APPENDIX 3Q

LOT 17 SPECIFICATION
RADIOTHERAPY ANCILLARY DEVICES INCLUDING DOSIMETRY, PATIENT POSITIONING AND QUALITY ASSURANCE DEVICES

1. Introduction

1.1. This Lot is for the supply of ancillary devices and applications used in conjunction with the planning and delivery of radiotherapy treatment (RT) for patients. Devices and accessories are required for a range of purposes, including quality assurance checks, dose measurement, commissioning, testing, safe treatment delivery and the positioning and immobilisation of patients. It will also cover related training, point of sale maintenance and warranties.

2. Radiotherapy ancillary devices including dosimetry, patient positioning and quality assurance devices

2.1. For the purpose of this specification an ancillary device is considered to be a product designed and intended for use with diagnostic systems, including CT and MR, and with a radiotherapy treatment system, including treatment delivered on CT based and MR based linear accelerators. Ancillary devices are required to ensure patient and operator safety and also include patient positioning and immobilisation products required to ensure effective treatment. This requirement includes components such as:

2.1.1. Dosimetry products.
2.1.2. Patient positioning.
2.1.3. Quality assurance.

2.2. Dosimetry products designed to ensure the calculation and measurement of radiation delivered to the patient include:

2.2.1. Ionisation chambers, electrometers, dosimeters and detectors.
2.2.2. Diodes.
2.2.3. Thermoluminescent dosimeters (TLDs).
2.2.4. Metal oxide semiconductor field effect transistor (MOSFETs).
2.2.5. Intensity modulated radiotherapy (IMRT) checking system (scanned system with comparison software plus IMRT delivery phantom).
2.2.6. Electronic portal imaging device (EPID) based patient QA and/or in-vivo dosimetry software applications.
2.2.7. Artificial Intelligence (AI) based auto/or manual contouring software.
2.2.8. In-vivo dosimetry system (including diodes, TLD's and MOSFET's).
2.2.9. Head mounted transmission chamber systems.
2.2.10. Software to produce synthetic CT scans for planning for MRI data.

2.3. For in-vivo dosimetry systems and IMRT Systems only, initial end user training must be provided free of charge upon delivery or at a time requested by the customer.

2.4. For in-vivo dosimetry systems and IMRT Systems only, installation is required (excluding any interface) and this must be free of charge and undertaken at a location specified by the customer.

2.5. Patient positioning products to aid the immobilisation and positioning of a patient during planning and treatment including:
- 2.5.1. Breast boards.
- 2.5.2. Thoracic/Abdominal boards
- 2.5.3. Vacuum cushions.
- 2.5.4. Positioning cushions.
- 2.5.5. Couch tops.
- 2.5.6. Baseplates.
- 2.5.7. Head supports.
- 2.5.8. Fiducial markers.
- 2.5.9. Skin markers.
- 2.5.10. Bolus.
- 2.5.11. Thermoplastic sheet to make radiotherapy immobilisation aids.
- 2.5.12. Water bath for production of radiotherapy immobilisation aids.
- 2.5.13. Lasers.
- 2.5.14. Image guided radiotherapy (IGRT) including surface guided radiotherapy (SGRT).
- 2.5.15. Patient and device set up validation.
- 2.5.16. Respiratory gating systems.

2.6. Quality assurance products are designed to ensure that diagnostic and radiotherapy treatment systems and processes are operating correctly. They can be used to determine that accurate measurements are being made and accurate radiation doses are being delivered as required including:
- 2.6.1. Water phantom with appropriate detectors and software transfer licence to chosen planning system.
- 2.6.2. Secondary standard photon chamber.
- 2.6.3. Secondary standard electron chamber.
- 2.6.4. Field chambers.
- 2.6.5. Secondary standard photon electrometer.
- 2.6.6. Secondary standard electron electrometer.
- 2.6.7. Photon inter-comparison phantom.
- 2.6.8. Electron calibration phantom plus water equivalent (for electrons) epoxy resin sheets.
- 2.6.9. Reference barometer.
- 2.6.10. Reference thermometer.
- 2.6.11. Full set of CT image assessment phantoms plus dose measurement equipment.

2.6.12. Epoxy resin water phantoms.
2.6.13. Beam alignment test tool.
2.6.14. CT density check phantom.
2.6.15. Imaging system alignment check phantom.
2.6.16. Head mounted flatness scanning device.
2.6.17. Anthropomorphic phantoms.
2.6.18. Daily output check devices.
2.6.19. Comprehensive QA software applications.
2.6.20. 4D CT phantoms.
2.6.21. MRI phantoms
2.6.22. Secondary MU software.
2.6.23. Digital workflow and patient management software.