

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

Attendees:

EORTC: Coen Hurkmans, Damien Weber, Angelo Monti, Andre Branquinho, Enrico Clementel, Coreen Corning, **IROC Houston:** Stephen Kry **IROC St Louis:** Jeff Michalski, **RTTQA:** Catharine Clark, Elizabeth Miles, David Eaton **IAEA:** Joanna Izewska, Eduardo Zubizarreta **TROG:** Annette Haworth, Jessica Lye(ACDS) **JCOG :** Satoshi Ishikura, Mitsuhiro Nakamura

1. Welcome and Introductions: (Stephen Kry)
2. Acceptance of minutes from ESTRO 2015 meeting (Appendix A)
3. Acceptance of Updated Terms of Reference (Appendix B)
4. Review of Absolute Dose Verification Audits
 - Purpose of Questionnaire is to establish feasibility of absolute dosimetry reciprocity for intergroup trials to ultimately reduced workload of sites
 - Each group discussed their criteria for absolute dosimetry
 - IAEA –provides dosimetry for QA purposes. They have as well created the Dosimetry Audit Network (DAN) a database of national and international dosimetry audit networks, currently with 46 audit networks. 20 DANs regularly participate in bilateral comparisons with the IAEA for QA of their dosimetry systems used for audits. The purpose is to register and recognise these DANs that perform audits meeting internationally acceptable standards
 - Suggestion given to develop minimum criteria for an acceptable absolute dosimetry audit across all GHG groups. It is realised that a groups' resources may drive their requirements. Ultimately it is necessary to gather data to support minimum criteria and until such time flexibility is encouraged when intergroup trials are being run until such time data can be acquired

Action: Stephen to construct a chart displaying each group's requirements to meet their absolute dosimetry criteria so that intergroup reciprocity can be established amongst the various priorities
5. Updates from Groups on new practices/issues
 - JCOG
 - a. Postal audit for IMRT
 - b. New trial JCOG 1408
 - Small field dosimetry credentialing
 - IGRT verification by mail
 - TROG
 - a. Australia has now installed its first Cyberknife system and a credentialing program has been developed
 - b. Flattening Filter Free credentialing is under development
 - c. The "VESPA" (Virtual EPID Standard Phantom Audit) project is progressing. 6 sites have issued reports for IMRT techniques. VMAT is challenging and still in pilot testing mode.

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

- d. A mail able phantom for auditing stereotactic plans has been developed
- e. Similarly, a phantom for cranial SRS is under development in collaboration with the UK RTTQA/ NPL
- f. Data storage and data transfer is becoming an issue as trials require large imaging data sets to be stored and reviewed
- g. TROG is including secondary analysis of clinical trial data as a key strategic direction

- RTTQA

- a. Funding approval for 3 years 2016-2019
- b. Review of efficiency of IT infrastructure
- c. 24 current RTQA trials, 19 in development
- d. Acceptance of RTTQA by TROG and EORTC
- e. Dosimetry Audits-VMAT,SABR, Brachy, SRS
- f. QA programs for SABR,SRS/SRT Adaptive RT, Brachy
- g. Future work in protons, MR-Linac, Molecular Radiotherapy

- EORTC

- a. *Still expecting -will be included before minutes sent out*

6. Update on AAPM nomenclature task group (Coen)

Action: presentation on GHG website

8. Update on planar dosimetry intercomparison (Catharine)

- Catharine presented results of each group's analysis of the three dose cubes
- All groups analysed as Head and Neck

Action: presentation on GHG website

TROG to submit their results

Each group to submit their analysis approach

Each group to send a default report of an analysed Head and Neck

Collate feedback

9. Yearly fees:

- Fees not collected for 2015 or yet for 2016
- Agreement to reduce collection of yearly fee amount for the foreseeable future

Action: Invoices for 2015 and 2016 to be sent to groups

Account statement to be sent to groups with invoices for transparency

IAEA and ESTRO to be classified as observers so no fee payment is required

TOR to be updated to state that fee collection is for members only

10. Website:

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

- Website is no longer active
- New website created with unanimous vote to activate
- New website address is: <https://rtqaharmonization.com/>
- Yearly fee of 24 Canadian dollars

9. Selection of location and topic for next meeting

Action: poll to determine location of next meeting ESTRO, ASTRO, ICARO, AAPM

10. AOB:

- RTTQA: Thanked all groups providing letters of reference. They have been provide three years approval of their group. They would like to approach each group to see how they efficiently run their IT system for uploading and review of cases
- TROG:VESPA Peter asking for feedback on his audits
- Suggest three hours for next meeting to accommodate agenda
- Suggest TC or Webex in between face to face meetings

Action: Webex to be set up for September 2016

Appendix A

Minutes-GHG meeting ESTRO 2015 Sunday April 26th Rm M12 8:30-11:30

1. Opening

2. Acceptance of April 5th ESTRO 2014 Meeting Minutes - Coen Hurkmans

The meeting minutes are accepted. All action points of the minutes have been addressed. Some points will also be discussed today.

3. Update on Financial Report: - Coen Hurkmans

An update was presented and it was agreed upon that the fee from now on (starting 2015) would be half the fee of 2014 as we had a good positive balance but also needed to maintain enough resources to continue our meetings etc.

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

4. Update on GHG publications and activities - Coen Hurkmans

See presentation.

5. IMRT Credentialing Survey Update – Catherine Clark

See presentation. The results of the updates were presented. There was a lively discussion on the interpretation of the answers. The centres name should be mentioned on the BOA report according to ISO 2517. The traceability of the centre performing the audit to the primary standard should be possible, does not need to be on the measurement certificate.

Regarding use of gamma we agree that the scope of credentialing is more on testing the competence of the whole centre and is procedures rather than testing specific equipment. Although there is a large variation in gamma pass rates between devices, we do feel that there are enough items we want to harmonise in IMRT credentialing reports to make them better suited for intergroup trial acceptance of RTQA credentialing results.

Action: Catherine Clark will draft a proposal for a harmonised IMRT/VMAT credentialing report.

6. Report on the recent paper in IJROBP 90(5) p1195-1201 by Kry et al regarding IMRT credentialing – Stephen Kry

See presentation.

After the presentation a depth discussion took place. The article published by McKenzie *et al* (Med Phys 2014 Dec; 41(12):121702-7) was also brought into this discussion.

All participants considered the difficulties that the devices show little consistency among them and also for not being able to detect all deviations.

Catherine Clark proposed to generate a library of DICOM RT-Plans in which a basic plan would be an approved one. More plans would be generated from it with deliberate errors and could be send around to test it virtually (only recalculation in the planning system) or physically (phantom irradiations). These errors should be chosen based upon existing clinically errors. Afterwards the results could be compared using local gamma software. The IROC data could supply the DICOM RT-Plans to test this. **Action: Catherine Clark will draft a proposal for such a project and send to all for comments/appraisals.**

7. Uniform Naming Conventions – Coen Hurkmans

See presentation. A few years ago it was decided that all GHG members would harmonise names across clinical trial groups and we adopted Santanam *et al* (IJROBP. 2012 Jul 15;83(4):1344-9) naming convention. Currently, UK RTTQA, IROC, TROG and EORTC have implemented it in their clinical trials and others are following. Sometimes there are minor changes to naming. It was stressed once more that adding dose to the target names is very useful and the notation should be regarded as a notation, not as a statement that we refer to cGy or Gy. In the UK it was discussed that omitting the dot in e.g., _7000 could cause confusion.

We debated about this and there was consensus that this confusion would be less if we would have a fixed amount of digits for dose notation, i.e PTV_00200 and PTV_02000 would be 2 Gy/200cGy and 20 Gy/2000 cGy respectively, and would be unambiguous. While if we allow the number of digits to vary, e.g., PTV_200 and PTV_2000 would be 2 Gy/200cGy and 20 Gy/2000 cGy, people would make more interpretation mistakes. A special notice about Sweden has issued a national standard on uniform naming which has been introduced last year. It basically adopts Santanam *et al* too, although

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

they do use a dot to code their dose levels and they always include T or N to distinguish primary Tumor and Nodes (e.g., PTVT_70.0).

8. Future dosimetry intercomparison between the GHG groups - Catharine Clark

See presentation and discussions included in these minutes under points 5 and 6.

9. International collaboration - Catherine Clark

There are an increasing number of intergroup trials for rare cancers in which the UK RTTQA group is involved. To minimise the RTQA burden within these trials, it would be good to know how and when in the process this intergroup cooperation is established in practice now. Sometimes a trial protocol is finalised and another group is asked to participate and sometimes more groups work together to draft a common trial protocol. Guidelines for trial RTQA could be very different still. IGRT credentialing was mentioned as an example, with the RTTQA having a national IGRT credentialing process which is hard to extent outside the UK. Others using e-learning (e.g. TROG) or do not have specific IGRT requirements yet. It was discussed that having an overview of current intergroup trials would already be of interest.

Action: All groups to make a list of their intergroup trials and send to Coen Hurkmans to put on our website.

10. Groups' Presentations

See presentations

- TROG-Martin Ebert
- IROC-Stephen Kry
 - IROC Houston monitors over 2000 hospitals worldwide, including output checks, anthropomorphic phantoms, site visits and virtual visits, and patient case reviews for clinical trial patients (focusing on brachytherapy patients). We also do extensive testing of proton therapy facilities. The largest current development is a transition from on-site dosimetry reviews to “virtual visits,” where dosimetry data is compared to reference standard data based on prior IROC Houston measurements for a given manufacturer and model of accelerator. This is being done to both reduce travel costs and to increase efficiency and thereby review more hospitals.
- RTTQA-Catharine Clark and Elizabeth Miles
- JCOG-Mitsuhiro Nakamura
 - Presentation regarding credentialing survey for proton therapy
 - A water-tank phantom enabling to insert rib structures (materials is tough bone) an ionization chamber and film was developed.
 - Visiting survey was done for one institution. Results were good.
- IAEA and EORTC: These presentations were skipped due to lack of time.

11. AOB

Joanna Izewska reminded us that we decided in 2010 to establish this group and see after 5 years if we should continue. We all feel very strongly that we should continue and this was agreed upon unanimously.

Action: Coen Hurkmans to study TOR to see when new chair and co-chair need to be elected.

12. Next Teleconference and In Person Meeting Venue

All members are requested to propose a new meeting venue. E.g., ICCR **27th - 30th June 2016 in London** is proposed.

Appendix B

Harmonisation Group

Global Harmonisation of Clinical Trials Radiotherapy QA

Terms of Reference

Preamble

Harmonisation Group vision

Many national and international clinical trials involving radiotherapy are conducted across several countries and often worldwide. There is a growing demand for collaboration between different groups conducting these trials for the following reasons. Firstly, for some diseases, international cooperation is required for sufficient patient accrual to achieve adequate statistical power. Secondly, broader acceptance of the trial results and thus an increased impact of the trial can be achieved.

As several publications, suggest the appropriate quality assurance of radiotherapy results in strong statistical power of the trial results. Approaches to radiotherapy and radiotherapy QA for multi-institutional clinical trials have been developed independently throughout regions of the world. By harmonising these approaches, international collaboration of clinical trials involving radiotherapy by various trial groups can be significantly enhanced.

Harmonisation Group mission

To promote harmonisation of radiotherapy and radiotherapy quality assurance between trial groups globally.

Harmonisation Group goals and strategy

- 1) Bring together, homogenize and distribute information regarding the quality assurance of radiation therapy (RTQA) standards of various trial groups in clinical trials.
- 2) Provide a platform for prospective discussions on new RTQA levels, software tools, guidelines and policies of trial groups.
- 3) Provide a framework to endorse existing and future RTQA levels and guidelines between various trial groups. Each organisation will be able to specify which RTQA procedures from other organisations they endorse and thus accept for future collaborative trials.
- 4) Promote high quality RTQA for clinical trials.

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

Concrete examples:

- 1) Promote global harmonisation of clinical trials RTQA within the radiotherapy clinical trials community by organising symposia and forum meetings during international scientific meetings especially recognizing the different approaches to daily radiotherapy (including local QA).
- 2) Provide/maintain a website where trial groups can upload and link information
- 3) Derive a model for validation/acceptance of national and regional basic dosimetry audits.
- 4) Define clear definitions for higher RTQA levels that can be used globally.
- 5) Promote research to understand the relative prognostic values, as well as the technical and human resource costs of RTQA approaches to enable the selection of appropriate clinical trial RTQA requirements, especially those involving advancing technologies.

Terms of Reference

Review and approval

These Terms of Reference will be approved by Harmonisation Steering Committee , undergo review one year after initial approval, and every 3 years thereafter to ensure relevance and applicability.

Structure and Governance

1. Executive Group
 - a. The executive group is comprised of
 - i. Chair-Elect
 - ii. Chair
 - iii. Past-Chair
 - b. Chair-Elect cycles to Chair, who cycle to Past-Chair on a two-year term (6 years total).
 - c. The chair-elect will be selected by the Steering Committee from the full members of the Harmonisation Group.
 - d. The Past-Chair will not be eligible to serve as Chair-Elect for a period of at least two years after completion of their Past-Chair position.
 - e. The responsibilities of the executive group include
 - i. Organising annual meetings and conference calls of the Harmonisation Group, ensuring appropriate agendas and minutes are kept and bi-annual newsletters are generated.
 - ii. Setting objectives and plans for the Harmonisation Group.
 - iii. Ensuring the objectives of the Harmonisation Group are met.
2. Steering Committee.
 - a. The steering committee is comprised of
 - i. Executive group
 - ii. 6 additional nominated members.

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

The steering committee will consist of one member from each of the following organisations: EORTC, IROC, TROG, JCOG, IAEA, and RTTQA. If the nominated member cannot attend committee meetings they must delegate an alternate representative from their organisation to ensure the interests of their group are served. Ex officio an EORTC staff member will support the steering committee.

- b. The responsibilities of the steering committee include
 - i. Oversight of the Harmonisation Group activities, including financial and administrative aspects
 - ii. Approval of the terms of reference and any amendments thereof
 - iii. Annual review of the activities and progress of the Harmonisation Group
 - iv. Ensuring the membership is appropriate, and appointing new members as needed.
3. Meetings of the group
- a. The group will meet in person at least once a year typically coinciding with a major relevant conference such as ASTRO or ESTRO
 - b. In between meetings, business is conducted via email with all official email addressed to all members of the group.
 - i. Motions must be in writing and are typically open for discussion for 14 days
 - ii. Voting must be initiated by the chair
 - iii.

Membership

The Harmonisation Group addresses multi-disciplinary issues and therefore encourages multi-disciplinary representation. The inclusion of radiation oncologists, medical physicists, and radiation technologists is actively encouraged to ensure comprehensive evaluation of RTQA issues.

The Harmonisation Group was initiated by individuals representing international clinical trial groups. The Group recognises the importance of contributions by other international trial groups and not-for-profit organisations dedicated to RTQA therefore inviting individuals from these organisations to become member. The Group further recognises the valuable contribution from professional international radiation oncology societies and manufacturers of radiation oncology equipment therefore inviting individuals from these organisations to become observers.

Members are representatives from groups that are dedicated to the quality assurance of radiation therapy within clinical trials. Member groups include IROC branches not represented on the steering committee, and other groups as identified and approved by the GHG. The members need to/have the right to approve /ratify decisions prepared by the steering committee regarding the goals, policies and structure of the Harmonisation Group. A quorum is designated as $\geq 50\%$. In the case of a split vote, the Harmonisation Group Chair will cast the deciding vote. Minority opinions will be provided in any minutes as appropriate.

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

Observers are individuals with personal expertise from other groups, societies and industry that are recognised as valuable contributors to the quality of radiation therapy within clinical trials. Observers are non-voting and limited to 15 individuals.

Task Groups will be created as needed, including Harmonisation Group members, observers and volunteers (i.e., non Harmonisation Group members if required) for specific issues or tasks, and will be dissolved when the task has been completed. Each Task Group will be led by a Task Group Chair, appointed by the Harmonisation Executive Group.

Responsibilities of Harmonisation Group Members and Observers

Members and observers that are unable to attend a meeting or conference call may appoint another person to represent their organisation with the approval of the Harmonisation Executive Group.

1. Members

- a. Participate in Harmonisation Group Steering Committee & Members meetings as convened.
- b. Attend meetings and conference calls.
- c. Review documents sent prior to, and in between meetings and provide advice or comments as requested.
- d. Proactively promote the Harmonisation Group goals.
- e. Review proposals for new members.
- f. Lead Task Groups and develop written Task Group reports in conjunction with the Task group members.

2. Observers

- a. Attend meetings and conference calls.
- b. Review documents sent prior to, and in between meetings and provide advice or comments as requested.
- c. Identify and facilitate areas where their organisations can help to reach the goals of the Harmonisation Group.
- d. Participate in Task Group activities

Membership & Terms

1. Term of membership are 3 years and renewable.
2. Members and observers will be invited by the Harmonisation Group Steering Committee or, in certain circumstances be proposed by other interested groups.

Membership includes:

- Access to the closed harmonisation group meetings organised during international scientific meetings.
- Link to your organisations website on the Harmonisation Group website and e-mail newsletters.

GHG meeting ESTRO 2016 Minutes
Sunday May 1st 3:00-5:00
ATENE Room - Green Group Meetings

- Access of your organisation to and inclusion in the framework of trial group endorsed RTQA procedures presented on the website.
- Possibility to co-organise a harmonisation group meeting and co-shaping the Harmonisation Group future.
- Access of your organisation to the database of validated/accepted national and regional basic dosimetry audits.

Fees

All steering committee and member organisations will be requested to contribute a one-time joining fee and a yearly fee to the Harmonisation Group. The emolument will be used to cover organisational costs associated with the operation of the group. The fees are set and reviewed yearly by the Steering Committee.