

## **NCRI LYMPHOMA GROUP - Stanford V vs. ABVD Phase III Trial for Advanced Hodgkin's Disease**

### **QUALITY ASSURANCE PROGRAMME: QA SITE VISIT**

Our objectives on this visit include:

- To assess dosimetry in a 2D geometric neck phantom
- To discuss patient TLD measurements and results
- To discuss any outstanding issues with the QA questionnaire

We are aiming to spend approximately 4 hours in the department during which we need access to the machines for 3 hours. We understand that the treatment machine may be available to us from 5.00pm. We would request that a member of staff from your department take an output measurement using one of your ion chambers.

Please could we request the following be available:

1. Time set aside for treatment machine measurements, approximately 3 hours needed (either during the working day or after hours). The allocated machine should be routinely used for treating lymphoma patients.
2. Completed plans or calculation of monitor units as per departmental protocol for lymphoma patients for the enclosed phantom outlines. More information is given in the additional notes.
3. 5cms of approximately water equivalent material that can be used as backscatter.
4. Quality Index of the machine to be used (20/10 ratio).
5. Percentage depth dose at 5cm deep 100cm FSD or TPR/TMR at 5cm deep 95cm FSD for a 10x10 field for the machine to be used.
6. A reading of pressure.

### **ADDITIONAL NOTES: Simulator Plan - Isocentric**

ENCLOSED (see in more detail below):

- ANT Radiograph (from Acuity) imaged at mid-plane (also isocentric plane). This is provided in DICOM and GIF formats. Field size and shielding have been drawn on (50% edge).
- TIFF images of sagittal (at ISO) and coronal (at ISO) slices from an AcQsim scan (visual aid). ISO and other measuring points have been marked on it for illustration.
- Phantom outlines at each point of interest. Phantom separations at these points are also tabulated below.
- Isocentre location and positions of POI (relative to isocentre) are tabulated below.

- Field size and orientation.

#### REQUIREMENTS:

- Phantom to be planned as you would a Hodgkin's Disease neck + SCF patient (NB the phantom design is such that the neck is inferior to the SCF!).
- Prescribe a dose of 2Gy to mid-plane at field centre (ISO).
- Please produce two separate plans (or monitor units): one with shielding (as marked) and one without.
- Use physical blocks or MLCs, as you would normally.
- If, on occasions, you use a SUP-INF wedge on patients, please plan the phantom in the same way. Otherwise use plain fields.
- Please calculate doses for the POIs requested.

### PLAN DETAILS

#### ISOCENTRE:

- ISO is located at mid-plane (also isocentric plane), on central axis and 4.6cm INF of central transverse slice. It is marked by the centre of the graticule on the ANT radiograph provided (imaged at mid-plane, FSD=92.5cm).

#### FIELD SIZE & ORIENTATION:

- The field size for each beam is **15cm x 18cm** on imaged plane.
- Plan two fields (parallel-opposed pair): ANT (0°), POST (180°).

#### SHIELDING:

- For the shielded plan, use a rectangular block, size **12cm x 6cm** on imaged plane. Use DICOM image for positioning.
- Use either MLCs or a physical block, as you would for a Hodgkin's Disease patient.

#### LUNG INSERT:

- Density is 0.2 g/cm<sup>3</sup>.
- Dimensions are 6cm RL x 10cm SI x 5cm AP.

#### POINTS OF INTEREST & SEPARATIONS:

- POI positions relative to ISO and phantom separations at each POI are tabulated below. Please calculate these doses at these points.

POINT OF INTEREST	RIGHT-LEFT (cm)	ANT-POST (cm)	SUP-INF (cm)	SEPARATION (cm)
ISO	0.0	0.0	0.0	15.0
A	0.0	0.0	6.6 Sup	18.3
B	0.0	0.0	6.4 Inf	11.7