

# QARC Update

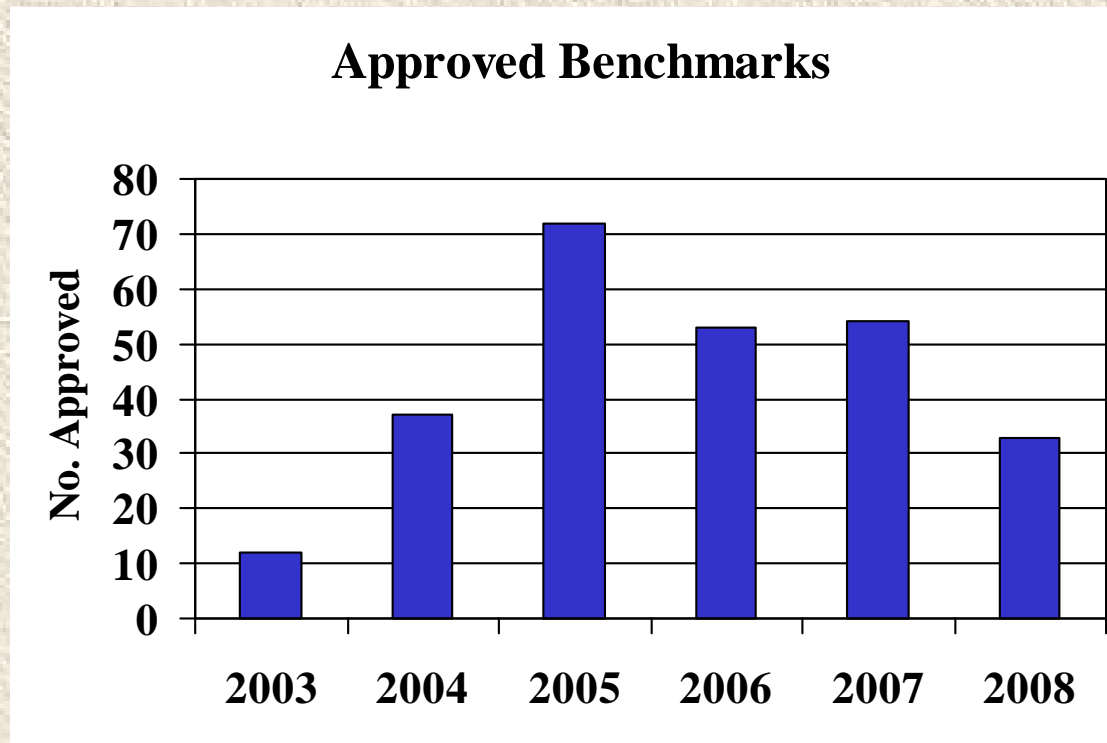
ATC Steering Committee Meeting  
TJ FitzGerald, MD  
2 October 2008

# IMRT Credentialing and Accomplishments

- Development of NCI IMRT Guidelines
- Development of IMRT Questionnaire
- Development of IMRT Benchmark
- Reciprocal credentialing with RPC
  - Use of same questionnaire
  - QARC accepts results of RPC head and neck phantom.

# IMRT Benchmark

- 126 QARC Benchmarks approved (9/29/08)
- 145 approved with RPC phantom + Questionnaire
- 170 approved RPC phantom without questionnaire



# 3D Benchmark Set

- Developed 3D Benchmark Set in collaboration with the RPC
  - Includes 3D Conformal, 3D CSI, and 3D Mantle cases
  - DICOM data sets are downloaded from the QARC website.
- 3D Benchmark Set is used to credential institutions for participation in Children's Oncology Group.
- All submissions are shared with RPC for use in RPC site visits

# **3D Conformal Benchmark Submission/Approval Summary**

- 93 approved, 4 approved by RPC
- 81 submitted electronically
- Common problems: brainstem contour, digital data issues, high dose outside PTV

## 3D CSI and Mantle Benchmarks

	CSI	Mantle
Approved	12	11
Electronic	10	11

# Protons and NCI

Revised and expanded proton questionnaire developed (M.Urie, J. Deye, and M. Gillin)

Completed proton therapy questionnaires received and approved from

MDA

MGH

LLUMC

UFL

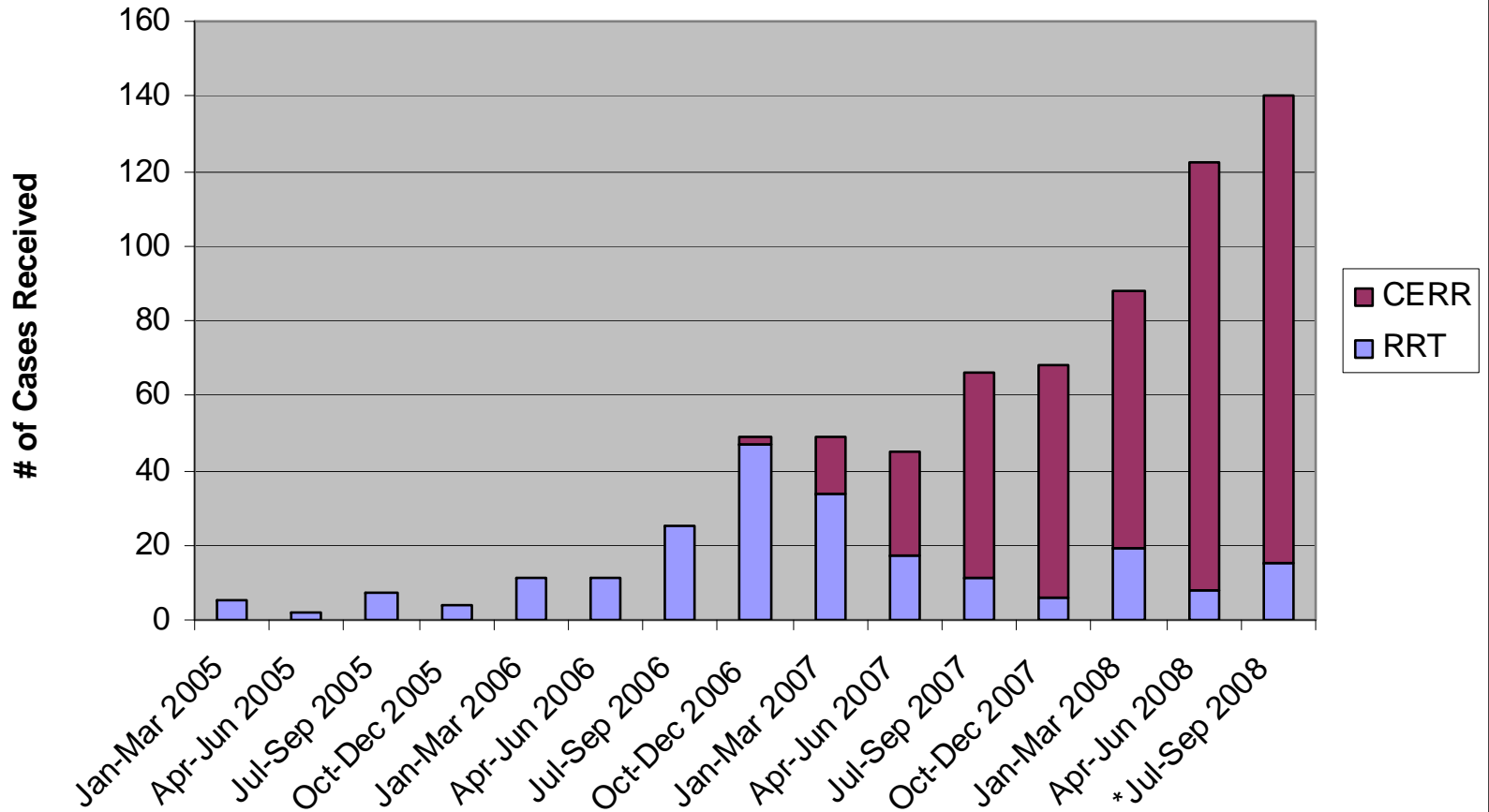


# Digital RT Data

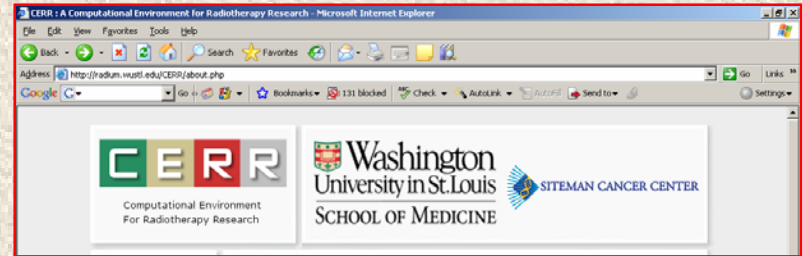
- QARC is using both the Remote Review Tool and CERR for digital RT data review.
- QARC has accrued a total of 692 digital RT cases from more than 100 institutions and more than 50 studies.
- Submission of data by either SFTP or CD is supported.
- QARC's SFTP site and the Remote Review Tool were installed at QARC by the ITC (Walter Bosch and John Matthews).



## QARC Digital RT Data



# Use of CERR at QARC

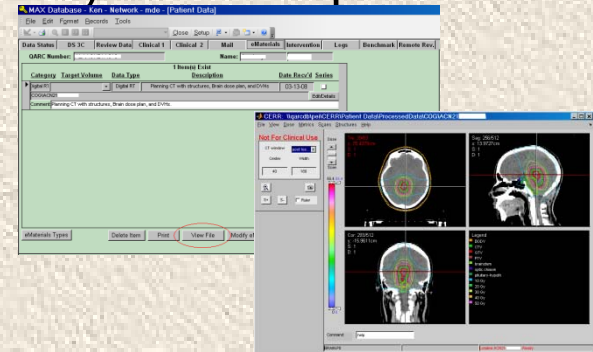


- CERR has been extensively customized for use as a review tool at QARC.
- Many of QARC's modifications have been incorporated into the latest versions of CERR.
- A network concurrent license for Matlab enables use of CERR by all users on the local network.
- Use of CERR is enabled remotely by connection to a terminal server through a web browser.

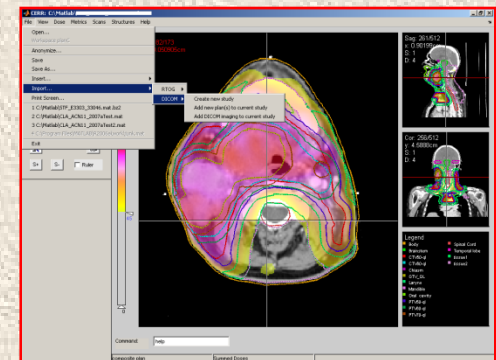
# Use of CERR at QARC

Modifications and enhancements made to CERR for QARC use include:

- A command line to launch a CERR study from the patient's record in the QARC database



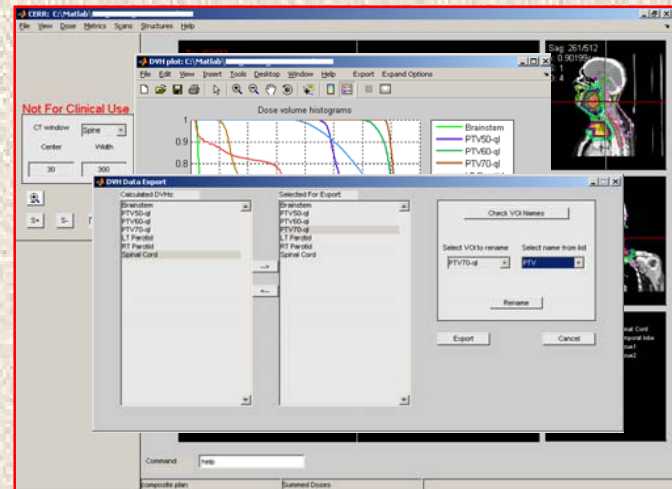
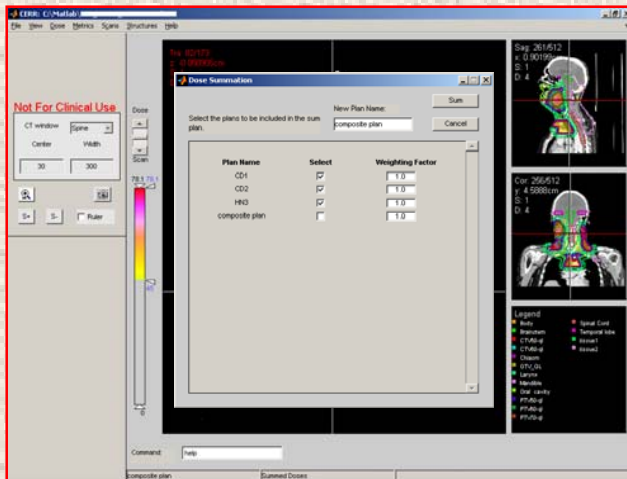
- Import of additional plans to an existing study (subsequent phases of treatment and/or modified plans)



# Use of CERR at QARC

Modifications and enhancements made to CERR for QARC use include:

- Improvement in import speed for DICOM RT
- Multiple consistency checks applied during the import process and when changes are made within the viewer
- Dose summation of multiple (>2) dose distributions
- An export function to export DVH data to a delimited text file for further analysis



ATC 10/2/08

## Use of CERR at QARC

- 470 protocol cases and 170 benchmark cases have been imported into CERR.
- Studies from 13 planning systems have been successfully imported into CERR.

# Use of CERR at QARC

**Full data sets from 13 planning systems have been successfully imported into CERR**

<b>DICOM RT</b>	<b>RTOG</b>
Eclipse	Pinnacle
Variseed	XiO
Plato	Theraplan Plus
XiO	Corvus
Oncentra Masterplan	UMPlan
Helax	
IsoGray	
Konrad	
Memorial Planning System	



# QARC Remote Review

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- Secure Log-in via a VPN
- Remote Reviewer is authenticated
- Remote Reviewer is granted access via their Internet Browser to a QARC terminal server
- Remote Reviewer logs into MAX and is recognized as a Study Reviewer
- The MAX Database optimizes the interface for that Reviewer. They are presented with a list of their cases for review
- Remote Reviewers can access the Diagnostic Imaging and digital RT data viewed in CERR. They can also see any other e-materials (for example, scanned diagnostic imaging reports)
- Currently in use for QARC staff
- Currently being piloted with Remote Reviewers



Press SPACEBAR or ENTER to activate and use this control

12:00:13 PM

Wednesday, March 2

# Login



Username

Password

Domain

OK

Cancel

The image shows a Windows desktop environment with a light blue background. The desktop contains several icons: Recycle Bin, MATLAB R2006a, Windows Explorer, Run TaskManager, WinZip, Internet Explorer, Microsoft Office Excel, QARC Database 2003, Microsoft Office Outlook, Microsoft Office PowerPoint, and Microsoft Office Word. The taskbar at the bottom includes the Start button, several open application windows, and a system tray showing the time as 12:04 PM.

Connected to qarc-remote.qarc.org

# Review Worklist

Current User: Fran

Pending

Reviewed

All

Current Assignee

JeffM

Status	QARC Number	Coop	Actual Protocol	Case No.	Comments
Pending	BAYACN31AN*H	COG	ACNS0331	759715	
Pending	HAWACN31AM*H	COG	ACNS0331	746963	
Pending	STOACN31AC*H	COG	ACNS0331	766315	Need copies of revised whole brain data and films (
Pending	VGHACN31AN*H	COG	ACNS0331	767056	Final Review Pending.

Total Number of Patients 5

EXIT

RETURN





Data Status DS 3C Review Data Clinical 1 Clinical 2 Mail eMaterials Intervention Logs Benchmark Remote Rev.

QARC Number **ASCACN31AJ\*H** Principal Institution **ASC** RT Dept **ASC** Group Status **NE**  
 Coop Group **COG**

Protocol **ACN31** Regimen **224** Actual Protocol **ACNS0331**

Case Number **774919** Accession No. **231** Record Created **10/23/2007**

Date of Birth **02/06/1992** On Study Age **15** **8** M/F: **M**

On Study Date **10/22/2007** RT Summary Due Date **12/16/2007** Radiation Oncologist: **Brown**

First RT Date **10/25/2007** Data Final Date  Number Of Months Post Tx End: **0**

RT Conditional **N** Received On-TX **Y** Data Received within specified period:

Interventional Review Impact: **Intervention**

Number	Target Volume	On TX	#Rev	Review	Status	Comments
1	Brain	Y		F	P	
1T1	Post Fossa	E		A	P	per institution, revisions were made (C2-C3 blocked)
2	Upper Spine	Y		A	P	

Total Number of Target Volumes **4**

Comments **Need copies of revised data and films for brain and spine volumes (if done), need copies of revis**

Performance Evaluation  /  RT Status **D** IMRT  Brachy

All Credentials Met:  3D **Y** SRS

DX Status **D**



<b>QARC Number:</b>	ASCACN31AJPH	<b>First Name:</b>		<b>Last Name:</b>	
<b>Case Number:</b>	774919	<b>Coop Group:</b>	COG	<b>Protocol:</b>	ACN31
<b>Prin Inst:</b>	ASC				
<b>Accession Number:</b>	231	<b>First RT Date:</b>	10/25/2007	<b>On Study Date:</b>	10/22/2007

**Diagnostic Intra-QARC Comments:** Per 6/25/08 review - patient is eligible.

Note: Keep Event and Study Name Lengths within | guidelines | to insure proper fit in rpt qryDiagnostic Crosstab fields

Event	Order	Event Date	Interval	Comments
ACN31 Pre op	10			

Record: 1 of 4

Study	H/A	Study Date	Revwd	Order	Image Type	CD	Comments	Form
Cranial MR	<input type="checkbox"/>	09/24/2007	<input checked="" type="checkbox"/>	10	DICOM	1		<input type="checkbox"/>
Other cranial MR	<input type="checkbox"/>		<input type="checkbox"/>					<input type="checkbox"/>
Spine MR	<input type="checkbox"/>	09/27/2007	<input checked="" type="checkbox"/>	20	DICOM	2	cervical images	<input type="checkbox"/>
Other spine MR 1	<input type="checkbox"/>	09/27/2007	<input checked="" type="checkbox"/>	23	DICOM	2	thoracic images	<input type="checkbox"/>
Other spine MR	<input type="checkbox"/>	09/27/2007	<input checked="" type="checkbox"/>	25	DICOM	2	lumbar images	<input type="checkbox"/>

Record: 1 of 7

There is 1 Dicom Communicator Import Form for this patient. Click [View Form] to see it.



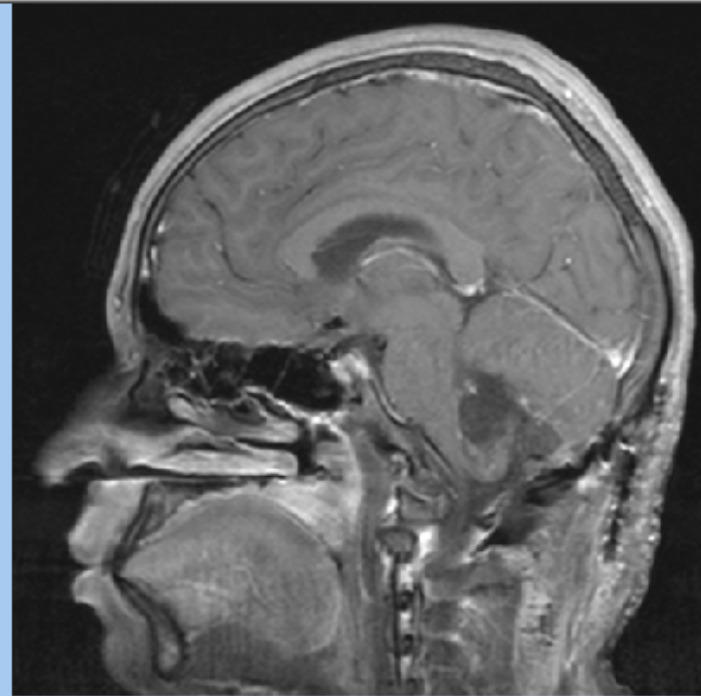
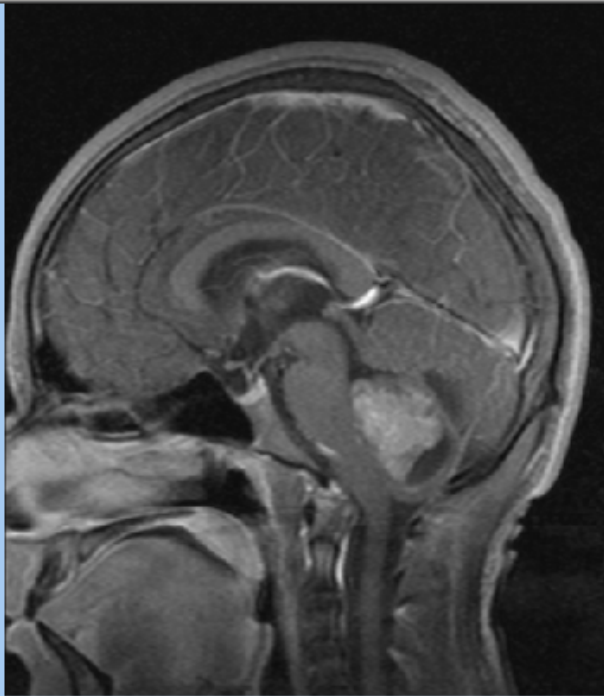


Image Activity Attributes Annotations

**Active Tool**

- Scroll
- Win/Lev
- Select
- Zoom
- Flip/Rotate
- Measure...

Coop Group: COG  
Protocol: ACN31  
Case Number: 774919  
Study Date: 9/24/2007  
Preset: Unspecified  
Format: 1:1

**QARC Number**  
ASCACN31AJ\*H  
Slice Thickness: 5  
Study: MRI BRAIN WITH AND WITHOUT CONTRAST

**Series Navigation**  
es: 10/10 T1 SAG FS POS

**Image Navigation**  
Image 10 of 19

Image Activity Attributes Annotations

**Active Tool**

- Scroll
- Win/Lev
- Select
- Zoom
- Flip/Rotate
- Measure...

Coop Group: COG  
Protocol: ACN31  
Case Number: 774919  
Study Date: 9/29/2007  
Preset: Unspecified  
Format: 1:1

**QARC Number**  
ASCACN31AJ\*H  
Slice Thickness: 5  
Study Navigation: MR Brain w/ & w/o Contrast

**Series Navigation**  
es: 12/12 T1 Fat Sat Sag Pt

**Image Navigation**  
Image 9 of 19

Attributes Left Side Viewer

Help

Attributes Right Side Viewer

Return

Pre-Op

Post-Op





Data Status DS 3C Review Data Clinical 1 Clinical 2 Mail **eMaterials** Intervention Logs Benchmark Remote Rev.

QARC Number: **ASCACN31AJ\*H** Principal Institution: **ASC** RT Dept: **ASC** Group Status: **NE**  
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Number	Target Volume	On TX	#Rev	Review	Status	Comments
1	Brain	Y		F	P	
1T1	Post Fossa	E		A	P	per institution, re
2	Upper Spine	Y		A	P	
Total Num						

**Comments For And From Reviewer**

Comments For Reviewer

Need copies of revised data and films for brain and spine volumes (if done), need copies of revised pfoosa boost data and films, revised composite isodose distributions and DVH data, RT-2 and daily RT treatment chart for all fields treated; protocol required report (see comment below).

Comments From Reviewer (Enter Your Comments Here)

Remote reviewer can open this form and enter their comments here.

QARC No: **ASCACN31AJ\*H** Case Number: **774919** Actual Protocol: **ACNS0331**  
 Cooperative Group: **COG** Return

Exit Diagnostic





QARC Number: ASCACN31AJ\*H

1 Item(s) Exist

Category	Target Volume	Data Type	Description	Date Recv'd	Series
Digital RT		Digital RT	isodoses/DVH's for each phase and composite isodoses/DVH's	11-13-07	<input type="checkbox"/>
COG\ACN31c774919					
Comment: isodose distributions and DVH data for each phase and composite isodose distributions and DVH					

View File

Not For Clinical Use

CT window --Manual--

Center Width

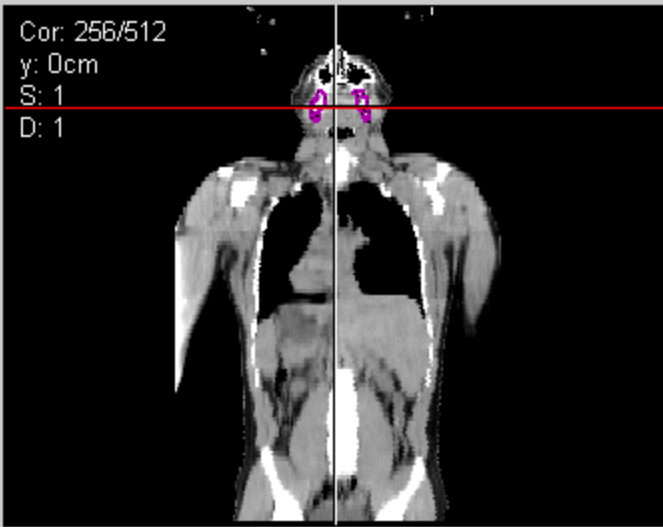
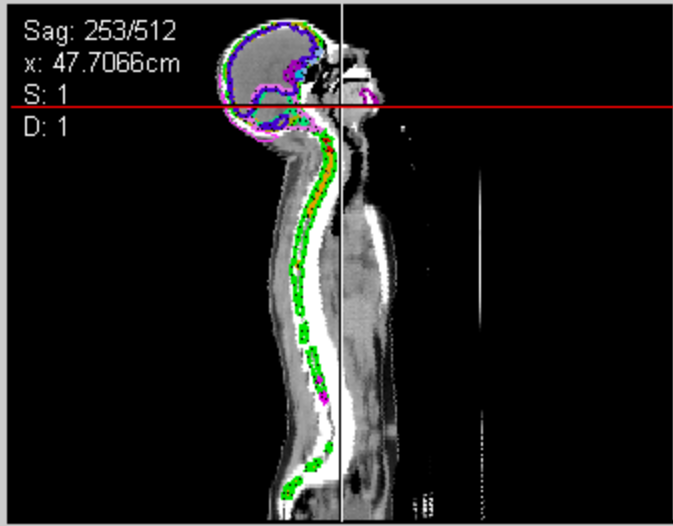
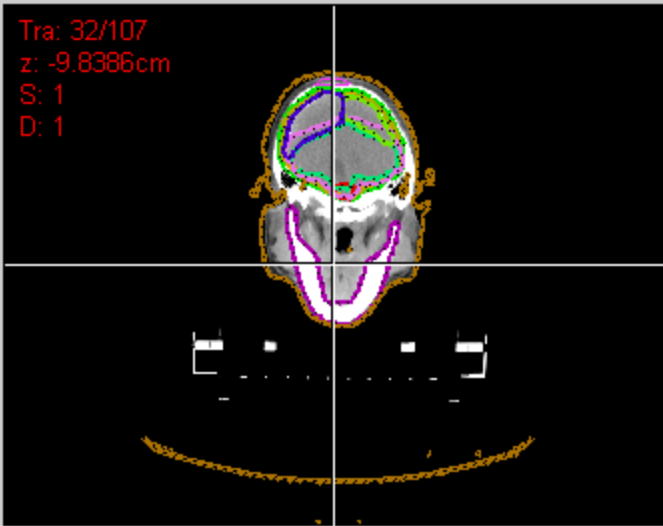
0 300

S+ S-  Ruler

Dose

Scan

10.9 10.9



- Legend
- Cranialspinal axis CTV110 Gy
  - Cranialspinal axis PTV1
  - C spine volume
  - Mandible
  - Brain
  - cribiform plate
  - T-L gap
  - skin
  - CTVpf
  - Boost PTV
  - RSB
  - LSB
  - hypothalamus/pituitary
  - Optic Chiasm

Command: help

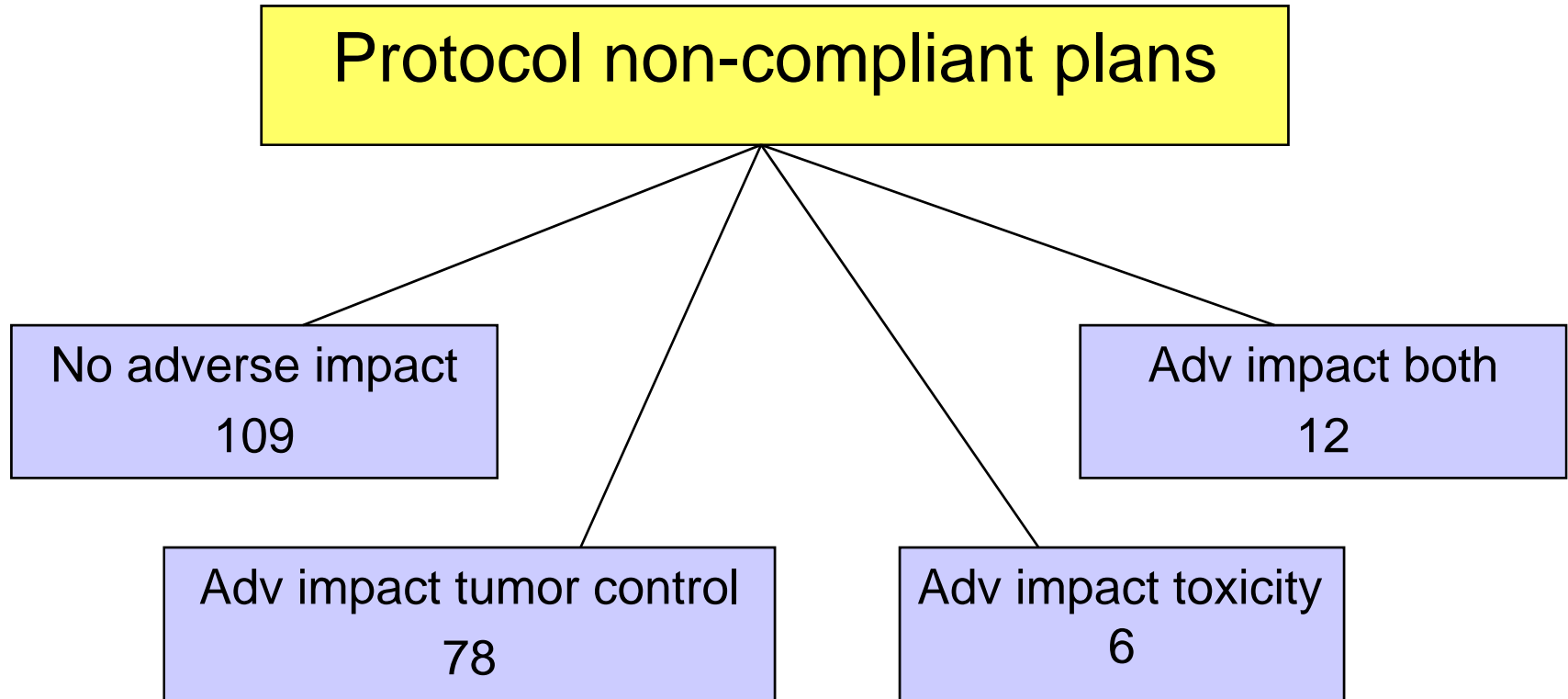
# VIEW Update

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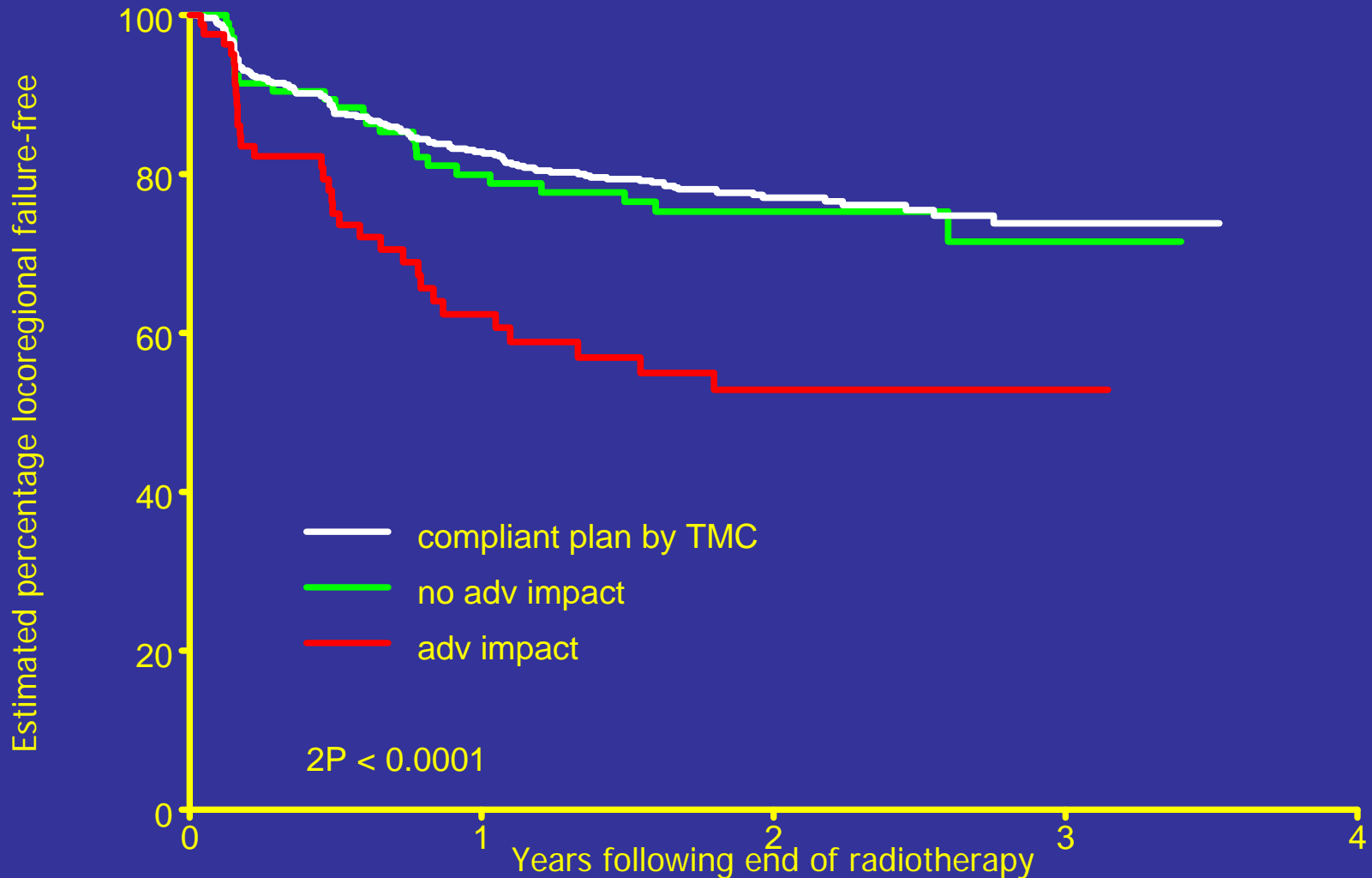
- VIEW Meeting in Chicago, June 2008
- IT, Quality and Standards Sub-committees met to establish committee membership and objectives
- First VIEW protocol, NCCTG N0723 – Marvel Trial opening October 1st. A Phase III Second-Line Therapy in Patients With Advanced Non-Small Cell Lung Cancer (NSCLC) Randomized to Pemetrexed Versus Erlotinib
- QARC will track and acquire baseline and follow-up imaging; ACRIN will perform QA. Duplicate archive established at QARC and ACRIN

# Secondary review of non-compliant plans (n=205 of 208)



# Time to LR Failure By Impact on Disease Control

Patients who had received at least 60Gy of RT to PTV2



# Conclusions

- The addition of TPZ to chemoradiation, in patients with advanced head and neck cancer not selected for the presence of hypoxia, did not improve overall survival
- Radiotherapy deviations had a major adverse impact on treatment outcome
- There was some evidence of improved locoregional control with TPZ/CIS in patients without major radiation deviations