

# The Quantitative Imaging for Personalized Cancer Medicine (QIPCM) radionuclide therapy and theranostics R&D program is in collaboration with UHN's Radiation Medicine Program.

## IMAGING SCIENCE EXPERTISE

Theranostics requires a multidisciplinary approach. The QIPCM team consists of experienced researchers, physicists, clinical trial and regulatory experts to enable success.

## PATIENT STRATIFICATION VIA IMAGING

Imaging is increasingly being used to identify the right patients for the right clinical trial. Our team has extensive experience with centralizing and analyzing PET/CT and PET/MR images including from 68Ga-Dotatate and 18F-PSMA.

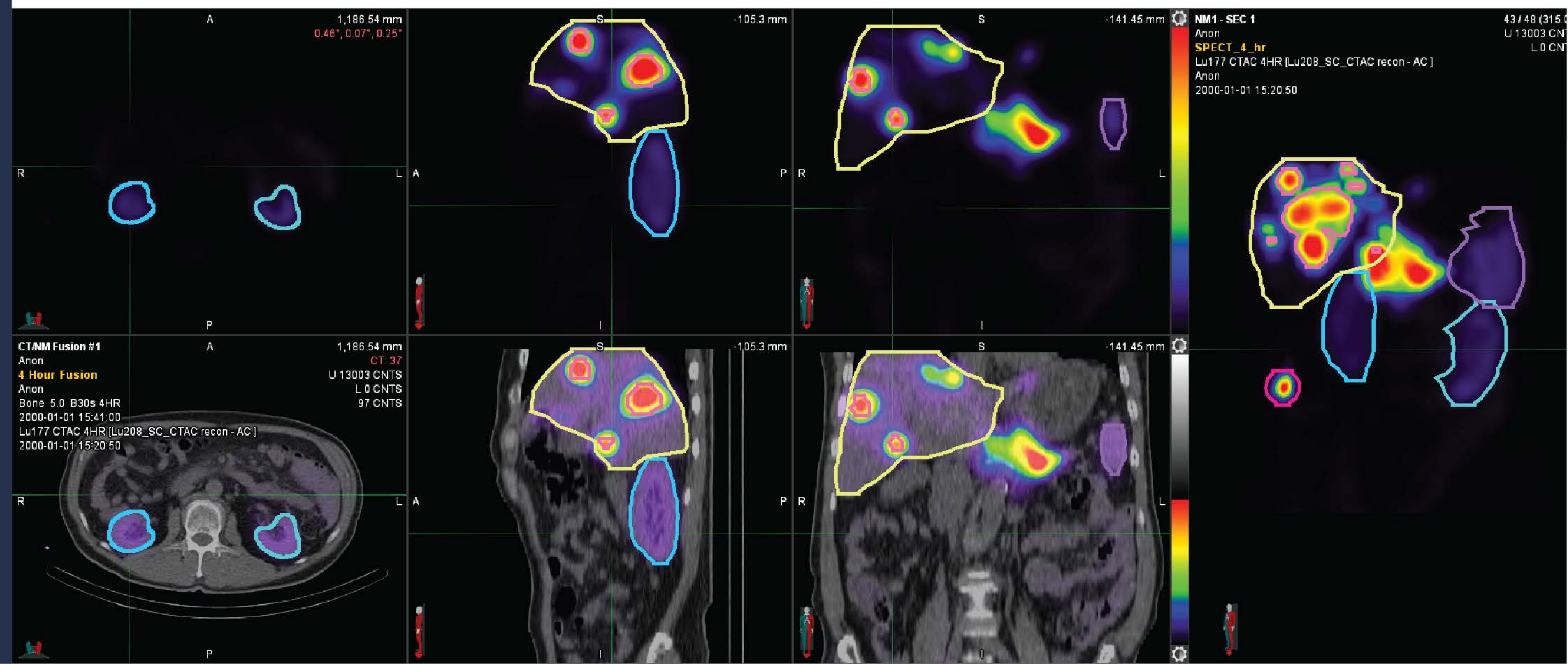
## QUALITY ASSURANCE

To enable accurate radiotherapeutic dosimetry across multiple sites and SPECT-CTs, camera sensitivity measurements need to be performed and validated. We have developed custom clinically applicable scanner validation procedures for SPECT-CT image-based dosimetry.

To ensure dosimetric quality throughout the duration of a clinical trial, ongoing calibration and image quality checks are required. We have developed techniques for these ongoing quality assurance, including standardized source for each scan that is quantitatively measured by QIPCM trial analysts, with quality control charts generated to flag any camera/scanner deviations before dosimetry is performed.

## WHOLE BODY\ORGAN DOSIMETRY

For novel radiotherapeutics it is common to perform whole body dosimetry using the planar SPECT images to quantify the dose to radiation sensitive organs and tissues in the body. This is typically performed using programs such as OLINDA, IDAC or MIRD/Dose which use ICRP89 phantom derived s-values and MIRD (Medical Internal Radiation Dose Committee of the Society of Nuclear Medicine) techniques to produce dosimetry results to more than 25 organs including brain, thyroid, lung, liver and bone marrow. Our team can take the SPECT-CT image derived dosimetry results and combine them with the whole body planar images to produce organ level dosimetry results for your studies.



## PERSONALIZED DOSIMETRY WITH IMAGING

Individualized dosimetry can be used to tailor treatment to maximize the dose to while limiting dose to the organs at risk. To obtain reliable quantitative dosimetry results from serial and cyclical SPECT images there are a number of technical variables that must be controlled. Our team has developed tools and methodologies to ensure accurate dosimetric measurements from SPECT-CT data acquired across various institutions and scanners.

We have developed customized, readily adaptable software tools for personalized dose planning and patient report generation, built upon validated and regulatory compliant commercial software for organ and tumour segmentation and review.



## CONTACT

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## QIPCM RADIONUCLIDE THERAPY

