**Job Description**

|  |  |  |
| --- | --- | --- |
|  **1. JOB IDENTIFICATION** | Job Title | **Photobiology Technologist (0.92 WTE)** |
| Department(s)/Location | **Photobiology Unit / Department of Medical Physics** |
| Number of Job Holders | **1** |
| 1. **JOB PURPOSE**

To assist with the provision of technical services for the Photobiology Unit, which include skin phototesting, ultra-violet light therapy procedures, laser treatment, and photodynamic therapy. The postholder is appointed to Photobiology as an outposted Technologist. |
| 1. **ORGANISATIONAL POSITION**

The staffing complement of the Photobiology Unit consists of this post, 11 specialist technologists, technologists and assistant technologists, two scientists and two consultant clinicians including the Head of the Photobiology Unit and the Clinical Lead for Phototherapy and Scottish Porphyria Service. Head Photobiology UnitHead Medical PhysicsHead of Scientific Services for PhotobiologySection ManagerHighly Specialist Technologist Specialist Clinical TechnologistsAssistant Laboratory Technologist Chief Clinical Engineering TechnologistSpecialist Clinical Technologist PhotonetSpecialist Technologist PorphyriaTechnologists PorphyriaPrincipal Clinical Scientist PorphyriaPost-doc Physics ScientistsResesarch StudentsPhDClinical Lead for Phototherapy and Scottish Porphyria ServiceClinical Technologists**(THIS POST)** Assistant Clinical Technologist |
| 1. **SCOPE AND RANGE**

The Photobiology Unit is part of the Dermatology Department and provides a unique service throughout Scotland for the diagnosis, treatment and research of photodermatological conditions. This includes the treatment of people who have adverse reactions to ultra-violet (UV) and visible radiation, such as urticarial conditions and malignant disease. The diagnostic process involves testing the patient’s skin reaction to different wavelengths of light, in order to recommend an appropriate treatment. These diagnostic investigations require up to 4 days of testing and the unit deals with, on average, 240 patients annually. As a national referral centre, the unit provides educational, scientific and technical support to colleagues throughout Scotland, organising and running courses for this purpose.Phototherapy, the treatment of inflammatory skin conditions such as psoriasis and atopic eczema, is carried out within the Photobiology Unit and is one of 42 centres within the Photonet Managed Clinical Network. The network ensures equity of service with standardised treatment protocols in place and a centralised computer programme that can identify patients at risk of skin cancer. A typical course of phototherapy requires approximately 24 treatments over 8 weeks, with about 900 courses carried out annually, within the department. Technical involvement includes performing the initial test doses for each patient and the maintenance and dosimetry measurements of the phototherapy equipment. Clinical research programmes undertaken in the unit, have resulted in optimal treatment protocols, using evidence based recommendations, for patient management, thereby improving patient care. There are satellite phototherapy centres in Perth, Pitlochry, Crieff, Stracathro, Arbroath and St Andrews, which fall under the umbrella of the hub based at Ninewells.Laboratory based scientific research provides support for ongoing clinical studies (eg pharmacokinetics) in addition to biochemical characterisation and development of light activated drugs and chemicals in *in vitro* cell culture models. The Photobiology Laboratory has a particular interest in mechanisms of phototoxicity and photogenotoxicity.The Scottish Cutaneous Porphyria Service is also located in the Photobiology Unit and provides a biochemical diagnostic service for the detection and identification of porphyria – a heterogenous group of metabolic disorders arising from defects in the haem biosynthetic pathway. The UV calibration laboratory, within Photobiology, ensures accurate UV measurements which is fundamental to the research carried out in the unit and to routine patient care. The laboratory provides an internal and external service in calibrating the unit’s own radiometers and other phototherapy centres’ radiometers to international standards (ISO 17025). Accreditation by UKAS (ISO 17025 and ISO 15189) and BSI (ISO9001) demonstrates the unit’s commitment to quality.The Scottish Photodynamic Therapy Centre is also based in the Photobiology Unit and the primary objective is to provide photodynamic therapy (PDT) for malignant and pre-malignant conditions affecting a range of organs. This form of therapy requires collaboration between multi speciality medical, nursing, technical and scientific personnel and is recognized with improving results in the cure of early cancers and provides palliation in advanced cancers. Around 1000 skin PDT treatments are performed annually using a variety of visible light sources including lasers and natural daylight.In addition to this, laser treatment of facial vascular lesions, pigmented lesions and laser hair removal is carried out, including a technician led service, with around 700 treatments a year. The postholder will perform a wide range of highly specialised clinical and technical procedures ensuring these tasks are carried out competently, with the aim of providing the optimum service possible to patients, staff and visitors alike. The postholder will report directly to the Highly Specialist Technologists in charge. |
| 1. **MAIN DUTIES/RESPONSIBILITIES**

Times are assigned but are approximate only**Clinical/ Technical (85%)**1. Undertakes duties directly related to phototesting the skin, ultra-violet photochemotherapy and ultra-violet phototherapy. This includes monochromator phototesting, photopatch, patch and minimal eythema/ phototoxic dose testing. These are all complex clinical procedures requiring considerable care and attention to detail. Standard reports are generated from these procedures which lead to the recommendation of an appropriate treatment for the patient.
2. Undertakes regular calibration procedures and quality control checks of highly complex optical equipment used in patient diagnosis and therapy. Maintains records of these procedures and of replacements, adjustments and repairs. This includes phototest, PDT & phototherapy equipment, as well as Home Phototherapy.
3. Undertakes the treatment of malignant and premalignant skin lesions using Photodynamic Therapy (PDT). This initially involves the preparation of the lesion by using a curette to abrade the lesion, which removes any surface scale present. After the application of photosensitising prodrug in a cream, a dressing is applied that stays in place for a predetermined length of time. This results in the subsequent light irradiation of the lesion using laser and non ionising light sources. As many patients find these procedures painful, it is necessary to establish a good relationship with the patient and provide reassurance throughout the procedure.
4. Undertakes Laser procedures conforming to local rules as designated by the Head of Scientific Services. Assists in the technician led clinics. This includes adhering to the Local Rules in place and obtaining advice from the Laser Protection Advisor when necessary.
5. Undertakes the recording of patient related results, assessments and reports including transcribing within departmental notes and patient case records. Undertakes the collating of patient questionnaires and the computer input, retrieval and updating of patient data and will be happy to assist with data analysis as required. Competency in the use of all four databases is required, three of which use different software.
6. The postholder will comply with the Data Protection Act, Caldicott Guidelines and local policies regarding confidentiality and access to medical records.
7. Assists with the development of new phototesting procedures and the development of techniques for improving performance, safety and reliability of equipment in use within the Unit.
8. Participates in clinical audit programmes to ensure continuous development of evidence based practice.

Quality Management (5%)1. Adhere to policies and procedures relevant to all areas of work in accordance with Departmental, Directorate, Hospital and Regulatory requirements including:
	* Quality Management policies
	* All departmental procedures and protocols
	* Patient confidentiality policies and current data protection legislation
2. Take part in external and internal audits of the operational processes as per the Quality Management System
3. Contribute towards maintaining high standards of quality by:
	* Achieving departmental objectives
	* Improving patient / customer satisfaction
	* Providing feedback for the improvement of procedures
	* Adhering to organizational policies
4. Abides by sections of the Quality Management System that are appropriate to the role, including where responsibilities, authorities and tasks have been delegated within the quality documentation

Health & Safety (5%)1. Complies with the Health and Safety protocols adopted by the Photobiology Unit including the co-ordination of the obligatory H&S responsibilities, guidelines, policies and procedures.
2. Adheres to the infection control measures adopted by the department and NHS Tayside.
3. Adheres to policies and protocols relating to the handling and disposal of contaminated blood to ensure safety of both self and other staff.

**Research/ Educational/ Other (5%)**1. Assists in the various drug and clinical research studies involving volunteers and patients. This includes carrying out the procedures ensuring the protocol is adhered to and the recording of data is within good clinical practice guidelines.
2. Assists with the maintenance of stocks of materials and spares required by the Unit.
3. Assists with the maintenance of the laboratories and facilities of the Unit.
4. Attends appropriate training courses and scientific meetings and participates in continuing professional development programmes, thereby keeping up to date with technical and scientific developments in the relevant fields, ensuring own personal developmental needs are met.
5. Demonstrates various clinical procedures and use of equipment to other multidisciplinary groups of staffing including medical students carrying out placements, nursing students and visiting academic, technical and clinical staff from outwith NHS Tayside.
6. Assists with equipment demonstrations at the Biannual Photodermatology Courses and in various other study days / courses held within Photobiology.
7. Complies with departmental policy with regard to conduct with patients.

**Induction Standards & Code of Conduct**Your performance must comply with the national “Mandatory Induction Standards for Healthcare Support Workers 2009” and with the Code of Conduct for Healthcare Support Workers. |
| 1. **COMMUNICATIONS AND RELATIONSHIPS**

The post holder must have good communication skills and be able to deal effectively and professionally with patients while maintaining an effective working relationship with colleagues and other NHS Tayside and University of Dundee staff.The post holder communicates complex matters to patients, relatives and other health care professionals to ensure provision of care. This includes conveying complex technical and scientific information that must be converted in a manner that is understood by that particular person whether it is a patient, staff member or visitor to the department. An essential element is establishing good relationships with patients despite barriers of language and understanding, for example, when dealing with children. Due to the broad spectrum of different procedures carried out, a compassionate manner is required for dealing with a number of groups of patients. This is evident in the laser clinics where sensitivity must be shown for some of the conditions treated and in the PDT clinics where reassurance and empathy is required as a large percentage of elderly, infirm and confused patients attend these clinics.The postholder will, occasionally, be required to deal with verbal complaints, aggression and challenging behaviour from patients and be able to act accordingly. |
| 1. **KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE**

 **JOB**BSc Degree in an appropriate subject and /or relevant experience.Understanding a range of work procedures and practices, some of which are non-routine, which require a base level of theoretical knowledge. This is normally acquired through formal training or equivalent experience.The postholder will be expected to gain knowledge and understanding of complex physics, and the interaction of UV and laser radiation within the body.Knowledge and understanding of complex dosimetry and calibration procedures and the expertise to operate highly specialised equipment.Demonstration of excellent team working skills. |
| 1. **SYSTEMS AND EQUIPMENT**

Assists in the regular maintenance and calibration of a wide diversity of highly specialist equipment (approximate total value of £500,000) and needs to have the specialist clinical knowledge to ensure the safe operation and use of the equipment. These include* irradiation monochromators (replacement value £20000)
* spectroradiometer,
* photodynamic diagnosis detection equipment
* multiple ultra-violet and visible light sources (replacement value £15000 for some units)
* 5 lasers used for patient care, three of which are used for different applications, and responsibility for day to day maintenance and calibration extends to these devices also. Replacement value of each of these lasers is >£40000.

 The post holder should be computer literate to enable the use of various software packages including Microsoft Office applications (Excel, Word), Access databases and patient database systems that are in place.**Responsibility for Records Management**All records created in the course of the business of NHS Tayside are corporate records and are public records under the terms of the Public Records (Scotland) Act 2011. This includes email messages and other electronic records. It is your responsibility to ensure that you keep appropriate records of your work in NHS Tayside and manage those records in keeping with the NHS Tayside Records Management Policy and with any guidance produced by NHS Tayside specific to your employment. |
| 1. **PHYSICAL DEMANDS OF THE JOB**

**Physical skills/ effort**On a basis of two to three times weekly, assistance is often required for helping patients on and off beds, on and off treatment chairs and from wheelchairs to beds (weights being in excess of 50kg generally). Safe manual handling techniques are employed to enable the patients to be in the correct position for testing or treatment.Laser treatments involve short periods of time (10 minute sessions with breaks), standing in restrictive positions and in using specialist manipulative skills, the postholder must ensure good contact between the laser aperture and the patient.Maintenance of phototest and phototherapy equipment requires moderate physical effort in the replacement of optical equipment and UV lamps and tubes. This is on a monthly basis and involves dismantling phototherapy units and optical equipment to allow lamp and/or starter replacement. In doing so, the postholder must carry out frequent repetitive bending and stretching manoeuvres. In the course of the working week, various pieces of equipment need to be moved for treatment purposes, some of which need to be pushed using considerable effort due to the weight of the equipment (some equipment can be greater than 50kg in weight). **Mental effort**There is a frequent need for prolonged concentration when carrying out calibration, spectroradiometry measurements and dosimetry calculations in order to ensure measurements are accurate and consistent. Concentration is required when checking documents/ patients notes whilst subject to frequent interruptions from patients/ relatives or other colleagues.**Emotional Effort**Emotional demands include communicating with distressed, anxious, worried patients and their relatives on a regular basis and providing support in the working environment to junior staff. **Working Conditions**Daily exposure to unpleasant working conditions is inevitable, with patient body odours, MRSA, bodily fluids, and verbal aggression. The postholder is also exposed to patients, on a daily basis, with distressing skin conditions such as psoriasis and atopic eczema, and to cancerous skin lesions which have broken down and, at times, can be ulcerated or hyperkeratotic in nature. Occasional exposure to infectious skin conditions is unavoidable.The postholder will be required to work, on a daily basis, with potentially dangerous ultra-violet radiation and high power lasers. This requires extreme care to ensure that risks are as low as reasonably achievable and the use of personal protective equipment and measures. |
| 1. **DECISIONS AND JUDGEMENTS**

The postholder adheres to an appraisal system with performance levels reviewed annually. The postholder adheres to set protocols and procedures in place and reports to the Section Manager.The posthoder is required to work within their competence, take responsibility for their own work and decide on the best course of action to resolve problems. They are accountable for own professional actions, whilst working within professional codes of practice, departmental policies and procedures. |
| 1. **MOST CHALLENGING/DIFFICULT PARTS OF THE JOB**

Maintaining a high standard of work, tailored to meet the needs of the Photobiology Unit and its patients.Understanding the highly complex scientific basis of the procedures and keeping up to date with advances and application of new techniques.Ability to re-assure patients while carrying out laser, PDT and phototherapy procedures which are often painful to the patient. |