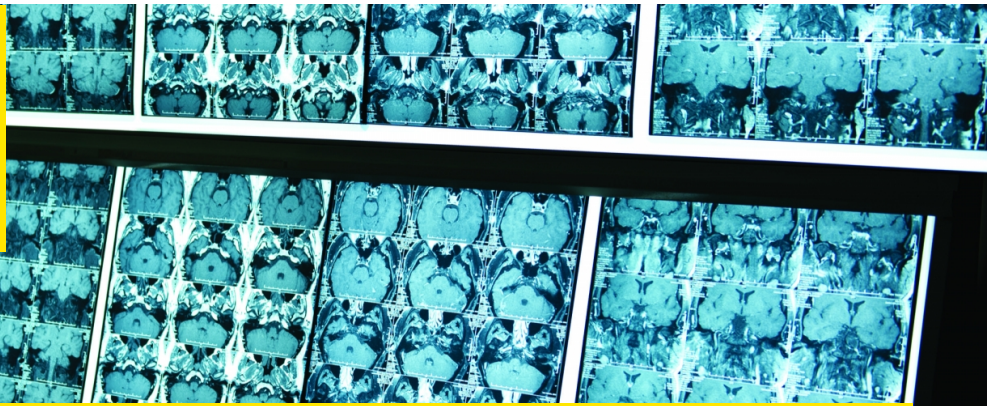




**UNSW**  
SYDNEY



## Distributed Cancer Data and Analysis

**Using data analytics, machine learning and deep learning techniques across clinical and imaging datasets to provide the opportunity for establishing personalised medicine approaches to cancer treatment.**

### Competitive advantage

- Leading a strong collaboration of national and internationally linked hospital-based radiotherapy datasets
- Distributed learning to enable machine learning and advanced imaging analysis across the network of datasets
- Imaging datasets that are annotated during the routine course of radiotherapy including defined treatment regions and normal tissue structures, all in 3D

### Impact

- Outcome models can provide additional clinical evidence where directly applicable clinical trial evidence is not available
- Variability in patient cohorts, treatment and outcome can be assessed in a streamlined fashion
- The impact of new technology that is unsuitable for a clinical trial, can be assessed

### Successful outcomes

- Validated published prediction models using this approach to accessing data
- Used imaging datasets available in this network to incorporate radiomics features into an outcome prediction model
- Develop autosegmentation algorithms - using image datasets - for use within a radiotherapy clinical environment

### Capabilities and facilities

- An established network across both national and international radiotherapy clinics
- A developed platform for undertaking machine learning on distributed datasets, and for calculating and analysing radiomics features and assessing correlation with other clinical factors or outcomes

### Our partners

- NSW Local Health Districts
- Trans-Tasman Radiation Oncology Group
- Maastricht clinic, Maastricht, The Netherlands
- Odense University Hospital Denmark
- Oslo University
- CSIRO
- Cancer Institute NSW

### More Information

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