GIG CYMRU NHS WALES

Pwyllgor Gwasanaethau Iechyd Arbenigol Cymru (PGIAC)

Welsh Health Specialised Services Committee (WHSSC)

Specialised Services
Service Specification: CP266

Peptide Receptor Radionuclide Therapy (PRRT) for the Treatment of Neuroendocrine Tumours (NETs) in adults

March 2023

Version 1.0

PARCH - RESPECT

PARTNERIAETH - PARTNERSHIP

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Description	NHS Wales will routinely commission this specialised service in accordance with the criteria described in this document
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Contents

Statement

Welsh Health Specialised Services Committee (WHSSC) will commission the service of Peptide Receptor Radionuclide Therapy (PRRT) for the Treatment of Neuroendocrine Tumours (NETs) in adults in accordance with the criteria outlined in this specification.

In creating this document WHSSC has reviewed the requirements and standards of care that are expected to deliver this service.

Welsh Language

WHSSC is committed to treating the English and Welsh languages on the basis of equality, and endeavour to ensure commissioned services meet the requirements of the legislative framework for Welsh Language, including the Welsh Language Act (1993), the Welsh Language (Wales) Measure 2011 and the Welsh Language Standards (No.7) Regulations 2018.

Where a service is provided in a private facility or in a hospital outside of Wales, the provisions of the Welsh language standards do not directly apply but in recognition of its importance to the patient experience the referring health board should ensure that wherever possible patients have access to their preferred language.

In order to facilitate this WHSSC is committed to working closely with providers to ensure that in the absence of a welsh speaker, written information will be offered and people have access to either a translator or 'Language-line' if requested. Where possible, links to local teams should be maintained during the period of care.

Decarbonisation

WHSSC is committed to taking assertive action to reducing the carbon footprint through mindful commissioning activities. Where possible and taking into account each individual patient's needs, services are provided closer to home, including via digital and virtual access, with a delivery chain for service provision and associated capital that reflects the WHSSC commitment.

Disclaimer

WHSSC assumes that healthcare professionals will use their clinical judgment, knowledge and expertise when deciding whether it is appropriate to apply this document.

This document may not be clinically appropriate for use in all situations and does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in

consultation with the patient and/or their carer or guardian, or Local Authority.

WHSSC disclaims any responsibility for damages arising out of the use or non-use of this document.

1. Introduction

This document has been developed as the Service Specification for the planning and delivery of Peptide Receptor Radionuclide Therapy (PRRT) for the Treatment of Neuroendocrine Tumours (NETs) in adults resident in Wales. This service will only be commissioned by the Welsh Health Specialised Services Committee (WHSSC) and applies to residents of all seven Health Boards in Wales.

In developing this service specification, WHSSC has reviewed the recommendations made in the Royal College of Radiologists' report *Molecular Radiotherapy Services in the UK* published in November 2021.

1.1 Background

Radiation therapy is a highly effective treatment for cancer. It is used in at least 50% of all curative cancer treatments as either primary or adjuvant therapy, and in a large proportion of palliative cancer treatments. The mainstay of radiation therapy in all radiotherapy departments is focused External Beam Radiotherapy (EBRT) generated by Linear Accelerators and proton units, and delivered to the cancer from outside of the body in highly targeted beams.

Whilst EBRT is generally accessible, precise, and effective, it has to traverse normal tissues to reach its target, and consequently has some limitations due to the potential to damage normal tissues surrounding the cancer. Therefore, there are potential benefits from placing the radioactive source within an affected organ, or within the tumour itself: this is termed Brachytherapy.

Molecular Radiotherapy (MRT), which can be characterised as a form of brachytherapy, utilises solutions or suspensions of radioactive substances, which are injected or taken orally. These solutions can be termed therapeutic radiopharmaceuticals. Therapeutic radiopharmaceuticals should be regarded as distinct from diagnostic radiopharmaceuticals, commonly used in nuclear medicine and PET-CT, although there is an overlap in terms of specialist workforce, logistics and infrastructure.

PRRT as a treatment for NETs

Neuroendocrine cancers are uncommon but increasingly prevalent cancers which are generally slow growing, although some can be aggressive (neuroendocrine carcinomas). Arising from different organs of the body, they most commonly originate in the gastro-entero-pancreatic system (GEP-NETs) or the lungs (bronchial NETS). They are diverse, complex and require individualised and expert care. Recently published research found

that GEP NET incidence in the UK in 2015 was 8.6 per 100,000[1], higher than previously thought. This would suggest there are approximately 275 new cases of GEP NET per annum in Wales.

PRRT is a type of MRT used to inhibit tumour growth and reduce associated symptoms when there has been progression after previous therapies. PRRT is also called radioligand therapy, molecular radiotherapy, targeted radiotherapy, radio labelled treatment or targeted radionuclide therapy. It uses a peptide hormone (somatostatin analogue) linked to a radioisotope (Lutetium-177 (^{177}Lu)). This radiopharmaceutical is given as an infusion into a vein. It then attaches specifically to the surface of neuroendocrine tumours. ^{177}Lu then decays, releasing a localised dose of radiation which destroys the cancer cells.

Prior to treatment, an octreotide scan or Gallium-68 (^{68}Ga) PET scan is needed to confirm the tumour has somatostatin receptors and uptake.

PRRT with ^{177}Lu is approved by NICE[2] for treatment of gastroenteropancreatic (GEP) NETs. WHSSC commissions PRRT for adults with NETs under the Policy Position PP195 Lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours, September 2020. Patients from South, Mid and West Wales currently receive their treatment at the Royal Free Hospital in London and patients from North Wales at the Royal Liverpool Hospital. Approximately 15 to 20 patients per annum in Wales are referred for PRRT. Typically patients receive 3 to 4 cycles of treatment.

1.2 Aims and Objectives

The aim of this service specification is to define the requirements and standard of care essential for delivering PRRT for people with NETs.

The objectives of this service specification are to:

- detail the specifications required to deliver PRRT services for people who are resident in Wales
- ensure minimum standards of care are set for the use of PRRT
- ensure equitable access to PRRT
- identify centres that are able to provide PRRT for Welsh patients
- improve outcomes for people accessing PRRT services.

[1] "Impact of neuroendocrine morphology on cancer outcomes and stage at diagnosis: a UK nationwide cohort study 2013–2015" T Genus et al. British Journal of Cancer. 2019 Nov;121(11):966-972.

[2] Lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours TA539 August 2018

1.3 Relationship with other documents

This document should be read in conjunction with the following documents:

- **NHS Wales**
  - All Wales Policy: Making Decisions in Individual Patient Funding requests (IPFR)
  - *Molecular Radiotherapy: the need for a Welsh strategy* All-Wales Molecular Radiotherapy Group (AWMOL) March 2022

- **WHSSC policies and service specifications**
  - CP50a Positron Emission Tomography (PET) July 2022
  - PP195 Lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours September 2020

- **National Institute of Health and Care Excellence (NICE) guidance**
  - Lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours TA539 August 2018

- **Other published documents**
  - Molecular Radiotherapy Services in the UK, Royal College of Radiologists, November 2021.
  - Clinical Guideline for Administration of Molecular Radiotherapy Version 2 2019
  - Joint IAEA, EANM, and SNMMI practical guidance on peptide receptor radionuclide therapy (PRRNT) in neuroendocrine tumours 2013
  - ENETS 2017 Consensus Guidelines for the Standards of Care in Neuroendocrine Neoplasms: Peptide Receptor Radionuclide Therapy with Radiolabelled Somatostatin Analogues

2. Service Delivery

The Welsh Health Specialised Services Committee will commission the PRRT for NETs service in line with the criteria identified in this specification.

2.1 Access Criteria

WHSSC commissions Lutetium (^{177}Lu) oxodotreotide for adults with neuroendocrine tumours (this treatment is also known as peptide receptor radionuclide therapy (PRRT)). For further information see:

- PP195 Lutetium (^{177}Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours September 2020

2.2 Service description

It is a basic property of a radionuclide that it decays over time, at a set rate, known as the half-life. For a radiopharmaceutical compound, this correlates precisely with therapeutic activity and therefore clinical utility. The half-life varies between radionuclides, for example, ^{131}I has a half-life of 8.02 days, and ^{177}Lu has a half-life of 6.65 days. In practice, this means that the time between manufacture and clinical administration is critical, and the logistics have to be efficient.

Delivery of PRRT is complex and multidisciplinary. The use of radioactive materials requires highly skilled and specialist staff, specialist facilities and equipment. There are legislative and safety considerations, time constraints and manufacturing factors.

2.2.1 Handling of Radiopharmaceuticals

Legislation, licencing and permits

Ionising radiation from any source is potentially hazardous, and its use is highly regulated through specific legislation. For radiopharmaceuticals, this includes institutional licences for purchase, storage, administration and disposal, as well as individual practitioner licences for prescription.

The service provider must ensure there are systems in place to obtain the suitable permits from the relevant UK environment agency to cover the storage of material and waste accumulation and disposal. A Quality Management System covering these aspects is required to demonstrate compliance with the following:

The Ionising Radiation Regulations 2017 [IRR2017]

Administration of radioactive substances requires the service provider to obtain consent from the Health and Safety Executive (HSE).

The Ionising Radiation (Medical Exposure) Regulations 2017 [IRMER2017]

To be able to administer radioactive substances to patients, the service provider must ensure:

- they have an IR(ME)R Employer Licence, that includes the relevant procedure, specifically for the site at which the administrations will take place, **and**
- there is at least one clinician with an IR(ME)R Practitioner Licence that includes the relevant procedure.

These are commonly referred to as "ARSAC licences". Both licences are obtained by application to the Administration of Radioactive Substances Advisory Committee (ARSAC). To be successful, applications must demonstrate adequate facilities, procedures and support staff (Employer Licence) and knowledge, training and experience (Practitioner Licence).

The Environmental Permitting (England and Wales) Regulations 2016 [EPR]

The service provider must ensure that the site at which the administrations will take place has an environmental permit, which is issued for sites within Wales by Natural Resources Wales (NRW). The permit specifies which radionuclides and activities can be kept, used and disposed of. Applications to NRW must demonstrate adequate storage facilities, procedures and staffing. For the purposes of disposals to drain (mainly from patient excreta), an environmental impact assessment will be required, which looks at doses to the public resulting from disposal.

Service providers of PRRT must ensure the following key duty holders have been appointed[3]:

Key Duty Holder	Responsible for	Knowledge and skills/certification	On site during MRT
Practitioner* (ARSAC licence holder)	The clinical aspects of the treatment including justifying the administration	ARSAC Practitioner Licence for therapies being performed	Contactable for all.[4] Present for research, complex or novel therapies
Radiation Protection Adviser(RPA)	Advise employer on compliance with IRR2017	RPA Certificate of Competence issued by an assessing body recognised by the HSE (e.g. RPA2000	Contactable
Radiation Protection Supervisor* (RPS)	Local rules, radiation safety culture, monitoring under IRR2017	relevant training. Formal appointment	Contactable

[3] Based on Clinical Guideline for Administration of Molecular Radiotherapy Version 2 2019

[4] For newly established services, it may desirable that there is an ARSAC licence holder on site.

Medical Physics Expert* (MPE)	Optimisation, dosimetry equipment QA, compliance with IRMER2017	MPE Certificate of Competence issued by RPA2000	Contactable for all. Present for research, complex or novel therapies as defined in regulations
Radioactive Waste Advisor (RWA)	Accumulation, storage and disposal of radioactive materials	RWA Certificate of Competence issued by RPA2000	No
Operators	Administering the radiopharmaceutical Defined in IRMER2017	Local training	Yes
*Some procedures may involve a combination of imaging and MRT. There needs to be clear identification of duty holders and lines of accountability for each function. Duty holders should be appointed in writing by the employer.			

Ordering Process

Lutetium (177Lu) oxodotreotide should be ordered in line with the manufacturer's marketing authorisation.

Storage and disposal

Storage of the radiopharmaceutical (when supplied as a single dose in a vial) prior to use should be in the local Nuclear Medicine Department with the necessary controls in place for record-keeping and safe storage at the required temperature. Attention should also be paid to the radiopharmaceutical calibration and expiry dates. Waste is typically stored in a dedicated Decay Store prior to disposal. Drawing up of the patient dose should conform to the UKRG guidelines for "Safe drawing up of radiopharmaceuticals in nuclear medicine".[5]

Radiopharmacy

The product should be prepared in an aseptic Radiopharmacy. The Radiopharmacy will provide radioligand therapy products already dispensed in a unit dose syringe. Some products arrive pre-manufactured in a vial.

Patient facilities

The administration of PRRT to the majority of patients requires day patient facilities (consultation room, uptake room, toilet facilities, etc.). However, some patients will require an overnight stay (for example, if they become unwell). Service providers should ensure access to suitable in-patient facilities is available to safely manage these patients.

[5] UK Radiopharmacy Group 2012

Although only rarely required, patients should also have access to HDU/ICU (levels 2 and 3 critical care) for the management of complications requiring critical care such as carcinoid crisis or tumour lysis syndrome. If these facilities are not available on site, protocols to ensure radiation protection for safe transfer and safe provision of critical care should be in place.

Diagnostics and accompanying scans

PRRT requires specific diagnostic imaging, often utilising nuclear medicine facilities, in order to stage disease, measure PRRT uptake and assess suitability for treatment. Each patient requires an octreotide scan or 68-Ga DOTATATE PET scan to confirm suitability for PRRT. Cross sectional imaging will be required after treatment at appropriate intervals.

2.2.2 Specialist Team

The service provider should ensure they have a specialist team available for the provision of PRRT. Core team members include[6]:

- Medical Physics Expert
- Clinical Oncologist
- Nuclear Medicine Physician
- Specialist Nurse
- Clinical Technologist
- Clinical Scientist
- Coordinator (an advanced practitioner from one of the specialties listed above).

The specialist team may also include:

- Radiographer
- Nuclear Medicine Radiologist
- Radiopharmacist

While the nuclear medicine physician is identified as a core role, it is recognised that there are only very limited numbers of these professionals currently within the UK. In the absence of a nuclear medicine physician, this role may also be fulfilled by a combination of other team members provided they have the necessary training and expertise (for example a nuclear medicine radiologist and a clinical oncologist).

[6] Drawn from: Clinical Guideline for Administration of Molecular Radiotherapy Version 2 2019; Molecular Radiotherapy: the need for a Welsh Strategy, Mar 2022, All Wales Molecular Radiotherapy Group, Clinical Oncology Sub-Committee, Wales Scientific Advisory Committee.

The service provider should ensure that all staff involved with PRRT are trained to fulfil their specific role and they are able to maintain their competence and undertake relevant Continuing Professional Development (CPD) activities. Key duty holders should be registered Healthcare Professionals (HCP) (or on a voluntary register) and certified (where applicable).

It is a legal requirement that the delivery of molecular radiotherapy cannot be performed without appropriate ARSAC Practitioner Licence holders. To ensure cross cover, there should be more than a single ARSAC licence holder within the specialist team.

The Medical Physics Expert (MPE) role is a legal requirement. The safe delivery of molecular radiotherapy requires the input and often the attendance of a trained MPE[7]. The role of the MPE includes ensuring the safe delivery of the radioactive product with the correct radioactivity.

Lutetium-177 for the treatment of NETs is currently administered under NICE TA539[8] as a fixed administered activity (standardised radiopharmaceutical)[9]. In the future, the evidence base may evolve to support patient specific dosimetry as noted by the Care Quality Commission[10] and departments setting up a service should plan accordingly.

Imaging

SPECT/CT scans should be undertaken after each cycle to assess uptake in tumours and look for any new lesions.

Coordination

One member of the team, usually an advanced practitioner nurse, should assume the role of coordinator of care, and provide the link between the NET MDT and the PRRT service. Administrative support is also required.

2.2.3 Clinical Standards

- For all therapeutic procedures, the service provider has responsibility for good patient care within a stringent clinical governance framework.
- Patients suitable for PRRT should be selected via the NET MDT.

[7] See The Ionising Radiation (Medical Exposure) Regulations 2017, Regulation 14 for details on the role of the MPE

[8] Lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours TA539 August 2018

[9] The radiation absorbed dose the patient receives will be variable based on the extent of their disease.

[10] IR(ME)R annual report 2020/21 - Care Quality Commission (cqc.org.uk)

- Service providers of PRRT should treat a minimum of 5 patients per annum to ensure an adequate volume of referrals to maintain the skills of the specialist team.
- For new centres, a period of mentoring should take place until competency is achieved. It is expected that complex cases are discussed with mentors on an ongoing basis.
- Clinicians involved in PRRT must be knowledgeable about and compliant with all applicable national and local legislation and regulations.

2.3 Interdependencies with other services or providers

Diagnostics

Imaging and therapeutic interventions are closely linked. PRRT has the requirement of accompanying PET-CT (Positron Emission Tomography) or SPECT (Single Photon Emission CT) scans to assess initial disease state and response to treatment.

2.4 Exclusion Criteria

Exclusion criteria can be found in the WHSSC Policy Position:

- PP195 Lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours September 2020

2.5 Acceptance Criteria

The service outlined in this specification is for patients ordinarily resident in Wales, or otherwise the commissioning responsibility of the NHS in Wales. This excludes patients who whilst resident in Wales, are registered with a GP practice in England, but includes patients resident in England who are registered with a GP Practice in Wales.

2.6 Patient Pathway

For patient pathway, please see PP195 Lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours, September 2020

2.7 Service provider/Designated Centre

To be confirmed

2.8 Exceptions

If the patient does not meet the criteria for treatment as outlined in this policy, an Individual Patient Funding Request (IPFR) can be submitted for consideration in line with the All Wales Policy: Making Decisions on Individual Patient Funding Requests. The request will then be considered by the All Wales IPFR Panel.

If the patient wishes to be referred to a provider outside of the agreed pathway, an IPFR should be submitted.

Further information on making IPFR requests can be found at: Welsh Health Specialised Services Committee (WHSSC) | Individual Patient Funding Requests

3. Quality and Patient Safety

The provider must work to written quality standards and provide monitoring information to the lead commissioner. The quality management systems must be externally audited and accredited.

There should be compliance with the radiation safety and protection legislation and regulations referred to in section 2.2.

There should be risk assessments and contingency plans in place in the event of a recently discharged patient becoming unwell and requiring emergency admission to another hospital.

The centre must enable the patients', carers' and advocates' informed participation and be able to demonstrate this. Provision should be made for patients with communication difficulties and for children, teenagers and young adults.

3.1 Quality Indicators (Standards)

- The provider will have a recognised system to demonstrate service quality and standards.
- The service will have detailed clinical protocols setting out nationally (and local where appropriate) recognised good practice for each treatment site.
- The quality system and its treatment protocols will be subject to regular clinical and management audit.
- The provider is required to undertake regular patient surveys and develop and implement an action plan based on findings.
- Quality of life should be monitored using a standard questionnaire such as EORTC QLQ-GINET21.
- The providers is required to submit their activity to the national Radiotherapy Dataset (RTDS) on a monthly basis. (RTDS V6 has Radioisotope therapy as a Treatment modality option).

4. Performance monitoring and Information Requirement

4.1 Performance Monitoring

WHSSC will be responsible for commissioning services in line with this specification. This will include agreeing appropriate information and procedures to monitor the performance of organisations.

For the service defined in this specification the following approach will be adopted:

- Service providers to evidence quality and performance controls
- Service providers to evidence compliance with standards of care

WHSSC will conduct performance and quality reviews on an annual basis.

4.2 Key Performance Indicators

The providers will be expected to monitor against the full list of Quality Indicators derived from the service description components described in Section 2.2.

The provider should also monitor the appropriateness of referrals into the service and provide regular feedback to referrers on inappropriate referrals, identifying any trends or potential educational needs.

In particular, the provider will be expected to monitor against the following target outcomes:

- Time from receipt of referral for PRRT to first treatment – target within 6 weeks.
- Interval between treatment cycles – target within 8 to 12 weeks.

4.3 Date of Review

This document is scheduled for review before March 2026, where we will check if any new evidence is available.

If an update is carried out the policy will remain extant until the revised policy is published.

5. Equality Impact and Assessment

The Equality Impact Assessment (EQIA) process has been developed to help promote fair and equal treatment in the delivery of health services. It aims to enable Welsh Health Specialised Services Committee to identify and eliminate detrimental treatment caused by the adverse impact of health service policies upon groups and individuals for reasons of race, gender re-assignment, disability, sex, sexual orientation, age, religion and belief, marriage and civil partnership, pregnancy and maternity and language (Welsh).

This policy has been subjected to an Equality Impact Assessment.

The Assessment demonstrates the policy is robust and there is no potential for discrimination or adverse impact. All opportunities to promote equality have been taken.

6. Putting Things Right

6.1 Raising a Concern

Whilst every effort has been made to ensure that decisions made under this policy are robust and appropriate for the patient group, it is acknowledged that there may be occasions when the patient or their representative are not happy with decisions made or the treatment provided.

The patient or their representative should be guided by the clinician, or the member of NHS staff with whom the concern is raised, to the appropriate arrangements for management of their concern.

If a patient or their representative is unhappy with the care provided during the treatment or the clinical decision to withdraw treatment provided under this policy, the patient and/or their representative should be guided to the LHB for NHS Putting Things Right. For services provided outside NHS Wales the patient or their representative should be guided to the NHS Trust Concerns Procedure, with a copy of the concern being sent to WHSSC.

6.2 Individual Patient Funding Request (IPFR)

If the patient does not meet the criteria for treatment as outlined in this policy, an Individual Patient Funding Request (IPFR) can be submitted for consideration in line with the All Wales Policy: Making Decisions on Individual Patient Funding Requests. The request will then be considered by the All Wales IPFR Panel.

If an IPFR is declined by the Panel, a patient and/or their NHS clinician has the right to request information about how the decision was reached. If the patient and their NHS clinician feel the process has not been followed in accordance with this policy, arrangements can be made for an independent review of the process to be undertaken by the patient's Local Health Board. The ground for the review, which are detailed in the All Wales Policy: Making Decisions on Individual Patient Funding Requests (IPFR), must be clearly stated

If the patient wishes to be referred to a provider outside of the agreed pathway, and IPFR should be submitted.

Further information on making IPFR requests can be found at: Welsh Health Specialised Services Committee (WHSSC) | Individual Patient Funding Requests

Annex i Abbreviations and Glossary

Abbreviations

AWMOL All Wales Molecular Radiotherapy Group

IPFR Individual Patient Funding Request

MDT Multi-disciplinary Team

MRT Molecular Radiotherapy

PRRT Peptide Receptor Radionuclide Therapy

WHSSC Welsh Health Specialised Services Committee

Glossary

All Wales Molecular Radiotherapy Group (AWMOL)

AWMOL is a subgroup of the Clinical Oncology Subcommittee (COSC) of the Welsh Scientific Advisory Committee (WSAC) and was set up to advise Welsh Government and the Welsh Health Specialised Services Committee (WHSSC) on the provision of Molecular Radiotherapy services for the people of Wales.

Individual Patient Funding Request (IPFR)

An IPFR is a request to Welsh Health Specialised Services Committee (WHSSC) to fund an intervention, device or treatment for patients that fall outside the range of services and treatments routinely provided across Wales.

Molecular radiotherapy (MRT)

An umbrella term for the use of therapeutic radiopharmaceuticals, given either orally or by injection

Radioligands

Compounds where a radionuclide is conjugated to a complex organic molecule such as an antibody, which is subsequently taken up selectively by a specific cellular target. This permits novel targeting of the radioligand which is not dependent on the chemistry of the radionuclide. Radioligand therapy is a field that is currently expanding rapidly.

Therapeutic radionuclides

These are basic radioactive molecules, or inorganic salts containing the radionuclide used for treating cancer and other diseases. Examples in common use include Sodium Iodide-131 (radioiodine) or Radium-223 Dichloride. These molecules are selectively taken up by certain human tissues by virtue of the radionuclide's chemical properties, allowing the radiotherapeutic effect to be localised. Some of these therapies, in particular the treatment of thyroid cancer with radioiodine, have been used routinely for decades.

Therapeutic radiopharmaceuticals
Therapeutic radiopharmaceuticals should be regarded as distinct from *diagnostic* radiopharmaceuticals, commonly used in nuclear medicine and PET-CT, although there is an overlap in terms of specialist workforce, logistics and infrastructure. There are several definitions used for therapeutic radiopharmaceuticals.

Welsh Health Specialised Services Committee (WHSSC)
WHSSC is a joint committee of the seven local health boards in Wales. The purpose of WHSSC is to ensure that the population of Wales has fair and equitable access to the full range of Specialised Services and Tertiary Services. WHSSC ensures that specialised services are commissioned from providers that have the appropriate experience and expertise. They ensure that these providers are able to provide a robust, high quality and sustainable services, which are safe for patients and are cost effective for NHS Wales.