



**New Zealand House of Representatives**  
Te Whare Māngai o Aotearoa

## **Health Committee**

Komiti Whiriwhiri Take Hauora

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# **Ministry of Health, Long-term insights briefing 2023**

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Presented to the House of Representatives  
by Sam Uffindell, Chairperson

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# Ministry of Health, Long-term insights briefing 2023

## Recommendation

The Health Committee has considered a long-term insights briefing from the Ministry of Health—*Precision Health: exploring opportunities and challenges to predict, prevent, diagnose, and treat health needs more precisely in Aotearoa New Zealand*—and recommends that the House take note of its report.

## About long-term insights briefings

The Public Service Act 2020 requires government departments to develop and publish long-term insights briefings at least once every three years. The briefings are developed independently of ministers, and in consultation with the public.

These briefings are intended to provide information to the public about medium- and long-term trends, and potential future risks and opportunities that could affect New Zealand. They should provide impartial information, analysis, and possible policy responses to the issues identified by the briefing. There is a requirement for public consultation on the topic and content of the briefing.

## About the ministry's long-term insights briefing

To develop this briefing, the Ministry of Health carried out public consultation on its chosen topic of precision health. It received 71 submissions, largely from healthcare stakeholders. It then undertook consultation on the draft briefing and received 29 submissions from stakeholders, including medical laboratory scientists, researchers, and industry groups.

We held a hearing with officials from the Ministry of Health on 20 March 2024. We heard from Dr Diana Sarfati, the Director-General of Health; Dr Ian Town, the Chief Science Advisor; and Steve Waldegrave, the Associate Deputy Director-General, Strategy, Policy and Legislation. Also, Professor Cristin Print contributed to developing the long-term insights briefing and participated in our hearing.

## The ministry's chosen topic: precision health

The Ministry of Health's inaugural long-term insights briefing focuses on precision health, which the ministry defines as "the use of technology and information to develop more precise ways of keeping people healthy". In its briefing, the ministry identifies two areas of rapid growth and innovation that have important implications for precision health. They are geonomics and artificial intelligence (AI).

Genomics is the study of how genetic factors contribute to health and risk of disease. Genomics looks at how genes can cause health issues or diseases and how different people or populations might respond to treatments based on their genetic makeup.

AI is “a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions”.<sup>1</sup> In the briefing, the ministry explains that AI can help “analyse large amounts of patient data, identify patterns and correlations and personalise treatment recommendations”.

Genomics and AI were chosen because both are experiencing considerable international interest and rapid technological advancement.

The briefing explains that the consensus amongst health professionals is that widespread use of precision health technologies is inevitable and, in some cases, already happening. Despite this, implementation in New Zealand lacks national coordination and is largely occurring in an unplanned manner.

To fully realise the potential of precision health, the ministry advocates strong strategic direction and support from government. It identifies several areas that would benefit from government leadership and investment. They include developing purpose-built infrastructure (data and physical), appropriate governance arrangements, frameworks for investment, and appropriate laws and regulations. The ministry suggests that, without more considered national-level planning and capability-building, the health system will be vulnerable to privacy breaches, genetic discrimination, inconsistent levels of care, and worsening inequities.

## **Defining precision health and precision medicine**

The briefing explains that “precision health” and “precision medicine” are often used interchangeably, but there is an important differentiation. Precision health emphasises prevention, whereas precision medicine relates to treating someone once they are already unwell. The ministry cited a definition of the two terms by Lloyd B Minor, Dean of Stanford University School of Medicine:

While precision medicine implies that individuals who get sick are treated precisely, precision health is focused on a holistic approach to keeping people healthy through targeted interventions and stopping disease before it starts.

## **Opportunities from precision health**

The ministry described precision health as providing “a tangible opportunity to move away from a one-size-fits-all approach” and create a fairer, more equitable health system that better accounts for population variance. It said genomics and AI are developing “rapidly, even exponentially, around the world”. We heard that these technologies have the potential to produce efficiencies and savings for the health system, and improve health outcomes.

This is welcome, as we know that the public health system is under strain as New Zealand’s health needs become increasingly complex and diverse. New Zealand’s population is ageing (the proportion of over-65-year-olds is projected to increase from 15 percent in 2021 to 21 percent in 2036) and becoming more ethnically diverse (Māori, Pacific, and Asian ethnic groups are steadily increasing). Demand for health services is driving an increase in costs:

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<sup>1</sup> Definition by OECD: [OECD AI Principles overview](#).

the Treasury projects that health expenditure will increase from 7 percent of GDP to over 10 percent by 2061 if there are no changes to the current health model.

Genetic screening can be used to predict a person's lifetime likelihood of acquiring certain diseases or conditions. It is already possible to use genetic testing to assess the likelihood that an individual or family group will develop some types of breast and stomach cancers. It is also possible to use genetic testing to reduce the risk of adverse side effects from some medicines, like chemotherapy.

Meanwhile, AI is useful for automating routine or repetitive tasks, which can relieve pressure on healthcare workers. For example, automating administrative tasks allows clinicians to spend more time with their patients. AI and machine learning can also potentially improve how clinicians predict, diagnose, and target treatment. We heard that there is good evidence of AI's ability to scan an array of images, such as mammograms, CT scans, and colonoscopies, to help radiologists detect cancer more quickly and accurately.

## **Precision health in the international community**

Precision health technologies are widely used internationally. The ministry told us that New Zealand's uptake has been comparatively slow and that "many other high-income countries are further along in their precision health journey". It said that interest in this field started developing more than a decade ago and is "an accelerating global trend".

We heard how precision health is being implemented overseas. For example, the ministry referenced a Dutch genomics study published in 2022 which sequenced 12 genes in over 6,000 people. The study achieved around a 30 percent reduction in adverse effects from a series of common medications.

## **Precision health in New Zealand**

The ministry told us that some precision health technology is already in use in New Zealand. For example, diagnostic laboratories in Auckland, Christchurch, and Wellington carry out specialist genomic tests and analysis. However, the ministry said that use is "limited compared with other economically developed countries and is unevenly distributed". The ministry pointed to a lack of appropriate infrastructure and limited workforce capacity as two factors preventing precision health from becoming a routine part of clinical practice.

The ministry described New Zealand's approach as disorganised and lacking planned, national-level strategic direction. This has resulted in a fragmented and inconsistent system. For example, it told us that, under the previous health system, some district health boards (DHBs) offered and paid for particular genetic tests for patients diagnosed with cancer. Other DHBs offered the tests but patients had to self-fund them, and some DHBs did not offer the tests at all.

We heard that other countries have national-level plans for developing and implementing precision medicine. For example, the UK has a national genomic medicine service and Singapore has a 10-year national precision medicine strategy. The ministry agreed with our assertion that New Zealand has a comparatively "very immature framework".

## **New Zealand's unique global position**

The ministry said that New Zealand's slow implementation of precision medicine presents a unique opportunity to "leapfrog" its progress. It said New Zealand is well placed to learn from foreign jurisdictions and to leverage work that has already been done overseas. We heard that New Zealand is an untapped market for foreign countries that are interested in partnering.

However, the ministry cautioned that New Zealand cannot entirely solve its lagging approach by importing foreign technology and approaches. It clarified that, while New Zealand is a net receiver of health technologies, the right domestic frameworks still need to be in place. The ministry emphasised the need to consider New Zealand's unique history, context, and demographics. For example, we heard that Māori and Pacific women have denser breast tissue, so using technology developed overseas to read their mammograms might not work well.

## **Areas of New Zealand leadership**

We heard that although New Zealand lags internationally, there are examples of excellence and leadership. The ministry said that New Zealand is "well ahead of the rest of the world" in terms of thinking about the ethical implications of genomics for indigenous populations. It said that New Zealand's collaboration with Māori on data sovereignty is seen as world leading, and of interest to countries like the USA, Canada, and Australia.

The ministry highlighted that New Zealand has a strong academic foundation with a number of senior professors who have specialised in precision health. For example, Professor Cristin Print is an authority on genomics. He contributed to the ministry's long-term insights briefing. Some academics are working with Health New Zealand–Te Whatu Ora to research how to implement AI health technologies in New Zealand.

Despite these areas of leadership, there remains a disconnect between academia and routine clinical practice. The ministry indicated that this as a key challenge.

## **Funding and the role of government**

The ministry told us that no dedicated funding is allocated to precision health at present. There has been some investment, but the ministry described it as "ad-hoc" and "non-systematic". Most of the work to date has been funded through research grants rather than traditional health funding sources. Increasing investment into precision medicine would require new funding to be allocated through a Budget process or for Health New Zealand–Te Whatu Ora to reprioritise funding within its existing budget.

The ministry agreed that public–private partnerships will likely play an important role in supporting the uptake of precision health in New Zealand. It pointed to Omico, an Australian public–private partnership model as a good example. Omico brings together researchers, clinicians, government, industry, advocacy groups, and patients to accelerate access to precision oncology. The programme screens people for cancer-related genes or genes that can mutate to increase cancer risk. Once the genes have been identified, people are directed to privately funded clinical drug trials. The model received \$185 million of Australian

government funding. It is estimated that it will create \$135 million of healthcare cost savings, \$525 million in new direct investment in local clinical trials, and 650+ new jobs in two years.<sup>2</sup>

We asked whether a government-led approach was necessary given precision health technologies are already being used in New Zealand. The ministry stressed that while it is true that hospitals and clinicians are organically adopting technologies, there is strong need for government-led policy to create a fair and consistent approach. It described current uptake of precision health as “patchy”. The ministry emphasised that, without national-level leadership, New Zealand will struggle to establish the frameworks and infrastructure necessary to maximise the potential of precision health and ultimately improve public health outcomes.

### **Investment into precision health**

Asked how New Zealand’s investment into precision health compares with other countries, the ministry said this is difficult to quantify. There is no national system for capturing and measuring the level of national investment. This is partly because, until the recent health reforms, each DHB was responsible for planning, purchasing, providing, and managing health services for each district. Also, GP practices are private businesses and make individual decisions about what technologies to invest in. These decisions are not reported or collated nationally.

The ministry provided information about investment into precision health in comparable international jurisdictions. For example, genomics in the UK experienced 12 percent year-on-year growth from 2011 to 2020. The UK aims to make £1 billion of funding available to promising life sciences companies. In New Zealand, investment into genomics has been largely confined to small-scale research initiatives, such as Aotearoa Variome and Rakeiora.

The ministry pointed to research that quantifies the potential economic benefits of embracing artificial intelligence. Research published in 2019 by AI Forum estimated that AI could create \$700 million of cost savings for the New Zealand health system by 2026. The AI Forum also estimated that AI could create up to \$3.6 billion in labour efficiencies for the healthcare and social assistance sectors by 2035.<sup>3</sup>

### **“Eroom’s law” and establishing a national assessment system**

The ministry told us that health technology in general (not just precision health) is advancing rapidly. However, costs are “continuing to balloon”. It explained the concept of “Moore’s law” which is the observation that as technology advances over time, computing power exponentially increases and cost decreases, making it possible to get more for less. The ministry said the opposite is true for healthcare. Fifty years ago, every billion dollars invested into drug research and development yielded 40 or 50 useful new medicines. Now, something like 0.5 new medicines are developed for every billion dollar invested. The ministry said this phenomenon has been dubbed “Eroom’s law” (Moore’s law spelt backwards).

We heard that precision health has the potential to create significant cost savings by targeting treatment more precisely. However, the ministry cautioned that there is a lot of

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<sup>2</sup> [The Precision Oncology Screening Platform Enabling Clinical Trials \(ProSPeCT\).](#)

<sup>3</sup> [AI Forum: Artificial Intelligence for Health in New Zealand.](#)

“over-promising” and a huge amount of choice, with both genomics and AI “generating almost daily new innovations in healthcare”. Because it is becoming more expensive to provide healthcare, evidence-based mechanisms are essential for assessing which technologies should be adopted and integrated into New Zealand’s health system.

## **Next steps and implementing precision health**

The ministry identified several areas that need investment to realise the potential of precision health.

### **National assessment for evaluating emerging technologies**

PHARMAC currently conducts a health technology assessment (HTA) of pharmaceuticals, some medical devices, and vaccines to determine effectiveness and value for money. The ministry indicated that work is ongoing to expand HTA for different types of emerging health technologies. However, it emphasised throughout our hearing that there is currently no national approach for analysing the cost–benefit of precision health technologies.

This makes it challenging for the government to make informed funding decisions and ensure good value for taxpayers’ investment. The ministry advocated the establishment of a system for assessing the effectiveness and value for money of these emerging technologies.

### **Modern legislation and regulation**

The ministry told us that while genomics and AI have been around for some time, New Zealand has outdated legislation and regulation which do not facilitate the uptake of these technologies. It emphasised the need for regulation that better recognises new hybrid technologies that fall outside traditional categories.

The ministry cited the Malaghan Institute’s work on CAR T therapy as an example. CAR T therapy is an innovative new treatment for people with blood cancer. The treatment involves collecting a patient’s immune cells, training them in a lab to fight the cancer, and reinserting them into the patient. Under the Medicines Act 1981, each time the patient receives their own cells it is treated like a new medicine. This means that every treatment must be individually approved, which adds cost and time to the process.

The Therapeutic Products Act 2023, which comes into effect in mid-2026, has a mechanism enabling more efficient regulation of treatments like CAR T therapy.

### **Specialised workforce**

The ministry emphasised the need to train new and existing health professionals. Many roles already exist, but investment is needed to grow these professions. Some educational pathways are not available in New Zealand. For example, genetic counselling is a post-graduate qualification only offered in Australia.

### **Improved infrastructure**

Precision health creates vast quantities of data. We heard that New Zealand needs purpose-built infrastructure to safely store the data. Equally important is investment into creating the capability for analysing and interpreting the data.



## **Appropriate legal and governance frameworks**

We heard about the importance of safe data governance to prevent privacy breaches and discrimination. The ministry explained that New Zealand already has comprehensive health privacy laws in place. The Health Information Privacy Code 2020, which falls within the Privacy Act 2020, protects information provided in a clinical setting and requires health organisations to safeguard patient data and protect against loss and unauthorised access. Health data can only be made available to third parties as required by law.

These protections form a good foundation, but New Zealand currently has no regulation to prevent misuse of genetic information. This is particularly significant for Māori and other groups who experience worse health outcomes. The ministry referenced an example of genetic discrimination where people in the USA were excluded from employment based on their genetics. This led to the development of the USA's Genetic Information Nondiscrimination Act 2008. Canada and Germany also have legislation to protect against genetic discrimination, while the UK has a Code on Genetic Testing and Insurance.

## **Public engagement**

The successful uptake of precision health requires public trust and social licence. The ministry emphasised the importance of raising awareness in the community and helping people to understand concepts like “informed consent”.

An individual's decision to have their genome sequenced has important implications for their family. It is vital that people fully realise these implications and make informed decisions before agreeing to genomic testing. The ministry stressed the importance of genetic counsellors who help people understand whether they should have a genetic test, what the results might mean for them and their family, and what treatment options are available if they are found to be predisposed to certain diseases. We heard that informed consent is a complex ongoing process, rather than a single act.

## **Enhanced partnerships**

The ministry advocates a whole-of-government approach. It said the current fragmented system with organisations working in silos has stalled New Zealand's ability to realise the benefits of precision health. The ministry highlighted the need for improved collaboration between government, academics, research groups, and industry—both domestically and internationally—and meaningful partnership with Māori as Treaty partners.

The ministry clarified that it is the right organisation to lead the development of policy advice. But it pointed out that other government agencies would need to be involved, including PHARMAC, Medsafe, the Ministry of Business, Innovation and Employment, and the Department of Internal Affairs. It also acknowledged that genomics has implications beyond human healthcare that are relevant for agencies like the Ministry for Primary Industries.

## **Conclusion**

We are optimistic about the future of precision health, and support measures to integrate precision health into routine clinical care. We find it convincing that these technologies can create efficiencies and savings and improve health outcomes by providing more tailored care. Precision medicine is already in use in New Zealand, but it is clear from the uneven

application that its use is not as sophisticated as other comparable countries. We agree with the ministry that further work is needed to create appropriate regulations, laws, infrastructure, and investment pathways.

We thank the ministry for highlighting opportunities and areas that require government attention and public–private investment. This long-term insights briefing is an important first step in a process that we hope will encourage more rapid adoption of precision health technologies.

Overall, we felt the briefing was very high-level. We would have liked it to have defined clearer next steps, with more specific recommendations. However, we recognise that the purpose of a long-term insights briefing is to provide information to the public, and that departments are not required to indicate preferences in the briefing for particular policy options.

## **Appendix**

### **Committee procedure**

We met between 20 March and 10 April 2024 to consider the long-term insights briefing. We held a hearing with the Ministry of Health and Professor Cristin Print.

### **Committee members**

Sam Uffindell (Chairperson)  
Dr Hamish Campbell  
Dr Carlos Cheung  
Ingrid Leary  
Cameron Luxton  
Hūhana Lyndon  
Jenny Marcroft  
Debbie Ngarewa-Packer  
Hon Dr Ayesha Verrall

### **Related resources**

The documents we received as advice and evidence for this inquiry are available on the [Parliament website](#), along with the [Hansard transcript](#) and [recording of our meeting on 20 March 2024](#).