



**Omico's
Impact
Report**

From momentum to mainstream

Delivering precision oncology for
Australians with advanced and
incurable cancers



Omico.



Omico.

is an Australian 'pioneer' in the fight against cancer

We are a not-for-profit, independent organisation providing Australians diagnosed with incurable cancers access to a proven, cutting-edge approach known as precision oncology.

Our role is to **translate the latest scientific innovations into meaningful advances in clinical care, health policy and system reform**, ensuring world-leading science delivers real-world benefits for patients.

Precision oncology is a modern way of treating cancer that looks closely at the unique genetic changes in cancer cells driving their growth. Using advanced molecular profiling tests such as comprehensive genomic profiling (CGP), whole genome sequencing (WGS) and immunohistochemistry (IHC), these changes – known as biomarkers – are identified. Doctors can then match patients to precision treatments most likely to work for them, based on the specific biomarkers in their cancer. **Omico provides access to CGP free of charge, made possible through collaborations with the government and our national partners.**

We unite Australia's world-class cancer institutes, researchers, clinicians, industry partners and government to facilitate a new way to address our most challenging cancers. By harnessing a nationwide network of expertise, infrastructure and resources, we aim to improve outcomes for Australian cancer patients using precision oncology, particularly for patients with incurable, advanced or poor prognosis cancers.

By fast-tracking molecular profiling, biomarker-led clinical trials and patient enrolment across the country, Omico is enabling access to next-generation treatments for Australians who need them most.

Dedication

This report is dedicated to the more than 27,580 Australians who have participated in Omico's programs, their families and carers, the physicians who referred them, and the clinical teams who have supported them.

Acknowledgement of Country

Omico acknowledges the Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the lands and waters across Australia. We pay our deepest respects to Elders past and present, and to all First Nations peoples.

We recognise that Aboriginal and Torres Strait Islander peoples hold a holistic understanding of health – encompassing physical, emotional, cultural, and spiritual wellbeing – which must be respected and embedded in all conversations about access and equity in healthcare.

Aboriginal and Torres Strait Islander peoples are a priority population, and we acknowledge their leadership, wisdom, and resilience. Omico is committed to walking alongside First Nations communities to create more equitable and culturally safe cancer care for all Australians.

Contents

- 03 Foreword**
Paul Jeans, Chair, Omico
- 05 Executive summary**
- 07 Emily's story**
A rare cancer, a life extended through precision oncology

01 Our mates are being left behind

- 09 Cancer is one of Australia's greatest health challenges**
- 11 One-size does not fit all when it comes to cancer treatment**
- 13 Caitlin's story**
The cost of delay and the power of precision

02 The unique opportunity to transform cancer care is here

- 15 Existing inequities in cancer care do not have to be permanent**
- 17 Jason's story**
Molecular profiling can open up treatment options

03 Our precision oncology journey

- 20 Shaping a new era of cancer care in Australia**

04 Omico's impact scorecard

- 25 Omico's impact scorecard**
- 29 Emma's story**
Brain cancer meets its match in regional Australia

05 The path forward

- 31 We are at a pivotal moment**
- 32 Omico's recommendations**
- 35 Marina's story**
Finding the missing piece through precision oncology
- 35 Beth's story**
Precision treatment that gave me my life back

06 It's time to mainstream precision oncology

- 37 Precision oncology works**
- 39 Acknowledgements**
- 43 Glossary of Terms**
- 44 References**

Foreword

It is my privilege to introduce *Omico's Impact Report: From Momentum to Mainstream*.

Over the past decade, Omico has grown from an ambitious idea into a trusted national organisation, demonstrating that Australia can deliver precision oncology at scale and with equity across the country. What began as a vision has now become a reality reshaping the way cancer care is delivered.

Omico is incredibly proud of its achievements, not only the scientific and clinical advances, but also the spirit of national collaboration that has made them possible. Government, researchers, clinicians, industry, philanthropists, and patient advocates have all contributed to our mission.

We hold great admiration and gratitude for all those who have guided and implemented these remarkable advances. Together, we have delivered new hope and created opportunities for thousands of Australians with cancer to access treatments that were once far beyond their reach. In doing so, we've built infrastructure that is world-leading, attracted substantial international investment, and developed significant new industry capability.

This report is not simply about looking back, it is about setting a course for what comes next. Omico has laid the foundation, but the task now is to embed these advances into our everyday approach to fighting cancer. Mainstreaming precision oncology will require leadership, sustained commitment, policy reform, and continued partnerships.

The evidence is compelling, the need is undeniable, and the opportunity before us is to act decisively to close the unacceptable divide in access to effective treatments - and with this, the survival divide.



P.E. [Paul] Jeans
Chair

Omico.

A landmark moment in Australia's fight against cancer

In 2016, when Omico began to change the way we fight cancer in Australia through precision oncology, we knew this would be a challenging journey.

We have shown that precision oncology extends lives, while simultaneously creating jobs and fuelling the economy. But Australia is falling behind the rest of the world. Access to precision oncology is not routine care. Without Omico providing access to free molecular profiling, precision oncology would be out of reach for most. Many would never uncover specific treatments and clinical trials that may offer extended time and a better quality of life.

From the very beginning, equity and science have been at Omico's core. Australians don't leave their mates behind, and neither should our healthcare system, so we need to embed precision oncology into everyday cancer care.

Our priority goal in this journey is to 'mainstream' access to precision oncology for those with incurable, advanced or poor prognosis cancers.

The need is urgent. Every 15 minutes, Omico receives another referral for a patient with an incurable cancer diagnosis.

The evidence is clear. More than two-thirds of the Australians we serve have had actionable biomarkers identified in their cancer, potentially unlocking access to new treatments that can extend survival. In this report, you will read personal testimonies that lie behind the statistics.

A decade of work, supported by more than \$300 million in combined public and private investment, has laid the foundations for a fairer, smarter, and more sustainable future in cancer care. But our most significant work will be ensuring that precision oncology becomes routine care.

This report documents how precision oncology extends lives, creates value for government and taxpayers, and grows Australia as a global destination for medical research. It is possible to deliver cutting-edge precision medicine to patients, support clinicians, and boost the Australian economy at the same time.

This report is also a call to action.

We must not turn our backs. As a doctor, I believe that Australians deserve better. Now is the time to ensure every person battling incurable cancers has equal access to the proven benefits of precision oncology.



Professor David Thomas
Founder and Chief Science & Strategy Officer

Omico.

Executive summary

Australia stands at a defining moment in its fight against cancer, one of our nation's greatest and most personal health challenges. Every day, thousands of Australians face devastating diagnoses of advanced and incurable cancer, leaving them and their families with little hope. But thanks to nearly a decade of collaborative effort, a new model of care is changing that story.

This report captures Omico's journey in building a world-leading precision oncology network that is transforming outcomes for Australians with advanced, incurable, and poor-prognosis cancers. It also makes the case for the next step: **embedding this proven model into mainstream cancer care so that no Australian is left behind.**

Every 15 mins

an Australian with incurable cancer is referred to Omico.

27,500+ Australians

have participated in our programs, gaining access to molecular profiling and potentially to precision treatments that were once out of reach.

69% of patients

have received a personalised treatment recommendation based on the unique genetic fingerprint of their cancer, and 17% of these have accessed clinical trials.

Up to 50% longer survival

for patients who received matched treatment compared with those who did not.

Behind every statistic is a story of a life extended and more moments shared with loved ones.

A national mission grounded in equity and science

Omico was founded on a simple belief - that where you live or what type of cancer you have should not determine your access to effective treatments or your chance of survival. Since its inception, Omico has united government, research, industry and the patient community behind a shared vision of equitable access to world-class precision oncology for every Australian diagnosed with a challenging and hard-to-treat cancer.

Precision oncology is a modern way of treating cancer that looks closely at the unique genetic changes in cancer cells driving their growth. Using advanced molecular profiling tests such as comprehensive genomic profiling (CGP), whole genome sequencing (WGS) and immunohistochemistry (IHC), these changes - known as biomarkers - are identified. Doctors can then match patients to precision treatments most likely to work for them, based on the specific biomarkers in their cancer, rather than relying on one-size-fits-all treatment. Omico provides access to CGP free of charge, made possible through collaboration with the government and our national partners.

Collaboration that has delivered improved health & wealth of our nation

This national success story has been made possible by more than \$300 million in combined public and private investment. Over nearly ten years, Omico has built the infrastructure that enables molecular profiling and clinical trial matching nationwide, a system that now connects 80 cancer centres, seven accredited laboratories, and clinicians from major metropolitan hospitals to non-metro locations. Over one-third of participants are from rural or regional communities, and more than 2% identify as Indigenous, evidence of a system built with equity by design.

Access to precision oncology is not just a cost, it is an investment that delivers both health and economic returns. Through the Precision Oncology Screening Platform Enabling Clinical Trials (PROSPeCT), Omico has not only improved survival and quality of life for patients, but also attracted more than \$200 million in foreign investment, created over 1,500 jobs, and generated comprehensive real-world data that can inform research and development, clinical practice, national policy, regulatory, and reimbursement decisions.

The case for action: from momentum to mainstream



Extended survival

Patients live longer with matched, targeted treatments.



Improves quality of life

Fewer side effects and more time with loved ones.



Reduced inefficiencies

Avoids ineffective treatments, saving valuable health system resources.

The results are in: precision oncology works. Patients gain time, clinicians gain crucial data, the Australian Government has gained measurable return on investment, and Australia gains global recognition as a leader in cancer research and clinical trials.

Yet access remains fragmented. For most Australians, molecular profiling and treatment matching are still not part of routine cancer care. Meanwhile, comparable nations such as the UK, Sweden, and Germany have already embedded these services within their national systems, leaving us behind.

In this report, Omico shares the proof, the partnerships, and the platform. What's needed now is national, sustained funding to extend PrOSPeCT, to ensure no patient facing incurable cancer is denied access, and a permanent mechanism to mainstream precision oncology, to integrate it into standard care starting with those who need it most: Australians with rare cancers and cancers of unknown primary.



“The science is proven, the infrastructure is built, and the partnerships are in place. What is needed now is national leadership and decisive action. With continued collaboration between government and partners, we can secure a fairer, smarter, and more sustainable future for all Australians living with cancer.”

Ian Black
CEO

Omico.

Emily's story



A rare cancer, a life extended through precision oncology



In 2019, at just 27, Emily was at the peak of her Defence Force career when what began as persistent sinus pain and headaches escalated rapidly. Within weeks, she lost vision in her left eye. The diagnosis was devastating – NUT carcinoma – a rare, aggressive and treatment-resistant cancer. Doctors told her she had six to nine months to live.

"I'd never heard of it before – my oncology team hadn't either. There were so few recorded cases. I went through chemotherapy, radiotherapy and immunotherapy, with side effects that were debilitating and, in some cases, permanent, including the loss of my chance to have children. Overnight, everything changed and I was forced to reassess my entire future."

With limited options, Emily was referred to Omico. Through genomic profiling, her cancer was analysed at the molecular level, revealing a potential targeted therapy. Accessed through a government-supported compassionate access program, it became a turning point.

"For the first time, treatment felt personal – designed for the specific mutation driving my cancer. That therapy became my lifeline. Since then, I've married, travelled and continue to tick things off my 'living list', making the most of every day. Above all, I'm still here, years beyond what I was told was possible."

Emily's story highlights the transformative potential of precision oncology. For people facing the rarest and most aggressive cancers, access to genomic testing isn't experimental – it's essential. It can mean the difference between running out of options and finding time, hope and a future.



01

**Our mates are
being left behind**

Cancer is one of Australia's greatest health challenges

Despite extraordinary advances in science, cancer remains a leading cause of death in Australia¹. Recognised by the Australian Institute of Health and Welfare (AIHW) in 1997 as one of five National Health Priority Areas², cancer control continues to be a major national health priority.³

Survival rates

Survival rates for some cancers have improved significantly over recent decades, with some specific common cancers now exceeding 90% five-year survival.¹ But this is far from the whole story. While the overall five-year survival rate for common cancers is estimated at 78%, for Australians diagnosed with rare and less common cancers it remains substantially lower at 63% and 49%, respectively. Other cancers have even poorer rates, such as brain cancer at 23% and pancreatic cancer at only 13%.¹

Rare and less common cancers account for nearly a quarter of all cancers, however due to challenges in diagnosis and treatment, they result in more than a third of all cancer deaths.¹ In 2024 alone, over 16,000 Australians lost their lives to these devastating cancers.¹

Rural disadvantage

In general, Australians living in regional, rural, and remote areas experience delays in cancer diagnoses and have fewer opportunities to participate in clinical trials or receive advanced therapies.² They also have poorer survival rates and are more likely to die from cancer than their metropolitan counterparts.⁴

First Nations peoples make up a larger proportion of the populations in more remote areas, meaning that factors affecting them are strong contributors to geographic disparities in overall health outcomes.³ Aboriginal and Torres Strait Islander peoples are more likely to be diagnosed with challenging cancers, and experience lower survival rates, than non-Indigenous Australians.⁴

These concerning disparities highlight systemic barriers for specific groups, including:

- **delayed diagnosis**
- **limited treatment options**
- **inadequate funding**
- **reduced access to clinical trials**





Regional and remote
Australians face delays
in diagnosis



They have fewer
opportunities to join
clinical trials or access
advanced therapies



They are more likely
to die from cancer
than metropolitan
Australians

“Through Icon’s partnership with Omico, we are ensuring that patients in Tasmania and other regional areas across Australia, who are disproportionately affected by cancer and experience poorer outcomes, have access to the same world-class precision oncology and genomic profiling as those in major metropolitan centres.”



A/Prof Louise Nott
Director of Medical Oncology
(AU/NZ) and Medical Oncologist
Icon Cancer Centre Hobart



One-size does not fit all when it comes to cancer treatment

More than ever before, the traditional “one-size-fits-all” treatments are no longer enough

Standard chemotherapy or radiotherapy regimens can burden patients with onerous physical and psychological challenges.⁵



Multiple rounds of ineffective treatment before finding one that works, if at all.



Every round of trial-and-error treatment costs precious time that many patients do not have.



Ineffective treatments consume valuable health system resources that could be used more effectively.

The new era of precision oncology offers a way to change this.

Today, approximately 90% of all late phase cancer drugs under development are rationally designed against a biomarker. Yet people with rare cancers, and those with common cancers that remain incurable or resistant to standard treatment, have been systematically disadvantaged from the benefits of targeted drug development over the past 50 years. The tide, however, is turning. Recent data point to a meaningful shift in the oncology research landscape: rare cancers now account for 74% of new clinical trial initiations⁶, reflecting growing recognition of unmet needs and increasing global investment in precision oncology.

There are many approved and funded advanced or targeted treatments for more common cancers. Conversely, most people with rare or incurable cancers can only access advanced treatments if they are suitable for a clinical trial or can pay for treatment themselves. This means many Australians are still missing out on potentially life-extending treatment options.

It was against this backdrop that Omico was established – to accelerate access to precision oncology and address unmet needs for people diagnosed with advanced, incurable, and poor prognosis cancers, including First Nations people and those living in regional, rural and remote Australia.

The science already exists to change these lives. Through molecular profiling, the unique genetic variations within a person’s cancer can be analysed to identify biomarkers that guide treatment, matching patients to personalised therapies or clinical trials that might otherwise have remained out of reach.

“Upper GI Cancers have some of the poorest survival of all cancers in Australia, with limited treatment options. Pancare Foundation has appreciated collaborating with Omico to enhance the availability of vital testing services for those affected by these poor survival cancers, ultimately improving patient outcomes.”

Doug Hawkins
CEO
Pancare Foundation



Access to precision oncology in Australia remains inequitable and is not yet part of mainstream care. Only a limited proportion of patients access molecular profiling, usually through referral to Omico, participation in a clinical trial, or by paying for it themselves if they can afford to. For most Australians, it remains out of reach. As a result, many people miss out on the chance to identify actionable biomarkers and access precision therapies that could extend, or even save, their lives.

“Equitable access to precision cancer care isn’t a luxury – it should be a right of every Australian who can benefit. Genomic medicine is already transforming cancer care, but its promise is only fully realised when access is fair and universal. Where you live or what you earn should not determine your treatment in this country.”



Professor Mark Shackleton
Professor of Oncology in the
Department of Medicine,
Monash University

“Genomic profiling is increasingly becoming standard of care in clinical practice, increasing the chances that patients will receive effective treatment early on. Omico’s cancer genomic profiling is a model example helping deliver this essential service.”



Professor Matt Brown
Chief Scientific Officer
Genomics England

The background of the page is a microscopic image of cells, likely stained with hematoxylin and eosin (H&E), showing numerous dark purple nuclei and lighter cytoplasm and extracellular matrix. A large white circle is centered on the page, containing the main text. A thin white line also forms a larger circle around the text area.

**Without reform,
Australia will continue
to lag behind other
countries already
embedding molecular
profiling into care**

such as the UK, Sweden, Finland, and Germany. Failing to act means thousands of Australians with cancer will miss the opportunity to benefit from timely, precision-guided treatment.

Caitlin's story



The cost of delay and the power of precision

Caitlin Delaney, a clinical scientist, was diagnosed at just 39 with stage four clear cell ovarian cancer in 2017.

"My daughters had not long turned two and four, and I had no known risk factors. I was exhausted for months and thought it was just life catching up with me, but by the time I was diagnosed with ovarian cancer it had already spread to the outside of my spleen and liver, and to my diaphragm. I started chemotherapy straight away and initially responded well.

I learned I had a rare and aggressive subtype of ovarian cancer with a high rate of recurrence. At the time, no one suggested molecular profiling. I didn't know my cancer had genetic mutations that could have been targeted with precision therapies. Having that information could have changed my treatment options, perhaps even delaying or preventing my cancer recurring.

I did eventually self-advocate for testing of my tumour tissue which has guided treatment options to this day. After just one cycle of the latest precision treatment, my tumour marker halved, and I could literally feel the difference.

Recently, Omico completed molecular profiling of my lung biopsy, providing a comprehensive current view of my actionable mutations. The report confirmed that a previous immunotherapy, which I had paid thousands of dollars for, was unlikely to work in treating my cancer. Had I known this information then, I wouldn't have wasted my time and money on a treatment that was unlikely to work, and I would have avoided the toxic side effects which made me feel even sicker."

"I believe everyone diagnosed with an advanced, rare, complex or incurable cancer should be offered CGP. It can spare patients the pain, both physical and psychological, of undergoing ineffective treatments, reduce financial and emotional burdens, and guide more personalised care."

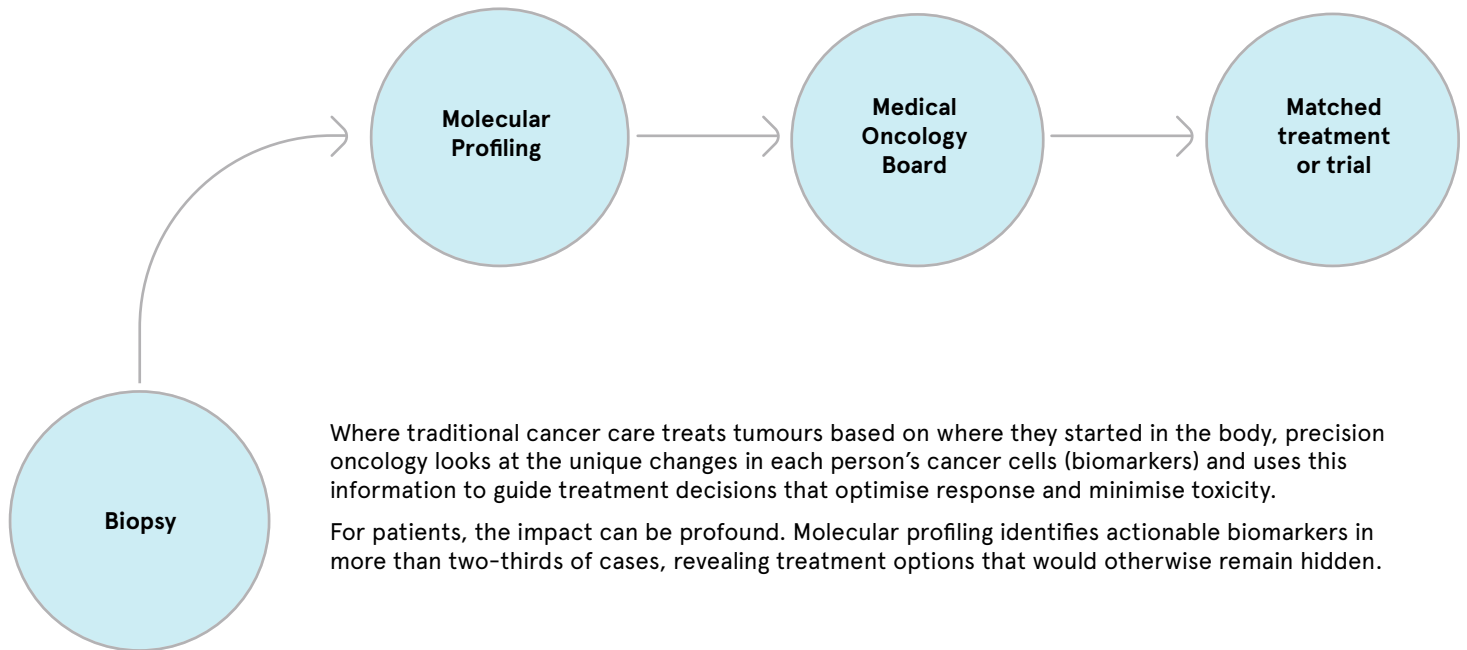




02

**The unique
opportunity to
transform cancer
care is here**

Existing inequities in cancer care do not have to be permanent



Where traditional cancer care treats tumours based on where they started in the body, precision oncology looks at the unique changes in each person's cancer cells (biomarkers) and uses this information to guide treatment decisions that optimise response and minimise toxicity.

For patients, the impact can be profound. Molecular profiling identifies actionable biomarkers in more than two-thirds of cases, revealing treatment options that would otherwise remain hidden.

This is exemplified by the dramatic improvement in outcomes for lung cancer. Advances in molecular profiling have uncovered an increasing number of biomarker targets and these discoveries have led directly to the development of new targeted therapies.

The number of new targeted treatments, as a result of these biomarkers, has expanded from 0 in 2000 to 11 in 2024 and are projected to reach 34 by 2030^{7,8}. Over this time, 5-year relative survival for lung cancer has more than doubled, from 10% in 1994 to 24% by 2019⁹. **Similar progress is anticipated for all cancer types.**

34
2030

11
2024

0
2000

The rise of tumour-agnostic therapies

An emerging and pivotal development is the discovery of tumour-agnostic therapies (or pan-tumour therapies), which are treatments that work across multiple cancer types when a particular biomarker is present. Instead of treating “ovarian cancer” or “bowel cancer,” these medicines treat the cancer’s underlying biology.

While some tumour-agnostic therapies are approved by the Therapeutic Goods Administration (TGA) in Australia, their indications for use are mostly limited to more common cancers in which the randomised clinical trials were conducted¹⁰. Tumour-agnostic therapies highlight the critical importance of access to molecular profiling as without it, patients may never be matched to these advanced precision treatments.

Expanding funded access to tumour-agnostic treatments for patients with a matching biomarker would be groundbreaking and deliver a step change in life expectancy and care.

Precision oncology harnesses scientific advances to enable personalised treatment decisions that deliver measurable benefits:



Improved efficacy

Precision oncology treatments are up to six times more effective than standard chemotherapy of the 1990s.



Targeted and personalised

By focusing on the molecular drivers of disease, treatments are tailored to the individual patient, improving the likelihood of success.



Extended survival and quality of life

Matching patients to therapies designed for their specific cancer biology results in improved survival and better treatment experiences.



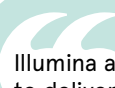
Reduced trial-and-error

Molecular profiling avoids the inefficiencies of sequential, ineffective treatments, reducing unnecessary side effects and saving valuable time for patients facing advanced disease.



Building efficiency in our health system

By avoiding ineffective therapies and streamlining trial enrolment, precision oncology reduces wasted costs and makes better use of finite healthcare resources.



“Illumina are proud to support Omico in its mission to deliver accelerated and equitable access to genomics-led cancer care in Australia. This important work will help to redefine what’s possible in cancer care - ushering in a new future with faster diagnoses, increased access, personalised treatment and better outcomes for patients.”



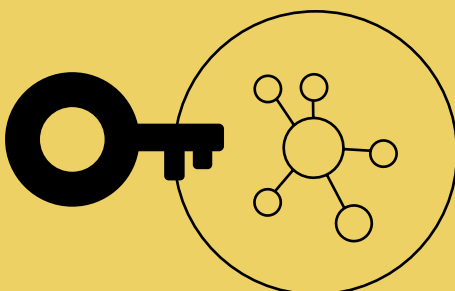
Rob McBride
General Manager Intercontinental
Illumina

illumina[®]

Jason's story




Molecular profiling can open up treatment options



“Being diagnosed with cancer is like being on the Titanic. But then you discover, there is something called Omico and they have the keys to the cabinet holding all the life vests as the ship is going down.

Molecular profiling is the first thing you should do if you have a cancer diagnosis. It should be done sooner rather than later, so you've got it in your back pocket for if, and when, less personalised treatments stop working, or if the standard treatments are known to be ineffective for your cancer.”

A microscopic view of cancer cells, showing numerous cells with large, dark nuclei and irregular shapes, set against a pinkish background. The cells are densely packed and show signs of rapid division and growth.

Now is the time to move from an inequitable, outdated model of cancer care

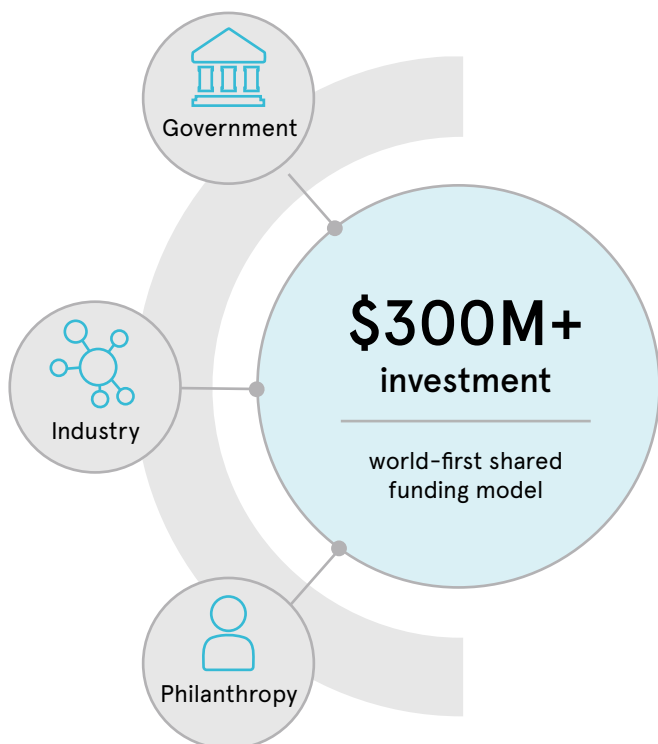
to one that is fairer, smarter, and more sustainable. By embedding precision oncology into mainstream care, we can ensure every Australian, no matter their postcode or background, has the chance for longer and better lives.

03

**Our precision
oncology journey**

Shaping a new era of cancer care in Australia

For almost a decade, Omico has been translating the rapidly expanding innovations in science, such as genomics and precision oncology, into meaningful clinical programs.



A globally unique model

Government, industry and philanthropy have invested more than \$300 million to enable Omico to build national infrastructure that brings molecular profiling and treatment matching to patients at no cost. This shared funding model is not just unique to Australia – it's a 'world first.'

This partnership model has allowed Omico to scale at speed and to reach patients with challenging cancer diagnoses across the country who would otherwise never have access to such advanced care.

“Omico has led Australia’s access to precision medicine and genomics and now provides more equitable access to cancer care around Australia. There is more to be done. It is important that our regulatory bodies keep abreast of rapidly advancing science and the need for flexibility and efficiency. Omico have my ongoing support.”



Dr Mike Freelander
Federal Member
for Maccarthur

Infrastructure

Omico has supported the establishment of a critical, underlying infrastructure that enables precision oncology to function nationally. From NATA-accredited laboratories delivering comprehensive molecular profiling, to data systems that support real-world evidence generation, Omico has enabled Australia to become a global leader in integrating genomics – and, increasingly, other advanced molecular profiling tools such as proteomics – into healthcare to improve treatment matching and health outcomes.

“Through the Zero Childhood Cancer Program (ZERO), led by Children’s Cancer Institute and the Kids Cancer Centre at Sydney Children’s Hospital, we have seen the profound impact precision medicine can have for children with cancer. While Omico’s national programs are primarily focused on adult cancers, their leadership in precision oncology strengthens the entire ecosystem that enables initiatives like ZERO to thrive.”



Professor Michelle Haber
Executive Director
Children’s Cancer Institute



Omico's flagship initiatives

Our work has been delivered through a series of landmark initiatives designed to accelerate access to molecular profiling, grow clinical trials, and modernise Australia's cancer healthcare system.



Omico.



Molecular Screening and Therapeutics program (MoST)

Australia's first precision oncology program for adults provided CGP to around 8,500 patients with advanced or metastatic cancer, matching to relevant clinical trials.



Genetic Cancer Risk in the Young (RisC) study

Research to understand more about the genetic variants that contribute to inherited cancers and their health-related costs.



Surveillance Study in Multi-Organ Cancer prone Syndromes (SMOC)

Investigates surveillance for people at high-risk of multi-organ cancer, using whole-body MRI.



Cancer Screening Program (CaSP)

This screening program within ProSPeCT provides access to CGP, free of charge, and matching to novel, biomarker-led therapies, including through clinical trials.

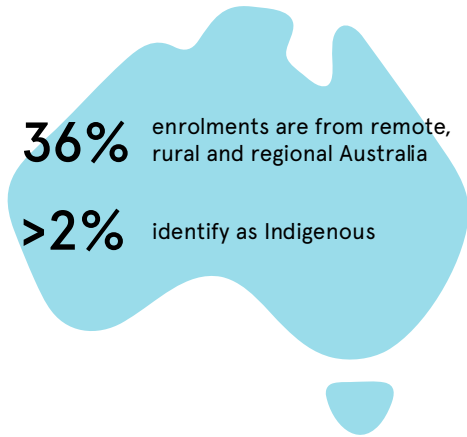


Precision Oncology Screening Platform Enabling Clinical Trials (ProSPeCT)

Australia's largest cancer and genomics initiative, enabled by public and private sector funding and partnerships totalling AUS \$185M, including \$61.2M from the Australian Government, accelerating access to precision oncology, at no cost, for 23,000 Australians with advanced, incurable and poor prognosis cancers.

Equity by design

From its inception, Omico has prioritised equity of access. More than one-third of the patients referred to Omico programs come from regional, rural, or remote areas, and more than 2% identify as Indigenous. Ensuring that geography, income, or background are not barriers to personalised care has been central to Omico's design.



“As a proud Euahlayi/Kooma woman, I have seen firsthand the challenges our communities face in accessing equitable cancer care and the high mortality rates due to late diagnosis. A critical first step is recognising and respecting individual and community understandings of genomics, cultural practices, and rights – ensuring First Nations peoples can engage with genomic healthcare services with full understanding, trust, and voluntary informed consent. Through working with the team at Omico and co-design with First Nations communities, our goal is to transform precision oncology by centring self-determination, data sovereignty, and community-led decision-making.”



Professor Maree Toombs
Omico's Head of Indigenous Engagement

Omico.

Experts and networks

Once molecular profiling has been completed, **Omico's unique Molecular Oncology Board** brings together oncologists, geneticists, pathologists, and other specialists to review every patient's molecular profile, clinical, pathology and treatment information to make evidence-based recommendations for potential treatment or clinical trial options. This means every clinician referring a patient for molecular profiling through Omico is supported by world-class expertise to guide treatment decisions and a forum for ongoing education.

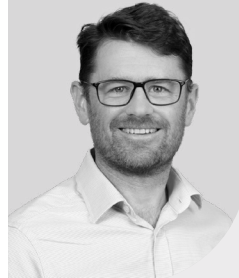
A cornerstone of Omico's success is the **Omico National Clinical Trials Network (ONCTN)**, a connected web of cancer centres, hospitals, and clinics across metropolitan, regional, and remote Australia. This network has grown to 80 sites and enables a system where patients can access appropriate precision oncology clinical trials closer to home. This is aimed at reducing the burden of travel and increasing equity of access.

“This national clinical trial network not only enables more patients to benefit from cutting-edge diagnostics and trial opportunities, but also supports clinicians, wherever they work, with access to expert interpretation and integration of results into care.”

“Omico's dedication to improving clinical trial access to regional patients has led to significant increases in regionally based and regionally led clinical trials. The ability to offer clinical trials to patients, where they live, has been so important to regional patients, families and clinicians.”



A/Prof Louise Nott
Director of Medical Oncology (AU/NZ) and Medical Oncologist
Icon Cancer Centre Hobart



Dr Samuel Harris
Medical Oncologist
Bendigo Cancer Centre

Underpinned by partnerships and data

From its inception, Omico has recognised that no single organisation or discipline alone can deliver a revolution in cancer care. **Precision oncology depends on:**



Omico has built a model of **partnership with pharmaceutical and biotechnology companies** that is unique in scale and impact. One where a respected and trusted environment exists in which all parties work toward the shared goal of accelerating access to innovative, precision treatments for Australians with incurable cancers.

Industry partners contribute investment, expertise, and access, providing the pathway to bring innovation rapidly into Australia's health system.

Through Omico and its National Clinical Trials Network, thousands of Australians with cancer have enrolled in clinical trials sponsored by industry partners, academic groups, and hospital investigators.

“Working with Omico has re-shaped the way we conduct our clinical trials in Australia, particularly in rarer cancer populations linked to specific genetic mutations, providing us with a competitive advantage and solid basis to innovate our trials, build a model for greater patient equity and accessibility to innovative therapies in rare cancers, and improve outcomes for patients and our trials. Omico's platform has allowed Servier the possibility of bringing a higher number of rare cancer trials to Australia.”



Dr Maryann Rakopoulos
APAC Hub Associate Director,
Servier Australia International
Centre for Therapeutic Research
(ICTR)



Omico has established a **national real-world data (RWD) capability** that strengthens Australia's international standing in precision oncology. Through partnerships, industry is able to access this data asset, gaining insights that complement traditional clinical trial data. This data is becoming increasingly valuable as evidence for regulatory submissions, reimbursement negotiations, and understanding how treatments perform across diverse populations in a real-world setting. Omico's RWD also helps shape clinical practice and inform health policy and system reform.

The partnership model formed by Omico has strengthened Australia's reputation as a destination for global research and development investment by providing the infrastructure to support precision oncology at scale.

“Omico plays a central role in driving incredible innovation and advancement, informing drug development and treatment strategies, strengthening our clinical trials ecosystem, while attracting international investment and ensuring patients benefit from the latest advances in care.”



Sue MacLeman
Chair, Medicines Australia
& Director Omico



Omico.

Patients gain earlier access to precision therapies.

Government sees its investments leveraged, health system costs reduced, and Australia's reputation as a global innovation hub enhanced.

The partnership between Omico and industry shows what can be achieved when collaboration is designed around shared value

Industry benefits from faster, more efficient clinical trial recruitment and the generation of robust RWD.

Clinicians are supported with evidence-based treatment recommendations.

04

Omico's impact scorecard

Better outcomes for those who need them most¹¹



A total of 31,470 referrals from 1,453 clinicians

27,587

have enrolled in Omico's programs*, since 2016

Including more than 16,200 patients who have accessed ProSPeCT since March 2023, highlighting the growing demand for precision oncology

Equitable access

36% enrolments are from remote, rural and regional Australia

>2% identify as Indigenous

Of the 20,365

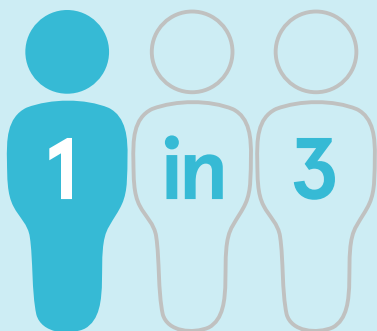
people who underwent free CGP:

69% received a treatment recommendation, and of these:

17% enrolled in a clinical trial (2,351)

3.3% received matched therapy outside a trial (470)

Identify actionable biomarkers, extend lives



(37.5%) participants in MoST & CaSP had a biomarker matching to a treatment that could extend life

Patients who received matched therapy

Lived up to 50% longer

from 14 to 21 months



In some cases, survival more than doubled¹²

Driving investment, growth and savings

Launched in March 2023, PrOSPeCT is Australia's largest cancer and genomics initiative:

 Investment & growth realised

\$200M+


foreign investment from industry-sponsored cancer clinical trials

91

industry-sponsored trials across all states and territories - 16 would not have come to Australia without Omico

\$84.9M+ growth

in Australian investment (R&D, equipment, technology, exports)


 Healthcare savings secured

\$60M+

Estimated out-of-pocket costs avoided by patients receiving free CGP



Reduced PBS expenditure through patients accessing clinical trials

 Jobs & skills created

1,540+ jobs¹³

created (direct + indirect)

- 258 highly skilled roles in medicine & science
- 1,290 indirect jobs across health, pathology & pharmacy



39 traineeships

traineeships boosting regional & Indigenous capabilities

- 69% in regional Australia

Omico's national clinical trial network

Enables Australia's growth as a global cancer research hub



80 cancer treatment centres

networked across all states and territories, 27 in regional Australia



118 clinical trials

supported in Australia



7 NATA-accredited labs

previously offshore, now established in Australia to perform molecular profiling



Omico real-world data shows access to clinical trials improves quality of life - patients are accessing trials closer to home, reducing travel burden and increasing equity.

Leading with science and innovation

Real-world data

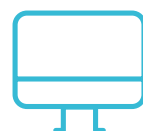
Omico is gathering data to drive **new cancer discoveries** and **clinical insights**:

19,000+ patient records and growing

10,000+ records linked to PBS/MBS

135,200+ biofractions stored at the NSW BioBank from 10,500+ people

Leadership & knowledge



50+ scientific presentations annually



144 high-impact publications

Providing national and global **leadership** in precision oncology **policy** and **education** through professional and community engagement

Emma's story



Brain cancer meets its match in regional Australia

Emma, 37, from Forbes NSW, was diagnosed with a brain tumour in 2020 after presenting multiple times to the emergency department with headaches, dizziness, blurred vision, slurred speech and dilated pupils. An MRI at Orange Hospital revealed a brain tumour, and Emma was flown to Sydney the next day to undergo surgery.

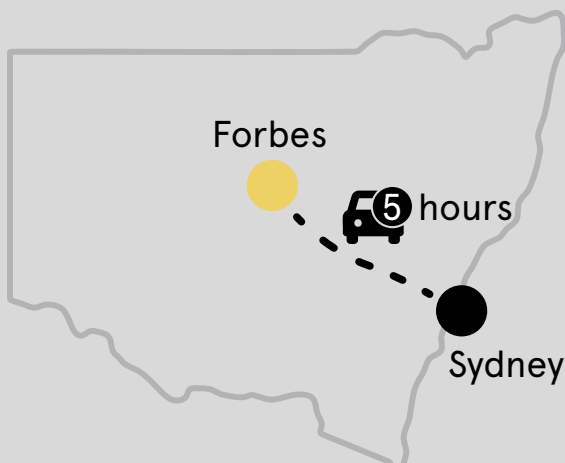
After 12 months of chemotherapy and then radiation, which saw her tumour continue to grow, Emma's oncologist A/Prof Rob Zielinski, referred her for CGP through Omico in the hope she could be matched to a precision treatment.

Omico uncovered a specific biomarker in Emma's tumour which made her eligible for a targeted immunotherapy in a clinical trial. The treatment has stabilised Emma's cancer and improved her facial paralysis.

“Emma is the lucky one. CGP matched her to a personalised treatment that has made a huge impact on her life. Without embedding CGP into normal clinical cancer care more Australians will miss out on life prolonging treatments. I cannot imagine going back to a time when this test was only available to certain people with certain bank accounts.”



A/Prof Rob Zielinski
Medical Oncologist
Central West Cancer Care
Centre, Orange Base Hospital



Her participation in the trial also prompted local health services to bring care closer to her home, enabling Emma to receive MRI scans locally, instead of travelling to Sydney. This change not only spared Emma the long journey but also set a new precedent, allowing other local patients to access scans locally.

“Having clinical trials available in regional Australia doesn't just give patients like me a chance, it encourages local health services to step up and support us. Because of the trial, I can now access life-changing care just an hour and a half from home, instead of travelling five hours to Sydney. It has made an incredible difference - not just to me, but to my family.

This trial gave me stability, hope, and a sense of control right here in my own community.”



05

The path forward

We are at a pivotal moment

Government leaders and key stakeholders are aligned in their calls for transformative and coordinated action to end inequities of access.

The recently established Genomics Australia will lead the integration of genomics into routine healthcare with access in cancer care one of its first priorities¹⁴.

The Australian Cancer Plan includes a National Framework for Genomics in Cancer Control¹⁵ that provides a national approach to integrating genomics into cancer prevention, diagnosis, treatment, and research to improve outcomes for all Australians.

“Australia is poised to translate genomics from research into mainstream cancer risk management, diagnosis and treatment. Genomics Australia is committed to improving access to personalised cancer care, informed by international best practice, and the outcomes and impact of Omico.”



Tiffany Boughtwood
Australian Health Genomics
Commissioner
Genomics Australia



Australian Government
Department of Health, Disability and Ageing

The 2023 Senate Inquiry into equitable access to diagnosis and treatment for individuals with rare and less common cancers recognised the importance of broader access to molecular profiling and timely and affordable access to novel, biomarker-matched medicines.²

The Federal Minister for Health and Aged Care, the Hon Mark Butler MP, also described precision oncology as a “game-changer” in cancer care¹⁶. In March 2025, Minister Butler announced additional funding to extend the ProSPeCT program beyond 2025, with the goal of “securing the future of precision medicine for a cancer-free future.”¹⁶

This alignment across science, policy and political landscapes presents a rare opportunity to deliver lasting change, with Omico and ProSPeCT enabling a nationally coordinated precision oncology system already embedded across Australia.

“Cancer Australia’s National Framework for Genomics in Cancer Control aims to support people affected by cancer to benefit from cancer genetic testing and genomics-informed treatments. Omico’s ProSPeCT study supports this aim with a shared vision of equitable access to genomic profiling and genomics-led care for Australians affected by cancer.”



Professor Vivienne Milch
Medical Officer
Cancer Australia



Australian Government
Cancer Australia

Omico's recommendation

1

Secure PrOSPeCT's critical infrastructure for precision oncology

Sustainable and stable funding for PrOSPeCT will lay the foundation for mainstreaming precision oncology for those who can benefit most. With additional Government funding over 2026–2027, we can safeguard what has been built and extend its benefits.

Together we can:



Ensure no patient with incurable cancer, or their clinician, is denied

or delayed access to precision oncology.



Deliver ongoing patient benefit and economic return

through precision oncology and clinical trial participation.



Sustain Australia's precision oncology ecosystem

in readiness for the implementation of recommendations from Genomics Australia, Cancer Australia and the Health Technology Assessment Reform.



Maintain the national infrastructure

built over a decade through a \$300 million investment.

Securing PrOSPeCT will provide the stability needed to maintain momentum and deliver the foundation for Australia's next step: **mainstreaming precision oncology**.

Omico's recommendation

2

Create a sustainable pathway to mainstream precision oncology into everyday care, starting with rare cancers, in the next 3 years

Australians with rare cancers have long faced major disadvantages when it comes to diagnosis, treatment, and access to innovation. Over the next three years, Omico's goal is to make sure these patients are no longer left behind. We will do this by:

Turning real-world evidence into lasting access for patients:

Omico will consolidate the real-world evidence generated through programs such as ProSPeCT and work with key stakeholders, including MSAC, PBAC, and industry partners, to inform reimbursement pathways for molecular profiling and the most advanced tumour-agnostic therapies. By providing robust, Australian data through established Health Technology Assessment processes, we aim to ensure that these proven innovations are reimbursed and accessible through the health system, just like other effective treatments.

Calling for the implementation of a faster, fairer pathway for medical innovation, such as Omico's Precision Oncology - Health System Incubator (Pro-HSI):

Australia needs a faster, fairer way to bring medical innovations like precision oncology into routine care. Omico will work with government, health experts and industry to design a new national pathway, modelled on successful international systems such as the UK's NICE¹⁷, to remove unnecessary barriers, speed up access, and make sure new treatments reach the patients who need them most.

One such model is Omico's Precision Oncology - Health System Incubator (Pro-HSI), which is carefully designed to provide an evidence-based mechanism for early access to molecular profiling and tumour-agnostic therapies for rare cancers, while preserving the value-for-money through our outstanding MBS and PBS.


Pro-HSI represents Omico's strategic vision to address one of the most critical gaps in oncology. For more information on Omico's proposed Precision Oncology - Health System Incubator (Pro-HSI), visit Omico's website.¹⁸

“Through our partnership with Omico, Omico has secured vital government funding, and helped hundreds of patients access genomic testing, which we hope to see continue. At the heart of this partnership is the belief that all cancer patients should have access to genomic profiling to guide treatment decisions. Embedding this into routine care can improve outcomes, reduce disparities, and ensure equitable access to personalised therapies.”



Christine Cockburn
CEO
Rare Cancers Australia



The background is a vibrant, multi-colored marbled pattern in shades of red, pink, teal, and yellow. A large white circle is centered on the page, containing the main text. A thin white line forms a circle around the text area.

**Our system is ready,
let's make precision
oncology part of
mainstream care**

Marina's story



Finding the missing piece through precision oncology

"I had an amazing oncologist who sent me for every test known to man, and still nobody could tell me where my cancer was actually coming from. In the end, he referred me to Omico so they could do comprehensive genomic profiling, to find out exactly what sort of cancer I had."

"The genomic profiling showed that I had a new type of breast cancer - triple negative. I had been diagnosed and treated for two other types of breast cancer before, but this new piece of information gave me a confirmed diagnosis this time around. It also gave me the best outcome, because it's all about my cancer and not just breast cancer in general. It's about my body and about connecting all the dots to find the best personalised treatment for me."



Beth's story

Precision treatment that gave me my life back

When Beth Ivimey, an oncology nurse based in Sydney was diagnosed in late 2022 with cholangiocarcinoma, a rare and aggressive cancer of the bile duct, she immediately understood the condition's severity.

Being familiar with the MoST trial and the benefits of precision oncology, Beth undertook genomic profiling through Omico while standard chemotherapy and immunotherapy was having no impact. Molecular profiling identified the gene mutation driving her cancer which led to joining a clinical trial in 2023 targeting that mutation.

The trial drug successfully shrank the tumour by 31%.

Feeling well enough to travel, she returned to Venice in 2024 to experience the absolute joy and triumph of running up the Rialto Bridge which had defeated her in 2022.

Beth attributes this to genomic testing.

Beth had experienced exceptionally difficult side effects from her first targeted therapy, necessitating a therapy break, which led to tumour progression.

Fortunately, Beth commenced another clinical trial in 2025. Feeling great, she returned to her beloved work supporting patients in lung cancer screening trials.



06

**It's time to
mainstream
precision
oncology**

Precision oncology works

It delivers better outcomes for patients, their families, clinicians, the health system, and for Australia as a whole.

We have proven that molecular profiling and treatment matching save time, extend lives, and improve the quality of care.

Clinical trials are expanding into regional centres, industry partnerships are bringing global investment, and world-class infrastructure is ready to scale. The question is no longer whether precision oncology should be mainstreamed, but **how quickly**.

Every delay forces patients down outdated treatment pathways, even as the science to guide better options already exists and continues to advance. Too many Australians are still enduring therapies that fail to work while their disease progresses.


Australians living with incurable or hard-to-treat cancers face urgent, time-critical decisions. Without timely access to precision testing and treatment, opportunities for life-extending care are lost. These are not isolated cases – they reflect a widening gap between what is possible and what is currently delivered by our health system. These patients do not have the luxury of time.

Omico's model has demonstrated that national coordination improves access and equity for many Australians. Mainstreaming precision oncology would extend these benefits system-wide, ensuring all patients who could benefit have the opportunity to do so.



Without leadership and urgent action from the Australian Government and industry partners, inequities will deepen, opportunities will be lost, and lives will continue to be cut short.

With action, the benefits can be immediate and lasting. Mainstreaming precision oncology will extend and save lives, strengthen our health system, and cement Australia's leadership in global cancer research.

A microscopic image of numerous purple-stained cells, likely bacteria or yeast, arranged in clusters and chains. A large white circle is centered on the page, containing the text. A thin white line also forms a circle around the text.

**The time for
decisive action
is now.**

Acknowledgements

Omico's achievements over the past decade have been possible through the collective efforts of many. We acknowledge, with gratitude, the Australian Government, NSW Government, research institutions, clinicians, industry partners, and patient advocacy organisations whose support has built the foundations of precision oncology in this country.

Our work is not done.

Mainstreaming precision oncology requires us all to work side-by-side with urgency and determination.

We look forward to continuing this journey together as we work to ensure every Australian, no matter their postcode or cancer type, can benefit from precision oncology.

With thanks to our members, partners, collaborators and supporters:

Omico members

Northern Territory

Northern Territory Government
(Department of Health)

Western Australia

Linear Clinical Research Ltd

Tasmania

Represented by its Department of Health

Victoria

Peter MacCallum Cancer Centre

New South Wales

The University of Sydney (NH&MRC CTC)
and Garvan Institute of Medical Research

Australian Capital Territory

ACT Government

Queensland

Metro South Hospital and Health service

South Australia

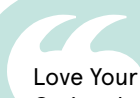
Central Adelaide Local health network incorporated

PrOSPeCT's core partners

Roche Australia | NCI – the National Computational Infrastructure at ANU | Children's Cancer Institute Australia (CCIA)

Omico supporters, partners and collaborators include:

Australian Government (Department of Industry, Science and Resources, Department of Health, Medical Research Future Fund) | NSW Government | AGITG - Australasian Gastro-Intestinal Trials Group | Alterome Therapeutics | Amgen | ANZGOG (Australia New Zealand Gynaecological Oncology Group) | AP Biosciences | Astra Zeneca | Atridia | Australian Genomics Health Alliance | Australian Teletrial Program | Australian Translational Genomics Centre (ATGC) | Avance Clinical | Bayer | BEAT Bladder Cancer Australia | BeOne | BioGrid | BioPlatforms Australia | Boehringer Ingelheim | Breast Cancer Network Australia | Canteen | Care-fully | Cholangiocarcinoma Australia | Children's Cancer Institute | Cooper Rice-Brading Foundation | Douglas Hanly Moir Pathology | Eisai | Elevation Oncology | Foundation Medicine | George Clinical | Head & Neck Cancer Australia | Humanise Health | Hummingbird Bioscience | Icon Cancer Centre | Illumina | Immunocore | InGeNA | Lilly | Love Your Sister Foundation | Macquarie University | Medicines Australia | Melanoma Patients Australia | Merck | Metastatic Breast Cancer Action Australia | Microba | Minderoo Foundation | MOMA | MSD | MTP Connect | Myeloid Therapeutics | NCI | Nelune Foundation | NeuroEndocrine Cancer Australia | NSW Health Pathology | Ovarian Cancer Australia | Pancare Foundation | PanKind Pancreatic Cancer Australia | Paspaley | Peace of Mind | Pfizer Oncology | PharmaEngine | PMV Pharma | Praxis | Prelude Therapeutics | QIMR Berghofer | Quantum | Rare Cancers Australia | Roche | Seagen | Servier | So Brave | Sonic Healthcare | Southern Star Research | Synnovation Therapeutics | Syntro | Telix | Tessellate B | TOGA - Thoracic Oncology Group of Australasia | UNSW | Plus many others..



Love Your Sister is proud to fund the expansion program with Omico, helping provide precision oncology to Australians in rural, regional and remote Australia. Love Your Sister has donated over six million dollars to Omico and that stream will continue and grow. Together we are stronger and Omico is making dreams real.



Sam Johnson
Co-founder
Love Your Sister



Omico National Clinical Trial Network

Australian Capital Territory

Canberra Hospital (including Canberra Region)
Canberra University Hospital

Western Australia

Fiona Stanley Hospital
Joondalup Health Campus (Ramsay Health)
Linear Research Centre
Sir Charles Gairdner Hospital

Northern Territory

Royal Darwin Hospital

South Australia

Clinical Research SA
Flinders Medical Centre
Icon Cancer Centre – Windsor Gardens
Icon Cancer Centre – Adelaide
Lyell McEwin Hospital
Queen Elizabeth Hospital
Royal Adelaide Hospital
Southern Oncology Clinical Research Unit (SOCRU)

Victoria

Metropolitan:

Alfred Hospital (Alfred Hub)
Austin Health (Austin Hospital)
Barwon Health (University Hospital Geelong, includes Andrew Love Cancer Centre)
Cabrini Brighton
Cabrini Malvern
Monash Comprehensive Cancer Consortium (MPCCC)
Olivia Newton John Cancer Research Institute (ONJCRI)
Peter MacCallum Cancer Centre (PMCC)
St Vincent's Hospital Melbourne

Queensland

Metropolitan:

Icon Cancer Centre – Chermside
Icon Cancer Centre – North Lakes
Icon Cancer Centre – South Brisbane
Icon Cancer Centre – Southport
Icon Cancer Centre – Wesley
Mater Hospital Brisbane
Mater Hospital Springfield
Prince Charles Hospital
Royal Brisbane & Women’s Hospital
Sunshine Coast University Hospital
Sunshine Coast University Private Hospital (Ramsay Health)

Regional:

Icon Cancer Centre – Mackay
Icon Cancer Centre – Townsville
Rockhampton Base Hospital
Toowoomba Base Hospital
Townsville University Hospital

New South Wales

Metropolitan:

Bankstown–Lidcombe Hospital
Calvary Mater Newcastle
Cambelltown Hospital (including Ingham Institute)
Chris O’Brien Lifehouse
Gosford Hospital
Liverpool Hospital
Macquarie University Hospital
Prince of Wales Hospital
Royal North Shore Hospital
Scientia Clinical Research
St George Hospital
The Kinghorn Cancer Centre / St Vincent’s Hospital Sydney
Westmead Hospital
Wollongong Hospital (including Illawarra Cancer Centre)
Wollongong Private Hospital (Ramsay Health)
Wyong Hospital

Regional:

Armidale Rural Referral Hospital
Bathurst Health Service
Border Medical Oncology (BMO)
Coffs Harbour Health Campus (including Mid North Coast Cancer Institute Coffs Harbour)
Dubbo Health Service
Moree District Hospital
Narrabri District Hospital
Orange Health Service
Port Macquarie Base Hospital (including Mid North Coast Cancer Institute Por Maquarie)
Shoalhaven District Memorial Hospital (including Shoalhaven Cancer Care Centre)
Southern Highlands Cancer Centre (Ramsay Health)
Tamworth Rural Referral Hospital

Tasmania

Metropolitan:

Icon Cancer Centre Hobart
Royal Hobart Hospital

Regional:

Launceston General Hospital
North West Regional Hospital

Regional:

Bendigo Health / Bendigo Hospital
Grampians Health Ballarat
Grampians Health Horsham
Grampians Health Stawell
Maryborough District Health Service
Northeast Health Wangaratta
South West Healthcare

New Zealand

Auckland Hospital

Glossary of terms

Advanced cancer

Cancer that has spread from where it first started to nearby tissues or other parts of the body. It can also refer to cancer that has returned after treatment. Advanced cancer is usually harder to treat than early-stage cancer. In some cases, treatment may help control its growth, manage symptoms, or improve quality of life, but this is not always possible.

Biomarker

A feature in a person's cancer cells, such as a change in a gene, molecule or protein, which helps doctors understand how the cancer behaves and what's causing it to grow. Biomarkers can guide diagnosis, predict how a cancer might respond to treatment, and help match patients to the most effective therapies.

Comprehensive Genomic Profiling (CGP)

A single test that looks at many genes in a sample of cancer tissue to find changes (biomarkers) that may be driving the cancer's growth. These results help doctors match patients to precision treatments or clinical trials.

Gene / Genetics

A **gene** is a piece of DNA that carries instructions for how the body's cells grow and function.

Genetics is the study of how genes are inherited and how changes in them can cause or influence diseases, including cancer.

In cancer, certain genetic changes can make cells grow uncontrollably, identifying these changes helps doctors match patients to treatments that target them.

Genome / Genomics

The **genome** is the complete set of all a person's genes – their entire genetic code.

Genomics is the study of all these genes together, and how they interact with each other and the environment to influence health and disease. Genetic biomarkers can be mapped using genomic techniques.

In precision oncology, genomics helps reveal the full picture of genetic changes driving a person's cancer, guiding more effective and personalised treatments.

Health Technology Assessment (HTA)

A process used by reimbursement agencies to decide whether new medicines, tests, or treatments should be publicly funded, based on how well they work and their cost.

Immunohistochemistry (IHC)

A laboratory test that looks for specific proteins in cancer cells or tissue samples. In cancer care, IHC helps identify the type of tumour and can show whether certain targeted treatments are likely to work.

Incurable cancer

Cancer that cannot be completely removed or eliminated with current treatments. In some cases, treatment may help control the disease, relieve symptoms, or maintain quality of life for a period of time. However, this is not possible for everyone, and care may focus on palliative care to support comfort and quality of life.

Mainstream / Mainstreaming

In healthcare, "mainstreaming" means making something part of **routine, funded, everyday care**, rather than limited to research programs or specialist access.

For Omico, **mainstreaming precision oncology** means ensuring that every Medicare-eligible Australian who can benefit has **funded access** to molecular profiling and personalised treatment as a standard part of cancer care, **regardless of their wealth, postcode or background**.

Molecular Profiling

A way of studying all types of molecular changes (including, but not limited to, genes and proteins), in a person's cancer cells to understand what makes it unique. This information helps guide more personalised treatment decisions.

There are several types of molecular profiling tests, and these continue to evolve. **Comprehensive Genomic Profiling (CGP)**

is currently at the heart of this approach, while newer tests such as **proteomic** and other advanced molecular analyses are emerging to provide an even fuller picture of how a cancer behaves.

Medical Services Advisory Committee (MSAC)

An expert committee that advises the Australian Government on whether new medical tests, procedures, and technologies should be publicly funded through Medicare. MSAC looks at how safe, effective, and cost-effective a service is before it can be added to the Medicare Benefits Schedule (MBS).

UK National Institute for Health and Care Excellence (NICE)

An independent organisation in the United Kingdom that reviews evidence about new medicines, tests, and treatments to decide whether they should be used in the National Health Service (NHS). NICE helps ensure patients have access to effective and affordable care.

Pharmaceutical Benefits Advisory Committee (PBAC)

An expert committee that recommends which medicines should be subsidised by the Australian Government under the Pharmaceutical Benefits Scheme (PBS). PBAC assesses how well a medicine works, its safety, and whether it provides value for money compared to existing treatments.

Poor prognosis cancer

Cancer that is expected to have a lower chance of long-term survival or response to treatment. This may be because it has spread, is fast-growing, or does not respond well to available therapies. Treatment may sometimes help slow its growth, manage symptoms, or improve quality of life, but outcomes are generally limited.

Precision Oncology

An approach to cancer care that focuses on the individual. It uses detailed information about a person's cancer, such as specific **biomarkers** (protein or genetic changes), to **match treatments** that are most likely to work for them.

This approach can reveal important information about a cancer that would otherwise remain unknown, uncovering new treatment options or clinical trials that may extend life and improve quality of care. Precision oncology makes treatment more **personalised, targeted and precise**.

Proteomics

The study of proteins, which are the working parts of cells. In cancer cells, looking at proteins can reveal how a tumour behaves, and help find new ways to treat it.

Real-World Data (RWD)

Real-world data are information collected from patients and their medical teams during everyday care – not just in clinical trials – such as electronic health records, claims databases and registries.

When analysed, these data generate **real-world evidence (RWE)**, which helps show how treatments work in practice and guides decisions about access, reimbursement and best care.

Therapeutic Goods Administration (TGA)

Australia's national regulator of therapeutic goods, including medicines, medical devices, and diagnostic tests. The TGA assesses and approves products for safety, quality, and efficacy before they can be supplied in Australia.

Tumour-Agnostic Therapy

A treatment that effectively targets a specific biomarker, such as a genetic, molecular or protein change, regardless of where the cancer started. Most current tumour-agnostic therapies are guided by genetic changes in cancer cells, but new research is expanding this approach to include other types of biomarkers, such as protein-based features revealed through proteomic testing.

Whole Genome Sequencing (WGS)

A test that looks at all of a person's DNA, their entire genome, to find changes that may cause or influence cancer. It can uncover rare or complex changes not seen with other tests. WGS can be used to understand the genetic drivers of a known cancer, helping to guide treatment, or to identify inherited genetic changes that may increase a person's risk of developing cancer in the future.

References

- 1) Australian Government, Australian Institute of Health and Welfare. Cancer data in Australia www.aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/overview
- 2) Australian Government, Australian Institute of Health and Welfare. NHPA report on cancer control 1997 www.aihw.gov.au/reports/cancer/nhpa-report-on-cancer-control-1997/summary
- 3) Australian Government, Cancer Australia. Australian Cancer Plan www.australiancancerplan.gov.au/
- 4) National Rural Health Alliance. Cancer in Rural Australia. Factsheet – July 2022 www.ruralhealth.org.au/wp-content/uploads/2024/05/nrha-cancer-factsheet-july2022.pdf
- 5) Liu, B., Zhou, H., Tan, L. et al. Exploring treatment options in cancer: tumor treatment strategies. *Sig Transduct Target Ther* 9, 175 (2024) www.doi.org/10.1038/s41392-024-01856-7
- 6) IQVIA, 2025 Global Oncology Trends 2025 www.iqvia.com/-/media/iqvia/pdfs/institute-reports/global-oncology-trends
- 7) Brims FJ, McWilliams A, Harden SV, O'Byrne K. Lung cancer: progress with prognosis and the changing state of play. *Med J Aust.* 2022 Apr 18;216(7):334–336. doi: 10.5694/mja2.51474. Epub 2022 Mar 29. PMID: 35352375; PMCID: PMC9310756
- 8) Howlader N, Forjaz G, Mooradian MJ, et al. The Effect of Advances in Lung-Cancer Treatment on Population Mortality. *N Engl J Med.* 2020;383(7):640–649. doi:10.1056/NEJMoa1916623
- 9) Australian Government, Cancer Australia. Lung cancer in Australia statistics. 2025 www.canceraustralia.gov.au/cancer-types/lung-cancer/statistics
- 10) Australian Government, Department of Health, Disability and Aging. Therapeutic Goods Administration. Information about therapeutic goods in Australia www.ebs.tga.gov.au/
- 11) Omico data on file. Data updated 16th October 2025.
- 12) Genomic therapy matching in rare and refractory cancers: Updated results from a retrospective cohort study in the Molecular Screening and Therapeutic (MoST) program. (2023) FPY Lin, S Thavaneswaran, CE Napier, JP Grady, M Kansara et al. *Journal of Clinical Oncology* 41 (16_suppl), 1540-1540 presented at ASCO 2023
- 13) Public-private partnerships (PPPs) in healthcare: Lessons from the ProSPeCT model www.healthcaretransformers.com/healthcare-business/strategy-and-operations/ppps-in-healthcare-lessons-from-prospect/?_thumbnail_id=9398
- 14) Australian Government, Department of Health, Disability and Aging. Genomics Australia www.health.gov.au/our-work/genomics-australia
- 15) Australian Government, Cancer Australia. National Framework for Genomics in Cancer Control www.canceraustralia.gov.au/key-initiatives/national-framework-genomics-cancer-control
- 16) Securing the future of precision medicine for a cancer-free future www.health.gov.au/ministers/the-hon-mark-butler-mp/media/securing-the-future-of-precision-medicine-for-a-cancer-free-future
- 17) NHS England. NHS England and NICE genomic testing pathway www.england.nhs.uk/long-read/nhs-england-nice-genomic-testing-pathway/
- 18) Omico. Omico Proposes a Transformative Solution for Affordable Precision Oncology as Routine Care for Rare Cancer. 2025 www.omico.com.au/news/omico-proposes-a-transformative-solution-for-affordable-precision-oncology-as-routine-care-for-rare-cancer/

**It's time to mainstream
precision oncology.
Together we can make
world-class cancer care
for all a reality.**



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omico.com.au