

ITC Case Workflow - Overview

- ITC is prompted via email by registrations
 - Appropriate data is entered into database (ACCESS front end, Sybase Database).
- ITC is prompted via email by Digital Data Submission Information (DDSI) Form after digital data is uploaded to ITC's SFTP server.
- DDIQA is performed and Data is processed
 - problems are diagnosed and fed back to appropriate personnel via email
 - reviewable data are prepared for review
 - Appropriate information is entered into spreadsheets and database.

FOCUS on digital data processing

- Simple Prostate Case Demonstration
- Slides showing complex cases which take time, effort and experienced ITC personnel to prepare for review.
- Demonstration of ACCESS outlook interface that simplifies emailing to institutions.

DDIQA Statistics - 2007

Disease Site	Number of cases Digitally Submitted	Problems Requiring Human Intervention	% Cases Requiring Human Intervention
Lung	45	14	31
Prostate 3D/IMRT	827	201	24
Prostate Seed	148	21	14
Partial Breast	997	260	26
Liver SBRT	6	2	33
Prostate 3D/IMRT with Nodal Volumes	209	104	50
H&N IMRT	417	107	26
Pelvic IMRT	147	35	24
TOTAL	2796	744	27

DDIQA Stats – 2007 Credentialing

Phantom	# of Submissions	Problems Requiring Human Intervention	% of Cases Requiring Human Intervention
H&N	280	77	28
Pelvis	73	28	38
Lung	37	17	46
Liver	7	2	29
TOTAL	397	124	31

DDIQA Stats – 2007 Credentialing

Protocol	# of Credentialing Submissions	Problems Requiring Human Intervention	% of Cases Requiring Human Intervention
Prostate external beam	5	0	0
Prostate Seed	10	1	10
PBI	77	28	36
Liver SBRT	6	2	33
H&N IMRT	18	6	33
Lung 3D/IMRT	18	6	33
TOTAL	139	44	32

Data preparation – processing digital data

- Focus on good data – 70 – 80 % of the data received
 - Data Extraction
 - Renaming of Structures
 - Summing of fraction groups
 - Recalculation of DVHs
- Summary - Preparation of data for a PI or study chair reviewer

Multiple fraction groups adds complexity and submission errors.

Exceed
Preview and Print Beam Settings - (cancer)

ID:

Name: Inst:

Patient List

0521c0001	0521c0002	0521c0003
0521c0004	0521c0005	0521c0005Comp
0521c0005boost	0521c0006	0521c0007
0521c0008	0521c0009	0521c0011
0521c0012	0521c0012boost	0521c0013
0521c0014	0521c0015	0521c0016
0521c0018	0521c0019	0521c0020
0521c0021	0521c0022	0521c0023
0521c0024	0521c0025	0521c0026
0521c0027	0521c0028	0521c0030
0521c0031	0521c0032	0521c0033

Plan ID:

no plan selected

Plan List

fx1hetero
fx2hetero
totalhetero

Printer:

Printer List

hplj4050-HP_4050_(Room_205)
hplj4550-HP_4550NColor_(205G)
hplj8000-HP_8000_(Room_205G)

Sample Point Dose

Point Coordinates

X (mm):
Y (mm):
Z (mm):

Extract Point Dose

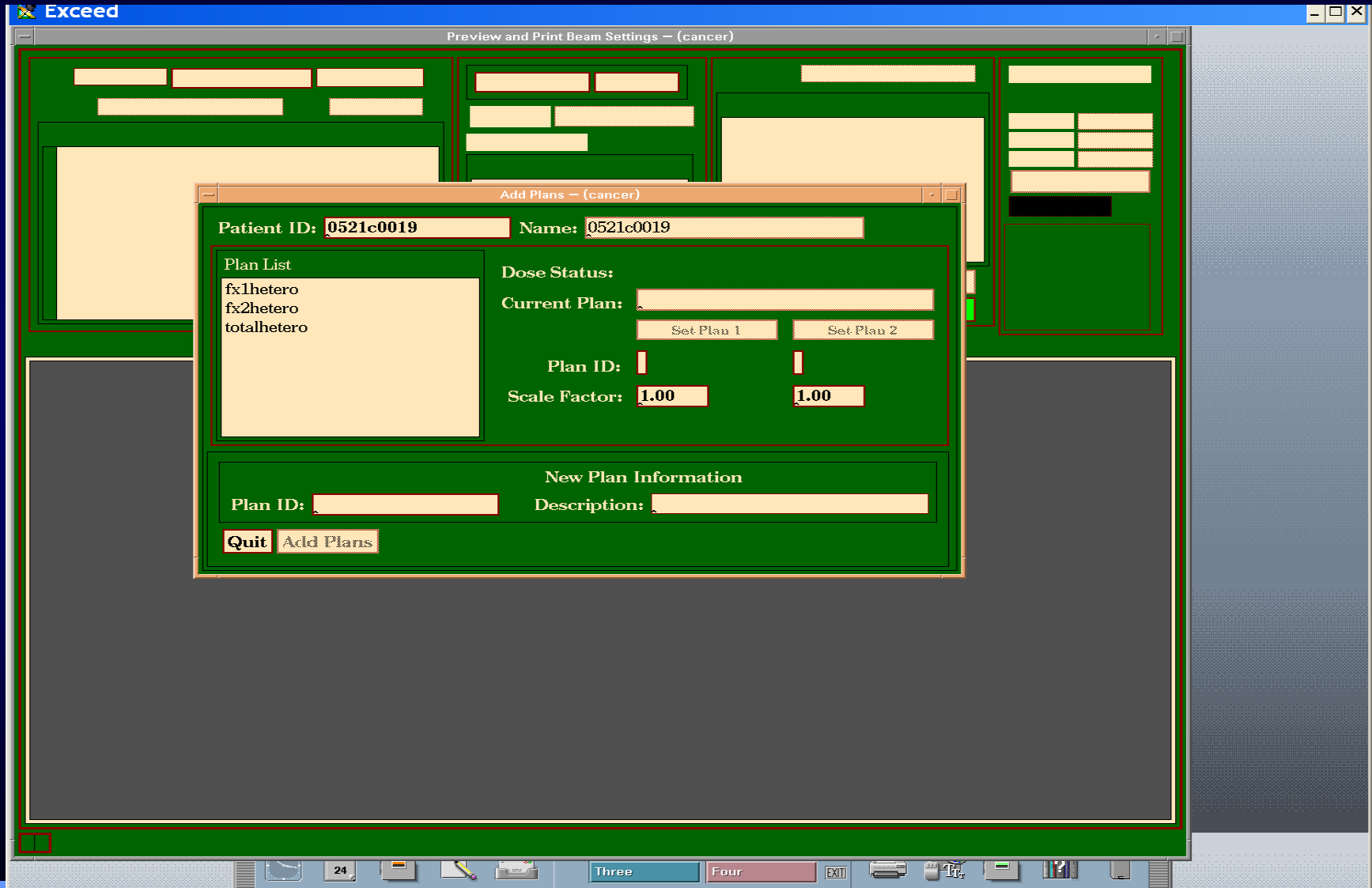
cGy

ICRU50 Ref Point

X (mm):
Y (mm):
Z (mm):
Dose:

24 Three Four EXIT

ITC tool used to sum fraction groups



3D head and neck case with 7 fraction groups which are summed to a total dose

http://canceritc.ro.wucon.wustl.edu:8080 - ITC RRT - Case: 0522c0023 - Us...

Update Image Edit Contours Contour Colors

Isodose Contours Plan: totalhetero

50 Gy Gy Gy

Gy Gy Gy

Structures (dashed when isodoses are off)

ON BRAC_PLX PAROTID_RT

CTV56 PTV56

CTV70 PTV70

EYE_LT SKIN

EYE_RT SPINAL_CORD

GTV ctv

LARYNX lt nodes

PAROTID_LT rt nodes

DVH: ITC

Struct:

Please select structure.

SLICE: -9.70 CM ZOOM: 1

Sup ↑ Inf ↓ Image Click Mode

W/L Preset: Default (soft tissue)

Win: 470 Lvl: 20

ITC Remote Review Tool

Internet

ng- 3/27/2008

Before and after preparation of case for review. Structures are renamed
And eliminated to make the review process manageable

The image displays two side-by-side screenshots of a radiotherapy planning software interface, showing a head CT scan with various colored contours representing different anatomical structures. The left window shows the initial state, and the right window shows the state after some structures have been renamed or eliminated.

Left Window (Case: 8000cBEF - User...)

- Structures List:**
 - CTV2
 - CTV3
 - PTV
 - PTV56
 - PTV36dilat
 - PTV63
 - PTV63dilat
 - PTV70
 - PTVexp plan56 1cm
 - PTVexp plan63 1cm
 - PTVexp plan70 1cm
 - PTVplan56
 - PTVplan63
 - PTVplan63_EXP8mm
 - PTVplan70
 - PTVplan70_8mm
 - cord 5mm
 - cord 8mm
 - density
 - ear RT
 - ear LT
 - eye RT
 - eye LT
 - larynx
 - mandible
 - mandible -ptr
 - optic chiasm
 - optic n LT
 - optic n RT
 - oral cav
 - parotid LT
 - parotid LT-ptv
- DVH:** Submitted, Recall DVH, Struct: PTV56, End DVH
- Graph:** DVH for PTV56 showing Volume (cc) vs. Dose (Gy). The curve shows a sharp drop-off around 70 Gy.
- Summary:** Plan ID: 0, Vol: 100.00%, Ref: 77.44 Gy, Max: 816 Gy, Min: 64.31 Gy, Mean: 64.31 Gy.

Right Window (Case: 0522c0435 - Us...)

- Structures List:**
 - BRACH
 - BRACH STEM
 - CHIASMA
 - CTV56
 - CTV63
 - CTV70
 - EYE LS
 - EYE RT
 - PTV
 - LARYNX
 - MANDIBLE
 - OPTIC NRV LT
 - OPTIC NRV RT
 - ORAL CAVITY
 - PAROTID LT
 - PAROTID RT
 - PTV56
 - PTV63
 - PTV70
 - SPIN
 - SPINAL CORD
 - SPINAL CORD FRV
 - ear LT
 - ear RT
- DVH:** Submitted, Recall DVH, Struct: PTV56, End DVH
- Graph:** DVH for PTV56 showing Volume (cc) vs. Dose (Gy). The curve shows a sharp drop-off around 70 Gy.
- Summary:** Plan ID: 0, Vol: 100.00%, Ref: 77.44 Gy, Max: 816 Gy, Min: 64.31 Gy, Mean: 64.31 Gy.

Case with 74 structures

- \$Header: /Focusdev/MIR_tools/src/rtog_read/RCS/ident_x_tape.c,v 1.18 2003/01/28 17:24:48
jwmfocus Exp \$

File system timestamp of directory file: Mon Jan 14 12:20:38 2008

Summary Data for exchange directory:

/r5/RTOG/patient_submit/pmh/0522c0377/incoming/RTOG0522_CASE=377

Tape standard: 3.00

Institution: RMP TEAM I - Development

Date created: 14,01,08

Written by: (unknown)

Patient Name:

- Case #: 1
Number of comment files: 0
Number of CT files: 175
Number of MR files: 0
Number of US files: 0
Number of struct files: 74
Number of beam files: 12
Number of seed files: 0
Number of film files: 0
Number of dose files: 2
Number of DVH files: 74

Case with 74 Structures

- Structure list (74 structures)

GTV
R2
R3
L2
CTV1
R2CTV1
R3CTV1
L2CTV1
CTV2
RCTV2
LCTV2
BRSTEM
CORD
REYE
LEYE
RLENS
LLENS
ROPTIC
LOPTIC
RLACRIMAL
LLACRIMAL
CHIASM

RPAROTID
LPAROTID
LIPS
MANDIBLE
glottis
Untreated midline
refRNECK
refLNECK
refRNECKI
refLNECKI
refRRETROPHARYNGEAL
refLRETROPHARYNGEAL
refRCTV56
refLCTV56
PTV1HD
R2PTV1HD
R3PTV1HD
L2PTV1HD
PTV2ED
RPTV2ED
LPTV2ED
modR2PTV1HD
modR3PTV1HD
modL2PTV1HD
modRPTV2ED
modLPTV2ED

optPTV2ED
optRPTV2ED
optLPTV2ED
AllTargets
RING
limPOSTSPARE
InRPAROTID
OutRPAROTID
InLPAROTID
OutLPAROTID
fixAIR
fixAMALGAM
prvBRSTEM3
prvCORD5
prvCORD7
prvBRSTEM5
EXTERNAL
miniEXT5
limESOPHAGUS
limMIDLINE
Unspecified Tissue
limANTAVOID
COLDPTV56
COLDPTV70
HOTSPOT
inMANDIBLE

Case with 74 Structures

http://canceritc.ro.wucon.wustl.edu:8080 - ITC RRT - Case: 0522c0377 - Us...

1.80 cm
1.60 cm
1.40 cm
1.20 cm
1.00 cm

SLICE: 0.40 CM ZOOM: 2

Sup ↑ Inf ↓
Print EXIT
Image Click Mode
Zoom In

W/L Preset: Default (soft tissue)
Win: 470 Lvl: 20 Update

ON
 BRAIN_STEM
 BRAIN_STEM_PRV
 CHIASMA
 CTV56
 CTV70
 EYE_LT
 EYE_RT
 GTV
 LAC_GL_LT
 LAC_GL_RT
 LARYNX
 LENS_LT
 LENS_RT
 LIPS
 MANDIBLE
 OPTIC_NRV_LT
 OPTIC_NRV_RT
 PAROTID_LT
 PAROTID_RT
 PTV56
 PTV70
 SKIN
 SPINAL_CORD
 SPINL_CRD_PRV
 empty

DVH: ITC Re-calc DVH
Struct: PTV70 Eval DVH

PTV70
Volume, (cc)
Dose, (Gy)

Plan ID	Vol ≥ Ref	Max	Min	Mean
totalhetero	97.60 %	80.00 Gy	63.10 Gy	73.60 Gy

Vol = 285.94 cc Conf_index = 0.721 [DVH Data File](#)

Case where dose is rotated compared to anatomy

http://canceritc.ro.wucon.wustl.edu:8080 - ITC RRT - Case: 0529c0063 - Us...

Isodose Contours Plan: fx1hetero

40 Gy Gy Gy

Gy Gy Gy

Structures (dashed when isodoses are displayed)

All Off All On

ON

- BLADDER
- CTV42
- CTVA
- FEMUR_LT
- FEMUR_RT
- GENITALS
- GTVA
- ILIAC_CREST
- LARGE_BOWEL
- PERIANAL_SKIN
- PTV42
- PTVA
- SKIN
- SMALL_BOWEL

DVH: ITC Re-calc DVH

Struct: PTV42 Eval DVH

PTV42

Plan ID	Vol ≥ Ref	Max	Min	Mean
fx1hetero	71.40 %	57.20 Gy	11.80 Gy	43.80 Gy

Vol = 1072.94 cc [DVH Data File](#)

SLICE: -136.50 CM ZOOM: 2

Sup ↑ Inf ↓ Image Click Mode W/L Preset: Default (soft tissue)

Print EXIT Zoom In

Win: 470 Lvl: 20 Update

ITC Remote Review Tool