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High Stakes Dosimetry:
Pushing the Limits with Prior Radiation

Presented to: AAMD 50th Annual Meeting

Presented by: Linnae Campbell MSHA, MS, CMD R.T. (R)(T)

June 18th, 2025

Objectives

Teamwork

- Discuss the importance of communication and safety for prior radiation cases.

Plan Optimization

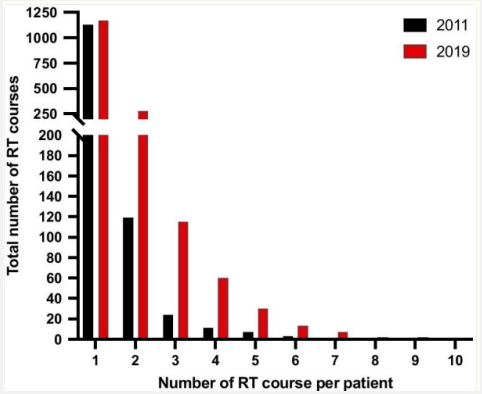
- Explore different ways to navigate prior radiation during treatment planning.

Documentation

- Understand the prior radiation treatment documentation.

Outline

Background



- Prior Radiation History & Experience
- Survey Says…
- Future of Prior Radiation

Setting Up For Success

Retreat:

☒ If area of previous treatment overlaps current course:

Nominal Max Dose: _____

Composite Max Dose: _____

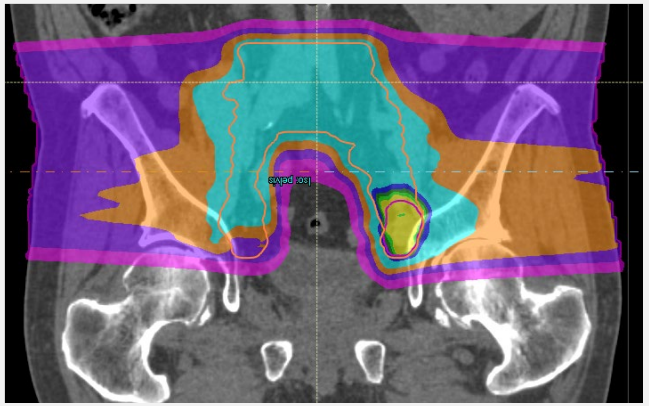
Special Directives concerning OARs in areas previously irradiated:

Assume 50% forgiveness of prior dose from 10 years ago. Keep composite dose to less than 105 Gy max dose, ureters to <80 Gy, V90Gy <2 cc, assuming 50% forgiveness of prior dose. I will also evaluate the composite without forgiveness. Prioritize GTV with robust coverage first. Okay to underdose CTV (outside of GTV coverage) as needed.

EQD2: *if known at this time, EQD2 evaluation order entered in Mosaiq* ☐

- Communication & Standardization
- Tools for Planning

Case Examples



- Pelvic Nodal
- Ribs
- Pubic Ramus

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Background

Why is prior radiation important moving into the future of the medical dosimetry profession?

Prior Radiation Cases Increasing

Review of Sebastian Christ et.al paper:

One Center's Patient Cohort-

Years: 2011-2019

Which Patients: Minimum of 5 treatment courses

Max number of courses: 10

Increased Incidence of 5+ courses:

0.9% in 2011

6.5% in 2019

Radiat Oncol. 2021 Oct 30;16:208. doi: 10.1186/s13014-021-01934-y

Long-term cancer survivors treated with multiple courses of repeat radiation therapy

Sebastian M Christ [1,✉], Maiwand Ahmadsei [1], Lotte Wilke [1], Anja Kühnis [1], Matea Pavic [1], Stephanie Tanadini-Lang [1], Matthias Guckenberger [1]

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PMCID: PMC8557578 PMID: 34717664

Prior Radiation Cases Stats

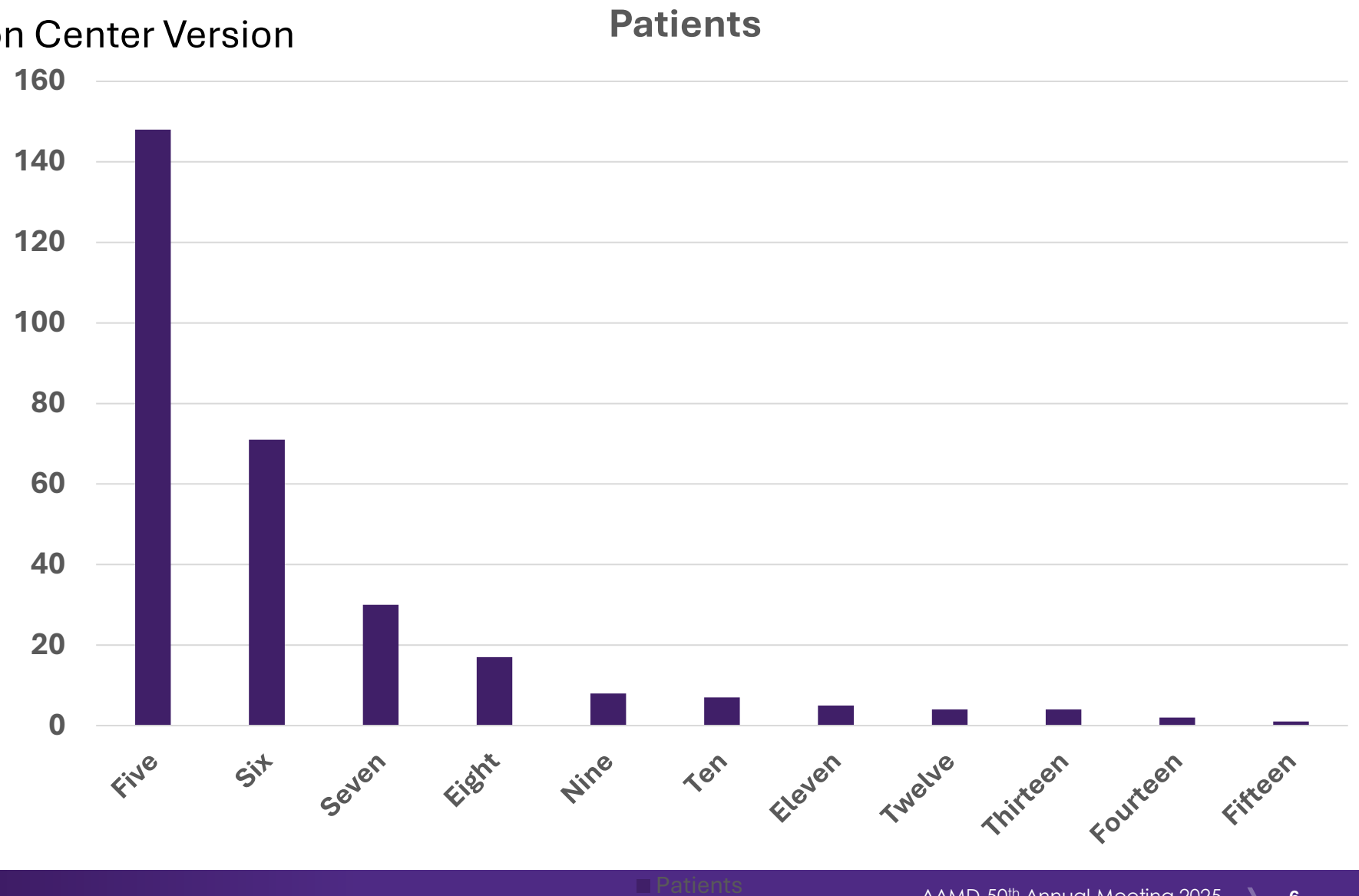
Northwestern WCC and Proton Center Version

Years: 2010-2025

Which Patients: Minimum of 5 treatment courses

Stats: 297 patients with 5+ courses*

1 patient with 15 courses



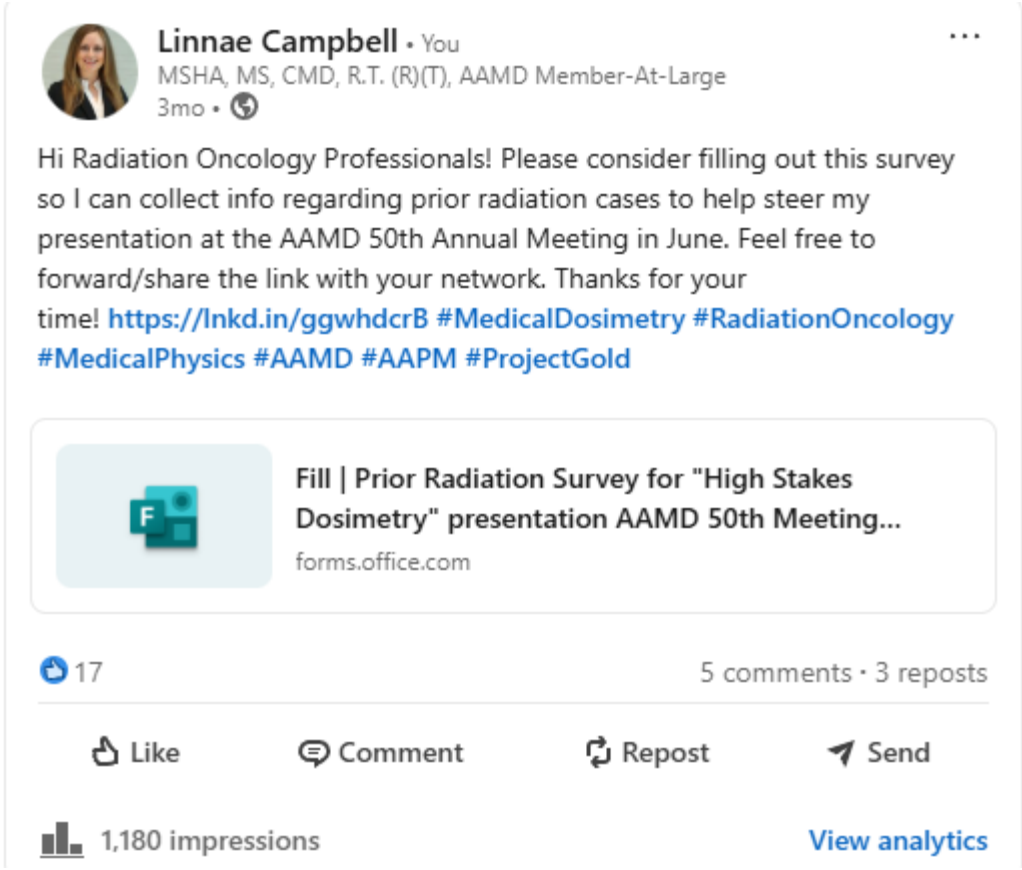
*MOSAIQ records shared with other centers in region/accuracy with course numbering

Survey Says…

Launched a survey on January 31, 2025

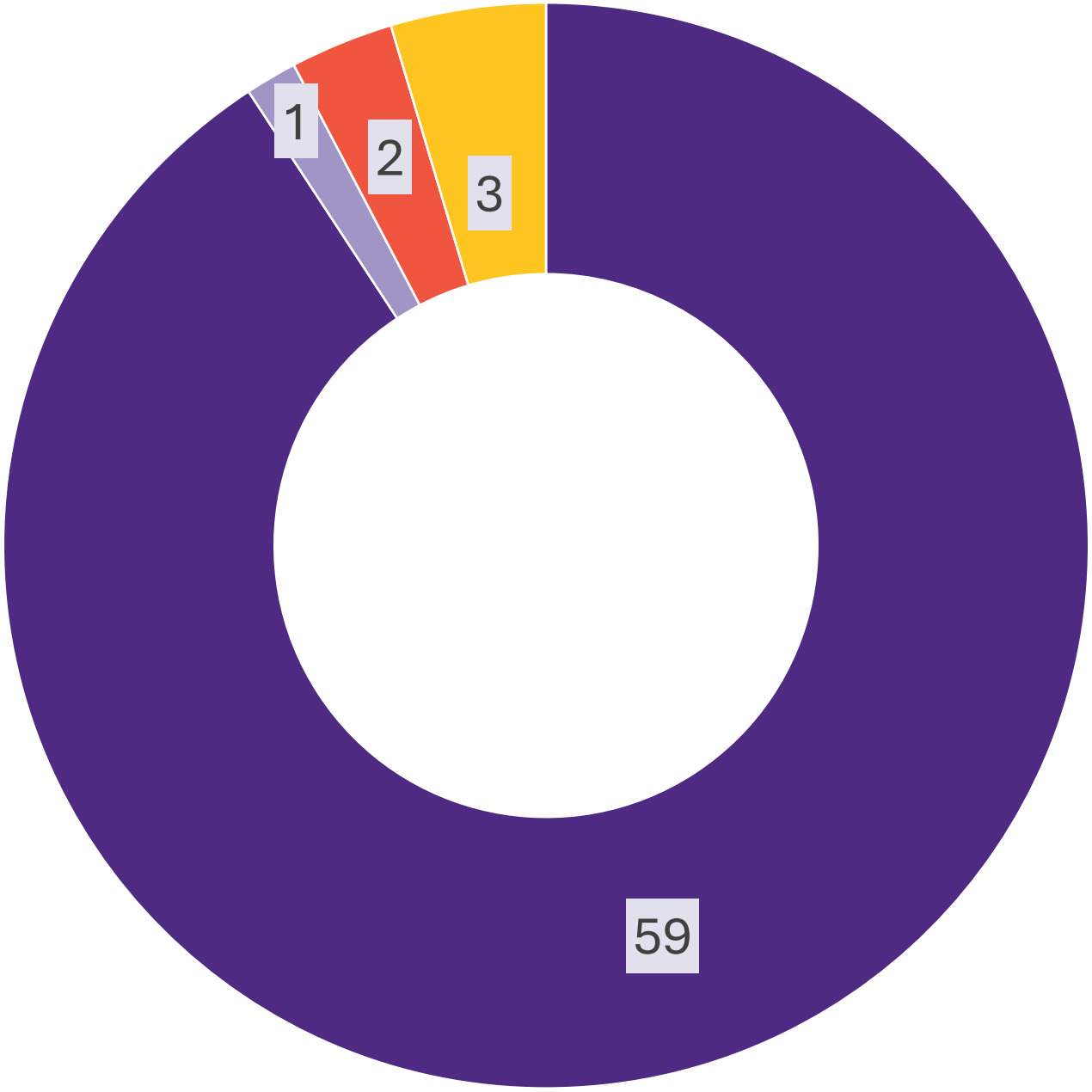
Why?

- What are we doing as a profession?
- What is important to participants?
- Virtual way to get audience participation!
  - We'll see some of these survey answers sprinkled throughout the presentation!



Who Took the Survey?

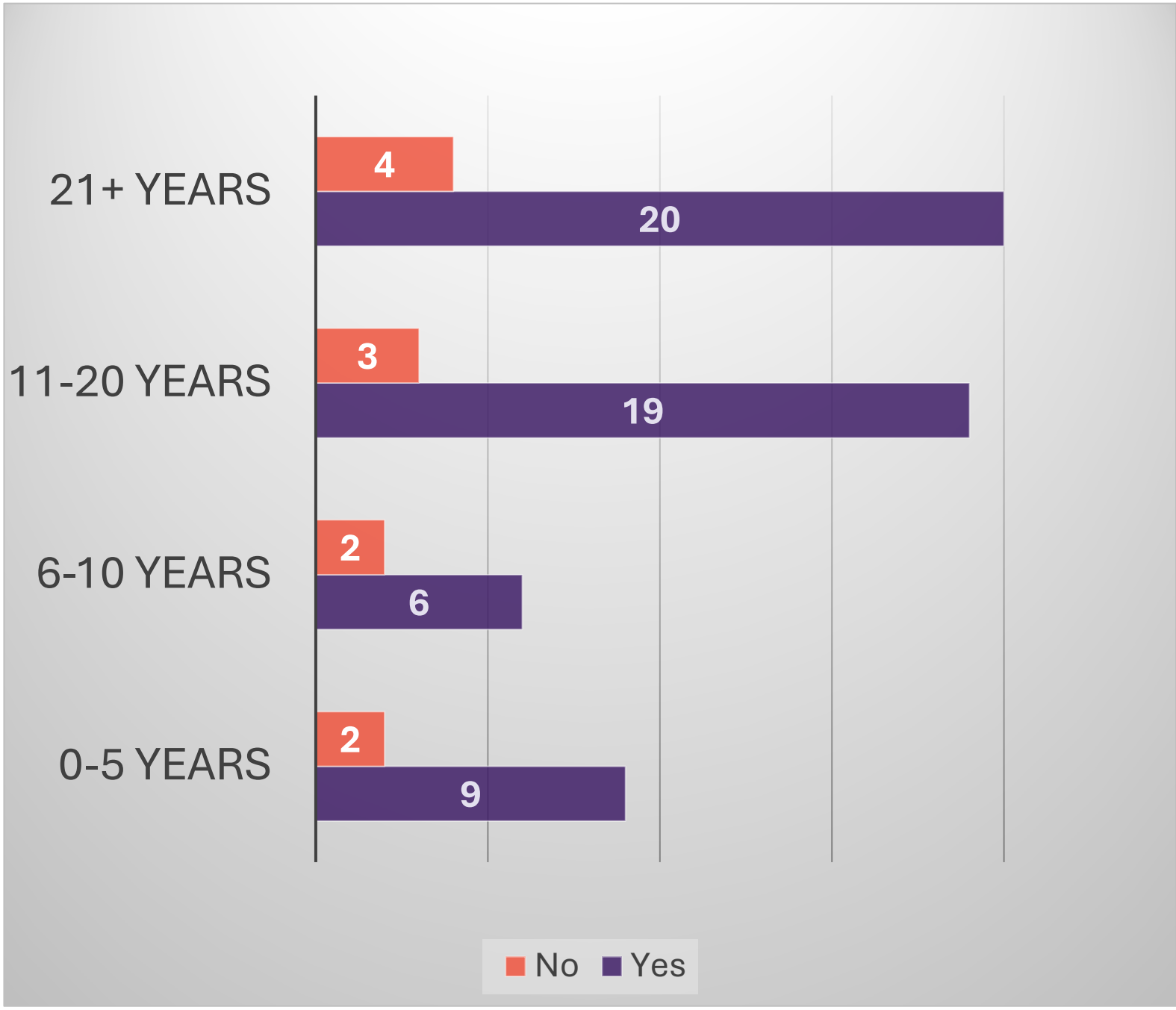
Target Audience: Medical Dosimetrists!



Experience & Perception-Survey

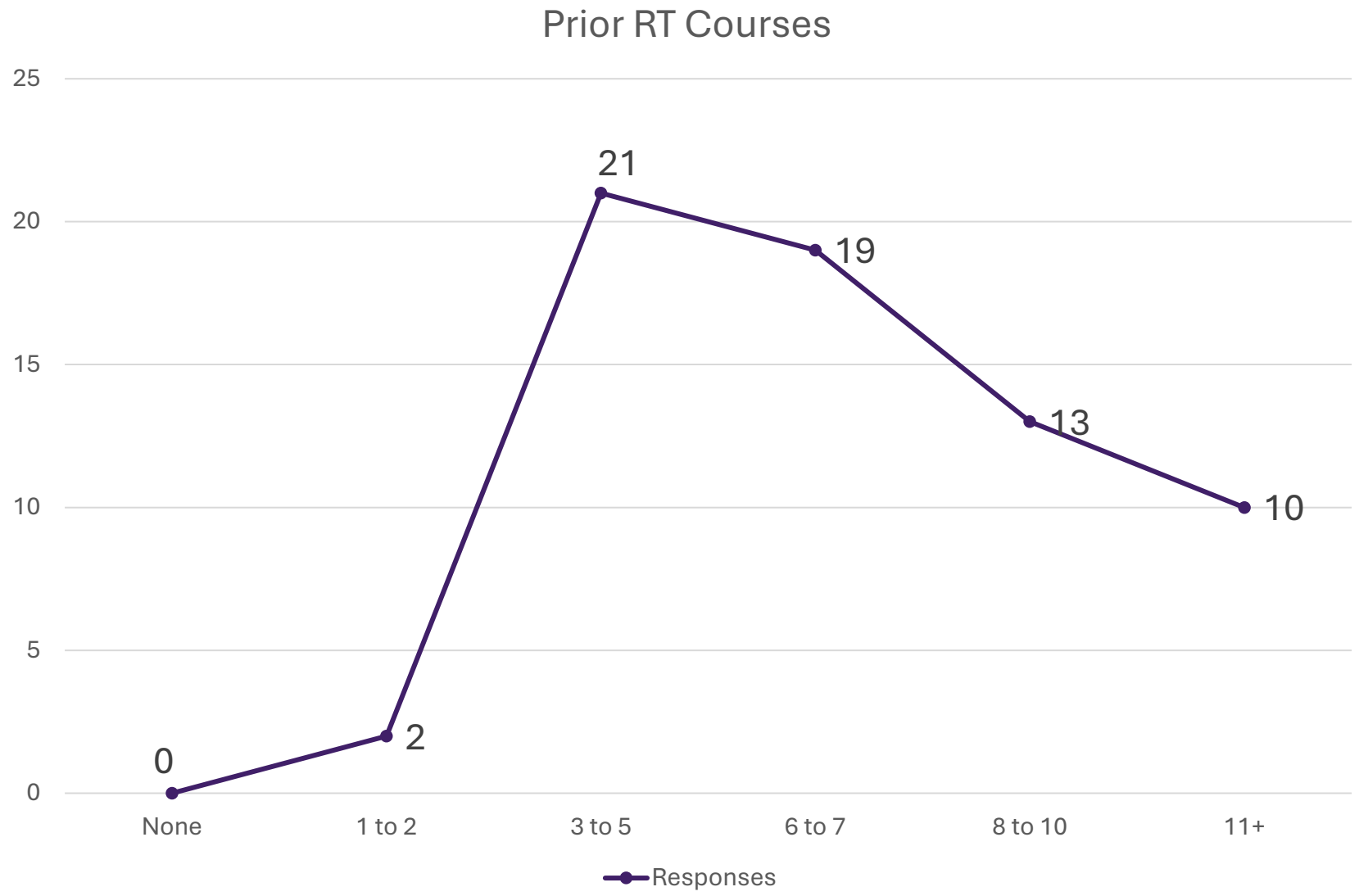
1. Years of Work in Radiation Oncology
2. Yes or No- Increase in Prior RT cases

Majority of experienced rad onc professionals surveyed saw an increase in prior RT cases.

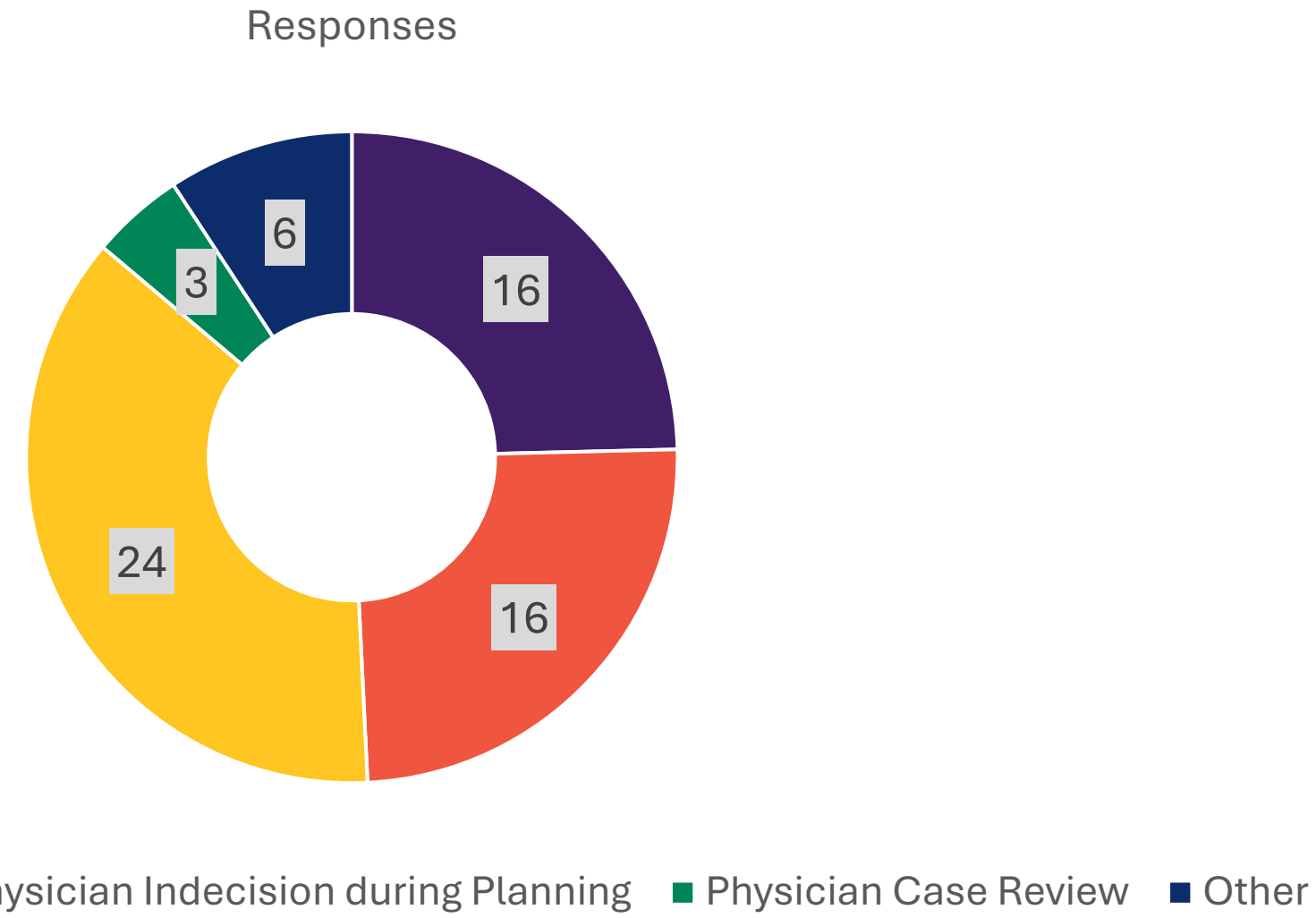


How Many Priors Have We Seen?

Survey Result

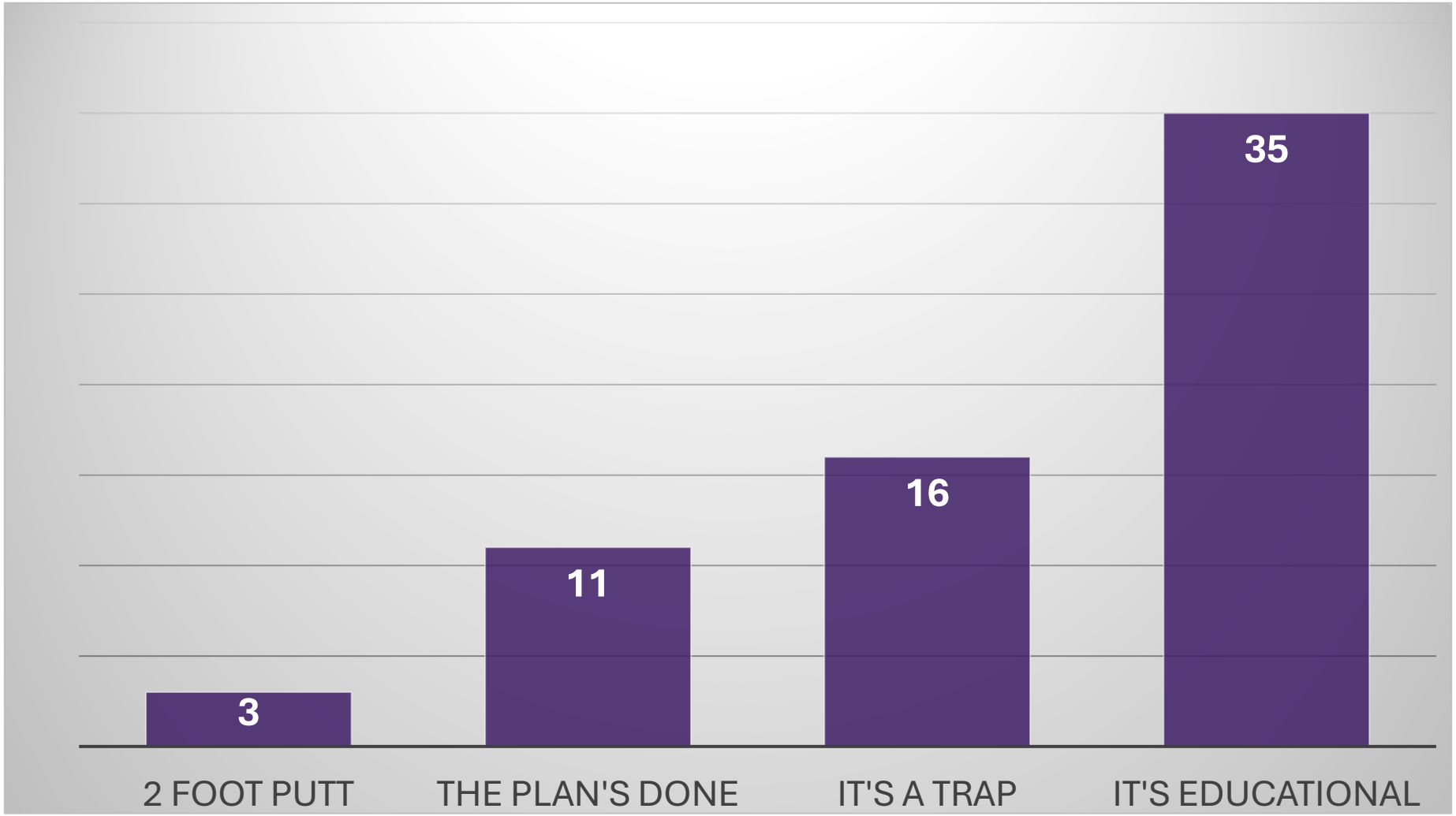


What's the Challenge with Prior RT?- Survey



Categorizing Prior Radiation Cases-Survey

NM Radiation Oncology Employee Inspired Version



Future of Prior Radiation Cases

What are we likely to encounter?

- **Balance of Treat or Not to Treat** (Toxicity)
- **“Challenges”:**
  - Which Patients to Treat
    - Long Term Survival Increase = Increase in Multiple Radiotherapy Courses
    - Potential for Increased Psychological Distress
  - Predicting Side Effects and Tumor Radiosensitivity
- **Site of treatment-determining factor of outcomes:**
  - Hematologic Toxicity
    - Infection, Fatigue, Increased Bleeding

ELSEVIER
Clinical and Translational Radiation Oncology
Volume 49, November 2024, 100871

Reirradiation – still navigating uncharted waters? ☆

Nicolaus Andratschke [a], Jonas Willmann [a], Ane L Appelt [b c], Madalyne Day [a], Camilla Kronborg [d], Mariangela Massaccesi [e], Mahmut Ozsahin [f], David Pasquier [g h], Primoz Petric [a], Oliver Riesterer [i], Dirk De Ruysscher [j], Joanne M Van der Velden [k], Matthias Guckenberger [a]

ELSEVIER
Clinical and Translational Radiation Oncology

Clin Transl Radiat Oncol. 2022 Mar 15;34:23–29. doi: 10.1016/j.ctro.2022.03.006

Quality-of-life and toxicity in cancer patients treated with multiple courses of radiation therapy

Maiwand Ahmadsei [a,*], Sebastian M Christ [a], Annina Seiler [a,b], Eugenia Vlaskou Badra [a], Jonas Willmann [a], Caroline Hertler [a,b], Matthias Guckenberger [a]

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PMCID: PMC8933336 PMID: 35313618

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Setting Up for Success

Communication & Standardization

What can we do within our organizations to prepare for prior radiation cases?

Key Component for Success is Communication

Acquiring Prior RT records

Completion Notes

DICOM Files

Clear Goals and Collaboration for the Treatment

Consultation of Patient/Consult Assessment

Complex Case Conference

Planning Directives

Teams-ing Physician

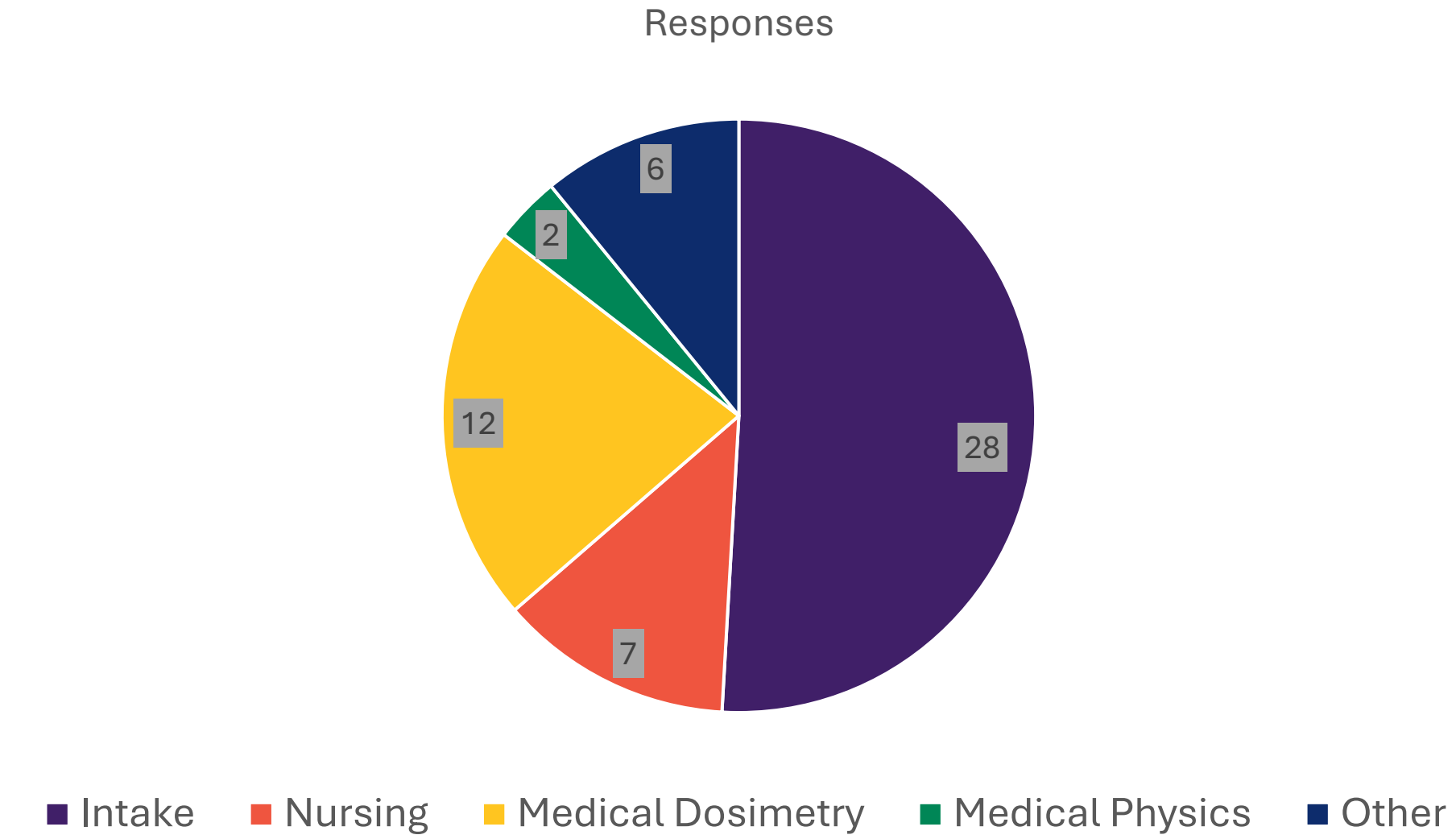
Documentation

Nominal Plan

Composite Plan

Explanation of Carving/Dosing of Organs at Risk/Targets

Acquiring Outside Prior Radiation Records-Survey



Prior Dose File Workflow

Intake

- Request
  - DICOM
  - Completion Note
  - Tx Rx Plan
- Pulls in Completion/PDFs

Dosimetry

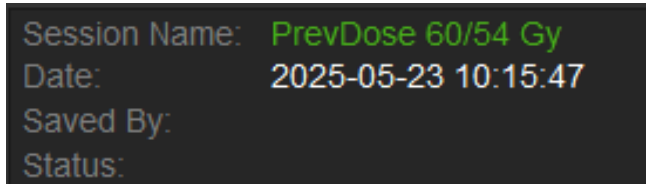
- Pulls in DICOM
- Creates Session
- References Completion Note
  - Cross-Check Dates

Follow-Up

- Notify Physician, Dosimetry Groups the Files are Available
- If Necessary:
  - Follow up with Contact at Outside Institution

Hi .

Hope all is well. Please see attached request for DICOM files along with the PDFs of the completion summary and treatment/prescription plan. Once all files are ready, I will supply the FTP link for the transfer. Appreciate the help!



Hi,

Dicom files have been placed in the a_intake folder. Please see below contact for any questions/issues.

PT

Planning Directives

What's included?

Rx and Dosimetry

- Combination Rx (photon and proton)
- Doses Entered and Verified
- Checklist/Organs at Risk Goals Templates for the Plan
- Favor Organ at Risk Dose vs. Target Coverage
- Target Margin (PTV)
- Suggested Beam Angles
- Additional Directives
- Rescans

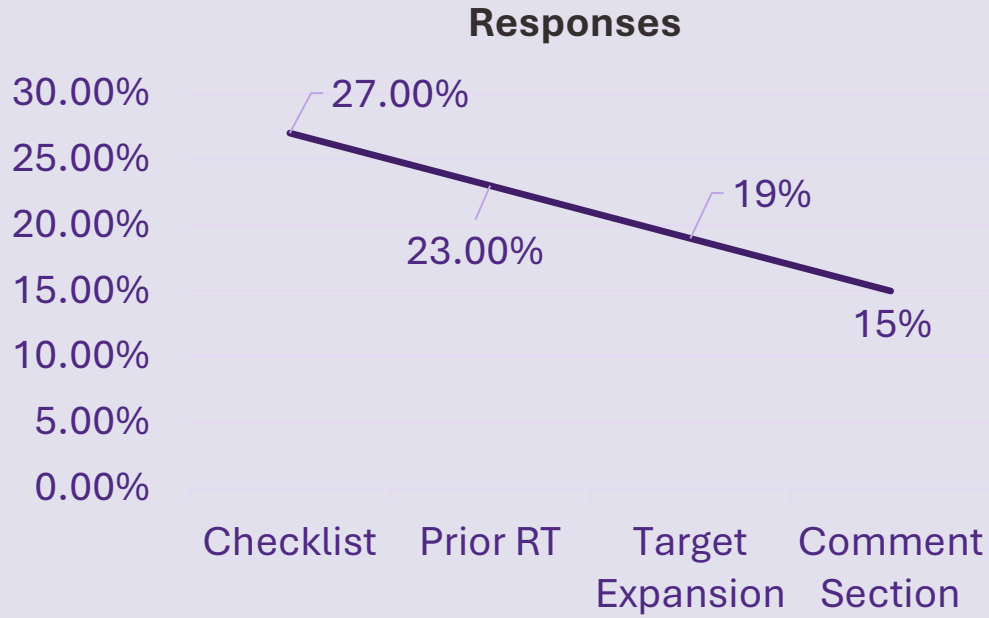
Prior RT:

- Mitigation of Prior RT (where)
- Nominal Max Dose
- Composite Max Dose
- Composite EQD2
- Composite Nominal Max Point Dose
- Carving out of certain organs

Timeframe

- Priority Level
- Iterative Planning Necessary

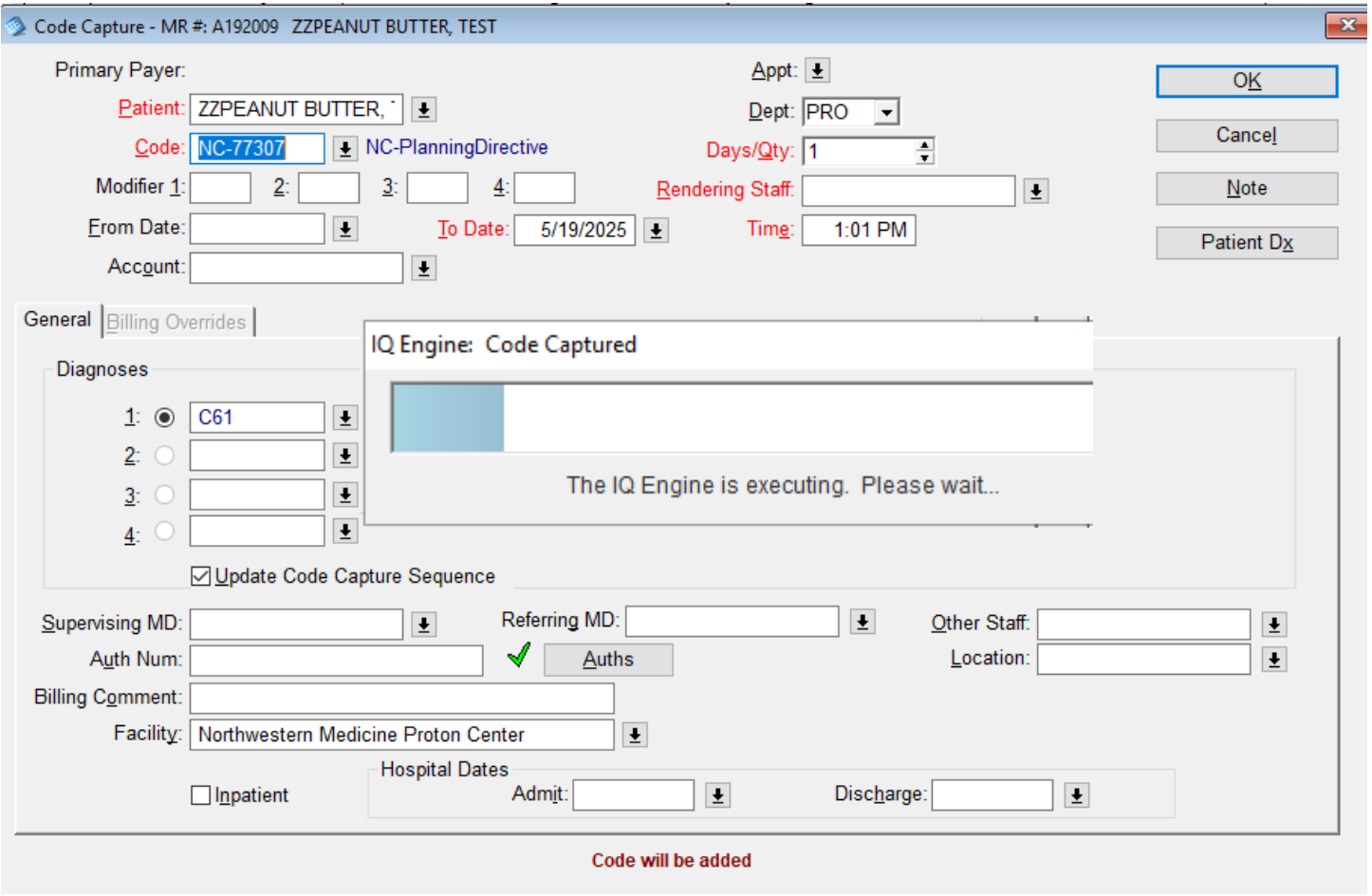
Survey



- 13% Do Not Have Written Planning Directives
  - 2020 AAMD Meeting-Explains Importance
- Other:
  - Varies Depending on Case
  - Reference Sources
  - Implantable Devices

Planning Directives

Automated



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Treatment Planning Directives

Date: May 19, 2025
Patient Name: Zzpeanut Butter, Test
Patient MRN:
Patient Date of Birth:
Attending Physician:
Diagnosis:

These planning directives are to be used as guidelines for creating the patient's treatment plan. The final treatment plan may differ based on input from physicians, physicists, and dosimetrists during the planning process, with approval by the physician.

Contour Peer Review:

☐ Contours were peer reviewed and appropriate feedback was taken into consideration (optional)

Timeframe:

☐ Priority Level 1: Expedited turnaround, medically specified start date of: _____
MD contours **must be completed within 24 hours of CT sim**

☐ Priority Level 2: Accelerated turnaround, requesting start on week of: _____

☐ Priority Level 3: Standard turnaround (4 days after plan export not to exceed 11 days past contour approval) or patient specific start date: _____

☐ Shared Photon/Proton patient:

- ☐ Requested Photon start date: _____
- ☐ Requested number of photon fractions: _____

☐ Iterative planning necessary (requires more MD availability for planning communication)

Prescription:

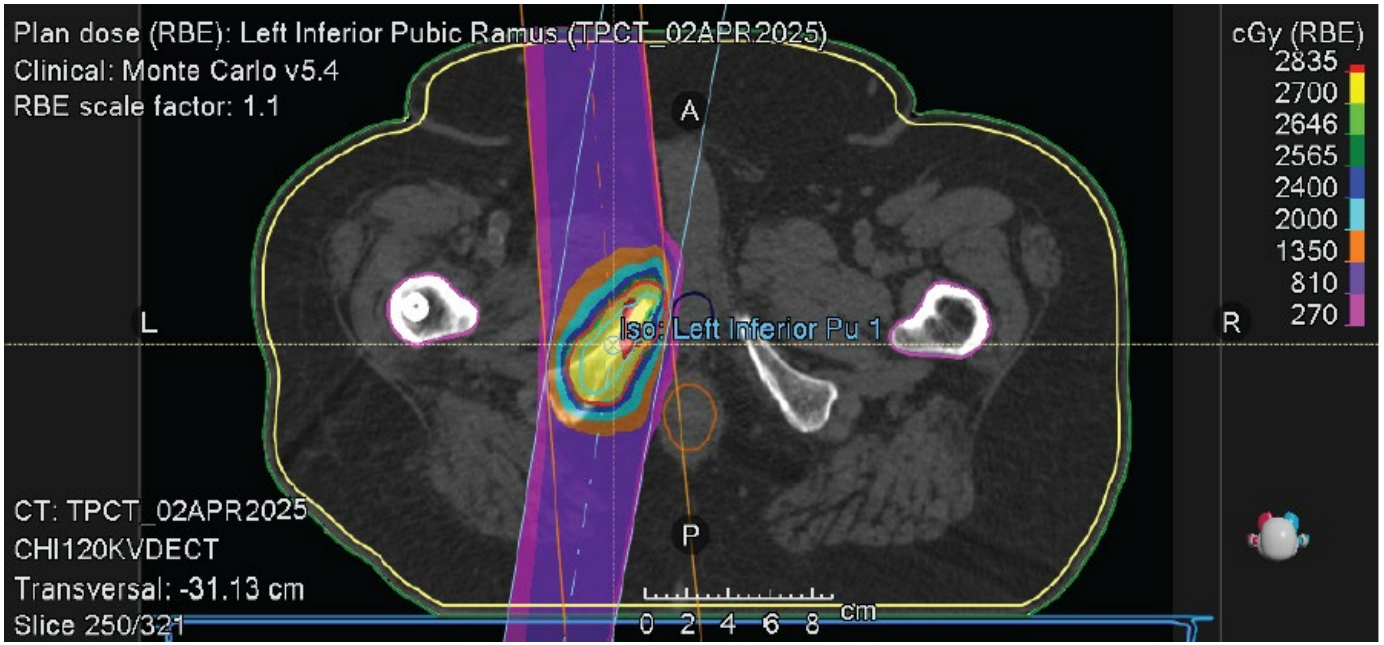
☐ Prescription(s) entered, doses verified, and target names in MIM match Rx (if shared patient, needs both photon & proton Rx)

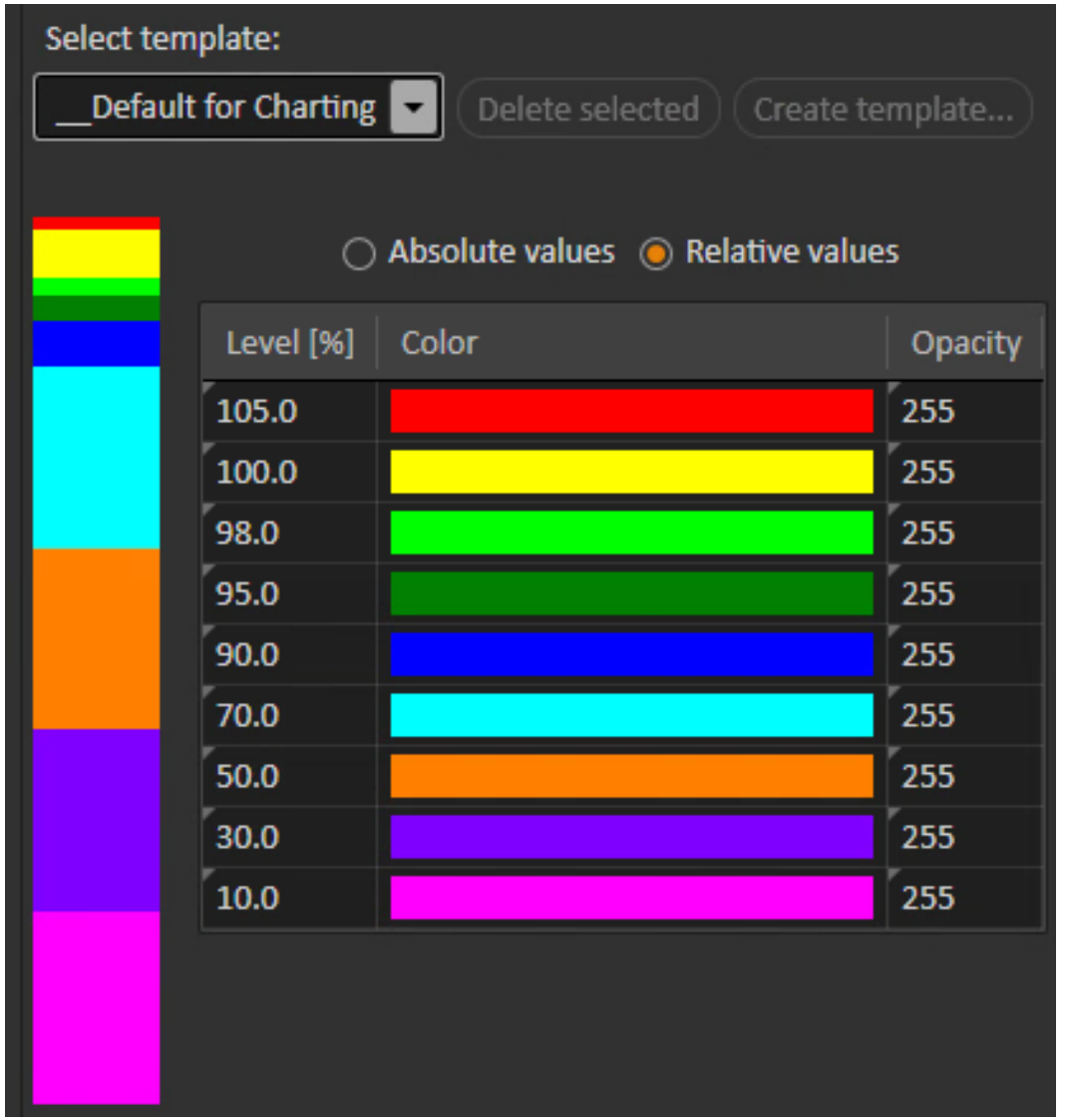
- ☐ Boost prescription(s) entered and doses verified

Default Colors for Charting

Standardized Colors for Charting

Streamline Look of Charts



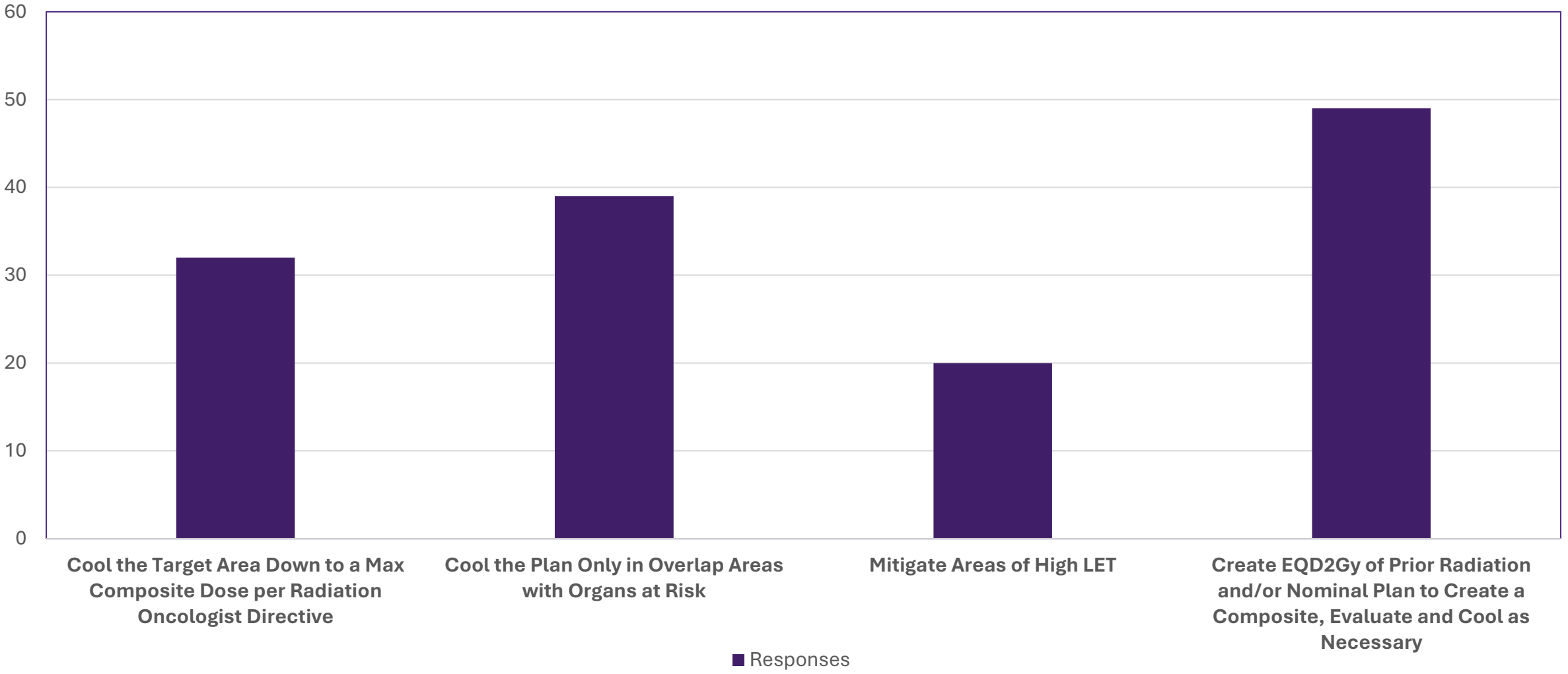


Tools for Planning

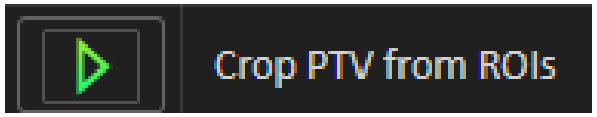
What can be automated, to focus more time on plan complexities?

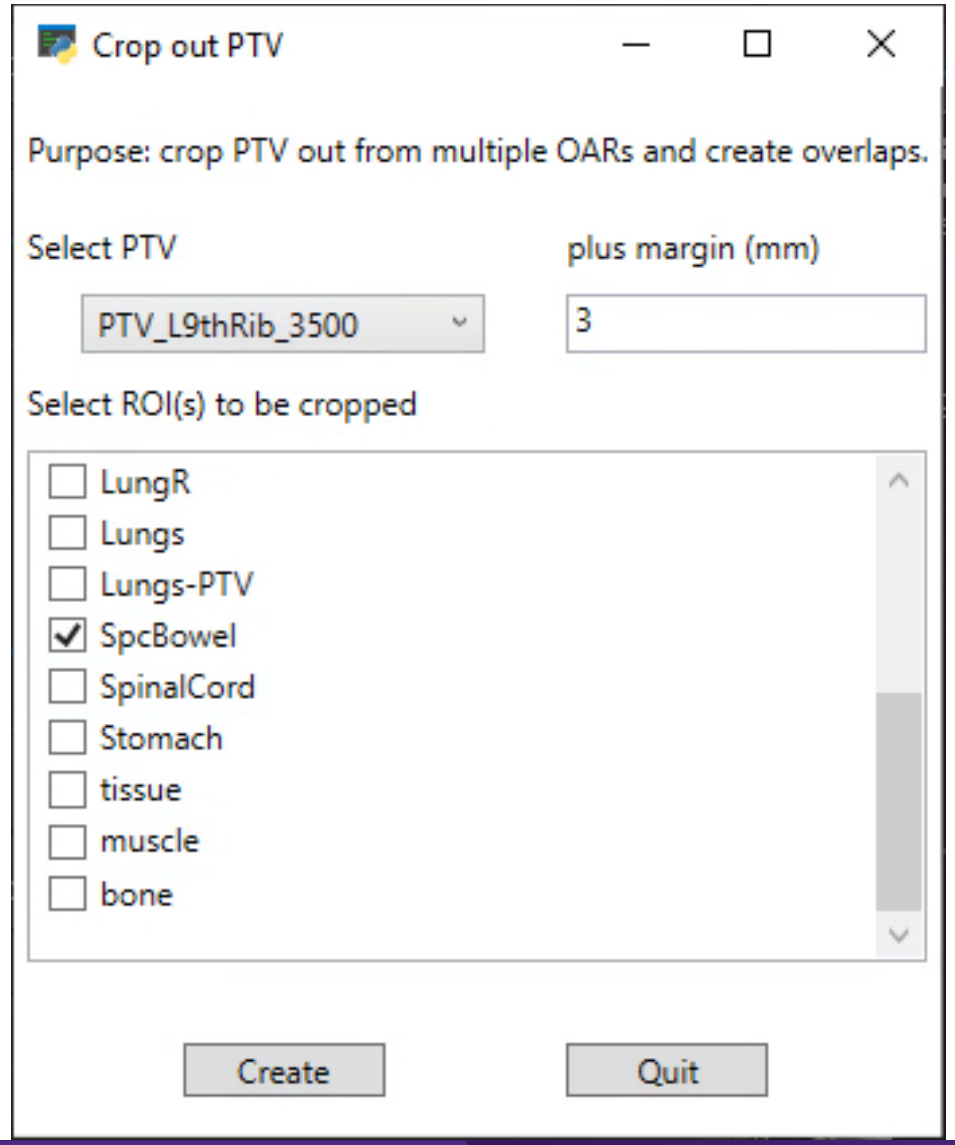
Mitigating Prior Radiation Survey

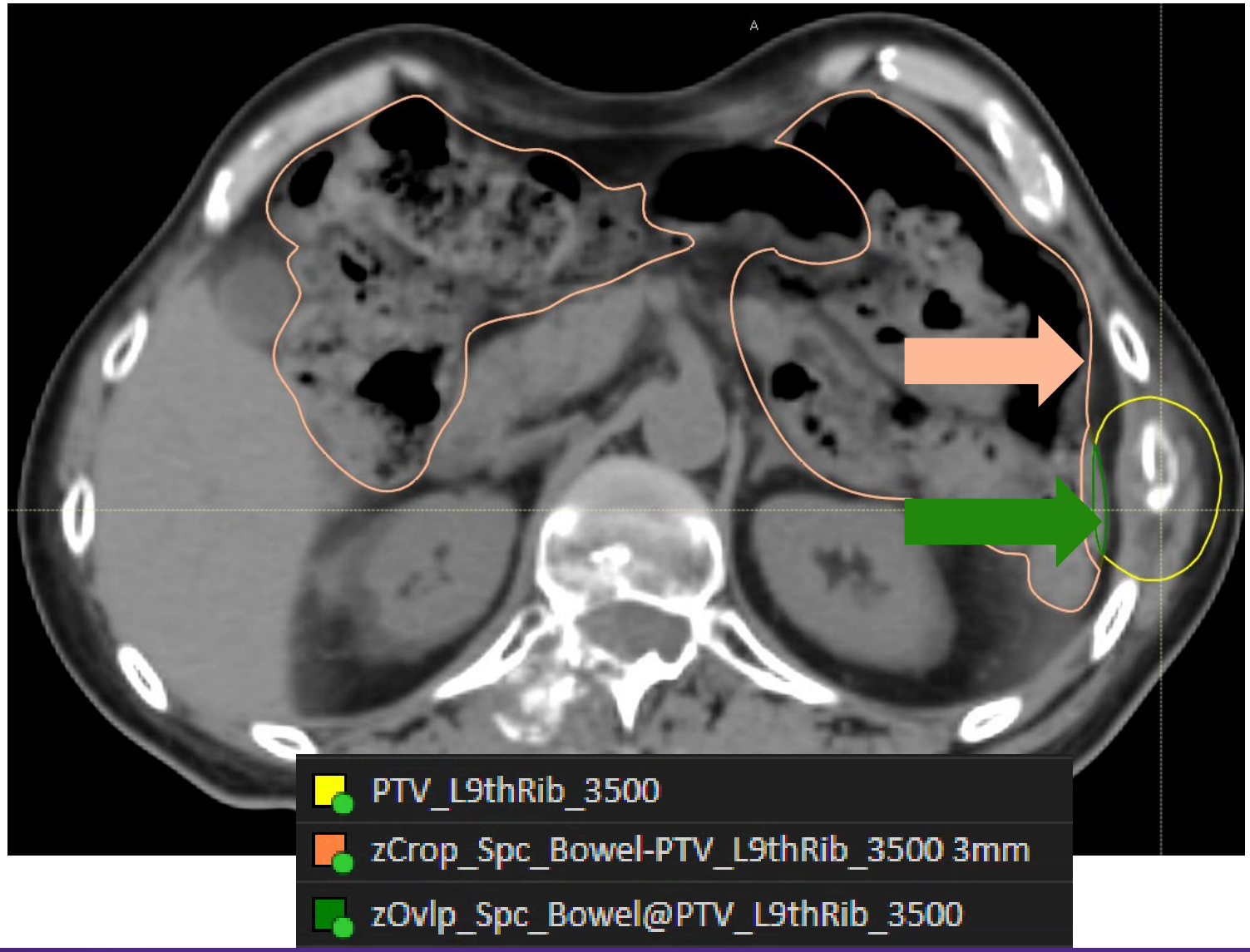
If prior treatment overlaps the new treatment site, what might your organization do to mitigate?



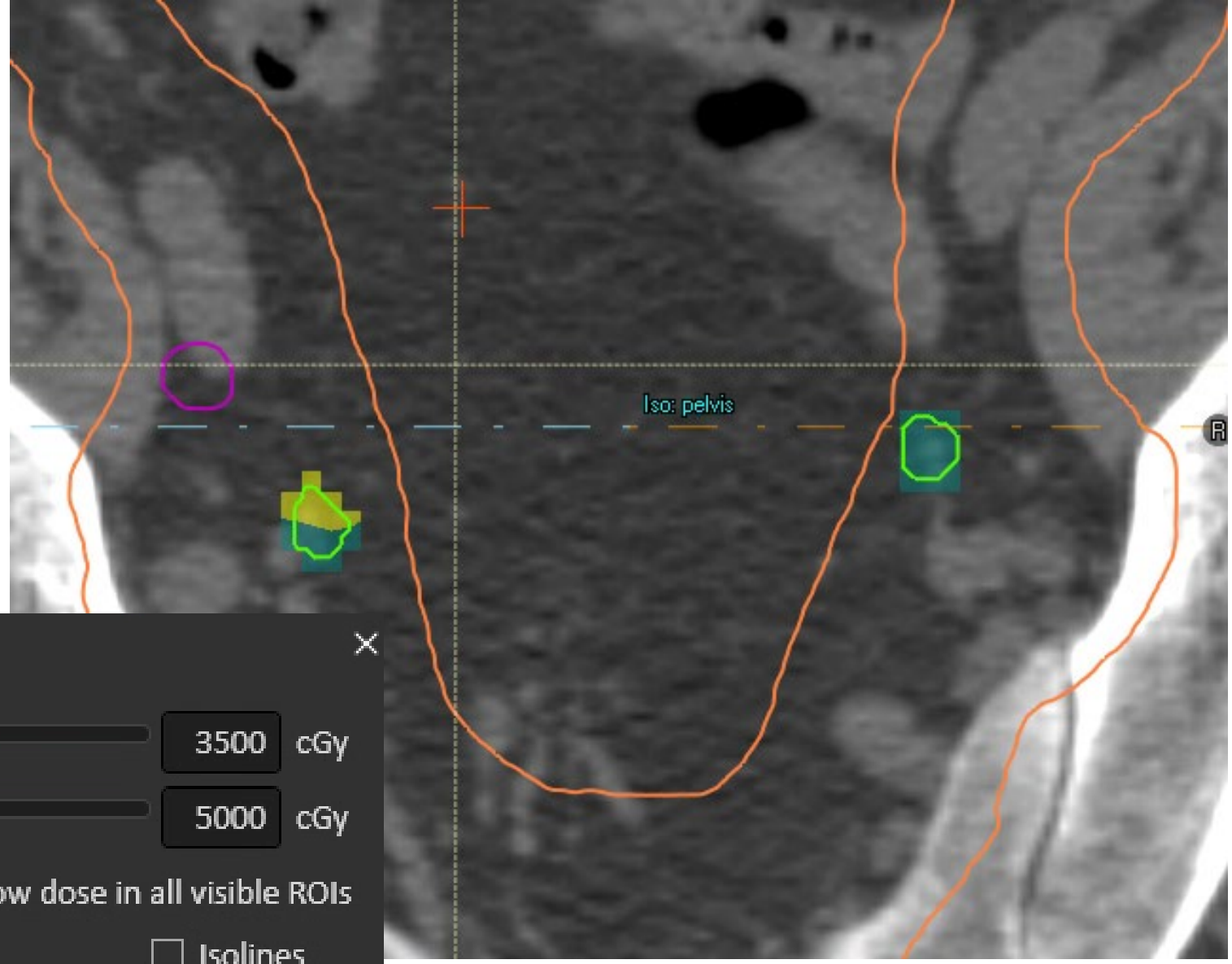
Overlapping Organs at Risk with Target







Dose Evaluation



Show dose above: 3500 cGy

Show dose below: 5000 cGy

Show dose in: Ureters

Show dose in all visible ROIs

Color mode: Color table Blue/orange

Isolines

ROI volume threshold: 0

ROI from Dose

Nominal Composite Functions

Utilize For:

Nominal or Composite Plans

Dose within Organs at Risk

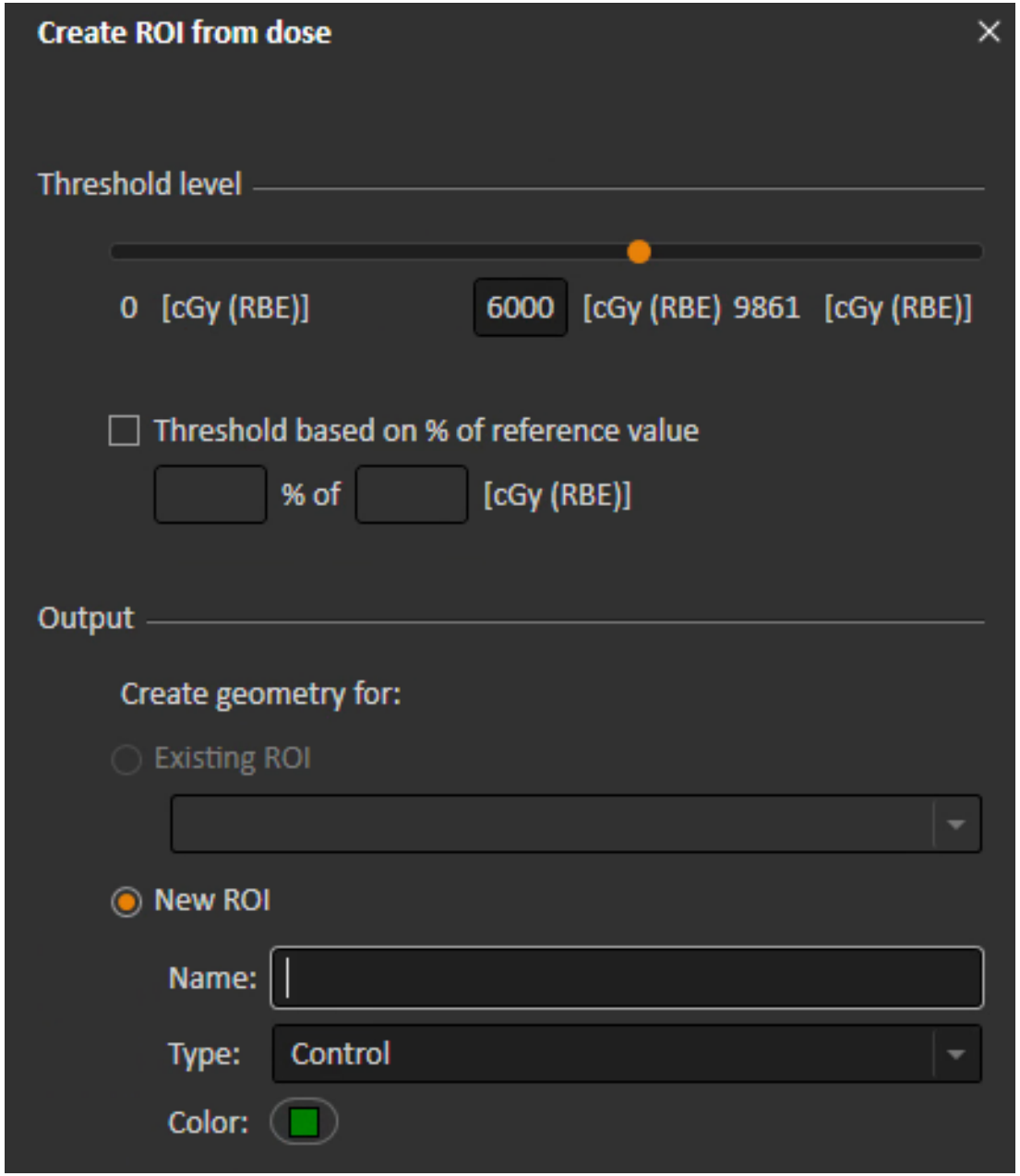
Max Point Doses

Tip:

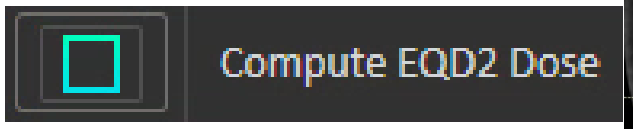
Go Under Max Dose Threshold

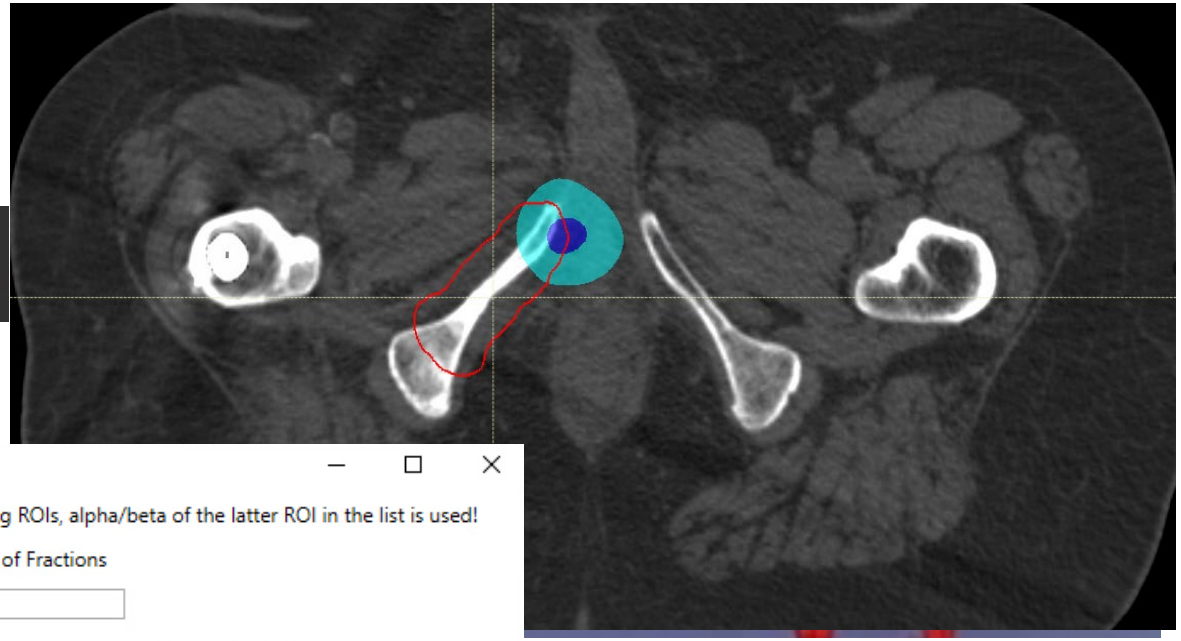
Or

Utilize Boolean Feature and Make Organ at Risk with Margin



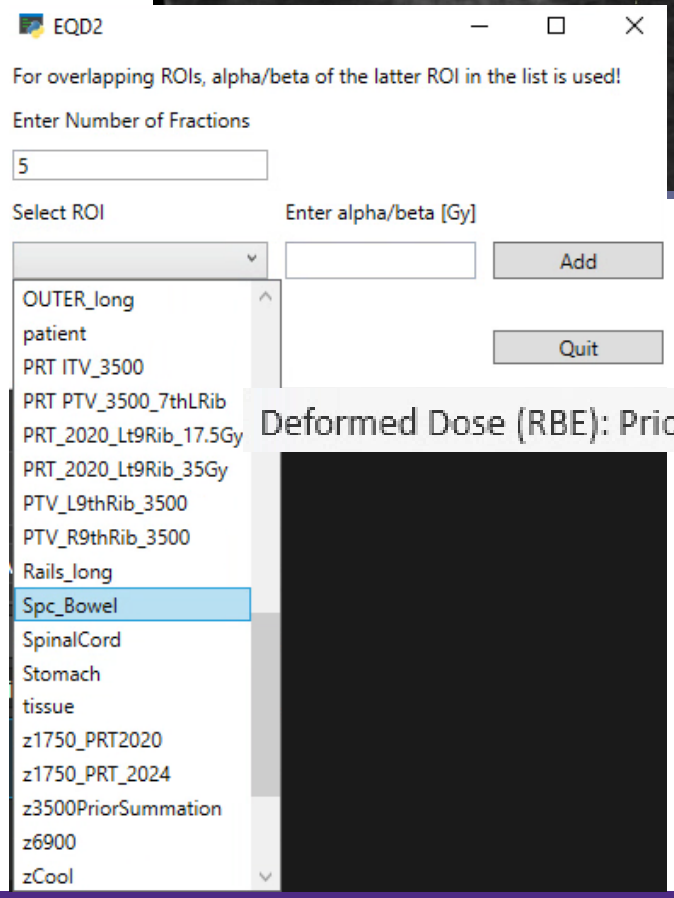
Scripting for EQD2





Structure Legend:

Tissue	Requested α/β ratio	α/β ratio (Gy) Reference
Brain		2*
Brainstem		2
Spinal Cord		2*
Cauda Equina		2
Nerve plexus		3-4*
Lung		2-4*
Heart		2-3*
Kidney		2-3*
Liver		3*
Bladder		5-10*
Oral mucosa		10*
Small intestine		3-4*
Colon		3-4*
Rectum		3-4*
Skin Desquamation		10-12*
Skin Fibrosis		2-3*
Skin Telangiectasia		3-4*
Proximal bronchial tree		3
Pulmonary Vessels		3
Aorta		3
Unspecified Tissue	3	3

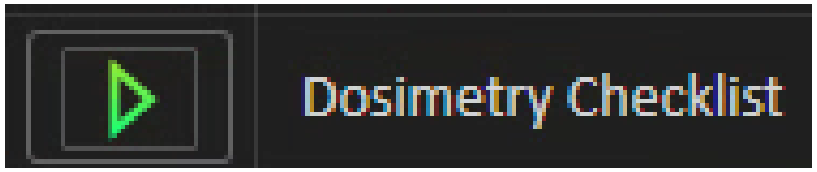


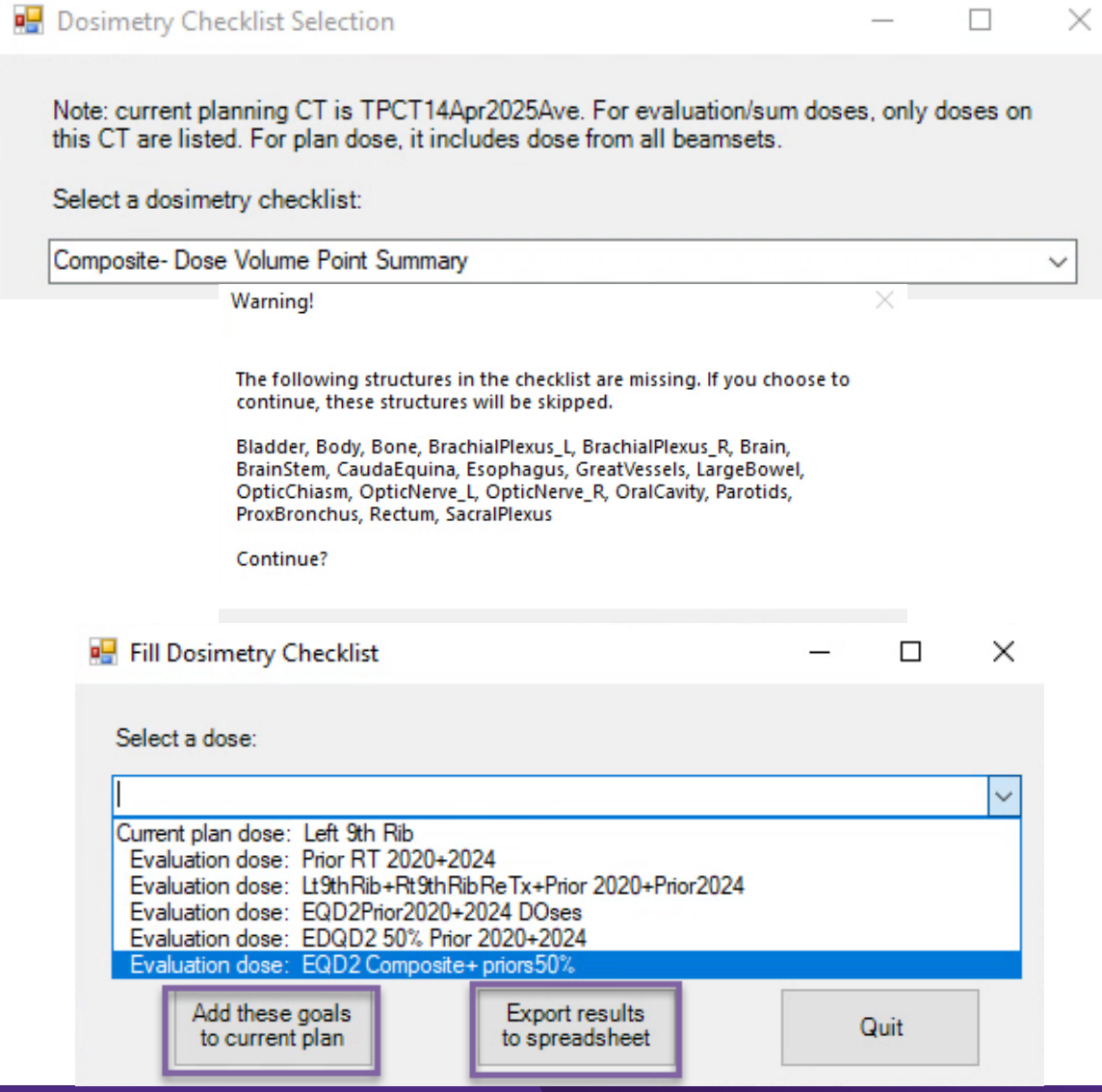
RBE EQD2 Sum Prior ONLY Bladder 10

Deformed Dose (RBE): PriorRT_2023_Left Hip PA 10Gy/5fx ¤ EQD2

(Bladder10.0 BowelCavity4

Documenting Composite Checklists





Plan Structure	Parameter	Result	Plan Value	Objective	Minor Deviation	Major Deviation	Comments
Duodenum	D0.03cc		0.88 GyRBE				
Heart	Mean		0.03 GyRBE				
Heart	D1cc		0.10 GyRBE				
Heart	V50		0.00%				
Heart	V70		0.00%				
Kidneys	Mean		0.82 GyRBE				
Kidneys	V20		0.00%				
Kidneys	V28		0.00%				
Liver	Mean		0.10 GyRBE				
Liver	V30		0.00%				
Liver	V50		0.00%				
Lungs	V20		0.00%				
Lungs	Mean		0.02 GyRBE				
Lungs	V50		0.00%				
Lungs	V30		0.00%				
Spc_Bowel	V15		8.77%				
Spc_Bowel	V35		2.49%				
Spc_Bowel	V45		1.00%				
SpinalCord	D0.03cc		0.60 GyRBE				
SpinalCord	V50		0.00%				
SpinalCord	V60		0.00%				
Stomach	Mean		0.34 GyRBE				
Stomach	V65		0.00%				
Spc_Bowel	D0.03cc	Flag	78.34 GyRBE	<70.00 GyRBE			Added per MD
Spc_Bowel	D0.03cc	Flag	78.34 GyRBE	<38.00 GyRBE			Added per MD

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Case Examples

Pelvic Nodal Case Example

Prior Prostate Radiation with New Treatment to Pelvic Nodes

Pelvic Nodes-Prior Prostate

Prior RT: In-House Prior Treatment

2013

Prescription: 1.8 x 30fx= 54.0 GyRBE

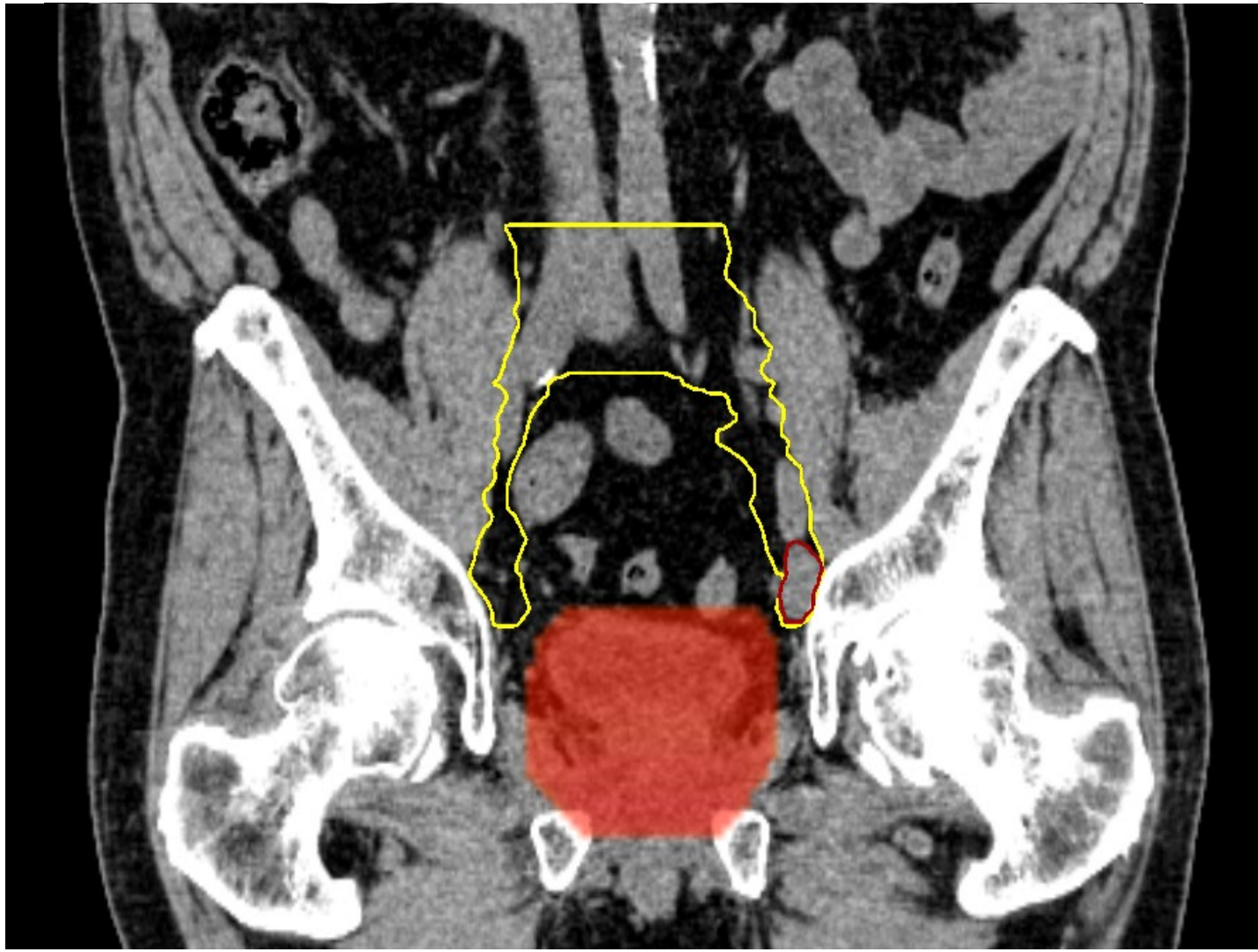
1.8 x 14fx= 25.2 GyRBE

Total: 79.2 GyRBE

Impression: PET showing pelvic nodal recurrence.

Chemo: ADT

Pelvic Nodal Rx: 62.5/50 GyRBE in 25 Fractions



Fusion Prep

Precursor Appts: 10 year follow up, PSA check, followed by PET scan

Pre-Consult Prep: Physician wanted to see the prior dose on the new PET/CT scan.

Physician Delineation: Ureters and the PET Avid Node

Importing to TPS:

Rigid + Deformable Fusion Options

Bowel View Side by Side

Plan Directives

Prescription:

☒ Prescription entered and doses verified

☒ Boost prescription(s) entered and doses verified

Timeframe:

☐ Priority Level 1: Expedited turnaround, medically specified start date of: _____
MD contours **must be completed within 24 hours of CT sim**

☐ Priority Level 2: Accelerated turnaround, requesting start on week of: _____

☒ Priority Level 3: Standard turnaround (4 days after plan export not to exceed 11 days past contour approval) or patient specific start date: _____

☒ Iterative planning necessary (requires more MD availability for planning communication)

Dosimetry:

Preferred Treatment Position: Supine

PTV Margin: Select One nodes only 7mm

☐ MD created Opti volume for optimization only

Suggested Beam Angles: Laterals _____

Target Coverage: Favor OAR Sparing

OARs to Spare: See notes on composite dose below

Dosimetry Checklist: Prostate Non-Protocol

Retreat:

☒ If area of previous treatment overlaps current course:

Nominal Max Dose: _____

Composite Max Dose: _____

Special Directives concerning OARs in areas previously irradiated:

Assume 50% forgiveness of prior dose from 10 years ago. Keep composite dose to less than 105 Gy max dose, ureters to <80 Gy, V90Gy <2 cc, assuming 50% forgiveness of prior dose. I will also evaluate the composite without forgiveness. Prioritize GTV with robust coverage first. Okay to underdose CTV (outside of GTV coverage) as needed.

EQD2: *if known at this time, EQD2 evaluation order entered in Mosaiq* ☐

Physics:

Special Physics Consult needed to:

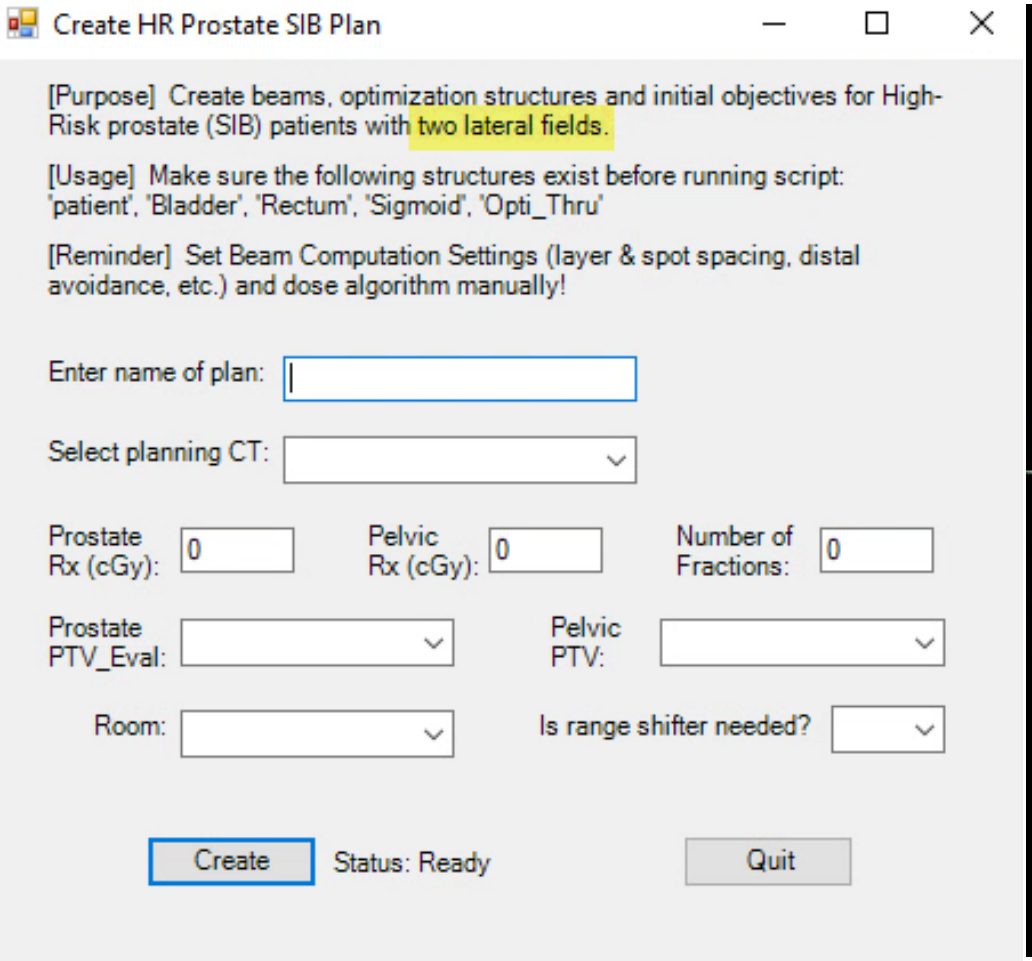
☒ **Previous Tx:** Analyze the current planned and previously treated radiation fields to assess cumulative radiation doses to organs at risk

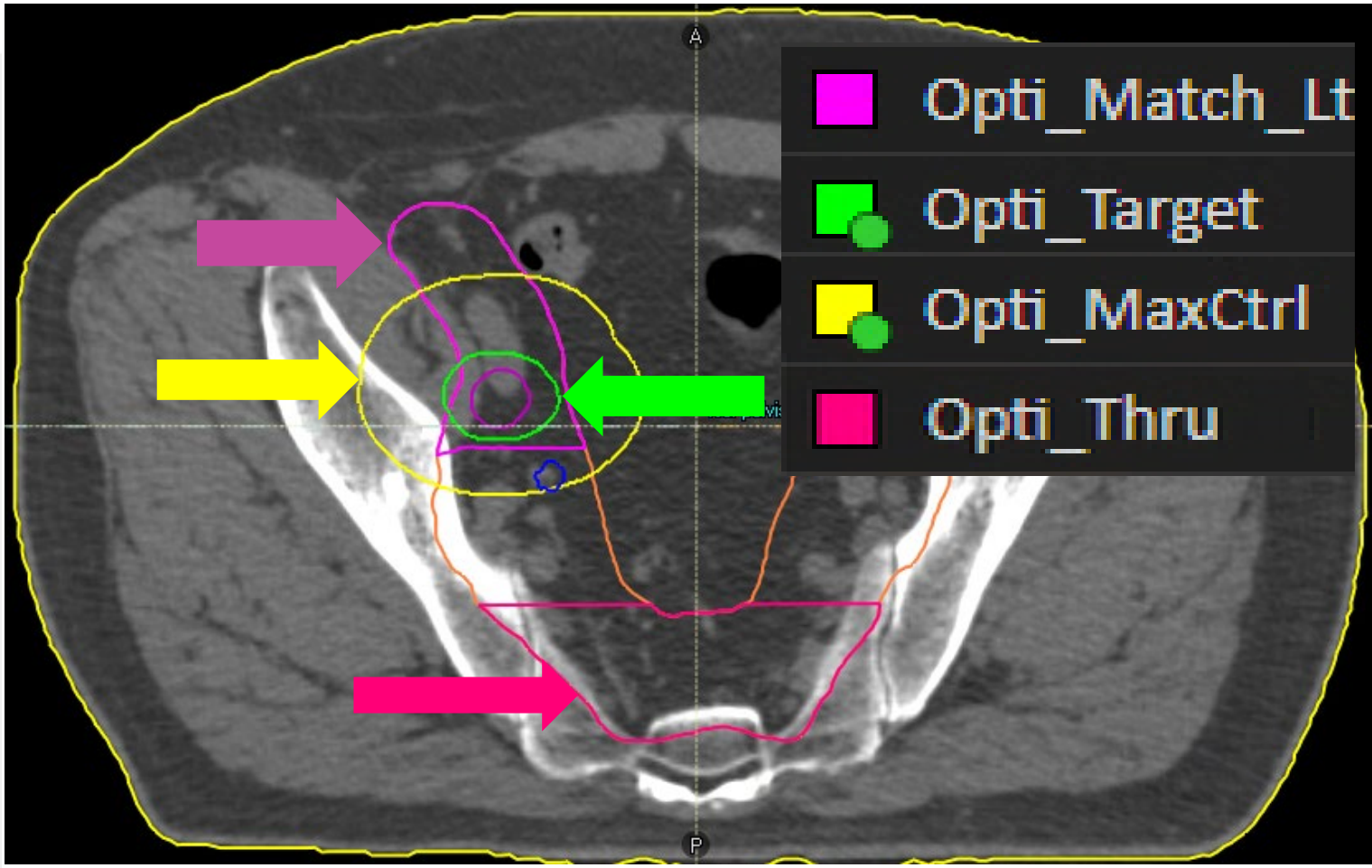
Plan Creation

Don’t Reinvent the Wheel

No.		Name	Description
1		C	G90T0 RLAT
2		D	G90T180 LLAT

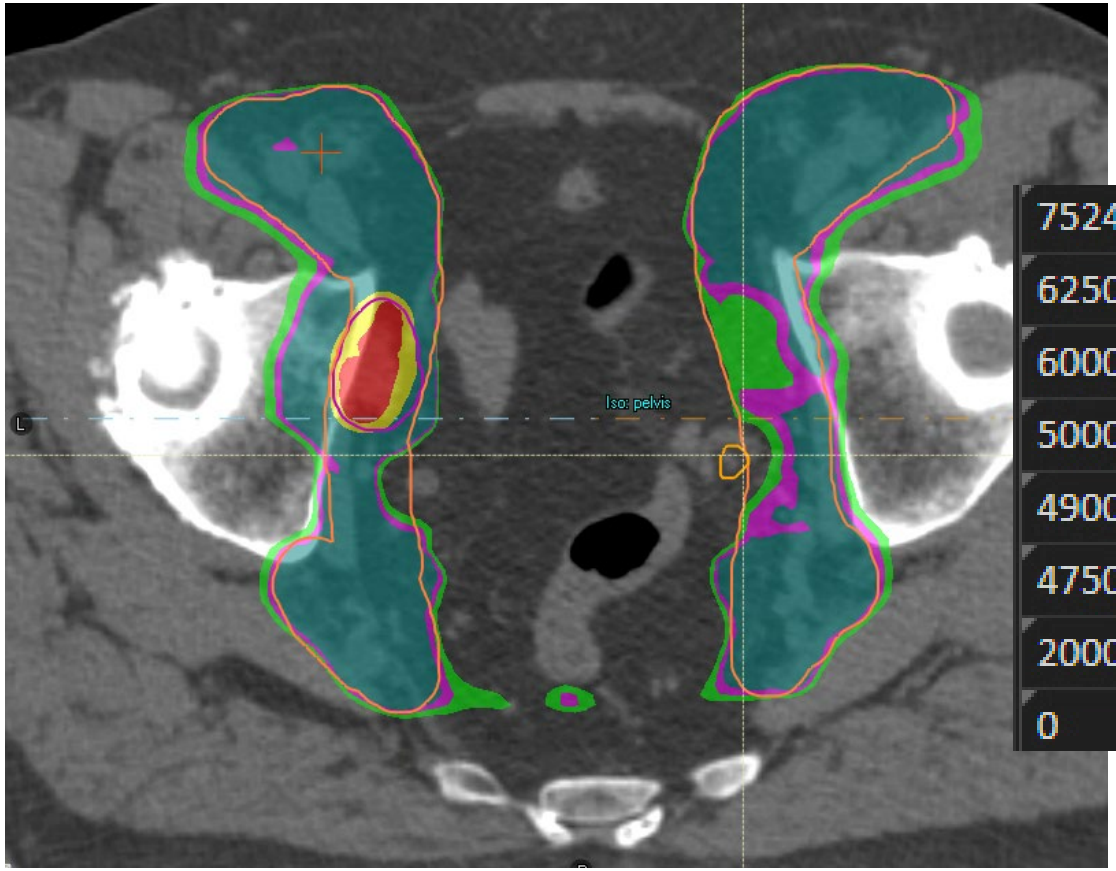
Naming Convention
In-House Prior

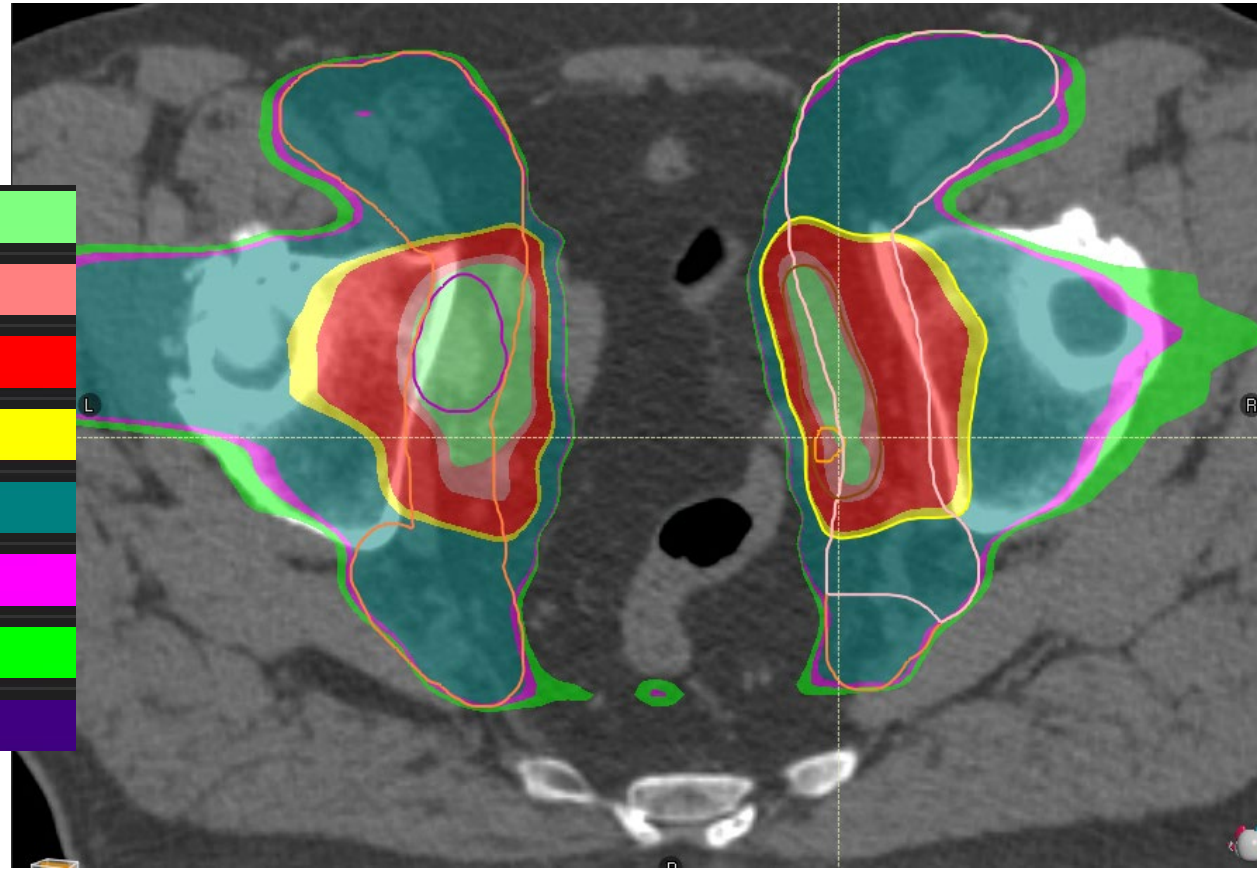




Communication and Collaboration

An Iteration of the Plan





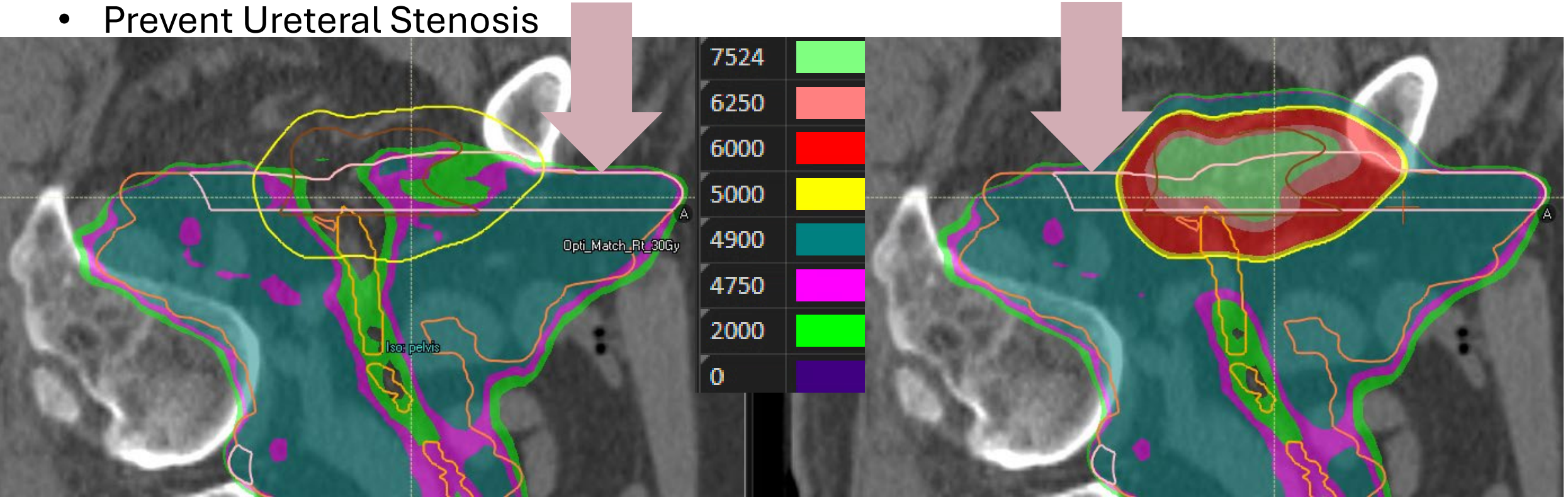
Nominal Plan Preview for Physician

Summary of Prior 50% Forgiveness + New Nominal

Added ROIs from Dose

Conclusion of Plan Preview

- Decrease Dose at Inferior Border on Elective Nodal Chain Side (Patient's Right)
- Prevent Ureteral Stenosis

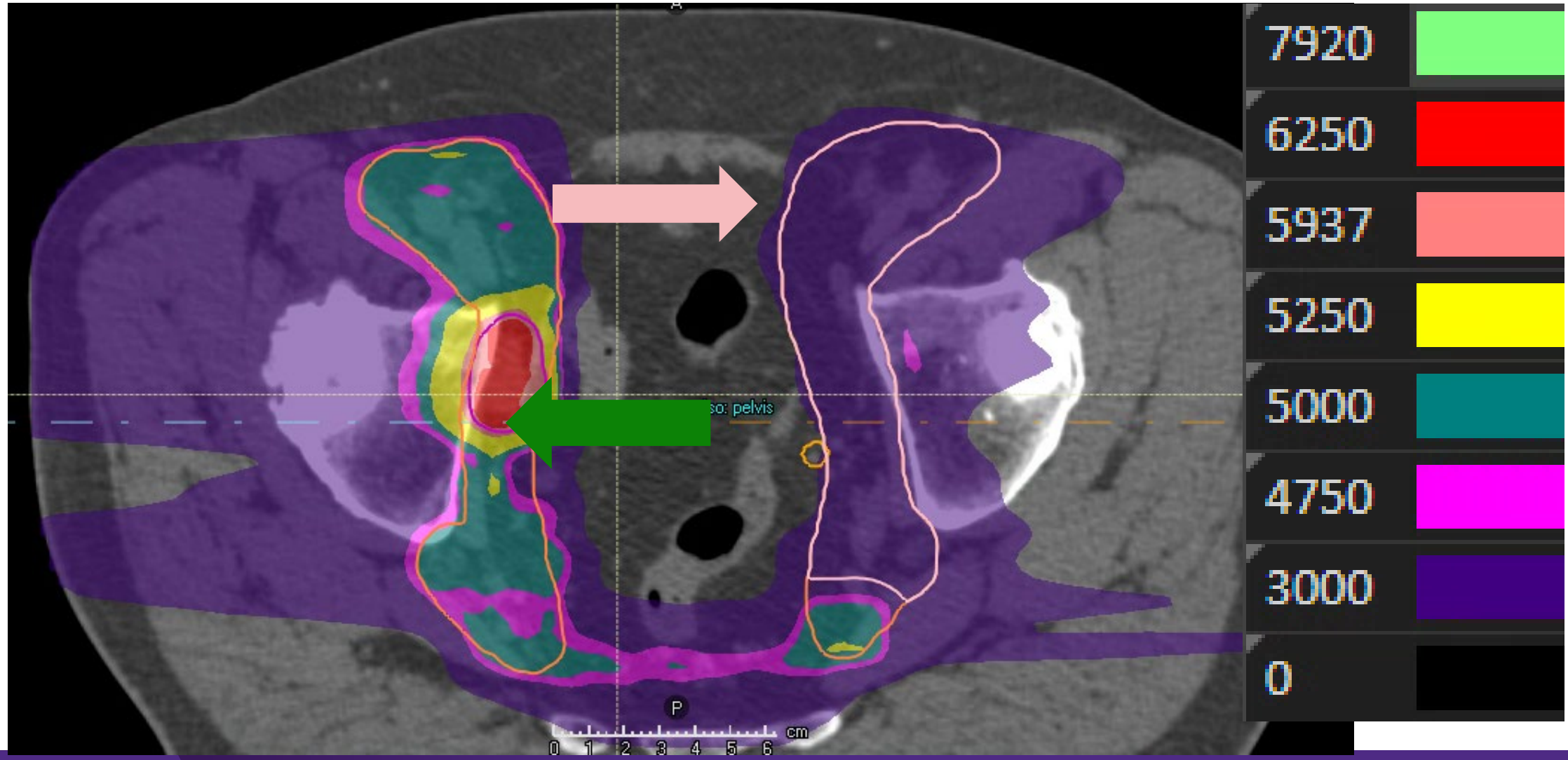


Nominal Plan Preview for Physician

Summary of Prior 50% Forgiveness + New Nominal

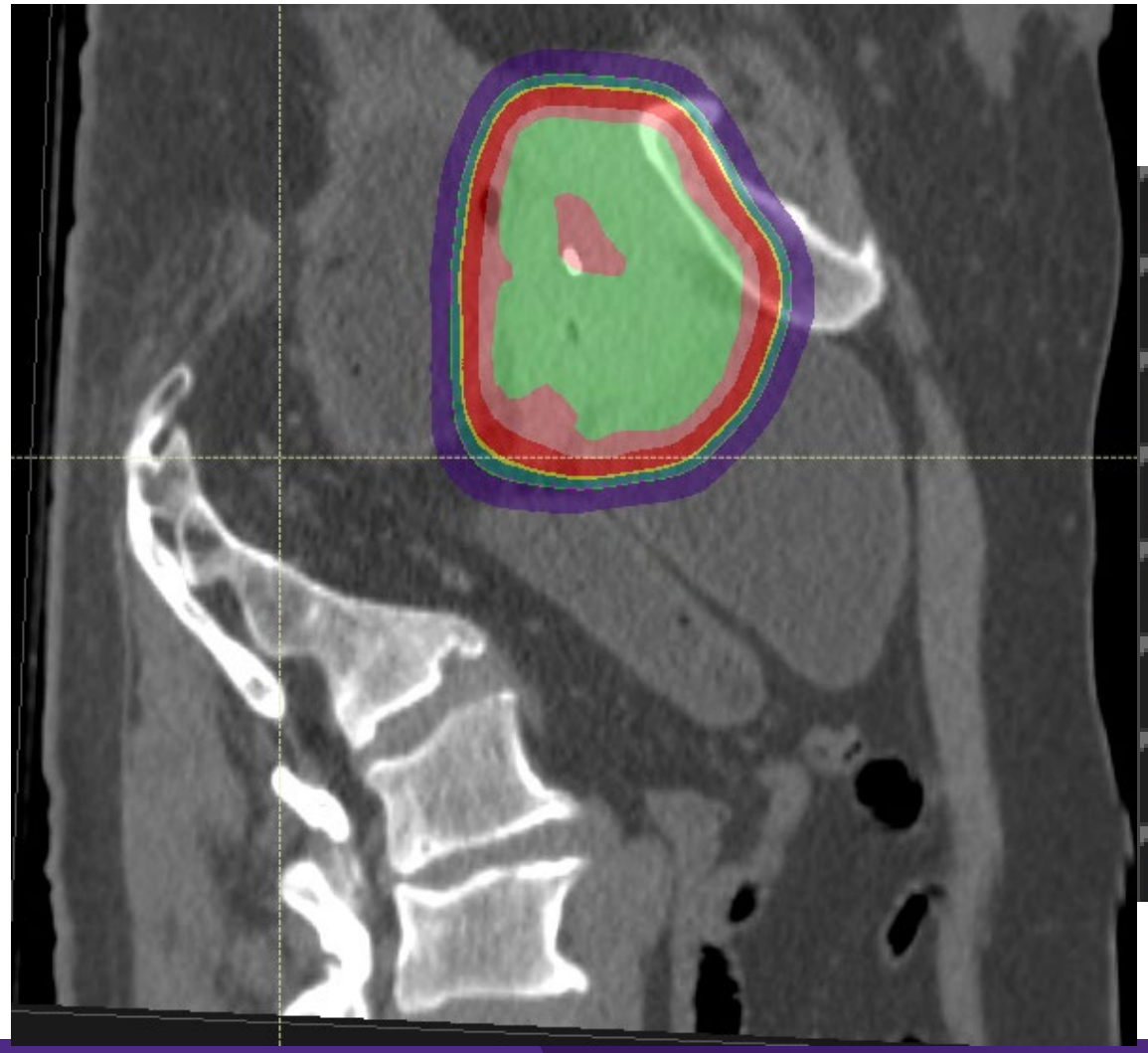
Re-Optimized Cool Plan

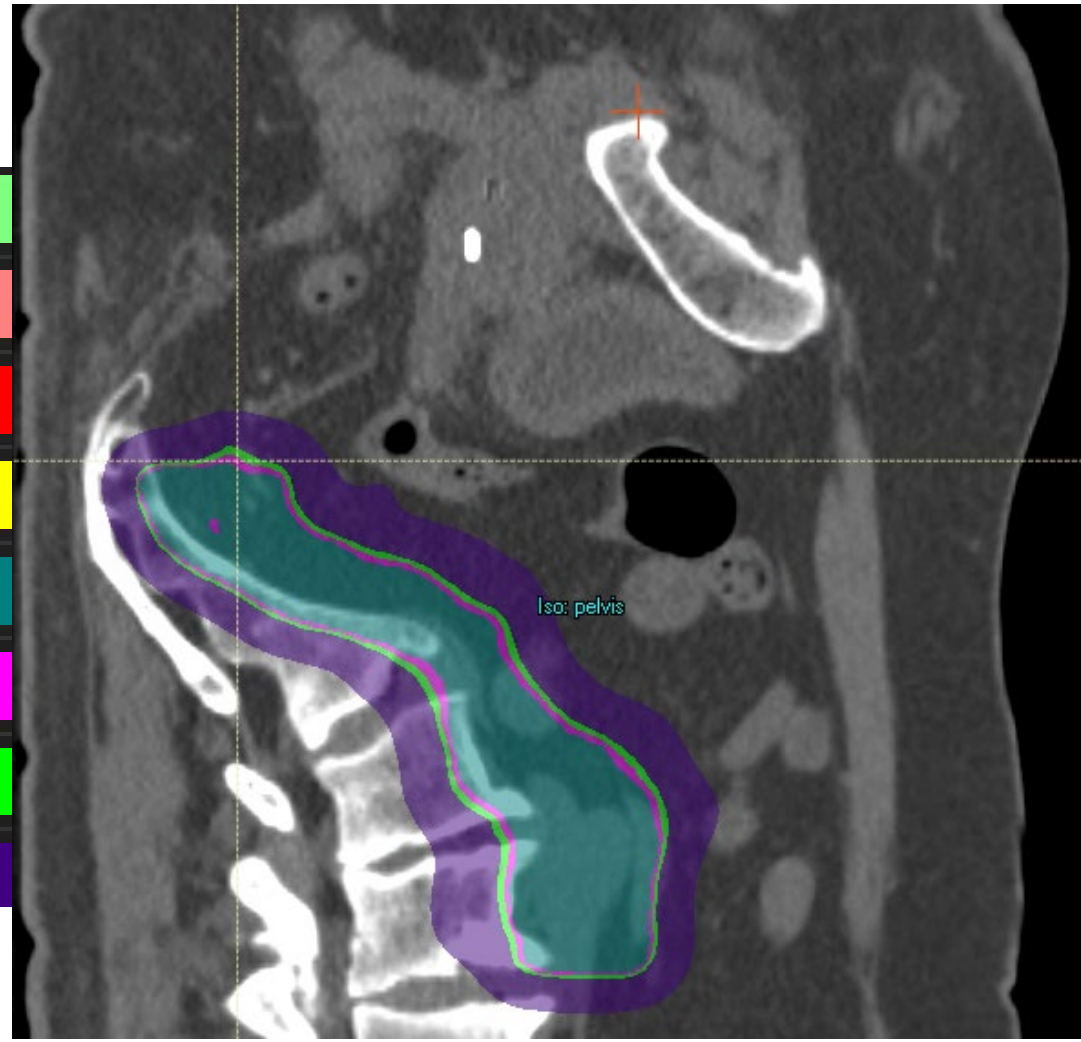
ROI from Dose plus ROI algebra to Adjust Optimization Structures



Documentation

Bowel Differences





Documentation-Old Version

Composite Checklist Dose

Notes:

Per MD, target coverage reduced to minimize dose to sigmoid/bowel and prior treatment overlap.

The prior treatment to the prostate in 2013 (54/79.2GyRBE) was summed with the nominal SIB Pelvic Nodes plan at 50% forgiveness. More metrics* were utilized to evaluate constraints to the ureters.

Plan Structure	Parameter	Result	Plan Value	Objective	Minor Deviation	Major Deviation	Comments
PTV_PelvicLN_L_6250	V100%	Pass	99.97%	>=98%	>= 95%		Nodes
PTV_PelvicLN_L_5000	V100%	Minor	89.93%	>=98%	>= 95%		Nodes
PTV_PelvicLN_L_6250	D99%	Pass	101.21%	>=95%	>= 93%		Nodes
PTV_PelvicLN_L_5000	D99%	Minor	67.44%	>=95%	>= 93%		Nodes
Bladder	V70	Pass	0.00%	<=10%	<= 15%		
Bladder	V65	Pass	0.00%	<=20%	<= 25%		
Bladder	V50	Pass	2.84%	<=35%	<= 40%		
Bladder	V40	Minor	65.83%	<=60%	<= 65%		
Femur_Head_L	V45	Minor	5.09%	<5%	< 10%		
Femur_Head_R	V45	Pass	0.05%	<5%	< 10%		
Rectum	V70	Pass	0.00%	<=5%	<= 10%		
Rectum	V65	Pass	0.00%	<=20%	<= 25%		
Rectum	V50	Pass	0.00%	<=30%	<= 35%		
Rectum	V40	Pass	0.87%	<=50%	<= 55%		
PenileBulb	Mean	Pass	24.83 GyRBE	<=46 GyRBE			
Sigmoid	D0.03cc	Flag	87.33 GyRBE	<57 GyRBE			
Spc_Bowel	V60	Pass	0.00 cc	<1 cc		> 1 cc	
Spc_Bowel	V45	Pass	167.23 cc	<195 cc	> 195 cc		
Ureter_Lt	D0.03cc	Pass	79.35 GyRBE	<=80 GyRBE			*
Ureter_Rt	D0.03cc	Pass	71.01 GyRBE	<=75 GyRBE			*

Ribs Case Example

Planning with Multiple Prior Courses of Radiation/Reirradiation

Rib-Prior Ribs

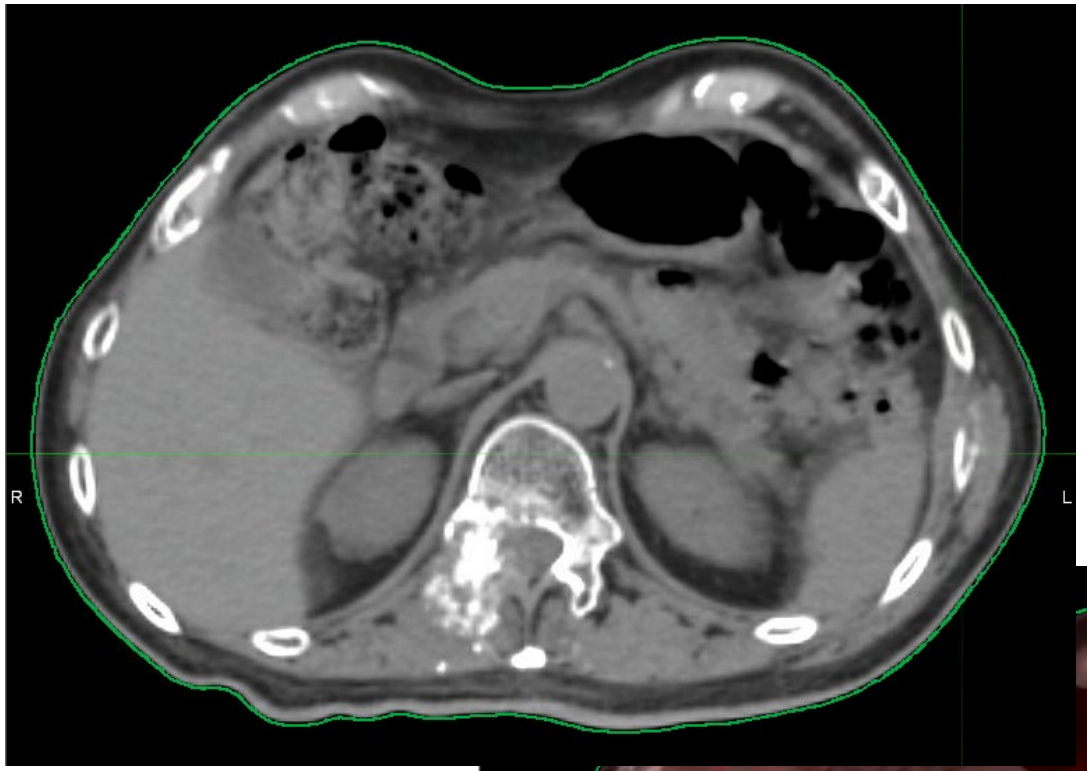
Prior RT: In-House Prior Treatment

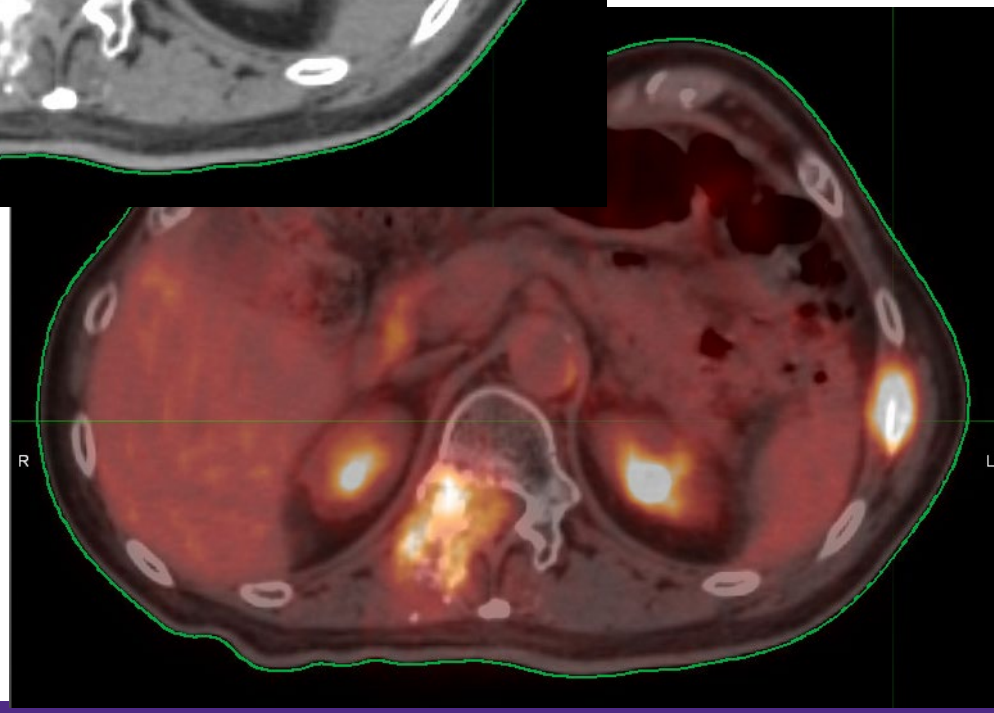
Prescription: Left 9th Rib 35GyRBE in 7 fractions

Left 7th Rib 35GyRBE in 7 fractions

Impression: Residual PET Activity

Rib Rx: Left 9th Rib Retreat 35GyRBE in 7 fractions





Sorting Multiple Priors

Safety in Reading all Documentation

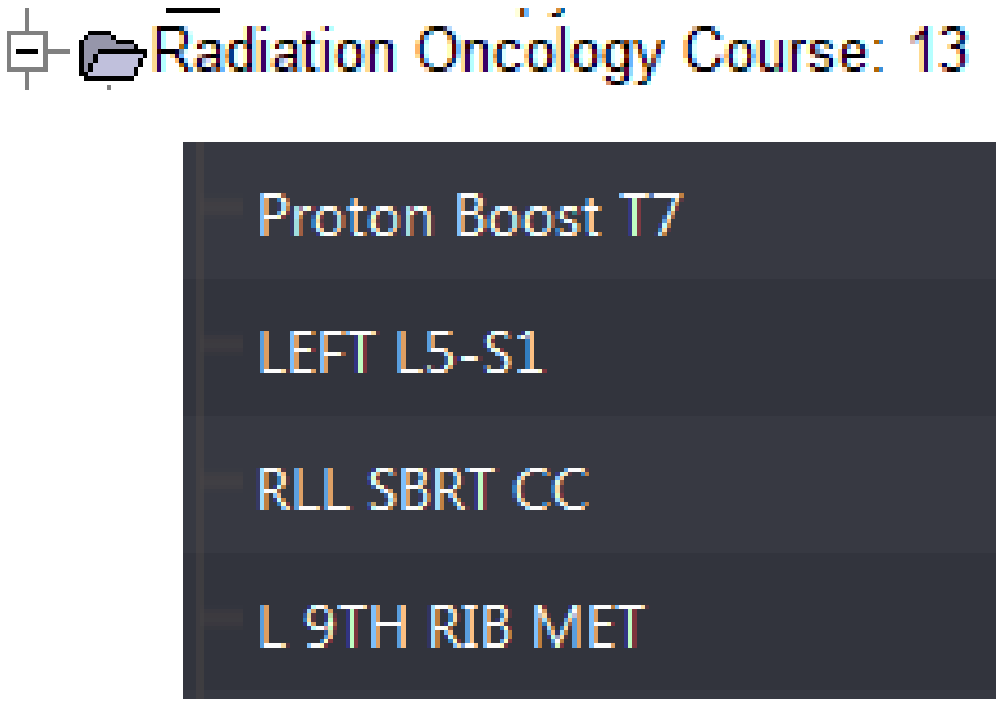
Collaboration is key here!

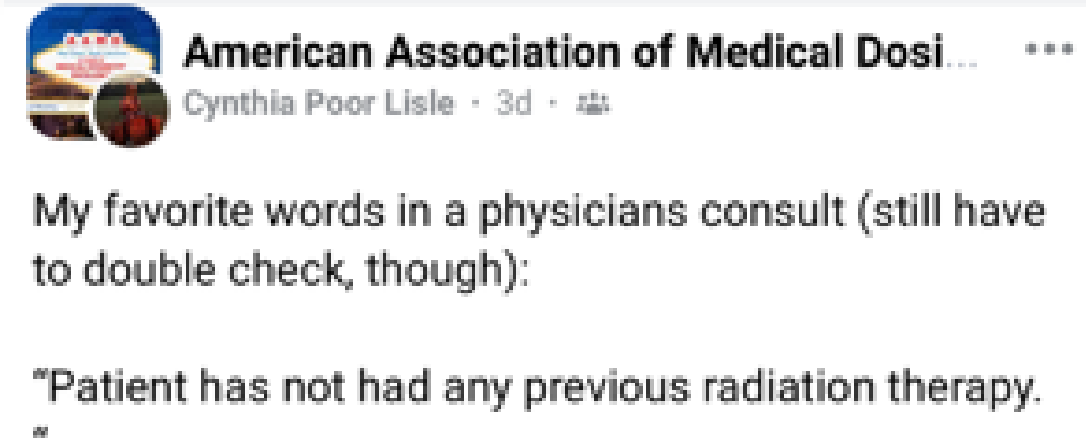
NA accidentally saved my bacon on this one with the long EQD2 calculation in the directive, because he was like "the patient got prior 18 to the spine" and I was like, hmm that's weird my dose file says 26, and that little cross check saved me from compositing this all wrong. Close call though

Tip:

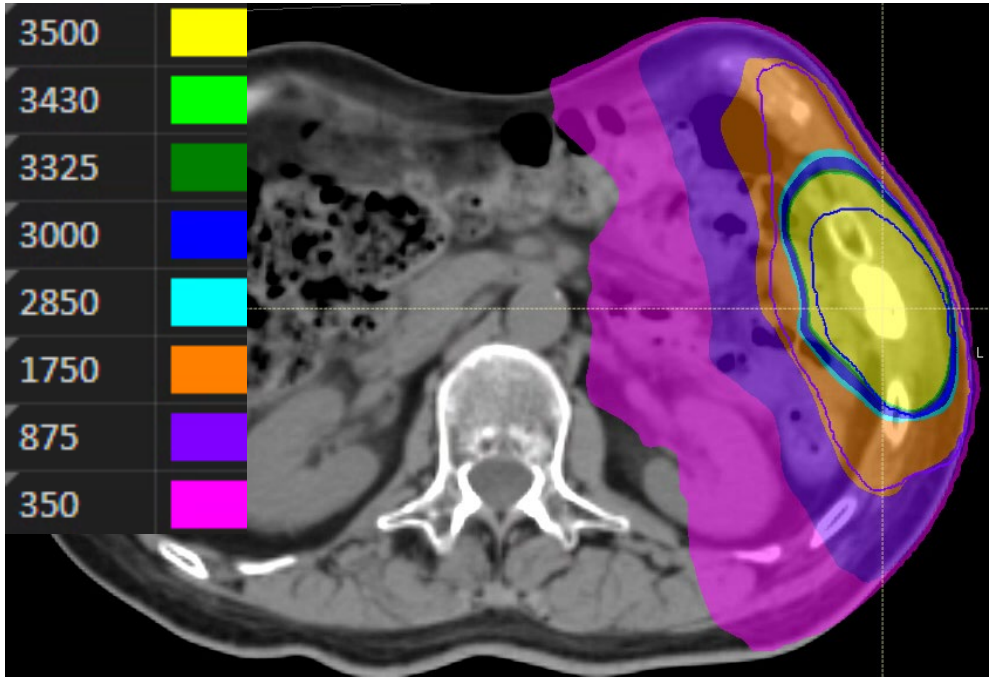
Double Check Files for Adaptive Txs and for Early Termination of Treatment

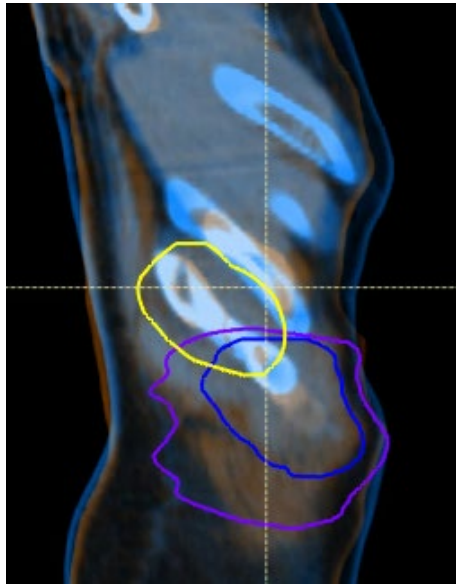
Sort Out What is Applicable to the New Tx Course

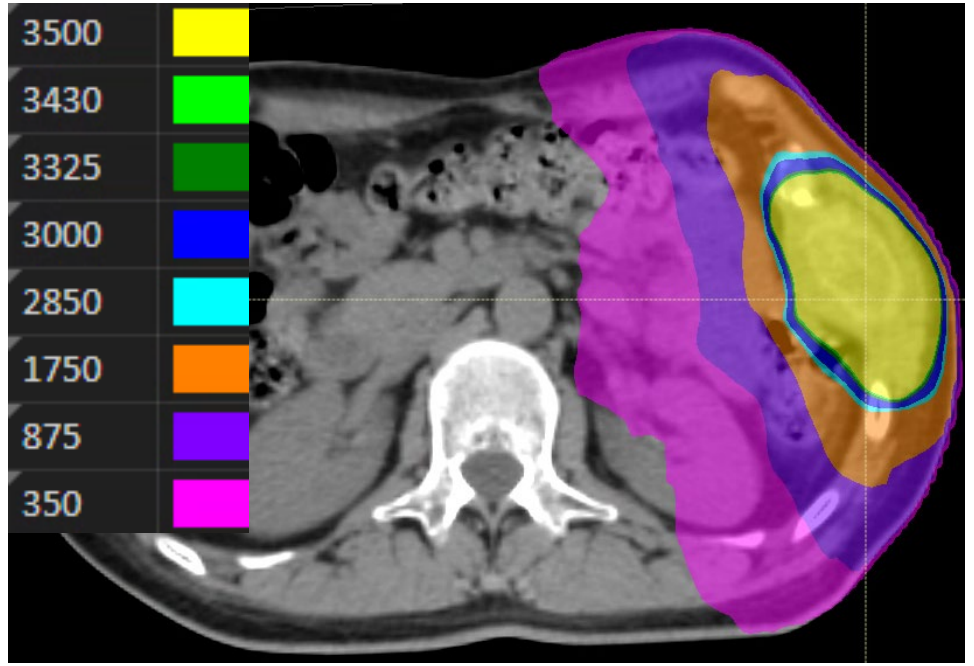




Fusion of Prior Radiation







Focus on Area of Interest

Current TPCT

Tip:

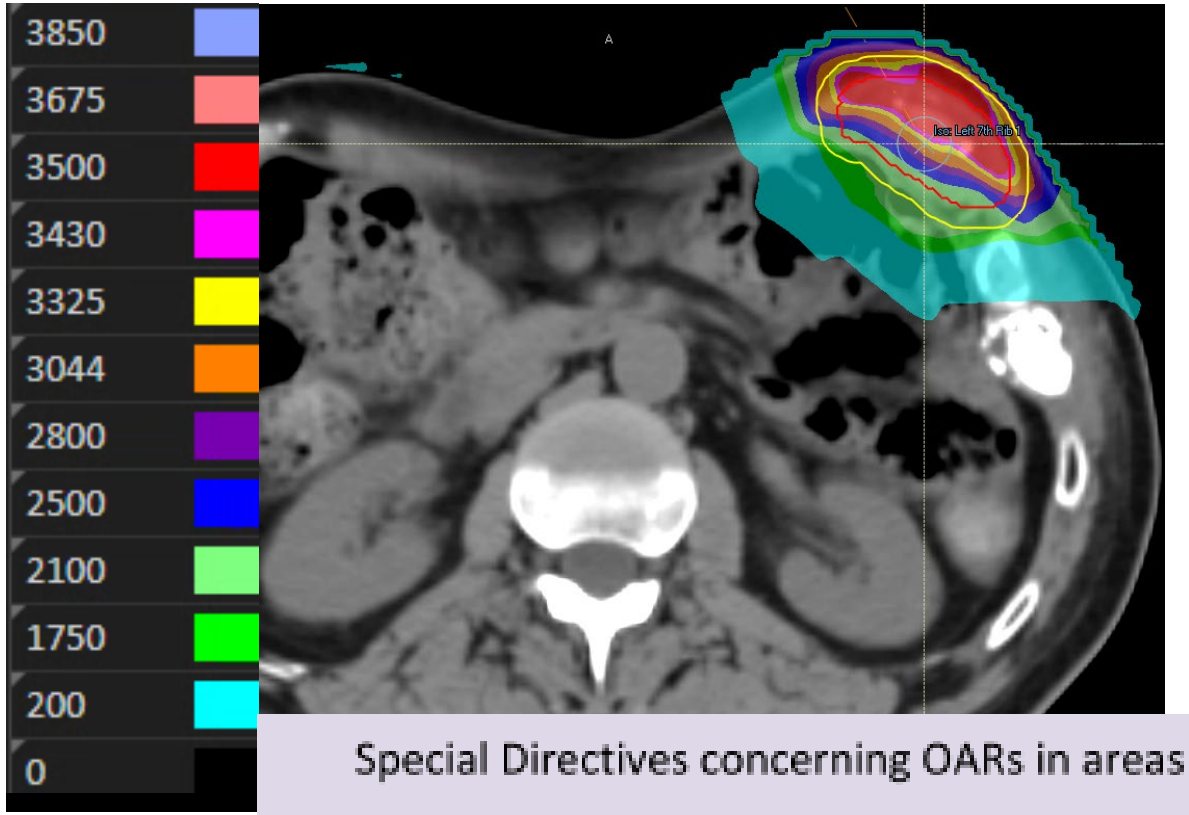
Prior TPCT

Copy Over Prior RT Structures

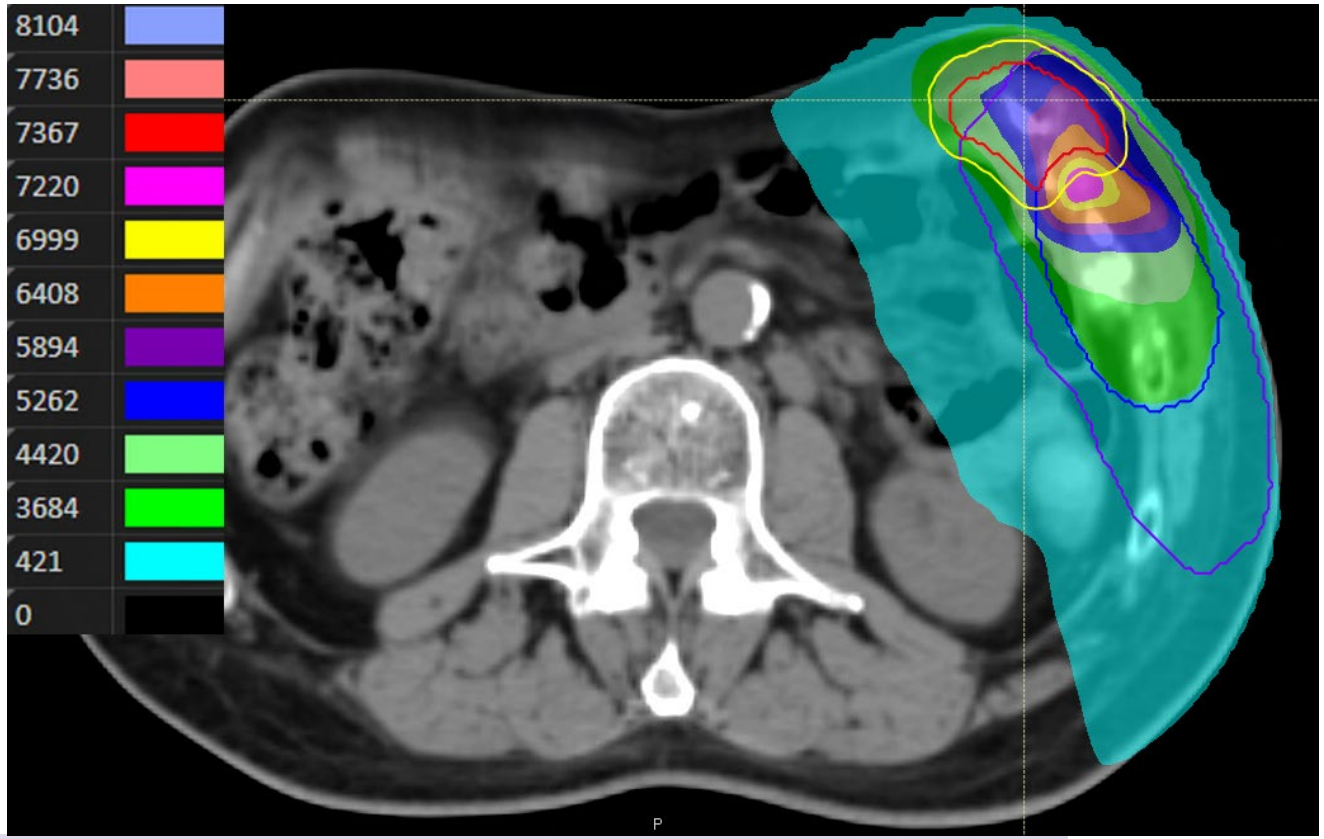
Plan Directives

7th Rib Only

Bowel Dose Reduced



7th Rib + Prior 9th Rib



Special Directives concerning OARs in areas previously irradiated:

Account for dose from prior left 7th rib tx in 2024 and left 9th rib treatment in 2020. Dmax to bowel < 38 Gy to 0.03 cc on current nominal plan Please apply 50% forgiveness to prior bowel dose. After this forgiveness ideal cumulative EQD2 between both courses < 70 Gy to bowel. Can reduce coverage as needed to achieve.

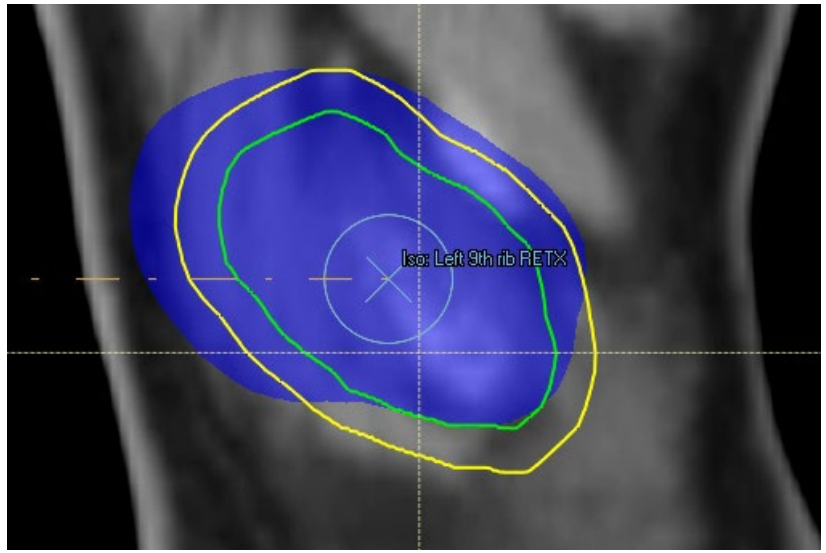
EQD2: *if required, EQD2 evaluation ordered in Mosaiq (include forgiveness factors and α/β ratios)*

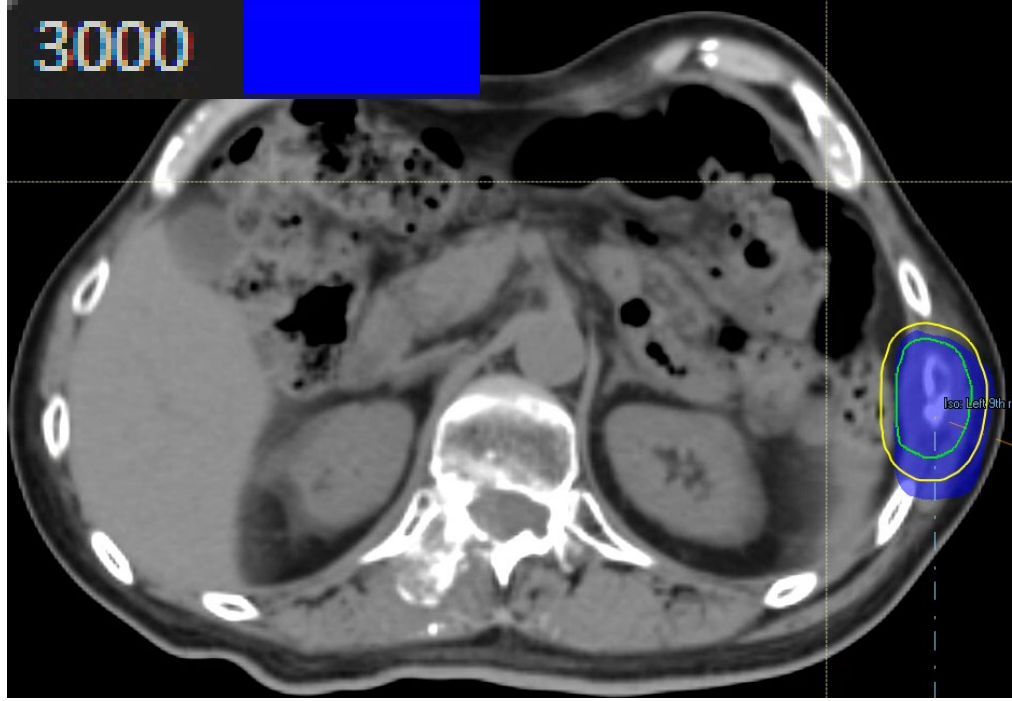
Communication and Collaboration

EQD2 Eval of Prior

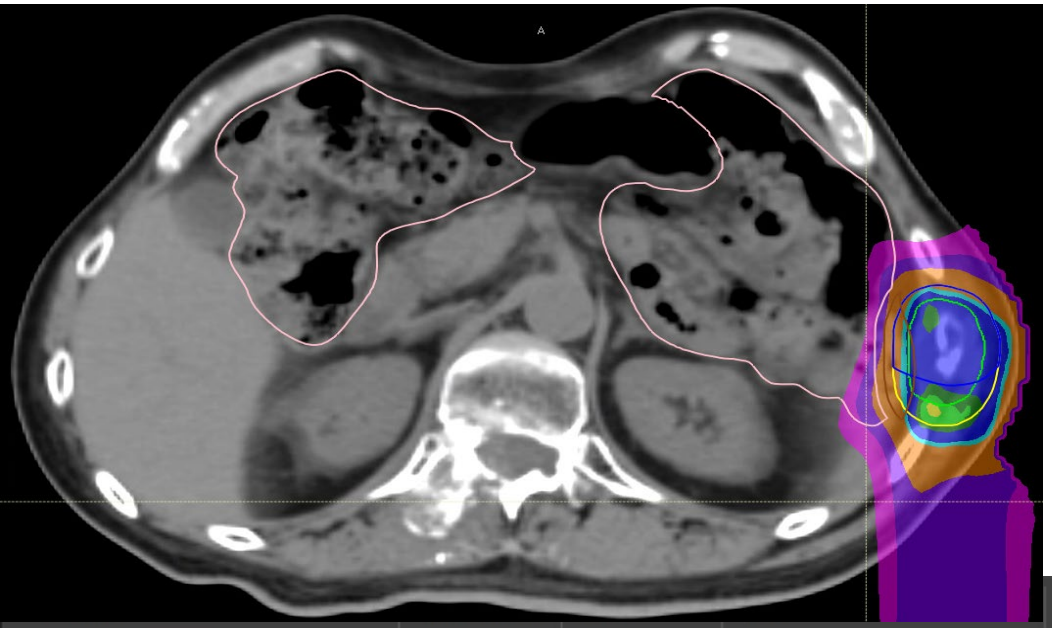
Bowel Evaluation

Compromise: 30GyRBE to ITV





Planning Optimization

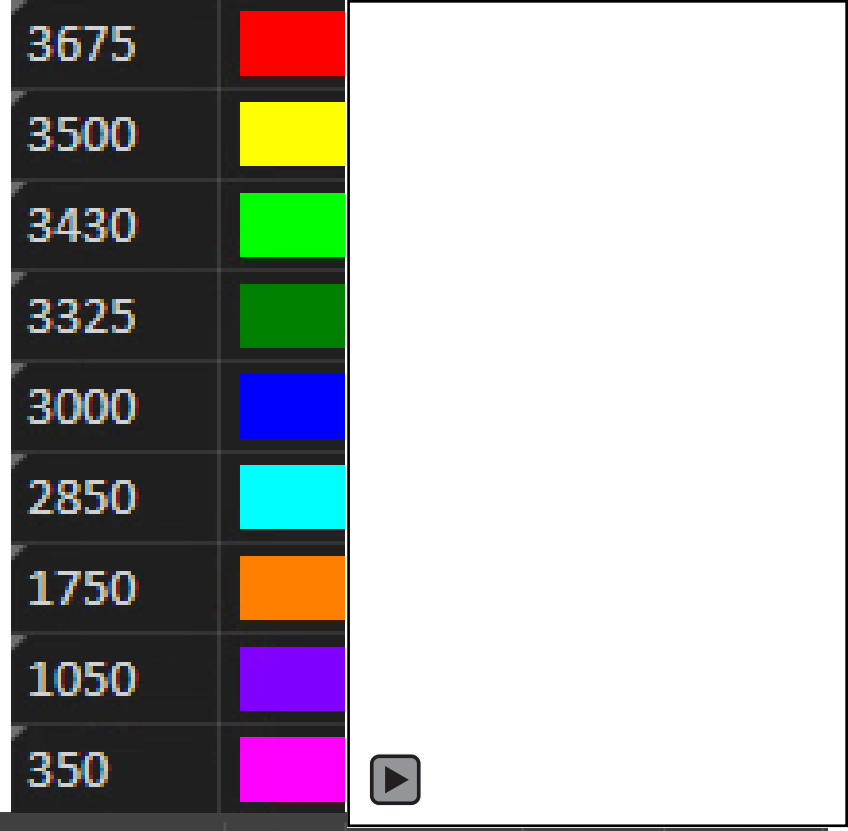


ROI from Doses

Subtraction of EQD2 from PTV

Bowel-Targets

Bowel Overlap with Target



Description				Robust	Weight	Value	EUD [cGy]
Physical composite objective							
Min dose	Beam (RBE)	Opti_PTV_EQD2	Min dose 3500 cGy (RBE), All beams		100.00		
Min dose	Plan (RBE)	Opti_GTV_Left9thRib	Min dose 3500 cGy (RBE)	★	100.00		
Max dose	Plan (RBE)	patient	Max dose 3675 cGy (RBE)		6000000.00	0.0186	
Dose fall-off	Plan (RBE)	patient	Dose fall-off [H]3500 cGy (RBE) [L]0 cGy (RBE), Low dose distance 1.00 cm		10.00	0.0113	
Min DVH	Plan (RBE)	zOverlap50%Lines	Min DVH 2880 cGy (RBE) to 99.99% volume		100.00	0.4847	
Max DVH	Plan (RBE)	zOverlap50%Lines	Max DVH 3000 cGy (RBE) to 1.00% volume		100.00	0.2710	
Max EUD	Plan (RBE)	Opti_Bowel	Max EUD 3000 cGy (RBE), Parameter A 150		100.00	0.0238	3103
Max EUD	Plan (RBE)	Opti_Bowel2	Max EUD 2950 cGy (RBE), Parameter A 150		100.00	0.0000	2602
Min DVH	Plan (RBE)	ITV_L9thRib_3500	Min DVH 3000 cGy (RBE) to 100.00% volume		900.00	0.0101	

Documentation

Composite Summary

(Select One)

(Select One)
Physical Dose Composite including available previous dose

Select: Physical or Biological Dose

Input: Prior RT Treatments

Forgiveness Factors

Comments

Disclaimer

Composite Summary

Biologically Effective Dose Composite (if utilizing EQD2 calculations, see Physics SPC Document for specific α/β ratios used)

Treatment Date	Treatment Site	Modality	Total Dose in Gy/GyRBE	Number of Fractions	Radiobiologic Forgiveness Factor
2020	Left 9th Rib	Proton SBRT	35GyRBE	5	0.50
2024	Left 7th Rib	Proton SBRT	35GyRBE	5	0.50
2025	Left 9th Rib RETX	Proton SBRT	35GyRBE	5	0.00

Comments:	Patient's prior RT to the Left 7th and 9th rib were evaluated on the prior treatment planning CTs to check anatomy along with the new nominal left 9th rib retreatment. The bowel shifted from each scan. The SIB 17.5/35GyRBE in 5 fx treatment from 2020 to the left 9th rib showed significant differences in bowel loop placement. In order to deliver therapeutic dose, the plan compromise was to let the bowel (since it had shifted location) EQD2 composite go to 78GyRBE in order to keep 30GyRBE in 5 fx to the ITV.

Composite doses are for evaluation purposes only. Composite dose sums will only include doses that contribute to the current treatment site. Composite doses are affected by time between treatment courses, fractionation size / total dose, and limitations of deformable registrations due to differing patient position and changes in patient anatomy or tissue densities.

Pubic Ramus Case Example

Multiple Priors Including Adjacent Bone Met Treatment

Pubic Ramus-Lots of Prior

PriorRT_2016ProstateBst_28.8GyRBE/16fx
PriorRT_2016ProstateHR_50.4GyRBE/28fx
PriorRT_2020_OligoMet 24GyRBE/3fx
PriorRT_2023_Left Hip AP 10Gy/5fx
PriorRT_2023_Left Hip PA 10Gy/5fx

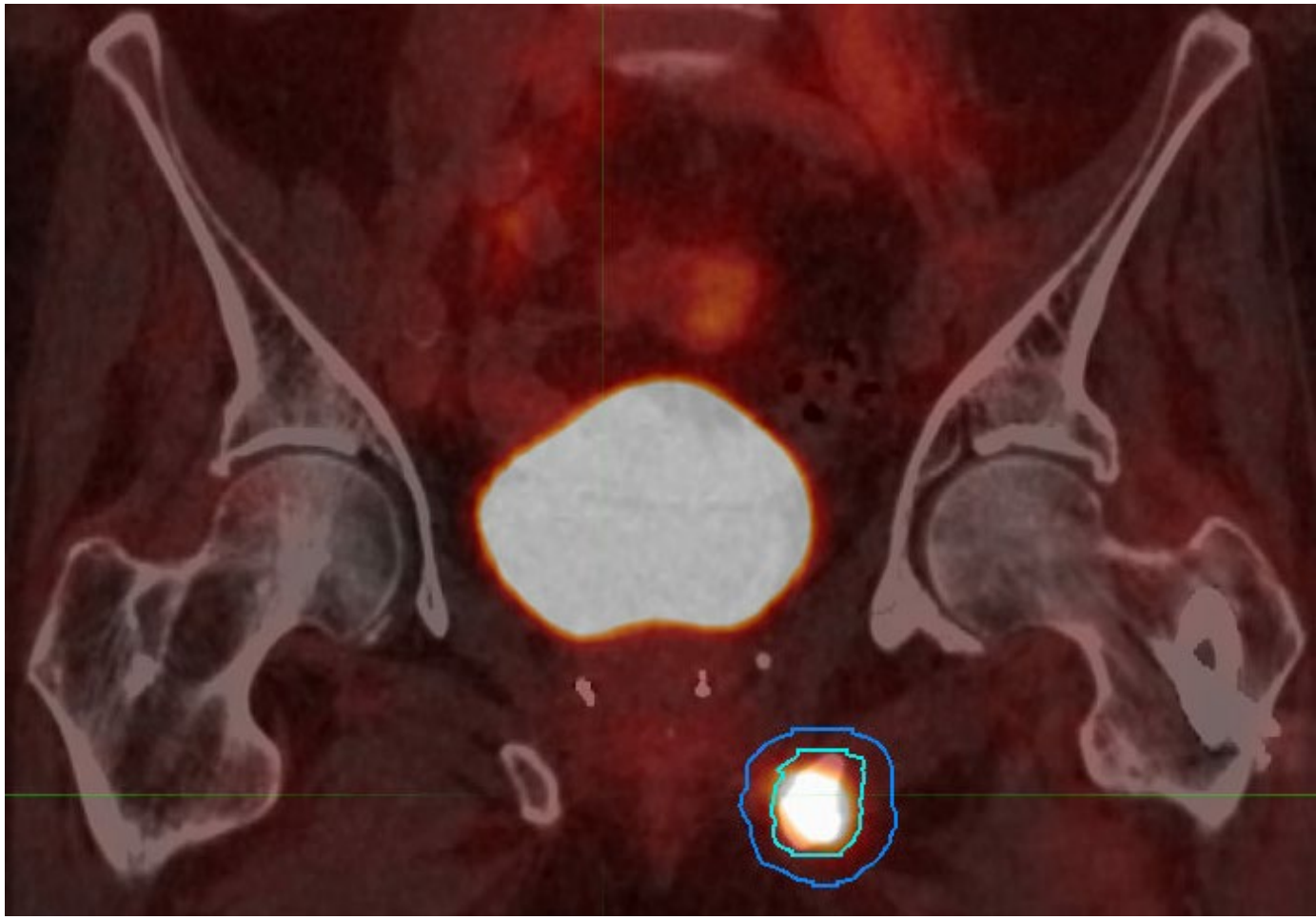
Pluvicto- 6 Metastatic Sites

1 Area with Residual Disease- Left Pubic Ramus

Pubic Ramus Rx: 27GyRBE in 3 Fractions

Tip: Label Multiple Prior Plans with a Prefix + Year + Dose + Disease Site

Streamline Labels and Avoid Confusion "New New"



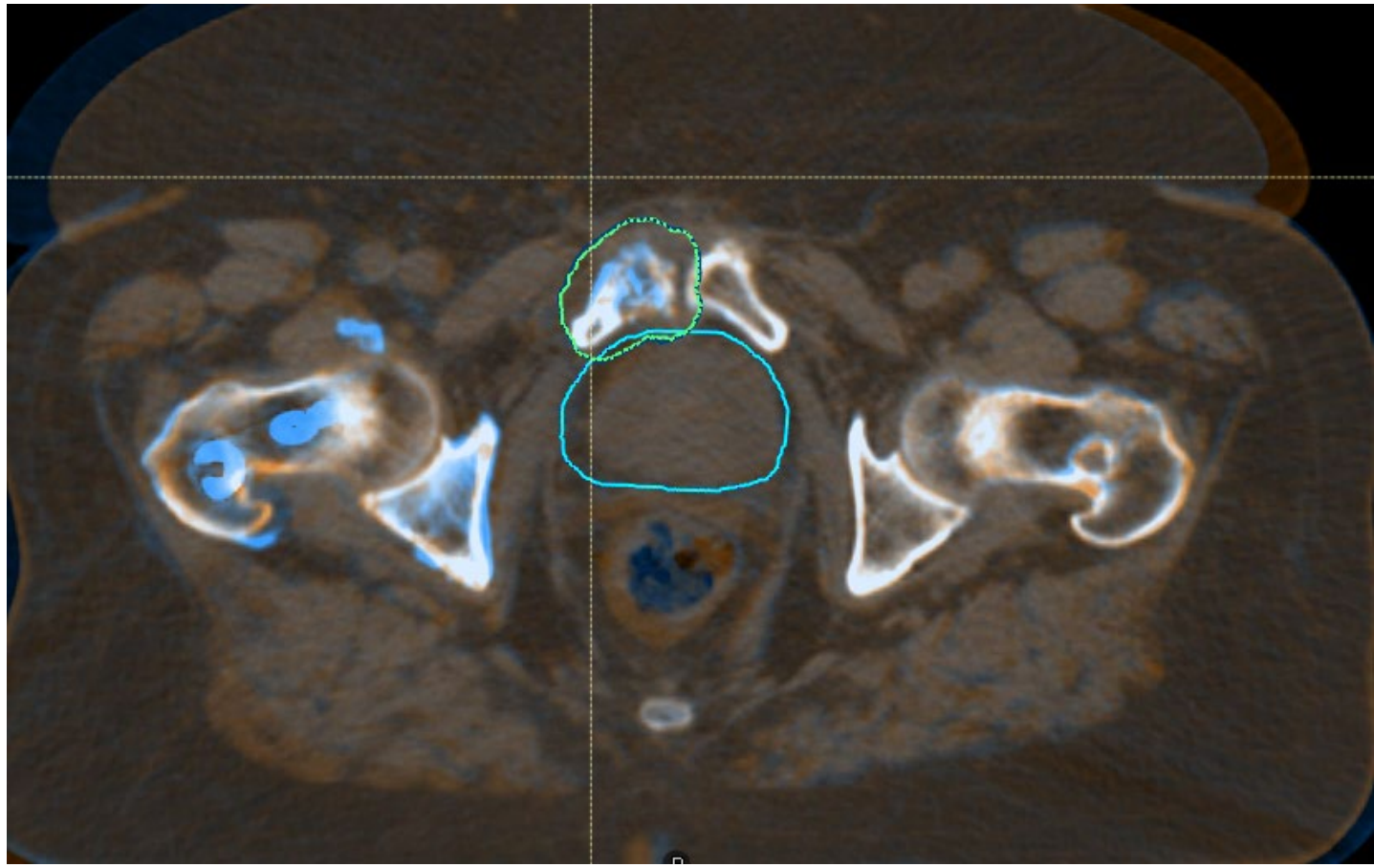
Fusion of Prior Radiation

Bone Met Treatment-Bone

Prostate Prior-Soft Tissue+Bone

Tip:

Pull Up Prior Plan First by Itself Verify Doses Against Completion Documents



Plan Directives

EQD2: Added in During Planning Process

Complex Case Conference: Added During Planning Process

Tip:

Think of Directives as a Starting Point with Prior RT Cases

Expectation vs. Reality of what Physician Wants for Plan

Special Directives concerning OARs in areas previously irradiated:

Avoid dose to penile bulp, urethra, prostate. Minimize any overlap with prior Bone anterior pubic symphasis treatment. Okay to miss coverage even down to 24 Gy if needed

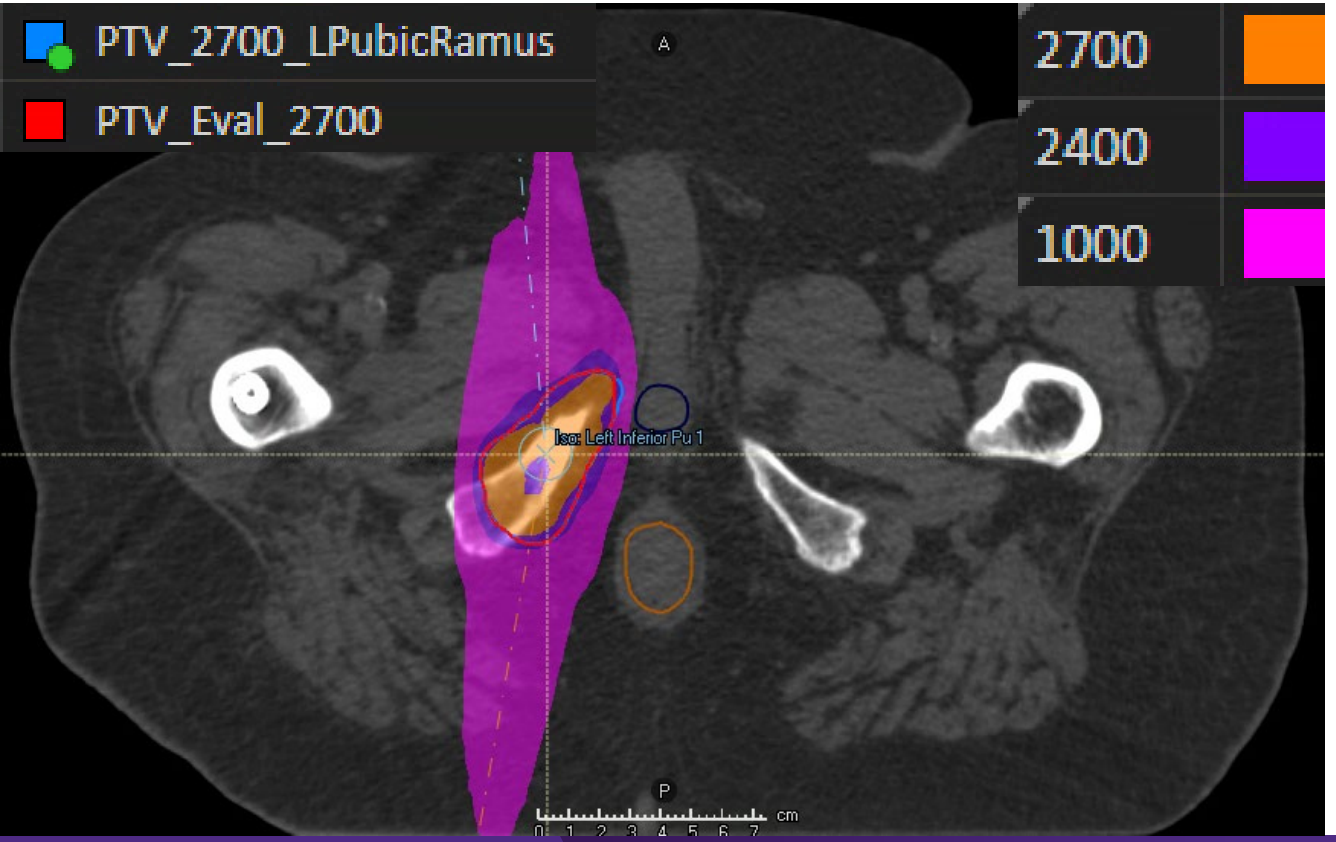
EQD2: *if required, EQD2 evaluation ordered in Mosaiq (include forgiveness factors and α/β ratios)*

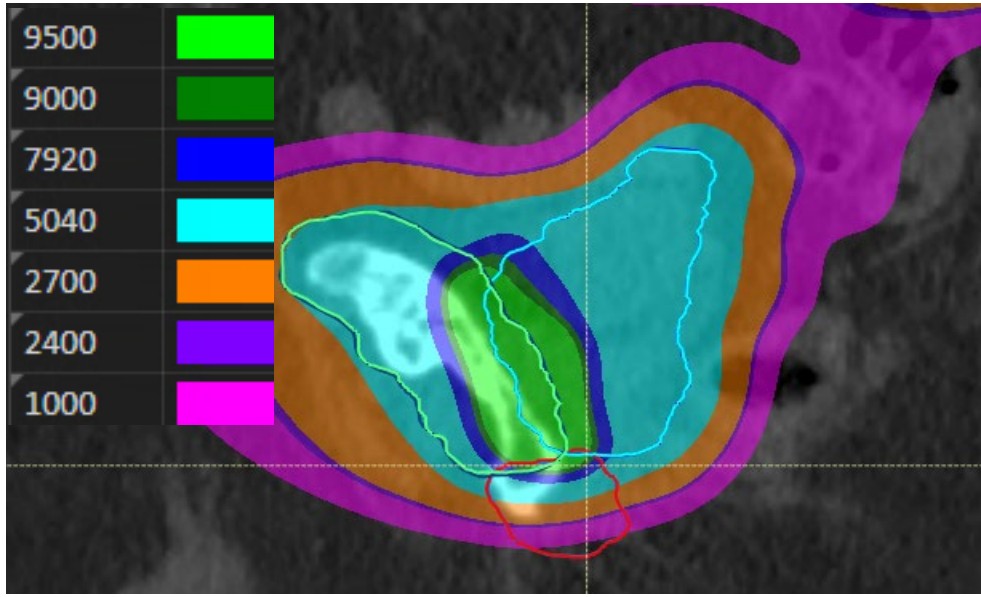
Communication and Collaboration

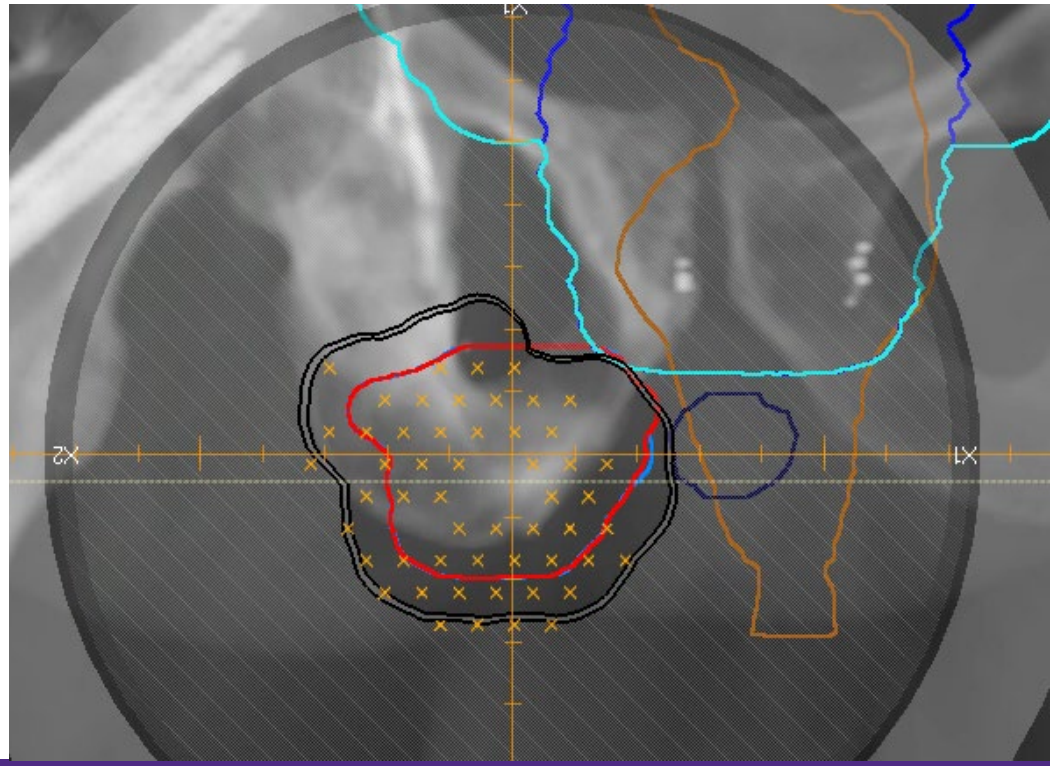
Complex Case Conference

Checking Prior EQD2 by Itself

Apertures and Beam Angles





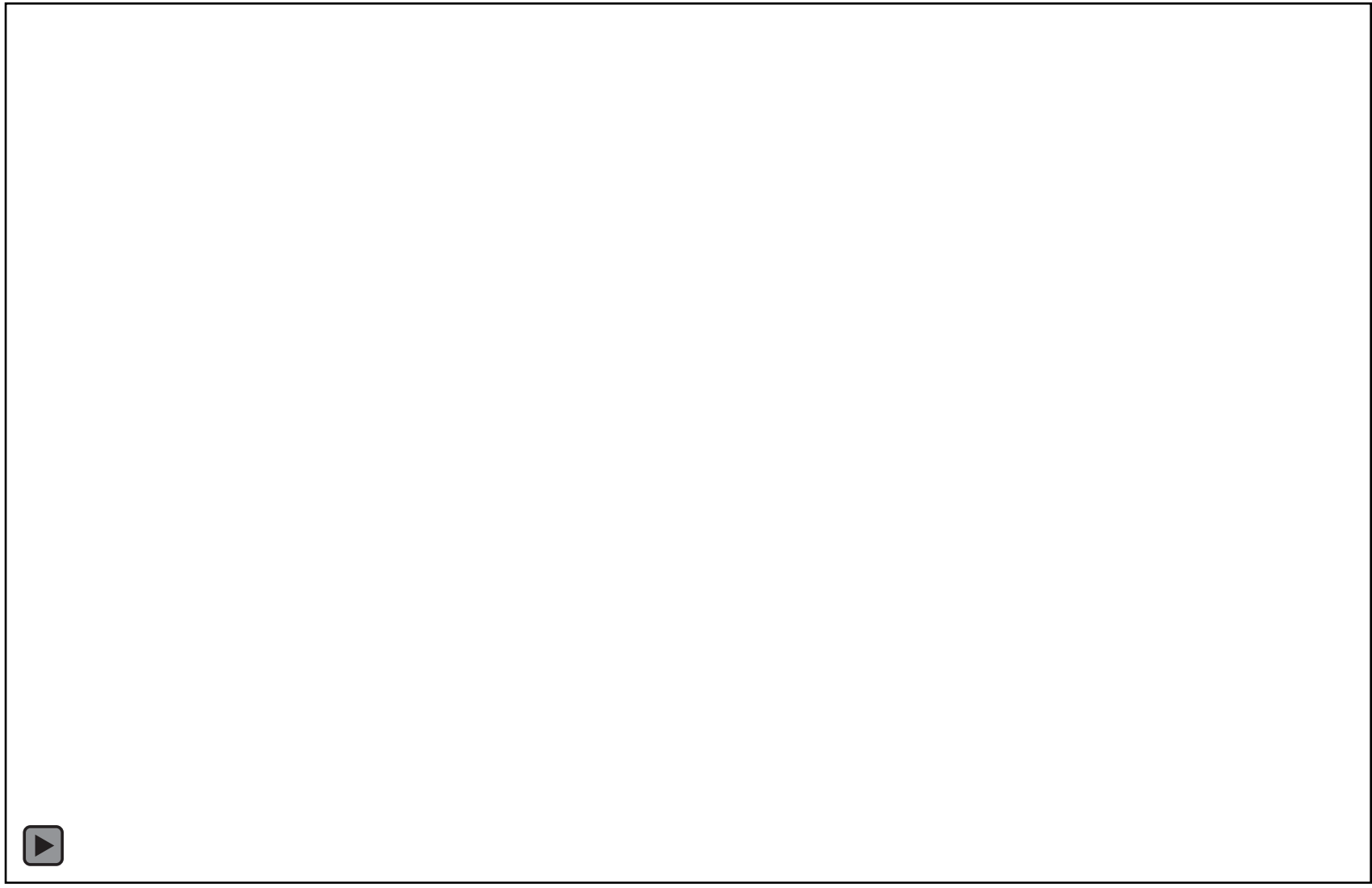


Planning Optimization Techniques

PTV vs. PTV_Eval

Cool Off 100Gy Overlap (pictured in orange- ROI from dose)

Keep GTV at Least 20GyRBE



Documentation

Comments:	EQD2 was analyzed checking all prior by itself and with the left inf pubic ramus to better understand what the current Left Inf Pubic Ramus contributed to the composite dose. The 2016 HR prostate nodal treatment was given 20% forgiveness. Apertures were designed to eliminate as much overlap as possible from prior treatments with special attention to the soft tissue areas: penile bulb, prostate, and rectum.

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Wrapping Up!

Almost break time!

Conclusion

Teamwork

- Utilizing tools such as plan directives, screen-sharing and messaging are all ways to keep lines of communication open between team members when working on cases.

Plan Optimization

- Optimization structures both manual and created via scripting can help with optimization of prior RT cases.

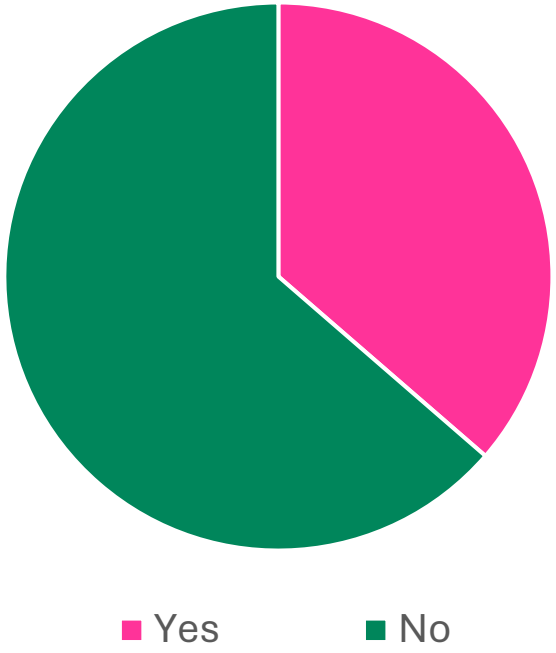
Documentation

- Clear concise documentation of complex treatments will be vital especially as we see a growing number of prior RT cases.

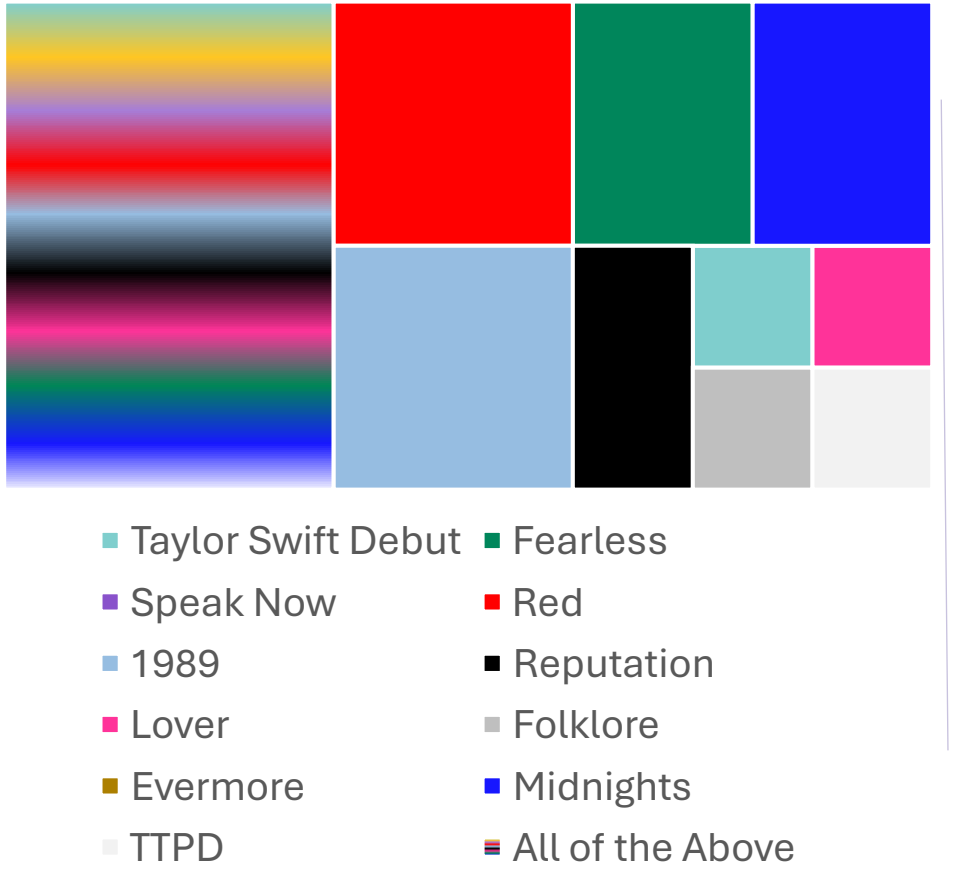
Questions?

Fun Question Results Survey

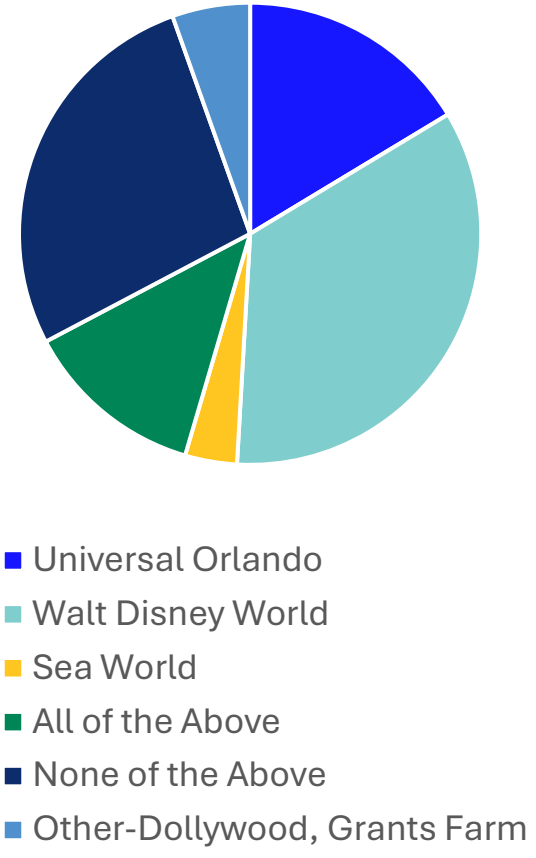
Have you seen Wicked?



Favorite Taylor Swift Era?



Favorite Theme Park?



Thank you

See you in Orlando! ☺

Linnae.Campbell@nm.org

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