



TROG 08.03 RAVES – Instructions for Dry Run

Purpose

The aims of this exercise are as follows:

- Identify interpretation ambiguities of the protocol regarding variations in contouring methods
- Identify interpretation ambiguities of the protocol regarding variations in planning methods
- Collect planning data in electronic format for validation of the technical QA audit system

Each treating clinician will be required to contour the CT dataset. A treatment planning exercise will be completed for each contoured CT dataset. The RT QA team will review the completed exercise and provide feedback in a timely manner.

Centres wishing to use inverse planned IMRT techniques should contact the Technical Review Committee **prior to entering patients** and refer to the document [Quality assurance and credentialing requirements for sites using inverse planned IMRT techniques](#) which can be found on our website www.trog-raves.org.

Contouring and Planning Exercise

At the website, under [Quality Assurance Program](#), download CT dataset "Patient A". This is a zipped file so you will need to unzip before installing on your planning computer

This CT dataset is in DICOM format and should be loaded onto your treatment planning computer. Please contour and plan according to the RAVES protocol Section 8 and complete "TROG 08.03 Dry Run Data Submission" form which is available from <http://www.trog-raves.org/HTMLPages/forms.htm>. Relevant clinical details for this patient are contained in the Case History section below. The following CT-relative electron density table should be used with your planning exercise for the heterogeneity correction:

Required Relationship

ρ_e	CT number	Physical Density (g/cm ³)
0.001	-2000	0.001
1	-9	1
1.147	127	1.18
6.394	10000	7.437



To assist with the dry run exercise, access the website and download the following resources from the “[Quality Assurance Program](#)” page:

- **Summary for Radiation Therapists**
- **Section 8 RAVES Protocol - Radiation Therapy**
- **Guidelines for Contouring**
- **Quality assurance and credentialing requirements for sites using IMRT techniques**

The treatment plan shall be saved in electronic format (see instructions below and use link for specific planning computers on our website on ‘Digital Exports’ page).

Case History

Case A

57 year old with PSA 9.5. Radical prostatectomy report: 99gm specimen, GS 3+4=7 bilaterally all areas – 10% of gland. Anterior disease prominent. ECE not reported. Extensive positive margins L para-apical, L post-lateral, R apex. SV neg, PNI +. Bilat obturator nodes negative.
6 week PSA undetectable

Data submission

Specific instructions for saving the completed exercise in electronic format and uploading data via CQMS may be found on the TROG web site: www.trog.com.au in the members section under 'Quality Assurance Programme' or requested by emailing qa@trog.com.au

The following data will be submitted through CQMS as follows:

- The radiotherapy treatment plan in RTOG or DICOM RT format.
- Completed forms TROG 08.03 Facility Questionnaire (with associated supporting documents) and TROG 08.03 Dry Run Data Submission
- Screen dump(s) of DVH of the following structures: CTV, PTV, (seminal vesicles if delineated as a separate structure), rectum. These may be submitted electronically with the treatment plan in jpeg format
- Screen dump of the axial central-axis & mid-sagittal with isodoses; max, 100%, 95%, 90%, 70%, 50%, 20% electronically with the treatment plan as a jpeg image.
- For IMRT plans only, the physics QA report



Exporting the treatment plan in electronic format

Instructions for exporting treatment planning data from each of the commercial treatment planning systems are available through a link on our website: www.trog-raves.org. For any queries about the electronic submission of the treatment plan for review please email: RAVES.Therapist@petermac.org.

Each treatment plan shall be computed with the following specifications:

- Dose matrix maximum grid spacing will be 2.5mm x 2.5mm.
- Data shall be presented in “absolute dose” as export in relative dose mode is not fully supported by some commercial systems
- All exported data shall be contained in a single directory for each patient.
- The maximum sampling resolution for the dose volume histogram data shall be 0.1cm for contoured structures, 0.2cm for all other tissue. The bin width shall be 10cGy.
- Exported data shall include the DRR for each field.
- The target and organs at risk will be named as defined in section 8.5 of the protocol i.e. **CTV** (or CTV1 and CTV2 for a 2 phase treatment), **PTV** (or PTV1 and PTV2 for a 2 phase treatment), **rectum**, **LF** (for the left femur), **bladder** and **AC** (for the anal canal if contoured)
- If the treatment is to be delivered as a two phase treatment then the digital export must contain the plan data for each phase.
- Contouring shall be included on all relevant CT slices for all structures. The interpolation algorithm on the treatment planning computer may be used if it is not normal clinical practice to contour on all slices.

Queries

Please direct all queries regarding this exercise to one of the QA Review team members below at RAVES.Therapist@petermac.org

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