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# Omico, MoST, and PrOSPeCT

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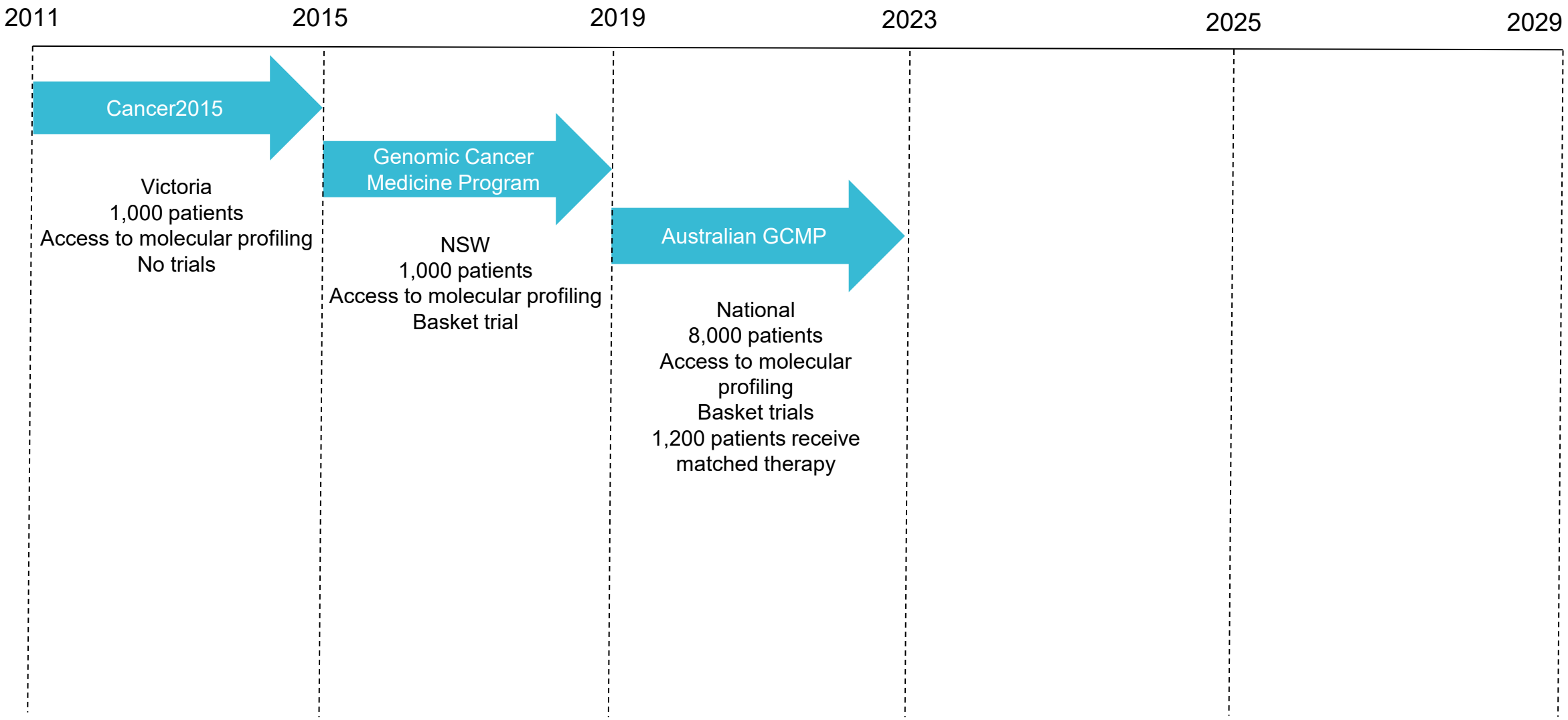
13 April 2024

Cancer
meets its match

# Development of Australian precision oncology



## Molecular screening & therapeutics

Tumour profiling to evaluate biomarker-driven treatments for patients.

## Health system reform

Leading health system reform through evidence.

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A national precision oncology network. Connecting leading specialists, researchers, government, industry partners and community. An innovative model for research-lead cancer care. Improving cancer outcomes for all Australians.

## Personalised risk management

Using heritable genetic information to assess cancer predisposition and investigate clinical risk management.

## Patient support & advocacy

Supporting patients and families today and planning the health system for tomorrow.

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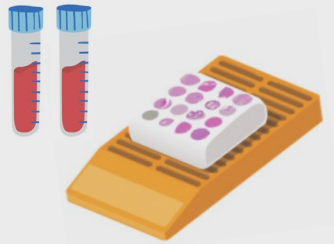
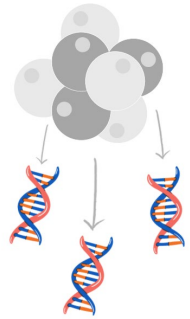
Referral from oncologist

Patient consent



Biospecimen retrieval



## NATA Laboratory

Comprehensive genomic profiling

TSO500
Foundation CDx
IHC-based screening

Clinical trials matching

Molecular Tumour Board and report issued

## Omico Central

## Clinician

Discuss results with oncologist

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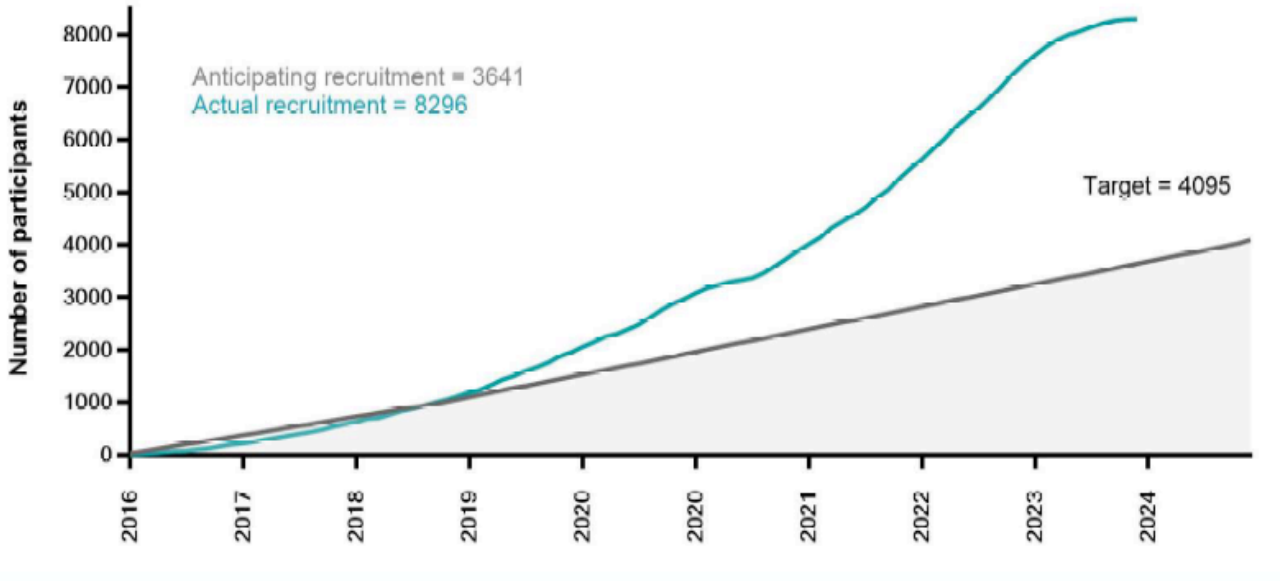
# Omico’s national population screening and clinical trial network


Omico Clinical Screening Recruitment
**10,000 and increasing**

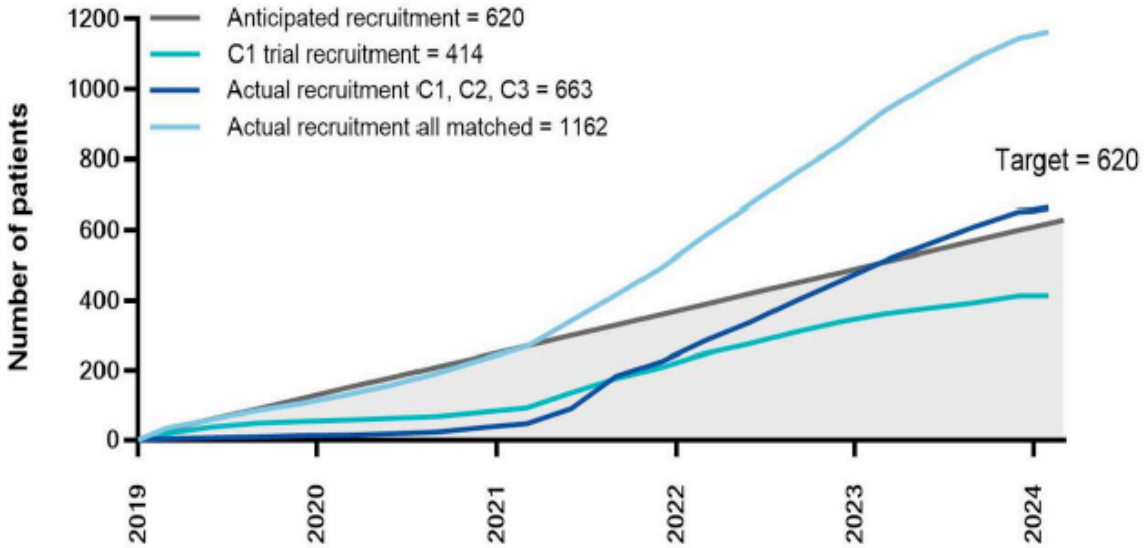

Omico National Clinical Trial Network
**43 sites to date, and growing**

# Demand for precision medicine

>700 practicing medical oncologists in Australia have referred onto MoST




Patients with tumor profiling




Patients receiving matched therapy

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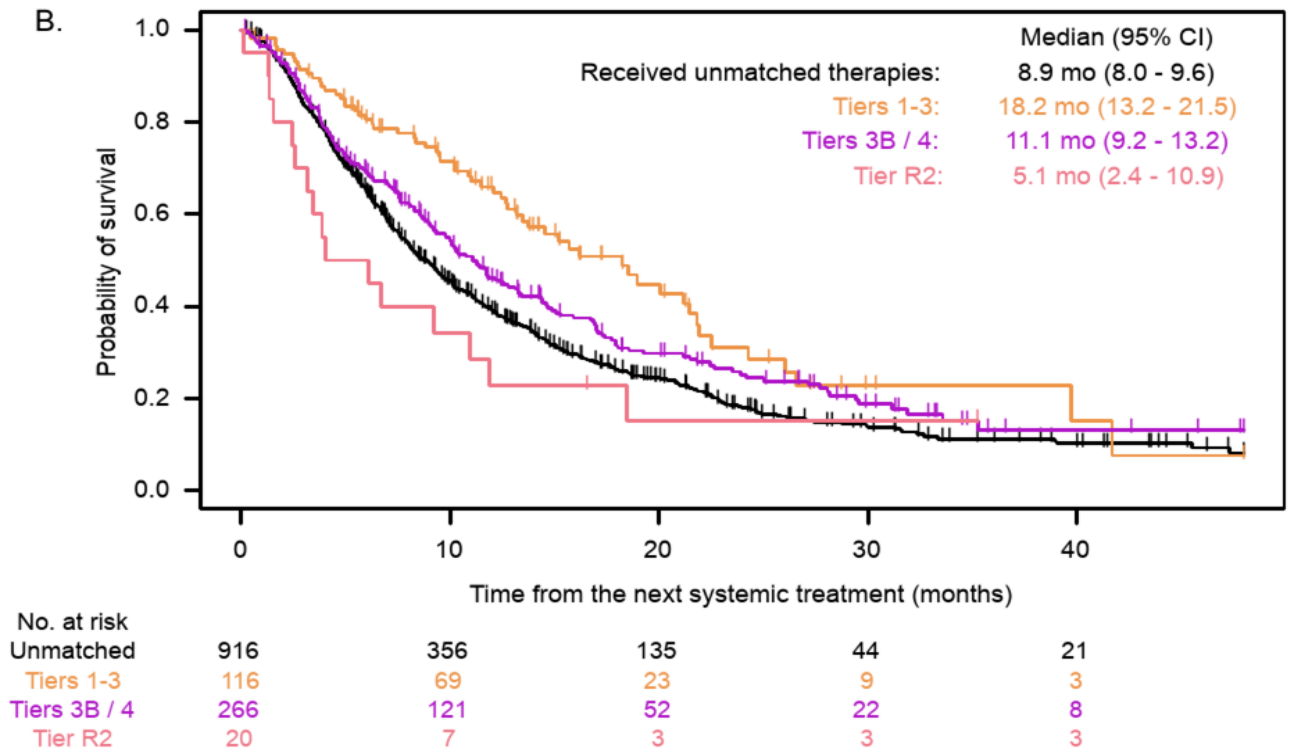
[1] https://hwd.health.gov.au/resources/publications/factsheet-mdcl-medical-oncology-2016.pdf

# Outcomes: improved survival




Data from MoST*

After the first 3,383 enrolled:

- **> 60%** of patients have had a matched treatment identified
- Of these, **37.5% have a drug target** (T1-3) which appears to result in a **doubling of survival**, provided the drug is accessible.

*Molecular Screening and Therapeutics study. Omico data on file.

# An unexpected change in diagnosis

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A 66 year old man had a core biopsy of a left iliac mass: metastatic squamous cell carcinoma, most likely bladder in origin.

| Mutation | VAF/CopyNo | Notes |
|---|---|---|
| TMPRSS2–ERG fusion | | Fusion product detected in RNA. |
| PRKN (PARK2) Q34Rfs*5<br>NM_004562.2 c.101_102del | 42% | This is a 2bp frameshift mutation at residue 34 in exon 2/12 of tumour suppressor PRKN. It results in premature truncation of the protein 5 amino acids later, and is predicted to lead to loss of function. It has not been reported in COSMIC but is considered pathogenic in ClinVar. |
| PTEN T321Ifs*3<br>NM_000314.4 c.954_961dup | 19% | This is a 8bp frameshift mutation at residue 321 in exon 8/9 of tumour suppressor PTEN. It results in premature truncation of the protein 3 amino acids later, and is predicted to lead to loss of function. It has not been reported in COSMIC but is likely pathogenic. |
| TP53 V272M<br>NM_000546.5 c.814G>A | 29% | Reported in COSMIC 172 times and is considered pathogenic in ClinVar. This is a known loss of function mutation in tumour suppressor TP53. |
| ARFRP1 amplification | 11 copies | Amplification of dual role tumour suppressor/oncogene ARFRP1. |
| CDKN2A loss | 0 copies | Biallelic loss of tumour suppressor CDKN2A. |
| CDKN2B loss | 0 copies | Biallelic loss of tumour suppressor CDKN2B. |

# An unexpected change in diagnosis

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55 year old man, left kidney mass: epithelioid angiomylipoma.

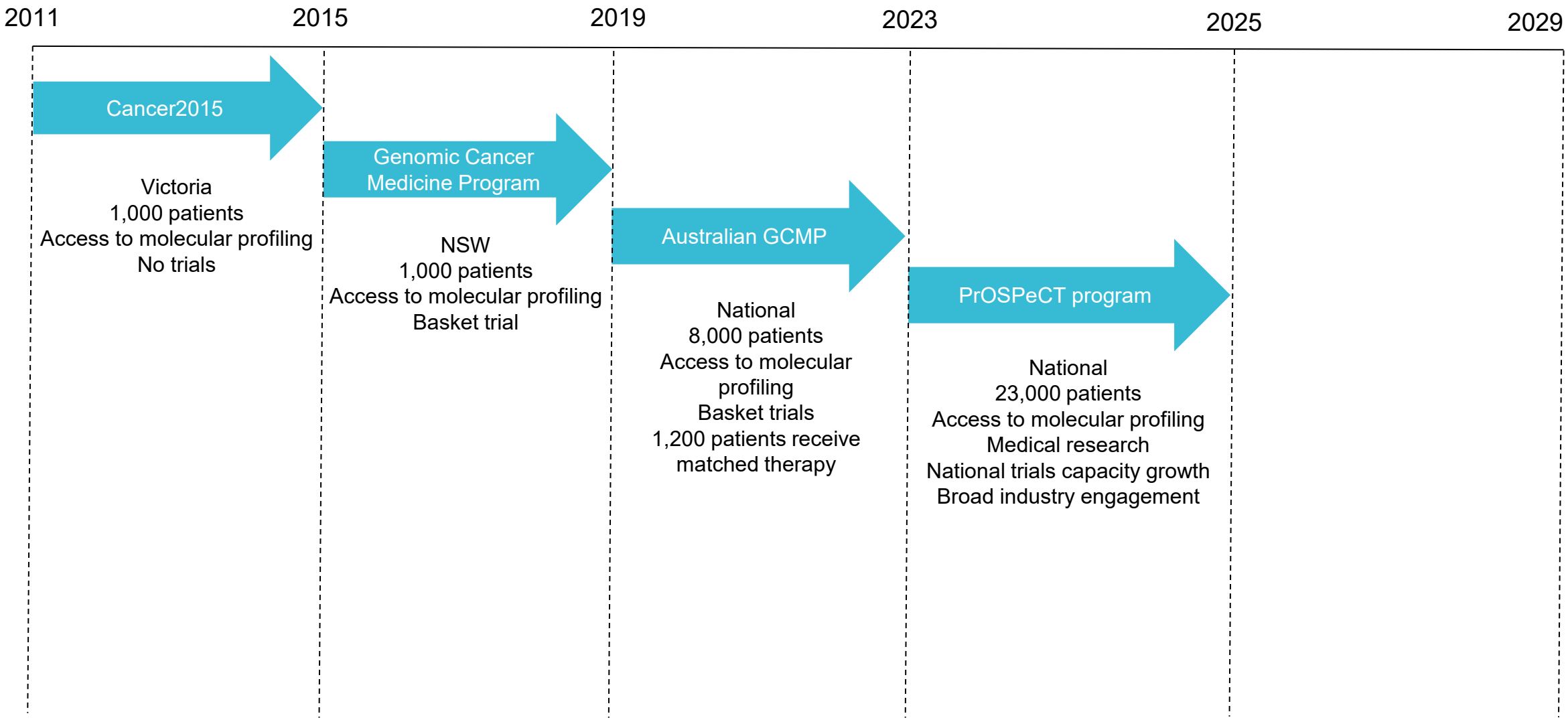
| Panel | Purity | MSI Status | TMB |
|---|---|---|---|
| TSO500 | 80% | MS Stable (0.8% unstable sites) | 53.3 Mut/Mb |

The following mutations were detected in the tumour:

| Mutation | VAF/CopyNo | Tier | Notes |
|---|---|---|---|
| BRCA1 K937*<br>NM_007294.3<br>c.2809A>T | | IIC | |
| NRAS G60E<br>NM_002524.4<br>c.179G>A | | IIC | |
| TERT<br>c.-146C>TNM_198253.2<br>c.-146C>T | | IID | |
| BRAF L597R<br>NM_004333.4<br>c.1790T>G | | IIC | |
| EZH2 Y641N<br>NM_001203247.1<br>c.1921T>A | | IID | |

Patient received immunotherapy with an ongoing complete response 2 years later.

# Development of Australian precision oncology



# PrOSPeCT is a $190m project that will establish Australia as a regional hub for cancer drug development and build the digital economy in health analytics

PrOSPeCT (Precision Oncology Screening Platform enabling Clinical Trials) is an Omico project that will…

1

Provide broad-based access to comprehensive genomic profiling for non-curative solid or haematologic cancer patient populations – **conducting large-scale genomic screening of more than 23,000 patients**

2

Maximise opportunities in clinical trials by identifying patients for specific biomarker-dependent clinical trials – **driving the efficiency of patient recruitment and decreasing trial costs**

3

Enhance biomarker-dependent drug development by enabling advanced molecular analyses – **creating a real-world dataset and analytics platform with national scale comprising more than 23,000 patients**

PrOSPeCT will be delivered alongside a public-private consortium of partners from across the Australian genomics and clinical trials ecosystem

**Major Sponsor***

Australian Government
Department of Industry, Science and Resources

**Commercial Collaboration Partners**

Roche
Omico.
Children's Cancer Institute
NCI AUSTRALIA

**Delivery partners**

Peter Mac Peter MacCallum Cancer Centre Victoria Australia
SA PATHOLOGY
SYNTRO
NSW GOVERNMENT Health Pathology
ATGC Australian Translational Genomics Centre
quantium
illumina
PathWest LABORATORY MEDICINE WA
NACCHO National Aboriginal Community Controlled Health Organisation
Aboriginal Health & Medical Research Council of NSW
BIOPLATFORMS AUSTRALIA
SONIC HEALTHCARE
MICROBA
George Clinical
PRAXIS AUSTRALIA

Note: *Funding through Modern Manufacturing Initiative

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## PrOSPeCT Key Numbers

(Data as of 31 March 2024)

| | |
|---|---|
| Patients referred | 4201 |
| Patients consented (adult) | 3475 |
| Patients consented (total) | 4084 |
| Patients through MOB | 2240 |
| Patients with matched treatment | 1694 |
| Patients on matched therapy* | 13 |
| Patients on Omico trials (C1, C2, C3) | 46 |
| Patients on industry partner trials (C3) | 14 |

*matched therapies outside of Omico trials

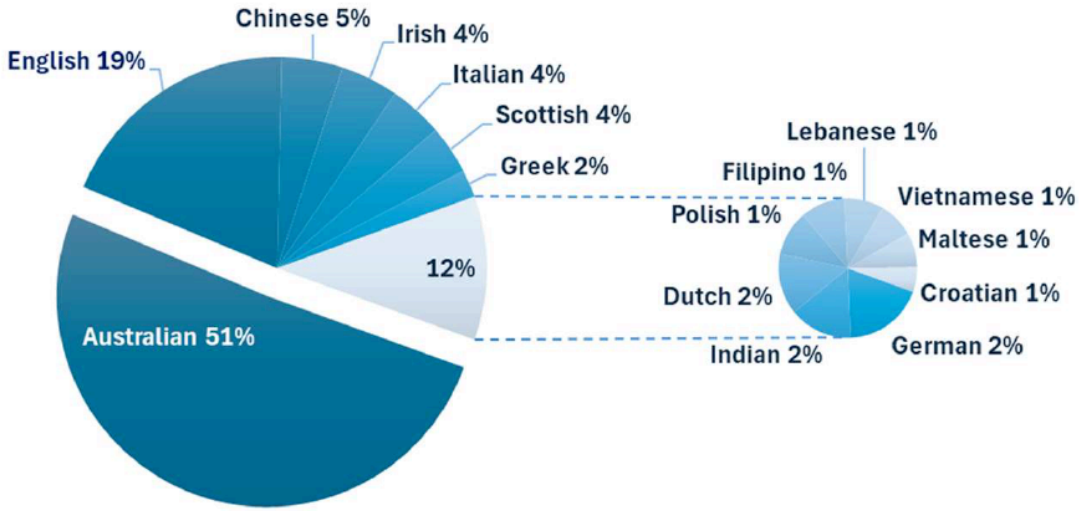
## CaSP Clinical Follow-Up

Clinical follow-up attempted for **375** CaSP patients Over the past 12 months.

**250** had at least one successful follow-up attempt.

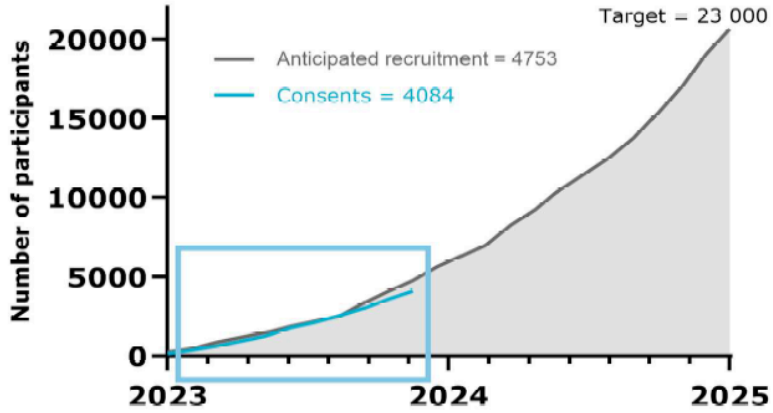
Of **386** total follow-up attempts in the last year, **257 (67%)** were completed.

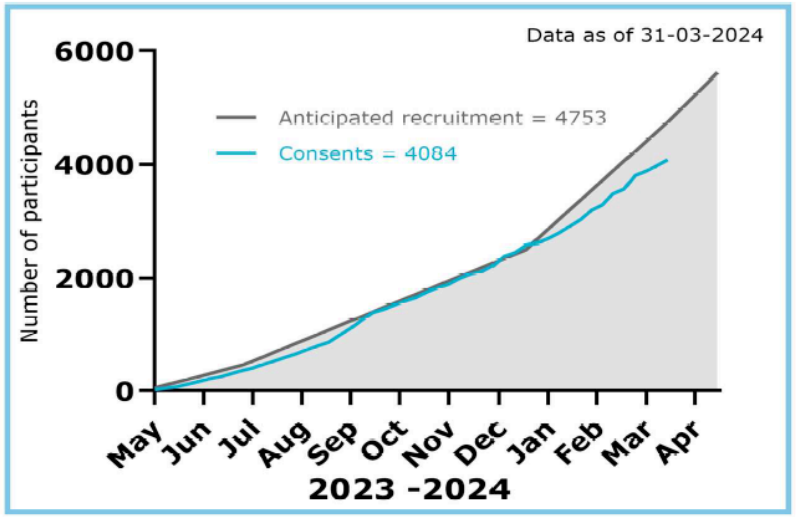
## Primary ethnicity of CaSP patients (when specified)




**1.9%** of the CaSP cohort identify as Aboriginal or Torres Strait Islander

## Recruitment (CaSP & Zero combined)




## Clinical Trials

| | |
|---|---|
| 35 | Industry sponsored trials |
| 9 | Trials brought to Australia due to PrOSPeCT |
| $40m | Estimated value of the clinical trials brought to Australia due to PrOSPeCT |

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# The Innovation Partner concept

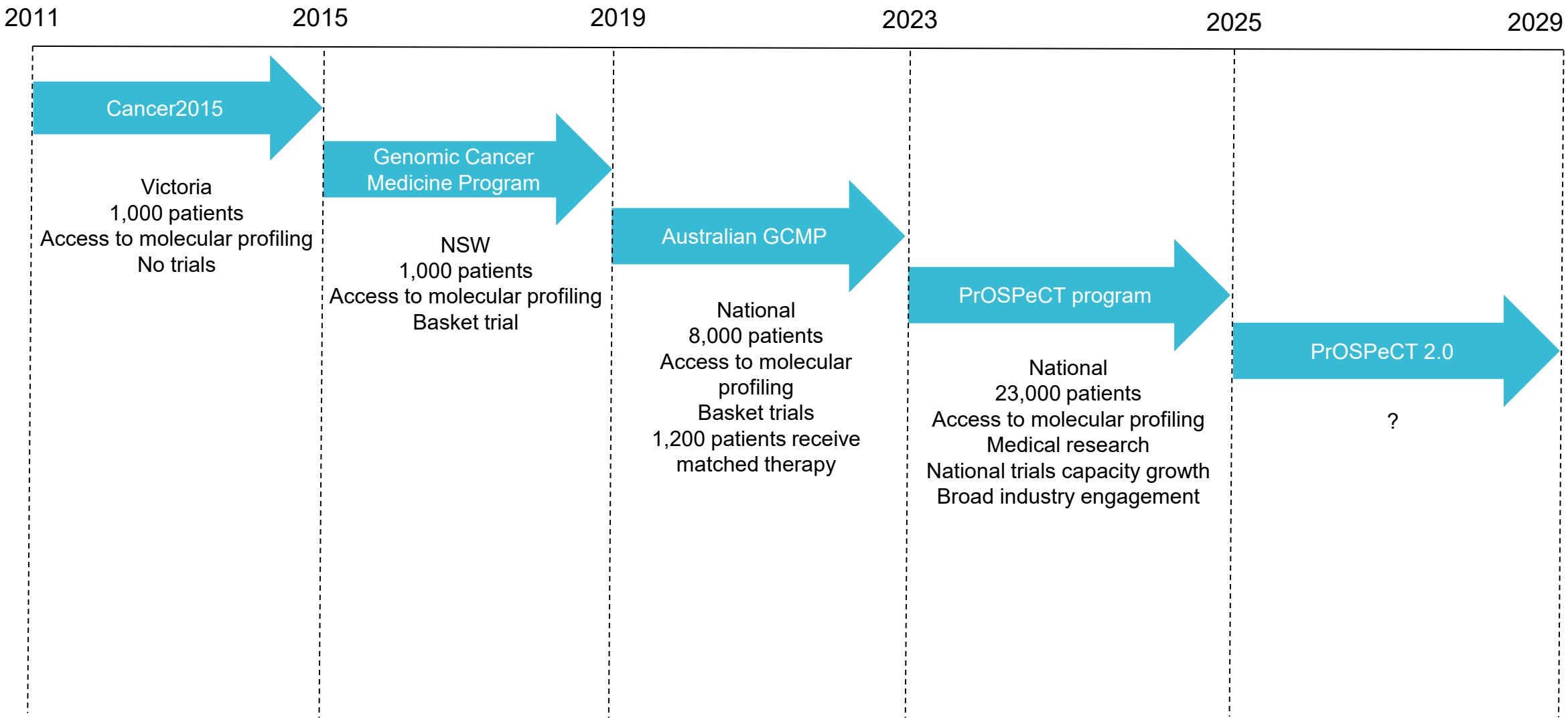
Select centres who commit to providing universal access to Comprehensive Genomic Profiling as a STANDARD OF CARE

Omico to provide administrative support (FTE) and resources to help clinicians refer their patients

Omico to provide training for clinicians and staff

Our goal in the next 12 months to have have 100% of incurable regional cancer patients access CGP

# Development of Australian precision oncology



# Thank you

CaSP
Cancer Screening Program

# PrOSPeCT leverages expertise and resources across our national network

Our established collaborative network is continuously growing, further expanding Australia's research capabilities and capacity

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prospect.

| Trials | Data Analytics |
|---|---|
| • Global and local industry<br>• Small and large pharmaceutical companies<br>• Biotech<br>• Diagnostics<br>• Pathology services<br>• Health insurers<br>• Satellite industries<br>• CROs<br>• CMOs<br>• Workforce training and education | • Industry<br>• Data analytics companies<br>• Small and large biotech<br>• Pharmaceutical companies<br>• Government<br>• Regulatory<br>• Health<br>• Medical research |

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