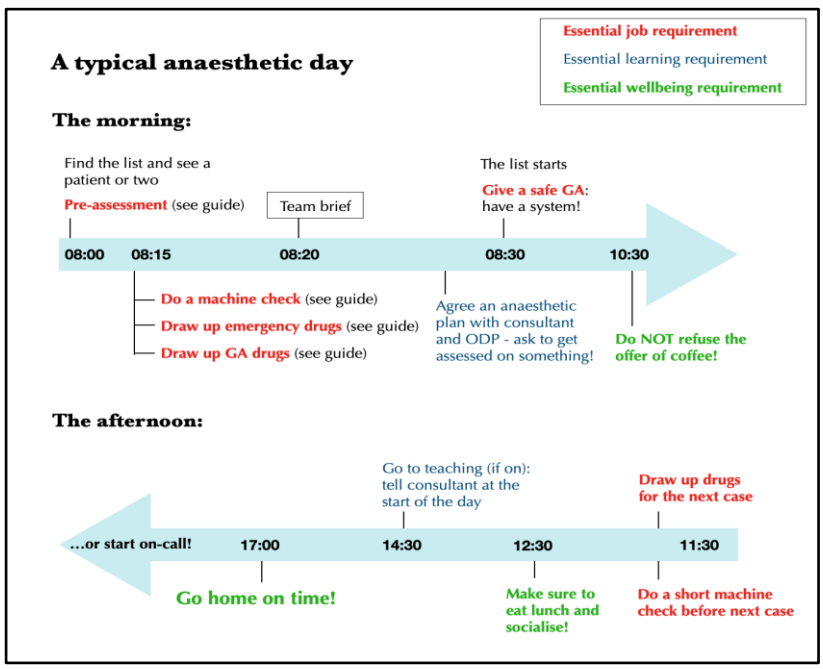
The aim of the first few months is to learn to provide a safe anaesthetic to uncomplicated ASA 1-2 patients. In doing this you will need to complete enough assessments to achieve your 'Initial Assessment of Competence' (IAC). This certifies that you have a basic level of competence in caring for patients undergoing anaesthesia and are able to go on to the on-call rota with appropriate supervision.

This section is a guide to what you should be aiming to achieve during your first few months of working towards your IAC. We will take you through:

- **A Typical day in Anaesthesia**
- **Things you will be expected to do** in your clinical work and how to go about doing them
- **A guide to training and how the IAC is completed** and what assessments are needed
- **A quick guide to the drugs** we use in anaesthesia

A Typical day in Anaesthesia

The anaesthetic day starts at 08:00 with seeing patients and doing a pre-operative assessment (see below). Once one or two patients have been seen you can go to theatres to perform a Machine Check (if you've been shown how) and draw up the emergency and GA drugs for the first patient.



The team brief normally starts at 08:20, ready to start the first case at 08:30. Afternoon lists normally start at around 13:30, so if you are on a different list make sure you leave time to have lunch and see the afternoon patients!

Throughout the day, there may be a number of different patients on the list. It will be your job, with help from the senior anaesthetist you are working with, to make sure all the patients have been pre-operatively assessed and drugs are ready for the next patient on the list.

In the course of your training you will be expected to complete a number of assessments (Supervised Learning Events – SLEs). It is much easier to discuss what learning objectives could be covered at the start of a list. In this way the consultant you are with can tailor the conversation and learning experience appropriately. It is important (and polite) to let the consultant know at the start of the list if you need to leave the list at any time, for teaching, a meeting or any other appointment.

The most important thing is to make sure that you get regular breaks. Never turn down the offer of a coffee break and make sure that you go home on time (17:00) unless you really want to stay longer. The consultants will expect you to leave on time but may not remind you!

Things you will be expected to do

- **Pre-assess patients.** All patients that have an anaesthetic should be properly pre-assessed prior to arriving in theatres. This is to ensure that they are fit for surgery, a suitable anaesthetic plan can be made and that they are appropriately consented. You will be given teaching on pre-assessment but a quick one-page guide on the fundamentals of how to assess a patient can be found in the appendices of this handbook
- **Get ready for anaesthetising patients.** You will be taught this by the anaesthetists you work with and in teaching, but you will need to draw up drugs for the next patient, draw up emergency drugs (see below) and check the anaesthetic machine (see the appendices)
- **Give an anaesthetic:** Again you will be taught how to do this by the anaesthetists you work with. A very brief guide on how general anaesthesia is typically induced and an example anaesthetic checklist (a cognitive aid, which can be used to ensure you are not missing anything) can be found in the appendices
- **Go to teaching:** It is important that you attend all of your scheduled teaching. Let the anaesthetist you are working with know you have teaching at the start of the day.
- **Join the on-call team:** This part sounds scary but is actually fine! Until you achieve your IAC, you will always be supervised directly by another competent member of the on-call team. It is worth reading the 'Guide for Stage 1 trainees', as this outlines your on-call responsibilities.
- **Look after yourself**: The most important thing! Anaesthesia can be a demanding speciality at times and we all struggle from time to time. It is essential to maintain work-life balance and having sources of support if required. Please have a read of the section on Pastoral care and Wellbeing.

There are other sources of useful information that can be found in the appendices. There is also a novice guide available on the RCoA website: https://www.rcoa.ac.uk/documents/novice-guide/introduction

A Guide to Training and How the IAC is completed

If you haven't done so already you need to ***register with Royal College of Anaesthetists*** (RCoA): https://rcoa.ac.uk/documents/novice-guide/register-college. This is a requirement for entry into your postgraduate exams. A subscription to the British Journal of Anaesthesia is also included with your membership. After registration, you will be given a ***Login to the Lifelong Learning Platform*** (LLP); this is used to complete assessments, record details of your training and keep a logbook of cases. The LLP can be accessed online at: https://lifelong.rcoa.ac.uk/login. You will get further instruction on using it early in your training. The East of England (EoE) school of anaesthesia will also provide you with a ***workbook*** of assessments to complete and give you guidance as to how you should use this to guide your training. This can be found at: https://heeoe.hee.nhs.uk/sites/default/files/core_handbook_july_22.pdf

Make sure that you ***meet your Educational Supervisor*** (ES) early. You will need to ***agree a Personal Development Plan*** (PDP) and ***set learning objectives***, which should be recorded on LifeLong Learning. You are also required to record all supervisory meetings too.

The first few months of training is known as ***the novice period***. This is where you gain your ***Initial Assessment of Competence (IAC)***. You will need to complete this before you can be left unsupervised. A detailed description of what is required for the IAC can be downloaded from the college website: https://www.rcoa.ac.uk/documents/2021-curriculum-assessment-guidance/entrustable-professional-activities-iac-iacoa. Key aspects of this are:

- ***You will need to keep a logbook*** and record all the cases you have done (including in ITU). It is well worth getting in to good habits early and recording cases as you go; it gets increasingly difficult to do this retrospectively as time goes on. You will be required to show your logbook for both your IAC sign-off and at your ARCP (which takes place yearly in the month before you commenced training). You should expect to complete > 400 cases in your first year if you record everything properly
- You will need to complete of a number of ***Structured Learning Agreements (SLEs)*** that relate to the relevant parts of the curriculum. These assessments can be either a **DOPS** (Directly Observed Procedural Skill), **A-CEX** (Anaesthesia Clinical EXercise), **CBD** (Case Based Discussion) or **ALMAT** (Anaesthetic List MAnagement Tool)
- The relevant parts of the curriculum are **EPA-1** (Entrustable Progammable Activity), which relates to performing a pre-operative assessment and **EPA-2**, which relates to performing a GA in an ASA1/2 patient for uncomplicated surgery. Once enough SLEs, reflections and other activities have been completed for EPA-1 and EPA-2, a **HALO** (Holistic Assessment of Learning Outcomes) can be generated for each. Details of this can be found in the RCOA IAC EPA-1/ EPA-2 workbook: https://www.rcoa.ac.uk/sites/default/files/documents/2022-09/EPA-1-2-2022%20v1.2.pdf
- ***A Multi-Trainer Report (MTR)*** needs to completed before the IAC is signed off. This is feedback from a number of consultants that will be collated by your Educational Supervisor.
- ***A combination of all of the above is used to finally sign off your IAC***

In other hospitals the completion of the IAC marks the trainee's transition into the on-call rota. At Lister you are part of the on-call rota from early on, therefore there is no intimidating jump into working the on-call shifts. Working on-calls from the start of training may seem like a negative but it does wonders for removing the anxieties of progressing up the ladder. Trainees get a good understanding of what is expected of them out of hours and of course are very well supported throughout

Drugs in Anaesthesia

Anaesthesia uses drugs from a lot of different classes. To aid rapid identification, colour-coded drug labels are used:

Induction drugs	Opioids	Anti-emetics	Anti-muscarinics	Reversal agents
Muscle relaxants	Benzodiazepines	Local anaesthetics	Vasoactive drugs	Miscellaneous

A lot of anaesthetic drugs are regulated under Controlled Drugs Regulations; these include opioids, ketamine and midazolam. Your ODP will ask you to sign for any controlled drugs you use in the CD book in each theatre. You should only sign for drugs that you have used yourself.

Emergency Drugs: adults

Emergency drugs are drawn up at the beginning of the day and should be available immediately if needed. Metaraminol, ephedrine and atropine should be drawn up. Propofol and suxamethonium should be readily available, though not routinely drawn up. Suxamethonium is stored in the fridge (with other muscle relaxants), so make sure the fridge is unlocked!

Top tip: If you keep cutting your fingers on vials, use a bit of gauze until you get the hang of it!

Below is a list of the commonly used emergency drugs:

	Indication / comments	**Vial contents**	**Dilute to**	**Dose (typical)**
Metaraminol	Hypotension Can cause bradycardia	10 mg in 1 ml	10 mg in 20 ml (with saline)	0.5 mg (1 ml) aliquots
Ephedrine	Hypotension	30 mg in 1 ml	30 mg in 10 ml (with saline)	3-6 mg (1-2 ml) aliquots
Atropine	Bradycardia	600 µg in 1 ml	Undiluted in 2.5 ml syringe	200-600µg
Propofol 1%	Inadequate depth of anaesthesia	200 mg in 20 ml	Undiluted in 20 ml syringe	Titrate to effect
Suxamethonium	Rapid paralysis. Kept in fridge	100 mg in 2 ml	Undiluted in 2 or 5 ml syringe	1.5-2.0 mg/kg

Emergency Drugs: paediatrics

Paediatric patients require careful preparation of both equipment and drugs, of which dosing is weight-bases. You will be carefully supervised with paediatric cases, so try not to worry too much about these initially. The appendices outline some paediatric considerations for reference if required.

Commonly used Drugs: adults

There are many drugs used in anaesthetics. Some of the most commonly used are:

	Indication / comments	Concentration [with syringe size to use]	Dose (typical)
Propofol	Induction Can cause pain on injection	10 mg/ml [20ml]	2-3 mg/kg (titrate to effect)
Thiopentone	Induction Normally only used for RSI	25 mg/ml [500mg in 20 ml syringe] Made up with water for injection	5 mg/kg
Atracurium	Muscle relaxant (non-depolarising)	10 mg/ml [5 ml or 10 ml]	0.5 mg/kg
Rocuronium	Muscle relaxant (non-depolarising)	10 mg/ml [5 ml or 10 ml]	0.5 mg/kg 1.1 mg/kg for RSI
Suxamethonium	Muscle relaxant (depolarising)	50 mg/ml [2 ml or 5 ml]	1.5 – 2 mg/kg
Fentanyl	Opioid	50 µg/ml [2 ml normally]	1 µg/kg
Morphine	Opioid	1 mg / ml [10ml] (dilute 10 mg/ml to 10 ml with saline)	0.1 – 0.2 mg/kg
Midazolam	Anxiolytic	1 mg/ml [5 ml]	0.5 – 3.0 mg
Ondansetron	Anti-emetic	2 mg/ml [2 ml or 5 ml]	4 – 8 mg
Dexamethasone	Anti-emetic Some analgesic effects	3.3 mg /ml [2 ml]	3.3 – 6.6 mg
Paracetamol	Analgesic Check not given on ward	1g / 100ml [comes in container] Give slowly	1g (if > 50kg)
Diclofenac	Analgesic Beware contraindications	75 mg /ml [Dilute in 100 ml NaCl with 0.5ml 8.4% bicarb]. Give slowly	75 mg
Glycopyrrolate	Anti-Muscarinic Used to treat bradycardia	200 µg/ml [5 ml]	200 – 600 µg
Lidocaine 1% **Lidocaine 2%**	Local Anaesthetic	10 mg/ml 20 mg/ml	Max 3 mg/kg (7 mg/kg with Adrenaline)
Bupivacaine 0.5% **Bupivacaine 0.25%**	Local Anaesthetic	5 mg/ml 2.5 mg/ml	Max 2 mg/kg

Antibiotics are given in a variety of different doses and are given in a variety of different ways. Refer to Microguide for what antibiotic is required (there's an app) and check with your consultant about how it should be given. Microguide is also available online at:

Adults: https://viewer.microguide.global/ENHT/ADULT
Maternity: https://viewer.microguide.global/ENHT/MATG
Paediatrics: https://viewer.microguide.global/ENHT/PAED

Commonly used Drugs: paediatrics

Again, try not to worry too much about paediatric doses at this stage. The appendices outline some paediatric doses for reference if required.

A Guide for ACCS and other non-anaesthetic trainees

Introduction

Welcome to the world of anaesthesia! We hope that you enjoy your time with us and pick up some valuable transferrable skills along the way. You never know, you might even love anaesthetics so much you decide to apply for anaesthetics training!

As well as gaining skills in airway management and vascular access, you will become more confident and capable of managing the sick patient who requires resuscitation and multi-organ support. These skills will hopefully stand you in good stead when you return to your parent speciality.

The main advice we would give, is get stuck in! You are here to do anaesthetics and, to get the most out of it, you should almost treat it like it is your chosen speciality.

A Guide to Training

The main aim of your time with us will be to attain a certain level of competence in anaesthesia. To this end, the first few months will be spent attaining your **Initial Assessment of Competence (IAC)**. This shows that you have the basic skills necessary to give an anaesthetic to a healthy (ASA 1-2) patient for an uncomplicated surgery. See the 'Guide for Novice Anaesthetists' for more information on this.

The other HALO (unit of training) that you must get signed off is **Sedation**. This is undoubtedly particularly useful for those doing ED. Look for opportunities to do more of this after you have completed your IAC. If you need more sedation lists to achieve this, speak to the Trainee rota co-ordinator

Although the IAC and then the Sedation HALO will be your primary areas of focus, there are a number of other opportunities to gain new skills that may be useful in the future:

- **Blocks**: Fascia Iliaca blocks are done frequently on the trauma list under ultrasound guidance. You will get opportunities to join the trauma list but there may also be opportunities to 'pop in to a list' to do a block if you are proactive
- **Sick patients**: You will get plenty of opportunities to help manage these on the emergency list. Offering to lend a hand when there is a sick patient with lots to do will maximise your experience

Information on ACCS training requirements can be found on the national website https://www.accs.ac.uk

The East of England handbooks and guidelines for ACCS and other non-anaesthetic trainees can also be found on the websites: https://heeoe.hee.nhs.uk/emergency_medicine/handbooks-guidelines and https://heeoe.hee.nhs.uk/anaesthesia/training-east-england-school-anaesthesia/accs-anaesthesia-east-england

A Guide for Stage 1 trainees

Introduction

By the time you have completed your IAC you will have a pretty good idea of how the system works, both in terms of clinical work and training. You will be given increasing amounts of responsibility as you gain in confidence and experience. However you will always have someone more senior than you available at any time you need them.

Clinical work

The role of the ITU SHO is laid out in detail in the Intensive Care chapter of this handbook. Below are a few of the activities you may be asked to become involved in as the Theatre SHO.

***Emergencies*:** As part of the on the on-call team you will be bleeped to attend cardiac arrests and trauma calls. All members of the on-call team receive the calls. It is usually the ITU SHO and ITU Registrar that are expected to attend. However, it is always courteous for the theatre team members to check in with their colleagues and ensure that the ITU doctors don't need additional support, so be prepared to attend instead. The Senior Registrar will also get emergency calls for sick patients undergoing PPCI; it is worth going down to assist if possible as it provides good experience at providing anaesthesia in a non-theatre environment. However you should not be going down to the cardiac cath lab on your own.

Emergency List: If you are in the emergency theatre (Theatre 7) during the day you are covering the emergency list and are expected to carry the on-call Theatre SHO bleep (1077). You should receive calls from teams who are booking patients. Days can be busy as you will be required to pre-assess patients and provide the anaesthesia!

Useful information to take over the phone is:

1. Age? If paediatric, what is their weight?
2. Planned surgery? If a laparotomy, what is the NELA / P-POSSUM score
3. Is the patient acutely unwell? How urgent is the case?
4. Significant co-morbidities
5. Any Allergies
6. LOCATION OF PATIENT
7. Are they starved?

***Pain calls**:* The theatre SHO is the first port of call to attend PCA and epidural related issues on the wards. You will have to familiarise yourself with the PCA and epidural pumps. The theatre nurses and the pain nurses work with these every day and will teach you all how to set them up during induction.

Patients with epidurals in situ need to be seen daily over the weekend; the pain nurses will hand over a list of these patients on Friday evening. The list is kept in a black lever arch folder on the top of the drugs cupboard in theatre 7.

Common Epidural Problems:

1. ***Air in line / Occlusion downstream****:* This is the most common epidural issue and the most easily solved. Simply detach the epidural line from the filter (filter to remain attached to patient), unlock the epidural pump (codes below) and select '*Prime*'. After priming the line to remove any trapped air, reattach and restart the infusion. If there is an occlusion then sometimes this can be resolved by repositioning the patient.
2. ***Pain:*** It is common to be called due to breakthrough pain despite a working epidural. Be sure to review the site and check that the epidural has not been accidentally dislodged. If the position appears optimal then a STAT bolus dose can help get control of the pain (a 10 ml bolus is a reasonable amount). Care should be taken when administering a bolus; consider the age/frailty of the patient and take into account how significant the neural block is and whether the patient is hypotensive. It takes around 15 mins for these boluses to have an effect. It is important if bolusing significant amounts to carefully monitor the blood pressure and patient condition.
3. ***High Bromage Score:*** Occasionally nurses will call to inform you of a high Bromage score or a unilateral/patchy block. For the insufficient blocks it is worth repositioning the patient to try and encourage redistribution of the analgesia. Significant motor block can be a sign of an intrathecal catheter or can also indicate the presence of a haematoma or epidural abscess. Be sure to stop the epidural and monitor for an improvement of symptoms. If these do not improve then alert a senior. If after stopping the epidural symptoms improve then you can be reassured and try recommencing the epidural at a lower rate.

Reviewing Epidurals

1. How many days since insertion? Typically this should not exceed 4 days in situ
2. Is patient comfortable? What is the pain score?
3. What rate is the epidural running at? (This is usually approx. 8 ml/hr of 0.1% Bupivacaine + 2mcg/ml Fentanyl but max 15 ml/hr)
4. What is the Bromage score?
5. Is there a block present? To what level? Both sides equal?
6. Check epidural site ?signs of infection ?tenderness on palpation
7. Is the patient ready to step down? If so, make sure Dalteparin isn't given < 4 hours after removal

Important codes: Enter **1497 (level 1 code) OR 1300 (level 2 code)** to unlock the PCA or epidural pump

If a patient has an epidural or PCA then you should attend if an issue is reported or if they're on the handover list. However, the parent team should make reasonable attempts at providing adequate pain relief for patients before you go and see them.

Cannulas: Anaesthetists are generally the best doctors in the hospital at cannulation (amongst many other things!). HOWEVER, this does NOT mean that you are responsible for every cannula in the hospital. If you are bleeped about IV access you should consider:

1. **Has the cannula been requested properly?** Unless the cannula is required as an immediately life-saving intervention, requests should be made through the theatre co-ordinator, who will ensure that all the appropriate steps have been followed before adding the cannula to the theatre list
2. **Has the cannula been escalated within their own team's hierarchy?** The problem should be escalated internally first (SHO, Reg, etc…) before the anaesthetic team are contacted. Being called across the hospital can be time consuming and remove you from other learning opportunities in theatres so don't be afraid to query this BUT remember to be polite!

3. **It is always worth reviewing why the cannula is indicated.** If it is for antibiotics then can these be stepped down to orals? If the patient needs fluids why are they unable to have oral fluids? It is very easy to overlook that not every patient NEEDS a cannula
4. **Make sure they get the equipment ready for you**. This is very simple but saves a lot of time. It is also worth getting the requesting doctors to be around when you do it so they can learn!
5. **Take a good supply of theatre cannulas with you**. You will become accustomed to using the theatre cannulas so it is better to take equipment that you are most experienced with. The ward cannulas are a different design and slightly more lightweight
6. **For the truly difficult cannula it is worth learning early on how to insert a cannula under ultrasound guidance!**
7. **If the patient is notoriously difficult and has required more definitive access in the past it may be appropriate that the patient is booked on the emergency list for a central line.** We recommend you review this plan with the Senior Registrar before proceeding to summon the patient to theatres. All of these patients should have had a PICC line requested before reaching this stage

A Guide to Training

CT1: Months 4-6

After completing your IAC, you will start working towards completing HALOs for each of the curriculum areas by completing SLEs and gaining experience in different areas.

A list of who signs of each HALO is found in the table below. These should be discussed with the consultant in question before sending the HALO request, in case there is anything specific they need before sign-off.

Unit	Consultant
General	Henry Reynolds
- **Obstetrics (CCC form)**	Matt Simpson
- **Paediatrics (CCC form)**	Pranav Kukreja
Peri-op	Ash Suxena
Regional	Aditya Singh
ITU	Kate Flavin
Pain	Johann Emmanuel
Procedural Sedation	Katie King
Resus & Transfer	Martyn Wildman
Safety & quality improvement	ES
Behaviours & Communication	ES
Management & Professional and Regulatory Requirements	ES
Team working	ES
Safeguarding	ES
Education & Training	ES
Research & Managing Data	ES

The appendices give a list of suggested requirements for sign-off in various units.

Around this time, ***start thinking about the Primary FRCA MCQ/SBA***. This is a difficult exam and needs good preparation. Up to 6 months' work is required and a good deal of background reading. There are three sittings you could potentially take; usually in February, September and November.

Meeting with your Educational Supervisor (ES) may help you to plan how to meet your training requirements and this should be formalised in a ***Personal Development Plan (PDP)***. You will need to meet your at least every 4 months in order to satisfy the training requirements of the RCoA.

CT1: Months 7-12
Towards the end of your first year you will be required to attend an ***Annual Review of Career Progression (ARCP)***. The panel will want to see that you have made satisfactory progress. They will review your logbook, assessments, MSF, reflections and ensure other paperwork is up to date. In particular they are going to need to see:

- That you have **completed your IAC (and EPA-1/2 HALOs), along with the Sedation HALO**
- That you have completed a ***Multi-Source Feedback (MSF)*** **and MTR (Multi-Trainer Report) for the year**. It often takes some time (2-3 months) to receive a sufficient number of responses, so it is well worth starting well before your end of year review.
- An **Educational Supervisor's Structured Report (ESSR)**. This takes a little time to complete, as it must be signed off by both your ES and the College Tutor, so make sure you request this a month or so before your ARCP. You will have needed to complete your MSF and all other paperwork before this too.
- Evidence of involvement in an audit or Quality Improvement Project (QIP)

A full list of what needs to be done by the time of your ARCP can be found on the RCoA website:
https://www.rcoa.ac.uk/sites/default/files/documents/2022-04/National%20Anaesthetic%20ARCP%20Checklist%202021%20curriculum%20v1.0.pdf

CT2:
The ARCP checklist above outlines what is expected by the end of this training year. It includes:

- Sign-offs of ***EPA-3*** and ***EPA-4 HALOs*** and achievement of the ***Initial Assessment of Competence of Obstetric Anaesthesia (IACOA)***
- Some evidence across all Stage 1 HALOs (ITU can be excluded if not done yet)
- Evidence of involvement in an audit or Quality Improvement Project (QIP)

CT3:
A the end of this year, all Stage 1 HALOs should have been completed and the Primary SOE (viva)/OSCE passed. All other requirements are as listed on the ARCP checklist.

Courses: The EoE school of anaesthesia and the department will ensure you are able attend courses within the first month of commencing your training. The deanery has a live calendar with all the upcoming courses you are expected to attend, and courses of interest, for example, FRCA exam study days, simulation courses etc. It is worth visiting the EOE School of anaesthesia website - it is regularly updated and you can find a lot of information on there: https://heeoe.hee.nhs.uk/anaesthesia

Book and websites : There are a number of books and websites that trainees have found useful during their core training. A list of these can be found in the appendices.

A Guide for Stage 2 trainees

Introduction

You will already be very familiar with your clinical role and the process of training. At this stage you will most likely be on the ITU Registrar or Obstetric Anaesthetic Registrar rota. Some trainees towards the end of Stage 2, providing they have the appropriate competencies, may also work as the Senior Registrar.

A Guide to Training

At this stage you will be very familiar with the training requirements of each year. In short, by the end of ST5, you should have completed all Stage 2 HALOs and passed the Final FRCA viva.

A list of who signs of each HALO is found in the table below. These should be discussed with the consultant in question before sending the HALO request, in case there is anything specific they need before sign-off.

Unit	Consultant
General	Henry Reynolds
- **Obstetrics (CCC form)**	Matt Simpson
- **Paediatrics (CCC form)**	Pranav Kukreja
Peri-op	Ash Suxena
Regional	Aditya Singh
ITU	Kate Flavin
Pain	Johann Emmanuel
Procedural Sedation	Katie King
Resus & Transfer	Martyn Wildman
Safety & quality improvement	ES
Behaviours & Communication	ES
Management & Professional and Regulatory Requirements	ES
Team working	ES
Safeguarding	ES
Education & Training	ES
Research & Managing Data	ES

ARCP

The East of England website, detailing the ARCP process and what you need to do in preparation for your ARCP can be found here:
https://heeoe.hee.nhs.uk/anaesthesia/training-east-england-school-anaesthesia/arcp

Linked to this is a checklist of requirements for each training year, which is found on the RCoA website:
https://www.rcoa.ac.uk/sites/default/files/documents/2022-04/National%20Anaesthetic%20ARCP%20Checklist%202021%20curriculum%20v1.0.pdf

A Guide for Stage 3 trainees

Introduction

At this stage you will most likely be on the Senior Registrar rota. In some cases, you may work on either the Obstetric Anaesthetic Registrar or ITU Registrar rota.

A Guide to Training

At this stage you will be very familiar with the training requirements of each year. In short, by the end of ST7, you should have completed your training!

A list of who signs of each HALO is found in the table below. These should be discussed with the consultant in question before sending the HALO request, in case there is anything specific they need before sign-off.

Unit	Consultant
General	Henry Reynolds
- **Obstetrics (CCC form)**	Matt Simpson
- **Paediatrics (CCC form)**	Pranav Kukreja
Peri-op	Ash Suxena
Regional	Aditya Singh
ITU	Kate Flavin
Pain	Johann Emmanuel
Procedural Sedation	Katie King
Resus & Transfer	Martyn Wildman
Safety & quality improvement	ES
Behaviours & Communication	ES
Management & Professional and Regulatory Requirements	ES
Team working	ES
Safeguarding	ES
Education & Training	ES
Research & Managing Data	ES

ARCP

The East of England website, detailing the ARCP process and what you need to do in preparation for your ARCP can be found here:
https://heeoe.hee.nhs.uk/anaesthesia/training-east-england-school-anaesthesia/arcp

Linked to this is a checklist of requirements for each training year, which is found on the RCoA website:
https://www.rcoa.ac.uk/sites/default/files/documents/2022-04/National%20Anaesthetic%20ARCP%20Checklist%202021%20curriculum%20v1.0.pdf

Guide to Obstetric Anaesthesia

Guide to Obstetric Anaesthesia

Who's who

The Anaesthetists

Obstetric Lead Anaesthetist:

- Dr Matt Simpson: Regular obstetrics sessions + Obstetric High risk anaesthetic clinic (HRAC)

Consultant Anaesthetists with Obstetric Interest:

- Dr Derek Brunnen: Regular sessions + (ad hoc) Obstetric HRAC
- Dr Katie King: Regular sessions + Obstetric HRAC
- Dr Melissa Kitching: Regular sessions + Obstetric HRAC
- Dr Kate McGlennan: Regular sessions + (ad hoc) Obstetric HRAC
- Dr Alastair Moye: Regular sessions + Obstetric HRAC
- Dr Aki Pathmanathan: Regular sessions + (ad hoc) Obstetric HRAC
- Dr Henry Reynolds: Regular sessions
- Dr Aditya Singh: Regular sessions

Consultant Anaesthetists with Ad hoc Obstetric sessions

- Dr Rajashree Chavan, Dr Reem Elbanna, Dr Pietro Ferranti,
- Dr Nicole Goetze, Dr Hassan Iqbal

The Obstetric Team:

- Miss Kelly McNamee: Obstetric Clinical lead, Labour ward
- Becks Merrifield: Labour ward manager / matron
- Sarah Lingley / Sue Wilson Obstetric Theatre Band 7

The Lister Maternity Unit

Diamond Jubilee Maternity Unit

The delivery is located in Level 2 in the **Pink Zone** at the back of the main hospital. It is divided into a 'Consultant led unit - CLU' (ground floor) and a 'Midwife-led unit - MLU' (first floor). In the consultant-led unit, there are 10 delivery rooms (including water birth) and 2 beds in the High Dependency area.

Maternity Theatres

There are 2 theatres (without anaesthetic rooms) and 2 recovery bays. They are accessed through CLU. Theatre 1 is usually the emergency theatre; Theatre 2 is mostly for electives. The multi-birth room on the main corridor of CLU has an anaesthetic room and can be used in dire emergencies as a third theatre. Please note that there is no scavenging in this room.

The Wards and SCBU

There are two wards located on the first floor of the maternity building. ***Gloucester ward*** is the post-natal ward and ***Dacre ward*** is the ante-natal ward. SCBU is located on the ground floor of the same building.

The Clinics

The Bancroft clinics are located on the corridor that links the maternity building to the main hospital. The anaesthetic department runs Obstetric High risk Anaesthetic Clinics every Tuesday afternoon; 2 in 4 Tuesday Mornings/Afternoon (Lister) plus 2 in 4 Monday afternoons at QE2. Patients are usually booked for telephone appointments; some are seen face-to-face if required. The details of the patient consultation and delivery plan are handwritten on the yellow Anaesthetic Chart, which is then sent to the patient to place with the rest of their obstetric notes (which are carried by the patient). Please look out for the chart of any woman who comes to labour ward who may have been seen in HRAC.

Obstetric Anaesthetist's General Duties

Staffing

Normal hours (08:00 – 18:00) on weekdays, the department is staffed by two Anaesthetic Consultants (one for Labour ward and one for Elective Caesareans) along with 1-2 trainees, one of whom will be post-IOCOA. This staffing may vary slightly according to staffing needs and training requirements. On weekends, bank holidays and after normal hours, there is one anaesthetist on duty with support from the senior registrar in theatres and the general consultant on call.

Labour ward Anaesthetist

The obstetric anaesthetist ***carries bleep 1056***. It is your responsibility to ensure that your bleep is not running out of battery. New batteries for the bleep can be obtained from the main theatre office.

The duty hours for the 'Long Day' obstetric anaesthetist are 08:00 to 20:30 and the 'Night' duty is from 20:00 to 08:30. The half an hour overlap is to allow for adequate handover: please use the C-SAFE structure and update the whiteboard in the anaesthetic office. Generally, handover takes place in the anaesthetic office (next to Obstetric theatre 2) at 08:00 and 20:00. This may have to happen in theatre if there is a case ongoing. After that, the day anaesthetist checks the anaesthetic machines and equipment in both theatres and prepares the relevant emergency drugs (see the section on emergency anaesthetic drugs).

The anaesthetists should join the Obstetric Handover at 08:30 and 20:00 in the main office and discuss with the obstetric/midwifery team about any concerns. ***It is considered a duty of the Anaesthetist covering Labour Ward to attend the ward round***.

Elective Caesareans Anaesthetists (Consultant and SHO)

Elective sections should start promptly at 08:30 starting with the WHO team-brief outside Obstetric theatre 2.

The Elective LSCS patients are admitted to the far-right hand bay on Dacre Ward at 07:30**. *The Elective caesarean list Anaesthetists should be up on the ward by 08:00 to see the patients pre-operatively.*** You will need to complete a thorough pre-operative assessment and ensure that the woman is fully informed and consented. A yellow Anaesthetic chart should be completed and kept with the patient notes. Use the back of the anaesthesia chart to guide your consent.

Epidural Audit System

There is a computerised Obstetric anaesthetic database in use: ***Epidural Audit System***. All cases must be entered into the computer audit system available on either theatre computer. This includes all theatre cases and epidurals for Labour. A computerised record and 'follow up' form will be generated and printed in recovery for each case; this should be filed in the **red follow-up folder**, which is kept in the anaesthetic office near theatre 2. Labour Epidural entries produce a *further* sheet which outlines your procedure (e.g., LOR at X cm). This should be signed and filed in the patient's notes. Follow ups need to be done and re-entered into the computer (see immediately below). Please see the Appendix for detailed procedure on how to set up the Audit System. If the Epidural Audit System is not properly accessible from your personal login, make sure you have full access to the V: drive. Ask one of the regular labour ward anaesthetists to help you find the application if you are unable to locate it.

Follow-ups

The anaesthetist(s) covering labour ward or the elective CS list should do the 'follow-ups' in the morning/early afternoon. These follow-ups relate to any patient who has had an anaesthetic intervention during their stay, including elective theatre, Labour ward or the emergency theatre. ***Post-natal patients are found on Gloucester ward*** and the follow-up sheets found in the **red folder** in the anaesthetic office. Go through the questionnaire with each patient. The data should then be entered into the audit program. If there is any issue with neuropathies, headaches, etc. then these **must be discussed with the consultant on labour ward**. There is an obstetric anaesthesia complications form that must be filled out for these women; these can be found in the front of the red folder. Please e-mail the details of any woman who requires follow-up in the obstetric anaesthetic clinic to the obstetric e-mail address (this e-mail address is also found on the bottom of the complications form).

Portfolio Requirements for Training

There will be an updated document for information relating to training in obstetrics. This will include requirements for sign off for IACOA, Stage 1, Stage 2 and Stage 3 sign offs. The suggested timeline for achieving IACOA can be found in the appendices, as can the requirements for Stage 1 training.

Other house-keeping information

Epidural Pump Keys: A key for the epidural pumps is attached to a red lanyard. This should be kept on your person if covering labour ward or on a dedicated hook in the anaesthetic office.

ODP Support: There is a dedicated ***Obstetric ODP (bleep 1360)*** to assist you; in theatre, for epidurals, at MOH etc. Please call them for support whenever needed. It is expected that the midwife will call them if a patient is being taken to theatre. There are two ODPs each weekday 08:00 – 18:00 to allow cover for two Obstetric theatres to run simultaneously.

Facilities: There are computers facilities in both obstetric theatres. They are linked to the printer in the recovery area. The Obstetric Anaesthetic Office has some seating. There is a sofa bed in the anaesthetic office next to theatre 2 for you to rest on nights. This room can get very warm! We hope to be expanding the anaesthetic office in the coming months. There is a pantry for the whole of labour ward by the triage at the main reception of the CLU and a coffee room with fridges and microwaves halfway down CLU. There is provision of coffee/tea/water and milk in these areas.

Out of Hours Second Obstetric Theatre: There is a policy for opening a second Obstetric Theatre out of hours (see departmental guidelines on the intranet). If a second ODP is required out of hours you should liaise with the SR to try and facilitate this. Opening a second theatre is very difficult logistically and should be avoided if at all possible, and discussed with the Senior Registrar/Consultant on call in a timely manner.

PROMPT Sessions

There are multidisciplinary *PROMPT* (Practical Obstetric Multi-Professional Training) sessions held monthly (usually on Thursdays). Volunteers to assist the running of any anaesthetic stations run are greatly appreciated and this may be particularly of interest to trainees with a specialist interest in obstetrics/education (please contact Dr Tarun Singh for more information). All trainees on the obstetric on-call rota or doing an obstetric block must attend one of these sessions as a candidate.

Obstetric Anaesthesia Guidelines

Full details of all guidelines can be seen on the Maternity section of the Intranet.

Please familiarise yourself with the information and guidelines contained within the appendices of this guide that relate to obstetric anaesthesia. These cover topics including MOH, PCEA, Remifentanil PCA, Cell salvage, essential equipment, VTE prophylaxis and other useful guides.

Guidelines exist for General and Regional Anaesthesia, and post-op pain relief.

Analgesia and codeine in obstetrics:
Post-operatively, please use Paracetamol as first line analgesia, an NSAID - usually Ibuprofen orally QDS if able to tolerate NSAIDs - and Oramorph orally PRN. Please chart the PR diclofenac usually given intra-op on the front of the drug chart and cross off the next two regular doses of ibuprofen.

Codeine has been withdrawn for use in Obstetrics following the MHRA advice on use of codeine in breast feeding women. Tramadol is also contra-indicated in breast feeding women.

Neuraxial Analgesia/Anaesthesia:

- ***Spinal opioid:*** Opiate of choice for Caesarean Section is diamorphine 300 mcg or a combination of Morphine 100 mcg and Fentanyl 15 mcg
- ***Labour Epidural:*** Standard 'low dose mix' epidural bags for use in labour are a combined mixture of Bupivacaine 0.1% and Fentanyl 2 mcg/ml. The standard PCEA bolus does is 9 mls with a 15 min lockout. See appendices for set up of these pumps
- ***Epidural top-up for theatre:*** Please use whatever top-up solution you feel comfortable with, providing it is safe. We would recommend either 2% lidocaine with 5 mcg/ml (1:200,000) of adrenaline or 0.5% levobupivacaine
- Please watch out for drug supply issues and updates about these

Antibiotics for LSCS
Prophylactic antibiotics should be administered by the anaesthetist before knife to skin incision (KTS) to all women having a Caesarean Delivery:

- For **term deliveries** (>37 weeks) give a single dose of Co-amoxiclav 1.2g IV
- For **pre-term deliveries** give a single dose of Cefotaxime 1g IV plus Metronidazole 500mg IV
- In cases of significant **penicillin allergy**, give a single dose of Clindamycin 600mg IV and Gentamicin 120mg IV

Administration ***before*** KTS reduces the risk of maternal infection more than when given after skin incision. No detrimental effects on neonatal outcomes have been demonstrated. The online version of Microguide for different Obstetric procedures can be found here: https://viewer.microguide.global/ENHT/MATG

VTE prophylaxis
Dalteparin s/c is given post op (6 hours post spinal or epidural removal after LSCS) for those who are intermediate risk or above (all Emergency LSCS and certain Elective LSCS patients). The dose is weight dependent (at booking); a table of weight-dose values are given below the VTE prescription section of the drug chart.

Please refer to guideline 036 "Antenatal and postnatal thromboprophylaxis" for full guideline, which can also be found in the purple postnatal notes. An overview of this guideline can be found on theatre wall or in the appendices of this guide.

Emergency Anaesthetic Drugs

At the beginning of each shift, the duty anaesthetist must prepare (or check) the emergency anaesthetic drugs. Please date them so that everyone knows how old they are.

The following drugs should be prepared, checked and appropriately labelled:

- **Propofol** 200mg in 20ml **OR Thiopental** 500mg in 20ml (depending on individual preference)
- **Rocuronium** 100mg in a 10ml syringe **OR Suxamethonium** 200mcg in 5ml syringe
- **Atropine** 600mcg in 3ml syringe
- **Ephedrine** 30mg in 10ml syringe
- **Phenylephrine 2mg in 20ml (100mcg/ml)** from a pre-diluted bottle. (see Guideline 4.28)

Phenylephrine concentration is 100mcg/ml and given by infusion during LSCS as required. Pumps are provided in each theatre. The suggested initial infusion rate is 20ml/hr (=2000mcg/hr = 33mcg/min). Typically 15-30ml/hr is adequate.

These drugs should be changed at least once every 24 hours, except for Propofol/Thiopental (which should be changed every 12 hours). They should be placed in the tray and kept in the fridge. Drugs should be prepared in both theatres during the day. If you run out of any drug labels, please inform the ODP so that they can replace them.

- ***Intralipid and Dantrolene*** are available in **both Theatres.**
- ***Sugammadex*** for reversal of Rocuronium is kept in **Theatre 1.**

Contact numbers for Obstetrics

Phone numbers / extensions		**Bleeps**	
Anaesthetic office	01438 28 4086 *(x4086)*	Obstetric Anaesthetic Registrar	b 1056
Anaesthetic office (mobile)	****	Anaesthetic Senior Registrar	b 1102
Co-ordinating anaesthetist	****	Anaesthetic Theatre SHO	b 1077
		Anaesthetic Float Registrar	b 4087
Gloucester ward	x4071		
Dacre ward	x4072	ITU-1 Trainee (SHO)	b 1104
		ITU-2 Trainee (SpR)	b 1394
Maternity unit	x5630	Outreach Consultant (SpR out of hrs)	b 1394
Maternity Triage	x6168		
CLU handover room	x5126	ODP: main theatres	b 1388
		ODP: maternity	b 1360
Obstetric theatre 1	x6109		
Obstetric theatre 2	x6110	Transfusion/Blood Bank	b 1005 (x5245)
Labour Ward recovery	x5034	Biochemistry	b 4690 (x5461)
		Porter	b 1100 (x5311)
(PCA / Epidural codes)	**** (Lvl 1) **** (Lvl 2)	Radiographer	b 5411 (x5545)

(Numbers checked and correct as per Induction App, Jan '23)

Guide to Intensive Care

Guide to Intensive Care

A Note from the Faculty Tutor

Welcome to the Lister ICU! We hope that you will enjoy your rotation with us. It is a busy unit with a good mix of medical and surgical cases, as well as the opportunity to engage in audits, QI projects and research. As in every ICU, the nurses are a fantastic source of knowledge and experience and you should be eager to draw on this. It goes without saying that we function as a very close team and have a wonderful working relationship with the nurses and other members of the MDT.

Who's Who?

Dr Steve Bates	Consultant in ICM and Anaesthesia
Dr Jon Bramall	Consultant in ICM and Anaesthesia Associate Medical Director for Patient Safety
Dr Minet Carrington	Consultant in ICM and Anaesthesia
Dr Pietro Ferranti	Consultant in ICM and Anaesthesia Research Lead Outreach Lead
Dr Kate Flavin	Consultant in ICM and Anaesthesia Clinical Lead for Vascular Anaesthesia Clinical Lead for Organ Donation FICE Mentor
Dr Sandra Gelvez-Zapata	Consultant in ICM, Clinical Governance Lead FICE Mentor
Dr Sunil Grover	Consultant in ICM and Anaesthesia Clinical Director for ICU
Dr Mark Hearn	Consultant in ICM and Anaesthesia Associate Medical Director for Reduction of Unwarranted Variation
Dr Sunil Jamadarkhana	Consultant in ICM and Anaesthesia, ACCP Lead FICE Mentor
Dr Anil Kambli	Consultant in ICM and Anaesthesia FICM Faculty Tutor
Dr Baldeep Panesar	Consultant in ICM and Anaesthesia, Paediatric ICU Lead Equipment Lead
Dr Venkat Prasad	Consultant in ICM and Anaesthesia
Dr Lucy Style	Consultant in ICM and Anaesthesia
Katie Goodyer	ICU Matron
Becky Nicholls	SNOD

Bleep Numbers:

ICU 1	1104	NIC ICU 1	5594	Outreach	1394
ICU 2	1213	NIC ICU 2	5520		

Daily Running of the Unit

The **ICU registrar** is expected to have an overview of the patients on the unit and coordinate the rest of the team to ensure that jobs are allocated and completed appropriately. There are three consultants on duty during weekdays and two at weekends. The work will be split differently depending on who is on: some like to go around together; others prefer to conduct two smaller ward rounds. One of the consultants will hold the **outreach bleep** in the morning to permit the registrar to attend the whole ward round. The bleep will be handed over to the registrar after the ward round. Please do ask if you would like to join the outreach consultant for your own learning and development and to facilitate assessments. We will endeavour to facilitate this in the mornings if workload on the unit permits, but this is often easier in the afternoons.

The **morning handover** starts with a **drill** that is chaired by the incoming (day) registrar. The handover from the night team follows this. You should expect to provide a full and detailed handover every morning. One of the day trainees should log into PACS and bring up the relevant imaging for review. As in all units, some consultants prefer a briefer overview, but you will get to know who likes what!

Immediately after handover, there is a **huddle** in which the consultants, NIC and CCOT team discuss potential discharges and patients of concern within the hospital. The ICU registrar should allocate patients to the rest of the junior team and then attend this meeting. Whilst this is ongoing the other trainees should go on to the ward and begin their assessments of the patients. The registrar should join them after the huddle.

The juniors are expected to perform a full assessment of their patients and complete the ward round paperwork: to include examination, review of the bedside chart, blood results and any other pertinent investigations. They should formulate an impression and a plan and be ready to present the patient in full on the consultant ward round.

The **consultant ward round** begins between 9:30-10am - the timing and format of the round may vary depending on who the consultant is that day. Generally, trainees should be prepared to present their patients fully, although this may not always be the case. A Computer On Wheels (COW) should be brought on the round to facilitate easy access to investigation results including radiology, as well as efficient organisation of tests requested on the round. Please be sure to document resus status and any limitations of care, and go through the checklist in the 'Consultant Ward Round' box. This should happen daily: it is important as it reminds us about things that are often overlooked. If you are unsure about anything, please ask the consultant.

Following the round, the team should convene (usually with a cup of tea!) to do a quick **board round** and ensure all the jobs are allocated.

The **afternoon ward round** starts at around 3:30-4pm, and the juniors are expected to attend and document in the notes. The trainees who are covering the 5-8pm shift will be released from their training lists in theatre to attend the afternoon round. Please do highlight this to the consultant on the list so they can facilitate this for you.

The day and night teams should print copies of the handover sheet in preparation for handover. Please ensure the information on these is updated at the end of each shift to ensure accuracy of handover.

Debriefing, Wellbeing and Resilience

We recognise that Intensive Care can be a challenging and emotional environment, particularly for new trainees. This is not unique to junior doctors: from time to time we look after patients whose condition and management affects us all. It is important that we support each other in these situations and we sometimes organise a debrief as an MDT to ensure that people can ask questions and discuss their feelings and highlight any difficult issues, or indeed positives, about these cases in a supportive and non-judgmental environment. Please speak to the Nurse in Charge or the consultant if you think there is a case that should be discussed in a forum like this. One of us will lead the discussion. We often find that juniors want to discuss specific points about case management for their learning or to highlight concerns, which we can certainly do but we try to keep this separate to the debrief.

Teaching

There are a number of teaching opportunities each day in the ICU. These are shown in orange on the ICU Weekly Timetable. You are expected to attend these sessions, although we appreciate that this may not always be possible for everyone if clinical workload is high. Some consultants prefer to do their teaching on the ward round, rather than sat in a more formal session. Rest assured, there are plenty of teaching/learning opportunities for you throughout the week.

You will be asked to present cases in the **Morbidity and Mortality meetings** (and if you lead the discussion and offer opinions you may request a CBD from one of the consultants at the meeting). You will also be allocated slots (and usually a paper) for **Journal Club**. There will be sufficient time for you to prepare for this. Additionally, you may request (or be asked) to prepare teaching sessions for the Tuesday **Consultant-Led Teaching**. This is a good opportunity for you to hone your teaching skills and lead a teaching session, and there will be a consultant present to support you.

Trainees are expected to take ownership of their own education and should actively seek learning opportunities, e.g. an interesting patient on the ward round, rather than expect only didactic teaching from the ICU consultants.

Importantly, the **Rehab MDT Meeting** on Thursdays is an additional educational opportunity. Trainees who are doing their ICU modules are expected to attend and contribute. Phil Tolson, our lead physio, is very proactive and really appreciates being able to work cooperatively with the trainees, so please make yourselves known to him and he will add you in to his email invites.

ICU Module Sign Off

If you are working towards getting your stage 1 ICU module (ACCS / core anaesthetics / medical training), stage 2 (ST4-5) or 3 (ST6-7) ICM modules, please make this clear to me at the beginning of your rotation with us.

For anaesthetics trainees, I will expect to see assessments covering a rage of presentations that we see commonly on ICU - you may link up to five 'competences' per WPBA. The number of SLEs is not important, but you must ensure you have enough to demonstrate a breadth of experience appropriate to your stage.

> For example, you may admit a patient with AKI - you would be able to use this case to evidence the assessment and management of AKI; acid-base, fluid and electrolyte management; arterial and/or central line insertion; and initiation and management of renal replacement therapy.

I would also like to see an MSF performed whilst on your ICU rotation. You should have completed a total of six months on the ICU including at least three months of on call commitments for stage 1, and a three month block of ICU including on call for stage 2. Attendance and contribution to M&M, teaching and Journal Club meetings is also necessary. I would like to see that the more senior trainees (CT3+) take the initiative to lead the ward round, and complete an ALMAT or ACAT each time they do this.

Please be organised! If you would like to complete an assessment with a consultant, please ask them **before the round** and send the form promptly (or do it in person at the time - this often is easier). It goes without saying that you should not leave all your assessments until the last minute. If you are having trouble getting SLEs completed, please discuss this with your ES or me.

Please do come to me or any of the other consultants with any problems, particularly if you are finding things difficult or if you are having problems getting assessments done or attending the teaching regularly. We would rather know of any issues early so we can work with you to improve things for you.

We hope you enjoy your time with us and, again, a warm welcome to the ICU!

Best wishes,

Dr Kate Flavin (FICM Faculty Tutor)

Lister ICU Weekly Timetable

Monday	Tuesday	Wednesday	Thursday	Friday
08:00 - 08:45 Morning drill Handover	**08:00 - 08:45** Morning drill Handover	**08:00 - 08:45** Morning drill Handover	**08:00 - 08:45** Morning drill Handover	**08:00 - 08:45** Morning drill Handover
08:45 - 09:00 Huddle with CCOT and NIC	**08:45 - 09:00** Huddle with CCOT and NIC	**08:45 - 09:00** Huddle with CCOT and NIC	**08:45 - 09:00** Huddle with CCOT and NIC	**08:45 - 09:00** Huddle with CCOT and NIC
09:30 - 12:00 Consultant ward round	**09:30 - 12:00** Consultant ward round	**09:30 - 12:00** Consultant ward round	**09:30 - 12:00** Consultant ward round	**09:30 - 12:00** Consultant ward round
14:00 - 14:30 Micro meeting	**12:00 - 12:30** Radiology meeting	**13:00 - 17:00** Core trainee teaching	**13:00 - 17:00** Registrar teaching	**14:00 - 14:30** Micro meeting
14:30 - 15:30 M&M meeting	**12:30 - 13:30** Consultant-led teaching	**14:00 - 14:30** Micro meeting	**13:30 - 14:00** Rehab MDT meeting	**14:30 - 15:00** Journal club
16:00 - 18:00 Evening ward round Handover	**16:00 - 18:00** Evening ward round Handover	**16:00 - 18:00** Evening ward round Handover	**16:00 - 18:00** Evening ward round Handover	**16:00 - 18:00** Evening ward round Handover
20:00 - 20:45 Handover	**20:00 - 20:45** Handover	**20:00 - 20:45** Handover	**20:00 - 20:45** Handover	**20:00 - 20:45** Handover
20:45 - 21:00 Huddle with CCOT and NIC	**20:45 - 21:00** Huddle with CCOT and NIC	**20:45 - 21:00** Huddle with CCOT and NIC	**20:45 - 21:00** Huddle with CCOT and NIC	**20:45 - 21:00** Huddle with CCOT and NIC

Adult Respiratory Distress Syndrome (ARDS) and Lung Protective Ventilation (LPV)

REDACTED for copyright reasons.

Shock

REDACTED for copyright reasons.

Sepsis

REDACTED for copyright reasons.

Acute Kidney Injury (AKI) & Renal Replacement Therapy (RRT)

REDACTED for copyright reasons.

Contrast-induced Acute Kidney Injury (CI-AKI)

REDACTED for copyright reasons.

Post-Cardiac Arrest Care and Neuroprotection

REDACTED for copyright reasons.

Paperwork and Housekeeping on ICU

There is a considerable amount of important paperwork and housekeeping that must be completed in a timely manner as this forms a key part of good clinical practice.

Admission Clerking Proforma

This is an electronic document found in the following location on Computer: V drive → ICU Admissions → Admission notes → Blank Admissions Template. This should be completed as soon as practicable with sufficient detail. It is particularly important to mention pertinent details in the history of presenting complaint (both pre-hospital and in-hospital), past medical history and social history as these may influence subsequent management of the patient including treatment escalation plans.

For post-operative patients it is useful to record any significant cardio-respiratory or metabolic derangements peri-operatively, including an accurate estimation of blood loss and also any significant surgical complications. In order to be concise and ensure salient points are covered, it is helpful to use the following format:

Operative procedure:
Indication:
Anaesthetic:
Analgesia:
Antibiotics:
Fluids / blood products administered:
Urine output:
Surgical complications:
Estimated blood loss:
Anaesthetic complications:

Once completed, the electronic document should be saved as the patient's name in the correct folder (depending on the year and month at the time of admission) and printed out on **yellow paper** and put in the bedside notes. Generally, if there is a junior involved in the case in theatre intra-operatively, they tend to complete the admission notes. Please ensure that both the operation note and anaesthetic chart are filed in the ICU notes for easy reference, rather than left in the ward notes.

Care Plans

We perform a number of interventions on ICU some of which are invasive. In order to ensure safe post-procedure care (especially with regards to infection control), there are specific LocSSIPs and care plans for each of these interventions, listed below, which should be **completed by the doctor performing them** and **not** delegated to the nurses. Please see the appendices for examples of the first four LocSSIPs, which are designed to be used like a WHO checklist.

- **Intubation** - of particular importance the C-L grade on laryngoscopy must be recorded
- **Bronchoscopy**
- **Chest drain insertion**

- **CVC and vascath insertion** - please note a CXR is *not* required to confirm correct placement of IJV lines prior to use (rather it is to detect complications): if the line has been straightforward, transduction confirms a CVP trace and a venous gas confirms venous placement then the line may be used immediately - this is unit policy
- **Tracheostomy**
- **NG tube insertion**
- **Arterial line insertion**
- **Peripheral venous cannula insertion**

Drug charts

Whilst the wards use Lorenzo for medication prescription and administration, there is a paper drug chart for all ICU patients which is yellow. These drug charts have additional sections for prescription of specialist drugs specific to ICU such as inotropes and sedatives, compared to the ward charts. Please ensure that **re-writing of drug charts is not left for the on call teams**.

Daily notes proforma

These are yellow coloured 4-paged, A4 sized booklets that are used for the daily ward rounds. Please ensure they are **completed in full** including dates and times, number of days on the ICU, the limits of care and resuscitation status, and the checklist in the Consultant Ward Round box as these are national requirements and are regularly audited.

Lab results

A sheet with a matrix containing the daily blood test results is kept in the bedside notes folder and is updated by the nurses every day.

Microbiology Proforma

This is for documentation of any microbiology culture results (both positive and negative) that have been sent and also where any discussions with the microbiology consultants must be recorded, even if the information has been recorded in the daily notes proforma. The easiest way to do this is to record the micro ward round discussion on a sticker, and then place this in the proforma.

Recording positive microbiology results and reasoning for suggested changes in therapy is very important to enable the consultants to be able to understand what has happened previously. Please do not record microbiology discussions in the main yellow notes, as it makes decision-making regarding antimicrobials difficult to follow.

Relative Communication Sheets

These are green A4 sheets that are used to document any discussions with family / next of kin. Please do not record this information in the daily notes proforma.

Handover List

This is found in the following location on Computer: V drive → ICU Admissions → Drs' Handover → [year] → [month]. The handover list contains information pertinent to a patient's admission and current status. It is the responsibility of the SHOs to ensure that the list is updated prior to the end of their shift and sufficient copies are printed for those incoming. In particular, the problem list must be accurate and any progress updated properly in order to ensure significant points are not missed during handover.

Discharge Summaries

This is found in the following location on Computer: V drive → ICU Admissions → Discharge Summaries → blank discharge summary. For most patients that have had a short stay the discharge summary should be relatively straightforward. However, occasionally there are patients who are complex and have had a prolonged length of stay. In these situations, it is essential that an **accurate account of all significant events and decisions** (particularly with respect to invasive & surgical interventions) is conveyed in the discharge summary. It is sensible to begin writing discharge summaries pre-emptively in advance for such patients; these can be saved in the 'Summaries in Progress' folder.

When a patient is being discharged, it is essential that the **treatment escalation plan and DNACPR status is accurately reflected** in the discharge summary. Please discuss this with a senior prior to discharge if there is any doubt.

The patient's EPMA must be completed on Lorenzo prior to ward discharge, and a handover must be given via telephone to the relevant team.

Emergency Drug Box

On the bottom of the Difficult Airway Trolley there is a drugs box for use in emergencies on the unit. These have specific drugs (not drawn up) and labelled syringes with blunt drawing-up needles as per the list inside the box. It is the responsibility of the **doctor who used the drugs to restock the box immediately**, according to the list inside. Please do not forget to do this: consider your colleagues who may have to intubate a patient in an emergency. Unlisted items or drugs **must not** be put inside the box

Appendices:
Anaesthetic Department

Appendices: Anaesthetic Department

The Departmental Photo wall

Departmental Clinical Leads

REDACTED for privacy reasons.

Clinical Directors

Clinical Director: Anaesthetics	Dr. King	**Deputy CD: (rota master)**	Dr. Yap
Clinical Director: Pain service	Dr. Bagade	**Deputy CD (clin.governance)**	Dr. Kukreja
Clinical Director: Intensive Care	Grover	**Deputy CD: (rota + governance)**	Dr. Jamadarkhana

Clinical Leads

Acute Pain	Dr. Emmanuel	**Obstetrics**	Dr. Simpson
Airway / ENT	Dr. Czech	**Ophthalmology**	Dr. Kota
Anaphylaxis	Dr. Iqbal	**Paediatrics**	Dr. Kukreja
Bariatrics	Dr. Chavan	**Plastics**	Dr. Yap
CPEX	Dr. Gray	**Recovery**	Dr. Silva
Day Surgery	Dr. Carrington	**Regional**	Dr. A. Singh
Drugs	Dr. Navarange	**Remote Site**	Dr. Gray
Equipment	**TBC**	**Resuscitation**	Dr. Teh
Emergency care	Dr. Wildman	**Sedation**	Dr. King
Frailty	**TBC**	**Sustainability**	Dr. van Hoogstraten
General Surgery	Dr. Gray	**Transfer**	Dr. Wildman
Gynaecology	Dr. Moye	**Transfusion**	Dr. Nagpaul
HRAC	Dr. Suxena	**Trauma and Ortho**	Dr. Belavadi
Infection Control	Dr. Chaudhury	**Urology**	Dr. Gowrie Mohan
NELA	Dr. Herriman	**Vascular**	Dr. Flavin

Non-clinical Leads

College tutor: SpR	Dr. Reynolds	**Teaching: SpR**	Dr. Navarange
College tutor: SHO	Dr. Prasad	**Teaching: SHO**	Dr. Chaudhury
Faculty tutor: ICM	Dr. Kambli	**Teaching: AA**	Dr. Silva
SAS/Fellows tutor	Dr. Belavadi	**PROMPT**	Dr. T. Singh
Trainee rota master	Dr. Morris	**Audit**	Dr. Mackenzie
ACSA	Drs. Brunnen / Batley / Mackenzie	**Wellbeing**	Dr. Chilvers

Study Leave Process

Part one: booking leave

STUDY LEAVE CLAIMING EXPENSES

A TRAINEE'S GUIDE LISTER HOSPITAL

Mukur Ghosh Feb 2023

1) FILL IN STUDY LEAVE FORM

Ideally complete electronically. Can obtain paper copy from Debbie Matthews

https://tinyurl.com/lstrslform

2) ES/COLLEGE TUTOR APPROVAL

Get your Educational supervisor/College tutor to sign the form or have them CC'd into your email request with their approval when sending form to Debbie.

3) SEND FORM TO ANAESTHETIC LEAVE (DEBBIE)

Send all requests ideally to the generic department leave email: enh-tr.anaesleave@nhs.net
OR physically to Debbie

4) APPROVED STUDY LEAVE

Once Debbie approves, its all ok (JUST FOR LEAVE).

- If you're on NWD, should be ok but book early as not everyone can go off.
- If there is an urgent/late reason, then d/w Gary Yap.
- If its on zero day. you can claim back the zero day in lieu.
- If on-call, you need to organise your own swaps. If struggling speak with Debbie/Ali if potentially can swap a rota gap for your day (no guarantee).

Part two: claiming expenses

CLAIMING EXPENSES

5) SEND APPROVAL TO STUDY LEAVE DEPARTMENT

If you wish to claim expenses (course cost/accommodation/travel including on regional teaching days, send ideally >6 weeks advance to:

studyleave.enh-tr@nhs.net

- Copy of the signed SL form (including approval from ES/College tutor)
- Approval from Debbie (copy of email is ok)
- Evidence of booking of course (and pre-booked travel/accommodation)
  - If driving, you do not need to show evidence prior to travel. Just complete expenses form (below)
- If total costs > £600 for pre-approved courses (see below) or aspirational courses (any cost), also attach approval from TPD: form on HEE EoE website (see below)

6) APPROVAL FROM STUDY LEAVE

Confirmation from Study leave is received along with expenses form
They can take time to reply. Keep records of your correspondence

7) ATTEND LEAVE AND COMPLETE EXPENSES FORM

Once you have attended the event, complete the expenses form (QR) and send back to studyleave.enh-tr@nhs.net

- Send asap (within 8 weeks of attendance
- Best to send copies of evidence and their approval along with the expenses form.

Payment is usually the following month (check it is correct)

https://tinyurl.com/listerslexpenses

ADDITIONAL INFORMATION

- HEE EOE Study leave policies including flowchart:
  - https://tinyurl.com/heeeoestudyleave
- TPD approval form
  - https://tinyurl.com/heeeoetpdform
- Pre-approved courses
  - https://tinyurl.com/heeeoeindividualrequirements

Further contact numbers

Main Theatre		**Treatment Centre**	
Theatre 1	5911	Theatre 1	8166
Theatre 2	5901	Theatre 2	8181
Theatre 3 & 4	4884	Theatre 3	8174
Theatre 5 & 6	4886	Theatre 4	8171/8172
Theatre 7 Nurse	4784	Theatre 5	8169
Theatres 7 & 8	4885	Theatre 6	8168
Theatre 9	5367	PACU 1	8154
Recovery	5593/4881	PACU2	8130/8158
Pre op	4880	Admission Bay	8198
Coffee Room	5449		
Theatre coordinator	****		
Maternity Unit	5630	**DSU**	
Midwife Station	6168	Nurses Station	5776/5775
Theatre 1	6109	Theatre A	5772
Theatre 2	6110	Theatre B	5774
Recovery	5034	Recovery	5773
Critical Care Unit		**Support Services**	
Critical Care North	4325/4322	Haematology	Bleep 1005/ X 5245
Critical Care Central	4085/5488	Biochemistry	Bleep 4690
Critical Care South	5650/5651	Radiographer	Bleep 5411
Coffee Room	4316	Porter	Bleep 1100/ X5311
Consultants Office	4538		

Appendices:
for Novice Anaesthetists

Appendices: Anaesthetists in Training

Patient pre-assessment

You will receive teaching on pre-assessment, both on the novice course and by consultants and more senior trainees during your time at Lister. However, below is a brief outline of the key features involved in pre-assessing a patient:

Medical history: Patients will hopefully have been seen in pre-assessment clinic prior to coming in (unless they are on the emergency list). Use this assessment or the notes as the basis for further information gathering as appropriate. There are a few particular things that are important for choice of conduct of anaesthesia:

- Make a note of the severity of co-morbidities and anything that makes them worse
- Assess general fitness and exercise tolerance (eg, can they manage a flight of stairs, etc.)
- Do they get reflux? If so, is it well controlled? Is it worse lying down?

Anaesthetic history: Check there have been no problems with GAs in the past (or FHx if N/A). Problems usually relate to PONV or intolerance to certain meds but can be more significant (allergic reaction, airway difficulties, etc)

Drug allergies: What exactly is the reaction if there is one

Are they starved: >2 hours for clear fluids, >6 hours for anything else (milk in tea counts as food!)

Airway assessment: This takes a long time to get a feel for and you'll get teaching on it. Essentially the purpose is to make a judgement as to whether you are going to be able to (i) Bag ventilate the patient, (ii) Visualise the glottis and (iii) Instrument the airway. The consultant will make their own assessment (make sure they know you're a CT1!).

Assessment includes (but is not limited to):

- How wide can they open their mouth?
- Can they protrude their jaw? Is it recessive? Do they have buck teeth?
- Mallampati score?
- Can they extend their neck?
- What is the distance between the thyroid cartilage and tip of their chin (thyromental distance)?
- Are there any loose teeth/caps/crowns/dentures? Any missing or damaged teeth?
- Sometimes there is an old anaesthetic chart in the notes - if there is, were they easy to ventilate and is there an intubation grade noted?

Investigations: Are blood results acceptable? Has the patient got a G&S (if appropriate)? Has the patient got an ECG if appropriate (e.g. any cardiovascular issues)? Other appropriate investigations will depend on other co-morbidities

Patient size: There should be a weight and height in the pre-assessment book. These are potentially important for airway and anaesthetic choice and for TIVA.

Consent and explanation: Generally, the choice for surgery is one of:

1) LA +/- sedation
2) Regional anaesthesia or neuraxial block (spinal, epidural, CSE) +/- sedation +/- GA
3) GA +/- local anaesthetic (or nerve block)

Most surgeries will be straightforward GAs but if you're not sure, you can either check with the consultant (ideal), or let the patient know about potential options. Explain what the patient can expect (eg, gown, anaesthetic room, monitoring, cannula, oxygen, anaesthetic, recovery. Discuss the risks. ***For GAs***, most people will discuss: PONV, pain and analgesia, sore throat and dental damage. ***For blocks***, most people will discuss: failure, headache (if neuraxial - PDPH), infection and nerve damage as well as motor block and duration of numbness.

Flag any concerns to the consultant. Expect to be slow to begin with!

Anaesthetic checklist

It is important when giving an anaesthetic to have some sort of system to make sure that the patient is safe and that you are not missing anything that may be important. Most anaesthetists will make an A-C type of assessment, so that they are able to quickly and systematically assess a patient. Everyone does this slightly differently but the important thing is that you develop a system so that, particularly early on in your career and under times of stress, you are able to give a safe anaesthetic. Below is an example (A-M) checklist that you might run through:

A	**Airway**	Appropriate airway? Patent airway?	*Patient's own, adjuncts, LMA, ETT, Tracheostomy* *Check: EtCO2 trace, misting of circuit, pattern of breathing*
B	**Breathing**	Oxygenation… Ventilation…	*Check: Sats, FiO2, PEEP, Adequate flow* *Check: mode (SV, PCV, VCV..), RR, TV, EtCO2 (+trace), Peak pressure*
C	**Circulation**	Blood Pressure… Heart Rate… ECG morphology… (CO vs TPR…)	*Appropriate pressure?* *Appropriate rate?* *Rhythm? Change compared to baseline? Ischaemia?* *CO monitoring needed? [Remember: (MAP -CVP) = (HR x SV) x TPR]*
D	**Disability**	Adequate anaesthesia? Muscle relaxants? Glucose monitoring…	*Patient behaviour, EtAA (MAC), Modelled plasma/brain drug levels* *Required for airway management or to facilitate surgery?* *Monitor if required*
E	**Exposure**	Temperature… Warming needed? Patient position? Pressure areas?	*Measure every 30 mins* *Bair hugger, under patient heating, warmed fluids* *Comfortable and neutral* *Padded and protected. Eyes taped*
F	**Fluids**	Input… Output…	*Appropriate fluids running? Volume to give? Goal-directed therapy?* *Catheter needed? UO measurement?*
G	**Gastro**	Starvation status… Nasogastric tube… Antiemetics… Laxatives…	*Should be 6 hours for food, 2 hours for clear fluids* *Required for procedure or post-op?* *For post-op* *Required post-op?*
H	**Haematinics**	Hb, Plts, INR G&S / Cross match U&Es, others	*Need for transfusion?* *Available if required?* *Need for electrolyte management?*
I	**Infection**	Current antibiotics ABX prophylaxis WCC / CRP	*If so, why and when last?* *As per protocol (Microguide)? Surgeons happy? Required post-op?* *Evidence of active infection or inflammation?*
L	**Lines**	Sufficient IV access? Art / CVC needed?	*Bleeding or fluids shifts expected? Infusions needed intra/post-op?* *Need for close BP monitoring, blood sampling or central meds?*
M	**Medications**	Allergies? Need for blocks? Analgesia VTE prophylaxis	*If so, what reaction?* *LA / Regional /Neuraxial required?* *Oral vs IV vs LA infusions* *LMWH, TEDS, Flowtrons prescribed as per risk profile?*

Inducing General Anaesthesia: the absolute basics

By the time the patient arrives in the anaesthetic room, there will have been a team brief, the patient will have been seen and consented by both surgical and anaesthetic teams and the anaesthetic team will have agreed amongst themselves how the GA will be conducted. GA drugs (including emergency ones) will have been drawn up and the machine checks confirmed.

The following is how a typical GA may be conducted once a patient arrives in the anaesthetic room:

Pre-induction:

1) The patient removes the outer gown and lies on the trolley, taking care not to sit on their gown.
2) The ***WHO checks*** are completed - confirming important details and reducing the chance of surgical never events!
3) ***AAGBI standard monitoring*** is attached to the patient: BP cuff, Sats probe and ECG monitoring, capnography attached to the breathing circuit
4) A ***cannula*** is inserted in to the most appropriate vein (normally avoiding the ACF)
5) The patient is then ***pre-oxygenated*** with high flow 100% O2 via the facemask, in order to increase the time available before desaturation occurs
6) Small talk generally continues!

Induction of anaesthesia:

1) Normally the trainee will take the 'top end' and hold the mask, taking care not to make the patient feel claustrophobic with hands to close to the face
2) The senior person in the room generally gives the drugs
3) Fentanyl (can be another opioid) is often given first, to aid with suppression of laryngeal reflexes (though it takes 3-5 mins for this to hit peak effect)
4) Once the opioid takes effect (sometimes straight after being given), propofol is given. Often this is titrated to effect but sometimes a judgement is made about the appropriate dose!
5) Once the patient is asleep - they no longer respond and don't mind a good jaw thrust - the person at the top-end will usually try to ventilate the patient. Giving a jaw thrust in to the mask (+/- a chin lift) and making a tight seal, the APL valve is closed (to about 15-20cm H20 - but adjusted to feel) and attempts at ventilation are made
6) At the same time as ventilating the patient, the volatile (often sevoflurane) is turned on (to around 4% on the dial - depending on age, etc.) in order to maintain anaesthesia, as the propofol will already be redistributing from the blood stream in to vascular rich and fatty tissues
7) If there is any difficulty in ventilating the patient, an adjunct (such as a guedel) can be used to help maintain airway patency. Sometimes ventilation can be difficult and is occasionally a two person job (one to hold the mask, the other to squeeze the bag)
8) Once the patient is adequately anaesthetised (usually quite quick) the airway can be instrumented. An LMA can be inserted or a tracheal tube inserted. For the insertion of a tracheal tube, muscle relaxant is normally given and time given for this to take effect (45-180 seconds, depending on relaxant and dose)
9) Once the airway is placed, adequate ventilation is confirmed with chest movement, misting of the airway and EtCO2 readings. If the airway is inadequate, it is adjusted or removed and other steps taken to secure the airway

Post-induction:

1) Whilst concentrating on the airway, the senior person on the list will be ***monitoring the patient*** and treating low blood pressure if this occurs. As a general rule, anaesthesia causes vasodilation and metaraminol is a reasonable first choice (as it is primarily a vasoconstrictor). However, metaraminol can cause a reflex bradycardia, so if the heart rate is low ephedrine is often used
2) Once the airway is secured (with tie or tape), the ventilator can take over from the bag, or the patient allowed to breathe spontaneously depending on technique. ***Continuously re-assess the patient*** (A-C) and concentrate on other procedures that might be necessary, such as larger drips, invasive lines, temperature probe, throat pack or asleep blocks (the list is long)
3) Once the patient is ready, they can be transferred in to theatre, connected to the theatre ventilator and a full check of patient stability and required jobs can be made, often using a cognitive aid (see Anaesthetic checklist)

Paediatric anaesthesia: some very brief notes

Anaesthesia for paediatrics is a sub-specialist area and a significant experience is required to anaesthetise children safely. As such, you will be heavily supervised when anaesthetising a child.

What can you usefully do if there is a child on the list?

- Pre-assessment: do this with a senior the first few times until you get a feel for the conversation. Important information to gather includes: the ***weight*** of the child, problems around the time of birth (e.g. SCBU stay, intubation) and how co-operative the child may be with anaesthesia!
- Write down a list of emergency drug doses, including volumes. You don't want to be doing this in a hurry – they all involved weight-based calculations
  - For example: for a 12 kg child: "Atropine 20 mcg/kg = 240 mcg = 0.4 ml"
- Write down a list of other things you might need in an emergency. Use ***WET FLAG*** (see below)

The table below outlines some of the commonly drugs used in paediatrics. The following drugs should be drawn up as emergency drugs:

- **Suxamethonium**: for both intubation and laryngospasm. Draw up the exact dose for each child
- **Atropine**: for bradycardia
- **Propofol**: for laryngospasm and inadequate depth of anaesthesia

	Indication / comments	Concentration [with syringe size to use]	Dose (typical)
Propofol	Induction Can cause pain on injection	10 mg/ml [10 - 20ml]	5-7 mg/kg (titrate to effect)
Atracurium	Muscle relaxant (non-depolarising)	10 mg/ml [5 ml or 10 ml]	0.5 mg/kg
Suxamethonium	Muscle relaxant (depolarising)	50 mg/ml [1 ml or 2 ml]	1.5 – 2 mg/kg
Atropine	To treat bradycardia (bradycardia is normally 2° hypoxia)	600 µg/ml [1 ml]	20 µg/ml
Fentanyl	Opioid	50 µg/ml [1 ml or 2 ml]	1 µg/kg
Morphine	Opioid	1 mg / ml [10ml] (dilute 10 mg/ml to 10 ml with saline)	0.1 – 0.2 mg/kg
Ondansetron	Anti-emetic	2 mg/ml [2 ml]	0.15 mg/kg
Dexamethasone	Anti-emetic	3.3 mg /ml [2 ml]	0.15 mg/kg
Paracetamol	Analgesic Check not given on ward	1g / 100ml [comes in container]	15 mg/kg
Diclofenac	Analgesic Unlicensed but widely used	75 mg /ml [Dilute in at least 100 ml] Give slowly	1 mg/kg

WET FLAG:

Weight :	(Age + 4) x 2 (if unknown)
Energy:	4 J/kg (defibrillation)
Tube size:	Diameter: Age/4 + 4 (uncuffed). Length: Age/2 + 12 (oral)
Fluid bolus:	20 ml/kg (fluid resuscitation)
Lorazepam:	0.1 mg/kg (seizure)
Adrenaline:	0.1 ml/kg of 1:10000 adrenaline (cardiac arrest)
Glucose:	2 ml/kg of 10% dextrose

For more information, the CATS website is excellent: https://cats.nhs.uk/emergency-tools/ (see "IN A HURRY").

Machine checks: AAGBI guidelines

The AAGBI guidelines outline how to do a full machine check (these should be on the side of every anaesthetic machine), which you will need to learn. You will be taught how to do an abbreviated machine check by people you work with. Two good resources about machine checks are:

https://portal.e-lfh.org.uk Background information which is found on the e-LH website
https://youtu.be/Z3FyxJRkycI Demonstration by the consultant who used to sign off this competency!

Check self-inflating bag available	
Perform manufacturer's (automatic) machine check	
Power supply	• Plugged in • Switched on • Back-up battery charged
Gas supplies and suction	• Gas and vacuum pipelines – 'tug test' • Cylinders filled and turned off • Flowmeters working (if applicable) • Hypoxic guard working • Oxygen flush working • Suction clean and working
Breathing system	• Whole system patent and leak free using 'two-bag' test • Vaporisers – fitted correctly, filled, leak free, plugged in (if necessary) • Soda lime - colour checked • Alternative systems (Bain, T-piece) – checked • Correct gas outlet selected
Ventilator	• Working and configured correctly
Scavenging	• Working and configured correctly
Monitors	• Working and configured correctly • Alarms limits and volumes set
Airway equipment	• Full range required, working, with spares

THE TWO-BAG TEST

A two-bag test should be performed after the breathing system, vaporisers and ventilator have been checked individually

i. Attach the patient end of the breathing system (including angle piece and filter) to a test lung or bag.

ii. Set the fresh gas flow to 5 $l.min^{-1}$ and ventilate manually. Check the whole breathing system is patent and the unidirectional valves are moving. Check the function of the APL valve by squeezing both bags.

iii. Turn on the ventilator to ventilate the test lung. Turn off the fresh gas flow, or reduce to a minimum. Open and close each vaporiser in turn. There should be no loss of volume in the system.

CHECKS BEFORE EACH CASE	
Breathing system	Whole system patent and leak free using 'two-bag' test Vaporisers – fitted correctly, filled, leak free, plugged in (if necessary) Alternative systems (Bain, T-piece) – checked Correct gas outlet selected
Ventilator	Working and configured correctly
Airway equipment	Full range required, working, with spares
Suction	Clean and working

Stage 1 Sign-off criteria

Some of the sign-off criteria for different areas are listed below. For those curriculum areas not listed, please contact the Clinical lead.

Transfer and Resuscitation (Dr Wildman)

- Logbook showing number of trauma cases undertaken,
- Any critical incidents and some reflection / CBD / assessments pertaining to trauma calls from ED.
- If you've done ATLS, just let me know.
- For transfer - attendance at the training course plus evidence of a few intra and inter hospital transfers with any reflections as necessary

Obstetric CCC (Dr Simpson)

- **Mandatory:**
  - IACOA
  - RCOA log book - showing 3/12 on calls
  - SLEs covering:
    - Periop
    - General
    - Regional
  - An MTR - this doesn't have to be just obstetrics, it can be the one covering all of the 3rd year of stage 1. I can also do an obs specific one if you wish / need. It shouldn't be the one from the IACOA though.
  - MSF for the year including some obs team e.g. obstetricians / MWs / obs scrub staff/ ODPs from obs etc. This can be the MSF covering the whole year doesn't have to be obs specific.
- **Also include if you have:**
  - SLE from clinics (attendance encouraged for stage 1, mandatory for stage 2)
  - Everything else you've got of:
    - QIP , reading, epi audit system log book etc

Regional (Dr Singh)

- Evidence of blocks for Ulna, Radial and Median nerve (Level 3 supervision)
- Should be able to identify the nerves etc for Axillary and interscalene/brachial but it is not solo practice for these blocks. Solo (level 4) for Epidurals, spinals and CSE

Paediatrics CCC (Dr Kukreja)

- Paeds Logbook - No fixed number of cases - Just enough and spread across specialties
- Portfolio - WBPA variety
- Level 2 safeguarding

Pain (Dr Samuel)

- CT1 - Aim - focus on epidural and PCA and acute pain management
- E-Learning modules
- Pain rounds:
    - Tuesday mornings am x2
    - Tuesday am - x1 - WR with pain nurses. Nurses will also go through epidural and PCA training competency presentation.
    - Thursday am x 1 - Acute pain referrals (initially triaged by pain nurses). Cases can be discussed with consultant (Dr Sa**muel)**

General Anaesthetics (Dr Reynolds)

Curriculum is competency based so it is hard to be specific about numbers of cases and SLEs etc. The end result is a trainee that can: 'provide safe and effective general anaesthesia with distant supervision for ASA 1-3 patients undergoing non-complex elective surgery within a general theatre setting'.

The following sign offs are a pre-requisite

- EPA 1 + 2 + IAC certificate
- EPA 3 + 4 + IACOA certificate
- Obstetrics CCC form
- Paediatrics CCC form
- Simulation training in critical incidents including airway and trauma resuscitation (or demonstrates equivalent competency)
- Logbook demonstrating adequate exposure in general, airway, ortho, regional, urology, gynae, emergency surgery
- TIVA logbook
- Multiple trainer report
- Range of SLEs across a range of surgical specialties demonstrating competency to the specified level in the areas specified areas by the RCoA curriculum
- Competency is specified at 2b (supervisor within hospital for queries, able to provide prompt direction/assistance), 2a (supervisor in theatre suite, available to guide aspects of activity through monitoring at regular intervals) or 1 (direct supervisor involvement, physically present in theatre throughout)

Useful Information from elsewhere

Useful Websites

- www.rcoa.ac.uk this is the college website
- http://www.e-lfh.org.uk/projects/ela/index.html this is the e learning website there is a plethora of online tutorials on this website, really useful! Also a selection of college MCQs are on this site. MCQs from this site are used in the exam, sometimes word for word!
- www.frca.co.uk a great website with useful exam information, past questions, revision courses and reading lists
- http://www.aagbi.org/ this the Association of Anaesthetists of Great Britain and Ireland, not only does it have guidelines on anaesthetic practice it has lots of useful information on training
- http://www.ficm.ac.uk/ this the website for the Faculty of Intensive Care Medicine
- http://www.accsuk.org.uk/ this is a useful resource for ACCS trainees

Useful iPhone Apps

- CLWRota – departmental rota (you will be provided a login upon starting)
- iDAS – difficult airway society guidelines
- Induction – provides all the bleep and extensions for the majority of the hospital
- MicroGuide – the trust antibiotic guidelines
- ANSO Pro – Sonoanatomy for regional anaesthesia. Yearly subscription but free for first year

Useful Books

There are a number of good books that can be used to learn about anaesthesia and prepare for the primary exam. Like most educational resources, the choice of materials are a matter of taste and individual preferences, but below are a selection of books that trainees have found particularly useful in the past:

Fundamentals of Anaesthesia. Edited by Tim Smith, Colin Pinnock, Ted Lin, Robert Jones. **ISBN**: 0521692490
A lot of useful information!

Pharmacology for Anaesthesia and Intensive Care. Tom Peck, Sue Hill. **ISBN**: 1107657261
Sue Hill writes the exam so it's the unofficial core pharmacology text book

Drugs in Anaesthesia and Intensive Care. Oxford University Press. **ISBN**: 0199599386
A great quick reference on most anaesthetic drugs

Basic Physics and Measurement in Anaesthesia. Gavin Kenny, Paul Davis. **ISBN**: 0750648287
All things physics!

Essentials of Anaesthetic Equipment. Baha Al-Shaikh, Simon Stacey. **ISBN**: 0702049549
A comprehensive book on equipment with clear pictures and diagrams

Physics, Pharmacology and Physiology for Anaesthetists: Key Concepts for the FRCA. Cross, Plunkett **ISBN:** 1107615887
Contains lots of good diagrams for the dreaded SOE part of the Primary!

Guide to the FRCA Examination - The Primary
This is the Royal College text on the Primary!

Useful Courses

There are several courses that will help you through your anaesthetic training. A select list is below:

1. Lister Transfer course – run by Dr Matt Morris
2. ATLS
3. APLS
4. Mersey Course – this is for the Primary FRCA. The MCQ course is very popular and trainees often say this course helped them pass!

As well as formal courses there is monthly regional teaching which is based at hospitals in the region (Stevenage, Luton, Bedford, Watford and Peterborough). This is mainly focussed on common topics assessed in the Primary FRCA. Departmental teaching for both ACCS and Anaesthetic CTs takes place weekly on a Wednesday afternoon.

Appendices:
Obstetric Anaesthesia

Appendices: Obstetric Anaesthesia

Major Obstetric Haemorrhage (MOH)

To activate a Major Obstetric Haemorrhage (MOH) call, please dial '2222' to inform the switchboard.
An MOH call is put out for blood loss of 1500ml and ongoing. Please note, no blood is kept on in maternity routinely.

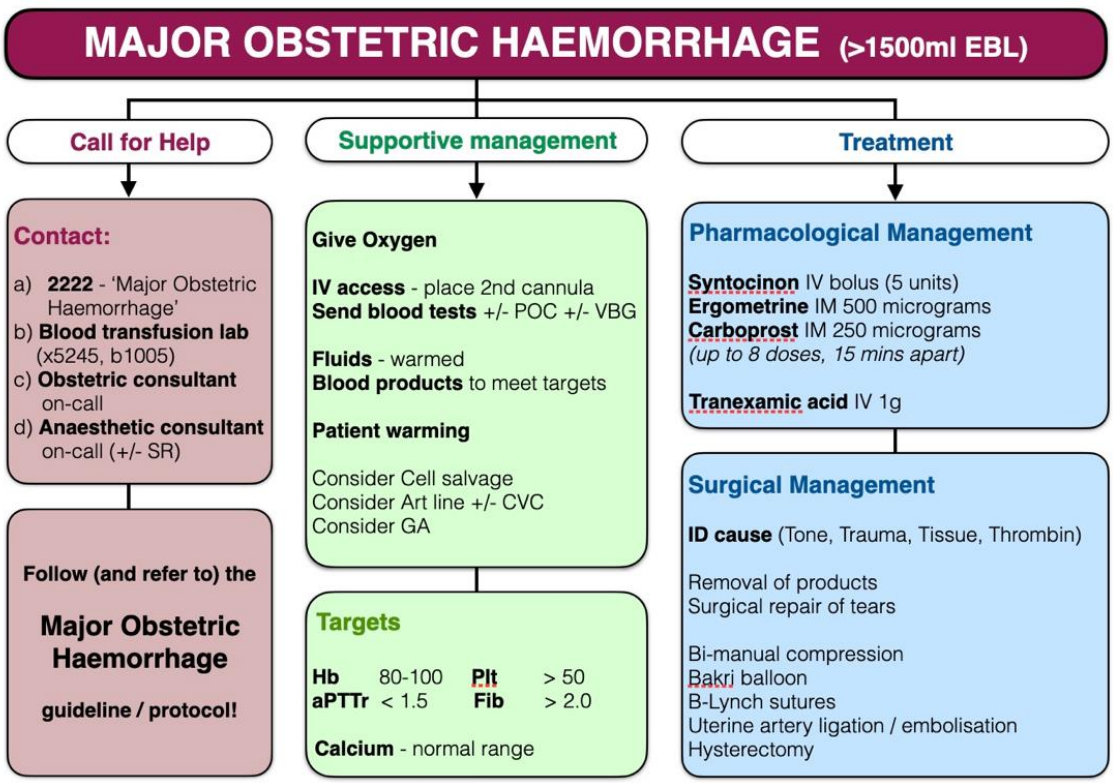
The following people will automatically receive the MOH bleep:

- Obstetric Registrar and SHO
- Obstetric Anaesthetist
- Obstetric ODP
- Senior Anaesthetic registrar
- Porter

The following people are NOT automatically contacted and it is **your** responsibility to contact them (or delegate this job to another member of the team e.g. ODP / midwives):

- ***Anaesthetic Consultant:*** They **MUST** be informed even if you do not need their attendance and please document the name of the consultant on the anaesthetic chart
- ***Transfusion lab:*** inform them of the details of the patient so that they can start preparing blood products for you (Note: **NOTHING** will be automatically released from blood bank unless specifically requested)
- ***Haematology Consultant:*** contact via switchboard for advice
- ***Obstetric Consultant***

Please refer to the 'guidelines' section for the full version (Guideline 5.2 Management of Major Obstetric Haemorrhage) for further details.



A flow chart devised by Dr Derek Brunnen (Consultant Anaesthetist with Obstetric Interest)

Difficult intubation guidelines for Obstetrics: DAS

For more details see: https://das.uk.com/guidelines/obstetric_airway_guidelines_2015

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Patient Controlled Epidural Analgesia

We provide a patient controlled epidural analgesia (PCEA) service. The anaesthetist needs to give the first dose which is also the test dose (10mls followed by a further 5 mls 5-10 minutes later). Bolus regime is Bupivacaine 0.1% + Fentanyl 2 μg/ml, with a bolus dose 9 ml and 15 minutes lockout. There is a pre-set on the epidural pumps for this- please use it.

When you commence a labour epidural please fill out an anaesthetic chart (history, examination, bloods), and leave this with the notes. This makes it easier to assess the woman quickly, if she is later rushed to theatre.

The Epidural Pumps:

- Currently the BD Bodyguard Epidural Pumps are in use
- The Midwives will provide the pump and the Epidural bag

How to set up:

- Pierce the epidural bag with the epidural giving set found on the epidural trolleys on Labour Ward

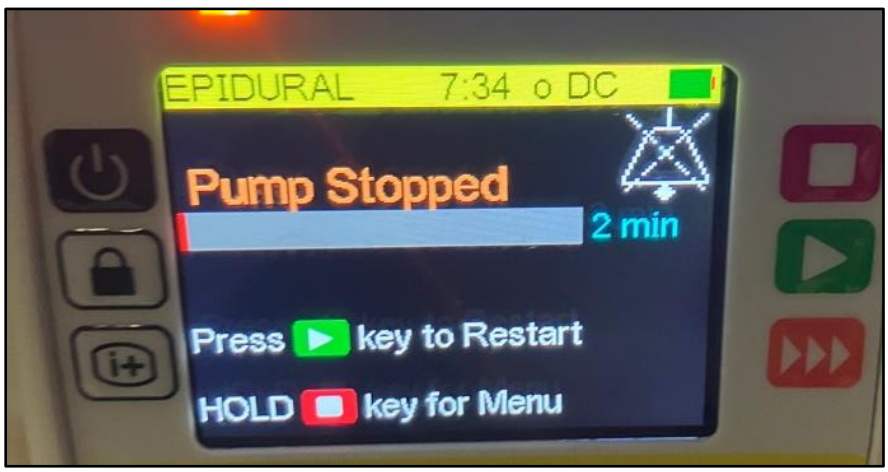
- Connect the giving set into the epidural pump as below

- Prime the line from the Menu. Disconnect the giving set from the patient's epidural first! Press stop once primed

- Press '*Select Protocol*'
- Input Patient ID
- Select Protocol of Fent + Bupivicaine 0.1% and start the infusion (this should automatically be set at 0 ml/h)

To 'Clinician Bolus'

- Stop the pump
- Press the orange button



- Type in the Level 2 code
- Select bolus volume
- Don't forget to restart the pump after the bolus dose
- If you have given > 9ml in the last 15 minutes, the midwives will have to recheck observations as they would when the epidural is first established (every 5 minutes for 20 minutes)

Remifentanil PCA in Labour

Occasionally, we provide remifentanil PCA for analgesia in labour for very carefully selected patients. This group of patients would usually have been seen in the obstetric anaesthetic 'high risk' clinic (HRAC). Remifentanil is not licensed for this use, however it has been well described as a safe alternative to epidural analgesia for those in whom an epidural is contraindicated (e.g. certain spinal problems, low platelets, recent heparin, coagulation disorders, etc). **It is important that the use of Remifentanil PCA is discussed with the consultant anaesthetist on-call before use.**

The Remifentanil PCA pump and giving sets can be found in the store room opposite the obstetric anaesthetic office. **Please read the Remifentanil guidelines before use.** The anaesthetist information card from the guidelines is below:

Starting a remifentanil PCA
• Ensure the woman has read and understood the Remifentanil PCA information sheet (see Appendix 2) • Ensure a **dedicated** intravenous cannula (22G Blue or 20G Pink). This should **not** be on the same side as BP measurement and the site should be regularly inspected for leaks or tissuing • Ensure minimal volume extension with a one-way valve • Dilute remifentanil to a concentration of 40 mcg / ml • Initial bolus of 0.5 mls (20 mcg) every 3 minutes • Ensure patient has been shown how to use the PCA and advise her to press the button just before or at the start of a contraction • Stay with the woman for the first few contractions to adjust dose / frequency as needed • Adjust the dose if insufficient or adverse effects (maximum dose 60 mcg) • Adjust the interval if contractions frequent (minimum interval 2 minutes)
During Remifentanil PCA use
• Visit the woman frequently to assess the quality of analgesia and if any side effects • The Remifentanil PCA observation sheet should be completed (see Appendix 1); sedation score, pain score and observations should be recorded every 30 minutes • Review the woman immediately if asked by the midwife (if busy ask the midwife to bleep the SR on 1102) • Increase the bolus dose if contractions painful to a maximum of 60 mcg • Decrease the lock out time to 2 minutes if contractions very frequent
After Remifentanil PCA use
• Ensure woman is entered on the follow up system

Cell Salvage

Currently the cell saver in main theatres can be used electively on a named patient basis for Jehovah's Witnesses and other groups unable to receive blood. This will be mainly in Elective Caesarean deliveries taking place in main theatres by prior arrangement.

There is no guaranteed emergency provision for cell salvage at present but please contact the SR / ODP if there is an emergency or unexpected case that would benefit from it. Please familiarise yourself with the equipment to start collection of citrated blood before the cell salvage machine and staff arrive - Conrado ODP can help with this.

Important Equipment List

This is a list of important equipment kept in the labour ward. This list is by no mean exhaustive. Please familiarise yourself with this equipment and be prepared to use them whilst on duty.

- **Anaesthetic machine**: Drager Primus
- **Airway trolley (found outside Theatre 1)**: selection of laryngoscopes and blades, McCoy, Airtraq, Supraglottic airways
- **Syringe drivers / pumps**: use these for phenylephrine / insulin infusion
- **Infusion pumps**: these are typically used for the infusion of oxytocin and are usually set up by midwives / ODP
- **Fluid warmers**: in theatre
- **Bair hugger**: in theatre
- **Haemacue**: in 'anaesthetic' shelf in Theatre 1
- **Glucometer**
- **PCEA pumps**: these are kept in 'clean utility' room.
- **Theatre procedure trolleys**: one in each theatre, for spinal / CSE in theatre, stocked by ODP
- **Labour epidural/IV access trolleys**: x 2. These are found in the main delivery suite corridor and should be stocked by midwives/CSW
- **MOH Trolley**: usually placed in recovery area
- **Oxford Help Pillow**
- **Ambu A-scope**: fibreoptic disposable scope
- **THRIVE**: Transnasal Humidified Rapid Insufflation Ventilatory Exchange – can be used for supplemental oxygenation during induction of anaesthesia for high-risk, high BMI women, or those with anticipated airway difficulty
- **Ultrasound machine**: for central line/block placement (theatre 1)

The following equipment may be 'borrowed' from main theatre (with permission) if necessary:

- **MH anaesthetic machine**
- **'Level 1 rapid infuser'**
- **PCA pump**: for remifentanil (in labour) or morphine (post-op) This is kept in the drugs room in recovery
- **Accuvein** vein finder

To transfer a patient to critical care, please borrow the transfer monitor & OxyLog ventilator from ITU. 'Inotrope' pumps may also be borrowed from ITU if required.

Dr. Simpson's suggested timeline of supervision for obstetric anaesthesia

Week	Cases	Supervision	Notes
1	Mainly elective list	1 or 2a	Read a text book of obstetric anaesthesia. Read the EPA 3. And 4 workbook from the RCOA. Book prompt if not already done
2	Mainly elective list	1 and 2a	Complete SLEs for elective cases and physiology/ pharmacology
3	Labour ward	1 and 2a	Attend ward round, SLEs for epidural and emergency cases
4	Labour ward	1 and 2a	Attend ward round, SLEs for epidural and emergency cases. Have lunch in the labour ward coffee room. Hand out in their handover room.
5	Mainly elective list	2a and 2b	Simple elective CS with minimal consultant input
6	Labour ward	1 and 2a	Should be able to site epidurals for straight forward cases with 2a supervision.
7	Labour ward	1 and 2a	should be managing MROP and repair of tears plus Cat 3 CS for straightforward cases with 2a supervision
8	Labour ward	1 , 2a, 2b	Focus on managing case that are not straight froward eg high BMI, PET, PPH. Send MSF to some midwives and obstetricians- you don't need an MSF for EPA 3 and 4 but you will for the end of CT2 ARCP. Arrange to see Lead obs Anaes..
9	Labour ward	1 , 2a, 2b	Focus on managing case that are not straight froward eg high BMI, PET, PPH. See Lead obs Anaes to look at SLEs and start MTR.
10	Labour ward	2a and 2b	Carry the bleep and decide when to call for assistance.
11	Mainly elective list	2B	Run the elective list with minimal consultant input for straight forward cases
12	Labour ward	2B	Should be managing emergency cases and labour ward analgesia with minimal supervision

Your target is level 3 supervision for straight forward cases and the initial management of emergencies. The above is just a suggested time line. No one does exactly what this says.

Typical issues are:

1. Trainees spending too much time in the elective theatre and not doing enough MROP, repair of tears, managing epidurals that are not working well, and doing epidural top ups.
2. Not reading a text book or similar at any stage: this is vital. You need a mixture of apprenticeship and academic training
3. Not getting to know the Midwifery team and obstetricians. Spend time in their handover room, their coffee room, on the ward round etc. Get to appreciate their concerns and points of view as well as ours.
4. Trainees not doing and SLEs for the first 10 weeks. When I sign the EPA3/4 I expect to see SLEs from the whole 12 weeks showing progress from level 1 to level 3 supervision. If you don't to SLEs early then you won't get feedback about what you need to focus on to improve.

Labour Pains Website

https://www.labourpains.org

This website provides a number of leaflets that are useful. There are also a number of translations available.

OAA Epidural Information Card

The OAA produced a very useful information card (double-sided), the first side briefly explains the epidural procedure, and the reverse includes a table with risks of regional anaesthesia. We have placed laminated copies of this in each of the delivery rooms so that women who lack knowledge about epidurals can read it during the early stages of labour when they are more able to understand the information. Please note that in the OAA website, there are such cards in various other languages, which can be downloaded and printed if necessary: https://www.labourpains.org/translated-information/overview

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AEOAT Quick Reference Guide

https://heeoe.hee.nhs.uk/sites/default/files/eaoag_quick_ref_guide_obs_final.pdf

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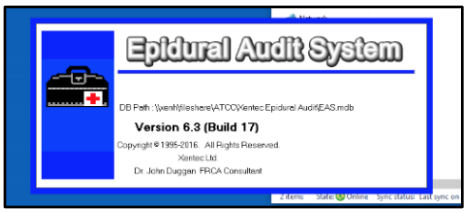
Epidural Audit System

- **Epidural Audit System** is to be used for all cases where a patient has been taken to theatre or have had an epidural in labour
- It generates follow-up forms so these patients can all be reviewed after their intervention and complications can be picked up in a timely manner
- Below is a 'how to' guide to get set up and input patient information

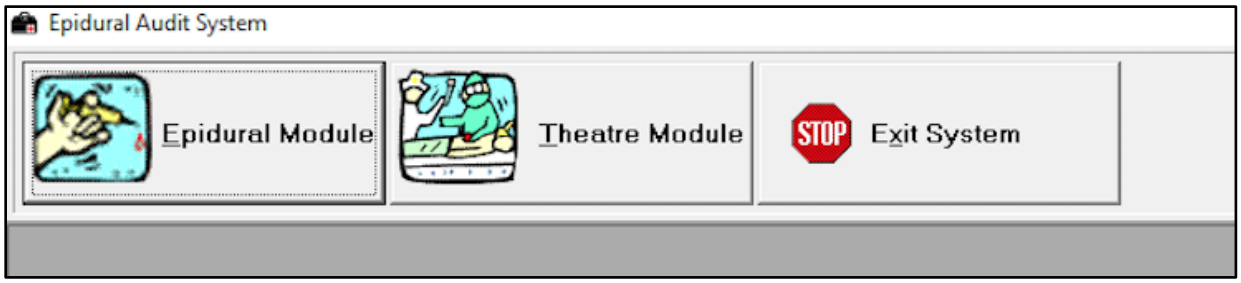
Getting started:

- On a computer in Obs Theatre 1 or 2 log into your desktop
- Find Epidural Audit System in the Search bar on the desktop main screen

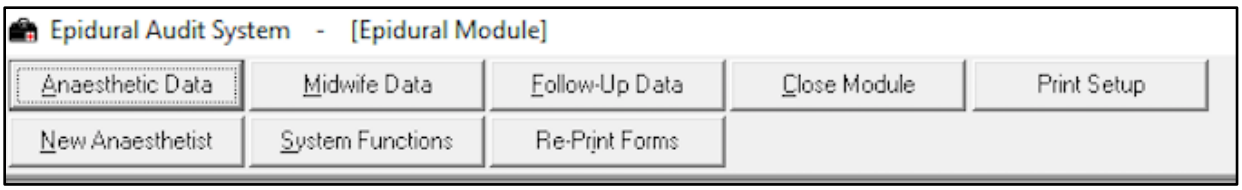


Setting up as a new user:

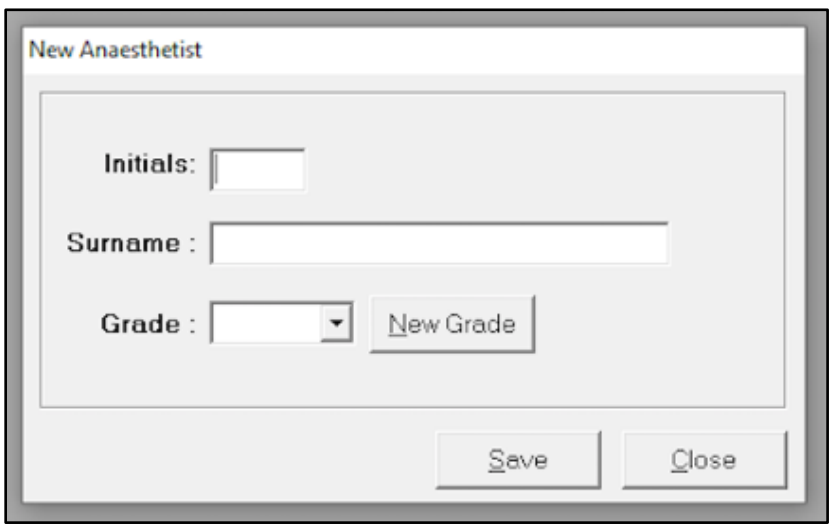
- Click on either the 'epidural' or 'theatre' module boxes.



- Click on 'New Anaesthetist'

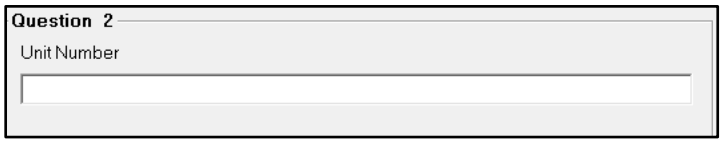


- Input your information



Logging patients:

- Open the Epidural Audit System Program
- Select either 'Epidural Module' or 'Theatre Module' depending on the case
- Input the data for the patient. Please note, the 'Unit Number' requires 7 characters. This should be the Hospital Number. If there are less than 7 numbers for that patient, then please use a 0 to start the Unit Number to make up a total of 7 characters



Following Up Patients:

Generating the forms:

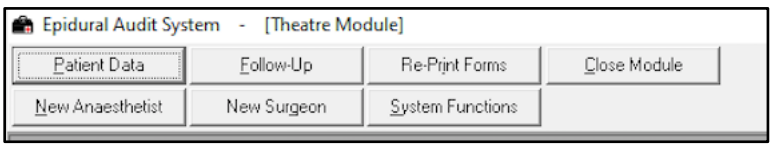
- **A printed Follow-up Form is generated** for both Theatre and Epidural Cases. **This is filed in the red folder** in the anaesthetic office
- **An additional form is generated for the epidural cases**, detailing your procedure**. This is filed in the notes for the patient**

Following up:

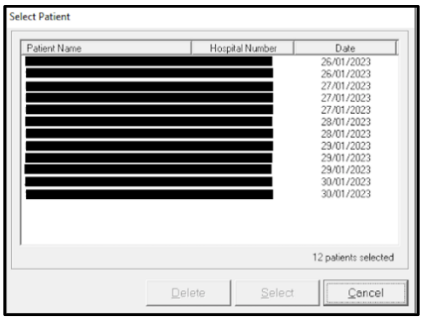
- **To 'follow-up' a patient, take the follow-up forms and ask the patient the questions** on the form on the post-natal ward

Inputting the responses:

- **The results from the follow-up need to be inputted onto the Epidural Audit System**
- Open the program as above
- Click on either epidural or theatre module depending on the case
- Click 'Follow-up'



- **Select the patient and input the data from the paper form**

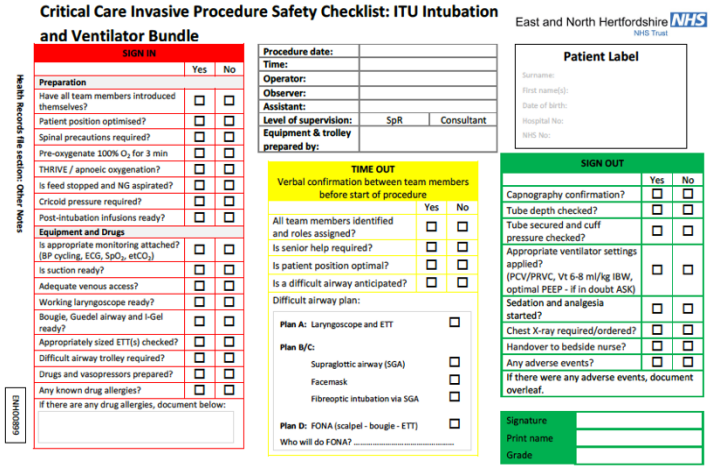


- **Please then discard the paper follow-up form in the box for shredding in the recovery area**

Appendices: Intensive Care

Appendices: Intensive Care

Intubation LocSSIP and Spontaneous Breathing Trial Paperwork



Critical Care Invasive Procedure Safety Checklist: ITU Intubation and Ventilator Bundle

East and North Hertfordshire NHS
NHS Trust

Health Records file section: Other Notes

ENH03869

SIGN IN	Yes	No
Preparation		
Have all team members introduced themselves?	☐	☐
Patient position optimised?	☐	☐
Spinal precautions required?	☐	☐
Pre-oxygenate 100% O_2 for 3 min	☐	☐
THRIVE / apnoeic oxygenation?	☐	☐
Is feed stopped and NG aspirated?	☐	☐
Cricoid pressure required?	☐	☐
Post-intubation infusions ready?	☐	☐
Equipment and Drugs		
Is appropriate monitoring attached? (BP cycling, ECG, SpO_2, $etCO_2$)	☐	☐
Is suction ready?	☐	☐
Adequate venous access?	☐	☐
Working laryngoscope ready?	☐	☐
Bougie, Guedel airway and I-Gel ready?	☐	☐
Appropriately sized ETT(s) checked?	☐	☐
Difficult airway trolley required?	☐	☐
Drugs and vasopressors prepared?	☐	☐
Any known drug allergies?	☐	☐
If there are any drug allergies, document below:		

Procedure date:		
Time:		
Operator:		
Observer:		
Assistant:		
Level of supervision:	SpR	Consultant
Equipment & trolley prepared by:		

TIME OUT
Verbal confirmation between team members before start of procedure

	Yes	No
All team members identified and roles assigned?	☐	☐
Is senior help required?	☐	☐
Is patient position optimal?	☐	☐
Is a difficult airway anticipated?	☐	☐

Difficult airway plan:

Plan A: Laryngoscope and ETT ☐

Plan B/C:
Supraglottic airway (SGA) ☐
Facemask ☐
Fibreoptic intubation via SGA ☐

Plan D: FONA (scalpel - bougie - ETT) ☐

Who will do FONA? .....

Patient Label
Surname:
First name(s):
Date of birth:
Hospital No:
NHS No:

SIGN OUT	Yes	No
Capnography confirmation?	☐	☐
Tube depth checked?	☐	☐
Tube secured and cuff pressure checked?	☐	☐
Appropriate ventilator settings applied? (PCV/PRVC, Vt 6-8 ml/kg IBW, optimal PEEP - if in doubt ASK)	☐	☐
Sedation and analgesia started?	☐	☐
Chest X-ray required/ordered?	☐	☐
Handover to bedside nurse?	☐	☐
Any adverse events?	☐	☐
If there were any adverse events, document overleaf.		

Signature	
Print name	
Grade	

Spontaneous Breathing Trial and Assessment for Extubation

Daily Screening

If the underlying indication for mechanical ventilation has resolved or significantly improved and there are no other acute medical problems, screening for SBT and extubation should be undertaken daily (ideally in the morning) and recorded below.

Answer ✓ / ✗ for each question.

Consider whether the patient's level of sedation is appropriate for their current clinical condition.

Date & Time							
RASS score -1 to +2							
Minimal dose vasoactive drugs (e.g. NA <0.2 mcg/kg/min)							
Spontaneous breathing mode (PSV or CPAP)							
$FiO_2 \leq 0.5$							
pH ≥ 7.3							
PEEP ≤ 8 cmH_2O							
TV ≥ 5ml/kg IBW							
Temp ≤ 38°C							
RSBI ≤ 100 b/min/l*							
Ready for SBT?							
Signature							

* RSBI – Rapid Shallow Breathing Index (RR ÷ TV)

If all parameters marked ✓, proceed to SBT

If 1-2 parameters marked ✗, refer to Consultant / Nurse in Charge for consideration of SBT

If ≥3 parameters marked ✗, repeat screening following day

Spontaneous Breathing Trial

Settings:

- CPAP ≤ 8 cmH_2O + PS ≤ 7cmH_2O
- Ensure tube compensation is on

Aim to undertake SBT for 30 minutes

STOP if RR > 35/min, HR > 140/min, SBP >200mmHg or <80mmHg, SpO_2 outside target range.

Document on observation chart that SBT has been performed and record results below:

	Date & Time	Pass / Fail	Reason for Failure
SBT 1			
SBT 2			
SBT 3			

If SBT passed, proceed to assessment for extubation, as below

If SBT failed 3 times, please refer to senior staff (Nurse in Charge, Consultant, physiotherapists) for weaning plan

Assessment for Extubation

Date			
Good cough strength? (yes or no)	Yes / No	Yes / No	Yes / No
Secretions: Volume, tenacity, number of suctions required per hour			
GCS (EVM)	E ..... VT M	E ..... VT M	E ..... VT M .....
Able to follow commands? (open eyes, follow with eyes, grasp hand, stick out tongue) Score 0-4 / 4	/4	/4	/4
CAM-ICU (negative or positive)	Negative / Positive	Negative / Positive	Negative / Positive
Grade of intubation **			
Signature			

** Consider leak test + / - direct laryngoscopy if difficult intubation

Discuss results with Nurse in Charge and Consultant

If decision made to extubate, follow local extubation guideline

If not for extubation, return to previous ventilator settings

Central Line LocSSIP

Critical Care Invasive Procedure Safety Checklist: CVC

East and North Hertfordshire NHS
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CVC / Vascath / PICC
(Please circle)

Indication: .....

Health Records file section: Other Notes

EN(HD)186-5

Procedure date:	
Time:	
Operator:	
Observer:	
Assistant:	
Level of supervision:	SpR / Consultant
Equipment & trolley prepared by:	

Patient Label
Surname:
First name(s):
Date of birth:
Hospital No:
NHS No:

SIGN IN

	Yes	No
Consent form checked? (not required if part of GA or in ICU) N/A ☐	☐	☐
Clotting checked?	☐	☐
Hands washed (operator and assistant)?	☐	☐
2% Chlorhexidine Gluconate / 70% isopropyl alcohol formulation (Chloraprep 2% with tint) applied to procedure site and allowed to dry?	☐	☐
Is all equipment available (incl ultrasound if applicable)?	☐	☐
Use a large drape to cover the patient in a sterile manner	☐	☐
Any known drug allergies?	☐	☐
If there are any drug allergies, document below:		

TIME OUT
Verbal confirmation between team members before start of procedure

	Yes	No
Is patient position optimal?	☐	☐
All team members identified and roles assigned?	☐	☐
Correct line ready? (16cm/20cm/24cm)	☐	☐
Any concerns about procedure?	☐	☐

If you have any concerns about the procedure, how have these been mitigated?

SIGN OUT

	Yes	No
Injection site caps placed using sterile technique	☐	☐
Sterile dressing (Tegaderm / Opsite 3000) applied using sterile technique	☐	☐
Guidewire removed?	☐	☐
2 sutures applied to hub	☐	☐
Chest X-Ray required/ordered	☐	☐
Any adverse events?	☐	☐
If there were any adverse events, document on reverse		
CXR checked / line safe to use?	☐	☐

Signature
Print name
Grade

During the procedure

Sterile gloves and sterile gown worn by operator and assistant	☐
Hat and mask worn by operator and assistant	☐
Sterile field maintained	☐
Sterile sheath and sterile gel used with ultrasound probe (if applicable)	☐

Procedure		Catheter type			Insertion site			
Elective	☐	CVC	16cm ☐	20cm ☐	Jugular	Right ☐	Left ☐	
Emergency	☐	Vascath	15cm ☐	20cm ☐	24cm ☐	Subclavian	Right ☐	Left ☐
Re-wire	☐	PICC	PowerPICC ☐	Other		Femoral	Right ☐	Left ☐
Ultrasound used?	☐		Length inserted .....cm			Guidewire removed		☐

Complications

Pneumothorax ☐	Arterial puncture ☐	Malposition ☐	Haemorrhage ☐
2nd person required ☐	Unable to cannulate ☐	Other ☐	None ☐

Comments:

Critical Care Central Venous Access Device (CVAD) care plan

- To be completed by bedside nurse on every shift
- To be commenced within 4 hours of line insertion / admission to a ward

Particular attention must be paid to meticulous hand hygiene and the proficient use of aseptic non-touch technique (ANTT)

Ward or Treatment area: ICU / ED / ward ..... Site: Lister	Time / Date of Admission:	Date care plan initiated:

Date dd/mm/yy	Time	Need for CVC assessed?		Dressing clean and intact?		CVC exit site inspected?		Any problems when flushing any of the lines?		ANTT used during line access?		Comments (Action taken, reasons for answers, details of ward transfers)	Print name & sign
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No		

Date dd/mm/yy	Time	Need for CVC assessed?		Dressing clean and intact?		CVC exit site inspected?		Any problems when flushing any of the lines?		ANTT used during line access?		Comments (Action taken, reasons for answers, details of ward transfers)	Print name & sign
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No		

Bronchoscopy LocSSIP

Critical Care Invasive Procedure Safety Checklist: Bronchoscopy

East and North Hertfordshire NHS
NHS Trust

Health Records file section: Other Notes

SIGN IN	Yes	No
Patient identity confirmed?	☐	☐
Appropriate consent completed?	☐	☐
Is all equipment available? (Difficult Airway Trolley, bronchoscope, sample pots)	☐	☐
Is appropriate monitoring available (including $etCO_2$)?	☐	☐
Indication for bronchoscopy:		
Any contraindications? (High FiO_2 / PEEP, anatomical, vascular, coagulopathy)	☐	☐
Medication and clotting checked?	☐	☐
Any known drug allergies?	☐	☐
If there are any drug allergies, document below:		
Is feed stopped and NG aspirated?	☐	☐
Are spinal precautions required?	☐	☐

ENH03897

Procedure date:	
Time:	
Operator:	
Observer:	
Assistant:	
Level of supervision:	SpR / Consultant
Equipment & trolley prepared by:	

Patient Label
Surname:
First name(s):
Date of birth:
Hospital No:
NHS No:

TIME OUT
Verbal confirmation between team members before start of procedure

	Yes	No
Is patient on suitable ventilator settings and 100% O_2?	☐	☐
Is patient adequately sedated and paralysed?	☐	☐
Is patient position optimal?	☐	☐
All team members identified and roles assigned?	☐	☐
Any concerns about procedure?	☐	☐

If you have any concerns about the procedure, how have these been mitigated?

SIGN OUT	Yes	No
Capnography in situ?	☐	☐
Ventilator settings reviewed?	☐	☐
Sedation reviewed?	☐	☐
Chest X-Ray required/ordered	☐	☐
Samples sent to micro?	☐	☐
Post-procedure instructions given to bedside nurse?	☐	☐
Any adverse events?	☐	☐

If there were any adverse events, document overleaf.

Signature	
Print name	
Grade	

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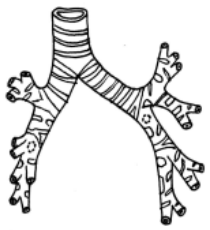
During the procedure			
Sedation	Propofol ml/hr	Opiate: ml/hr	Other: ml/hr
Paralysis	Rocuronium ☐ mg	Atracurium ☐ mg	Other: mg
Findings			



BALs
Tissue Samples

Additional Comments / Adverse Events

Chest Drain LocSSIP

Critical Care Invasive Procedure Safety Checklist: Chest Drain

East and North Hertfordshire NHS
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Health Records file section: Other Notes

SIGN IN	Yes	No
Patient identity confirmed?	☐	☐
Appropriate consent completed?	☐	☐
Is all equipment available? (drain, lignocaine, Seldinger set or surgical set and clamps, ultrasound, sample pots)	☐	☐
Is appropriate monitoring available?	☐	☐
Indication for chest drain:		
Confirm site of clinical abnormality	☐	☐
Correlate with CXR findings?	☐	☐
Safe site of insertion identified?	☐	☐
Medication and clotting checked?	☐	☐
Any known drug allergies?	☐	☐
If there are any drug allergies, document below:		

ENH03898

Procedure date:	
Time:	
Operator:	
Observer:	
Assistant:	
Level of supervision:	SpR / Consultant
Equipment & trolley prepared by:	

Patient Label
Surname:
First name(s):
Date of birth:
Hospital No:
NHS No:

TIME OUT
Verbal confirmation between team members before start of procedure

	Yes	No
Is patient on suitable ventilator settings and 100% O_2? N/A ☐	☐	☐
Is patient adequately sedated and paralysed? N/A ☐	☐	☐
Is patient position optimal?	☐	☐
All team members identified and roles assigned?	☐	☐
Any concerns about procedure?	☐	☐

If you have any concerns about the procedure, how have these been mitigated?

SIGN OUT	Yes	No
Sutures, tube and dressing secured?	☐	☐
Patient advised about care of drain including not elevating above the chest?	☐	☐
Analgesia prescribed?	☐	☐
Chest X-ray required/ordered?	☐	☐
Post-procedure instructions given to bedside nurse?	☐	☐
If effusion, ensure: - ≤500 ml in first hour - ≤1500ml in first 24 hrs	☐	☐
Any adverse events?	☐	☐

If there were any adverse events, document overleaf

Signature	
Print name	
Grade	

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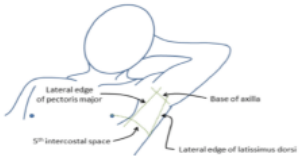
During the procedure			
Sterile scrub, gown and gloves worn by operator and assistant			☐
Chloraprep 2% applied to skin			☐
Local anaesthetic (if required): ..... ml			N/A ☐
Large fenestrated drape used			☐
STOP if unable to aspirate air / fluid whilst infiltrating LA with green needle			☐
Procedure	**Site**		**Drain**
Elective ☐	Left ☐	Right ☐	Type:
Emergency ☐	Site:		Seldinger ☐ **Surgical** ☐
Ultrasound used? ☐	Intercostal space:		Size: ..... F
Samples sent			
Biochemistry ☐	**Microbiology** ☐		**Cytology** ☐
Protein, LDH, pH, glucose, albumin, amylase, triglycerides	Including urgent gram stain and cell count		If malignancy suspected
Light's Criteria (exudates meet at least one of the following criteria)			
1. Ratio of pleural fluid : serum protein >0.5 2. Ratio of pleural fluid : serum LDH > 0.6 3. Pleural fluid LDH > 2/3 upper limit of normal for serum LDH **Additional criteria if results equivocal: Serum albumin - pleural fluid albumin <12 g/l**			

Additional Comments / Adverse Events

Guide to anatomical landmarks for 'safe triangle' for chest drain insertion



Dr Kate Ravin, ICU Consultant
October 2019

Appendices: Emergency Guidelines

Appendices: Emergency Guidelines

Difficult intubation guidelines: DAS

For more details see: https://das.uk.com/guidelines/das_intubation_guidelines

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Anaphylaxis guideline: RC-UK

For more details see: https://www.resus.org.uk/library/additional-guidance/guidance-anaphylaxis/emergency-treatment

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Local Anaesthetic Systemic Toxicity (LAST) guidelines: AAGBI

For more details see: https://anaesthetists.org/Home/Resources-publications/Guidelines/Management-of-severe-local-anaesthetic-toxicity

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Intralipid administration guideline: AAGBI

REDACTED for copyright reasons.

Adult Life Support (ALS) algorithm: RC-UK

For more details see: https://www.resus.org.uk/library/2021-resuscitation-guidelines/adult-advanced-life-support-guidelines

REDACTED for copyright reasons.

Malignant Hyperthermia guideline: AAGBI

For more details: https://anaesthetists.org/Home/Resources-publications/Guidelines/Malignant-hyperthermia-2020

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Major Haemorrhage Quick Reference Guide: AAGBI

For more details and to view the AAGBI Quick Reference Handbook (QRH) in its entirety, see: https://anaesthetists.org/Home/Resources-publications/Safety-alerts/Anaesthesia-emergencies/Quick-Reference-Handbook/PDF-version

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  - Addition of Study leave protocols
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