Erasmus School of Health Policy & Management

HTA of Cancer Genomics: perspectives transferability and access

Maarten J. IJzerman, PhD
University of Melbourne, Centre for Cancer Research, Melbourne, Australia
Erasmus School of Health Policy and Management, Rotterdam, the Netherlands
maarten.ijzerman@unimelb.edu.au
ijzerman@eshpm.eur.nl

Erasmus University Rotterdam

THE UNIVERSITY OF MELBOURNE

VCCC Alliance
Overcoming cancer together

Peter Mac
Peter MacCallum Cancer Centre
Victoria Australia

Erasmus

Understanding differences: molecular testing

- **Australia (26 Mo people)**
- Universal Healthcare (Medicare, tax based) and Private Health Insurance (premium based)
- Public and private hospitals (including pathology labs), specialists work in both
  - Charge service fees to private patients
- Commonwealth manages Medicare: PBS and MBS following rigorous HTA
- State governments fund hospital services through DRGs
  - Complex for interstate patients (e.g. rare cancers like ALL)

- **Netherlands (17,6 Mo people)**
- Universal Healthcare, Premium based
- Public healthcare (few private centres)
- National Government is responsible for defining benefits scheme (drugs follow HTA process)
- Health insurers (non-for profit) legally bound to offer benefits scheme. Competition on premium
- Hospital services are funded through a bundled payment (DOT), including (complex) diagnostics

Implementation of co-deps: item descriptors

Medicare Benefits Schedule - Item 73341

Search Results for Item 73341

Category 6 - PATHOLOGY SERVICES

73341

Group P7 - Genetics

Fluorescence in situ hybridisation (FISH) test of tumour tissue from a patient with locally advanced or metastatic non-small cell lung cancer, which is of non-squamous histology or histology not otherwise specified, with documented evidence of anaplastic lymphoma kinase (ALK) immunoreactivity by immunohistochemical (IHC) examination giving a staining intensity score > 0, and with documented absence of activating mutations of the epidermal growth factor receptor (EGFR) gene, requested by a specialist or consultant physician, to determine:

a. if requirements relating to ALK gene rearrangement status for access to an anaplastic lymphoma kinase inhibitor under the Pharmaceutical Benefits Scheme are fulfilled; or

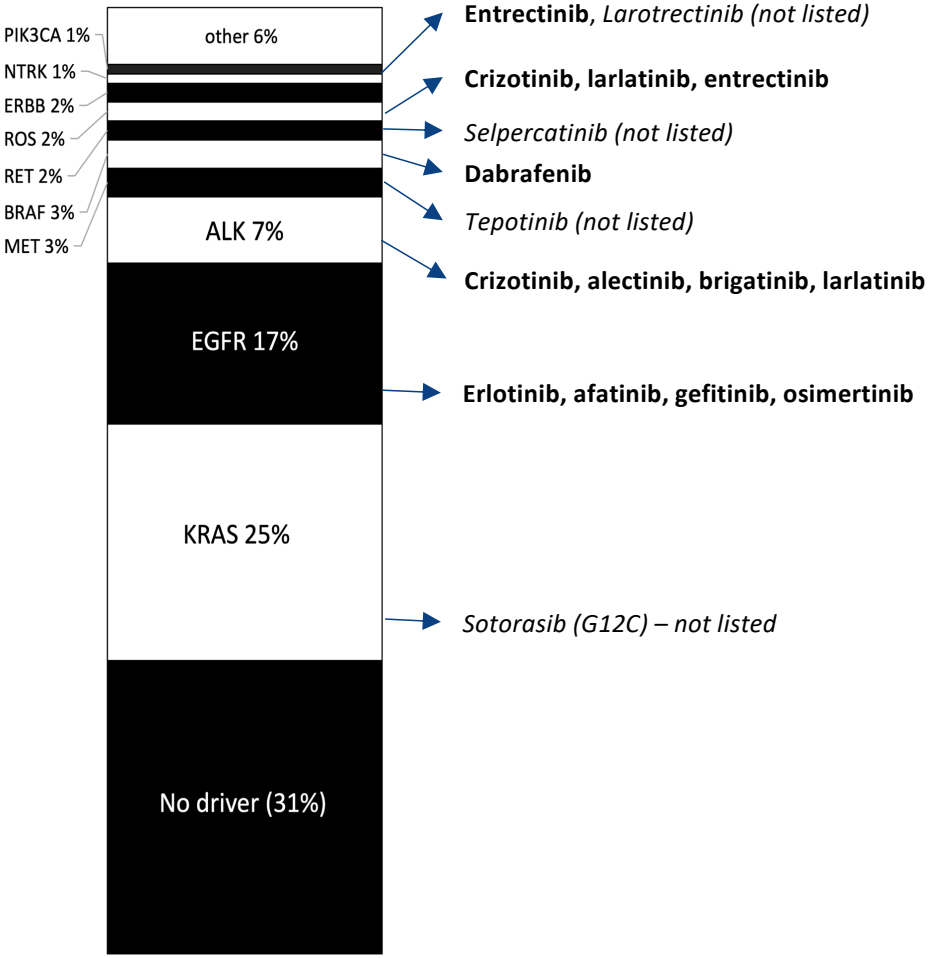
b. if requirements relating to ALK status for access to pembrolizumab under the Pharmaceutical Benefits Scheme are fulfilled.

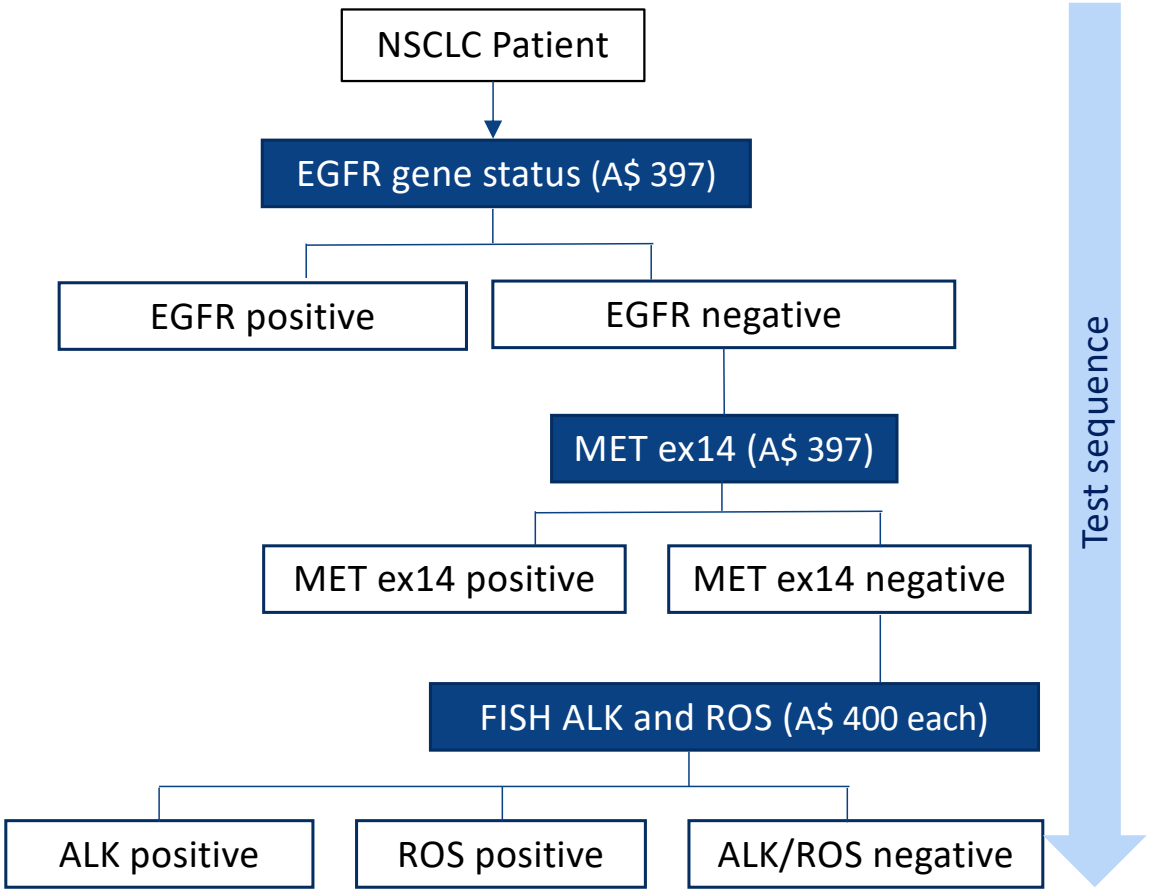
Fee: $400.00 **Benefit:** 75% = $300.00 85% = $340.00

← Previous - Item 73340

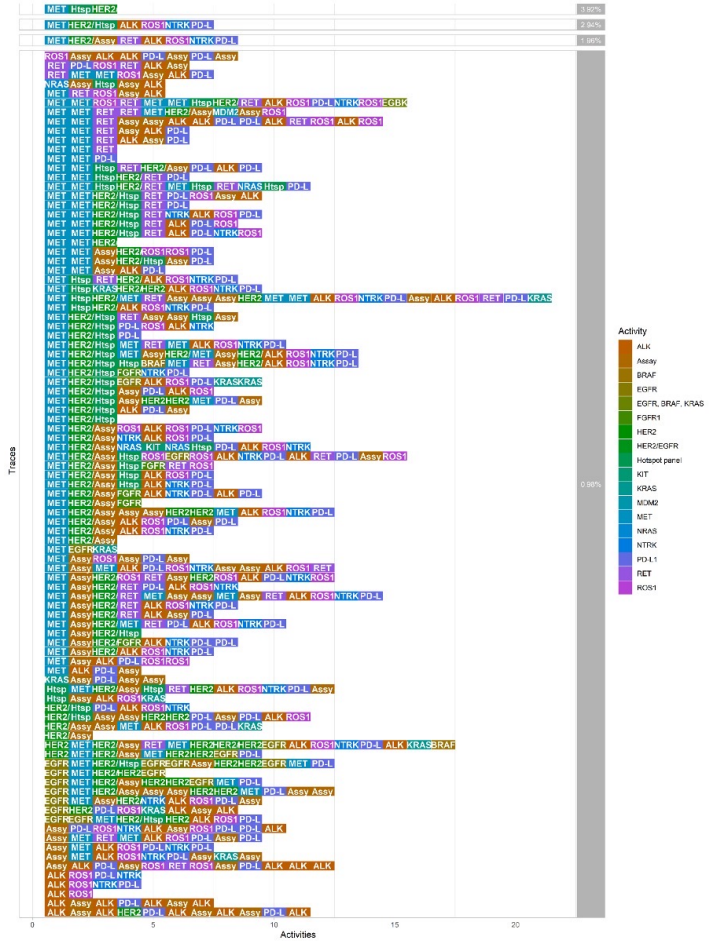
Next - Item 73342 →

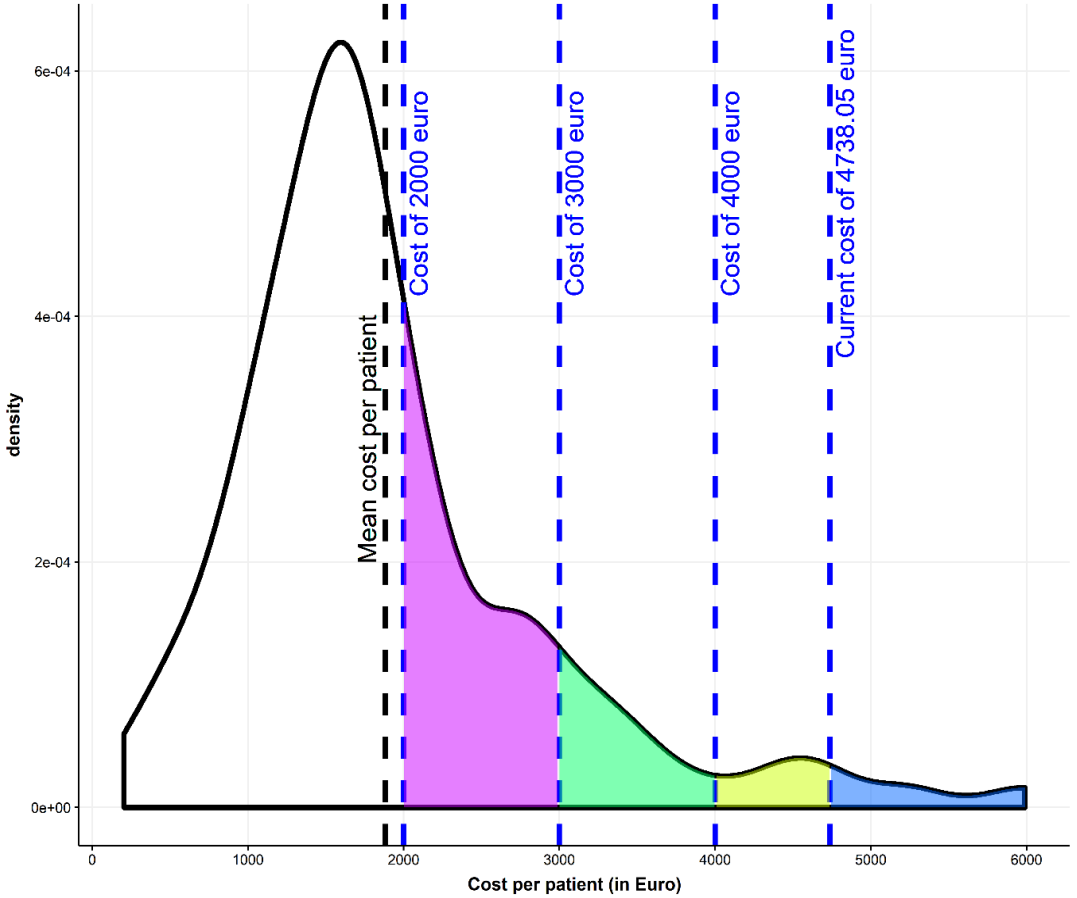
NSCLC treatment landscape & MBS items





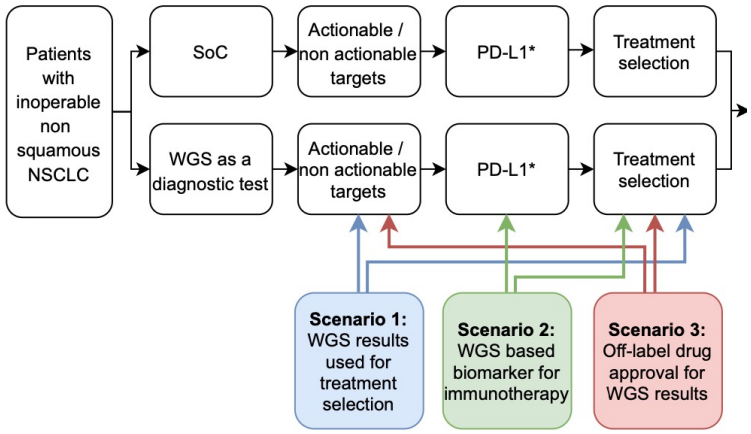
Whole-Genome Sequencing to replace SoC tests?

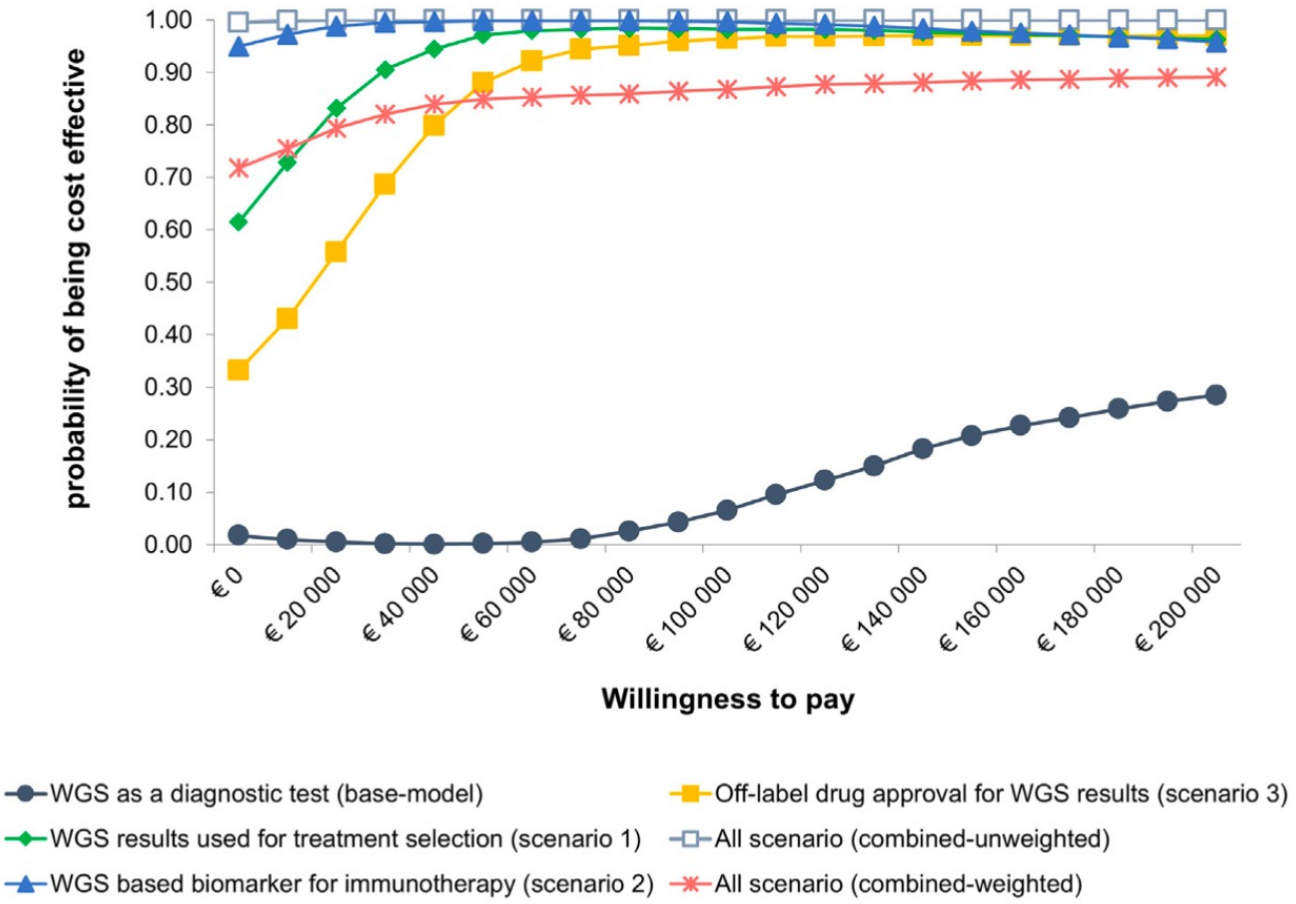




van de Ven et al, J. Molecular Diagnostics, 2021

Cost-effectiveness acceptability of WGS

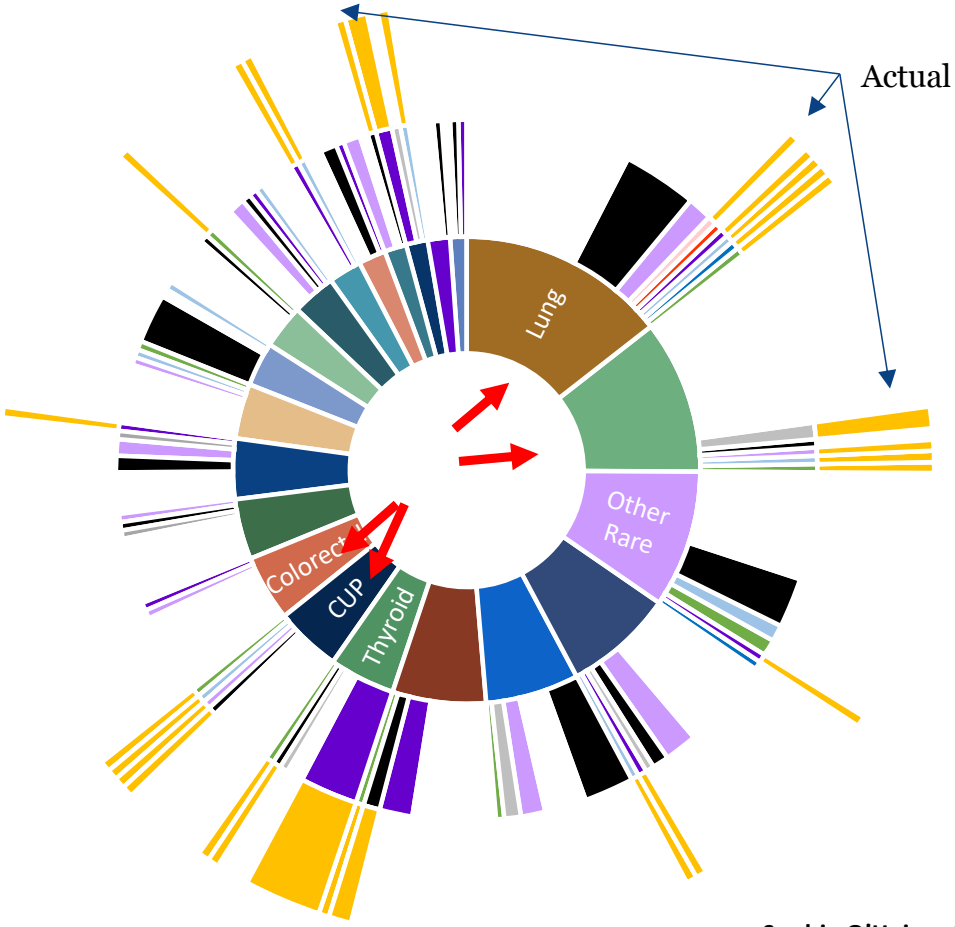


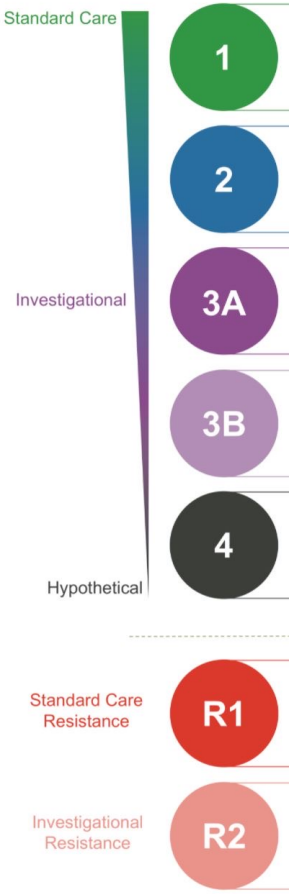


Simons *et al*, 2022

CGS – Actionable Findings (n=217 / 390+ genes)

- Biliary
- Bladder
- Bone & Soft Tissue
- Breast
- Cervical
- Colorectal
- CUP
- Endometrial
- Gastric/Oesophageal
- Head & Neck
- Lung
- Melanoma
- Neurological
- Other Rare
- Ovarian
- Pancreatic
- Prostate
- Renal

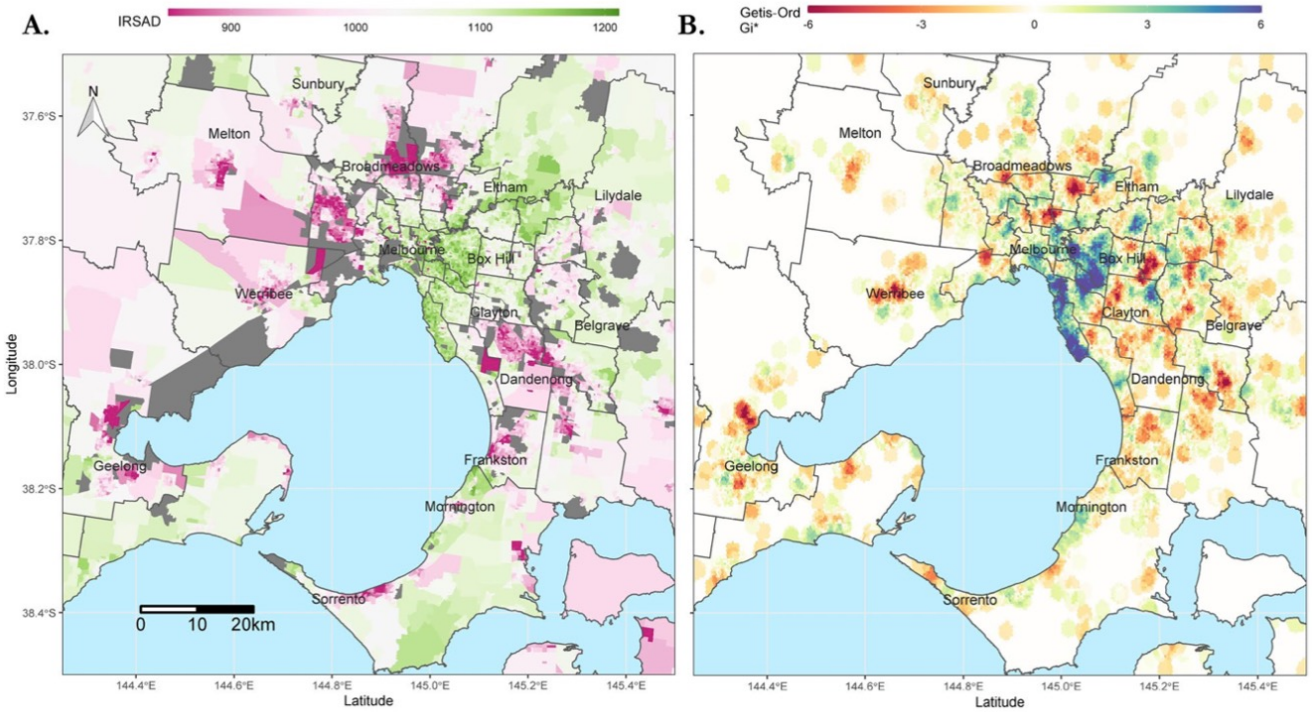




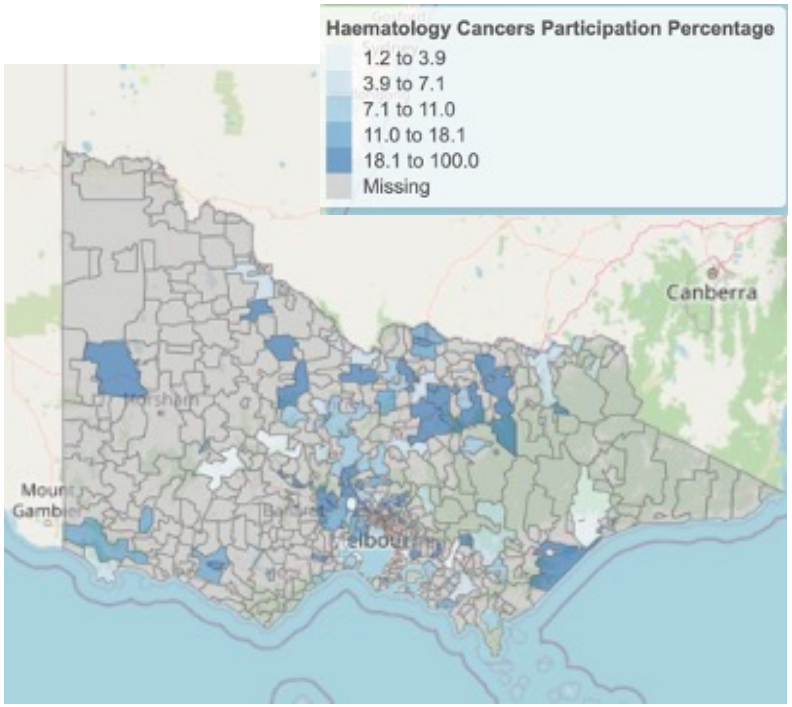
Sophie O'Haire et al, 2022 (J. Precision Oncology)

OncoKB levels of evidence
Chakravarty et al., JCO PO 2017

Equitable access and oucomes



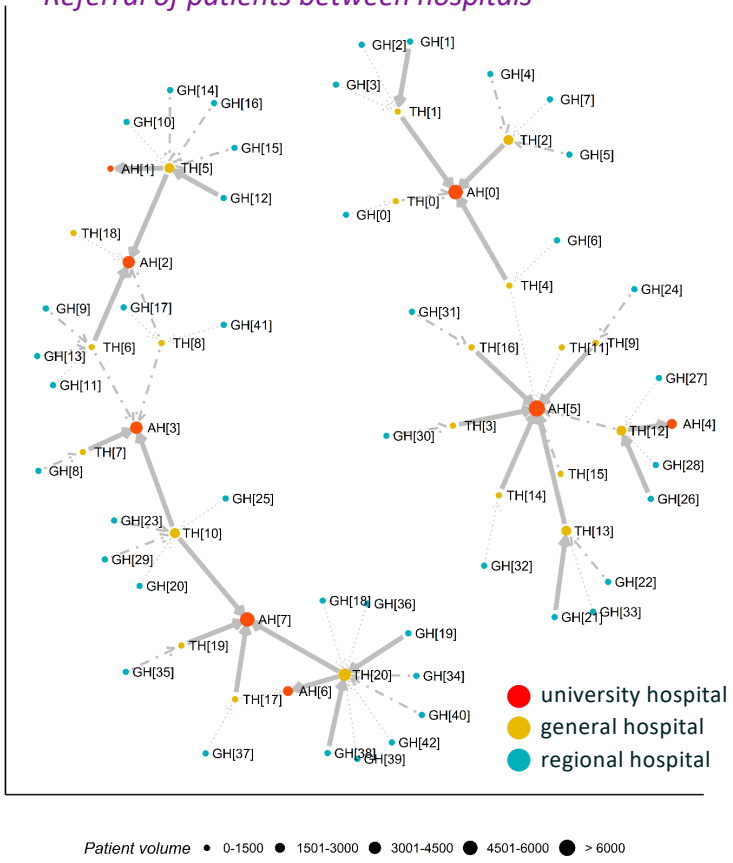
"Mapping disparities in functional outcome of prostate cancer patients"
Kendrick Koo et al, BMC Cancer 2022



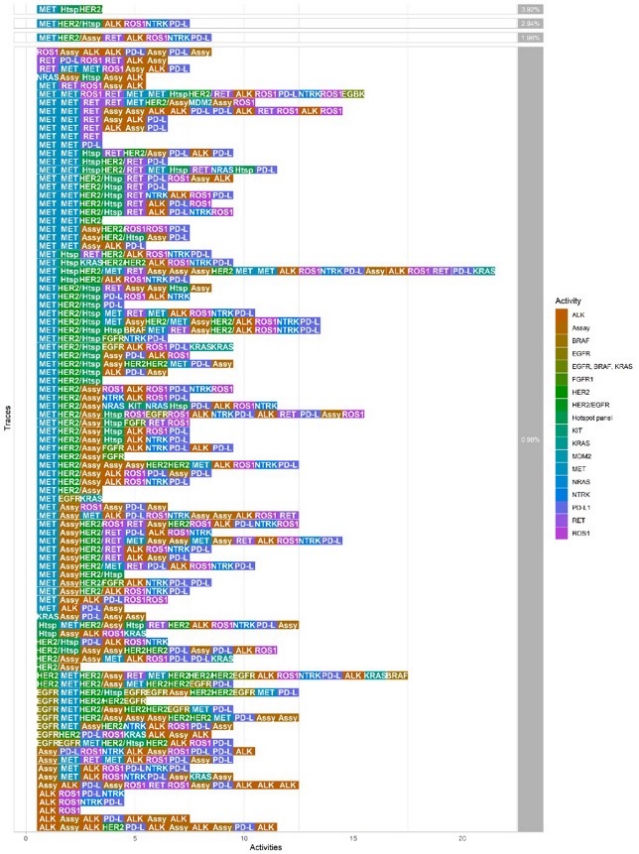
Mapping of clinical trial participation weighted for cancer incidence.
Nancy Tran et al, 2020

Systems models to simulate access to precision oncology

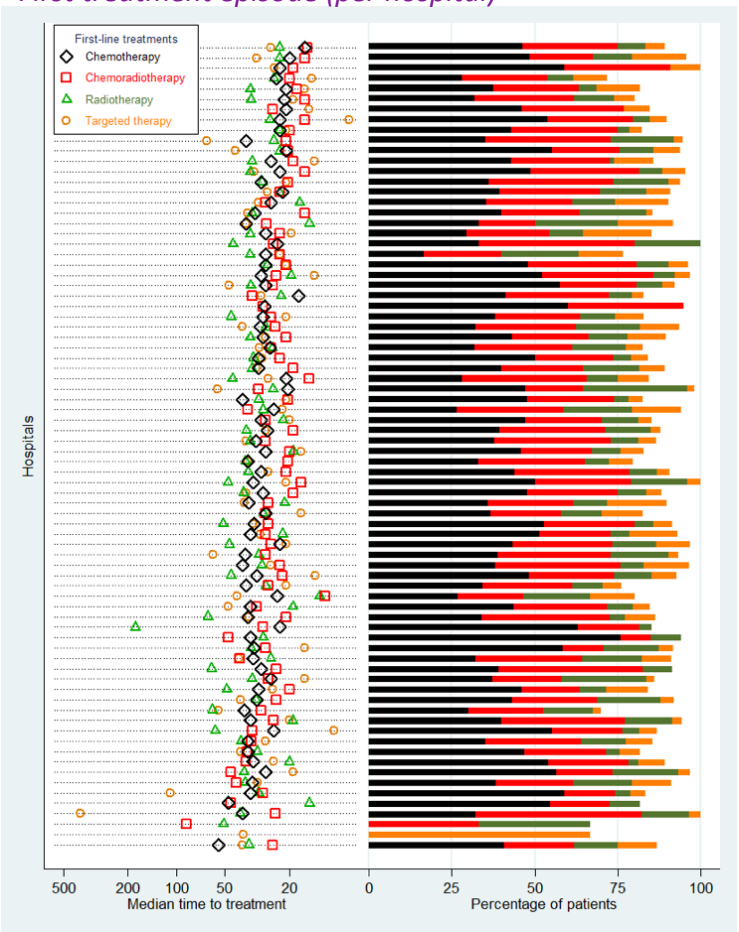
Referral of patients between hospitals



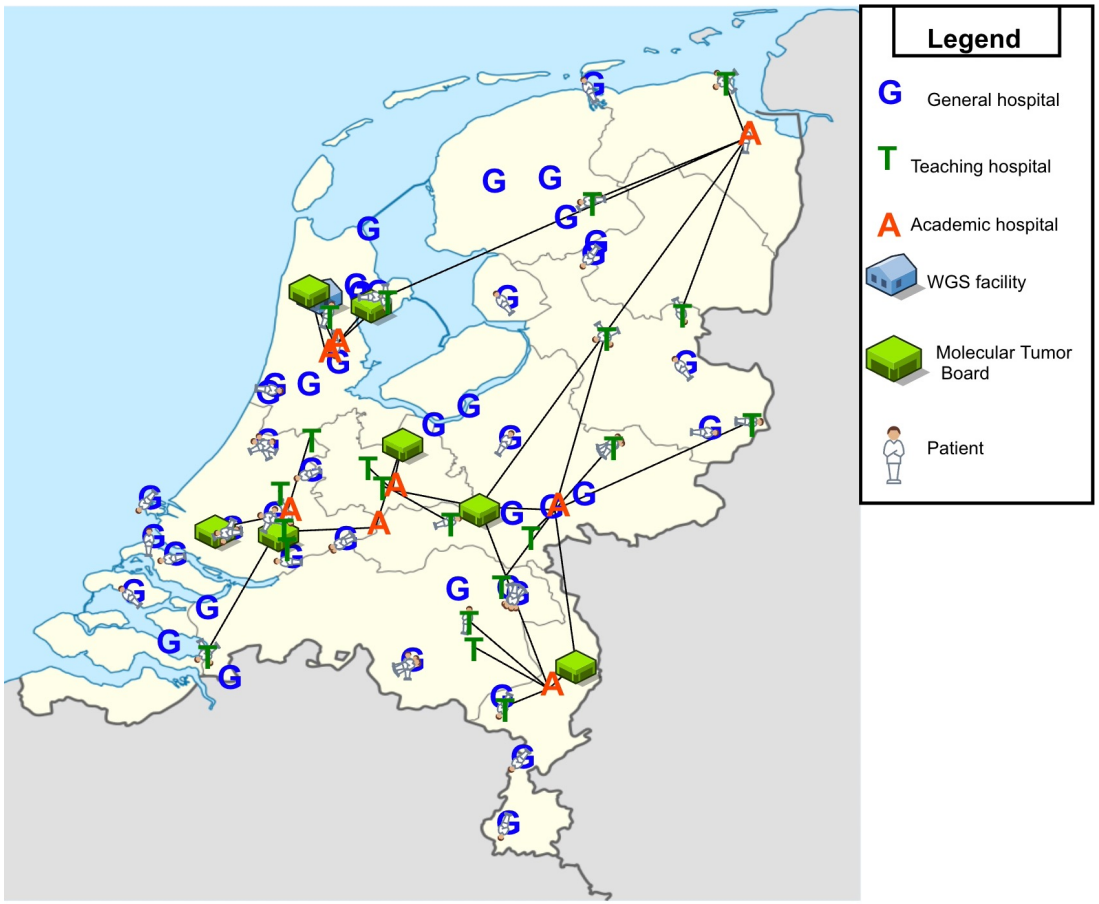
Molecular diagnostics

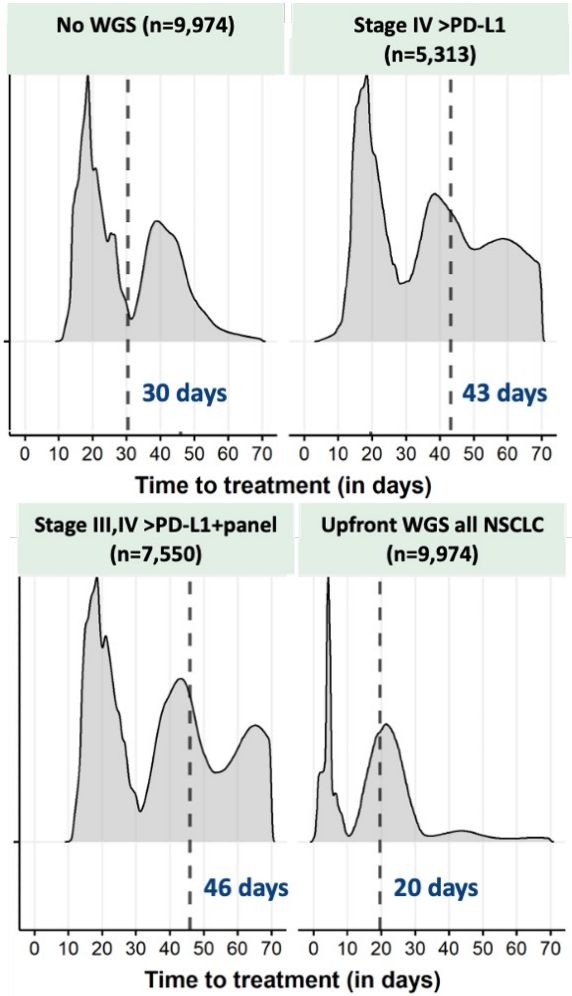


First treatment episode (per hospital)



Implementing Whole-Genome Sequencing





vd Ven *et al*, BMC Medical Research Methodology, 2022

Implementation considerations in HTA

- **Transferability to the community**
  - Prevalence (and budget impact) of specific biomarkers (e.g. NTRK, MSI)
    - Depends on testing platform, tested population (e.g. indiginous), cancer stream
  - Actionability and incremental benefit of targeted treatment (indirect evidence)
    - Level of evidence of predictive value of co-dep
  - Local settings: biopsy (tissue, liquid), sequencing, curation and interpretation
- **Implementation issues**
  - Sample collection (fresh) and transportation to centres of excellence
  - Data analysis, curation and interpretation vs. treatment in local setting
  - Block vs. fee for service funding? Inter-state patients with different funding mechanisms (state, federal)
- **Health systems models** to determine effect of system constraints in implementation (granularity of data for policy vs. clinical decisions)