

# CANM Resident Forum: Preparing for the Future of NM

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# Many revolutions in diagnostic NM

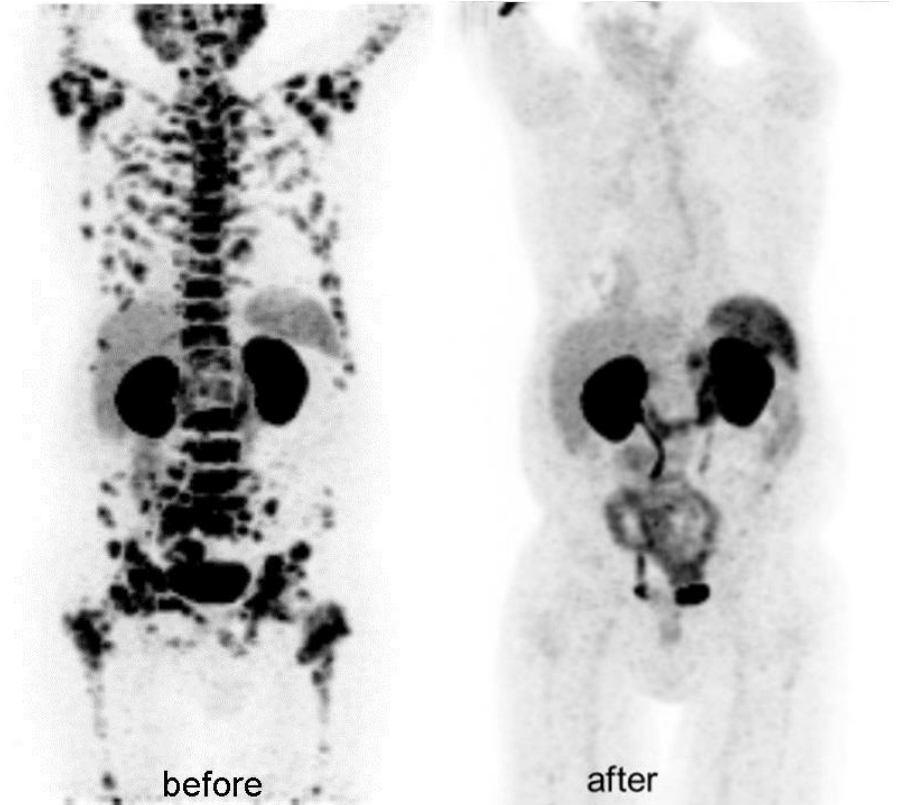


# Limited practice of radionuclide therapy (RNT)

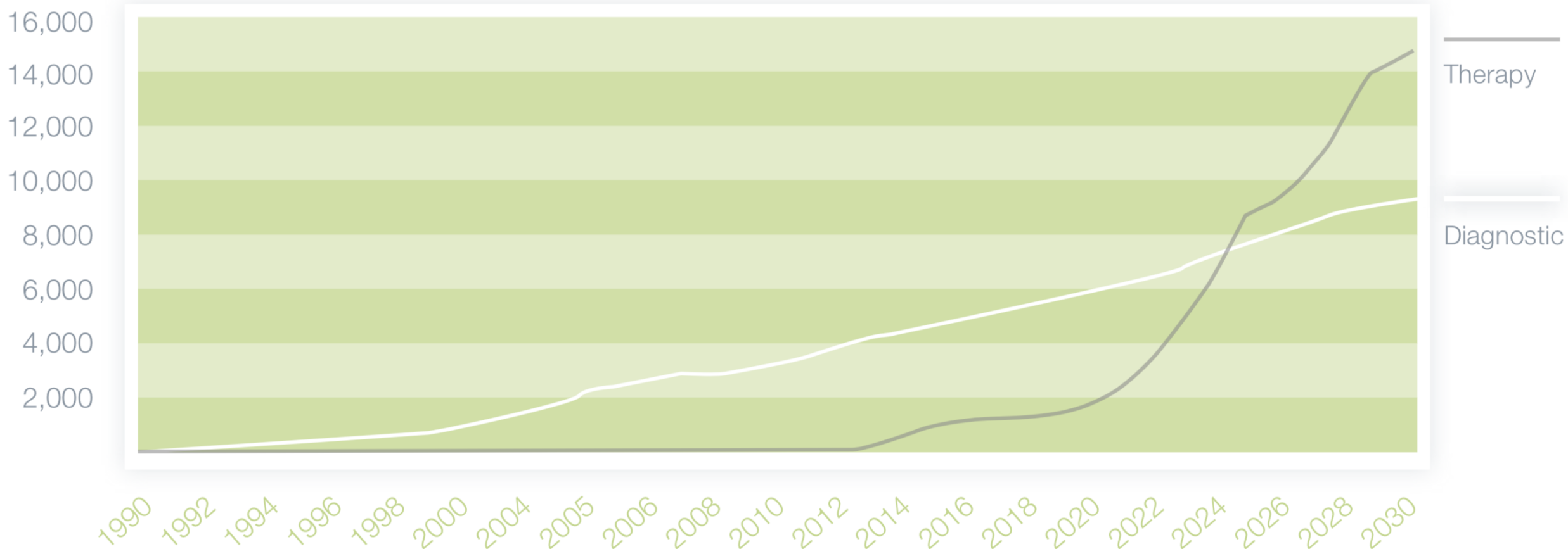


# The Theranostic Revolution in NM

- Novel RNTs:
  - Highly effective, Life-prolonging
  - Low toxicity
  - Blockbuster applications
- More involving:
  - Patient selection
  - Multi-cycle
  - Imaging and dosimetry
  - Long-term follow-up
  - Multidisciplinary approach
- New/evolving roles for NM physician: becoming a **Nuclear Oncologist**



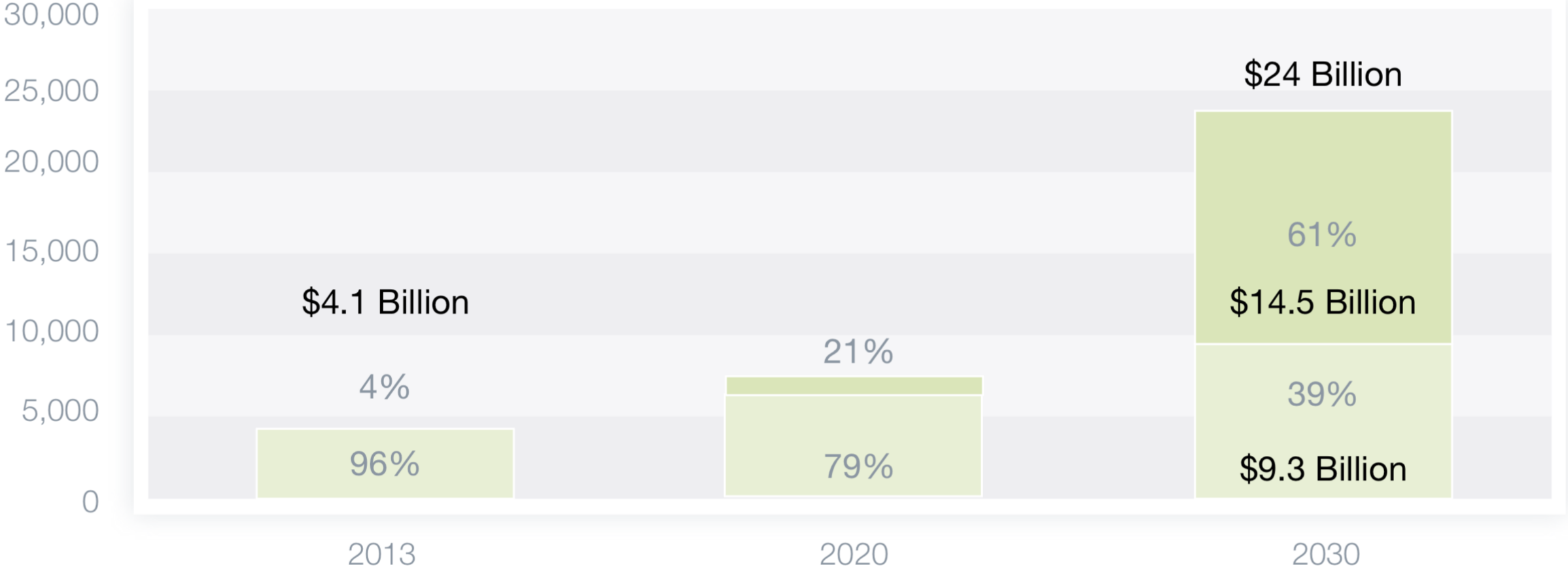
# Diagnostic and Therapy radiopharmaceuticals worldwide sales forecast in \$ Millions



Source: ME-Draysintell 2014 report - Opportunities in nuclear medicine – radioisotopes, radiopharmaceuticals

# MNM - Diagnostic & Therapy evolution

## Sales in \$ Millions



- Diagnostic
- Therapy

# Current trends in NM

- Novartis acquired:
  - AAA for \$ 3.9 billions in 2017 (Lutathera® PRRT)
  - Endocyte for \$ 2.1 billions in 2018 (PSMA-617 RLT)
- RP start-ups are mushrooming
- Many early phase trials
- Alpha therapy emerging fast

- ClinicalTrials.gov:

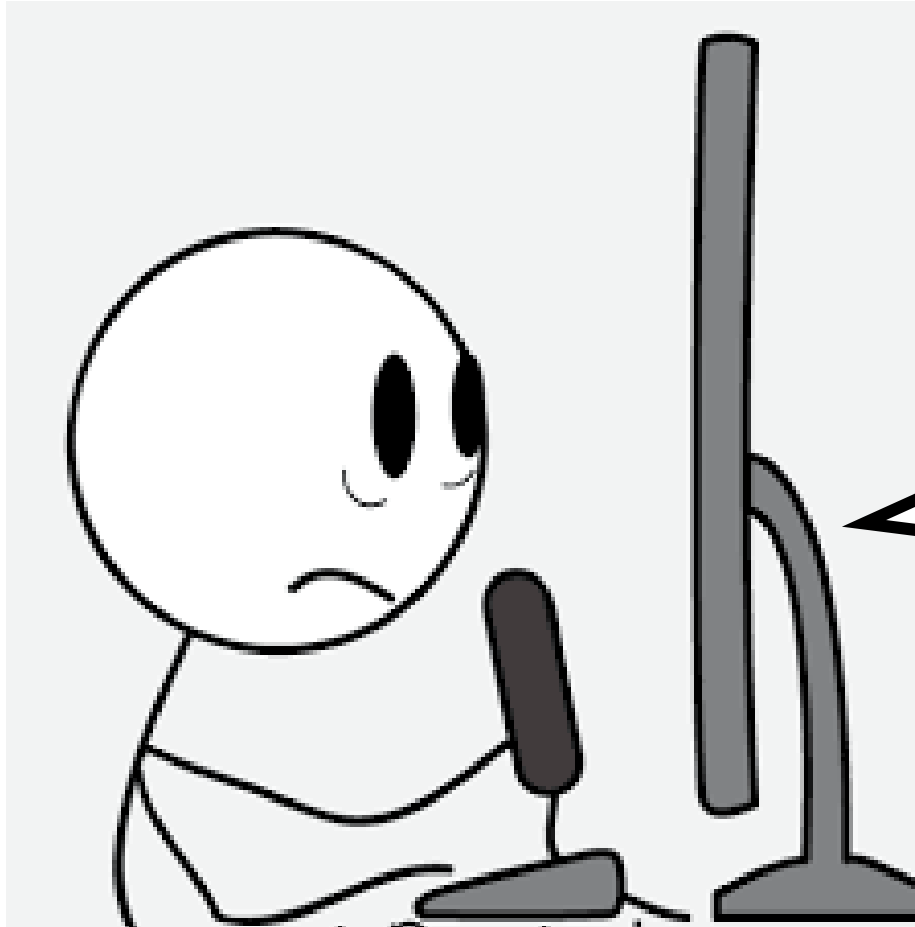
Nuclide	No. active trials
I-131	79
Y-90	76
Lu-177	59
Ra-223	38
Ac-225	4
Re-188	3
Sm-153	2

# Why RNT is best practiced by NM physicians?

- Expert in radiopharmaceuticals
- Expert in molecular imaging and molecular delivery of radiation
  - Able to predict response and toxicity
  - Able to image RNT biodistribution and perform dosimetry
  - Able to tailor RNT to patients/tumour characteristics
- RNT has the potential to become a MAJOR component of practice
  - Further consolidate and increase expertise



# The diagnostician...



There are 23  
lesions on CT,  
but one clearly  
takes up Ga-68  
above background

...and the therapist

The PET report  
says you have  
cancer...  
Don't worry, I've  
got a radiation  
shot for you !



# The diagnostician and the therapist model

- Risks: poor patient selection, futile treatments, suboptimal outcomes, undue toxicity
- (Radio)pharma: concerned about maximum return on investment
  - Market growth
  - Easy access: administration by whoever cares for patients and/or willing
  - Simplicity: one-size-fits-all regimens, no imaging
  - May favor this alternate model

# NM Community vs. Theranostics

- Need to jump on the train RIGHT NOW!
- Need expand the field of practice towards direct patient care
  - Substantial change to current practice model
- Training needs to adapt (FAST) to this revolution
  - Residency programs
  - Fellowships
  - MDs in practice
- Become Nuclear Oncologists and be indispensable to practice RNT with the highest standards of quality

# Where do we start?

1. Acknowledgement of the importance of the theranostic revolution and the urgency to react
2. Adapt our practice to embrace it
3. Redefine the training pathway(s) to ensure sufficient expertise and workforce
4. Elevate the standards of practice