



THE QUEEN ELIZABETH HOSPITAL BOARD

JOB DESCRIPTION

JOB TITLE:	Physicist I/II
SALARY SCALE:	S8: Z10-6 (Q.B) Z5-1
DEPARTMENT:	Oncology & Nuclear Medicine
REPORTS TO:	Consultant, Head of Department
DIRECT REPORTS:	N/A

JOB SUMMARY

Under general direction uses analytical and applied scientific techniques to assist healthcare workers in the safe treatment of diseases. Performs the safe and effective delivery of radiation to achieve the therapeutic goal prescribed by the Radiation Oncologist. Undertakes any relevant duties as required by management.

DUTIES AND RESPONSIBILITIES

The duties listed below are intended only as an illustration of the various types of work that may be performed:

1. Promotes and develops multidisciplinary teamwork within the specialty and communicates effectively with all agencies and personnel involved in providing radiation medicine services; and monitors the occupational radiation exposure of staff, and maintains all records necessary for regulatory agencies;
2. Works collaboratively with the wide range of technical and clinical expertise available across the Hospital in support of clinical strategy; and assists in building the Hospital's capacity and profile as a centre for innovation in technology for patients;
3. Attends meetings as required e.g. Quality Assurance Program Committee, Radiation Safety Committee, and Tumour Board Committee; and provides consultation and support for technical, medical, nursing and allied health personnel, on matters pertaining to the utilisation of technology to support clinical workflow, in supporting alternative models of care and the use of technology;
4. Assists with lifecycle management plans for radiation emitting equipment within the Hospital; and prepares reports of work conducted relating to radiation medicine services within the Hospital. Keeps abreast of any new international standards of quality assurance and puts those standards into practice;
5. Advises on shielding requirements within Radiology and Oncology & Nuclear Medicine and other controls necessary to restrict exposure in accordance with the Hospital Regulations; and also ensures the correct disposal of radioactive waste;
6. Develops, establishes, and monitors procedures for measuring equipment performance and ensures that tests are performed in accordance with international guidelines;
7. Manages equipment support services for radiation emitting equipment within the hospital; and supervises preventative and corrective

maintenance work performed on radiation emitting equipment within the hospital;

8. Performs radiation protection surveys of the room housing radiation emitting equipment across the hospital; and is responsible for acceptance testing, commissioning, calibration and safety surveys of imaging and radiation therapy delivery equipment;
9. Performs acceptance testing and commissioning of the radiation oncology management information system, treatment planning system, and brachytherapy system;
10. Assists with the duties as Systems Administrator's for the radiation oncology management information system; and develops purchasing and acceptance specifications for imaging and radiation therapy equipment when necessary;
11. Performs calibration and verification of measurement instruments (Ion Chambers, Detector Arrays etc.); and performs absolute dose calibration, output adjustments and beam steering when dosimetric machine performance parameters are out of tolerance;
12. Manages/performs weekly, monthly and annual quality assurance procedures on radiation emitting equipment within the hospital e.g. Linear Accelerator, CT Simulator, HDR Brachytherapy System, and Treatment Planning System in accordance with international guidelines;
13. Performs annual thermoluminescence dosimetry (TLD) irradiation for independent output validation with an internationally accredited facility;
14. Performs Treatment Plan Consults and liaises with the Radiation Oncologists when necessary concerning treatment objectives and limitations;
15. Develops, reviews and updates existing policies and procedures related to the Clinical Physics Programme; and develops, revise and implements treatment planning techniques, policies and procedures in accordance with current international guidelines;

16. Performs external beam planning using appropriate techniques/parameters (e.g. IMRT, 3DCRT, VMAT); and performs brachytherapy treatment planning e.g. intracavitary, gynaecological procedures;
17. Performs weekly Quality Assurance Checks of Patients' Treatment Charts; and perform and analyse patient specific QA measurements including ArcCheck, ion chamber and portal dosimetry measurements to confirm plan delivery accuracy;
18. Performs Biological Effective Dose Analysis for patient treatment interruptions and advise the radiation oncologists on treatment options to compensate for missed treatments.
19. Performs review of all treatment plans for accuracy and plan quality; and re-plan or re-optimize when necessary; and supervises initial treatment set-ups for accuracy.
20. Manages the hospital's Radiation Safety Programme and develops/reviews radiation safety policies and procedures. Provides continuing education lectures with regards to radiation protection/safety; and initiates and participates in research projects as required;
21. Assists with patient dosimetry for treatment of patients undergoing radiotherapy with radioactive isotopes. Orders radioactive isotopes and ensures that stock levels are adequate;
22. Supports building the clinical engineering and technological base required in future models of clinical care at the Hospital; and evaluates equipment and makes suggestions regarding purchase, use or rental;
23. Checks the computation of dose and dose distributions produced for external beam therapy and high dose rate brachytherapy, and monitors the application of such computations to ensure that radiotherapy doses delivered agree to those prescribed according to internationally agreed quality assurance standards;
24. Provides in-service training for Radiotherapists, Radiographers, technicians and nursing staff; and evaluates subordinate staff

- performance. Provides consultation and support to staff on matters pertaining to quality, safety and the interpretation of data from diagnostic and therapeutic systems;
25. Monitors and evaluates the overall performance of staff in the department in line with Hospital and departmental policies; and provides continuing education lectures to staff, Radiation Therapists and associated allied health personnel on radiation safety.
 26. Designs, implements, and maintains the Radiation Medicine Quality Assurance/Management Programmes; and participates in the routine quality assurance of all equipment used for Radiation Medicine at the Hospital;
 27. Attends training as required;
 28. Observes health and safety protocols in the execution of duties;
 29. Using customer service skills, establishes and maintains effective working relationships with other employees, officials and members of the general public.
 30. Performs any other related duty as assigned.

KNOWLEDGE, SKILLS & ABILITIES

1. Knowledge of the information and techniques needed to treat malignancy
2. Knowledge of general screening and reporting
3. Knowledge and experience in Ultrasound, Computerised Tomography and Magnetic Resonance Imaging
4. Good communication and interpersonal skills
5. Leadership and teamwork skills
6. Motivation skills
7. Ability to use initiative.

REQUIRED TRAITS

- Confidentiality
- Co-operation
- Dedication
- Dependability
- Empathy
- Flexibility and Adaptability
- Ethical
- Meticulousness
- Patience
- Respect

EDUCATION AND EXPERIENCE

Physicist I

A postgraduate qualification in Physics and not less than five years' relevant experience.

Physicist II

A degree in Physics and not less than two years' relevant experience.

Automatic advancement beyond the Qualification Bar is permitted on the acquisition of a postgraduate qualification in Radiation Physics.