Billing strategies for RPT dosimetry

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Disclaimer:

I am a Medical Physicist, not a billing or regulatory compliance expert.

Disclaimer:

Exact dollar figures for reimbursement and coding can be considered proprietary information, so numbers presented herein have been modified and should be interpreted as “ball-park.”

Status quo for RPTs

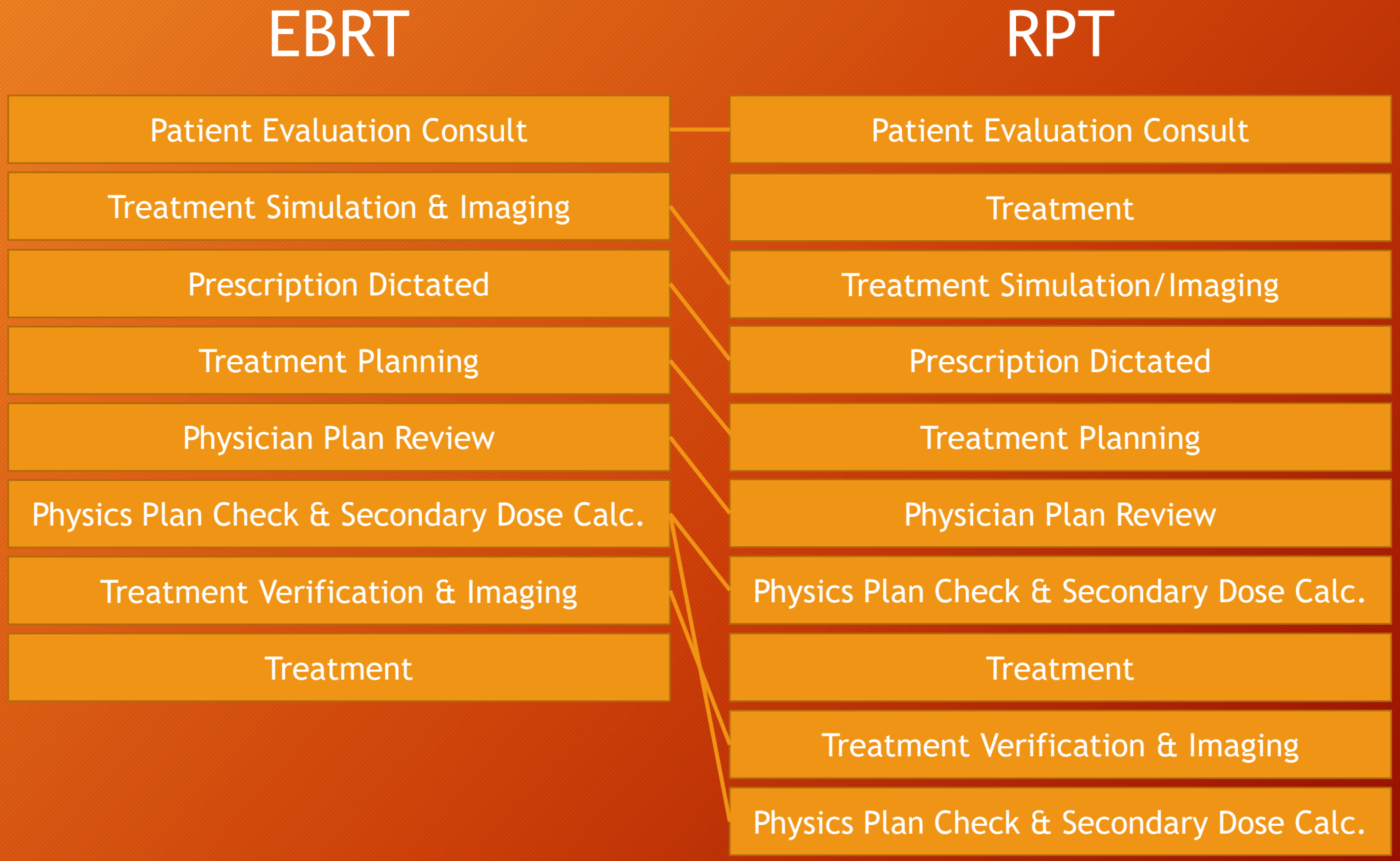
1. Patient is seen by medical oncology, and referred to Nuc. Med. for qualification imaging (e.g. ^{68}Ga-DOTATATE or low-dose ^{131}I-NaI)
2. Case is presented at tumor board by Medical Oncology, and Nuclear Medicine OKs decision to treat.
3. Radiopharmaceutical is ordered, and patient comes to Nuc. Med. for therapy. (This is the first time that a Nuc. Med. physician consults with the patient…)
4. If the patient has risk factors, additional imaging or blood samples are collected following treatment for dosimetric evaluation.
5. Follow-up is performed by the referring physicians (Med. Onc.)

“Best practice” for RPTs
(roughly parallel to EBRT)

1. Patient is seen by medical oncology, and referred to Nuc. Med. for qualification imaging (e.g. ^{68}Ga-DOTATATE or low-dose ^{131}I-NaI)
2. Case is presented at tumor board by Medical Oncology, and Nuclear Medicine OKs decision to treat.
3. Nuclear medicine physician consults with patient prior to treatment
4. Radiopharmaceutical is ordered, and patient comes to Nuclear Medicine for therapy.
5. Imaging and blood collection performed following all treatments for **treatment planning** and **treatment verification**.
6. Follow-up is performed by the Nuc. Med. and/or Rad. Onc. physician

How do we get there?

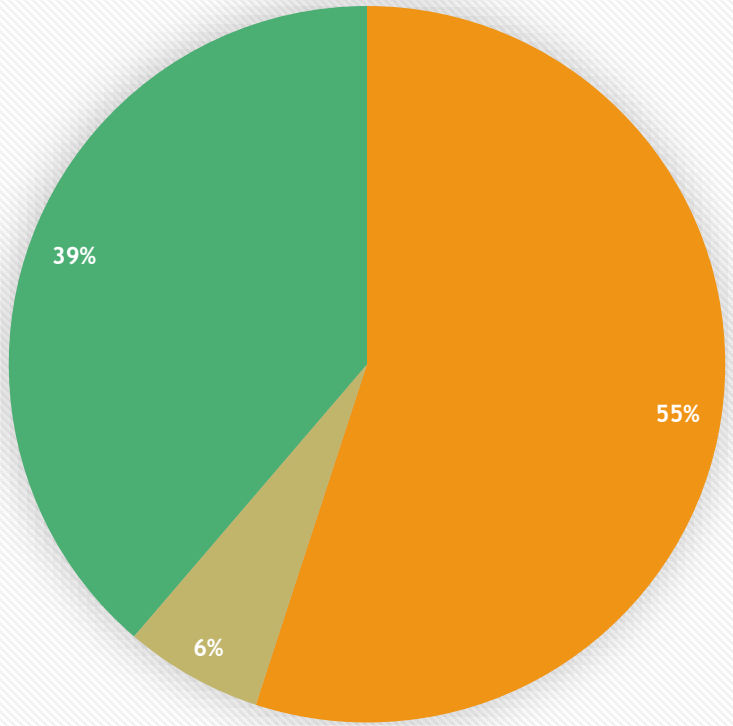
- Treatment planning for RPTs closely parallels what is routinely done in Radiation Oncology
  - Care path is similar
  - Time requirements are similar
  - Software & hardware expenses are similar
- Drawing parallels with the Radiation Oncology billing model can inform as to what is achievable and equitable.

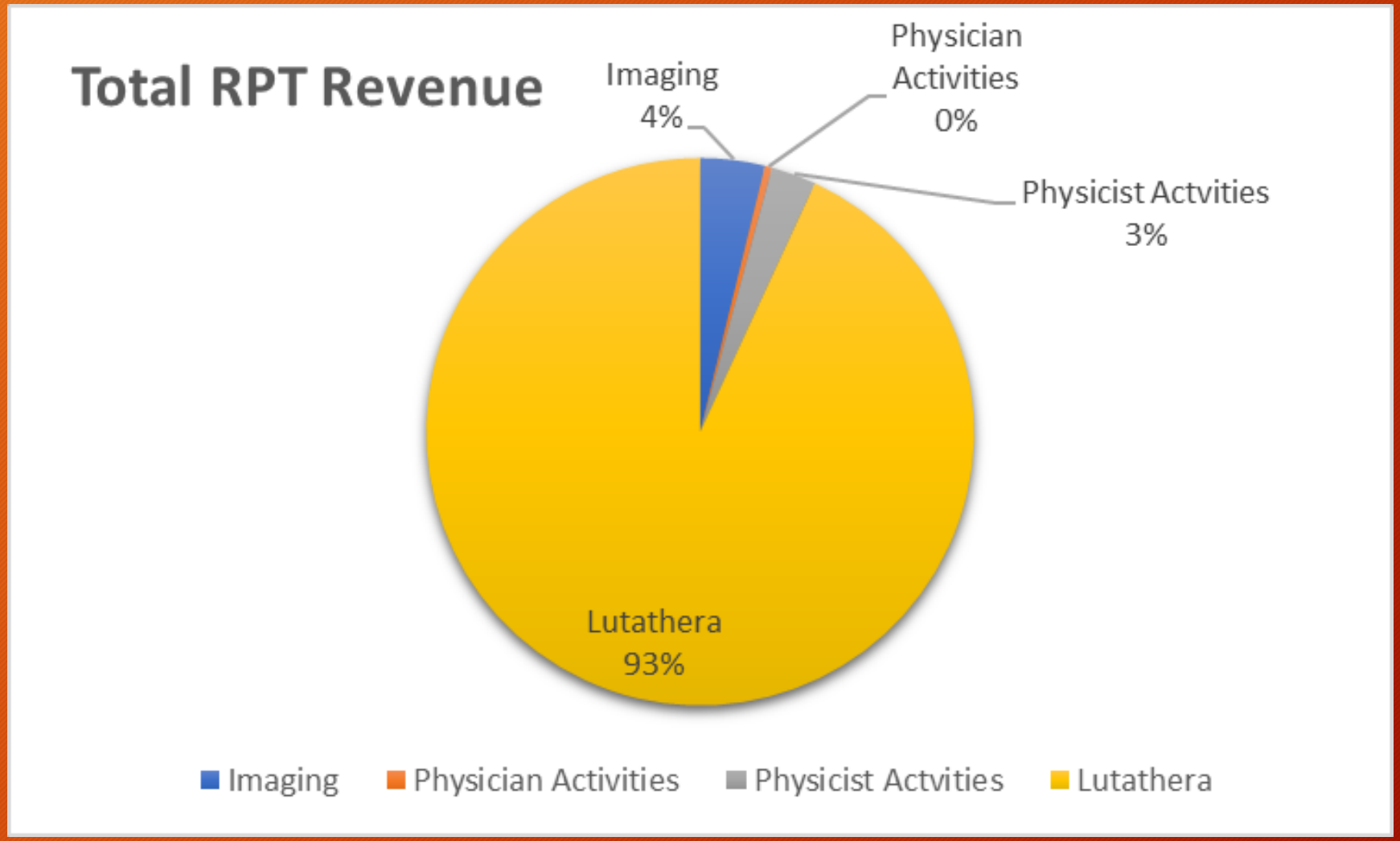

EBRT
Patient Evaluation Consult
Treatment Simulation & Imaging
Prescription Dictated
Treatment Planning
Physician Plan Review
Physics Plan Check & Secondary Dose Calc.
Treatment Verification & Imaging
Treatment
RPT
Patient Evaluation Consult
Treatment
Treatment Simulation/Imaging
Prescription Dictated
Treatment Planning
Physician Plan Review
Physics Plan Check & Secondary Dose Calc.
Treatment
Treatment Verification & Imaging
Physics Plan Check & Secondary Dose Calc.

	#	CPT	$/CPT	#*$/CPT
Patient Evaluation Consult	1	99205	$ 900.00	$ 900.00
Treatment	1	-	-	$ -
Treatment Verification and Imaging	1	78832	$ 6,500.00	$ 6,500.00
Prescription Dictation	1	77263	$ 850.00	$ 850.00
Treatment Planning	1	77295	$ 9,700.00	$ 9,700.00
	1	77370	$ 1,250.00	$ 1,250.00
Phyisician Plan Revew	1	-	$ -	$ -
Physics Plan Check and Secondary Dose Calc.	1	77300	$ 900.00	$ 900.00
Consult prior to treatment	3	99243	$ 400.00	$ 1,200.00
Treatment	3	-	$ -	$ -
Verification Imaging	3	78832	$ 6,500.00	$ 19,500.00
Physics Plan Check and Secondary Dose Calc.	3	77370	$ 1,250.00	$ 3,750.00
	3	77300	$ 900.00	$ 2,700.00

Amount billed	$ 47,250.00
Approximate reimbursement (30%)	**$ 14,175.00**

Dosimetry/Treatment Planning Revenue (~$14,000/pt)




Total RPT Revenue
Imaging
4%
Physician
Activities
0%
Physicist Actvities
3%
Lutathera
93%
Imaging
Physician Activities
Physicist Actvities
Lutathera

Detailed Nuclear Medicine Care Path

Patient evaluation and consultation

- Performed prior to any therapy or therapy-specific imaging
- Nuclear medicine physician educates the patient on risks, treatment expectations, and determines eligibility for RPT
- CPT 99205 - $900

Radiation Oncology:

Patient evaluation and consultation

- Performed prior to any therapy or therapy-specific imaging
- CPT 99205 - $900

- Consults are also performed once per week during treatment
- CPT 99243 - $400

Initial Treatment

- Currently, dosimetry and treatment planning can only be performed following the initial treatment.
- Radioactivity is ordered and administered (e.g. 200 mCi of Lutathera)

Treatment simulation and imaging

- The first treatment fraction is used as a simulation for the remaining treatment fractions.
- Serial SPECT/CT images are acquired with the patient carefully positioned for reproducibility
- Imaging standard is often produced to enable quantitative SPECT reconstruction

- CPT 78830 – Single SPECT/CT - $3400
- CPT 78832 – Multiple SPECT/CTs - $6500

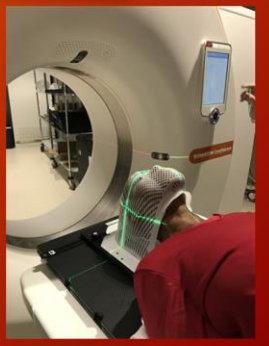
Radiation Oncology:

Treatment simulation and imaging

- Patient immobilization is created, and the treatment coordinate system is established with x-ray opaque fiducials
- CT imaging is performed.
- CPT 77290 - $3000

- In some cases, a PET scan is acquired without moving the patient, so that images are inherently registered.
- CPT 78999 - $7000

- Breathing motion may be assessed by a Medical Physicist
- CPT 77370 - $1250



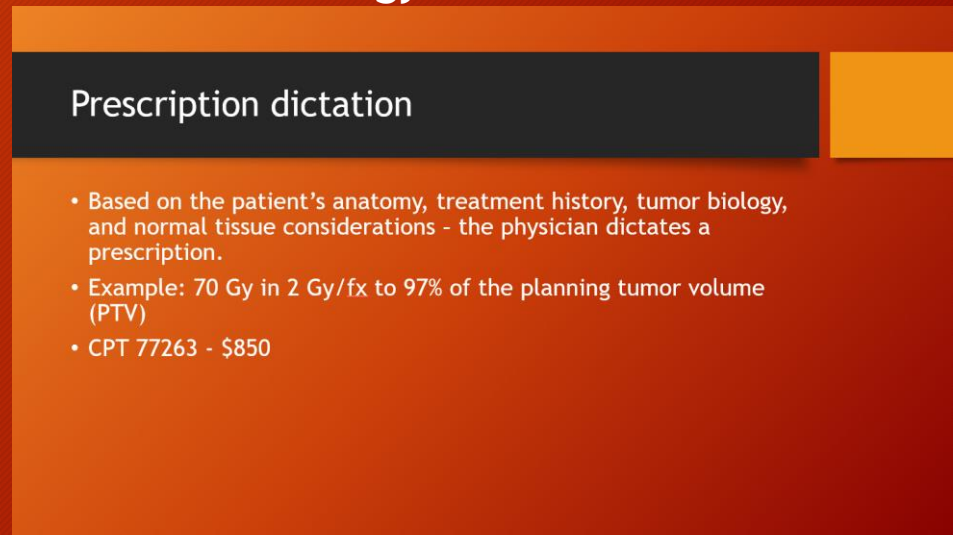
Prescription dictation

- Based on the patient's pharmacokinetics, treatment history, tumor biology, and normal tissue considerations – the physician dictates a prescription.

- Example 1: 200 Gy mean dose to the PTV
- Example 2: Deliver 23 Gy to the kidneys
- Example 3: Administer 800 mCi in 200 mCi fractions

- CPT 77263 - $850

Radiation Oncology:



Treatment Planning

- Plan is created to meet physician's prescription. Revisions are made to minimize potential toxicity.
- CPT 77295 – 3D plan – $9700

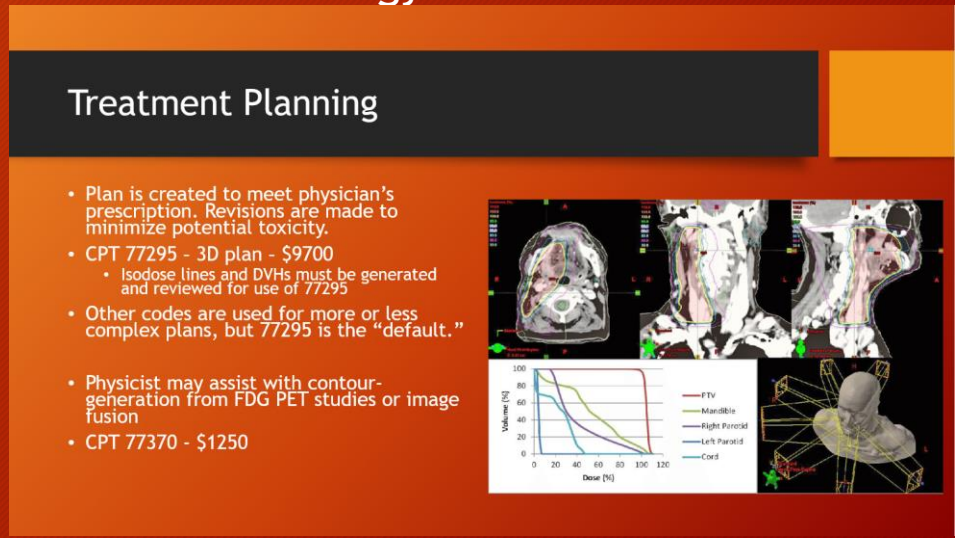
- Physicist will assist with image fusion and contour propogation
- CPT 77370 - $1250

mim SurePlan MRT

HERMES MEDICAL SOLUTIONS

DOSIsoft

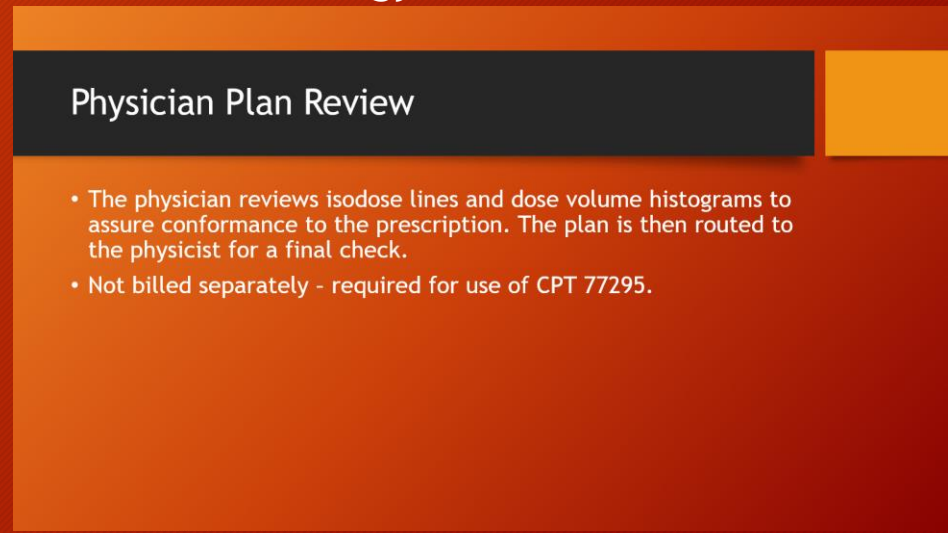
Radiation Oncology:



Physician Plan Review

- The physician reviews isodose lines and dose volume histograms to assure conformance to the prescription. The plan is then routed to the physicist for a final check.
- Not billed separately – required for use of CPT 77295.

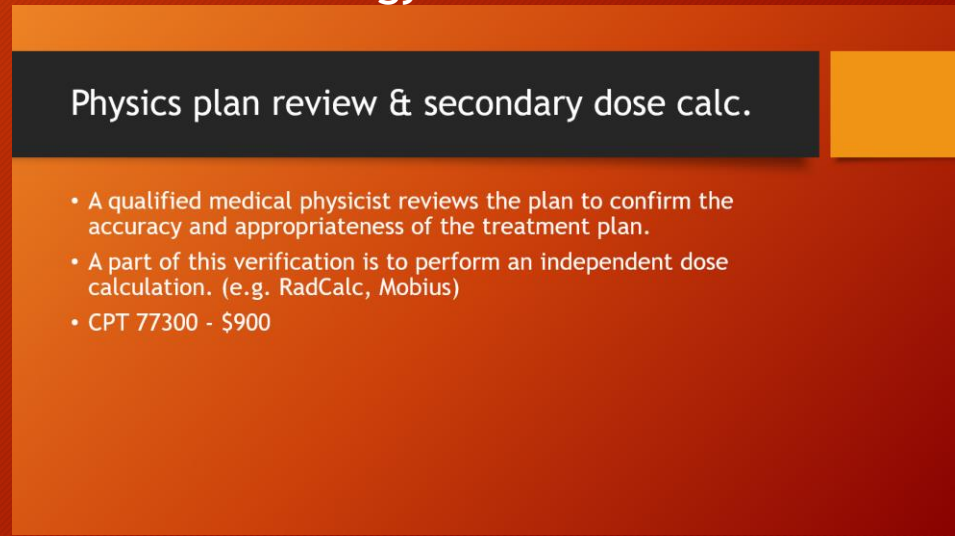
Radiation Oncology:



Physics plan review & secondary dose calc.

- A qualified medical physicist reviews the plan to confirm the accuracy and appropriateness of the treatment plan.
- A part of this verification is to perform an independent dose calculation. (e.g. OLINDA 2.1)
- CPT 77300 - $900

Radiation Oncology:



Subsequent treatments

- Treatment plan is followed for remaining fractions.

Post-treatment dose verification

- Imaging performed following each treatment. If significant pharmacokinetic changes are observed, an “adaptive” treatment plan may be needed.
- Monitoring for changes in tumor burden or changes in cGy/mCi to critical organs

- CPT 78830 – Single SPECT/CT - $3400
- CPT 78832 – Multiple SPECT/CTs - $6500

- CPT 77370 – Physics special consult - $1250
- CPT 77300 – Dose calculation – $900

RPT

Patient Evaluation Consult	99205
Treatment	
Treatment Verification & Imaging	78832
Prescription Dictated	77263
Treatment Planning	77295, 77370
Physician Plan Review	
Physics Plan Check & Secondary Dose Calc.	77300
Treatment	
Treatment Verification & Imaging	78832
Physics Plan Check & Secondary Dose Calc.	77300, 77370

← 99243 (physician consult prior to each therapy)

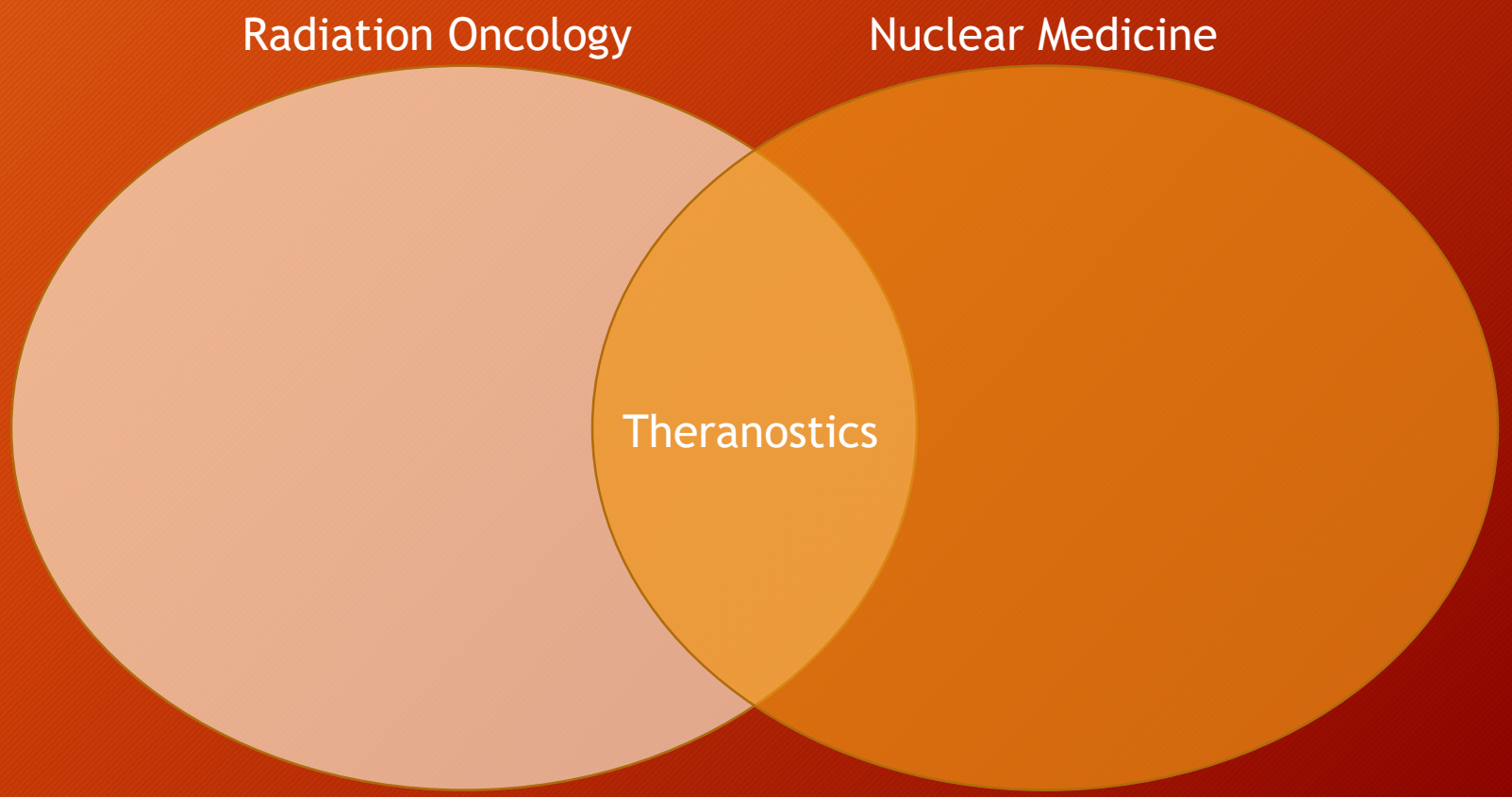
Path forward

Path forward

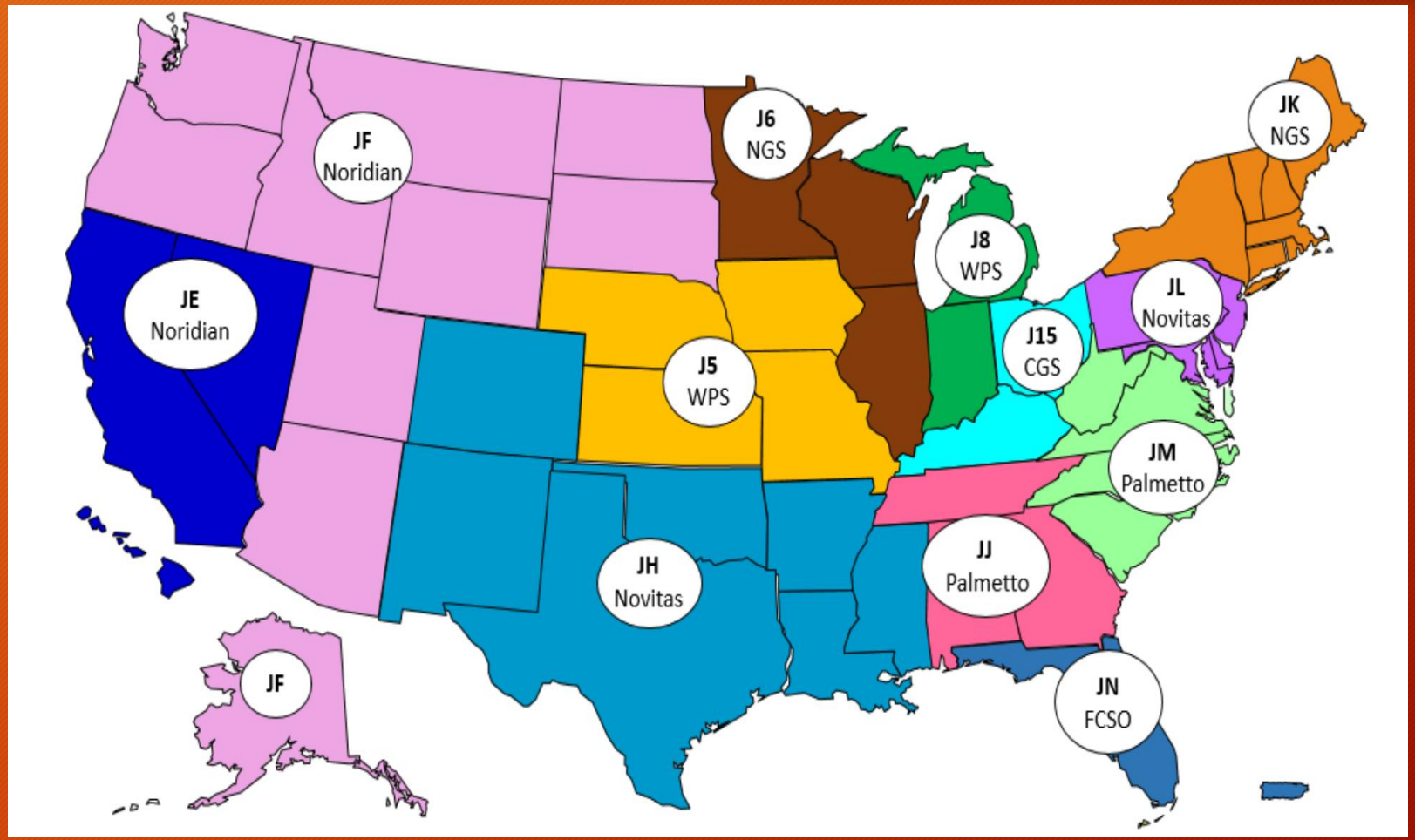
- **Radiation Oncology codes can only be billed by Radiation Oncology providers.**
- Eventually new codes will need to be created.
  - Option 1 – Nuclear medicine provider codes
  - Option 2 – Codes that can be used by any authorized user
  - Option 3 - ??
- Until then, here is the model that is being pursued at U-Iowa…

University of Iowa Model

- We are in the process of establishing a joint clinic where patients are seen by **both providers.**
- Radiation Oncology providers can bill for care, and **revenue generated will be used to support theranostics-related expenses.**
- Radiation Oncology physicists may be trained to support treatment planning activities (e.g. the “second check”)
- Initially, patient consults will take place in Radiation Oncology, however dedicated theranostics consult rooms are expected to be constructed within five years.



Medicare Administrative Contractors (MACs)



Summary

- Dosimetry improves the safety and efficacy of radiotherapy
- Cost recovery for dosimetry and treatment planning is required for adoption of these techniques
- Close collaboration with Radiation Oncologists may be a short-term solution for cost-recovery

  (This collaboration is also desirable in the long-term for expertise and workforce development reasons!)
- Cost analysis should be performed so that dedicated codes can be established.

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