

<b>Training Document</b>	<b>T/R129</b> <b>February</b> <b>2009</b>
<b>Linear accelerator working area competencies record</b>	

Name: \_\_\_\_\_ Grade: \_\_\_\_\_

Employment Start Date: \_\_\_\_\_

### 1. Aim

The purpose of this record of competencies is for the radiographer and the line manager to determine what areas of competency has been achieved and what supplementary training may be required in the areas where competency has not been achieved. Competency is recorded as it is met. When starting a new placement the radiographer will discuss their competency requirements with the line manager using this record.

### 2. Competency training details

This standard forms part of the competency framework for radiotherapy.

1. Baseline competency
2. Return to practice
3. Assistant practitioner

The standards deal with all aspects concerned with the delivery of external beam megavoltage radiation to an individual patient, according to an individual treatment plan, including information and care provided to that patient, before, during and after treatment.

#### 2.1. QA system

The radiographer / AP must read and understand the required QA procedures and work instructions:

- OR/A001 Advice and Counselling for Patients
- OR/G001 General Responsibilities of Therapy Radiography Staff
- OR/R003 Delivery of External Beam Radiotherapy Treatment
- OR/V001 Verification of Radiotherapy Treatments using Films, TLDs & Diodes

#### 2.2. Competency assessment consists of two elements:

- A skill or procedure made up of actions that must be undertaken competently (Performance criteria). These actions will be undertaken in the context of the relevant Oncology Centre Quality System procedures and work instructions.
- All skills or procedures are underpinned by a Knowledge Specification. An individual cannot be assessed as competent if they do not have the knowledge to support the actions.

#### 2.3. This knowledge will be acquired either:

- as part of an in house education and training programme
- or
- by registered practitioner status and professional qualification

**3. Competency Record**

GENERAL DUTIES - ALL	Date Achieved / comments
Awareness of operator status according to IR(ME)R	
Correctly identify patients according to local rules and department protocol <b>(OHR/1001)</b>	
Supervise elderly and ill patients and alert clinical staff to all potential emergency situations	
Liaise with reception to co-ordinate and arrange patient transport as necessary	
Ensure effective hygiene, infection control and house keeping systems are maintained	
Offer basic patient support, guidance and limited range of care information, appropriate referral onwards	
Identify and work safely within controlled and supervised radiation areas. Identify and read local rules	
Utilise computer based verification & recording systems, patient notes and patient management systems	
Identify that treatment documentation is complete and fully checked	
Appropriate use of policies and procedures	

PROVIDING PATIENT CARE			Date Achieved/ comments
Performance criteria			
First day chat <ul style="list-style-type: none"> <li>• Inform the patient of the procedure to be undertaken and any possible side effects in a manner which assists their understanding and encourages them to ask any questions.</li> <li>• Familiarise the patient with their environment and the location of all facilities required for their personal comfort.</li> <li>• Ensure they have received appropriate information and have consented to the procedure</li> <li>• Check pregnancy status if appropriate</li> </ul>			
Assess the patient’s emotional and physical state daily, document and take appropriate action			
Assess the patient’s mobility record and take appropriate action			
Infection status - implications			
Take appropriate action where an acute effect of radiotherapy is identified, according to local protocols			

(...cont)

<b>PROVIDING PATIENT CARE</b>			
<b>Performance criteria</b>			<b>Date Achieved/ comments</b>
Ensure any required medications have been administered according to local protocols (anti-emetics / pain relief)			
Maintain the patient in a safe environment at all times			
Answer any questions asked by the patient accurately, or where necessary refer to another healthcare professional for specialist advice			
Report any incidents, errors or accidents according to local and national guidelines			

<b>DELIVERY OF MEGAVOLTAGE EXTERNAL BEAM RADIOTHERAPY</b>			
<b>Performance criteria</b>			<b>Date Achieved/ comments</b>
The patient's identity is checked according to local protocols			
Informed consent to the procedure is confirmed according to local protocols.			
The patient's understanding of information given is re-affirmed to ensure compliance during treatment.			
The patient's treatment data is checked according to local protocols.			
Patient is suitable for delivery of daily treatment #			
A visual assessment is performed to ensure treatment can be safely and accurately delivered.			
The patient is monitored throughout treatment delivery			
The treatment given is accurately recorded according to local protocols			
Weekly check <b>(LA3.61, OR/P012)</b>			

LINEAR ACCELERATOR			Date Achieved/ comments
Carry out the morning run up procedure /switching off at the end of the day			
Varian <b>(TS3.04, TS3.30)</b>			
Siemens <b>(TS3.47, TS3.05, TS3.42)</b>			
Prepare treatment room and all equipment			
Position the patient using: <ul style="list-style-type: none"> <li>• Immobilisation Devices</li> <li>• Couch controls and handsets</li> <li>• In-room monitors and data displays</li> <li>• Correct use of accessory trays</li> <li>• Lasers, field light beams, back pointers and FSD scales</li> <li>• Bolus, compensators and other tissue equivalent devices</li> </ul>			
Set up tolerance levels and terminology <b>(OR/V002)</b> EPI Siemens <b>(LA3.71, OR/P006, OR/P010)</b> Varian <b>(OR/P005)</b>			
Safe use of EPI			
Ability to input data to enable image capture			
Appropriate use of overrides <b>(LA3.74)</b>			
Appropriate use of film cassettes & cassette holder			
Appropriate use/ positioning of TLD's and diodes <b>(OR/V001, OR/P008)</b>			
Prior to initiating treatment staff must check: <ul style="list-style-type: none"> <li>• Correct doses</li> <li>• Radiation modality</li> <li>• Radiation energy</li> <li>• Treatment parameters</li> </ul>			
Monitor patient throughout exposure			
Safely utilise interruption, termination, emergency off and auto-sequencing facilities <b>(LA3.70, LA3.73)</b>			
Complete and record all treatment data, sign treatment sheet and store appropriately			
Disinfect and store all equipment after use and at the end of clinical sessions			

TECHNIQUE COMPETENCY			Date Achieved/ comments
Site (refer to T/R128)			
Isocentric Breast (LA3.25)			
SSD Breast (LA3.23, LA3.24, LA3.20)			
Thoracic (LA3.80)			
Head & Neck (LA3.15)			
CNS (LA3.18)			
Pelvis (LA3.31)			
TBI (LA3.06)			
Paediatric Non GA			
Paediatric GA			
Complex Sarcomas			
Palliative			
Electrons (LA3.12, LA3.04)			
Acculoc Level 1 (T/R109, LA3.83)			
Acculoc Level 2 (T/R109, LA3.83)			
Stereotactic - Basic (Putting together & fitting frame)			
Stereotactic - Level 1 (Measurements) (T/R111)			
Tomotherapy – level 1			
Tomotherapy – level 2			
Neuro			
IMRT (LA3.82, LA3.75) – Simple IMRT			
IMRT (LA3.82, LA3.75) – Complex IMRT			
Moduleaf (LA3.76)			

#### 4. Deliver external beam megavoltage radiation knowledge specification

##### 4.1. Legislation, regulatory and protocols

1. Current radiation protection regulations.
2. Local protocols for data entry, utilisation, recording and transfer.
3. Local protocols for verifying and validating treatment.
4. Local protocols on informed consent.
5. Local protocols for patient identification.
6. National and local guidelines for radiotherapy planning and treatment.
7. Limitations of own knowledge and experience and the importance of not operating beyond this.

##### 4.2. Clinical knowledge

8. Relevant anatomy e.g. sectional and functional.
9. Signs of patient anxiety.
10. Clinical signs which require the attention of other team members.
11. Concurrent malignant disease progression and the potential impact on physiological systems.
12. The side effects of radiotherapy.

##### 4.3. Technical knowledge

13. Possible contra-indications to treatment.
14. The functions of the megavoltage external beam radiation treatment unit controls and other equipment used in radiotherapy.
15. Use of beam modifiers in changing the beam shape.
16. Impact of treatment parameters or changes to treatment parameters, on dose distribution.
17. The use of photon and electron beams in radiotherapy treatment.

##### 4.4. Equipment

18. Equipment capabilities, limitations and user maintenance.
19. Efficiency and efficacy of patient immobilisation and positioning devices.

##### 4.5. Examination procedures and patient management

20. Principles of radiotherapy, for example:
  - patient positioning and immobilisation in order to optimise reproducibility of treatment delivery
  - selection of appropriate treatment technique for optimum delivery
21. Roles and responsibilities of other team members.

##### 4.6. Range

**Accessories includes:** immobilisation and positioning devices, beam modification devices

**Treatment includes:** simple treatment plans, complex treatment plans

Treatment Competency		
Name of staff member (PRINT)		Qualifications/Grade
Declaration of competency:		
I am aware of my personal accountability and Addenbrooke's NHS Trust liability.		
I understand I am responsible and accountable for my practice and for keeping it up to date. I have been advised to read policies and procedures at least annually and to seek to update my practice as necessary, but particularly if I do not undertake an element of practice in six months. I will ensure that I update this Treatment Competency annually, prior to my annual appraisal taking place.		
Signed	Date	QA use only: Recorded on Q-Pulse initials & date

Assessor statement:		
This member of staff is considered competent to practice and is aware of their personal accountability and Addenbrooke's NHS Trust liability.		
Signed	Date	QA use only: Recorded on Q-Pulse initials & date
Name of Assessor (PRINT/Stamp)		Qualifications/Grade

**5. Monitoring the effectiveness of the Process**

- a) Process for Monitoring compliance and Effectiveness - Review of incident forms, as recorded on RMIS, for non-compliance and the results presented by Radiotherapy QA Facilitator to the Radiotherapy Standards Group – the minutes of this meeting are retained for a minimum of 5 years.
- b) Standards/Key Performance Indicators – This process forms part of a quality system accredited to International Standard BS EN ISO 9001:2008. The effectiveness of the process will be monitored in accordance with the methods given in the quality manual, QM1.00

**Equality and Diversity Statement**

This document complies with the Cambridge University Hospitals NHS Foundation Trust service Equality and Diversity statement.

**Disclaimer**

It is **your** responsibility to check against the electronic library that this printed out copy is the most recent issue of the document.

**Please notify any changes required to the relevant Quality Manager**

Document ratification and history			
Approved by:	Superintendent Radiographer, Head of Radiotherapy		
Date approved:	04/05/09	Date placed on electronic library:	28 August 2009
Review period:	2 year(s) (or earlier in light of new evidence)		
Authors:	Superintendent Radiographer	Owning Department:	Oncology Directorate QA Team
File name:	\\addfile\Oncology\Education & Induction Packages\Radiographer Induction & Training\tr129_v2_LA_working_area_competencies.doc		
Version number:	2	Unique identifier no:	T/R129
<i>This document has been ratified by the Clinical and Corporate Governance Committee</i>			