

# Cardiothoracic surgery

A cardiothoracic surgeon is a specialist who operates on the heart, lungs and other thoracic (chest) organs. As well as performing surgery, they also diagnose and treat diseases of these organs.

This page provides useful information on the nature of the work, the common procedures/interventions, sub-specialties and other roles that may interest you.



## Nature of the work

Cardiothoracic surgery is one of the most challenging and demanding areas of surgery. It's also highly competitive with a relatively small number of jobs. The work is extremely rewarding, since diseases of the chest are a major cause of ill-health and death throughout the world.

As a cardiothoracic surgeon you will see the immediate and often life-changing results of your work. Since the end of the Second World War cardiothoracic surgery has seen rapid growth, coupled with fast-paced technological changes. The specialty is relatively young and is still evolving.

The main areas of cardiothoracic surgery are:

- adult cardiac surgery
- general thoracic surgery
- congenital cardiac surgery
- heart and lung transplant surgery

Monitoring patients in intensive care [1] is a vital part of the work. Although cardiothoracic surgery is relatively safe, complications can occur, including death, stroke [2], infection, bleeding and heart rhythm problems amongst other things.

As well as performing surgery, cardiothoracic surgeons are involved in the treatment and management of the many different conditions within their specialty. This involves attendance at outpatient clinics, multi-disciplinary team meetings and ward rounds.

**Cardiac surgeons** perform various kinds of surgery including:

- coronary artery bypass surgery – restoring blood flow to the heart by bypassing the narrowed coronary arteries
- heart valve surgery – repairing and replacing narrowed or leaking heart valves
- aortic surgery – replacing an enlarged or damaged blood vessel leaving the heart

**Thoracic surgeons** perform a wide range of surgery including:

- surgery for lung cancer, tumours and cysts
- surgery on collapsed or infected lungs
- key hole thoracic surgery (video assisted thoracoscopic surgery (VATS))
- chest-wall deformities (pectus surgery)

**Congenital cardiac surgeons** treat babies and children with heart diseases that have been present from birth. These conditions include

- septal defects (a hole between two of the heart's chambers)
- aortic and pulmonary valve stenosis (where the valve is narrower than normal)
- transposition of the arteries

*"When I'm in theatre I just can't believe how fortunate I am as I love my job! I really enjoy being part of such a close-knit inspirational team, which is like an extended family. We all appreciate one another's individual roles."* Alia Noorani, Specialist surgical trainee, Papworth Hospital NHS Foundation Trust.

Read Alia's Story [3]

## Want to learn more?

Find out about:

- the working life [4] of a cardiothoracic surgeon
- the entry requirements [5] and training and development [6] needed

- Pay and conditions

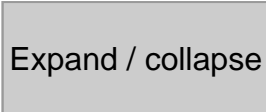
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This section provides useful information about the pay for doctors in training, SAS doctors (specialty doctors and associate specialists) and consultants.

Find out more about the current pay scales for doctors [7], and there's more information on the BMA website [8].

NHS employers [9] provides useful advice and guidance on all NHS pay, contracts terms and conditions.

Medical staff working in private sector hospitals, the armed services or abroad will be paid on different scales.

-  Where the role can lead

Read about consultant and non-consultant roles in cardiothoracic surgery, flexible working and about wider opportunities.

### **Consultant roles**

You can apply for consultant roles six months prior to achieving your Certificate of Completion of Training [10] (CCT [11]). You will receive your CCT [11] at the end of your cardiothoracic training.

Managerial opportunities for consultants include:

- clinical lead - lead NHS consultant for the team
- clinical director - lead NHS consultant for the department
- medical director - lead NHS consultant for the Trust

Education and training opportunities for consultants include:

- educational supervision of doctors in training
- director of medical education - the NHS consultant appointed to the hospital board who is responsible for the postgraduate medical training in a hospital. They work with the postgraduate dean to make sure training meets GMC standards.
- training programme director - the NHS consultant overseeing the education of the local cohort of trainee doctors e.g. foundation training [12] programme director. This role will be working within the deanery/HEE local office
- associate dean - the NHS consultant responsible for management of the entirety of a training programme. This role will also be working within the deanery/local office

### **SAS doctor roles**

SAS surgeons (Staff, Associate Specialists and Specialty Doctors) work as career grade specialty doctors who are not in training or in consultant posts. You will need at least four postgraduate years training (two of those being in a relevant specialty) before you can apply for SAS roles.

The role of an SAS surgeon can vary greatly. Depending on your experience you might work on complex surgery or relatively minor diagnostic and outpatients work. SAS doctors will frequently participate in routine and elective [13] surgery rather than emergency work. They may also train other staff.

Some surgeons are attracted to the SAS role as the hours are more regular than those of the consultant, and you're paid for on-call work and overtime beyond 7am-7pm.

Further information on the SAS doctor role. [14]

### **Other non-training grade roles**

These roles include:

- trust grade
- clinical fellows

### **Academic pathways**

If you have trained on an academic surgery pathway or are interested in research there are opportunities in academic medicine.

For those with a particular interest in research, you may wish to consider an academic career in cardiothoracic surgery. Whilst not essential, some doctors start their career with an Academic Foundation post. This enables them to develop skills in research and teaching alongside the basic competences in the foundation curriculum.

Entry into an academic career would usually start with an Academic Clinical Fellowship (ACF) and may progress to a Clinical Lectureship (CL). Alternatively some trainees that begin with an ACF post then continue as an ST trainee on the clinical programme post-ST4.

Applications for entry into Academic Clinical Fellow posts are coordinated by the National Institute for Health Research Trainees Coordinating Centre (NIHRTCC). [15]

There are also numerous opportunities for trainees to undertake research outside of the ACF/CL route, as part of planned time out of their training programme. Find out more about academic medicine. [16]

The Clinical Research Network [17](CRN) actively encourages all doctors to take part in clinical research.

### **Other opportunities**

There are good career opportunities for ambitious and hard-working doctors within cardiothoracic surgery. The slight decrease in the number of cardiac operations has been balanced with an increased need for thoracic surgery.

As their careers progress cardiothoracic surgeons often become increasingly involved in a wide range of other activities including research, audit, teaching, writing and committee work.

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Job market and vacancies

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This section provides useful information about the availability of jobs, how to find vacancies and sources of further information.

### **Job market information**

NHS Digital regularly publish workforce statistics which show the number of full time equivalent

consultants and doctors in training for each specialty: NHS Digital workforce statistics [18].

Competition ratios for medical specialty training places are published on Health Education England's specialty training webpage [19].

For information regarding Scotland, Wales and Northern Ireland please click on the links below.

NHS Scotland workforce information [20]

NHS Wales workforce information [21]

NHS Northern Ireland workforce information [22]

### **Where to look for vacancies**

Applications for core surgery training are made via the Core Surgery National Recruitment Office. Further details including closing dates can be found on the Surgery Recruitment [23] website.

London and the South East (LaSE) nationally coordinates the recruitment into Core Surgery Training round one (CT1) on behalf of England, Wales and Scotland. This training programme is open to those who may want to train flexibly on a less than full-time basis (LTFT). You can request and apply for this after you have been offered the job. Restrictions apply.

Health Education Wessex [24] is coordinating the national process for recruiting trainees into Cardiothoracic Surgery ST posts.

Registration and application for core surgery and specialist training is online via Oriel. Further details, person specifications and application deadlines are also available on the Oriel [25] website.

Northern Ireland has its own recruitment process. For further details please visit the Northern Ireland Medical and Dental Training Agency [26] website.

Generally all cardiothoracic surgery posts are advertised on NHS jobs [27].

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Further information

### **Organisations**

British Medical Association [28]

General Medical Council [29]

Royal College of Surgeons [30]

Royal College of Surgeons of Edinburgh [31]

Royal College of Physicians and Surgeons of Glasgow [32]

Society for Cardiothoracic Surgery in Great Britain and Ireland [33]

### **Real-life stories**

A career in cardiothoracic surgery (BMJ) [34]

A day in the life of a thoracic surgeon (CTSNET) [35]

A day in a heart surgeon's life (CTSNET) [36]

## Other roles that may interest you

- Cardiology [37]
- Emergency medicine [38]
- Respiratory medicine [39]
- Experienced paramedic [40]

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**Source URL:** <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/surgery/cardi thoracic-surgery>

### Links

- [1] [https://www.healthcareers.nhs.uk/glossary#Intensive\\_care](https://www.healthcareers.nhs.uk/glossary#Intensive_care)
- [2] <https://www.healthcareers.nhs.uk/glossary#Stroke>
- [3] <https://www.healthcareers.nhs.uk/explore-roles/surgery/cardi thoracic-surgery/real-life-story-miss-alia-noorani>
- [4] <https://www.healthcareers.nhs.uk/explore-roles/surgery/cardi thoracic-surgery/working-life>
- [5] <https://www.healthcareers.nhs.uk/explore-roles/surgery/cardi thoracic-surgery/entry-requirements-skills-and-interests>
- [6] <https://www.healthcareers.nhs.uk/explore-roles/surgery/cardi thoracic-surgery/training-and-development>
- [7] <https://www.healthcareers.nhs.uk/about-us/careers-medicine/pay-doctors>
- [8] <http://bma.org.uk/practical-support-at-work/pay-fees-allowances/pay-scales>
- [9] <http://www.nhsemployers.org/your-workforce/pay-and-reward>
- [10] [https://www.healthcareers.nhs.uk/glossary#Certificate\\_of\\_completion\\_of\\_training](https://www.healthcareers.nhs.uk/glossary#Certificate_of_completion_of_training)
- [11] <https://www.healthcareers.nhs.uk/glossary#CCT>
- [12] [https://www.healthcareers.nhs.uk/glossary#Foundation\\_training](https://www.healthcareers.nhs.uk/glossary#Foundation_training)
- [13] <https://www.healthcareers.nhs.uk/glossary#Elective>
- [14] <https://www.healthcareers.nhs.uk/i-am/currently-working-health/information-doctors/sas-doctors>
- [15] <https://www.nihr.ac.uk/about-us/how-we-are-managed/managing-centres/about-the-trainees-coordinating-centre.htm>
- [16] <https://www.healthcareers.nhs.uk/i-am/currently-working-health/clinical-academic-careers>
- [17] <http://www.crn.nihr.ac.uk/>
- [18] <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-workforce-statistics>
- [19] <https://specialtytraining.hee.nhs.uk/Competition-Ratios>
- [20] <http://www.isdscotland.org/isd/5345.html>
- [21] <http://wales.gov.uk/topics/statistics/headlines/?lang=en>
- [22] <https://www.health-ni.gov.uk/articles/staff-numbers>
- [23] <http://www.lpmde.ac.uk/laserecruitment/specialties/core-surgery>
- [24] [http://www.wessexdeanery.nhs.uk/recruitment/national\\_ct\\_surgery\\_st1\\_\\_st3.aspx](http://www.wessexdeanery.nhs.uk/recruitment/national_ct_surgery_st1__st3.aspx)
- [25] <https://www.oriel.nhs.uk/Web/>
- [26] <http://www.nimda.gov.uk/>
- [27] <https://www.jobs.nhs.uk/>
- [28] <http://www.bma.org.uk>
- [29] <http://www.gmc-uk.org/>
- [30] <http://www.rcseng.ac.uk/>
- [31] <http://www.rcsed.ac.uk>

[32] <http://www.rcpsg.ac.uk>

[33] <http://www.scts.org>

[34] <http://careers.bmj.com/careers/advice/view-article.html?id=20001067>

[35] <http://www.ctsnet.org/article/day-life-thoracic-surgeon>

[36] <http://www.ctsnet.org/article/day-heart-surgeons-life>

[37] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/cardiology>

[38] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/emergency-medicine>

[39] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/respiratory-medicine>

[40] <https://www.healthcareers.nhs.uk/explore-roles/ambulance-service-team/roles-ambulance-service/experienced-paramedic>