IMAGING AND RADIATION ONCOLOGY CORE
Global Leaders in Clinical Trial Quality Assurance

IROC Rhode Island QA Center
Building B, Suite 201
640 George Washington Highway
Lincoln, RI 02865-4207
Phone (401) 753-7600
Fax: (401) 753-7601
www.irocri.qarc.org

IROC Houston QA Center
M.D. Anderson Cancer Center
8060 EL Rio Street
Houston, TX 77054
Phone (713) 745-8989
Fax: (713) 794-1364
irochouston.mdanderson.org

Irregular Fields (Mantle) Benchmark

This benchmark is a sample case used to evaluate the treatment planning process at your institution for Hodgkin's disease treated with opposed "mantle" fields. The goal of this benchmark is to demonstrate your capability for data acquisition, treatment planning, dose calculation and monitor unit calculations. Your benchmark will be evaluated by IROC to assess your planning process and the accuracy of your dose calculation.

The CT image set may be downloaded from the IROC website (http://www.irocri.qarc.org/). Appendix 1 shows a DRR with the blocking to be used for the anterior field.

Institutions are required to submit this Benchmark in digital format. Digital data shall include planning CT, along with the structure, dose and plan files. The data may be submitted on a CD or sent electronically via sftp to IROC Rhode Island (QARC). Instructions for digital submissions may be found on the IROC Rhode Island website - http://www.irocri.qarc.org/, under Digital Data, RT Treatment Planning.

IMAGING AND RADIATION ONCOLOGY CORE
Global Leaders in Clinical Trial Quality Assurance

IROC Rhode Island QA Center
Building B, Suite 201
640 George Washington Highway
Lincoln, RI 02865-4207
Phone (401) 753-7600
Fax: (401) 753-7601
www.irocri.qarc.org

IROC Houston QA Center
M.D. Anderson Cancer Center
8060 EL Rio Street
Houston, TX 77054
Phone (713) 745-8989
Fax: (713) 794-1364
irochouston.mdanderson.org

Irregular Fields (Mantle) Benchmark

Section 1: Description of Irregular Fields Benchmark

Method:

A CT image set of a Hodgkin's disease patient is provided and may be downloaded from the IROC website (http://www.irocri.qarc.org/).

The image set shall be imported into the treatment planning system that will be used for protocol patient treatment planning at your institution.

A treatment plan to deliver 180 cGy per fraction with "mantle" fields shall be developed.

The point to be used as isocenter is embedded in the CT scan on slice 91 (z = 1.5 cm).

The blocks for the anterior mantle field are shown in Appendix 1. This blocking shall be approximated to the best of your ability on your planning system. For most systems, this can be accomplished by creating an anterior field DRR and drawing the blocks with respect to the anatomy.

For this benchmark, the blocking for the posterior field shall mirror the anterior field.

Dose calculation shall include the effects of tissue heterogeneities.

The prescription dose is 180 cGy per fraction.

In addition to isodose distributions, dose shall be reported at the off-axis points embedded in the CT scan. One is in the left supraclavicular region on slice 78 (z = 4.75 cm), the other in the lower mediastinum on CT slice 150 (z = -13.25 cm).

Section 2: Data to be Submitted

Institutions are required to submit this Irregular Field Benchmark in Digital Format. The institution's treatment planning system must have the capability of exporting data as DICOM RT. The digital plan shall consist of the CT data set along with structure, dose and plan files.

Additional data to accompany the digital submission shall include:

1. DRR in the Beam's Eye View (BEV) for both fields, showing the blocking.
2. A printout of beam specifications, including at a minimum the beam energy, gantry, couch, and collimator positions, field sizes, aperture/block names, wedge specifications, and depth of isocenter (or SSD).
3. Report of the dose calculated at the three embedded points (isocenter, supraclavicular region, and lower mediastinum).
4. Completion of the Questionnaire in Section 3 below.

Note: Items that are not part of the digital submission should be submitted as screen captures or other electronic format whenever possible.

IROC™
IMAGING AND
RADIATION ONCOLOGY CORE
Global Leaders in Clinical Trial Quality Assurance

IROC Rhode Island QA Center
Building B, Suite 201
640 George Washington Highway
Lincoln, RI 02865-4207
Phone (401) 753-7600
Fax: (401) 753-7601
www.irocri.qarc.org

IROC Houston QA Center
M.D. Anderson Cancer Center
8060 EL Rio Street
Houston, TX 77054
Phone (713) 745-8989
Fax: (713) 794-1364
irochouston.mdanderson.org

Section 3: Irregular Field Benchmark Questionnaire

Institution: _____

City: _____ **State/Province:** _____ **Country:** _____

Treatment Planner: _____

Telephone: _____ **FAX:** _____ **e-mail:** _____

1. Treatment machine _____ & photon energy (MV) _____used.
2. Treatment Planning System *(manufacturer, version)*: _____
3. Calculated dose at required dose points:
   a) Isocenter _____ Gy
   b) Left supraclav _____ Gy
   c) Lower mediastinum _____ Gy

Please save and submit with supporting documents to IROC QA Center via sFTP.

Or

Click to Submit

Appendix 1: AP DRR with blocks