

Principal Clinical Scientist: Treatment Planning (Band 8A)



PERSONNEL SPECIFICATION

JOB TITLE AND BAND: Medical Physicist
(Principal Clinical Scientist: Radiotherapy Physics):
Treatment Planning (Band 8A)

DEPARTMENT / DIRECTORATE: Cancer Services / Acute Directorate

Month & Year: October 2020

Notes to applicants:

1. You must clearly demonstrate on your application form under each question, how you meet the required criteria as failure to do so may result in you not being shortlisted. You should clearly demonstrate this for both the essential and desirable criteria.
2. Shortlisting will be carried out on the basis of the essential criteria set out in Section 1 below, using the information provided by you on your application form. Please note the Trust reserves the right to use any desirable criteria outlined in Section 3 at shortlisting. You must clearly demonstrate on your application form how you meet the desirable criteria.
3. Proof of qualifications and/or professional registration will be required if an offer of employment is made – if you are unable to provide this, the offer may be withdrawn.

ESSENTIAL CRITERIA

SECTION 1: The following are **ESSENTIAL** criteria which will initially be measured at shortlisting stage although may also be further explored during the interview/selection stage. You should therefore make it clear on your application form whether or not you meet these criteria. Failure to do so may result in you not being shortlisted. The stage in the process when the criteria will be measured is stated below.

Factor	Criteria	Method of Assessment
Experience	<ol style="list-style-type: none"> 1. Post qualification experience in medical physics, predominantly in radiotherapy physics, including demonstrable specialist experience in the following: <ol style="list-style-type: none"> a) UK Reference Dosimetry b) Advanced treatment planning of a range of clinical sites c) Commissioning of treatment planning and radiotherapy imaging equipment 	Shortlisting by Application Form AND Further assessed at Interview



<p>Qualifications/ Registration</p>	<ol style="list-style-type: none"> 1. A minimum of a 2nd class Honours degree, or equivalent, in Physics or other appropriate science subject. 2. Relevant MSc or higher degree. 3. Completion of formal medical physics training scheme equivalent to IPEM parts I and II or the Modernising Scientific Careers (MSC) Scientist Training Programme (STP). 4. HCPC registration as a Clinical Scientist.* 5. Certification as Medical Physics Expert (MPE) through inclusion on the RPA 2000 national list of MPEs.* <p><i>*Individuals without the necessary registration and certification must demonstrate eligibility to hold these at appointment, and secure registration and certification within 6 months of appointment. Continued appointment will be dependent upon securing these.</i></p>	<p>Shortlisting by Application Form</p> <p>AND</p> <p>Further assessed at Interview</p>
<p>Other</p>	<p>Hold a current full driving licence which is valid for use in the UK and have access to a car on appointment. This criteria will be waived in the case of applicants whose disability prohibits driving but who have access to a form of transport approved by the Trust which will permit them to carry out the duties of the post.</p>	<p>Shortlisting by Application Form</p>
<p>SECTION 2: The following are ESSENTIAL criteria which will be measured during the interview/ selection stage:</p>		
<p>Skills / Abilities</p>	<ol style="list-style-type: none"> 1. Ability to effectively communicate scientific issues to scientists and non-scientists with good verbal, written and audio-visual production & presentation skills. 2. Well-developed skills in the use of common IT applications including Excel, Word, Access, PowerPoint, etc. 3. Ability to adapt and develop software solutions to meet the needs of the service 4. Ability to organise and prioritise own work. 5. Ability to concentrate when subjected to unpredictable working patterns 	<p>Interview</p>
<p>Knowledge</p>	<ol style="list-style-type: none"> 1. Demonstrable knowledge and experience in Radiotherapy Physics, commensurate with having completed a formal training scheme for clinical scientists. 2. A broad level of knowledge and understanding of other areas of Medical Physics, including imaging with ionising & non-ionising radiation and radiation safety. 	<p>Interview</p>



	<p>3. A good understanding of the principles and practice of radiation physics and radiotherapy, including radiotherapy equipment QA, equipment management, radiation dosimetry, treatment planning.</p> <p>4. An understanding of the current UK legislation, codes of practice and guidance pertaining to the use of ionizing radiation in a healthcare environment.</p>	
DESIRABLE CRITERIA		
SECTION 3: these will ONLY be used where it is necessary to introduce additional job related criteria to ensure files are manageable. You should therefore make it clear on your application form how you meet these criteria. Failure to do so may result in you not being shortlisted		
Factor	Criteria	Method of Assessment
Experience	<p>Focused experience in radiotherapy treatment planning. Relevant publication record.</p> <p>Principles and practice of data analysis and statistics. Experience managing a team.</p>	Shortlisting by Application Form
Qualifications	Relevant PhD	Shortlisting by Application Form

As part of the Recruitment & Selection process it may be necessary for the Trust to carry out an Enhanced Disclosure Check through Access NI before any appointment to this post can be confirmed.

“The successful candidate can expect to be placed at the minimum point of the pay scale, although a higher starting salary, within the range of the pay band may be available if the person appointed has experience relevant & equivalent to the post. If the successful candidate is an existing HSC employee moving to a higher band, AFC Pay on Promotion will apply.”

“Are able to request Flexible Working from the 1st day of their employment. A number of flexible working provisions are offered by all HSC Organisations including Full-time working, Fixed working patterns, Part-time working, Flexi-time, Compressed/elongated hours, Average hours working patterns, Term-time working, Job-share or Homeworking for some or all of the working pattern, depending on the role being undertaken. Successful applicants are encouraged to discuss with their manager what Flexible Working provisions may be available in the role they are taking up, prior to commencing employment, to help them achieve a positive Work/Life Balance”.

Successful applicants may be required to attend for a Health Assessment

THE TRUST IS AN EQUAL OPPORTUNITIES EMPLOYER



JOB DESCRIPTION

JOB TITLE	Medical Physicist (Principal Clinical Scientist: Radiotherapy Physics) – Treatment Planning
BAND	Band 8A
DIRECTORATE	Acute Directorate
INITIAL LOCATION	Radiotherapy Physics Department, North West Cancer Centre (NWCC)
REPORTS TO	Head of Treatment Planning & Mould Room
ACCOUNTABLE TO	Head of Radiotherapy Physics Service

JOB SUMMARY

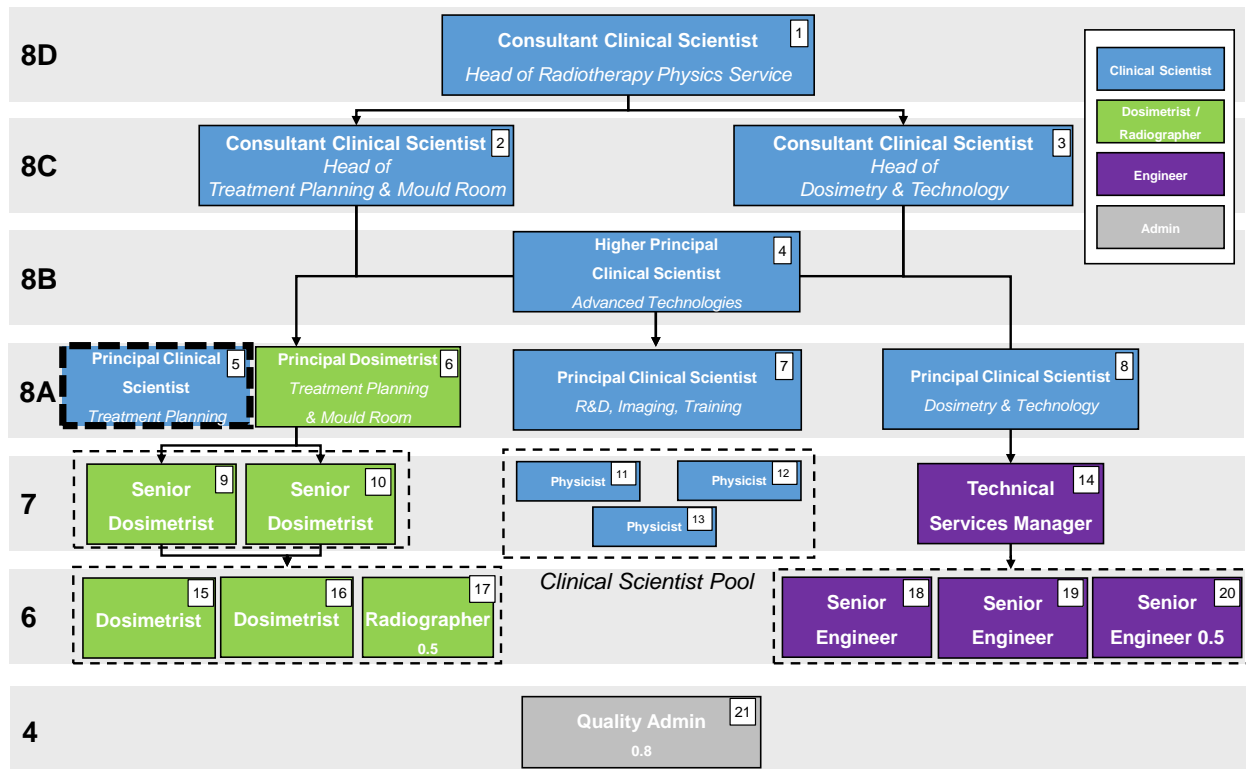
- As a Medical Physicist the post holder will contribute to all aspects of the Radiotherapy Physics service at the North West Cancer Centre.
- The post holder will play a leading role in the development of radiotherapy treatment planning.
- The post holder will apply their specialist knowledge and training in Physics to develop and manage safe, innovative, patient centred services at the North West Cancer Centre, in line with best current practice.
- The post holder will work as part of an integrated Radiotherapy team alongside Dosimetrists, Engineers, Therapeutic Radiographers and Clinical Oncologists.
- The post holder will provide day to day clinical scientific leadership and strategic direction to the Dosimetrist Team, supporting the operational agenda of the Principal Dosimetrist and reporting to the Head of Treatment Planning & Mould Room (TP&MR).
- The post holder will be entitled as a Medical Physics Expert (MPE).



1 Organisational Position

- 1.1 The post holder is a member of the of the Treatment Planning & Mould Room (TP&MR) section, reporting to the Head of TP&MR.
- 1.2 The post holder will play a leading role in developing and supporting treatment planning activities across the Radiotherapy service.

Radiotherapy Physics Department



2 Service Delivery: Treatment Planning & Mould Room (TP&MR)

- 2.1 Participate in the preparation and verification of treatment plans for radiotherapy patients, being a local expert in the advanced treatment planning.
- 2.2 Provide day to day clinical scientific leadership and strategic direction to the Dosimetrist Team, supporting the operational agenda set by the Principal Dosimetrist.
- 2.3 Develop computer models of patients using CT and other imaging datasets, applying manual and automatic segmentation methods to characterise disease extent and localise organs at risk.
- 2.4 Apply manual and computational methods to optimise radiotherapy beam arrangements and the resulting dose distributions. This will include utilising statistical methods to quantitatively assess any particular plan against treatment planning objectives and accepted performance standards.



- 2.5 Apply mathematical models of radiation transport to understand the propagation of energy within the patient and calculate the radiation dose to treatment target volumes and organs at risk. Validate mathematical models of energy deposition against experiment.
- 2.6 Critically compare the performance of available dose calculation algorithms and develop guidelines around the circumstances in which different algorithms should be utilised.
- 2.7 Mathematical modelling of the radiobiological impact of different dose / fractionation schedules and gaps in treatment.
- 2.8 Lead the commissioning, operational use and development of computerised Treatment Planning System (TPSs) and associated technologies to meet current and developing clinical requirements in Radiotherapy.
- 2.9 Contribute to the procurement of new TPSs and associated technologies or enhancements to existing TPSs.
- 2.10 Work with the Head of TP&MR and Principal Dosimetrist to ensure effective training arrangements are established for all staff.
- 2.11 Develop and maintain the quality assurance programme for the TPS, ensuring veracity and validation of TPS data. Contribute to ensuring on-going consistency between the actual performance of treatment equipment and that calculated by the TPS.
- 2.12 Support the Dosimetry & Technology (D&T) team during commissioning of treatment equipment to ensure experimental collection of sufficient and appropriate data to populate the TPS and to confirm output from the TPS.
- 2.13 Liaise with the D&T team to ensure on-going consistency between the actual performance of treatment equipment and that calculated by the TPS.
- 2.14 Provision of scientific and professional advice in support of the development of the TPS for new clinical applications.
- 2.15 Provide scientific advice on the appropriate use of multi-modality image data in the treatment planning process, including development of robust pathways for image registration and automatic segmentation.
- 2.16 Contribute to the development and maintenance of a framework to facilitate clinical peer-review of the treatment planning process.
- 2.17 Work with the Head of TP&MR to interpret relevant national and international guidelines, developing and leading plans for their appropriate local implementation.
- 2.18 Liaise with clinical, radiography, technical and other physics staff when developing new Treatment Planning techniques / methodologies.
- 2.19 Comply with and ensure all work performed in the TP&MR Section complies with applicable legislation, particularly The Ionising Radiations Regulations (Northern Ireland) 2017 and The Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2018.



- 2.20 Ensure all calculation methods used as part of the Treatment Planning process are accurate, appropriate for the clinical applications to which they are being applied and that the limitations are understood and documented.
- 2.21 Implement new and improved Treatment Planning techniques to optimise the use of available treatment equipment.
- 2.22 Contribute to the ongoing optimisation of pre-treatment imaging by liaising with other staff as appropriate.
- 2.23 Contribute to and liaise with appropriate staff in the investigation and reporting of any case of suspected or actual mistreatment of any patient due to a failure in the Treatment Planning process. Ensure that all reporting mechanisms are in place and adhered to.
- 2.24 Liaise with the relevant staff to ensure the implementation of corrective and/or preventative actions following any incidents.
- 2.25 Act as a point of contact for scientific clinical issues relating to the Treatment Planning process.
- 2.26 Develop software tools to support the Radiotherapy service. For example, for patient dose calculation, to analyse experimental data, for quality assurance or to perform statistical modelling of the impact of patient set-up uncertainties.
- 2.27 Contribute to the development and maintenance of an in-vivo dosimetry service, devising and performing experiments to verify that the energy imparted to the patient during treatment agrees with the mathematical model calculated during the treatment planning stage.
- 2.28 Ensure appropriate audits of TP&MR processes are performed.

3 Service Delivery: Dosimetry & Technology (D&T)

- 3.1 Adhere to dosimetry standards, codes of practice and quality assurance requirements for radiotherapy dosimetry and technology.
- 3.2 Reintroduce radiotherapy equipment to clinical use following planned service or repair. This will involve performing radiation dosimetry experiments and other tests as appropriate.
- 3.3 Support the D&T team in ensuring appropriate testing, documentation and certification (e.g. CE marking) of all in-house medical devices.

4 General Radiotherapy

- 4.1 Direct participation in the operational work of the Radiotherapy Physics department as necessary and appropriate.
- 4.2 Act as Medical Physics Expert (MPE) under the Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2018 for all areas of radiotherapy physics. Act as a lead MPE for treatment planning, working closely with the Heads of TP&MR and D&T. Ensure the



continuing competence of other appointed MPEs and IR(ME)R Operators within the department.

- 4.3 Direct participation in the operational work of the Radiotherapy Physics department as necessary and appropriate. Perform as an Operator as defined under the Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2018 within own scope of practice.
- 4.4 Liaise with other physicists across Northern Ireland to ensure safe and effective delivery of a regional Radiotherapy service.
- 4.5 Support the Radiation Protection Advisor (RPA) and Radiation Protection Supervisors (RPSs) by undertaking general radiation protection duties, building resilience within the local team.
- 4.6 Work within the Radiotherapy Physics competency structure, ensuring own competence is reviewed and recorded according to departmental protocols.
- 4.7 Undertake risk assessments and contribute to maintaining the departmental risk register.
- 4.8 Participate in the Service's 'on-call' scheme, work outside normal working hours, and provide emergency cover as and when required. The activities of this post will be covered by a Memorandum of Understanding (MoU) between the Western and Belfast Health and Social Care Trusts. Should service exigencies arise the post holder may be asked to spend a short period of time working at the Northern Ireland Cancer Centre (NICC) in Belfast. Any work away from base will be agreed in advance.
- 4.9 Maintain registration as a Clinical Scientist and Medical Physics Expert and participate in an agreed scheme of Continuous Professional Development.
- 4.10 Undertake other duties to maintain existing services or develop new services.

5 Research & Development (R&D)

- 5.1 Lead and support appropriate research and development.
- 5.2 Contribute to the development, maintenance and quality assurance of clinical trials.
- 5.3 Develop new or adapt existing equipment or software to meet emerging clinical or service requirements.
- 5.4 Maintain appropriate documentation and produce reports in accordance with research governance guidance.

6 Managerial

- 6.1 Provide day to day scientific leadership and MPE advice to the Dosimetrist Team, supporting the operational management activities of the Principal Dosimetrist.
- 6.2 Contribute to a supportive, fair and open culture that encourages and enables staff.



- 6.3 Supervise and take responsibility for the work of Medical Physicists, Dosimetrists, Engineering and other staff when they are performing work under the post holder's direction.
- 6.4 Participate in the orientation and induction of new staff and in the development of good interpersonal relationships.
- 6.5 Participate in regional, national and international Medical Physics activities as requested.
- 6.6 Participate in the recruitment and selection of staff as required.
- 6.7 Participate in staff appraisal and review.

7 Education

- 7.1 Assist with the provision of in-house teaching and training of clinical, Radiographer, scientific, technical and other staff within the Radiotherapy Service.
- 7.2 Assist with the provision of lectures, tutorials and practical instruction for medical, scientific, technical and other staff outside the Service as required.
- 7.3 Actively participate in departmental seminars and journal clubs.
- 7.4 Assist with the supervision of trainee Clinical Scientists, Dosimetrists, Radiographers and Physicians.
- 7.5 Attend training courses and meetings as required, including courses off-site and where national or international travel is required.
- 7.6 Undertake mandatory training in line with departmental policy.

8 Communication & Information Management

- 8.1 Play a leading role in the clinical scientific development of radiotherapy dosimetry and technology, working as part of a multi-professional team.
- 8.2 Communicate effectively with staff and maintain productive working relationships amongst your staff and with others.
- 8.3 Report and record all accidents, untoward incidents, sickness and absence, within your area of responsibility, using appropriate forms.
- 8.4 Deal with and report complaints, in keeping with Trust Policy, and assist with investigations, when necessary.
- 8.5 Adhere to all applicable data protection and information governance standards and policies.
- 8.6 Ensure the security of patient data within radiotherapy information systems.



- 8.7 Champion the implementation and maintenance of paperless processes across all scientific, technical and clinical workflows.

9 Quality

- 9.1 Ensure that the needs of patients and their carers are at the core of the way that the Trust delivers services.
- 9.2 Work within the Trust's governance framework to ensure policies and procedures meet relevant statutory requirements, professional standards, policy guidance and workforce and regulatory requirements.
- 9.3 Support the Trust in advancing its compliance with Risk Management Controls Assurance Standards and to contribute to improving governance across the organisation.
- 9.4 Promote a culture of continuous service improvement amongst your staff, encouraging their participation and that of service users in reviewing and modernising current services and in service development
- 9.5 Comply with the requirements of the Health and Safety at Work Legislation.
- 9.6 Participate in the departmental Quality Assurance programme, following standard procedures and protocols and contributing to the development of these as required.
- 9.7 Embrace and support the local implementation of relevant accreditation and certification standards, in particular BS 70000 for Medical Physics and Clinical Engineering (MPACE) and the CHKS oncology standards.
- 9.8 Support the service securing and maintaining relevant certifications and accreditations.

10 Financial & Resource Management

- 10.1 Develop and monitor appropriate controls within scope of responsibility in accordance with the Trust's Schedule of Delegated Authority
- 10.2 Adhere to agreed policies and procedures including standing financial instructions.
- 10.3 Authorise mileage forms and stock and non-stock requisitions in accordance with the Schedule of Delegated Authority.
- 10.4 Ensure that the Trust's funds are effectively used, that financial commitments represent value for money and comply with standing financial instructions and Trust protocols
- 10.5 Manage and monitor service standards, contracts and agreements arising from relationships with internal and external suppliers.

11 People Management



- 11.1 Establish a supportive, fair and open culture that encourages and enables staff, within your area of responsibility, to meet required performance standards.
- 11.2 Identify, at least annually through performance appraisal, training and development needs of staff in line with the NHS Knowledge and Skills framework and to carry out the development review process as required.
- 11.3 Participate in the recruitment and selection of new staff as required.
- 11.4 Participate in the orientation and induction of new staff and in the development of good interpersonal relationships.
- 11.5 Encourage good practice and act as a role model, give leadership and support to staff and encourage effective teamwork within your area of responsibility.
- 11.6 Manage and document grievance and disciplinary matters in keeping with Trust policies.
- 11.7 Take responsibility for managing and improving attendance of staff in accordance with the Trust's Managing Attendance Protocol.

12 General Duties

- 12.1 Employees of the Trust will be required to promote and support the mission and vision of the service for which they are responsible.
- 12.2 Develop and maintain good communication with all levels of management and build partnerships with the wider HSC, DoH, NHS and external organizations in the promotion of the Trust.
- 12.3 Carry out duties and responsibilities in compliance with health and safety policy and statutory regulations.
- 12.4 Participate in grievance and disciplinary processes as required.
- 12.5 Promote equality of opportunity through own actions and ensure this policy is adhered to by staff in area of responsibility.
- 12.6 Undertake mandatory training as prescribed by Trust and departmental policy.
- 12.7 To undertake other duties as required by the Head of Radiotherapy Physics.

General Management Responsibilities

The post holder will promote and support effective team working, fostering a culture of openness and transparency. The post holder will ensure that they take all concerns raised with them seriously and act in accordance with 'Your right to raise a concern (Whistleblowing)' policy and their professional code of conduct, where applicable.

General Requirements

The post holder will be required to:



- Ensure the Trust's policy on equality of opportunity is promoted through his/her own actions and those of any staff for whom he/she has responsibility.
- Co-operate fully with the implementation of the Trust's Health and Safety arrangements, reporting any accidents/incidents/equipment defects to his/her manager, and maintaining a clean, uncluttered and safe environment for patients/clients, members of the public and staff.
- Adhere at all times to all Trust policies/codes of conduct, including for example:
 - Smoke Free policy
 - IT Security Policy and Code of Conduct
 - standards of attendance, appearance and behaviour
- Contribute to ensuring the highest standards of environmental cleanliness within your designated area of work.
- Co-operate fully with regard to Trust policies and procedures relating to infection prevention and control.
- All employees of the Western Health and Social Care Trust are legally responsible for all records held, created or used as part of their business within the Western Health and Social Care Trust including patients/clients, corporate and administrative records whether paper-based or electronic and also including emails. All such records are public records and are accessible to the general public, with limited exceptions, under the Freedom of Information Act 2000 the Environmental Information Regulations 2004, the General Data Protection Regulations (GDPR) and the Data Protection Act 2018. Employees are required to be conversant with the Western Health and Social Care Trust policy and procedures on records management and to seek advice if in doubt.
- Take responsibility for his/her own ongoing learning and development, in order to maximise his/her potential and continue to meet the demands of the post.
- Represent the Trust's commitment to providing the highest possible standard of service to patients/clients and members of the public, by treating all those with whom he/she comes into contact in the course of work, in a pleasant, courteous and respectful manner.
- The HSC Code of conduct sets out the standards of conduct expected of all staff in the Western Health & Social Care Trust and presents standards of conduct and behaviours required during and after employment with the Trust. Professional staff are expected to follow the code of conduct for their own professions as well as this code.
- Staff members are expected to involve patients, clients, carers and the wider community where relevant, in developing, planning and delivering our services in a meaningful and effective way, as part of the Trust's ongoing commitment to Personal and Public Involvement (PPI).



Please use the link below to access the PPI standards leaflet for further information.
http://www.publichealth.hscni.net/sites/default/files/PPI_leaflet.pdf

- Employees must at all times abide by Trust policies and procedures and the terms of their contract of employment. They must conduct themselves with impartiality, integrity, objectivity and honesty and maintain high standards of personal and professional accountability.
- Employees are expected to demonstrate commitment to the Trust by ensuring regular attendance at work and efficient completion of duties.
- Employees must ensure that they comply with any risk management responsibilities specific to their post, and as set out in the Trust's Risk Management Strategy.
- The Trust is committed to the development and implementation of systems under Integrated Governance to ensure continuous improvement in the quality of services provided. Employees will be expected to co-operate and work with such systems.
- All information concerning patients and staff must be held in the strictest confidence and may not be divulged to any unauthorized person.
- Employees must ensure that equality and human rights issues are addressed within the post holder's area of responsibility in accordance with the Trust's Equality Scheme.





This Job Description will be subject to review in the light of changing circumstances and is not intended to be rigid and inflexible but should be regarded as providing guidelines within which the individual works. Other duties of a similar nature and appropriate to the grade may be assigned from time to time.

It is a standard condition that all Trust staff may be required to serve at any location within the Trust's area, as needs of the service demand.

22 October 2020





HSC Value	What does this mean?	What does this look like in practice? - Behaviours
 <p>Working Together</p>	<p>We work together for the best outcome for people we care for and support. We work across Health and Social Care and with other external organisations and agencies, recognising that leadership is the responsibility of all.</p>	<ul style="list-style-type: none"> • I work with others and value everyone’s contribution • I treat people with respect and dignity • I work as part of a team looking for opportunities to support and help people in both my own and other teams • I actively engage people on issues that affect them • I look for feedback and examples of good practice, aiming to improve where possible
 <p>Compassion</p>	<p>We are sensitive, caring, respectful and understanding towards those we care for and support and our colleagues. We listen carefully to others to better understand and take action to help them and ourselves.</p>	<ul style="list-style-type: none"> • I am sensitive to the different needs and feelings of others and treat people with kindness • I learn from others by listening carefully to them • I look after my own health and well-being so that I can care for and support others
 <p>Excellence</p>	<p>We commit to being the best we can be in our work, aiming to improve and develop services to achieve positive changes. We deliver safe, high-quality, compassionate care and support.</p>	<ul style="list-style-type: none"> • I put the people I care for and support at the centre of all I do to make a difference • I take responsibility for my decisions and actions • I commit to best practice and sharing learning, while continually learning and developing • I try to improve by asking ‘could we do this better?’
 <p>Openness & Honesty</p>	<p>We are open and honest with each other and act with integrity and candour.</p>	<ul style="list-style-type: none"> • I am open and honest in order to develop trusting relationships • I ask someone for help when needed • I speak up if I have concerns • I challenge inappropriate or unacceptable behaviour and practice

All staff are expected to display the HSC Values at all times

