

# How PSMA-PET is Changing Radiation Therapy Treatment and How We Abstract Prostate Cancer



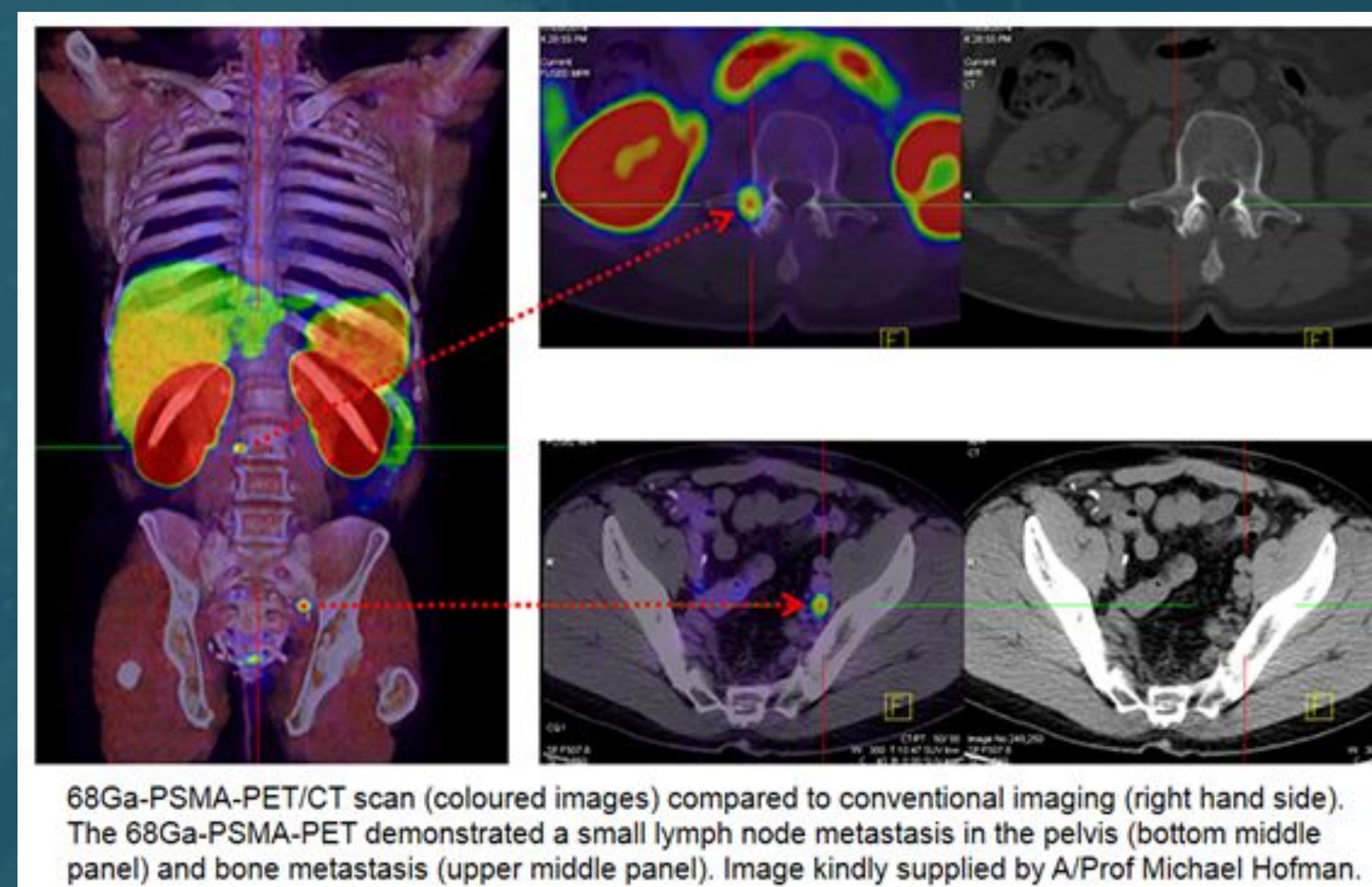
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## What is PSMA-PET and How does it work?

FDA approved radioactive tracer drug 68Ga-PSMA-11 attaches to PSMA proteins, which prostate cancer tumors overexpress. The PET scan detects the concentrated PSMA tracer, pinpointing these tumors for more effective treatment.

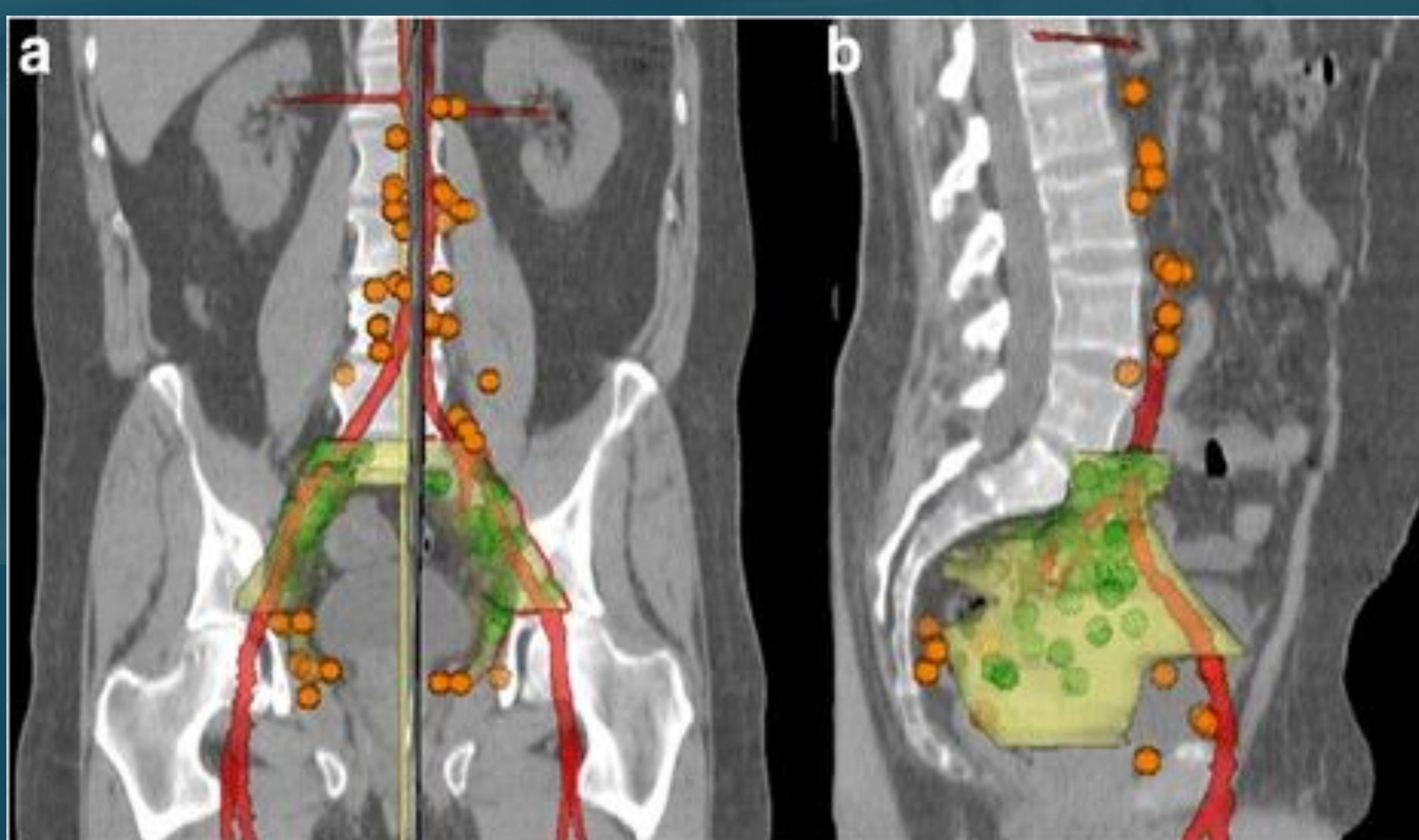
### PSMA PET is more effective and precise for localizing metastatic prostate cancer

- PSMA is overexpressed in >90% of tumor cells. The higher PSMA expression is associated with higher Gleason score and lower survival rates
- Results lead to better treatment planning and targeted care.
- PSMA-PET is more effective in pinpointing and eliminating tumors not only in the prostate but also throughout the pelvis and the body in cases where the tumors have migrated.
- PSMA PET was able to detect significantly more prostate lesions than fluciclovine "traditional" PET in men who had undergone a radical prostatectomy but had experienced a recurrence of their cancer.



### Changes in Radiation Treatment Plan Leads to Changes in the Registry

There is a rise in orders for PSMA-PET imaging in advanced prostate cancer. We are seeing more Lymph Node and bone met involvement based on results from PSMA-PET scans



Lymph nodes detected by PSMA-PET imaging that would have been inside (green) or outside (orange) of a standard XRT treatment field. 35.7% of all lymph nodes would have been missed in the standard XRT field. This would result in insufficient dose coverage.

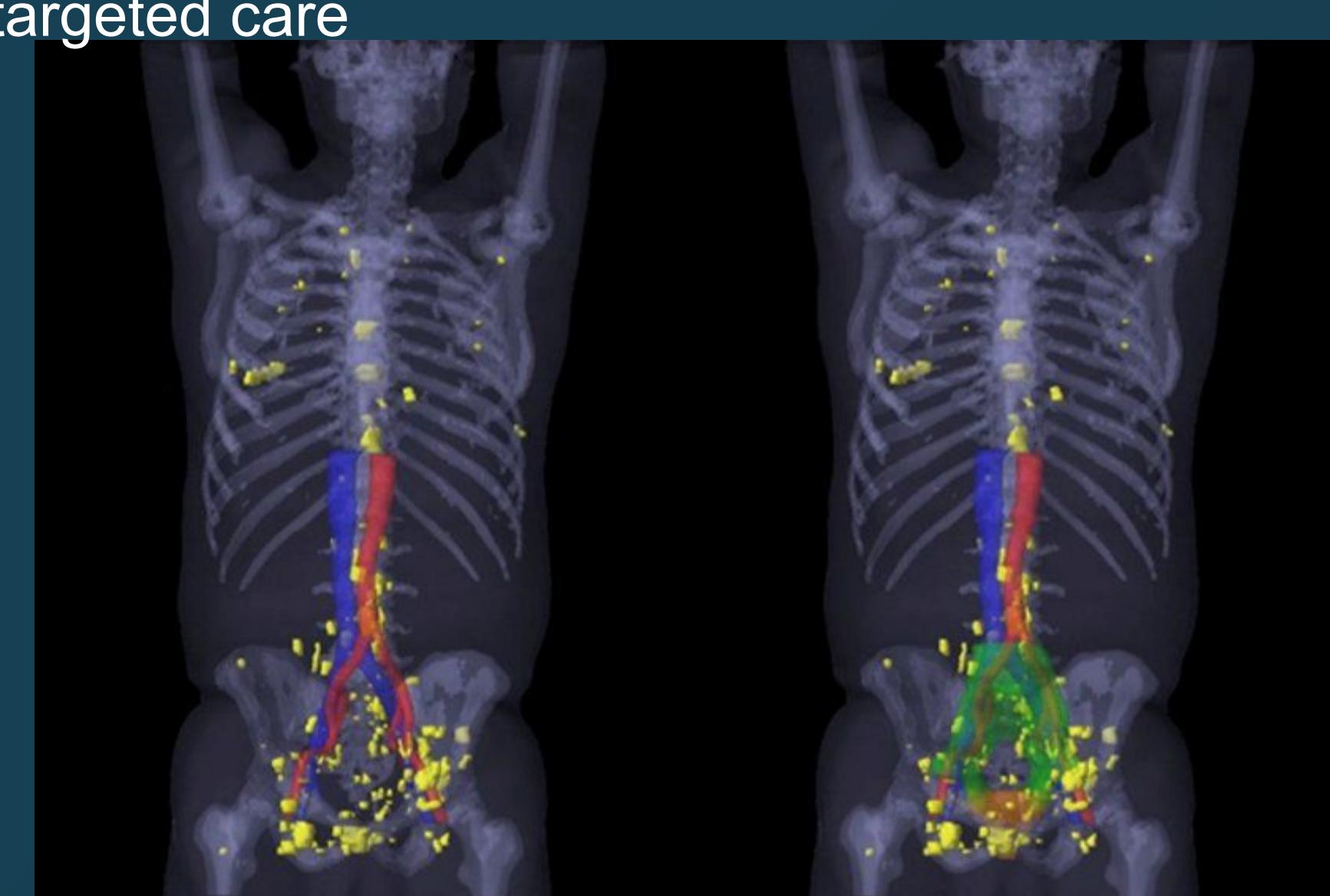
### Prostate Abstract Coding Changes Resulting from PSMA-PET Scan Imaging

- Information to be added to Follow-up if after radical prostatectomy, since not 1st course tx
- If 1st course treatment, several Radiation Data Items may change:
  - Radiation to Draining Lymph Nodes, Code 00 vs 06
  - Primary Treatment Volume, Code 06 vs 64
  - External Beam Radiation Planning Technique, Code 05 vs 04 (mets)
  - Dose per Fraction, Number of Fractions and Total Dose will be dependant on what the Oncologist includes the radiation treatment plan

STDR 2022		Phase I-III Radiation to Draining Lymph Nodes	
Code	Label	Code	Label
00	No radiation treatment to draining lymph nodes. Diagnosed at autopsy.	00	No radiation treatment to draining lymph nodes. Diagnosed at autopsy.
01	Neck lymph node regions	01	Neck lymph node regions
02	Axillary lymph node regions	02	Axillary lymph node regions
03	Nasal and thoracic wall lymph node regions	03	Nasal and thoracic wall lymph node regions
04	Breast/Chest wall lymph node regions	04	Breast/Chest wall lymph node regions
05	Abdominal lymph nodes	05	Abdominal lymph nodes
06	Peritoneal lymph nodes	06	Peritoneal lymph nodes
07	Adrenomedullary lymph nodes	07	Adrenomedullary lymph nodes
08	Lymph node region, NOS	08	Lymph node region, NOS
88	Not applicable. Phase I radiation Primary Treatment Volume is lymph nodes	88	Not applicable. Phase I radiation Primary Treatment Volume is lymph nodes
99	Unknown if any radiation treatment to draining lymph nodes. Unknown if radiation treatment administered	99	Unknown if any radiation treatment to draining lymph nodes. Unknown if radiation treatment administered

Phase I-III Radiation Primary Treatment Volume	
Code	Label
04	Conformal or 3D conformal therapy
05	Intensity modulated therapy

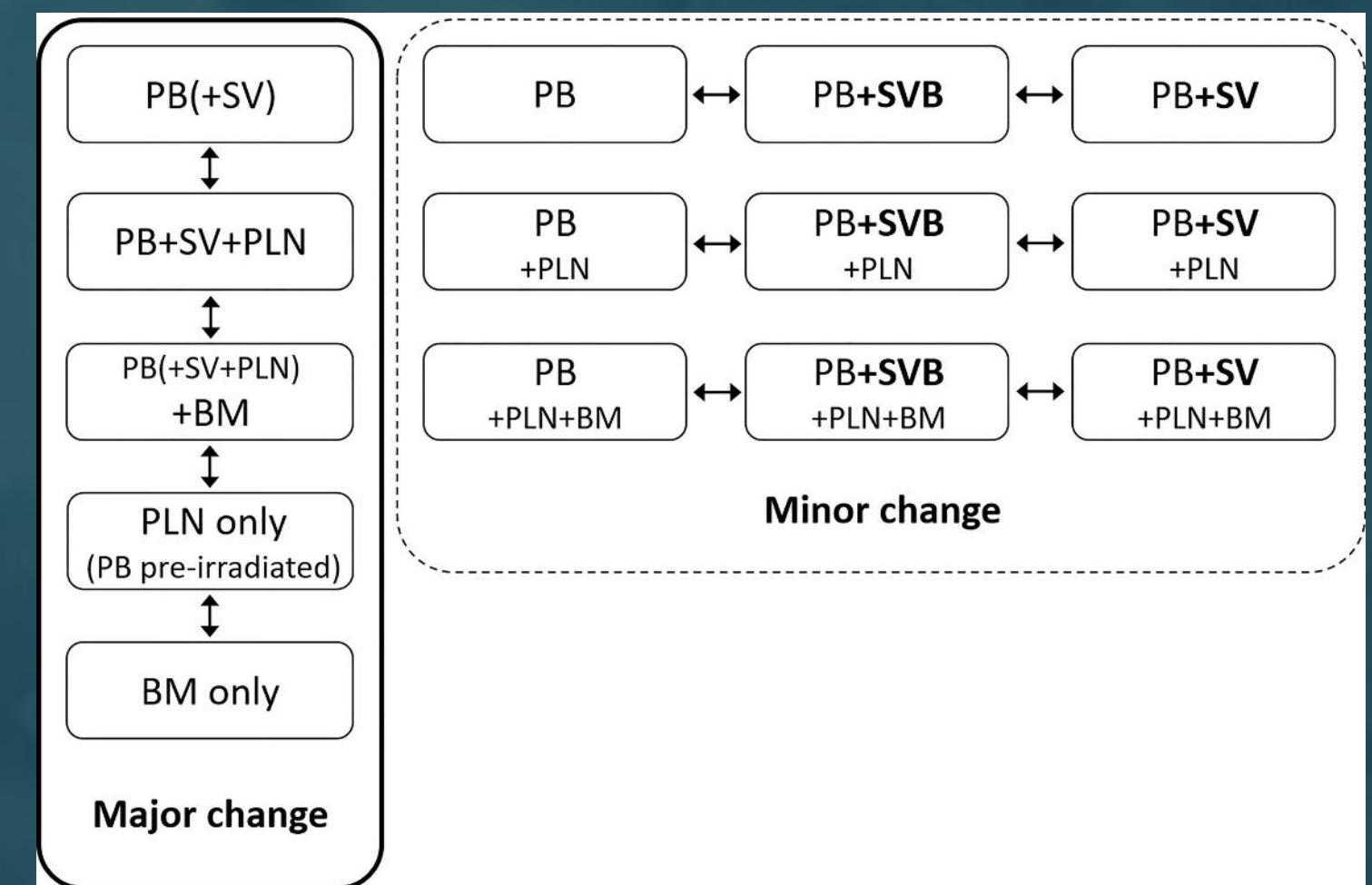
An external beam planning technique using multiple, fixed beams shaped to conform to a defined target volume. Should be clearly described as IMRT, IMAT, VMAT, or other therapy. If a treatment is described as intensity modulated therapy (IMRT/IMAT), volumetric arc therapy (VMAT) and other ways, if a treatment is described as IMRT with online re-optimization/re-planning, then it should be categorized as online re-optimization/re-planning.



### Impact of PSMA-PET on the Radiation Treatment Plan for the Management of Recurrent Prostate Cancer

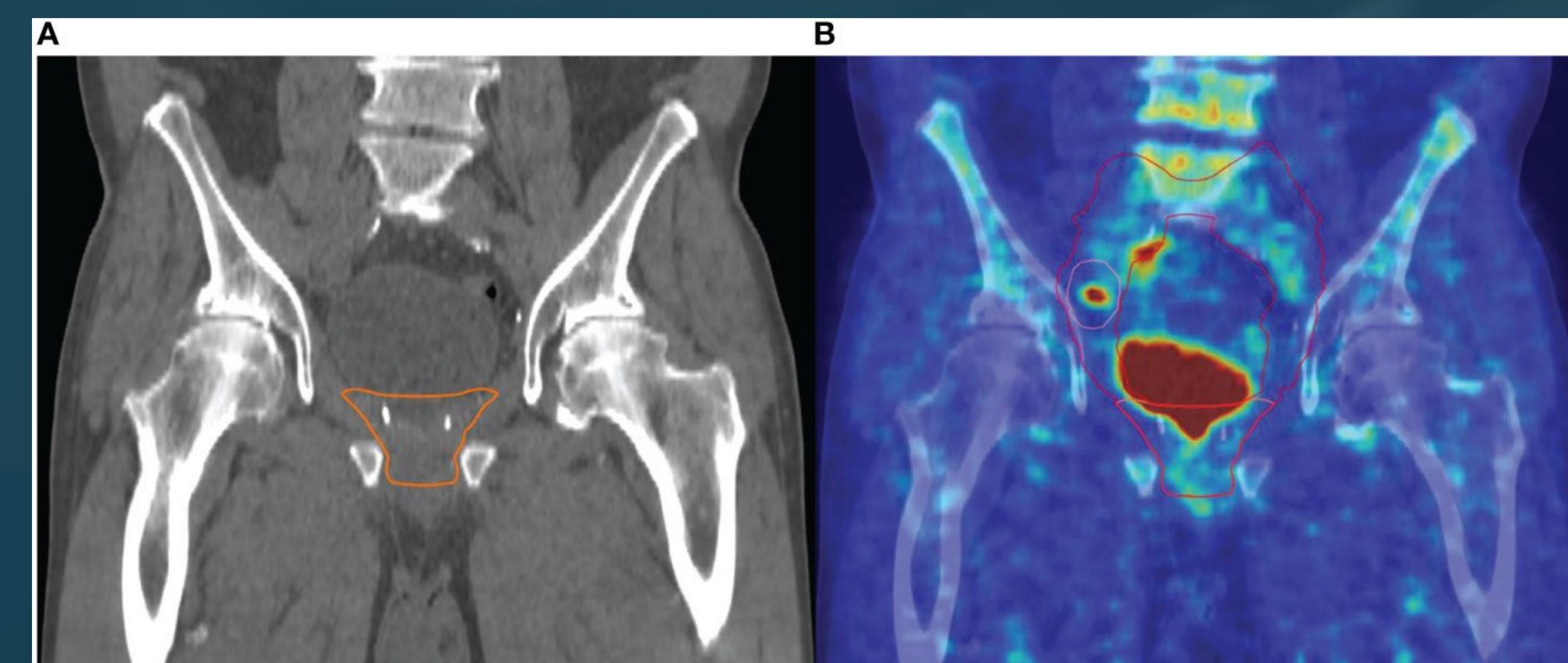
- In Clinical trial, following PSMA PET scans, patient treatment had an intended change that was considered major in 46% of patients
- Major changes occurred most often for patients with a PSA of 0.5ng/mL - <2.0ng/mL
  - Active Surveillance 47%
  - Local or Focal Therapy 56%
  - Locoregional Disease 33%
  - Systemic Therapy 69% M1a, 43% M1b/c
  - Metastatic Disease 40%
- Conclusion:** Intended diagnostic tests, mostly CT (29%) and bone scans (35%), were prevented by PSMA-PET, and disease localization translated into management changes in more than 50% of patients with recurrent prostate cancer

Definition of major and minor changes in XRT



PB, postop prostate bed; SV, original seminal vesicle position; SVB, original seminal vesicle base position; PLN, pelvic lymph nodes; BM, bone mets; NC, no change

### Example of Major Change to a Standard Radiation Treatment Field Based on PSMA-PET Imaging Location



### National Comprehensive Cancer Network (NCCN) Guidelines for Prostate PSMA-PET Imaging

- As workup for progression, detection of recurrent disease after irradiation or radical prostatectomy and for initial risk stratification for localized prostate cancer
- Men with newly diagnosed unfavorable intermediate, high or very high risk prostate cancer
- Suspected mets for initial definitive irradiation

**Conclusion:** We will be seeing a rise in orders from Oncologists for PSMA-PET imaging for prostate cancer patients