

Principal Investigator's Report Advanced Technology QA Consortium

ATC mini-meeting, Tampa
January 14, 2010

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ACKNOWLEDGEMENTS

The Advanced Technology QA Consortium is a team effort, supported by NIH U24 Grant CA81647, “Advanced Technology QA Center”. The individuals listed below have made significant contributions to this work.

NCI: James A. Deye, Ph.D. (Project Officer)

ITC: Jeff M. Michalski, M.D, (Principal Investigator), Walter R. Bosch, D.Sc. (ITC Director), James A. Purdy, Ph.D., William L. Straube, M.S., John W. Matthews, D.Sc., Joe Deasy, Ph.D. Roxana J. Haynes, R.N., Anna Eccher

QARC: Thomas J. FitzGerald, M.D., Marcia M. Urie, Ph.D., Kenneth Ulin, Ph.D., Richard Hanusik

RPC: Geoffrey S. Ibbott, Ph.D., David Followill, Ph.D., Andrea Molineu, M.S., Jessica Lowenstein, M.S., Irene Harris, B.S., CMD, Paola Alvarez, M.S., Joye Roll, B.S., CMD, Huy Duong, B.S.

RTOG: Walter J. Curran, M.D., Elizabeth Martin, CCRP, James Galvin, Ph.D., Ying Xiao Ph.D., Lorraine Quarles, Brenda Young

ATC Grant Objectives

The goals for the ATC as specified in the RFA are to be accomplished through the following **developmental, coordination, and service objectives**:

1. Eliminate duplication of infrastructure developmental efforts and facilitate sharing of QA resources among cooperative groups.
2. Help to insure that appropriate and uniform QA procedures and criteria for advanced technology trials are developed across all cooperative groups.
3. Facilitate/help manage the uniform credentialing of institutions for advanced RT trials.
4. Facilitate/manage digital data protocol submission.
5. Facilitate/manage the QA review of submitted data.
6. Further development of methods for rapid analysis of volumetric treatment planning data.
7. Assist clinical trial Coop. Groups in development of clinical trials including: (a) credentialing requirements; (b) TV definitions; (c) QA procedures; and (d) data submission instructions.
8. Develop, implement, and maintain innovative methods for electronic exchange of digital planning data between institutions participating in clinical trials and between QA Centers.
9. Develop, implement, and maintain innovative web-based software tools to facilitate protocol digital data reviews by Study Chairs, Dosimetry Groups, RPC, and QARC.
10. Develop, implement, and maintain archival treatment planning and QA databases that can be linked with the cooperative groups' clinical outcomes databases.
11. Demonstrate understanding of and ability to achieve compatibility with existing software and electronic health record standards, including caBIG and DICOM RT.

Agenda: Thursday, January 14, 2010

- 3:10 PM: ATC Project Officer Report (Deye)**
- 3:20 PM: ATC P.I.'s Report (Michalski)**
- 3:40 PM: International Harmonization: Status US, EU ERDA audits**
- 3:50 PM: ATC Committees on Credentialing/QA**
 - TLD Audits (ERDA) (Followill)**
 - IMRT Credentialing (Galvin)**
 - Facility Survey (Straube)**
 - IGRT Credentialing/QA Guidelines (Galvin / Urie)**
- 4:20 PM: ATC Proton Credentialing/QA Guidelines (Deye / Ibbott)**
- 4:35 PM: NCI Proton Clinical Trial Guidelines (Gillin / Moyers)**
- 4:50 PM: ACRIN contributions and ATC collaborative opportunities (Adineh)**
- 5:00 PM: Update on ACR / RTOG Core Laboratory (Xiao)**
- 5:10 PM: Update on NBIA-RTOG 0522/ACRIN 4500 Project – (Jeraj / Fox)**
- 5:20 PM: Break**
- 5:35 PM: Credentialing Procedure for Contouring (Galvin)**
- 5:50 PM: Harmonization of the Prescription Process (Galvin)**
- 6:00 PM: DDIQA Update (Straube)**
- 6:10 PM: Dose-Volume Histograms/QA Criteria (Straube)**
- 6:25 PM: Extended use of QARC MAX software (Urie)**
- 6:35 PM: caBIG Enterprise Use Case: RT Clinical Trials (Purdy)**
- 6:45 PM: Discussion; New Business – Next Meeting / Conference Calls**
- 7:00 PM: Adjourn**

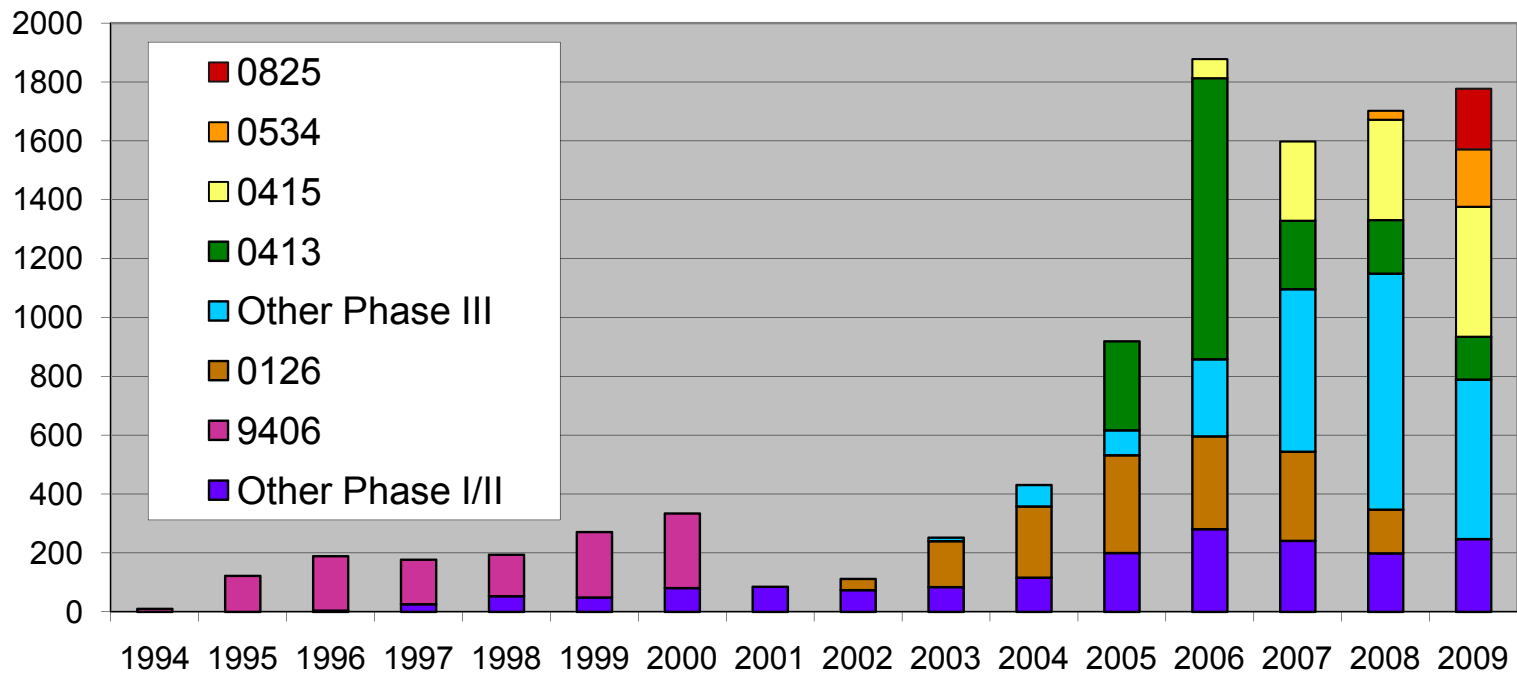
ATC P.I.'s Report

- Protocol Case Accruals
- Feedback from ATC Steering Committee TCon held October 2009
- ITC Director report (W. Bosch)
- Review of Action Items

Protocol Case Submissions

- As of Sept. 21, 2009: 10,051 complete, protocol-case, volumetric digital datasets have been submitted using QuASA²R

Annual Advanced-Technology Protocol Case Accruals



- 11 commercial TPS vendors (22 TPSs) have implemented ATC compliant export capability.
- 664 institutions able to submit digital RT data

Action Items - ATC Steering Committee Response

- *There was a high level of concern expressed by all members of the Steering Committee regarding the increasing need for human intervention in receiving submissions to the ATC. While this is perhaps to be expected as the technology requirements for protocols increase, it needs to be addressed.*
 - *ATC should investigate the issues that require human intervention*
 - *Once identified, appropriate measures (education, documentation, better feedback during the upload process) should be implemented to attempt to reverse this trend. It may be possible to enlist other groups (protocol offices, RTOG Physics Committee, ...) to help in this education.*
 - *This needs to continue to be monitored.*

ACTION ITEMS

- Develop protocol submission checklists
- Publish standardized tissue nomenclature
- Continue development of automated data submission methods
- Education efforts

Action Items - ATC Steering Committee Response

- *There appear to be significant efforts being made to share appropriate data between protocols and protocol groups, including ATC and subcontractor QA and credentialing data. This was viewed by all members of the committee as an important effort and should be encouraged / facilitated by the ATC wherever possible.*
 - *How does ATC improve the communication of QA issues across protocols (e.g. the effect of protocol deviations on results, importance of Rapid Review on protocol compliance)?*
 - *How does ATC transfer this information to PIs of developing protocols so that the protocols can take advantage of ‘lessons learned’?*
 - *ATC needs to continue current efforts in harmonizing QA and credentialing oversight across protocols. Efforts in web-based credentialing, online access to credentialing by institutions, and guidelines/feedback on contouring are specifically noted as successes in this area.*

ACTION ITEMS

- RPC and QARC to facilitate sharing of experience with other groups
- Develop and post standard RT section protocol templates on ATC website

Action Items - ATC Steering Committee Response

- *There was a general concern that ATC and its subcontractors need to find ways to improve the rate of publication of data and results from ATC-facilitated studies.*
 - *Can ATC implement a standard operating procedure (or some equivalent) to be shared with individuals utilizing ATC-stored data that will encourage publication?*
 - *Are there tools or other means that ATC could provide to facilitate the generation of publications? (Outreach efforts should be continued to identify and prioritize such development.)*
 - *How can the QA information stored in the RPC be better mined for results, particularly by outside investigators?*

ACTION ITEMS

- Develop a catalogue of QA and treatment planning data available
- Encourage investigation and secondary analyses of existing data

Action Items - ATC Steering Committee Response

- *Concerns were expressed by the Steering Committee on how ATC can continue / improve its ability to stay abreast of upcoming clinical trial requirements.*
 - *Ensuring that quality issues are addressed in new trials involving protons, VMAT, etc.*
 - *Continued communication within ATC and its subcontractors. How can current efforts be encouraged to continue and improve?*

ACTION ITEMS

- Continue to solicit input from AAPM clinical trials group
- Continue to support communications amongst ATC members (meetings, teleconferences)

Action Items - ATC Steering Committee Response

- *The ATC has developed a number of strong relationships with RT-related protocol groups such as the RTOG.*
 - *How can the ATC increase its involvement with non RT-based protocol groups to improve the quality of RT data captured in such protocols?*
 - *How can the ATC capture and perhaps improve the quality of the QA being done in such protocols?*

ACTION ITEMS

- Identify ATC group representative for each of the cooperative groups

Action Items - ATC Steering Committee Response

- *There appear to be a number of benefits being realized in the cooperation between the ATC and ACRIN.*
 - *The “Image Registration” paper needs to be published.*
- *Recommendations on the adequacy of image registrations and metrics for their evaluation need to be shared with protocol groups*

ACTION ITEMS

- Continue to support 0522 image registration project
- Continue to evaluate image registration methodology and metrics

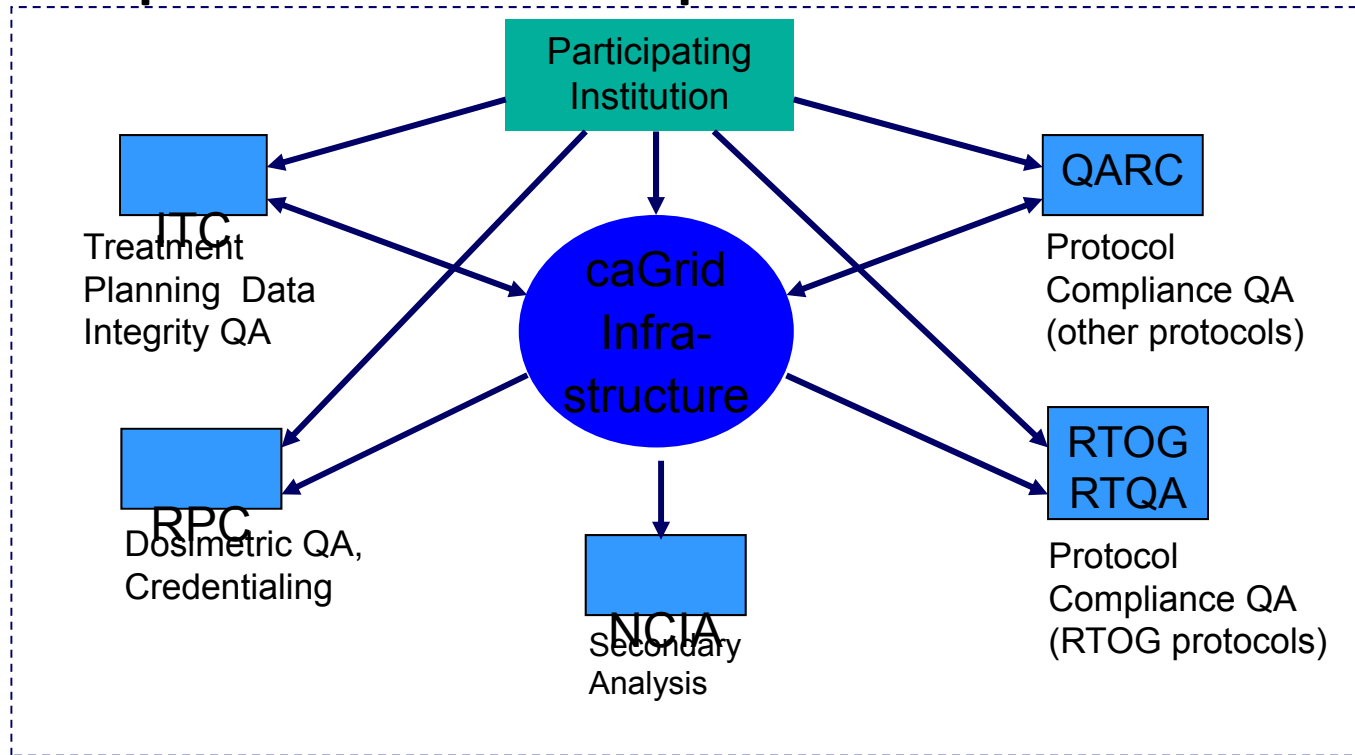
Action Items - ATC Steering Committee Response

- *Several members of the committee noted the award of supplemental funding for data access and data integrity and expressed their congratulations to the ATC for their efforts in this area.*
 - *The use of CERR in this effort has been noted, particularly in the work of Ken Ulin and QARC. Should the ATC consider expanding the commissioning and use of CERR outside of protocol group centers?*
 - *There is likely an opportunity for a publication from this effort.*

ACTION ITEMS

- Inform scientific community about CERR use through scientific publication

Use Cases for caGrid Infrastructure in Cooperative Group RT Clinical Trials



- Replication of protocol case and credentialing data among QA centers
- Distributed review of images/RT data
- Submission of data from participating institutions
- Sharing of data for secondary analysis

ATC P.I.'s Report

- ATC F2F meeting (Date, Location TBD)
- Propose to make use of WebEx meetings in the future.
 - Hold one F2F meeting at ITC each year
 - Hold two mini-meetings at RTOG Semi-Annual meeting
 - Hold one ATC Steering Committee (ATCSC) each year
 - Hold one WebEx/Teleconference with ATCSC each year
 - Hold ATC F2F at subcontractor QA Center on request and/or ATC PI request.
- ATC Progress Report (with proposed budgets) due to Dr. Michalski by March 2010