

Radiotherapy physics

Join the team and
make a difference

Radiotherapy is one of the most effective ways of treating patients with cancer. Healthcare scientists play a key part in providing essential scientific and technical input to the provision of a radiotherapy service.

What will you do?

As a member of the physics team, you will use your specialised knowledge and training to support the planning and delivery of radiotherapy treatment to individual patients and ensure that the equipment used is safe and reliable.

Most patients are treated with beams of radiation which have to be carefully chosen so as to maximise the dose to the patient's cancer while minimising damage to healthy tissues and unpleasant side effects.

Detailed information for each patient, including the size and position of the region to be treated, is obtained from CT scanners or other state-of-the-art imaging machines. You will feed this information into a computer which also contains accurate data about the way that each treatment machine can deliver "doses of radiation" to the patient. You will then design each patient's treatment by bringing all this information together as the first essential step in a successful course of treatment for the patient.

You will operate and maintain the treatment machines, monitoring each individual machine by carrying out a regular programme of tests to ensure that the machines deliver each treatment with a high

degree of precision. You may also be required to make emergency repairs to guarantee that the machines are available for treatment whenever they are required.

Radiotherapy physics is a continually developing area which provides a rewarding career and offers the opportunity to innovate and have a key role in the development of new equipment and its applications to the treatment of patients.

What entry routes are available?

To qualify as a clinical technologist (dosimetrist) in radiotherapy physics, you will need to undertake a vocational BSc (Hons) in clinical technology. The course, which consists of several generic modules, normally over four years, allows students to specialise in an area of their choice (such as radiotherapy physics or nuclear medicine). Alternatively, you might train as a therapy radiographer and then obtain additional specialist skills in radiotherapy physics to work in treatment planning.

On completion of your training, you will be eligible to join the voluntary register of the Registration Council for Clinical Technologists.

If you have a first-class or upper second-class degree in a relevant subject, you may be eligible to join the NHS Clinical Scientists Training Scheme. This is a four-year programme of in-depth training in a specialist area, usually leading to an MSc or a specialist postgraduate diploma, and registration with the Health Professions Council. For more information, visit www.nhsclinicalscientists.info

Where will you work?	What skills and qualities will you need?
You will be based in a hospital which has a cancer centre.	<ul style="list-style-type: none"> • an interest in physics, maths and their application to medicine
Working hours may include extra hours, shifts and on-call duties during the week and at weekends.	<ul style="list-style-type: none"> • reliability and accuracy – someone’s life could depend on your measurements and records
	<ul style="list-style-type: none"> • good communication skills – you will be working with a wide range of different professional staff within the hospital
	<ul style="list-style-type: none"> • IT skills and ease working with high-tech equipment

With GCSEs or an equivalent NVQ and/or previous work experience it is often possible to start work as a trainee or assistant in healthcare science, combining on-the-job training with study so that you learn as you earn. For more information, see the *Clinical support worker* factsheet.

Some employers also offer cadet schemes, which involve a two-year training programme that gives you experience of different jobs within healthcare science and provide the entry qualifications to the degree courses in clinical technology.

For more information on the range of opportunities available in healthcare science, please visit www.nhscareers.nhs.uk/list/qualifications. This gives more specific details about what qualifications are necessary for each role. You can search for current vacancies and download job descriptions at www.jobs.nhs.uk

How can you develop your career?

This is a career with excellent prospects, and includes openings for research, management and education. Healthcare scientists in radiotherapy physics are expected to continually expand their knowledge as advances are made and some may carry out related specialised work.

With training, responsibility and experience, you could reach the highest level in the profession, attaining consultant status.

Find out more about what training is open to you and how you can develop your career, at www.nhscareers.nhs.uk/list/training

You will also have the chance to take on additional responsibilities and progress within the organisation as part of the Career Framework. For more information about this initiative, please see the *Careers in healthcare science* booklet.

Pay

The national pay system in the NHS is called Agenda for Change (AfC). This applies to all staff except doctors, dentists and very senior managers. These are examples of roles and the AfC bands at which they may be paid: healthcare science support worker (Band 2); healthcare science assistant (Band 4); healthcare science practitioner (Band 5); healthcare science specialist (Band 6); healthcare science advanced (Band 7); healthcare science consultant (Band 8a-c). For more information, visit www.nhscareers.nhs.uk/list/payandbenefits

To find out more about careers in healthcare science, please visit www.nhscareers.nhs.uk/list/working

For contact details, including professional bodies, please visit www.nhscareers.nhs.uk/list/contacts