

Clinical pharmacology and therapeutics

Clinical pharmacologists are doctors with training in clinical pharmacology and therapeutics (CPT), which is the science of medicines and their clinical use. Their main role is to improve patient care through the safe, economic and effective use of medicines.



Nature of the work

Clinical pharmacologists often work in hospitals, providing specialist advice to patients and colleagues which improve the outcomes and experiences for patients. They may also work in academic settings, in industry and for national and government organisations.

An important aspect of the role is clinical work with patients who may have complex health problems. The CPT consultant is in a unique position to help with advice about the correct medicines and dosages.

They can provide specialist advice on the interactions of different medicines and how these might affect patients. Some patients may have adverse drug reactions, or find that their medicine does not work as it should. A CPT consultant is well-placed to aid in all aspects of medicine management.

CPT consultants may also adopt a generalist role, providing hospital care for patients with complex

conditions that affect multiple organ systems and therefore need several different medicines. There is an increased chance of drug interactions and adverse reactions with this patient group, who are often elderly.

As well as working in hospitals, CPT consultants have an increasing role in community-based medicine, by running clinics for patients with hypertension [1] (high blood pressure) or for those considered a risk for stroke [2] or heart disease.

Providing guidance about the safe prescribing of medicines is another important aspect of the specialty. At a local level CPT consultants may offer medicines information service. They also work with the British National Formulary, which offers medical staff prescribing guidelines and treatment summaries. The goal is always to ensure that patients obtain the maximum health gain from medicines.

Poisoning is a common reason for hospital admission and many of these cases are related to the misuse of prescribed medicines. Some CPT consultants with toxicology expertise work in specialist poison centres. They provide advice about poisoning to staff in A&E and intensive care units, helping to improve care, facilitating early discharge and preventing avoidable hospital re-admissions.

Other areas of work include:

- working with the National Poisons Information Service [3], where CPT consultants provide specialist advice and an on-call service to all allied healthcare professionals
- participation in health economic assessments - The British Pharmacological Society [4] says that spending on medicines amounts to around 10% of the total NHS budget and that this figure is growing
- ensuring the cost-effectiveness of new treatments and make recommendations on medicine usage, working closely with other national bodies such as the National Institute for Health and Care Excellence [5] (NICE) and [6] the Medicines and Healthcare products Regulatory Agency (MHRA) [7]
- working with industry to improve the use of current medicines and to develop new medicines through clinical trials work.

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Common procedures/interventions

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Common procedures and interventions include:

- safe prescribing, reviewing and monitoring of appropriate drug therapies in many different disease areas
- developing treatment plans incorporating lifestyle and pharmacological therapy in prevention of many diseases, in particular cardiovascular disease
- using their knowledge and experience of toxicology to assess and manage the clinical care of patients poisoned by drugs or other chemicals at work or in the environment and those patients who have been abusing drugs such as alcohol or opiates
- undertaking and interpreting the results of clinical trials to evaluate what a drug is doing to the body (pharmacodynamics) or what happens to the drug in the body (pharmacokinetics), and how it works in terms of treating a particular disease. Trials may be undertaken at all stages, including once the drug has been licensed

Sub-specialties

- stroke medicine

- toxicology

Want to learn more?

Find out about:

- the working life [8] of a doctor in this area of medicine
- the entry requirements [9] and training and development [10]
- Pay and conditions

Expand / collapse

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

Find out more about the current pay scales for doctors [11], and there's more information on the BMA website [12].

NHS employers [13] 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

Expand / collapse

Read about consultant and non-consultant roles in clinical pharmacologist and therapeutics, flexible working and about wider opportunities.

Approximately two-thirds of consultants in clinical pharmacology and therapeutics hold academic posts, working in a medical school with an honorary NHS consultant contract. Most CPT academics also have a subspecialty interest such as hypertension, oncology, epilepsy, gastroenterology or paediatrics.

There are also opportunities to move into the pharmaceutical industry to develop new medicines and improve the use of current medicines.

Other opportunities include working in drug regulation. The Medicines and Healthcare products Regulatory Agency (MHRA) [7] employs trained clinical pharmacologists. This organisation ensures the safety of medicines licensed in the UK.

The main careers in CPT are:

- academic as a senior lecturer/ reader/ professor in a medical school with an honorary NHS consultant contract. Most CPT academics have a subspecialty interest such as hypertension, oncology, epilepsy, gastroenterology, paediatrics, etc. Approximately two-thirds of consultants in clinical pharmacology and therapeutics hold academic posts. As well as having a service commitment, their work will have a strong research emphasis which will contribute to

knowledge about drug actions and their clinical usage. They will also play an important role in the planning and delivery of undergraduate teaching in therapeutics. If you are interested in an academic career, you should consider applying for an academic clinical fellowship (ACF), particularly one that provides exposure to CPT. Some trainees use their academic time to prepare an application for funding for a research fellowship leading to a PhD and subsequently apply for an academic clinical lecturer appointment

- NHS consultant. There are relatively few NHS consultant jobs in pure CPT, including ones in poisons units. Many more trained clinical pharmacologists have NHS consultant jobs in other specialties such as general acute medicine or cardiovascular medicine. CPT consultants who serve on drug and therapeutics committees, research ethics committees and formulary committees typically spends about half their time in supervision of acute medical admissions, responsibility for medical inpatients and running outpatient clinics. Clinical pharmacologists do not do private practice but it is possible to earn further money by acting as consultants/advisers to the pharmaceutical industry
- pharmaceutical industry. Opportunities exist within the pharmaceutical industry to develop new medicines and improve the use of current medicines
- drug regulation. The Medicine and Healthcare Products Regulatory Agency (MHRA) has a particular interest in recruiting trained clinical pharmacologists

Consultant roles

You can apply for consultant roles six months prior to achieving your Certificate of Completion of Training (CCT). You will receive your CCT at the end of your clinical pharmacology and therapeutics 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

Most NHS consultants will be involved with clinical and educational supervision of junior doctors.

Here are some examples of education and training opportunities:

- 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 eg foundation training programme director. This role will be working within the HEE local offices/deanery
- associate dean - the NHS consultant responsible for management of the entirety of a training programme. This role will be also be working within the HEE local offices/deanery

SAS doctor roles

SAS doctors (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.

Find out more about 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 clinical pharmacology and therapeutics 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 rehabilitation medicine. 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 opportunities to be employed by the NHS, academic institutions, private sector, universities, organisations and national governing bodies.

- Job market and vacancies

Expand / collapse

This page provides useful information about the availability of jobs, finding vacancies and where to find out more.

Job market information

CPT is a very small specialty, with only 15 consultants in 2016 and 24 medical registrars in England working for the NHS. (NHS Digital, 2016 [18]).

However, this data does not fully reflect the numbers employed in this specialty in different environments such as the pharmaceutical industry and academic settings. The latest census from the Royal College of Physicians [19] shows 76 consultants in England and 32 medical registrars. (RCP

Census 2015-6).

Currently, little more than 10% of the consultant workforce is female but this is changing. Full-time working is still very common in this specialty although the training curriculum supports less than full-time working. About a third of consultants will reach age 65 in the next ten years. The British Pharmacological Society [20] is campaigning for an increase in the CPT workforce and better career support and development.

In 2016, the competition ratio for CT1 Core Medical Training was 1.53, and for ST3 clinical pharmacology and therapeutics it was 1.11 (NHS specialty training 2016). [21]

On this section we have information for England only. For information regarding Scotland, Wales and Northern Ireland please click on the links below.

[NHS Scotland medical and dental workforce data \[22\]](#)

[NHS Wales medical and dental workforce data \[23\]](#)

[Department of Health, Social Services and Public Safety workforce information for Northern Ireland \[24\]](#)

Three reports on clinical pharmacology and the NHS [25], published by the British Pharmacological Society, provide more information on this career.

Where to look for vacancies

All candidates apply through the online application system Oriol.

All jobs are advertised on the NHS Jobs website [26].

- **Further information**

[Expand / collapse](#)

Organisations

[Royal College of Physicians \[27\]](#)

[Royal College of Physicians of Edinburgh \[28\]](#)

[Royal College of Physicians and Surgeons of Glasgow \[29\]](#)

[Joint Royal College of Physicians Training Board \(JRCPTB \[30\]\)](#)

[British Pharmacological Society \[31\]](#)

Other roles that may interest you

- [General internal medicine \[32\]](#)
- [Geriatric medicine \[33\]](#)
- [Pharmaceutical medicine \[34\]](#)
- [Cardiology \[35\]](#)

Source URL: <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/clinical-pharmacology-and-therapeutics>

Links

- [1] <https://www.healthcareers.nhs.uk/glossary#Hypertension>
- [2] <https://www.healthcareers.nhs.uk/glossary#Stroke>
- [3] <http://www.npis.org/>
- [4] <https://www.bps.ac.uk/>
- [5] <https://www.nice.org.uk/>
- [6] <https://www.healthcareers.nhs.uk/glossary#NICE>
- [7] <https://www.gov.uk/government/organisations/medicines-and-healthcare-products-regulatory-agency>
- [8] <https://www.healthcareers.nhs.uk/explore-roles/medicine/clinical-pharmacology-and-therapeutics/working-life>
- [9] <https://www.healthcareers.nhs.uk/explore-roles/medicine/clinical-pharmacology-and-therapeutics/entry-requirements-skills-and>
- [10] <https://www.healthcareers.nhs.uk/explore-roles/medicine/clinical-pharmacology-and-therapeutics/training-and-development>
- [11] <https://www.healthcareers.nhs.uk/about-us/careers-medicine/pay-doctors>
- [12] <http://bma.org.uk/practical-support-at-work/pay-fees-allowances/pay-scales>
- [13] <http://www.nhsemployers.org/your-workforce/pay-and-reward>
- [14] <https://www.healthcareers.nhs.uk/i-am/currently-working-health/information-doctors/sas-doctors>
- [15] <https://www.nihr.ac.uk/>
- [16] <https://www.healthcareers.nhs.uk/i-am/currently-working-health/clinical-academic-careers/clinical-academic-medicine>
- [17] <http://www.crn.nihr.ac.uk/>
- [18] <http://content.digital.nhs.uk/searchcatalogue?productid=23451&topics=2fWorkforce%2fStaff+numbers%2f>
- [19] <https://www.rcplondon.ac.uk/projects/outputs/2015-16-census-uk-consultants-and-higher-specialty-trainees>
- [20] http://www.bps.ac.uk/SpringboardWebApp/userfiles/bps/file/Clinical/Clinical%20Meetings/BPS_A_prescription_for
- [21] <https://specialtytraining.hee.nhs.uk/Competition-Ratios>
- [22] <http://www.isdscotland.org/Health-Topics/Workforce/Medical-and-Dental/>
- [23] <https://statswales.wales.gov.uk/Catalogue/Health-and-Social-Care/NHS-Staff/Medical-and-Dental-Staff>
- [24] <https://www.health-ni.gov.uk/articles/staff-numbers>
- [25] <https://www.bps.ac.uk/about/our-campaigns/clinical-pharmacology-the-nhs>
- [26] <http://www.jobs.nhs.uk/>
- [27] <https://www.rcplondon.ac.uk/>
- [28] <http://www.rcpe.ac.uk/>
- [29] <http://www.rcpsg.ac.uk>
- [30] <http://www.jrcptb.org.uk/>
- [31] <http://www.bps.ac.uk/>
- [32] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/general-internal-medicine>
- [33] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/geriatric-medicine>
- [34] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/pharmaceutical-medicine>
- [35] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/cardiology>