The Royal College of Radiologists

A career built on relationships

Become part of a network of specialists redefining cancer treatment

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What is clinical oncology?

Clinical oncology is a rewarding field of medicine, focused on the treatment of cancer with radiotherapy and systemic therapies (including chemotherapy, targeted agents and immunotherapy).

The specialty is rapidly evolving and there have been tremendous advances in the treatment and delivery of radiation techniques and systemic agents over the past decade. Clinical oncology involves working closely as part of a multidisciplinary team, including specialist nurses, radiographers, physicists, dosimetrists, chemotherapy nurses, dieticians, speech and language therapists and members of the palliative care team.

Clinical oncologists are their patients' advocates through their treatment pathway, whichever form this takes. Good communication skills are necessary to be able to explain the treatment(s) as well as to ensure that patients have a realistic expectation of the outcomes.

Open and honest discussion will empower patients to understand the aims and intent of the treatment and any potential associated risks. Compassion and empathy are crucial in aiding decision making, especially in stopping or starting treatment. General medical knowledge and experience are also vital to support patients during treatment; a combination of this scientific perspective and holistic communication will provide patients with the best care throughout their treatment.

It is important to consider the differences between medical and clinical oncology. Medical oncology focuses on the development and delivery of systemic therapies, whereas clinical oncology involves the development and delivery of both radiotherapy and systemic anti-cancer agents.

Why clinical oncology?

Cancer is an incredibly interesting disease to manage, involving radiotherapy and chemotherapy, and the critically important multidisciplinary team. The job incorporates a mix of ward work and clinics, allowing exposure to acute problems as well as continuity of care. After reviewing patients following their initial diagnosis of cancer, clinical oncologists are then able to discuss a patient's diagnosis and possible treatment options, and subsequently review the effects of their treatments over time. Throughout these consultations, a close, trusting relationship with patients and their families develops. In addition, the specialty is constantly advancing and offering opportunities to be involved with exciting developments; research is greatly encouraged.

How did you get into clinical oncology?

Dr Jennifer van Griethuysen, ST5
North London Trainee

I first became interested in oncology during my Foundation Year 2 (FY2) whilst working in Wellington, New Zealand. When I returned to the UK for Core Medical Training (CMT), I started with an oncology rotation. During this attachment as well as working on the ward, I was able to spend time in the clinic and chemotherapy day unit. I was also encouraged by my supervisor and other clinical oncology trainees to spend time in radiotherapy planning and in the on-treatment radiotherapy review clinics. I decided that I enjoyed the variety and challenges that clinical oncology provided.

Practically speaking, in terms of obtaining a clinical oncology training number, I undertook various oncology specific audits and quality improvement projects. At interview in addition to discussing the oncology projects I had undertaken, the panel wanted to know that I understood the clinical oncology training pathway and had spent time in radiotherapy.

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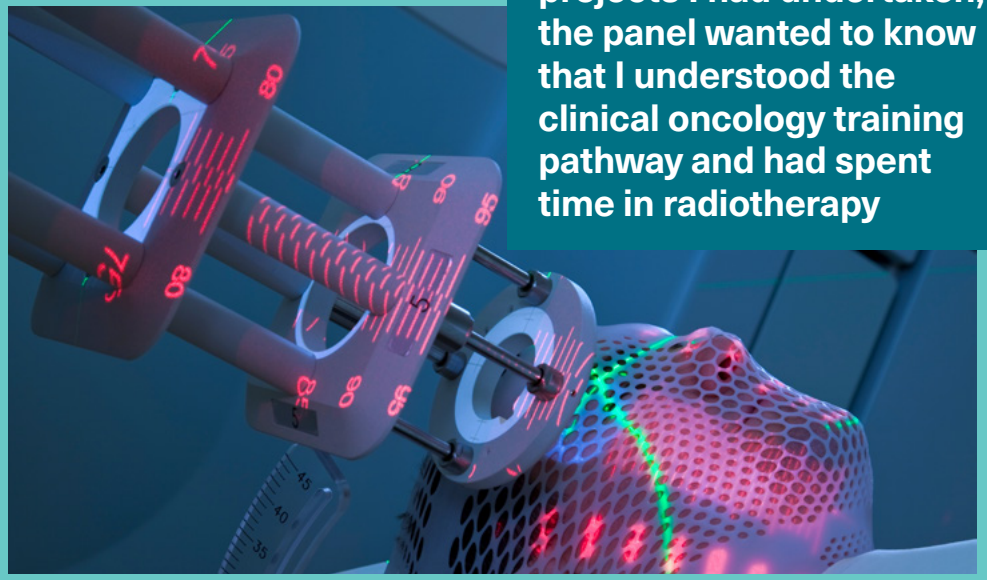

FAQ's
Dr Brendan McCann,

ST6, West of Scotland Trainee

I've heard there's lots of physics involved.

Please don't panic if the last time you did physics was in a drafty classroom squinting at confusing mathematical formulas. The physics is focussed on practical radiotherapy and gets taught on physics courses. Nobody expects you to come up with the theory of relativity on your own and everyone gets the hang of it after a while. The vast majority of physics work is done by specialist medical physicists who enjoy the mathematical formulas, so no need to dust off the scientific calculator yet.

Isn't oncology a bit ...depressing?

There's no question that cancer evokes many negative connotations but as a clinical oncology you are involved in all aspects of a patients care and will make a huge difference to patient's lives. For those patients who are incurable you can palliate many symptoms with radiotherapy and prolong life with systemic treatment. On a more positive note, for those patients cured of cancer, radiotherapy forms part of treatment for 40% of all cases and in fact is the primary mode of treatment for several cancer types. Knowing you're curing cancer provides huge job satisfaction and very grateful patients!

I want to do research so should I do medical oncology instead?

Clinical oncologists can be involved in research and out of programme experiences such as PhD, MDs, and fellowships are encouraged. These can be radiotherapy focussed or lab based. With new state of art radiotherapy techniques there's never been a better time to get into clinical oncology research.

Aren't the exams really hard?

Like all specialities clinical oncology has its own set of exams. These are two different parts – the imaginatively named 'Part 1' consists of four modules on physics, cell biology, pharmacology and statistics and is sat in the early part of training. Courses are provided to help you through the different modules. Part 2 takes place towards the end of training and is more clinically focussed with a written and practical exam. Although the exams are a challenge they are really no more difficult than MRCP and the vast majority of trainees make it through to the end.

With all these new chemotherapy and immunotherapy treatments are we going to need radiotherapy in the future?

Clinical oncology is an expanding field with hugely exciting times ahead. The new proton (sorry...more physics) centres allow for more precise radiotherapy to be delivered and emerging concepts such as high dose radiotherapy to metastatic cancer in previously thought incurable patients means there's an ever growing demand for clinical oncologists. Additionally we still provide input into highly specialised systemic treatments allowing for full responsibility of all aspects of a cancer patient's care.

My life as a clinical oncology trainee

Dr Rebecca Shakir, ST6
Oxford Trainee

I started my specialty training 5 years ago, and completed 2 years full time (during which I passed Part 1 exams) before having my little girl. I returned to training 3 days a week, and passed my Part 2 exams last year. I have now taken time out of training to complete a PhD.

I only decided I wanted to do clinical oncology training when I was a CT2, but I am so glad I did. I didn't enjoy physics at school, and dropped it after GCSE, so I was nervous about how I would manage learning radiotherapy. But this is now one of the aspects of my job which I love the most, and I want to go into a sub-specialty which allows me to practise technical and complex radiotherapy.

Clinical oncology is a truly multidisciplinary specialty, and I have learnt so much from radiographers, physicists, specialist nurses, pharmacists, dieticians, speech and language therapists, surgeons, pathologists, radiologists, and many more along the way! Keeping up with changes in practice, driven by international high-quality research, can be demanding but means that I know I will continue to be challenged in this specialty throughout my career. Oncology patients are inspirational and the frequency of their visits means you are able to build solid relationships with them. This allows true shared-decision making, where high-quality communication is required to enable patients to make the right choice for them.

Dedicated time in research has different benefits and challenges. I have much more autonomy in terms of how I spend my time, but in the first few months not being told what to do was incredibly daunting! Having time to design and see a project through is a luxury compared to the constant rotation of clinical work, and I believe my research will have a real impact on the clinical care of patients, which makes it incredibly rewarding.

Overall I have found clinical oncology to be an incredibly varied and rewarding specialty, and I would definitely encourage you to apply!

> **Taking time out to do research is allowing me time within the training programme to pursue my interests, gain new skills and work more independently.**

How do I become a clinical oncologist?

What do I need to apply?

As a clinical oncologist you will work closely with a number of other specialists so a broad range of experience can really help you as a trainee. Most people will take the route of: undergraduate medical school (5–6 years) (+/-intercalated degree); foundation jobs; internal medicine training (IMT); then apply for a clinical oncology post after their second year of IMT. Acute care common stem (ACCS) training is an acceptable alternative to IMT and equivalent experience from outside the UK may also be allowed. You must be able to demonstrate achievement of IMT competencies, including being successful in all parts of the Membership of the Royal College of Physicians, MRCP (UK) examinations, in the three years preceding the start of a clinical oncology post, which is something to consider if you are planning on taking time out.

The application process

To apply for a training programme you will go through national recruitment. The online application form asks about your experience of clinical oncology and your commitment to the specialty, and you'll be asked to provide examples of key skills that clinical oncologists have – such as good communication and team working. After that is an interview. Details change from time to time but recently interviews have included three main areas: clinical, ethical and portfolio. To excel in these you have to know a little about oncology, so it might sound obvious but if you have had some relevant exposure and experience this will count for a lot. Once you start thinking about clinical oncology as a career, look for opportunities to build your CV – you can refer to the 'Top Tips' section of this booklet for some ideas!

What does training involve?

Subject to GMC approval of the rewritten clinical oncology curriculum, from August 2021 the first year of training will be joint with medical oncology and will be referred to as the oncology common stem (OCS). Recruitment into each specialty will remain distinct and after the OCS year training will diverge.

Clinical oncology specialty training takes five years (including the OCS year). You are likely to be based in a group of hospitals within your deanery. Attachments are typically for six months, sometimes in a new hospital, sometimes at the hospital where you are already working: These are usually focused on one or two tumour types, allowing you to cover all tumour types during your training. Within each attachment, you will gain exposure to the different areas of clinical oncology, that is, you will spend time in clinic, on the wards, in chemotherapy and in radiotherapy planning. Every year of training is well supported, with dedicated teaching. During your first year there is specific training on physics, cell and radiobiology, pharmacology and medical statistics to prepare you for the First FRCR exam. In addition, clinical oncology is a specialty at the cutting edge of medical research so it is common for trainees to take time out for research, either completing an MD or PhD.

> **To excel in recruitment interviews you have to know a little about oncology.**

Radiotherapy

There has never been a more exciting time in the UK to be a clinical oncologist – the new Proton centres and the ever growing use of high dose precision radiotherapy (SABR- stereotactic ablative radiotherapy) means it will be an ever growing and in demand specialty.

Radiotherapy has been around for over one hundred years and encompasses treatment of cancer with precise high dose X-rays to cause DNA damage to cancer cells.

As a clinical oncologist your job will be to decide on the suitability of radiotherapy for patients in both a curative and palliative setting in discussion with other specialities in the multidisciplinary team depending on the tumour type. After an initial patient consultation where radiotherapy is explained to patients, practical aspects as well as expected benefits and side effects, your role will be to plan the radiotherapy and make sure a patient is managed through the treatment course.

More complicated and radical (curative) cases of radiotherapy require precise planning and you will work closely with the medical physics team and radiographers in order to deliver the best care.

For patients with incurable cancer, radiotherapy still has a big part to play as it can help many symptoms of cancer and be used for life threatening oncology emergencies.

Systemic therapy

Clinical oncologist take part in all aspects of a cancer patient's care by being able to prescribe systemic therapy and deliver radiotherapy.

Systemic therapy encompasses several treatments such as traditional chemotherapy, targeted therapy for known cancer mutations, immunotherapy, and hormone based treatment for breast and prostate cancer. Systemic therapy has taken huge steps in the last few years. We now have a far more personalised approach to patients' care and most patients tumours are analysed for several different mutations and for sensitivity to immunotherapy depending on the tumour type. Immunotherapy works by 'unmasking' cancers to the body's own immune system.

These new treatments have been a revelation in oncology care for patients aiming to turn previously thought incurable cancers into a more long term health condition where patients can live for several years instead of months.

Chemotherapy, which works by attacking rapidly dividing cells, still holds a role in many tumour types and is often used in conjunction with radiotherapy to improve the chance of survival in a radical cancer setting.

Major advances within clinical oncology in the last few years include proton centres which allow for extremely precise radiotherapy to take place in highly specialised cancer cases that allow for minimal short and long term side effects to treatment.

What is it like to be a trainee in clinical oncology?

Dr Kyle Crawford, ST6
Northern Ireland Trainee

Training as a clinical oncologist is an experience which I feel is unrivalled in other medical specialties. It provides you with a range of skills in the non-surgical management of cancer. We offer a full spread of treatments from radical to adjuvant (treatments administered to reduce the chances of recurrence), and palliative radiotherapy as well as systemic anti-cancer treatment. It is a privilege to get to know your patients throughout their whole cancer journey.

The training involves using all that incredibly hard gained knowledge of general medicine and applying it to cancer patients, as well as gaining new knowledge in radiotherapy, physics and radiology. During training we also have to complete the FRCR examination. There are numerous courses and a very structured curriculum to support trainees through these exams. Study leave is well protected.

Clinical oncology offers a vast array of opportunities including clinical fellowships and leadership fellowships. There is also an excellent way to get involved in shaping the RCR for the future via the Oncology Registrars Forum (ORF) and the various committees.

We are a small specialty in the UK and through courses and conferences we get to know all our peers across the UK and Ireland relatively quickly. There are loads of opportunities to meet with peers and establish collaborations and relationships that will last throughout a career in clinical oncology.

> **There is also an excellent way to get involved in shaping the RCR for the future via the Oncology Registrars Forum (ORF), and various committees.**

A typical day in the life of a clinical oncology trainee

Dr Andrew Ho, ST5
East of England Trainee

As clinical oncology is predominantly an outpatient-based specialty, there can be a fair amount of variation across the week in what the day involves.

8:15
Having been on call from home the night before, I catch up with the overnight admissions and notify the relevant teams. Thanks to remote access to our EMR system, I had already written in the notes and it is easy to review what has happened since.

08:30
I attend the neuro-oncology MDT meeting along with neurosurgeons, neurologists, radiologists, pathologists, specialist nurses and other members of the team. We discuss new patients and those with key management considerations; in addition, the meeting is video-linked with surrounding hospitals to discuss shared cases.

10:00
After a brief team meeting (with a cup of tea!) I pop up to the ward with the consultant and specialist nurse. The ward team have been looking after our few inpatients so the ward round does not take long.

11:00
Radiotherapy floor clinic with the consultant radiographer. We schedule a weekly review with all patients on treatment primarily to assess toxicities and prescribe chemotherapy where appropriate. We get to know our patients well during this treatment period, which is rewarding.

13:00
Over lunch I chat in the office to fellow registrars, learning from and supporting each other. Afterwards, I look through the new patient clinic for tomorrow and check that all the information is ready. One of the patients, discussed in this morning's MDT, has a germinoma so I look through his scans and read about craniospinal axis irradiation in preparation.

14:00
Radiotherapy planning time. I consented two patients last week who have now had their planning scans: one with a glioblastoma and another with recurrent meningioma. I spend an hour and a half focussing on the segmentation, and then meet with my consultant to go through it.

16:00
Having finished radiotherapy planning (and filled out an e-portfolio assessment!), I answer a few e-mail queries and call a GP to update them about one of our inpatients who is being discharged. I arrange with the radiographers a time for a patient to come for palliative radiotherapy to a painful bony metastasis from thyroid cancer, then call the patient to let them know. I finish the day by reading the paper for journal club next week: the SCOT trial on duration of adjuvant chemotherapy in colorectal cancer.

17:15
Home time!

An insight into the future of clinical oncology

Dr Frances Yuille,
Medical Director for Education and Training (MDET), clinical oncology

What will clinical oncology look like in the future?

Mainly due to our ageing population we are expecting that 1 in 2 of the population will be diagnosed with a cancer during their lifetime and many of these will be cured. Radiotherapy is an important part of any cancer treatment programme as is chemotherapy. Both in radiotherapy and chemotherapy there are more and more treatment options available which are becoming more specialised and personalised and this will indeed be the case for years to come. Cure rates will improve and as has been the case in the last 20 years this will be due to teams of doctors, nurses, pharmacists, radiographers, researchers and scientists all improving results and outcomes incrementally to achieve better disease free and survival rates with fewer side effects. Modern radiotherapy is increasingly complex yet effective, chemotherapy options are forever increasing and we are currently at the dawn of the benefit of immunotherapy treatments which by 2050 will be standard practice. Genomic information will be embedded in our day to day practice and all these treatments may well be used in combination with artificial intelligence, to once again improve the outlook and experience of cancer treatment for patients.

Currently medical oncologists specialise in chemotherapy and clinical oncologists in both chemotherapy and radiotherapy. Within the next 10 years and certainly within the next 30 years we will increasingly work closer together combining our skills to provide seamless and efficient and effective care for patients.

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Undergraduate Oncology Societies Association (UOSA)

What is UOSA?

The RCR is keen to support medical students interested in a career in oncology and is aware of the work that university societies do in this area. The RCR is also looking to engage more with medical school following the September 2019 update of the Undergraduate non-surgical oncology curriculum.

The College has set up an association to provide a central link for oncology societies where they currently exist and to encourage the development of societies in areas where none currently reside.

Member Societies can identify themselves as members of UOSA and have use of the RCR logo on their society pages and resources. The RCR will, where possible, offer support to societies in promoting local events, marketing the society and providing access to teaching and learning resources.

No society in your medical school?

We can help with guidance on setting up a society and providing links to existing societies around the UK.

Find out more about how the RCR can support you throughout your career as a clinical radiologist by visiting www.rcr.ac.uk/career-timeline

Top tips: how to get into clinical oncology

Medical students:

- SPEAK to clinical oncologists!
- Attend RCR clinical oncology undergraduate days
- Apply for undergraduate bursaries and prizes (see the RCR website [**www.rcr.ac.uk**] for more info)
- Choose a special study module or elective in clinical oncology
- Develop your portfolio to demonstrate a commitment to specialty – conduct oncology audits
- Join an oncology society, or found your own
- Become affiliated with the RCR undergraduate oncology societies association
- Attend regional and national careers events
- Spend some time finding out about how the cancer services work in the UK
- Investigate the resources available on the RCR website (**www.rcr.ac.uk**): the careers pages, public lectures and other informative videos (especially the one on radiotherapy!).

Junior doctors:

- Gain a good grounding in general medicine
- Take or create any opportunity for cancer related research
- Do some oncology audits and quality improvement projects
- Foster links with the oncology departments and get to know the oncologists and the rest of the team
- Follow a patient through the radiotherapy process
- Look for oncology posts as part of foundation doctor training and IMT
- Investigate the resources available on the RCR website (**www.rcr.ac.uk**) especially the careers pages, public lectures and other informative videos (especially the one on radiotherapy!).

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