Royal College of Surgeons

ADVANCING SURGICAL CARE

Learning in Operating Theatres

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Who is this guidance for?

- Staff who work in theatres, so they can support new staff and students. We often forget what it is like for learners who are new to such a complex area. We want to make sure the students and new staff learn well and efficiently. They should feel comfortable and welcomed as part of the team
- New staff in all disciplines
- Students in all disciplines. This guidance may explain some details so you feel more prepared and can make use of your time to learn
- Work experience students

Purpose of this guidance

- To help ensure people have the best opportunity to learn (people do not learn just by watching), and to help make sure people don't learn the wrong things.
- We are often too busy to explain the basics or forget what is of interest to a person new to our area. This guide will highlight where to focus.
- To explain simply how teams work. Having a good functioning team is an important part of ensuring patient safety.
- To help students and new staff to look at the operating theatre as part of the patient's pathway.
- To encourage surgeons and staff to be and appear more welcoming to students and new staff.
- The operating theatre is potentially an amazing place to learn.
- For more information on these topics, please see www.rcseng.ac.uk for publications:
    - Avoiding unconscious bias – a guide for surgeons (2016)
    - The high performing surgical team: a guide to best practice (2014)
    - Mentoring: a guide to good practice (2015)

Essential information for students, new staff and visitors

Operating theatres are a very important part of a hospital. Some operations need a large amount of equipment and a large number of trained staff. Each operating theatre specialises in a particular surgical specialty. You are very welcome learn about how theatres work and how patients are cared for within the theatre complex. Think about the patient and the process: How is safety maintained? How does this operation fit into the patient's life?

Beforehand

- Most Trusts have a minimum age of 17 for anyone (except patients) in the operating department.
- Work experience students need to complete the application process and forms from the Human Resources department before starting.
- Remember that you should respect each patient's right to confidentiality and dignity.
- Some people feel faint when they watch an operation – remember to have breakfast
- Bring any snacks for during the shift – it is difficult to leave the theatre suite during the shift
- No wrist watches or dangly earrings

- Don’t bring valuables in
- You might want to bring in a notebook to write down questions you want to ask
- Visitors/students may want to bring in a book/magazine. Some operations go on for a very long time, and you can take a break without missing much.
- If you are also going to wards or clinics, you should dress according to the Trust Uniform policy, including “bare below the elbows”

On arrival

- Visitors should sign in with the theatre reception. You will be shown where to change:
    - Top and theatre bottoms (different sizes are sometimes available)
    - Keep your underwear on. (Socks too, if you want.)
    - Theatre cap (to cover all hair)
    - Theatre shoes
    - Please wash your hands before starting, and between patients
- Name badge / identification badge should be worn at all times
- Keep any valuables with you, or ask if there is a locker
- Most people leave their snacks in the kitchen area of the theatre suite
- Remember – you can go back to the changing room and toilets at any time.

During your time in the operating theatre

- Staff will show you how to put on your mask, and remove it afterwards
- Do not do anything you have not been trained to do
- You can leave at any time
- You can go to the toilet / changing room
- You can go to the coffee room (please wash up your cup afterwards)
- If you feel sick or faint: tell someone and sit down; you may need to leave the theatre.
- Many staff (not just your supervisor) will be happy to answer your questions most of the time. Be sensitive that some times of the operation/anaesthetic get a bit tense

If you are invited to scrub:

- Try to meet the patient first. Aim to follow them up, in recovery and back on the ward.
- Practice scrubbing and gowning in advance, before you have to do it for real
- If given instruments to pull, pull with exactly the tension you are given
- Say if you are going to move.
- Keep a logbook if training (you should not keep confidential information unless registered)

Organisation

It makes best use of the skilled team to put similar operations together. The list of patients to be operated on, with all their details, is called an “operating list”. There are many considerations planning a list – you may want to think about these: Where should specialist equipment go? Are Xrays needed during the operation? How does the team cope with coordinating operations that take longer or shorter than planned or where unpredicted things happen? Trained staff in theatres include nurses, doctors and Operating Department Practitioners (ODPs) who are registered with the Health Care and Professions Council (HCPC).

What is an anaesthetic?

Anaesthesia is a whole specialty in medicine, which looks after patients' physiology (bodily functions) while they are unable to look after themselves. Sometimes different medications are used to reduce pain or reduce consciousness (awareness). An Anaesthetist is a doctor who has had extra specialist training in anaesthesia. Most anaesthetics are administered in a separate room – the "anaesthetic room", and the patient is wheeled into the adjacent operating theatre after this. There are several types of anaesthetic:

- **G.A. = General Anaesthetic**
  The patient is unconscious. The patient is put into a medically induced coma, which is reversed at the end of the operation.
- **Regional anaesthetic**
  Only a part of the patient is affected.
  The Anaesthetist puts injections around the nerves that supply one part of the body.
  An Epidural is when a needle is put in the back, to numb the lower half of the body.
  It may be used when a woman is having a Caesarean Section for delivery of her baby.
- **L.A. = Local Anaesthetic**
  Injections are put around the part to be operated on to make that area go numb.
  The patient stays awake

Stages of an operation

Typical stages	Explanation
Positioning	Of the patient, exposing the operation site and protecting other parts
Tourniquet	If an arm or leg is being operated on, this squeezes out some blood
Prepping of patient	Painting the operation site with antiseptic solution
Draping of patient	Covering the whole patient with sterile towels, leaving only the operation site exposed.
Incision	Cutting the skin
Approach	Moving through the layers of muscle, avoiding nerves and blood vessels
Findings	Locating the abnormality, and checking it is as the tests before suggested.
Procedure	Taking something out or rearranging the anatomy, testing it will work, fixing everything, etc. This is the main part of the operation.
Drains	Putting in temporary plastic tubes to drain away any excess fluid/blood.
Closure	Using stitches or staples to close the layers of muscle, fat and skin.
Splints	Sometimes if the surgery is a little delicate, it has to be protected until the patient is strong again. (Eg after repairing a tendon.)

Adjuncts

You might see some things being used:

- **Endoscopic surgery** Many operations can be done using telescopes. The telescope is put into a space (eg knee joint or abdomen) and another "portal" is put in, so the surgeon can move instruments around.
- **Diathermy** This is an electric current that seals off the ends of blood vessels, to stop bleeding. It makes a "buzzing" sound when in use.
- **Suction** This is a plastic tube to suck fluid or blood out of the operation site, so the surgeon can see all the structures.

- **Xray** Some operations use Xrays, to check positions of bones or implants
- **Magnification** Some surgeons operate using microscopes (eg for eye surgery)

The patient's journey

Here is a typical "patient journey" for elective or planned surgery:

- G.P. referral: the patient's General Practitioner decides that the patient has a condition that may require surgery and refers the patient to the hospital (usually a few days or weeks later).
- Outpatient clinic: the patient comes to the clinic where s/he sees a Consultant Surgeon, or another doctor or nurse in the team. The "history" is taken, the problem part examined and some test may be requested. If the decision is made that an operation might help, the risks and benefits are discussed with the patient, and the doctor fills out a "waiting list card" and signs a "consent form" with the patient.
- Pre-Assessment clinic: the patient attends a clinic to see a doctor or nurse, to check whether they are fit for surgery and for an anaesthetic, and whether they need any special care or medication to help them (eg if they have heart problems).
- The Admissions department contact the patient to confirm a date for the surgery.
- The patient attends on the morning of surgery, usually having had no food for 6 hours and no drink for 2 hours. (This is to avoid the risk of damage to the lungs from stomach contents while they are being put to sleep.)
- The nurses on the ward or the Admission Lounge check everything is OK
- The surgeon checks the patient on the morning of surgery, and puts an arrow on the part to be operated on, and countersigns the consent form.
- The anaesthetist assesses the patient on the morning of surgery.
- When it is this patient's turn, the theatre staff "send for" the patient, asking a porter to collect the patient.
- The patient is taken to the operating theatre suite, often into the Anaesthetic room. There is a checklist, to make sure the right patient is ready for the right operation.
- The Anaesthetist administers the anaesthetic and stays monitoring the patient throughout the operation. S/he works with an Anaesthetic-trained nurse/O.D.P.
- The patient is moved into the operating theatre.
- Everyone helps position the patient so that the part to be operated on is accessible.
- The surgeon "scrubs" his/her hands, and puts on a green or blue sterile gown and gloves. The surgeon may not touch anything that is not sterile.
- (The "scrub person", a nurse or O.D.P., has already checked all the kit, and "scrubbed, gowned and gloved".)
- The surgeon and scrub person "prep" the patient, painting the skin of the area with a antiseptic solution. (This is often brown or pink.)
- The surgeon and scrub person "drape" the patient, so that s/he is covered with sterile towels, with only the "prepped" area exposed.
- The surgeon does the operation.
- Everyone helps make sure the patient is put back on their bed and is comfortable. The Anaesthetist makes sure that the patient is recovering from the anaesthetic.
- The patient is wheeled into the Recovery room where one nurse or O.D.P. will stay with him/her until s/he is fully awake.
- The team "send for" the next patient.
- Everyone washes their hands between patients.
- The surgeon writes the operation note, saying everything that happened, and listing instructions for "post-op" monitoring, and when the patient can go home, and a plan for when the patient will be reviewed again in clinic.
- When the patient is fully awake and stable a nurse or O.D.P. escorts him/her to the ward.

Some patients have emergency operations. These patients are referred either from their G.P. or via Accident and Emergency. They are assessed by the surgical team, and if a

decision is taken that surgery is needed, their name is added to an operating list. Some lists are kept empty for emergency admissions. We try to avoid operating at night, unless the operation is life-saving or limb-saving. The patient may have tests and be prepared overnight for a “Trauma list” or “CEPOD list” the next day.

Why isn’t the surgeon called “Dr”?

Surgeons in the UK are often called “Mr.”, “Mrs.”, “Miss” or “Ms”. Doctors doing specialist training in surgery usually drop the title “Dr.” when they pass their initial surgical exams and gain “MRCS” (Membership of the Royal College of Surgeons). Until the mid-19th century, surgeons were trained by apprenticeship and a diploma. Surgery changed so that only those with a medical degree could do the training. Reverting to “Mr.”, “Mrs.”, etc. remained something that surgeons did.

The exams have changed slightly, so that surgeons now are granted “MRCS” (Membership) when they are committed to surgical training and then “FRCS” (Fellowship) when they have completed surgical training in their specialty.

The regulations from the General Medical Council

The governing body gives doctors this advice: *“[Supervisor] should seek the patient’s express consent to a student observing their care. [Supervisor] should make sure that the student understands the importance of respecting confidentiality and that their school or college takes seriously its responsibilities for its students’ conduct”.*

Fig 1: Doctors (surgeons and anaesthetists) you may see in the operating theatre: Simplified diagram of training system

<table>
<tr><th>On-Call</th><th>Hurdles</th><th>Old system</th><th>New system</th><th>Other doctors not in training</th></tr>
<tr><td rowspan="2"></td><td></td><td rowspan="2">Medical School</td><td rowspan="2">Medical School</td><td rowspan="2"></td></tr>
<tr><td>Exams</td></tr>
<tr><td></td><td>HO (house officer)</td><td>FY1 (foundation year 1)</td><td></td></tr>
<tr><td rowspan="3">“SHO” Rota</td><td></td><td>SHO (senior house officer)</td><td>FY2 (foundation year 2)</td><td rowspan="3">“Trust SHOs”</td></tr>
<tr><td>Selection</td><td>SHO (senior house officer)</td><td>CT1 or ST1 (core trainee)</td></tr>
<tr><td>Exams</td><td>SHO (senior house officer)</td><td>CT2 or ST2</td></tr>
<tr><td rowspan="4">“Registrar” Rota, on-call in own specialty</td><td>Selection</td><td>Registrar / Specialist Registrar</td><td>ST3 (specialty trainee)</td><td rowspan="5">SAS doctors = Specialty Doctor Staff Grade Doctors Associate specialists</td></tr>
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This information may be useful for medical students to keep. The “old” terms are still in use! (Doctors training to become General Practitioners [GPs] leave hospital training at ST3.)

Important information

Please remember that this leaflet is intended as general information only. It is not definitive. We aim to make the information as up to date and accurate as possible, but please be warned that it is always subject to change. Please, therefore, always check specific advice or any concerns you may have with your supervisor.

After reading this information are there any questions you would like to ask? Please ask your supervisor.

Further reading

www.rcseng.ac.uk Royal College of Surgeons Students and Foundation doctors may join the Affiliates scheme

www.rcoa.ac.uk Royal College of Anaesthetists

www.npsa.nhs.uk National Patient Safety Association

www.ncepod.org.uk National Confidential Enquiry into Patient Outcome and Death

www.gmc-uk.org General Medical Council

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