

Work as a specialist radiopharmacist

Radiopharmacy can include a clinical and technical dimension. Beverley Ellis tells Zoe Gross about her career

Radiopharmacy has several elements including procurement, manufacture, dispensing, quality control and supply of radiopharmaceuticals, research and development, education and training and the provision of professional and clinical advice to nuclear medicine services.

A hospital service can be provided by a stand-alone radiopharmacy department or by a radiopharmacy unit based in a nuclear medicine, pharmacy or medical physics department.

As a radiopharmacist, I work as part of the nuclear medicine team, using my knowledge of nuclear physics, radiation protection, chemistry, physiology, pharmacology, radiochemistry, immunology, anatomy, haematology and law. I find my IT skills are essential and have also developed an understanding of how radiopharmaceuticals are controlled by law both as medicines and radioactive substances. The regulatory requirements have increased significantly in recent years.

The radiopharmacist's main responsibility is for the procurement, preparation, quality control and supply of radiopharmaceuticals, ensuring their safety and efficacy. There is also a clinical dimension to the role, which includes giving advice on the use of radiopharmaceuticals and providing input into patient care in the nuclear medicine department.

This can mean providing advice on potential and actual drug interactions with radiopharmaceuticals; on possible causes of abnormal biodistributions seen on nuclear medicine scans; on the choice and suitability of using medicines to enhance nuclear medicine studies and on the stability and formulation of radiopharmaceuticals as well as monitoring and reporting adverse reactions. I am also involved in education and training.

There is considerable scope to get involved in research and development. This can



range from the development of new radiopharmaceuticals, clinical trials, investigating mechanisms of action, to the development of new or improved preparation and quality control techniques.

I am a past chair of the UK Radiopharmacy Group (www.ukrg.org.uk) and the British Nuclear Medicine Society (www.bnms.org.uk) Radiopharmacy Group, and am currently head of radiopharmacy services at Central Manchester and Manchester Children's University Hospitals NHS Trust. As head of the radiopharmacy unit it falls to me to ensure that radiopharmaceuticals and radio-labelled blood components are prepared to the correct standards for administration to patients.

Work in a multidisciplinary team

Although my formal working hours are 37.5, in practice I often work more. I drive to work because I have a regular early start and often have to attend meetings at locations that are difficult to reach by public transport.

The radiopharmacy unit in my trust is situated in its nuclear medicine department. Approximately 12,000 patient doses a year are prepared in it, as part of its service to the trust and to other hospitals.

I enjoy working with a multidisciplinary team. My role brings me into contact with nuclear medicine physicians, medical physicists, nuclear medicine technicians and nuclear medicine nurses, who contribute in different ways to the delivery of the service. For example, the routine preparation and quality control testing of radiopharmaceuticals and radio-labelling of blood components for reintroduction into a patient for diagnostic purposes, such as infection and inflammation imaging, is mainly undertaken by nuclear medicine technicians, who rotate through the radiopharmacy unit.

I teach on the postgraduate course in radiopharmacy at King's College London, the

MSc course in medical physics (nuclear medicine module) at Manchester University, the MSc course in advanced practice (nuclear medicine) at Salford University. I have also taught on the European Radiopharmacy Course (European Postgraduate Specialisation Certificate in Radiopharmacy).

Although, historically, most training has been acquired through practical experience on the job, pharmacists can now undertake formal qualifications in the specialty. I would like to see the development of a structured career pathway from basic grade to advanced practitioner up to consultant practitioner level

(via a skills escalator) for specialists in radiopharmacy.

The opportunities for radiopharmacists to network with other members of the team include becoming active members of radiopharmacy and nuclear medicine groups and national and regional committees, attending conferences, workshops and meetings, and taking part in online discussion groups, such as on the VirRAD website (www.virrad.org). The VirRad platform aims to create a virtual community to facilitate communication within the worldwide radiopharmaceutical community.

I travel frequently in my professional role, including to international meetings. I enjoy working in the radiopharmacy and nuclear medicine community but, like others in the profession, I am concerned about recruitment, retention and training. There is a critical succession planning problem in the UK, with a severe shortage of appropriately trained staff. What is needed is a more attractive and rewarding career structure for pharmacists within the specialty.

Despite the downsides, I see radiopharmacy as a rewarding career that provides pharmacists with the opportunity to be a key part of a multidisciplinary nuclear medicine team. As a small specialty there are limits to promotional progression, but it is a career that is intellectually and scientifically challenging. It provides an opportunity to interact with a range of scientists, clinicians and technologists.

Beverley Ellis

1998 to present Chief/consultant radiopharmacist, Central Manchester and Manchester Children's Hospitals, including research investigating the pre-clinical development of novel radioactive tracers for myocardial perfusion imaging.

1993–8 Senior radiopharmacist, Central Manchester and Manchester Children's hospitals.

1989 Began radiopharmacy career after starting a PhD in medicinal chemistry at King's College London. Part of the doctorate involved research in radiopharmacy at Addenbrooke's Hospital, Cambridge.

My career

Thinking of changing your career? This series profiles different careers in pharmacy. It is designed to provide a taster of work in different specialties. Any pharmacist who would like to contribute to the series should contact the editorial office on 020 7572 2429 or e-mail editor@pharmj.org.uk in the first instance.