

## GHG Proton Subcommittee Conference Call Agenda

Wednesday, September 4, 2019

**Attendees:** Markus Stock (co-chair, MedAustron), Paige Taylor (co-chair, IROC), Coreen Corning (EORTC), Catharine Clark (RTTQA), Dhermain Frederic (EORTC), Liz Miles (RTTQA), Joerg Lehmann (TROG), Nick Reynaert (EORTC), Rachel Effney (EORTC), Sarah Kelly (EORTC), Steven Habraken (Netherlands), Bill Rompokos (EORTC), Enrico Clementel (EORTC), Samir Patel

**Regrets:** Stephen Kry, Jessica Lye, Walter Bosch, Alejandra Mendez Romero

### Roll call and introductions

Welcome to our new co-chair, Markus Stock (MedAustron), and welcome to our new members Frederic Dhermain (RTQA/EORTC), Sarah Kelly (EORTC), Nick Reynaert (EORTC), Rachel Effney (EORTC), Bill Rompokos (RTQA/EORTC), Steven Habraken (Netherlands), Alejandra Mendez Romero (EORTC)

### Discussion of committee structure:

In an attempt to be consistent, the proton calls will be held every other month. We have eliminated sub-subgroups for the time being, and will cover all topics on the general call. Will re-establish sub-subgroups as necessary.

### Discussion of other proton QA groups: What are the groups and how to we connect?

CTRAD – research group in the UK; proton beam strategy group to support development of clinical trials (head and neck – TORPEDO trial, lung, breast, lymphoma, brain, paediatrics). Plan to approach funding bodies in UK to get funding for trials. Also a subgroup looking at specific QA aspects and comparison of photon/proton plans. Want to develop guidelines on robustness. **Liz** can act as liaison.

MedAustron – Austrian group developing dosimetry audit for proton and carbon therapy. Focus on end-to-end treatment process; audit developed with NPL to use alanine, ion chambers, and film in anthropomorphic phantom for head and pelvis. Some support from PTCOG. **Markus** can act as liaison.

IPACS (group of particle centres from Italy, Poland, Austria, Czech Republic, and Sweden); published paper on harmonization of H&N treatment planning (Stock et al - Acta Oncol. 2019 Aug 8:1-11). Also discussing QA practices. **Markus** can act as liaison.

COG Proton Group – US paediatric group. Just meeting for the first time this week. Planning to survey current clinics on paediatric treatment practices. **Paige** can act as liaison.

NRG Medical Physics Proton Subcommittee – US adult group. Developing recommendations for when to use Monte Carlo in proton trials. **Paige** can act as liaison.

European Particle Therapy Network (EPTN) – ESTRO group. Working groups on QA (Sairos Safai, Oliver Jakel, Stefan Menkel), treatment planning, cost efficiency, radiobiology. Surveying what QA is

done in each proton center in Europe. Workshop in late October on QA practices. **Catharine and others** can act as liaisons.

QARTEC QA of paediatric trials in Europe. Harmonizes guidelines of different groups running clinical trials (right now different disease site trials run their own protocol development). Looking at QA of plan quality. Support EORTC and SIOP. **Sarah Kelly** can act as liaison.

NPL – UK. Code of practice will be published late 2019/early 2020. Developing proton audits with portable calorimeter.

#### **Presentation of cases by Markus Stock:**

Anaplastic ependymoma, previously resected. Post-op target delineation using MRI. Routine QA MRI and QA CT scans performed on patients during treatment. Bolus can be used as pseudo-range shifter and does not have dramatic beam broadening effect as seen with range shifters. Selection of beam angles and numbers as well as SFUD approach was discussed. LET calculation available for plan assessment, but not clinically implemented. Discussion point: It's important to define timing between surgery and treatment simulation imaging.

#### **Future Teleconference Ideas:**

- Challenges of randomized photon vs. proton trials
- Audit activities: Review various ion therapy QA groups and their audit activities
- Clinical trial QA best practices: Discuss the balance between too little or too much QA, appropriate action levels, and statistical implications
- Proton treatment in heterogeneous media
- Robust optimization: Discuss implementation and how QA centers can compare methods across multiple institutions
- Variable RBE: Invite representatives from Mayo and MedAustron to give overviews of their TPS capabilities, special treatment planning considerations; discuss what data needs to be collected/reviewed for clinical trials

#### **Action Items:**

- Paige: schedule next teleconference
- Paige: distribute NCI proton guidelines for clinical trials