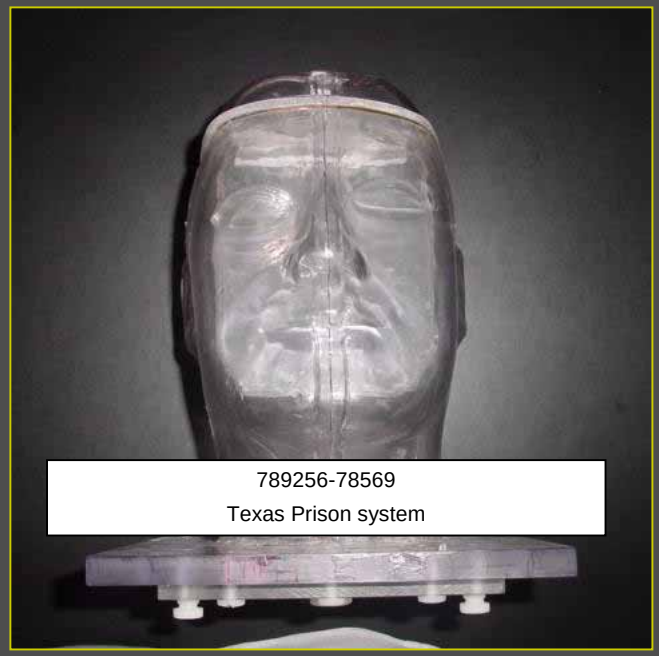


ATC Steering Committee

RPC

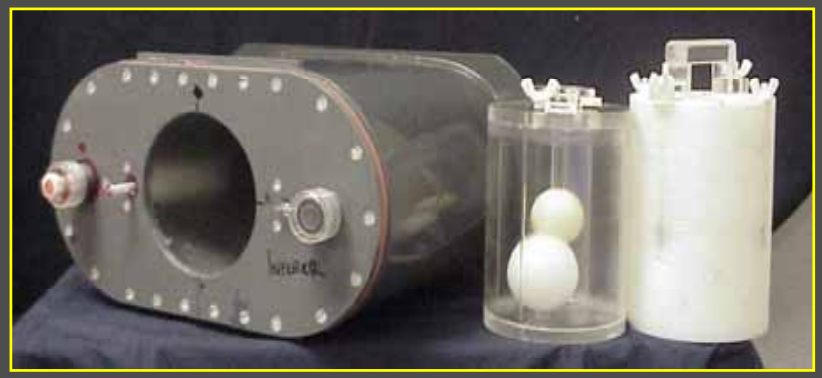
March 2004

THE UNIVERSITY OF TEXAS
MD ANDERSON
CANCER CENTER

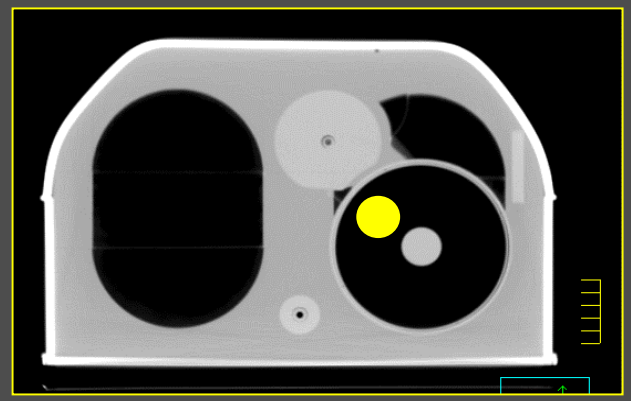
ATC QA Review Workstation

- Received from ITC on March 1, 2004
- Will be used for:
  - –2D analysis of phantom results
  - –Image-base brachy calculations
  - –Credentialing
  - –Patient record review
  - –ATC Teleconferences

RPC Phantoms



prostate RTOG P-0126 (IMRT)



thorax RTOG 0236 (SBRT)

H&N IMRT RTOG H-0022,
H-0225, P-0126,
COG ACNS0331

SRS encouraged for
ACOSOG Z0300

Phantom Inventory

H&N waiting list

Priority	Institutions
3	1
2	8
1	2
0	10*

* want phantom for QA, not credentialing

Head & Neck	10
Under construction	6
TOTAL	16
Pelvis	4
Lung	1
Lung/Liver Ordered	2
TOTAL	4

Phantom Results

Phantom	H&N	SRS	Prostate	Thorax
Reports Sent	66	66	0	0
Pass	44*	49	0	-
Fail	22	17	0	-
Under Analysis	9	1	6	2 irradiations
At Institution	8	0	0	1
# of requests	21	0	11	7

* 6 of the passes failed on their first attempt; 66% of institutions passed on the first try

IMRT H&N Phantom Results

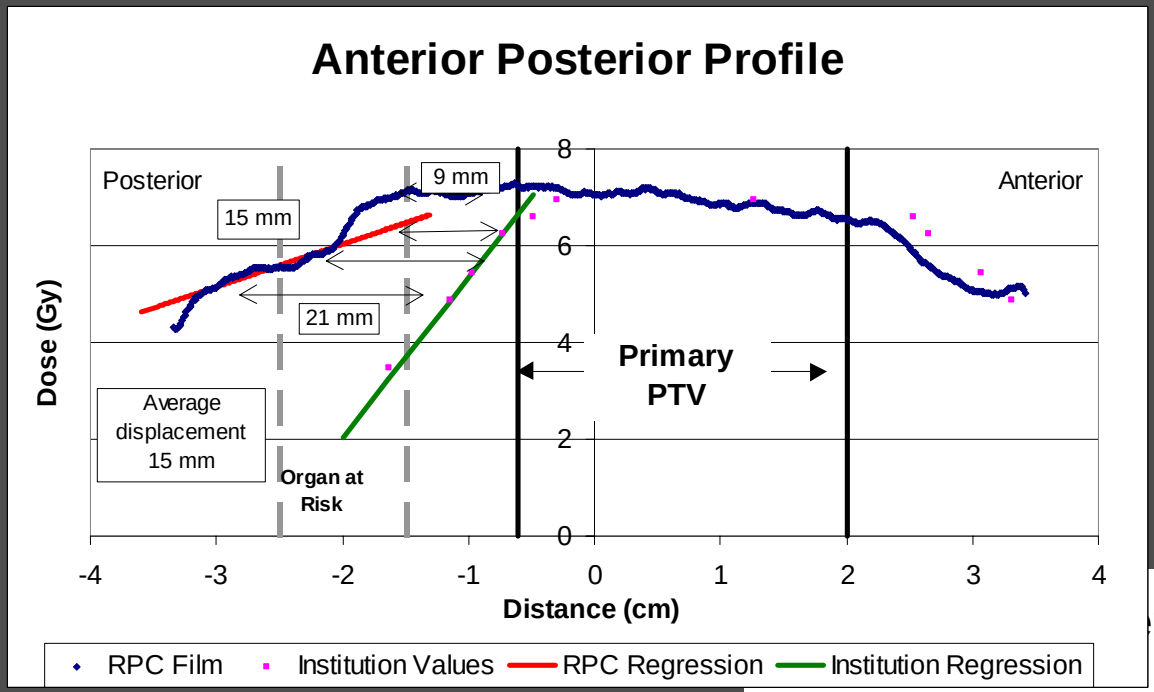
11 institutions failed by TLD results

4 failed by film results

7 failed by both

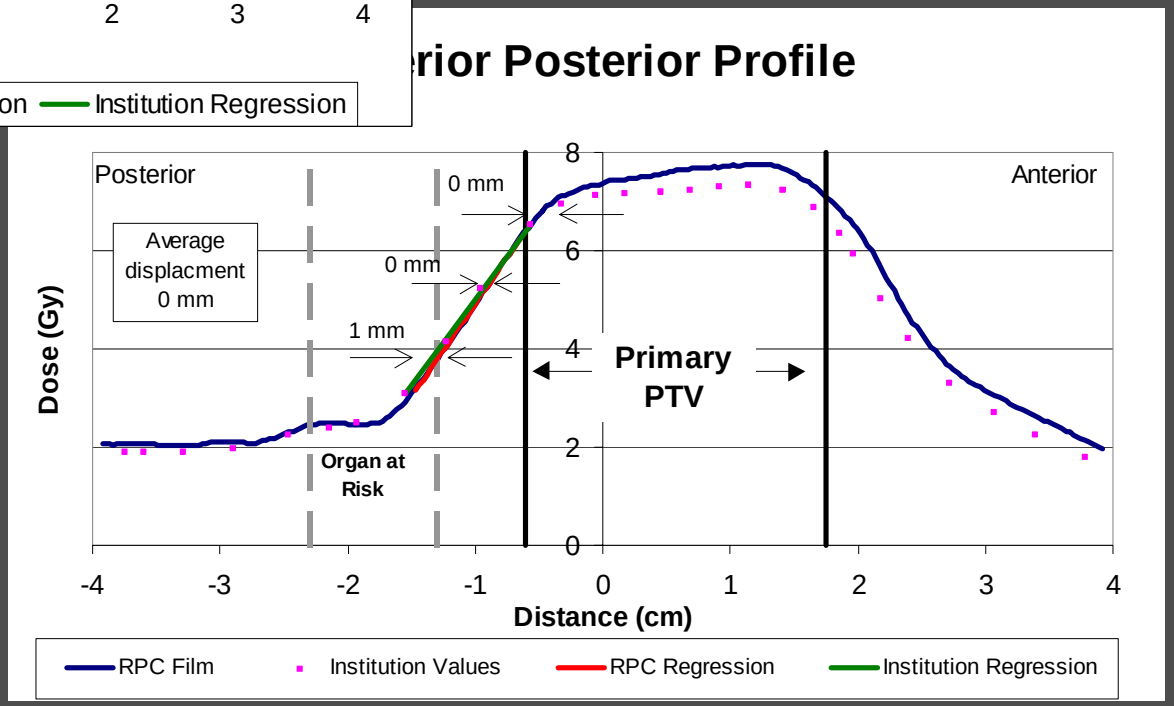
	1PTVsup	2PTV	OAR	Displ.(mm)
mean	1.01	1.01	1.10	1.08
std dev	0.052	0.048	0.27	0.2
count	143	72	72	60
range	0.78-1.13	0.92-1.22	0.71-1.94	-15 - 8

IMRT H&N Phantom Results cont.

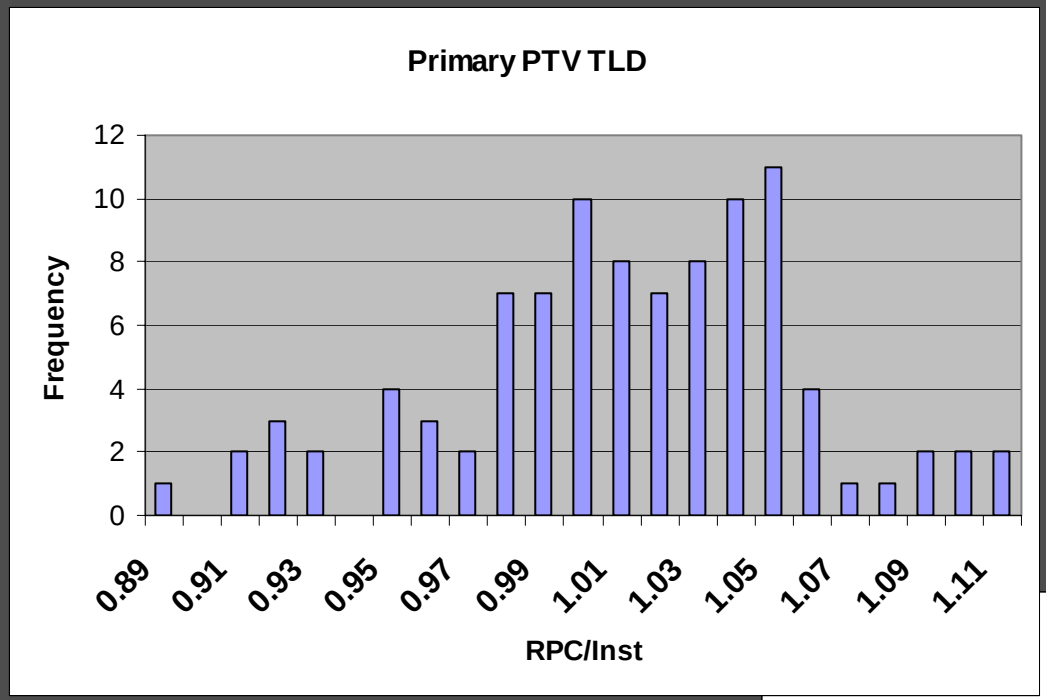


Poor agreement

Great agreement

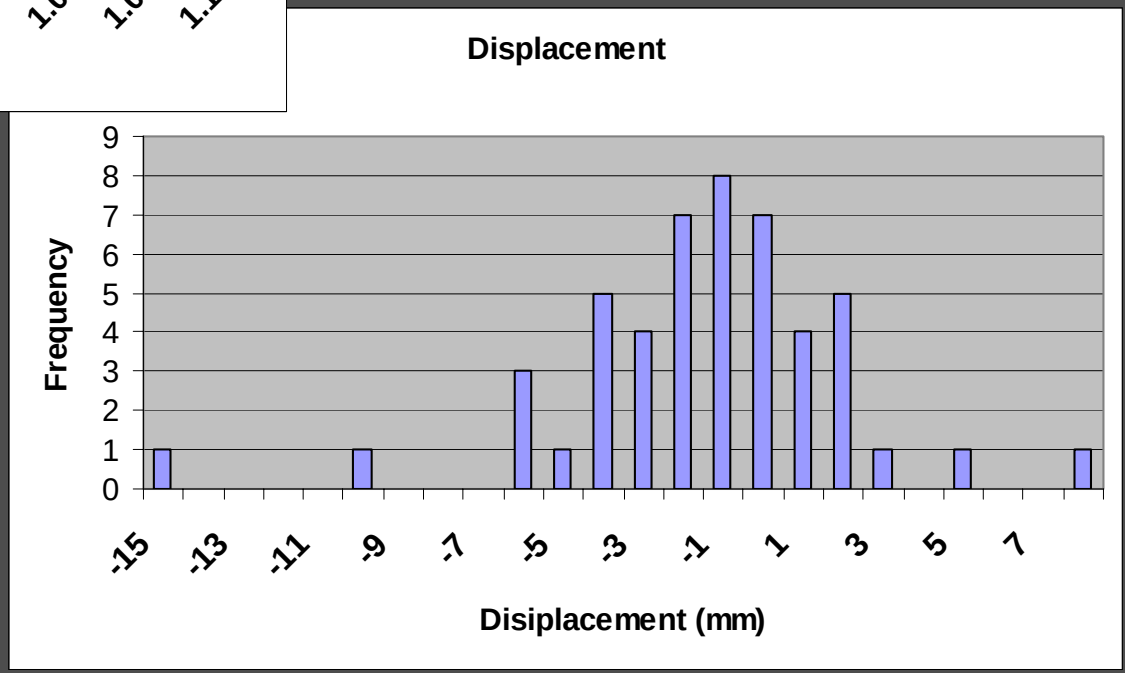


IMRT H&N Phantom Results cont.



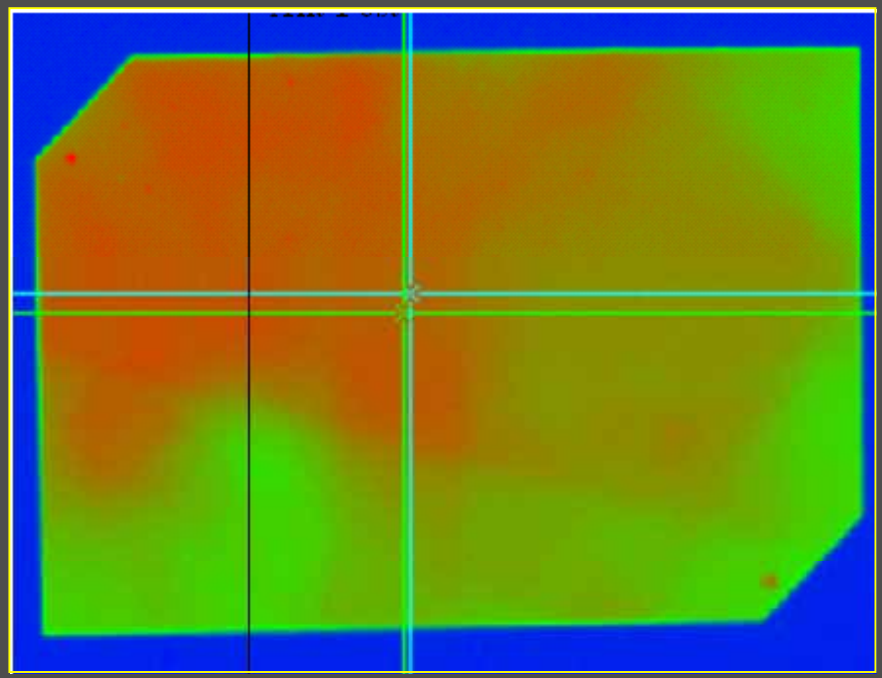
Primary PTV TLD results

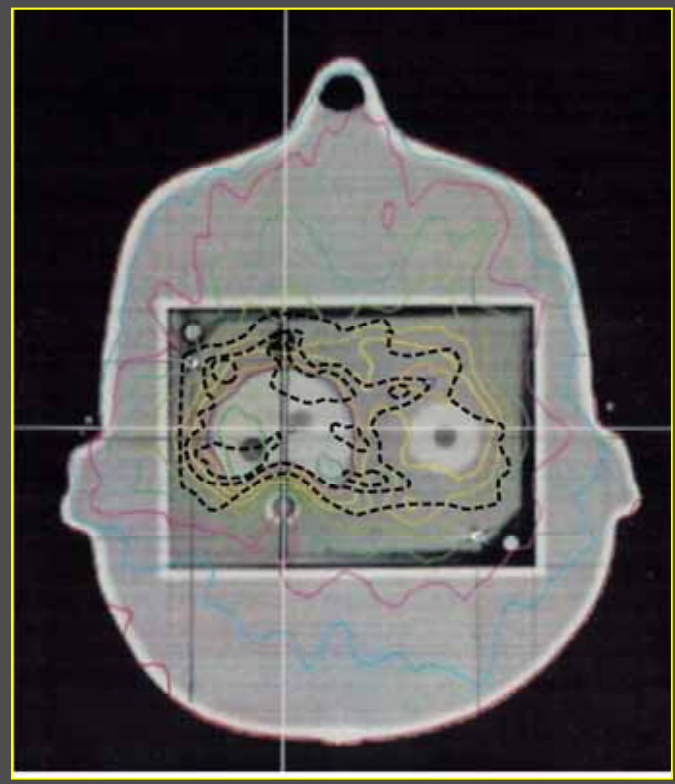
Dose profile displacement



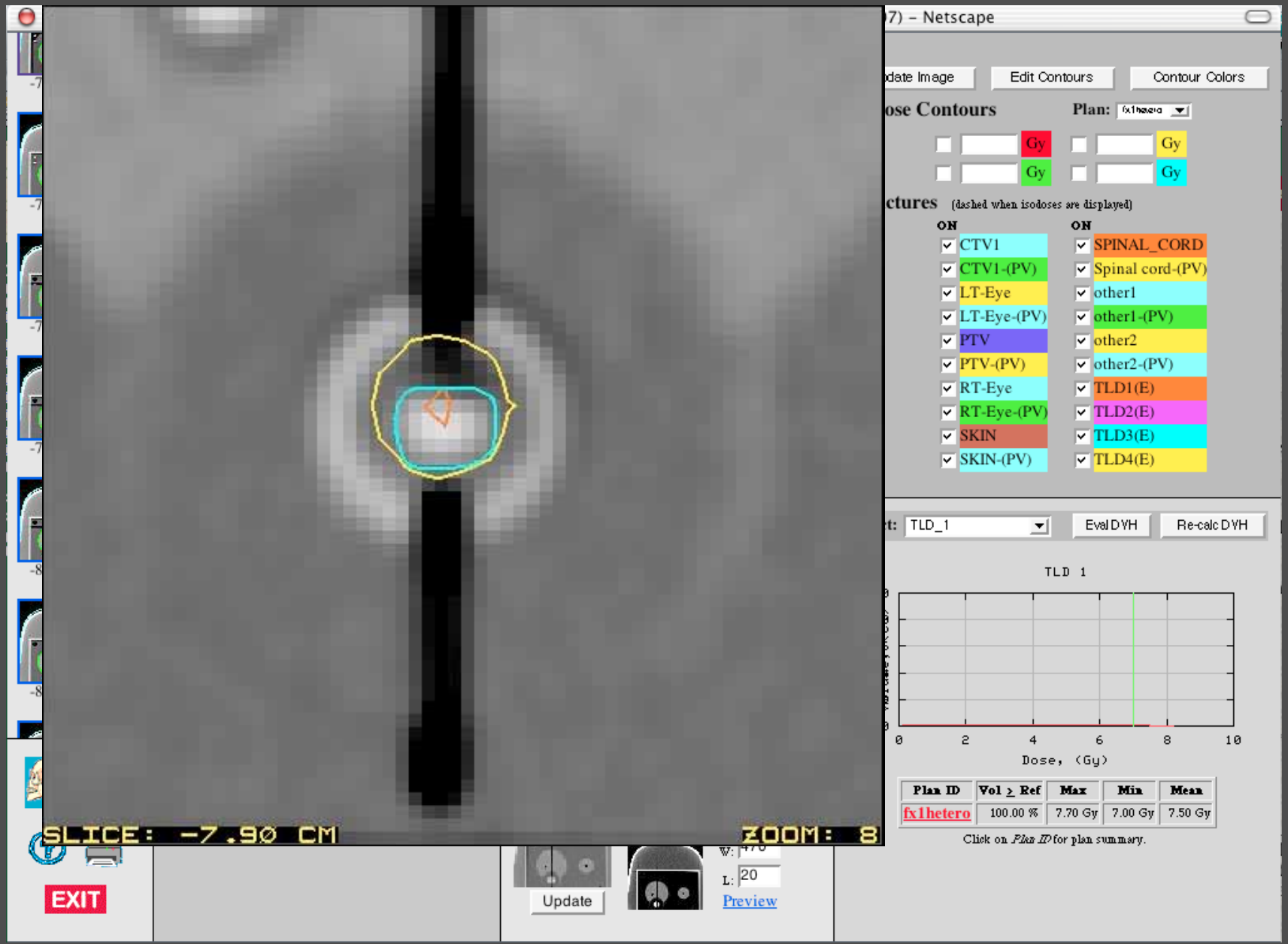
Film Analysis

- dose profiles taken from film
- compare to electronic dose data submitted to ATC or to isodose curves mailed to RPC
- need ability to receive dose matrix from plan to implement 2D analysis in multiple planes using DoseQA



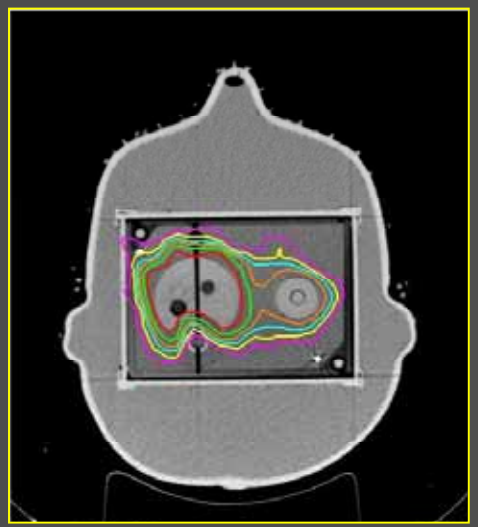


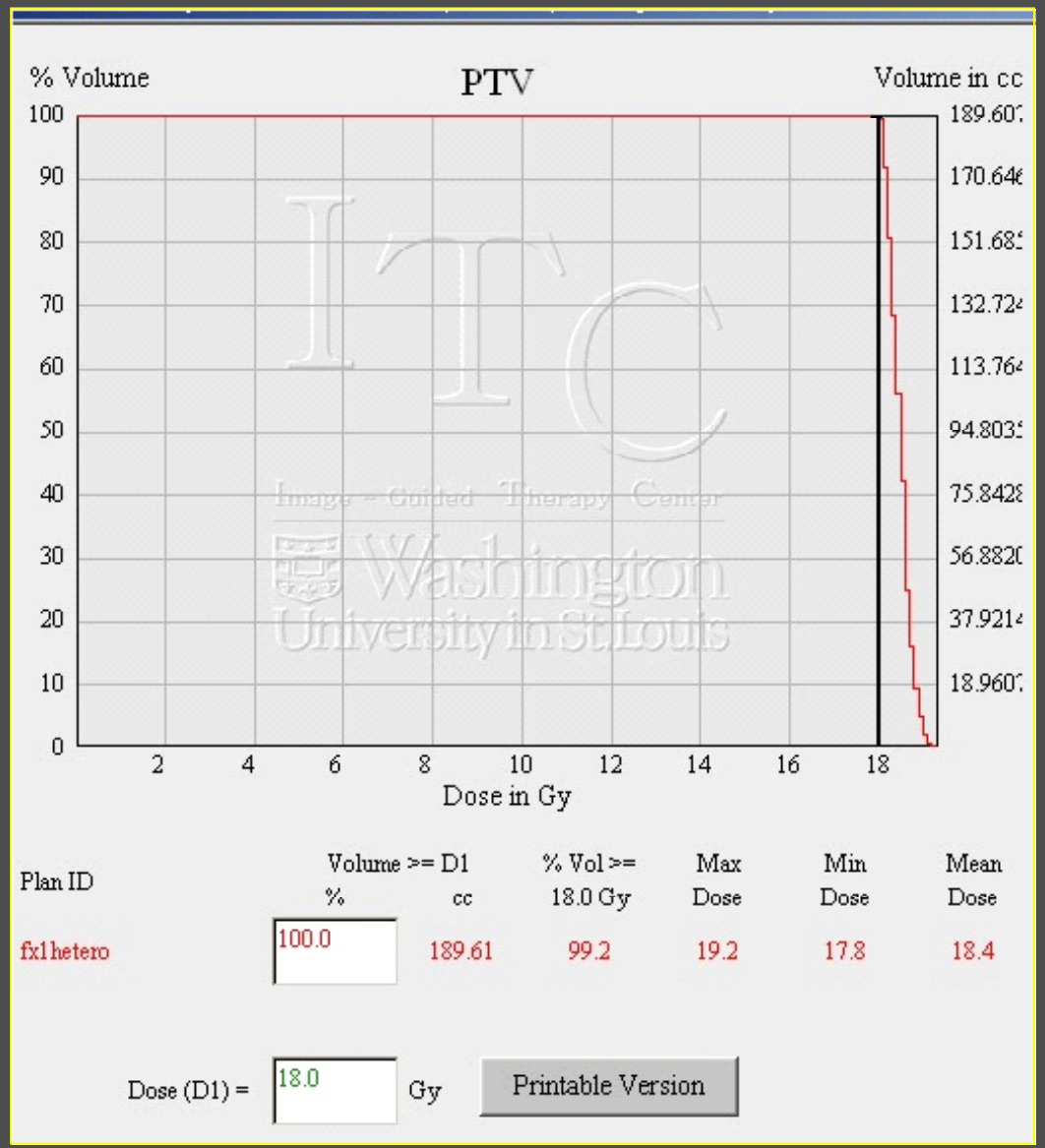
ITC remote review tools



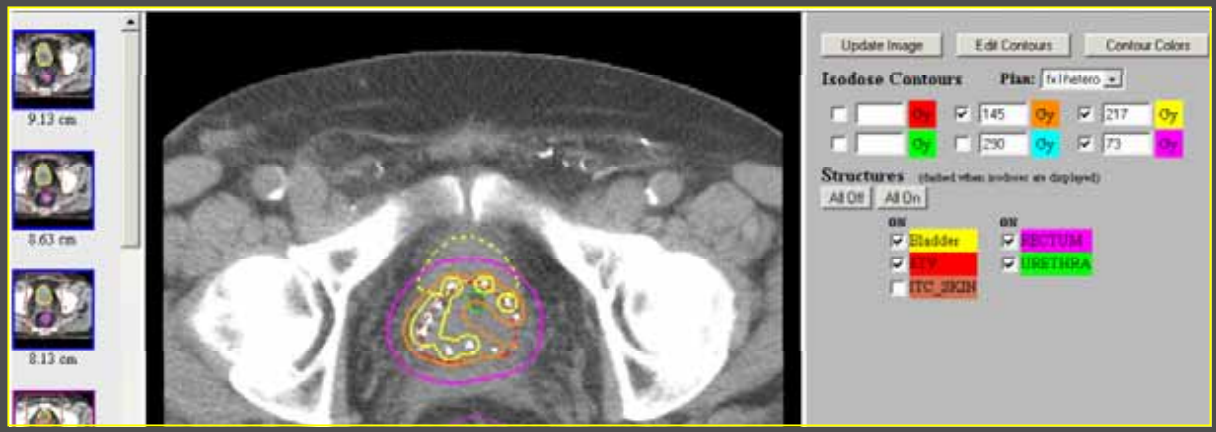
ITC remote review tools

- evaluation of IMRT H&N, prostate, and thorax phantoms
- clinical evaluation for P-0232
- point doses
- new contours and DVHs
- will be used for future credentialing





RTOG P-0232 Prostate Brachytherapy

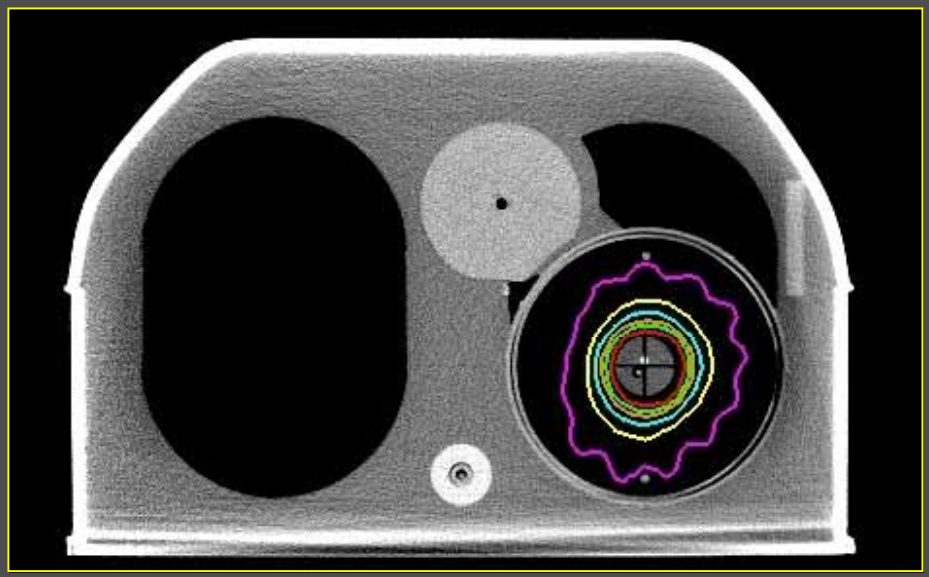


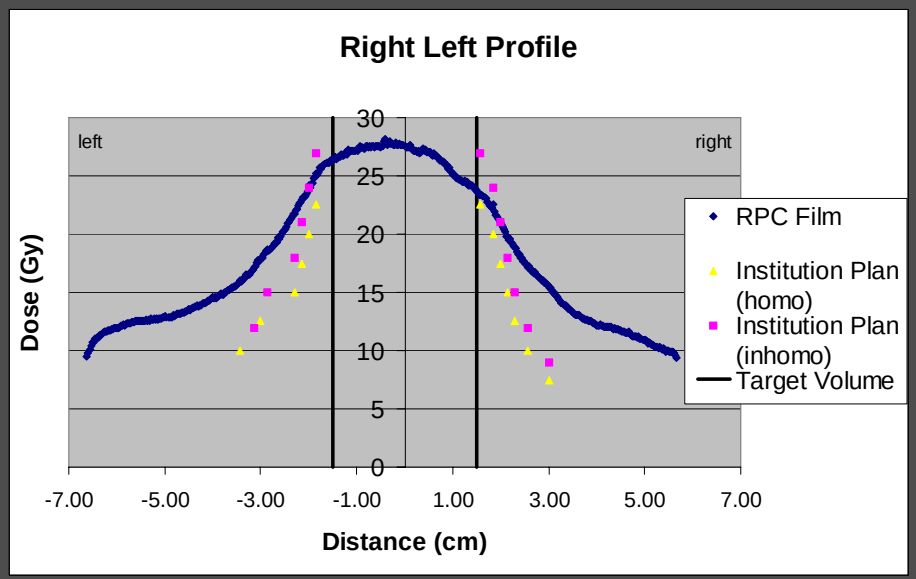
Credentialing Requirements:

- Complete Facility and Knowledge Assessment Questionnaires
- Benchmark Cases
  - Single Seed
  - Geometric arrangement of seeds
- Electronically submit patient case through ATC (clinical evaluation performed)

- 98-05 & P-0019
- P-0232
  - 64 credentials issued to 62 institutions
  - 23 Institutions credentialed
  - 33 Institutions have submitted dry run
  - 13 under analysis
- RPC web page lists seeds meeting AAPM prerequisites:
  - 13 ^{125}I seed models
  - 4 ^{103}Pd seed models

RTOG 0236 SBRT lung protocol

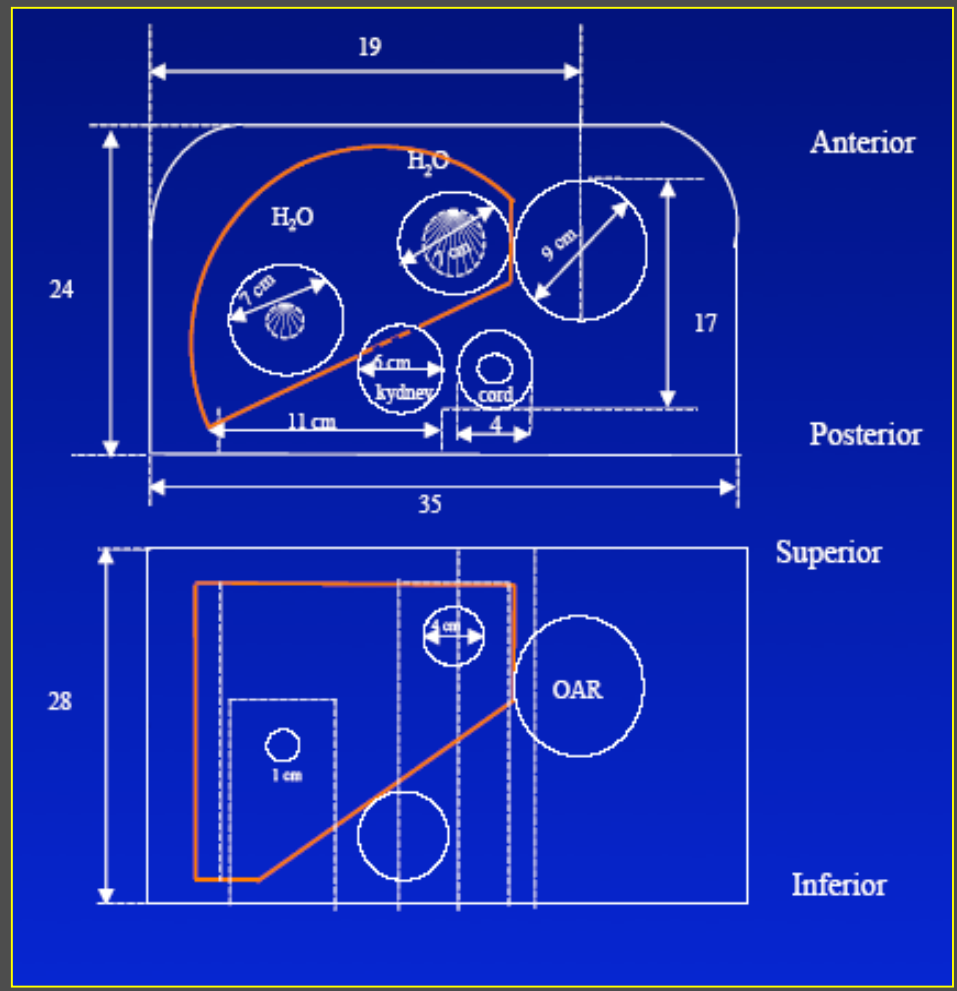




- 2 institutions have irradiated phantom
- criteria are being developed
- 6 more institutions have shown interest in protocol
- will have all or most credentialed by the time protocol opens this summer

RTOG 0245 liver

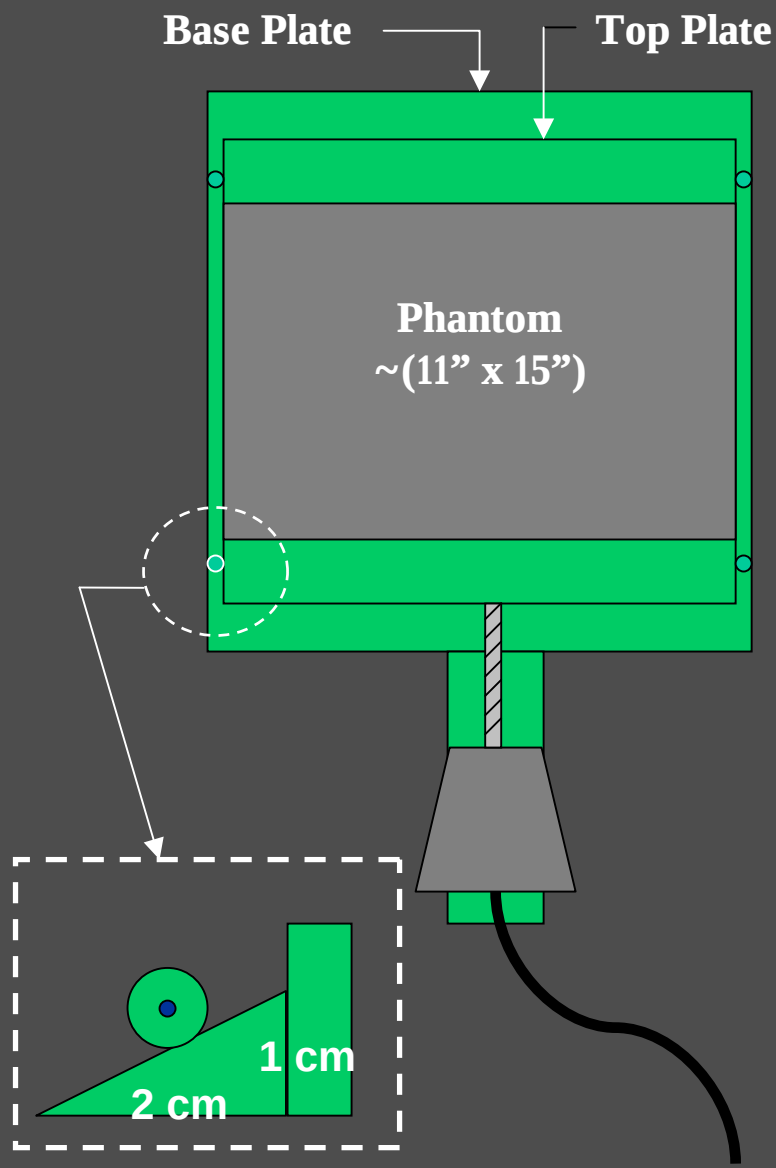
- proposed changes to the lung phantom to approximate liver anatomy
- phantom will be placed on a reciprocating table



Reciprocating Table

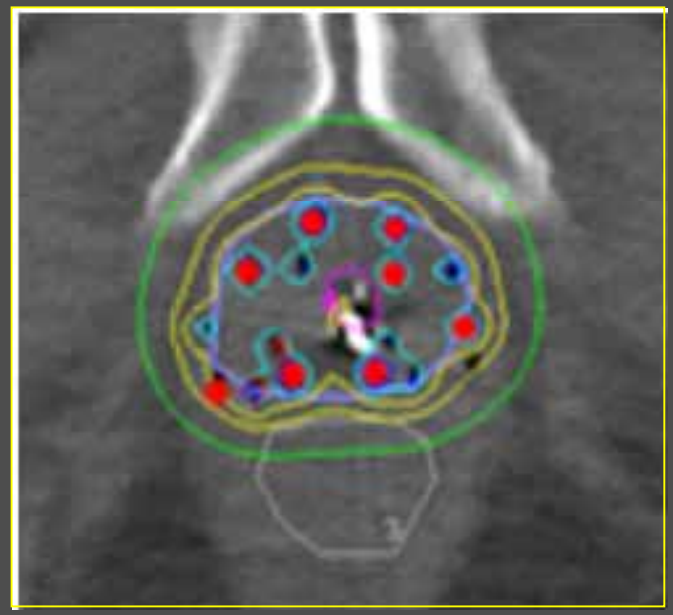
Developed for RTOG 0245

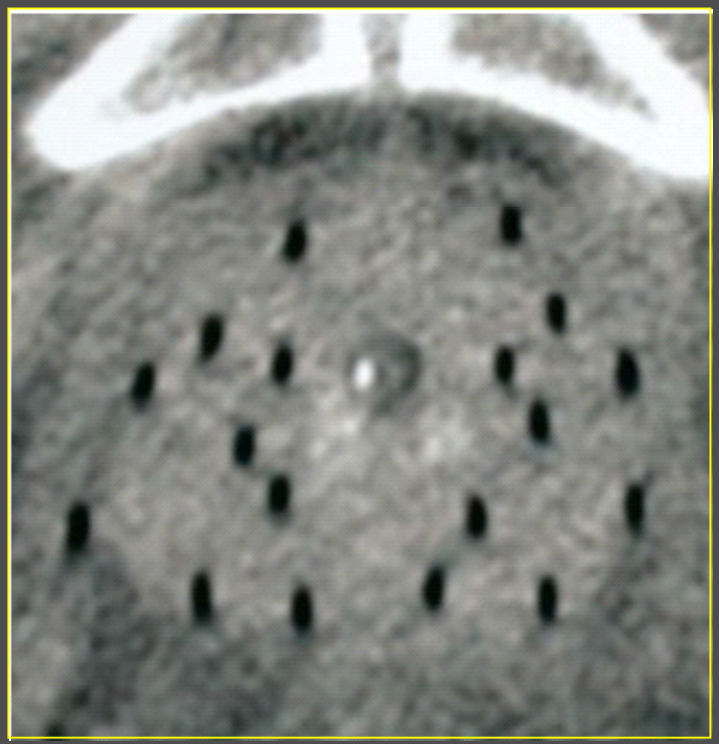
- Develop a two-part moveable plastic platform with movement in AP and SI planes via a programmable stepper motor
- Allow for placement of an external fiducial on the the chest wall
- Develop driver function to simulate typical free and breath hold patient breathing patterns



RTOG 0321 HDR

- RPC is preparing to conduct credentialing for this protocol
- electronic submission will be required (Nucletron noncompliant)





Credentialing requirements include:

- questionnaires
- dose distribution from single source
- dose distribution from multiple catheter geometry
- One patient case

NSABP/RTOG PBI credentialing

- MammoSite
- interstitial HDR
- 3D conformal

- DICOM CT data set will be provided
- Dry run will be electronically submitted

ATC Tools—RPC priorities for development

- Measuring tool in remote review tool software for phantom data analysis
- Dose matrix access for dose distribution analysis
- BrachySys (resolve bugs)
- Compliant HDR TPS for upcoming RTOG trials
- Ability of institutions to download DICOM objects to their TPS (electronic benchmarks)