HIRA

Tranche One Business Case

Version 1.0
23/08/2021

Modernising the patient experience

Hira Tranche 1

This business case seeks approval of $143.0 million to implement the first tranche of the Hira programme. The lifetime cost of the tranche 1 investment, based on a ten-year horizon, is $337.7 million.

By 2026 Hira will, through a series of implementation tranches, establish the foundations for a digitally enabled health and disability system. This will enable New Zealanders to be more empowered to manage their health, wellbeing and independence, resulting in a measurable improvement in equity of access and outcomes. It is a significant enabler of innovation and system reform.

Hira is an ecosystem of data and digital services that enables better access to health information. It will transform the way people and their whānau interact with health services, providing them with more control over how their health information is used, and supporting them to have access to a comprehensive range of services in their local communities to help them stay well. Access to trusted and reliable data and digital services will improve workforce experience and satisfaction and support decision making, research and public health measures. It will improve the ability of health organisations to respond to consumer needs, facilitate more efficient and effective patient journeys, and enable new digitally enabled models of care as in-person visits are supplemented with telehealth and digital therapeutics, and preventable hospitalisations and demand for hospital services are reduced.

Tranche 1 of Hira runs for 30 months from the date of approval and will release foundational technology enablers, such as digital identity and a succession of data and digital services that can be accessed through multiple channels (websites and apps). All New Zealanders, and their health providers, will get access to important health information such as demographics, enrolments and entitlements, prescribed and dispensed medicines, immunisations and laboratory test results, and summary primary care data, and be empowered to update and contribute information such as their contact and iwi details and information about their own health service experience.

Hira is more than just those data and digital services created by this investment. The sector, and digital innovators in the market, will be empowered to design and contribute data and digital services that increase access to information, improve equity, and empower consumers and whānau to better manage their health and wellbeing.

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Better health and wellbeing through better data, better access and better sharing

Mihi

Nau mai rā ki tēnei kaupapa whakahirahira, ōtira he kaupapa kia piki ake te hauora me te waiora o ia tangata, ia whānau me te iwi whānau o Aoteoroa.
Ko Hira tēnei.
Tīhei mauriora

Welcome, let us invite you to our source of new services that will improve the health and wellbeing of our people, our iwi and our Whānau in New Zealand.
This is Hira!

1   Executive Summary

1.1   Purpose of Business Case

> **HIRA WILL MODERNISE THE EXPERIENCE FOR CONSUMERS AND THE HEALTH AND DISABILITY WORKFORCE, THROUGH A RANGE OF DIGITAL SERVICES THAT ENABLE BETTER ACCESS TO HEALTH INFORMATION, IMPROVE WAYS OF WORKING, AND EMPOWER PEOPLE TO MANAGE THEIR HEALTH, WELLBEING, AND INDEPENDENCE.**

This detailed business case seeks formal approval to implement the first tranche of the Hira programme. The lifetime (build and run) cost of the tranche 1 investment, based on a ten-year horizon, is $337.7 million. Further enhancements to the services developed in tranche 1 will be funded through subsequent tranche business cases.

This business case builds on the Hira Programme Business Case which described the case for change and evaluated a range of options to meet the business need. In March 2021, the Cabinet Government Administration and Expenditure Review Committee endorsed the preferred way forward outlined in the programme business case [GOV-21-MIN-0008 refers] and invited the Minister of Health to report back to the Committee seeking approval of the Hira Tranche One business case following its completion.

This business case informs a proposal to Cabinet to:

1.   Invest up to $60.4 million (CAPEX) and $82.6 million (OPEX) from 2021/2022 to 2023/24. This includes contingencies of $27.4 million.

2.   Increase ongoing (baseline) operating expenses by $21.8 million in 2024/25, rising to $30.8 million in 2029/30 before reducing to $30.4 million in 2030/31.

3.   Fund this tranche from a draw-down from Budget 21 of $400 million tagged contingency for Data and Digital Infrastructure Capability (this single contingency provides funding for both Hira and investment in foundational data and digital infrastructure to enable health system transformation).

4.   Finalise contracts with the preferred suppliers to deliver the tranche 1 services specified.

5.   Proceed to deliver the proposed tranche to implement and commission Hira (Preferred Option).

1.2   Introduction

What is Hira?

Hira is a critical enabler supporting the implementation of the government's reform of the health and disability system.

Hira will support the system to address the equity gap to contribute to improved Māori health outcomes, promote efficient and effective care, and empower people and whānau to better manage their own health and wellbeing. It will enable organisations to work together to share information so that people do not have to repeat personal details multiple times, and those who need information have access to it. It will enable clinicians to work more efficiently and harness digital technologies to improve services.

"Data and digital infrastructure and capability will be essential to enhance system sustainability, enable better and more equitable outcomes for all New Zealanders, and deliver the new system model… investment in digital systems and technology improves day-to-day practice and decision-making, and enables integration of data to improve consumer experience."

HDSR: Proposals for Reform CAB-21-MIN-0092

Hira addresses four key concerns:

- Consumers[1] cannot engage effectively with their own health care, contributing to unmanageable demand on health services.
- Information does not adequately support decision making, adversely impacting individual, organisation, and system level planning.
- Barriers to collaboration across the health, wider Government and private sectors are hindering innovation in the delivery and management of heath care.
- The lack of integrated information across the system is driving unnecessary rework and duplication for service users and health care staff.

By 2026, Hira will establish the foundations for a digitally enabled health and disability system. It will enable a virtual electronic health record, creating access to that data as needed.

Consumers will have better access to and control over their health information. **Providers** will have secure, easy access to patient information, in the right context and at the right time. **Decision makers** will have better insights to improve safety and quality, performance, planning, system and service level design and delivery. **Primary care and community-based services** will be better able to respond to consumer need, and the growth in the use of hospital services will be reduced. **Innovators** will be enabled and transformation across the health ecosystem will be accelerated.

Hira tranche 1 will not address all the issues related to the sharing of information and the empowerment of people to manage their own health, but it is a vital first step. Consumers and providers will gain real value from the tranche 1 initiatives. Some examples of how people's experience will change are shown in Figure 1.
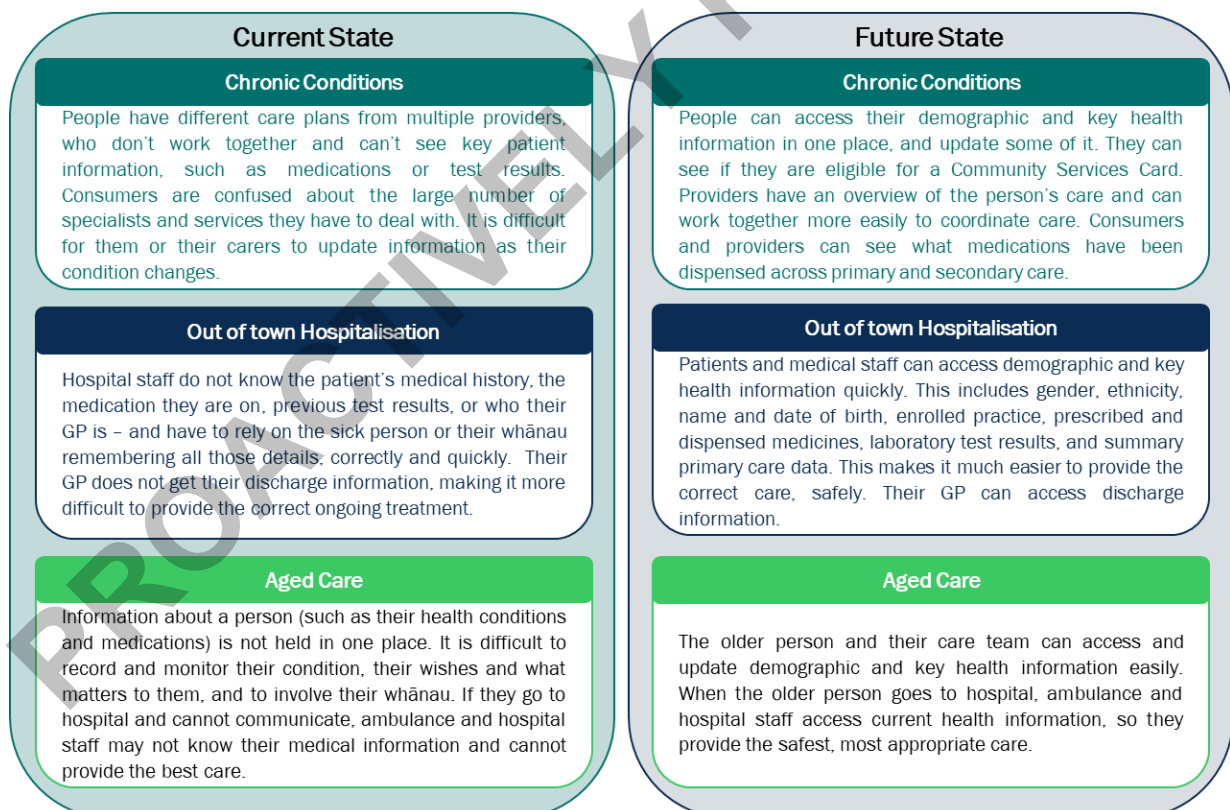

Figure 1: Hira Tranche 1 - Current and Future State

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[1] In this context, the term consumers encompasses the individual, their whānau/family and support networks.

COVID-19 experience

The recent COVID-19 pandemic brought the shortcomings in the current health information and communications technology (ICT) environment into sharp focus. The COVID-19 response was enabled with technology and capacity that already existed, but in some cases, new systems had to be developed very quickly to support different ways of doing things.

The COVID-19 experience underlined the need to have enablers in place, such as interoperability, identity, standards, and security. If Hira had been in place, the Ministry would have been able to respond more quickly to the COVID-19 situation. In the future, Hira will enable a quicker response to public health emergencies and health challenges, by re-using and adapting existing solutions rather than developing new ones. Hira will connect consumers and the health workforce through ICT systems such as patient portals, so information can be shared in real time during a major public health event.

The Ministry's experience in responding to the COVID-19 pandemic has informed both the tranche scope and delivery approach. Scope has been adjusted to reflect the work already underway and completed due to COVID-19 that will be leveraged to support delivery of Hira. The iterative delivery approach (delivering a minimum viable product, then expanding and enhancing this over time and as needed) which was so successful in delivering the COVID-19 ICT response is embedded in the Hira approach.

Hira Tranche 1

In addition to the changes made to accommodate the COVID-19 response, Hira has modified the tranche 1 scope in response to the findings and recommendations from research and discovery undertaken in 2020 in partnership with the Department of Internal Affairs (DIA), and to enable realisation of benefits within a shorter timeframe.

Tranche 1 establishes the Hira technology foundations across seven areas:

- **Data Services:** Enables people to access health information from different trusted sources through application programming interfaces (APIs), enabling a person's health information to be viewed as a virtual electronic health record. Tranche 1 scope has prioritised high value sources of data.

- **Consumer Services**[2]**:** Ensures that consumers have access to at least one secure channel to interact with the health system, so that they can access relevant health information about themselves and their whānau. Tranche 1 scope will ensure access through web and mobile applications supported by identity, authorisation and access management services.

- **Provider Services:** Ensures that health service providers have access to at least one secure channel to consistently access authorised consumer information. Tranche 1 scope will ensure access to web and mobile applications supported by identity, authorisation and access management services.

- **Operational Services**[2]**:** Establishes an operating model for secure and stable Hira services. Tranche 1 scope is end-to-end service management, data set compliance with New Zealand security, data privacy and data protection standards, and business and technical support, transition and operational support services.

- **Identity:** Provides consumers with access to health information available through Hira, by using a unique digital identity. Tranche 1 scope is consumer-controlled authorisation and consent services, profile management and delegation.

- **Interoperability:** Provides the mechanism to consolidate and manage access to the trusted sources of data to users.

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[2] Where existing services are in place, Hira will extend these if appropriate.

- **Change and Adoption:** Supports sector and community engagement, innovation, and uptake of the Hira services. Tranche 1 will enable Hira service adoption, sector onboarding and innovation and business partner engagement with frontier vendors and identify and support digital health transformation opportunities.

Hira has developed a number of user stories ('personas'), to describe the current and future state for a variety of situations (such as out of area hospitalisation, mental health, aged care as shown in Figure 1). These stories are indicative and the value they describe is largely experiential and qualitative. The programme has also defined quantitative benefits, both financial (non cash-releasing) and non-financial. The quantified benefit values have been derived from international and national evidence, but most are not measurable in a practical sense.

Lead indicators have been identified as proxy measures; these will be monitored by the programme, alongside case studies, to provide evidence of the impact of tranche 1. Lead indicators include, for example, the number of consumers and providers accessing Hira services, apps using Hira, people using Hira to update demographics and request entitlements etc.

The most significant risks to the successful delivery of tranche 1 include significant competition for limited resources, unplanned diversion of key resources to other priorities (such as the COVID-19 response), delays in programmes/projects contributing to Hira (such as the Ministry Integration Programme and Identity Project) and security/privacy breaches impacting consumer confidence in Hira services. If uptake of services is lower than projected, the expected benefits may not be fully realised. If the uptake is higher than forecast, the ongoing cost for running the services will be higher than budgeted.

1.3 Economic Case

The Ministry is responsible for delivering tranche 1 including utilising sector and market partners. Hira capabilities will be leveraged and extended by the public and private sector, to achieve greater value. For each element of tranche 1 delivered by the Ministry and/or its market/sector partners, a recommended approach was identified by evaluating a longlist of options against project-specific evaluation criteria. Once a recommended approach was agreed, the overarching tranche composition and timeline was evaluated to ensure that the tranche delivery approach was logical, and that any timing or deliverable discrepancies were resolved. The following dimensions were used for all elements of tranche 1 delivered by the Ministry and its sector/market partners:

- **Scope:** Hira will deliver the minimum viable product and then iterate. This mirrors the successful approach taken for delivery of COVID-19 ICT support, which focused on delivering 'good' as quickly as possible. Consistent with an agile delivery approach, continuous improvement (further refinement and extension of the initial outputs within Hira defined scope) will be considered as part of co-design. Extension beyond the minimum viable product would depend on capacity, affordability, and value for money for the benefits that will be realised. The SRO will make any decision to expand Hira scope, in conjunction with the Governance Group, programme team and co-design partners.

- **Service Delivery:** Five potential delivery approaches for sourcing and resourcing were considered for each project: in-house; hybrid development; hybrid commission; outsource development; and outsource commission. The preferred delivery model for all Ministry-delivered elements is either a hybrid development or a hybrid commission approach. Ongoing management of the services would be by the Ministry or provider, as applicable.

- **Implementation (timing):** Two approaches were considered for each project: 'big bang' or incremental rollout. None of the projects is suitable for a big bang implementation, as the programme's preferred approach is iterative discovery and delivery. This approach will result in the development/implementation of a minimum viable product to select stakeholder groups, with subsequent enhancement and broader rollout.

- **Funding:** Two approaches were considered for each project: Crown funding, or Crown funding plus other source(s). The 'Other' funding source will vary by project (e.g. PPP, user pays etc). Whilst alternative funding sources may be identified as part of detailed project design and

delivery, at this stage there is insufficient information on the projects to determine whether this is a viable approach. The programme has therefore identified full Crown funding as the initial preferred approach for all projects.

1.4 Commercial Case

Procurement Approach

Hira procurement is tightly aligned to the delivery requirements of each Hira service delivered by the Ministry. Procurement methods will be custom specific to each of the services and the underlying technical and service architecture elements. A variety of procurement approaches will be utilised for the tranche 1 projects, to enhance opportunities and minimise risks. The approaches include use of Ministry existing service capability, direct sourcing, secondary procurement leveraging panels and open tender.

For each of the tranche 1 procurements, a Procurement Plan will be developed. The level of detail in each plan will vary depending on the type of procurement. Procurement is expected to commence from mid/late 2021. Cross-functional evaluation teams and an evaluation method will be established for each procurement where a full market procurement exercise is undertaken. Detailed planning for each project will confirm the details of the planned contracts (including contract length, contractual clauses, risk allocation etc.). Procurement and Health Legal will manage contract formation. Contracts will be developed in collaboration with Health Legal, using Health Legal agreement templates.

Approach to Market

In November 2020, the Ministry ran a Request for Information (RFI) process to gain an understanding of suppliers' capabilities, track record experience, maturity and innovations, in support the delivery of Hira tranche 1 services and to inform procurement planning. The RFI process, as a market research tool, was not intended to solicit accurate estimates, pricing or quotes for subsequent short listing or evaluation and selection.

The RFI identified that there are multiple suppliers in the market with a good understanding of the New Zealand public health system, its existing ICT capabilities, as well as its current and future needs. As well as long-standing providers, new entrants and start-ups have also entered the market. This group is providing niche and speciality solutions that could meet elements of Hira services. The programme is confident that the market has the capability to support tranche 1 delivery and will work proactively with potential suppliers to ensure capacity is available as needed.

1.5 Financial Case

Indicative Costs

For the purposes of this business case, the cost modelling covers a ten-year period from 2021/22 to 2030/31. This comprises three years of programme costs to implement the tranche 1 projects, and ongoing operational costs over the modelled period. Whilst costs are indicative at this stage, (as procurement has not been undertaken and therefore final costs are not yet known), there is a high degree of confidence in the overall cost. This is built up from detailed analysis on a project-by-project basis, and quantitative risk assessment supports the proposed contingency values included.

- **Implementation cost:** the three-year implementation cost of tranche 1, excluding contingency and capital charge, is $115.7 million (comprised of $50.4 million capital cost and $65.3 million operating cost). Including contingency and capital charge, the implementation cost is $143.0 million (comprised of $60.4 million capital cost and $82.6 million operating cost).

- **Ten-year modelled cost:** The funding sought for Tranche 1 over the ten-year modelled period, including initial implementation and ongoing run costs but excluding contingency, capital charge and depreciation, is $208.7 million (comprised of $50.4 million capital cost and $158.3 million operating cost). Including contingency, capital charge and depreciation the ten-year modelled cost is estimated at $337.7 million (comprised of $60.4 million capital cost and $277.3 million operating cost).

The ten-year funding requirements for tranche 1, including contingency, capital charge and depreciation, are summarised in Table 1.

Table 1: 10-year Programme Costs by Financial Year (including Contingency, Capital Charge and Depreciation)

Tranche 1 Profile	Tranche Cost Profile ($m)										
	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2026/ 2027	2027/ 2028	2028/ 2029	2029/ 2030	2030/ 2031	Total
Capital	22.1	25.5	12.9	-	-	-	-	-	-	-	60.4
Operating	27.3	35.0	26.2	21.8	24.1	25.5	27.2	29.0	30.8	30.4	277.3
Total	49.4	60.5	39.1	21.8	24.1	25.5	27.2	29.0	30.8	30.4	337.7

Affordability

Capital affordability: the total capital cost of $60.4 million for tranche 1 over the ten-year modelled period will require Crown funding.

Operational affordability: The operating cost of tranche 1 over the ten-year modelled period is estimated at $277.3 million. This is not affordable within the current Ministry funding allocation. This investment is only affordable with Crown funding.

Sector affordability: Tranche 1 of Hira will have a service and financial impact on the sector and on the communities they serve. Whilst the programme will proactively engage with the sector to leverage and align current and future investment, it recognises that the sector will not, in all cases, be able to fully fund the changes required to adopt Hira services. The programme has budget provision for sector change and adoption. Through co-design and sector engagement, Hira will determine what investment is needed in the sector and the communities they serve. The Hira tranche 1 cost includes s 9(2)(i) for change and adoption, specifically to support the sector to uptake Hira services.

The sector can extend the use of Hira – and therefore their benefits - with their own investment. For example, the programme may determine that it will ensure access to Tranche 1 data services in hospitals by funding the cost of integration with the current systems that support emergency, inpatient and outpatient services. Improved access to data will directly release benefits through improved decision making and operational efficiencies. Health providers can then leverage this new capability to undertake further steps to transform internal processes and engage with consumers in new and different ways to release further value.

1.6 Management and Delivery

Governance

The Deputy Director-General for Data and Digital, Ministry of Health, is the Senior Responsible Owner (SRO) for Hira and has overall responsibility for the programme. The governance structure has been revised since the completion of the programme business case, to reflect the increased emphasis on engaging with Māori and improving equity.

Governance of tranche 1 will be through the Hira Steering Committee, Governance Board and the SRO to the Executive Leadership Team and the Director General of Health.

Governance comprises:

- **Hira Governance Board**: Provides strategic direction and alignment for the programme.
- **Te Tiriti Partnership Board**: (see below) holds the programme to account for addressing equity issues for Māori.
- **Hira Steering Committee**: Provides operational direction to ensure coordinated, successful delivery and focuses on managing prioritisation and the backlog of initiatives.
- **HISO**: Supports and promotes the development and adoption of fit-for-purpose health information standards for the New Zealand health and disability system.
- The **Architecture & Design Authority** (ADA): Responsible for ensuring Hira purchased or created technology solutions comply with architectural standards.
- The Hira **Clinical Governance** Group (to be established): Responsible for input to relevant clinical processes and governance requirements.
- The Hira **Data Governance** Group (to be established): Responsible for ensuring Hira standards and technical policies are in alignment with sector expectations.

Tranche 1 will be managed through three workstreams: Data and Channels; Enablers; and Change and Adoption. A fourth workstream, the Programme Management Office (PMO) will provide support to the tranche.

Māori Engagement

The Ministry has established a Te Tiriti Partnership Group to sit alongside the Governance Board, to be active partners in decision making and planning, provide advice and guidance to the programme, provide critical insights and cross-sector linkages, design equity solutions in partnership with Hira, and hold the programme to account for addressing equity issues for Māori. This is a significant departure from historic Māori engagement approaches and reflects Hira's commitment to enabling improved equity.

Management and Resourcing

Tranche 1 will be managed in line with the key principles from Managing Successful Programmes (MSP). A tailored approach to project and product delivery will blend elements of waterfall and agile methodologies as appropriate and aligned to programme requirements. As so many of the Hira team participated in the Ministry COVID response, this has resulted in a uniquely experienced team with a skillset perfectly aligned to the demands of delivering the Hira programme in a fast-paced and agile manner.

Tranche 1 will be resourced through a combination of Ministry employees (some full time, some part time or seconded), fixed-term contractors, consultants, secondment roles from other agencies, and sector and supplier partners.

Management of Risks, Benefits, Service Adoption and Change

The programme operating model defines processes and delivery.

- **Risk and Issue management:** The initial Risks and Opportunities Plans and Registers created as part of initial tranche planning will be further developed. Where required, the process of risk identification, assessment and the development of countermeasures will involve consultation with the Hira Governance Group, other relevant stakeholders, and project team members.

- **Benefits management:** The tranche 1 Benefits Plan details the lead indicators and broader quantitative and qualitative measures. Programme Managers will undertake identification, measurement and tracking of the lead indicators. The SRO has overall responsibility for the realisation of benefits, with sector benefits owners being identified as part of the codesign work for tranche 1. The Hira Programme Director will be responsible for benefits monitoring and reporting.

- **Stakeholder Engagement and Change and Adoption:** Communications and engagement will focus on higher-level messaging, such as progress updates and benefits. Change and adoption communications will be more detailed and focused on assisting the sector to understand the specifics of the anticipated changes and the expected impact, clarifying what the sector needs to do to prepare/respond, and encouraging commitment to the changes. Change impact analysis has been undertaken for the tranche 1 projects, based on the requirements as they are known to date and the current understanding of stakeholder needs. More detailed change planning will follow approval to proceed.

Assurance

A Gateway 0/2 Strategic Assessment/Delivery Strategy review was undertaken in April 2021. The review found that good progress had been made despite the COVID-19 challenges and noted that there is strong support for the initiative, which is seen as critical to enabling the planned health system reforms.

Further assurance on tranche 1 design has been provided through Technical Quality Assurance (TQA), Independent Quality Assurance (IQA) and Quantitative Risk Assessment (QRA).

The programme team has addressed the key recommendations from these reviews that are within scope.

An active assurance approach is being adopted for tranche 1, where "point in time" assurance activities (such as TQA and Treasury mandated Gateway reviews) are complemented by embedded assurance functions, including IQA, within programme governance and management activities.

Tranche 1 Timeline

The tranche 1 key milestones are shown in Figure 2. The timeframe is designed to minimise delivery costs and realise benefits as quickly as possible. The tranche will be implemented over two years of delivery plus six months of closeout, concluding after 30 months with final handover to the relevant Ministry team(s) to be maintained and evolved as 'business as usual'.
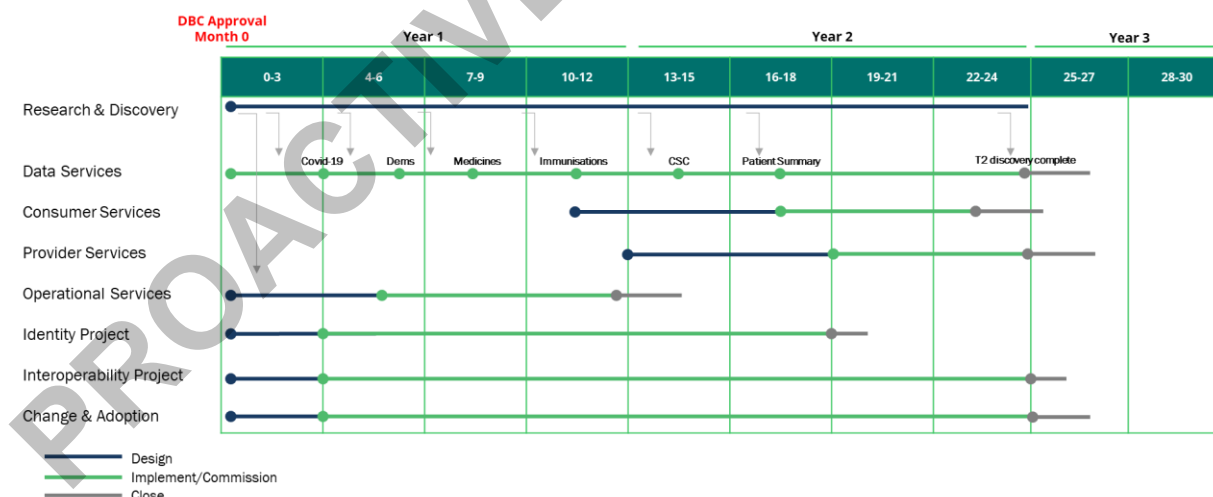
Figure 2: Tranche 1 High Level Delivery Timeline

2 Introduction

2.1 Purpose of this Business Case

This business case seeks approval of $143.0 million to implement the first tranche of the Hira programme, commencing in 2021/22. The lifetime (build and run) cost of the tranche 1 investment, based on a ten-year horizon, is $337.7 million. Further enhancements to the services developed in tranche 1 will be funded through subsequent tranche business cases.

The purpose of this Detailed Business Case is to:

- Identify the investment options that optimise value for money.
- Prepare the investment proposal for procurement.
- Describe the funding and management arrangements for the successful delivery of the project.
- Seek agreement to approach the market with Requests for Proposal and finalise the arrangements for implementation of the tranche 1 projects.

2.2 Background to this Business Case

A Strategic Assessment[3] for a National Electronic Health Record (EHR) was approved in August 2016. An Indicative Business Case[4] for the implementation of a single EHR was considered by the Cabinet Committee on State Sector Reform and Expenditure Control in July 2017 and further information on costs and benefits was requested.

In 2019, a change in approach was agreed, moving away from the concept of a single EHR to a national health information platform (nHIP) which will make health data from multiple trusted source systems accessible on a virtual platform, enabling real-time access to an individual's data throughout the healthcare system. In September 2019, the Government approved the development of a Detailed Business Case for nHIP. With support from the Treasury, the Ministry of Health ('the Ministry') elected instead to complete a Programme Business Case (PBC) that details the overarching direction and intention of the programme, as it is better suited to the iterative delivery approach. The PBC was intended to be delivered to the Cabinet Social Wellbeing Committee in February 2020. Cabinet consideration was delayed due to COVID-19 and endorsement of the business case was received in March 2021 [Gov-21-MIN-0008 refers].

Ideally, the PBC would have been endorsed by Cabinet prior to the development of the Tranche 1 business case and related activities. However, to maintain momentum and support strategic enablers for the COVID-19 response, Cabinet approved $5.3 million in in May 2020 from the COVID-19 Response and Recovery Fund ('CRRF') to continue the development of the tranche 1 business case, including a limited number of proofs of concept[5] [CAB-20-MIN-0234 refers]. The investment for COVID-19 does not pre-determine Cabinet decisions regarding this programme.

As noted in the PBC, nHIP has been rebranded as Hira, a te reo Māori word which means 'to have a significant bearing on future events', and also means 'to have a widespread effect'. This name speaks to the Hira promise of better health outcomes for all New Zealanders.

This business case builds on the PBC and describes the implementation plan for tranche 1. Hira will be delivered as a series of tranches, with each tranche designed to create standalone capability and delivery of value and realisation of benefits.

The Central Agencies have been engaged throughout the development of this business case. The format and approach are as agreed with the Central Agencies and are in accordance with the requirement of the New Zealand Treasury Better Business Case process.

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[3] Strategic Assessment: Establishing the Electronic Health Record. Ministry of Health 2016.

[4] Indicative Business Case: Enabling Next Generation Care through an Electronic health Record. Ministry of Health November 2017.

[5] Now referred to as research and discovery activity.

3 Update to Programme Business Case

3.1 Reconfirming the Case for Investment

Need for Investment

The Ministry has reassessed the strategic case for investment as set out in the PBC and confirms that the strategic context remains unchanged. The PBC described four key challenges, which the Hira programme aims to address.

The inability of consumers[6] to engage effectively with their own health care is contributing to unmanageable demand on health services: Consumers have few opportunities to use digital health services to interact with their care providers and it is difficult for them to navigate the system or be guided to the right information or service using the various digital resources and services available today. Health care is less effective when consumers are not engaged in decisions regarding their care and empowered to better manage their own health.

Information does not adequately support decision making, adversely impacting individual, organisation and system level planning: Basing clinical decisions on incomplete or unreliable information may lead to poorer health outcomes and/or an unsatisfactory care experience. Current data management is creating significant security and privacy risks. At a system level, New Zealand is failing to take advantage of the possibilities arising from using health data as a powerful tool to better inform policy, service planning and research.

Barriers to collaboration across the health, wider Government and private sectors are hindering innovation in the delivery and management of heath care: Immature commercial, procurement and innovation practices for digital health services are hindering digitally enabled innovation and collaboration. The inability to integrate data across health, social and wellness service providers limits the ability to support integrated service models across government. Fragmented health information is slowing or preventing the uptake of advances in modern technologies which support clinical diagnosis and decision making, with implications for the already overstretched workforce as well as for health outcomes and consumer experience.

The lack of integrated information across the system is driving unnecessary rework and duplication for service users and health care staff: Health information currently sits across a multitude of systems that are often unconnected, resulting in unnecessary effort to get information. Where data cannot be shared, it must be sought and recorded multiple times by multiple users. Consumers are frequently required to be the 'glue' by providing the same information to multiple health providers or organisations. Poor access to and sharing of information can be irritating and inconvenient or potentially hazardous. This is contributing to the risk of harm, as well as impacting consumer, whānau and staff satisfaction.

Hira Benefits

There is no change to the primary benefits and transformational opportunities which will be realised by Hira. The benefits are primarily in the health domain of the NZ Treasury Living Standards Framework but will also support benefits across the other domains, in particular: Jobs and Earnings; Knowledge and Skills; and Civic Engagement and Governance.

> *"Hira is not only about rolling out new or updated technology – it is about developing a whole new way of working with health data and digital services. Hira will fundamentally change the way people interact with their health information."*
> *GM Digital Strategy and Investment, Ministry of Health*

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[6] In this context, the term consumers encompasses the individual, their whānau/family and support networks.

These benefits are shown in Figure 3 and are summarised below.

- **Improved health outcomes:** Timely access to a patient's health information at the point of care will improve decision making and co-ordination of care between health professionals, reduce the risk of errors and reduce repeat and/or inappropriate diagnostic and other interventions. Better access to information will enable health equity issues to be addressed, improve research and innovation in health care, and facilitate greater sharing of information between providers.

- **Affordable and sustainable health care system:** Hira will change the approach to national collections and registries (in some cases avoiding duplication of data) and make data more accessible with less effort. It will support a reduction in demand on the system, by enabling the sharing of data for care delivery and

Figure 3: Hira Programme Benefits

empowering consumers to better manage their care and wellness, releasing capacity, improving workflow and efficiency, and avoiding future costs.

- **Improved consumer, family, whānau and staff experience**: Hira will empower consumers and their carers to become more active in managing their health and wellness. Hira services will enable consumers to be better informed, with timely access to more comprehensive and holistic health and wellness information. Consumers will be able to interact with providers more easily, and the improved sharing of data across multiple providers will reduce inconvenience and risk of harm from repeat unnecessary interventions.

Hira Values

In designing and implementing Hira, the programme is guided by six principles:

- **Trust & Security:** The consumer is at the centre and is the primary consent giver for the sharing of health information between providers who can access the Hira platform. Providers have rights and responsibilities relating to information of people in their care.

- **He Tāngata:** Focus on improving New Zealander' lives – individuals, children and young people, families, whānau, iwi and communities.

- **Mana Whakahaere:** Empower people's choices and enable access to, and use of, their information.

- **Manaakitanga:** Respect and uphold the mana and dignity of the people, whānau, communities or groups who share their information.

- **Mahitahitanga:** Work as equals to create and share valuable knowledge.

- **Kaitiakitanga:** Act as a steward in a way that is understood and trusted by New Zealanders.

3.2 Reconfirming the Programme Approach

Programme Short List

The approved PBC identified five options for addressing the problems described above. There is no change to the options presented in the PBC, and no further economic evaluation has been undertaken at a programme level.

1. **Do Minimum:** Progress solutions across New Zealand in the current manner, but drive alignment through an emphasis on standards, consistency and controls that support local/regional objectives.

2. **Central Health Platform:** Create a closed platform limited to health data. Enable controlled access to centralised national health datasets/services, supporting both information sharing and interactions across the health and disability system.

3a. **Gateway (single EHR):** A purpose-built gateway with access to a single electronic health record based on aggregated health, wellness and social data.

3b. **Gateway (single EHR) commencing with health:** As per 3a but commencing with health data, with flexibility to scale into wellness and social data at a later date.

4. **Hira:** An ecosystem[7] approach where data from multiple trusted sources and digital services are discoverable and accessible, with no single centralised electronic health record. The sector, and digital innovators in the market, will be empowered to design and contribute data and digital services.

Investment Objectives and Critical Success Factors

The programme identified four overarching investment objectives. There is no change to the Hira objectives as detailed in the programme business case and summarised in Figure 4.

The programme critical success factors (strategic fit and business need, value for money, supplier capacity and capability within timeframe, affordability and achievability) and their respective proposal specific criteria were developed for the programme business case. These have been reviewed by the programme team and remain unchanged.

Hira Investment Objectives

By 2026, foundations for a digitally enabled health and disability system with access to and use of trusted health information and services are in place so that:

- New Zealanders are more empowered to manage their health, wellbeing and independence, and there is measurable improvement in equity of access and outcomes.
- The health and disability system is enabled to improve decision making at point of care and has better insights to improve safety and quality, performance, planning, system and service level design and delivery. The consumer has a real voice in decision making.
- Innovation and transformation across the health ecosystem is accelerated.
- Primary care and community-based services are better able to respond to consumer need and the growth in the use of hospital services is reducing.

Figure 4: Hira Investment Objectives

Recommended Programme Way Forward

The Ministry has reconfirmed that the recommended programme approach, **Option 4: Hira** is expected to deliver the investment objectives, tangible benefits and public value. The approach is still considered to be realistic and achievable, and no other alternative approaches have been identified since the PBC was endorsed.

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[7] Whole of health and disability system, including technology partners and suppliers brought together to create transformational change.

Programme Implementation Approach

The Hira PBC described the planned implementation approach of three tranches, to be delivered over five years. There are no changes to the planned tranche approach, as depicted in Figure 5.

Tranche 1

Improves access for consumers and health providers to view and update demographics, view medicines, entitlements (e.g. Community Service Card), immunisations and laboratory results (commencing with COVID-19), trusted sector sources of data (e.g. regional clinical data, radiology); summary primary care information and digital signposting of other trusted health information. Allows developers to find and connect to Hira data and digital services.

Digital identity services including consent and authorisation and interoperability services to support health information access and sharing.

Community engagement and co-design; service adoption support; digital literacy and inclusion initiatives; supporting standards and policies.

Tranche 2

Additional access to data (subject to prioritisation: community care, allergies, adverse reactions, shared care plans, additional eligibility and entitlements).

Continued community engagement and co-design: further emphasis on innovation and business partner engagement, data anonymisation and bulk data download services to support research.

Tranche 3

Additional access to data (subject to prioritisation). Better communication and collaboration services, increased use of self-reported data. Continued community engagement and co-design.

Value (increasing over time)

Empowering consumers to manage their health, wellbeing and independence through better access to their health information. Consumers have visibility of where information is held on them, including who is authorised to access their data.

The sector, and digital innovators in the market, will be empowered to design and contribute data and digital services that improve equity.

Improved access to more accurate and timely information shared between health providers, to improve decision making and reduce risk of medication errors.

New opportunities for consumers and providers to engage with the health and disability system. Consumer, family, whānau and provider experience will be improved through achieving better communication and collaboration along the care continuum.

Improved ability for health organisations to respond to consumer needs, facilitate more efficient and effective patient journeys, and enable new digitally enabled models of care. Preventable hospitalisations and demand for hospital services are reduced.

Better evidence-based planning and interventions grounded in richer, more accurate and timely data at a system level; a greater ability to identify health equity issues in order to address disparities in the provision of services.

Figure 5: Hira Tranche Approach

4 Strategic Case

4.1 Strategic Alignment and Stakeholder Support

Tranche 1 Strategic Alignment

Hira is a critical enabler supporting the implementation of the government's reform of the health and disability system. The aim of the reform is to strengthen the health system to provide consistent, high-quality health services for everyone. Hira will be a key part of achieving the vision for a system which achieves Pae ora / healthy futures for all New Zealanders.

The tranche 1 projects will support the system to address the equity gap and promote efficient and effective care. They will empower people and whānau to better manage their own health and wellbeing and give people, their carers and whānau meaningful control, and will harness digital technologies to improve services. Organisations will be enabled to work together to share information (so that people do not have to repeat personal details multiple times, and those who need information have access to it) and clinicians will be more efficient.

> *"Data and digital infrastructure and capability will be essential to enhance system sustainability, enable better and more equitable outcomes for all New Zealanders, and deliver the new system model... investment in digital systems and technology improves day-to-day practice and decision-making, and enables integration of data to improve consumer experience."*
>
> HDSR: Proposals for Reform CAB-21-MIN-0092

> *"Health organisations will work together to share information, intelligence and best practice, helping each other to continuously improve care and patient experience. Digital technology will be a key feature of the system and will enable clinicians to work more efficiently and at the top of their scope, and will better support multi-disciplinary working."*
>
> HDSR: Proposals for Reform CAB-21-MIN-0092

Tranche 1 is aligned with and supports the delivery of multiple government and Ministry strategies, including:

- Our health and disability system: Building a stronger health and disability system that delivers for all New Zealanders April 2021.
- Health and Disability System Review: Proposals for Reform March 2021.
- June 2020 Health and Disability System Review.
- 2021 Data Protection and Use Policy.
- 2021 Data and Information Strategy for Health (draft).
- 2020 Healthcare Information and Management Systems Society Digital Health Indicator evaluation.
- 2020 Strategy for a Digital Public Service.
- 2020 Digital identity trust framework.
- Whakamaua: Māori Action Plan 2020-2025.
- 2019 Digital Inclusion Blueprint.
- Mahi Aroha Carers' Strategy Action Plan[8] 2019-2023.
- 2018 Digital Health Strategic Framework.
- 2018 Data Strategy and Roadmap.

The alignment of Hira and these strategies is described in Appendix 1.

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[8] A partnership between the government and the Carers Alliance (c. 50 NGOs) to recognise and support carers.

4.2 Tranche 1 Scope

The business scope describes the extent of change required for Tranche 1 to be considered successful. Since the completion of the PBC, the tranche 1 scope has been revised to reflect both the work already underway and completed as a result of COVID-19, and in response to the reduced tranche timeframe of two years.

In selecting the revised scope (group of projects to be included in Tranche 1), the programme re-evaluated potential projects using the same decision framework detailed in the programme business case. The programme has considered the projects through three lenses: strategic[9], execution[10], and value[11]. Key stakeholders endorsed the revised tranche scope.

Hira has focused on ensuring that tranche 1 is both achievable within the planned timeframe and will deliver real benefits. Delivery remains underpinned by an iterative, agile approach with a strong focus on change and adoption.

Tranche 1 is focused on targeting trusted access to key data sources that are currently fragmented, difficult to access, duplicated and of variable quality. As the initial phase of the Hira investment, tranche 1 will deliver immediate benefits whilst creating a solid foundation for subsequent projects and tranches. The emphasis for this tranche is on data sources maintained by the Ministry and those already used in DHB regions, as this data is readily accessible to Hira and the data quality is already assured. Whilst some data needed for tranche 1 is non-government (for example, in patient management and laboratory systems), this is funded by government through the health system and data quality standards still apply.

Consumers will get significant value from the tranche 1 projects. **Improved connection and communication** between service providers will result in more accurate and timely information sharing. Improved medicines information will **reduce the risk of medication errors**. Better information for decision making at the point of care will **improve provider workflows**. Consumers will be able to **access their own information,** including viewing and updating relevant demographic information, and view medicines prescribed and dispensed across multiple providers. **Entitlements activity** will commence, with the integration of Community Services Card (CSC) eligibility information. Tranche 1 will target **equity of access to digital health tools** for those who currently do not have access.

Tranche 1 is comprised of seven projects, as described in Table 2. Summarised project briefs are attached as Appendix 2 to Appendix 8.

Table 2: Tranche 1 Projects

Project	Summary
1 Data Services	This project will enable health information from different trusted sources to be accessed through application programming interfaces (APIs). These allow data to be accessed, whilst not being unnecessarily replicated or centralised. This will enable a person's health information to be brought together and viewed as a virtual electronic health record – the foundation of all Hira services. The sector, and digital innovators in the market, will be empowered to design and contribute data and digital services.
2 Consumer Services[12]	This project will ensure that all consumers have access to a digital channel so that they can access relevant health information about

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[9] The extent to which the potential project aligns with strategies and policy. Only services which meet a defined need or respond to strategy would be taken forward for further consideration.

[10] The shortlisted services would be evaluated for feasibility, i.e. does the data exist and could Hira realistically expect to be able to deliver the service in the expected timeframe. Feasible options were triaged to prioritise those which enable other services.

[11] The expected value (quantifiable and unquantifiable benefits) to be realised would be assessed.

[12] Where existing services are in place, Hira will extend these if appropriate.

Project		Summary
		themselves and their whānau. Access will be secure and authenticated, and web delivered. The project will focus on the tranche 1 data services such as viewing and sharing data on medicines, COVID-19 immunisations, demographics, primary care summary data, Community Services Card entitlements, existing sector data sources, and laboratory tests and diagnostics.
3	Provider Services	This project will ensure that all health service providers have access to a digital channel to access authorised health information. Access will be secure and authenticated, and web delivered. Providers will be able to view and share data on medicines, immunisations, demographics, primary care summary data, Community Services Card entitlements, existing sector data sources, and laboratory tests and diagnostics.
4	Operational Services[12]	The project will establish an operating model to ensure secure and stable Hira services. The operating model will evolve over time to meet the changing needs of consumers and providers. Investment in the operating model means that changes can be made to the roles, responsibilities, governance, processes, systems and tools that are required for Hira to function well.
5	Identity	This project will provide all consumers of health services in New Zealand with access to the range of health information available through Hira, through the use of a unique digital identity. It will establish the technical components to create, authenticate, manage and operate this identity, and support consent/authorisation of access to health information.
6	Interoperability	The project provides an event notification service, an integration platform and a marketplace and developer portal for APIs used to access data through Hira platforms. The event notification service will monitor and ensure the security of APIs and enable real-time distribution of data changes to multiple subscribers at one time and includes the ability to notify events. The integration platform and marketplace and developer portal will include certification processes and auditing of access for consumer and provider APIs.
7	Change and Adoption	This project will support sector uptake of the Hira services. Hira tranche 1 projects will impact data and technology suppliers and the organisations or people who use or access these digital services. The Hira team will facilitate uptake by supporting stakeholders to understand the changes, how they will be affected, what they need to do, and encourage commitment to the change.

4.3 Tranche 1 Benefits and Disbenefits

Approach

The combined tranche 1 investment will contribute to all three programme benefits and will start to build the foundations for the wider transformational opportunities detailed in the programme business case.

The approach to quantifying tranche 1 benefits mirrors the approach used for the overall Hira programme. As there is no New Zealand comparator on which to based benefit measurement, the programme has undertaken an extensive review of similar programmes internationally[13]. International findings have been interpreted for the New Zealand context, and quantifiable and qualitative benefit measures have been set based on the available data. Based on the international

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[13] No equivalent programme has been identified, as internationally there has been more focus on creating a single electronic health record.

analysis, the Hira benefits are expected to be achieved in an interoperable environment. The approach and international analysis are described in detail in the Hira Benefits Realisation Management Strategy.

Whilst analysis for tranche 1 has identified a limited number of benefits that could be quantified in financial and non-financial terms, the nature of iterative delivery and human-centred design means that further specificity and benefits projections will be tested as part of tranche 1 implementation.

The approach for tranche 1 is therefore to provide qualitative analysis of the value to be delivered by the tranche, supplemented by quantified measures where data is available to support such analysis. Measures for equity are embedded across all benefits.

- All benefits will be tracked using **qualitative** approaches such as a combination of surveys, focus groups, interviews, or case studies. User reports will be included where available. The focus is on delivering value to users, i.e. improving the user experience.

- Where **quantified measures** have been identified for benefits, these are based on national and international examples.

- **Lead indicators** have been identified as proxy measures, as whilst the quantified benefit values have been derived from international and national evidence, most are not measurable in a practical sense.

Tranche 1 Qualitative Outcomes

Hira is taking a human-centred design approach to the design of services. Consumer and provider personas have been developed and are presented to highlight the user journey and the outcomes tranche 1 will provide. Some examples of how people's experience will change are shown in Figure 6.

Current State	Future State
Chronic Conditions	**Chronic Conditions**
People have different care plans from multiple providers, who don't work together and can't see key patient information, such as medications or test results. Consumers are confused about the large number of specialists and services they have to deal with. It is difficult for them or their carers to update information as their condition changes.	People can access their demographic and key health information in one place, and update some of it. They can see if they are eligible for a Community Services Card. Providers have an overview of the person's care and can work together more easily to coordinate care. Consumers and providers can see what medications have been dispensed across primary and secondary care.
Out of town Hospitalisation	**Out of town Hospitalisation**
Hospital staff do not know the patient's medical history, the medication they are on, previous test results, or who their GP is – and have to rely on the sick person or their whānau remembering all those details, correctly and quickly. Their GP does not get their discharge information, making it more difficult to provide the correct ongoing treatment.	Patients and medical staff can access demographic and key health information quickly. This includes gender, ethnicity, name and date of birth, enrolled practice, prescribed and dispensed medicines, laboratory test results, and summary primary care data. This makes it much easier to provide the correct care, safely. Their GP can access discharge information.
Aged Care	**Aged Care**
Information about a person (such as their health conditions and medications) is not held in one place. It is difficult to record and monitor their condition, their wishes and what matters to them, and to involve their whānau. If they go to hospital and cannot communicate, ambulance and hospital staff may not know their medical information and cannot provide the best care.	The older person and their care team can access and update demographic and key health information easily. When the older person goes to hospital, ambulance and hospital staff access current health information, so they provide the safest, most appropriate care.

Figure 6: Hira Tranche 1 - Current and Future State Examples

An example consumer persona describing a consumer story is depicted in Figure 7. The potential future provider experience is depicted in Figure 8. Further personas are attached as Appendix 9.

Figure 7: Hira Tranche 1 Benefits - Out of Area Hospitalisation

Figure 8: Out of Area Hospitalisation - Future Provider Experience

Tranche 1 Benefits Summary

These personas are supported by a range of quantitative (financial (non cash-releasing) and non-financial) and qualitative measures. The tranche 1 lead indicators are summarised in Figure 9. The majority of the lead indictors do not have baseline data and will not have any data until implementation. Lead indicators will be monitored by the programme to provide evidence of the impact of tranche 1. Where possible, data will be disaggregated to provide analysis of Māori, Pacific and Other.
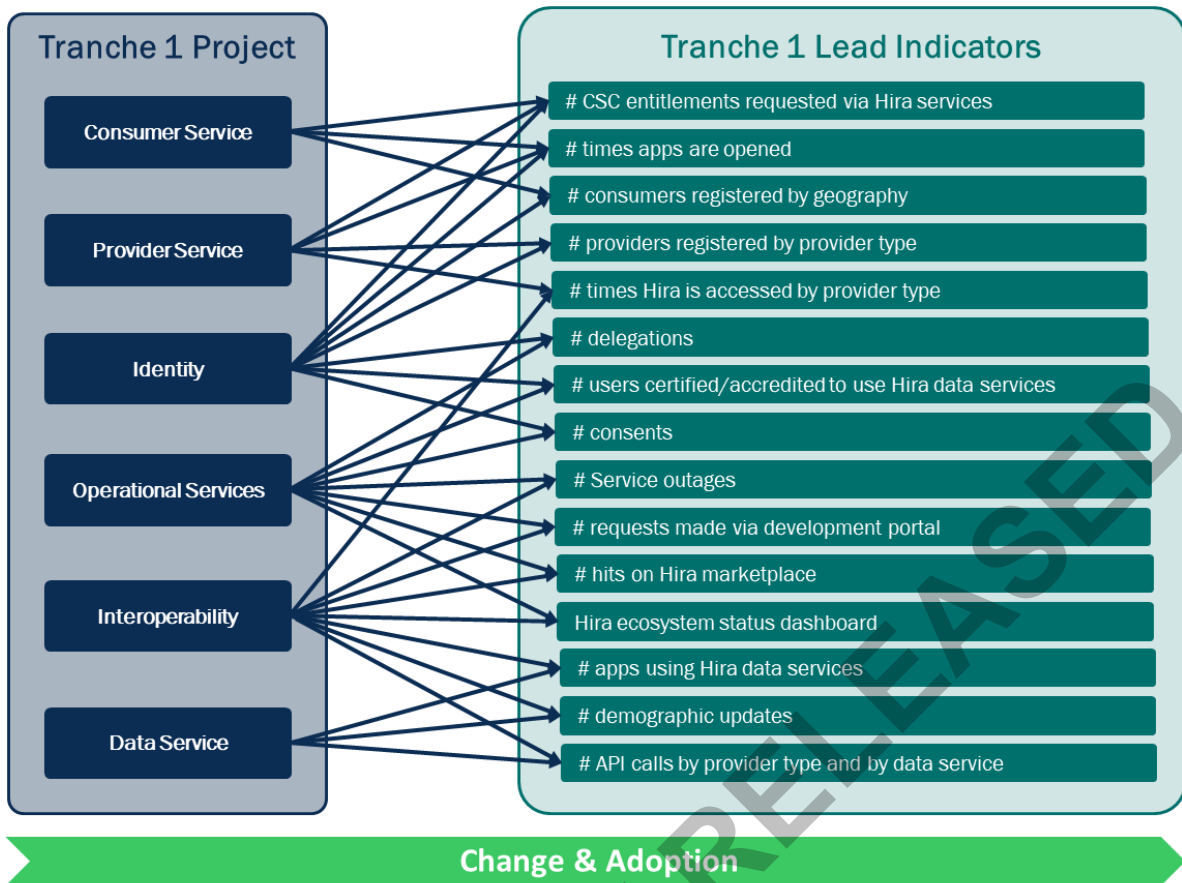
Figure 9: Tranche 1 Lead Indicators

All lead indicators have owners, who are accountable for ensuring that the indicators are monitored and reported. These have been identified for both the implementation phase, and for the ongoing run state. If progress against the indicator target is not as expected, the owners will be responsible for identifying and implementing an action plan to bring the measure back on track.

The alignment of tranche 1 benefits with the Hira overarching programme benefits and Key Performance Indicators (KPIs) is described in Table 3. As stated above, the values presented in this table are representative and for practical reasons measurement is not expected to be undertaken. Case studies will be used where appropriate to gather data to support the quantitative and qualitative measures identified.

Financial benefit values are the best estimates of the likely scale of the financial benefits arising. The tranche 1 investment will deliver financial value estimated at approximately s 9(2)(j) per annum. These benefits are assumed to be non-cash releasing, as the organisations to which the benefits accrue may choose to reinvest the time/cost saved into other services.

Table 3: Tranche 1 Benefits

Benefit	Measures
	Fewer medication errors Reduced (risk of) errors due to inadequate information at point of care, improving consumer safety. Timely and comprehensive access to consumer history reduces risk of medication errors (in particular, adverse drug events. Fewer errors flow through to better health outcomes. s 9(2)(j) s 9(2)(j)
	Improved primary care provider flow resulting in efficiencies gains and reduced delays in care. s 9(2)(j)
	Improved NGO decision making at point of care as access to consumer primary care, NZePS and COVID-19 health information will advance health care decision making and co-ordination. s 9(2)(j) .

Benefit	Measures
Health (primary) **Improved health outcomes** s 9(2)(i)	**Aged care access to consumer information** of primary care, NZePS and COVID-19 improves care responsiveness and decision making. s 9(2)(i)
	Improved allied health care co-ordination through the ability to access consumer primary care, NZePS and COVID-19 information. s 9(2)(i)
	Enhanced assessment capability by St John's advances transfer of care and emergency department clincal workflow efficiencies. s 9(2)(i)
	Community midwife access to consumer primary, NZePS and COVID-19 health information improves consumer centred care and advances care co-ordination and transfer of care efficiencies. s 9(2)(i)
	Greater appointment efficiencies through reliable access to core data about health consumers. A wide range of clinicians will have access to the most up-to-date contact details for appointment reminders and appointment efficiencies contributing to a s 9(2)(i)
	Increased uptake of CSC entitlements will improve consumer access to health services through minimising cost barriers. Potential measure: a s 9(2)(i) s 9(2)(i) will result in 5,000 consumers accessing CSC health entitlements.
	Increased equity through more Māori and Pacific peoples accessing CSC health entitlements. Potential measure: s 9(2)(i)
	Event notifications in real time improves clinical decision making. Potential meeasure: **reduced clinical workflow waiting times.**
	Clinicians will received **event notifications in patient context** (their patients only). Potential measure: **event notification reports and reduced consumer waiting times.**
Health (primary) **Affordable and sustainable health care system** s 9(2)(i)	**Reduced emergency admissions/readmissions due to Adverse Drug Events** due to improved sharing of information. s 9(2)(i)
	Reduction in DNAs because of improved preventative health capability and reach which results in more appointments being attended. Value of s 9(2)(i)
	Improved adherence to care plans attributable to advanced health information exchange to consumers. s 9(2)(i)
	Reduced hospital bed days due to fewer adverse drug events because timely and comprehensive access to consumer history will reduce the risk of medication errors. s 9(2)(i)
	Emergency department workflow efficiency will be improved by access to primary care, NZePS and COVID-19 consumer information and data sets. s 9(2)(i)
	Interoperability foundations for health system value enables the sharing and access of quality health information. s 9(2)(i)
	Increased accuracy and completeness of NHI level details that meets published requirements to ensure data quality. Potential measure: **regular data quality audits.**
	Improved security through the accreditation requirements to join the federated digital identity system, which will advance the security of digital identities used to access Hira. This will help to increase service provider confidence in the identities of individuals accessing their service.
	Event notifications will result in a data flow efficiency, reduction in costs to move data and reduction in storage because data will be clinician-patient specific.
	Improved data quality and data sharing will result in increased trust and confidence in the health system.
	Data integration removes manual routines that are time consuming and prone to human error, and will eliminate redundant and/or duplicated data entry.
	Data integration brings opportunities to streamline processes and automate workflows resulting in time efficiencies: Potential measure: **automated workflow time efficiencies.**

Benefit	Measures
	A marketplace provides access to Hira APIs that are simple and robust, promoting increased trust and confidence that the access provided to underlying data is appropriate and secure.
	A developer portal will provide increased capacity for developers to explore innovation opportunities without the current platform/local portal restraints.
	Innovation will be accelerated across the sector, by breaking down information siloes and enabling standardised interoperability and information exchange.
	Improved economic productivity because of efficiencies made to manual and clinical workflows through interoperability. s 9(2)(j)
Health (primary) **Improved consumer, family, whānau & staff experience** s 9(2)(j)	Parent and child scenario[14] • Ability for a parent to record both their own and their child's health information. • Granting selected access to a person's health profile. • *See CSC entitlements.*
	Out of area hospitalisation scenario • Medical information will be visible to the individual, their family, and relevant health and disability care providers in case of emergency. • Medications and other information will be provided to the individual in a way that is easily understood.
	Chronic and complex conditions scenario • Providing a single view of a complex health journey. • Selected access to a person's health profile will be granted.
	Aged care scenario • Family will have greater visibility of a person's health journey and a better ability to provide support. • Aged care providers wiuld be more connected to a person's health information, enabling better care and communication with the family.
	Wellness scenario • Information from multiple sources in a health profile will allow an individual to stay informed, for example about their COVID-19 immunisation status.
	Mental health scenario • People will have greater control over who can access and view their health information. • A more holistic picture of a person's health can be built.
	Hospital staff access to consumer information will improve consumer consumer, family-whānau and staff experiences with each hospital episode as a result of clinicians having access to consumer primary care, NZePS and COVID-19 information. Reduced risk of errors. s 9(2)(j)
	Consumers and providers enhanced engagement through access to primary care, NZePS and COVID-19 vaccination status information.
	Consumers, family and whānau can **view and update their information.** Potential measure: s 9(2)(j)
	Health providers can all view and update consumer details, resulting in more up-to-date consumer contact information.
	Consumer ability to **self identify iwi affliations.** Potential measure: s 9(2)(j)
	Health providers can view CSC information and inform consumers, family-whānau of their CSC health entitltments. Potential measure: **number of providers accessing CSC information for consumers.**
	Better access to information improves consumer, family/whānau and carer engagement in health care.

[14] Scenarios are based on the Hira personas.

Benefit	Measures
	Improved consumer experience through not being asked for the same information repeatedly.
	Increased trust demonstrated through high participation, faster interactions and better access to services.
	Quicker and easier for staff, consumers, family/whānau to prove their identity and access to services.
	Enhancing privacy improves consumer confidence that their privacy is respected and that they are in control of their information.
	Consent services enhance consumer empowerment and engagement through access and having control of their health information.
Jobs and earnings (secondary) **Improved work environment**	**Enhanced clincian wellbeing** through improved support and processes when involved in an adverse drug event. Potential measure: **Case study on 'clinicians as second victims' measuring pre- and post-clinician experiences.**
	Improved provider workflow and reduced time taking consumer histories and searching for information because of access to Hira and improved systems allowing for increased quality interactions with consumers. Potential measure: s 9(2)(j)
Knowledge and skills (secondary) **Health literacy**	**Consumers are better informed** with timely access to more comprehensive holistic health and wellness information through Hira services. Current access to information is enhanced by including information from other sources i.e. primary care, NZePS and COVID-19 vaccination status.
Civic engagement & governance (secondary) **Increased trust**	**Increased trust in the Ministry and digital health services** due to a more adaptive and responsive service, contributing to increased confidence in New Zealand's public service, resulting in improved participation.

A benefits map showing the alignment of tranche 1 quantified financial benefits to the overarching programme benefits and a more detailed analysis of the Tranche 1 quantified benefits and measures is attached as Appendix 10.

Tranche 1 Disbenefits

In any change process, there are benefits as well as disbenefits i.e. the known downsides of making the investment. Unlike risks, which may be eliminated, disbenefits cannot be removed completely through programme or project actions. Whilst they may be managed to an extent, they WILL occur if the investment proceeds. The most significant disbenefits identified for tranche 1 (excluding the opportunity cost of investing in Hira as opposed to in other priorities), are summarised in Table 4.

Table 4: Tranche 1 Disbenefits

Disbenefit	Summary and Management Approach
Time and effort required for intensive engagement	More intensive engagement required as part of this approach. Significant amount of time and effort will be required to ensure appropriate and adequate consultation, co-production and co-design, diverting participants from other activities. **Mitigation approach:** Ensure that investment prioritisation and planning recognise the time and effort required in co-design and co-production and proactively seek opportunities to leverage that investment for wider system benefit.

Disbenefit	Summary and Management Approach
Increased gap in digital and health literacy[15]	Māori and Pacific peoples, and those in low socioeconomic groups, currently experience an equity gap in health literacy. This has strong links with health status. **Mitigation approach:** Ensure that investment prioritisation and co-design approaches recognise potential health literacy barriers and proactively target resolution. Awareness, alignment and or partnerships with other initiatives addressing health literacy.

4.4 Key Risks

Tranche 1 Key Risks

The programme has identified and evaluated risks to the delivery of tranche 1 overall. These risks are aligned with the overarching programme risks but are focused on the first delivery tranche. The risks have been assessed for likelihood and impact, mitigating actions have been determined and a further assessment of the residual risk, post mitigation, has been calculated. The most significant risks to tranche 1 (post mitigation) include:

- If key projects and programmes external to Hira (such as the Ministry Integration Programme and Identity Project) do not deliver as planned, this may impact Hira resourcing, adoption, privacy/security etc.

- If competition for resource in the New Zealand labour market continues, this may mean that the programme is unable to meet its delivery timeframes.

- If capacity and critical resources are reprioritised onto other tasks (e.g. COVID-related), this may impact Hira's ability to deliver tranche 1 projects and value within the planned timeframe.

- If there is a security or privacy breach in any project delivered by tranche 1, the public may lose confidence in Hira and no longer use or adopt the services that it creates. (A Privacy Impact Assessment has been undertaken for Hira, see Appendix 11).

- If the uptake of Hira tranche 1 services is lower than projected, the expected benefits will not be realised.

- If the uptake of Hira tranche 1 services is higher than forecast, then the ongoing cost for running the services will be higher than budgeted.

These tranche risks and mitigation actions are detailed in Appendix 12.

Tranche 1 Project Risks

For each project within tranche 1, risks have been identified through workshops with key stakeholders. Where there is expected to be a material impact on external stakeholders, projects have sought to identify risks from an external perspective. The risks have been captured in individual project risk registers, which combine into the overarching programme risk register. A summary of the most significant tranche 1 project risks and risk mitigation strategies is attached as Appendix 12.

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[15] Actions designed as part of planned implementation to improve digital and health literacy would contribute to minimising the negative impact, but the effect cannot be mitigated completely until digital health literacy for all groups is the same. Broader government work such as the Digital Inclusion Blueprint and health literacy programmes undertaken by the Ministry of Health, will contribute to the mitigation of these disbenefits.

4.5 Key Constraints, Dependencies and Assumptions

Tranche 1 Constraints

Constraints are defined as limitations imposed on the project from the outset. Whilst the projects within tranche 1 are working within an environment of expectations, in particular with regard to the delivery timeframe and budget, there are no specific immovable constraints for tranche 1.

Tranche 1 Dependencies

Dependencies are actions or developments upon which success is dependent. In line with the Hira programme methodology,[16] three types of dependency have been identified for the tranche 1 projects:

- **Intra dependencies:** those that can be managed at the boundary of an individual project.

- **Inter dependencies:** those that can be managed beyond the project boundary and into other projects.

- **Extra dependencies**: those that extend beyond the boundaries of the programmes into other parts of the organisation.

The key intradependencies for tranche 1 are summarised in Figure 10. Project dependencies are summarised in the individual project briefs.
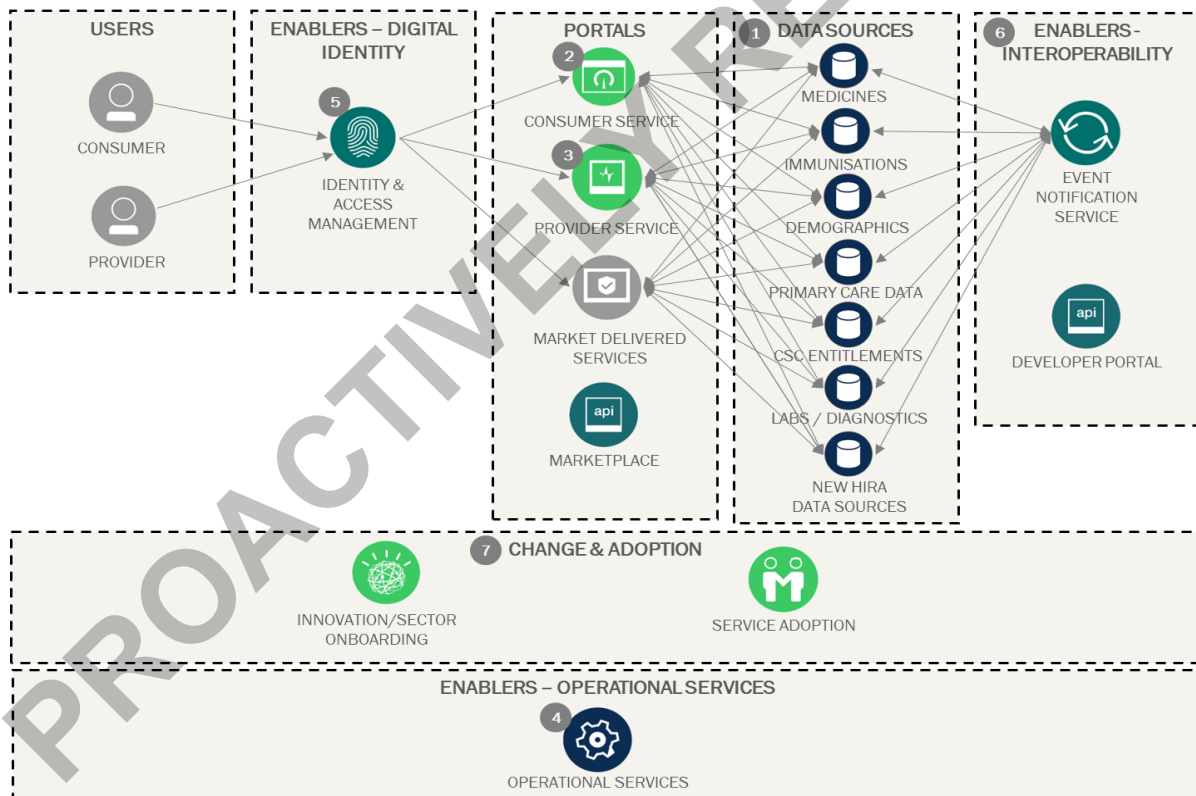
Figure 10: Tranche 1 Key Intra Dependencies

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[16] Managing Successful Programmes (MSP).

Tranche 1 Assumptions

Assumptions for tranche 1 have been developed on a project-by-project basis, aligned with the overarching programme assumptions as described in Table 5. These are assumed to be true but are not proven.

Table 5: Key Programme Assumptions

Assumptions	Notes
Strategic context	No material changes in Government or Ministry policy or New Zealand legislation, that will impact the programme's ability to share and utilise data as envisaged. The announced system reform strengthens the Hira programme objectives and achievability.
Population	No material changes to population as a result of significant change to immigration policy or population demographics.
Consumer and provider demand	There is consumer and provider demand for Hira services. Expectations for access to data continue to rise over time in line with expectations for other sectors.
Market/sector response to problems	The market/sector is not addressing the problems identified in a timely national and equitable manner.

5 Economic Case

5.1 Approach

Purpose

The purpose of the analysis undertaken for this business case was to provide sufficient information about the recommended approach for each project and tranche 1 overall to support an investment decision, whilst recognising that detailed analysis and planning for the tranche and projects will be undertaken in the next phase, following funding approval.

Process

The approach to options identification and analysis for each project and the overall tranche is summarised in Figure 11 and described below.
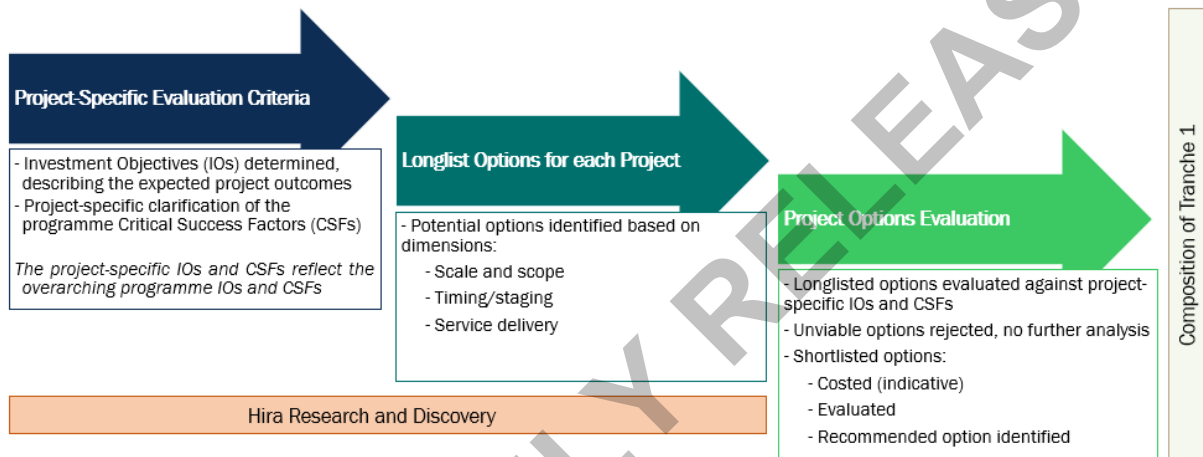
Figure 11: Options Evaluation Approach for Tranche 1 Projects

Evaluation criteria were agreed for each project, drawing on the programme Critical Success Factors (CSFs) and Investment Objectives (IOs). The Hira programme CSFs are shown in Figure 12 and the IOs, by project, in Table 6.

Hira Critical Success Factors

- **Strategic fit and business needs**: How well the option meets the agreed investment objectives, related business needs and service requirements, and integrates with other strategies, programmes and projects

- **Potential Value for Money**: How well the option optimises value for money (i.e. the optimal mix of potential benefits, costs and risks).

- **Supplier capacity and capability within timeframe**: How well the option matches the ability of potential suppliers to deliver the required services and is likely to result in a sustainable arrangement that optimises value for money.

- **Potential affordability**: How well the option can be met from likely available funding and matches other funding constraints.

- **Potential achievability**: How well the option is likely to be delivered, given the organisation's ability to respond to the changes required and match to the level of available skills required for successful delivery.

Figure 12: Hira Programme Critical Success Factors

Table 6: Tranche 1 Project Investment Objectives

	Investment Objective
1: Data Services	• To enable consumers to update their own information. • Innovation and transformation across the health ecosystem is accelerated. • To have mechanisms in place to ensure that data used by Hira services meets specified data quality standards.
2: Consumer Services	• New Zealanders are more empowered to manage their health, wellbeing and independence, and there is measurable improvement in equity of access and outcomes. • To provide the consumer with a voice in decision making. • To improve ease and timeliness of access for consumers to their own data. • To improve ease and timeliness of access for consumers to entitlements information.
3: Provider Services	• Primary care and community-based services are better able to respond to consumer need, and the growth in the use of hospital services is reducing. • To enable access to consumer data systems of record and sources of truth for all authorised users. • To expand the range of consumer data (including consumer-generated data) available to authorised users.
4: Operational Services	• To ensure security and stability of consumer, provider and data services from Q2 2022. • To create self-service option for consumers and providers to notify Hira of data/system issues and provide feedback on consumer, provider and data services by Q2 2022.
5: Identity	• Innovation and transformation across the health ecosystem is accelerated. • To create a reusable health digital identity. • To implement digital authorisation of access to consumer data (consent and delegation).
6: Interop-erability	• Innovation and transformation across the health ecosystem is accelerated. • To enable authorised users to check quickly and easily who has accessed consumer data. • To enable all Hira subscribers to be notified of any change in consumer data.
7: Change and Adoption	• Innovation and transformation across the health ecosystem is accelerated. • To incentivise sector participants and the market to adopt Hira services. • To assist vendors with change management activities to accelerate onboarding of Hira services. • To deliver literacy and inclusion initiatives to support consumers and providers to access and use Hira services. • To collaborate with community groups and Iwi to drive uptake and develop roadmap for Hira services.

Longlist Options for each Project

The aim in developing the longlist was to identify the widest range of realistic options for meeting the IOs and realising the planned benefits, across four dimensions: scope; service delivery; timing; and funding. The longlist options were informed by the Hira research and discovery analysis undertaken in conjunction with the Department of Internal Affairs (DIA) (see Section 5.2).

Project Options
Evaluation

The longlist options were assessed against the project evaluation criteria, to determine a shortlist for further analysis. Rejected longlist options were not costed, as the rationale for rejection was deemed to be sufficiently compelling that further evaluation, taking costs into account, would not have resulted in a different outcome.

Once a recommended approach was agreed for each project, the overarching tranche composition and timeline was evaluated to ensure that the tranche delivery approach was logical, and that any timing or deliverable discrepancies were resolved.

5.2 Research and Discovery

Approach

Hira is taking a people-centric view to better understand identified problems statements, find out whether they are in fact issues for consumers and practitioners, and to inform the tranche 1 programme of work.

The Hira research and discovery approach includes user research, co-design, proof of concept, and prototype work using the Double Diamond approach as depicted in Figure 13. Research to date has identified previously unknown problem areas, and these have contributed to defining the tranche 1 scope.
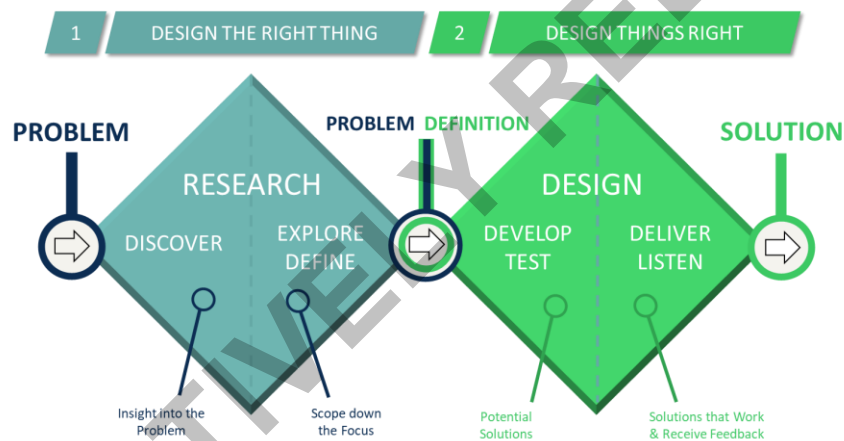
Figure 13: Double Diamon Design Process Model
Source: https://en.wikipedia.org/wiki/Double_Diamond_(design_process_model)#/media/File:Doubl

The Hira approach includes:

- **Equity focus:** Hira research and co-design is conducted with equity in mind. The programme is focused on the needs of Māori, Pasifika, people with disabilities, people with lived experience of mental health, people over 65, people who live in rural environments, caregivers, and people with low socio-economic circumstances. These stakeholders and their representative groups must be engaged throughout the discovery and design processes.

- **With the people by the people:** It is not easy to reach and work with this wide range of stakeholders; each has its own set of challenges. It takes significant time to coordinate and run co-design activities and then to collate and analyse the information collected. Hira is working towards a model where some of these representative groups are supported to do their own co-design processes, with Hira oversight and resourcing.

- **Human-centred design + technical and data discovery:** Once the problems and requirements are understood, technical and data discovery is required to explore how these problems can be resolved. This discovery work is critical as it highlights the programme's ability to solve problems and the effort required.

- **Prototype platform:** The Hira programme is developing a prototype platform to enable the technical and data elements of the programme to be tested in a 'sandbox' environment. This will enable things to be proved quickly and securely and support the sector, and digital innovators in the market, to design and contribute data and digital services.

Research and Discovery Timeline

Research and discovery activities commenced in 2020 and, as shown in Figure 14, will continue through tranche 1.

Findings and recommendations from research and discovery already completed has informed the design and content of tranche 1. A summary of this research and analysis is attached as Appendix 13. The research and discovery work currently underway will inform the detailed planning for tranche 1, with some of the later activities more focused on informing the content of Hira tranche 2.
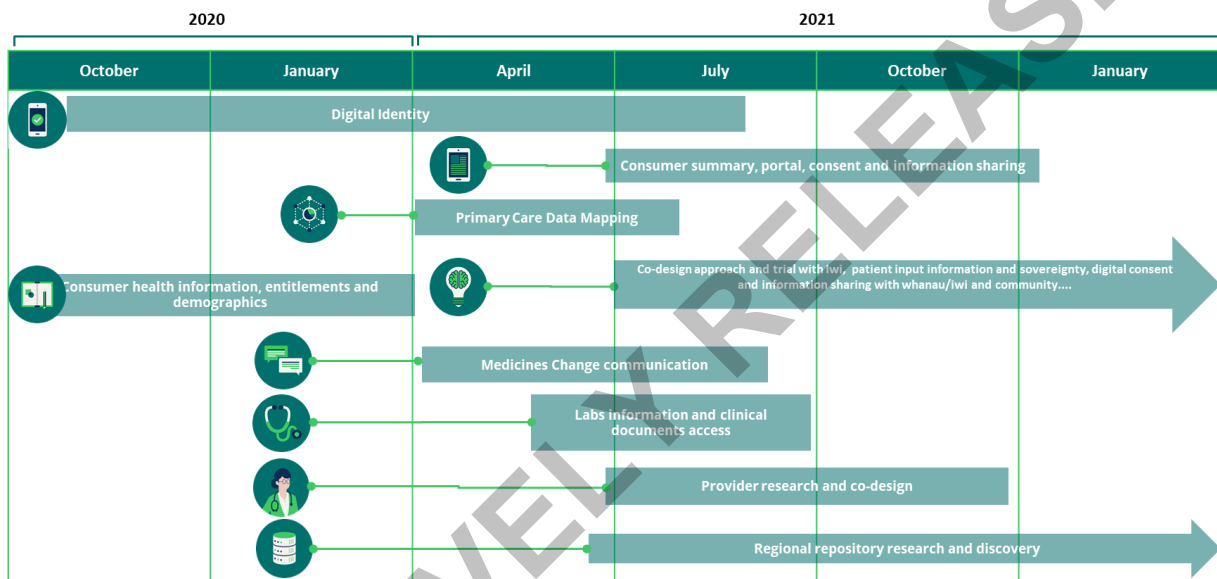
Figure 14: Research and Discovery Timeline

5.3 Tranche 1 Projects Options Analysis

Project Scope

For each project, potential scope options were assessed to determine the optimum balance to deliver value within time and resource constraints. The agreed scope for each project describes the extent of change required for the project to be considered successful.

Hira will deliver the minimum viable product and then iterate. This mirrors the successful approach taken for delivery of COVID-19 ICT support, which focused on delivering 'good' as quickly as possible. Consistent with an agile delivery approach, continuous improvement (further refinement and extension of the initial outputs within Hira defined scope) will be considered as part of co-design. Extension beyond the minimum viable product would depend on capacity, affordability and value for money for the benefits that will be realised. Any decision to expand Hira scope will be made by the SRO, in conjunction with the Governance Group, programme team and co-design partners.

The recommended scope for the tranche 1 projects is summarised in Table 7. The full scope analysis is captured in the respective detailed project briefs.

Table 7: Tranche 1 Projects – Scope Summary

Project			Scope Summary
1		Data Services	Access to view and update **Demographics;** view **Medicines**, **Entitlements** (for example, Community Service Card), **Immunisations and Laboratory** (commencing with COVID-19), trusted **sector sources** of data (for example, regional clinical data, radiology) and **summary primary care** information.
Channels	2	Consumer Services	Universal access to consumer services (web, mobile), **Demographics**, **Medicines**, **Entitlements** (Community Service Card, High User Health Card), **Immunisations** (NIR and COVID-19), **Digital signposting** of other trusted health information and other tranche 1 Hira data services.
	3	Provider Services	**Universal access to provider services** (web, mobile), **Demographics**, **Medicines**, **Entitlements** (Community Service Card, High User Health Card), **Immunisations** (NIR and COVID-19) and other tranche 1 Hira data services.
		Marketplace	**Marketplace** website which will allow developers to subscribe to, use, and monitor APIs, and Developer Portal (website that allows developers to find and connect to APIs).
4		Operational Services	People, processes and technologies required for: • **Service operations** including fulfilling of user requests, resolving service failures, fixing problems and undertaking routine operational tasks. • **Service transition** including technical change, knowledge, releases and deployment, system testing validation and configuration management. • **Service reporting and service management** measuring the quality of service against performance goals (KPIs).
5		Identity	**Consent/Authorisation** (Authorise provider, authorise consumer), **Share Health Information** (give authorisation for another consumer access to view **selected** information), **Profile Management** (Manage account settings).
6		Interop-erability	• **Integration**: APIs that include data from the GP Summary Data Set, Health Identity, demographics, medications, Community Service Card entitlements, COVID-19 immunisations. • **Event Notification Service** Technology which will publish, filter through a set of business rules and deliver information about events to subscribed parties.
7		Change and Adoption	• **Service Adoption** Māori co-design, community engagement, problem statements, service and user experience design, literacy and inclusion initiatives. • **Sector Onboarding** commercial and commissioning arrangements, business change management activities, business partner relationship management. • **Innovation** use of innovation funds and business partner engagement with frontier vendors to identify and support Digital Health transformation. • **Standards and Policies:** Policies that enable or constrain the use of data (such as privacy, consent, data sovereignty social license). Standards encompassing data, security, technology and business processes. • **Literacy and Inclusion** leverage initiatives such as the health literacy programmes undertaken by the Ministry, and initiatives led by other agencies (such as the DIA-led work on increasing the digital skills of individuals and whānau).

Service Delivery

Five potential service delivery approaches were considered for each project, as described in Table 8.

Table 8: Service Delivery Approaches

Approach	Description
Inhouse	Programme team includes all the skillsets required to develop, support and operate the Hira service.
Hybrid[17] Development	Programme has a core team[18] and works with partner(s) to develop, support and operate the Hira service as a bespoke solution e.g. NZ Covid Tracer.
Hybrid[17] Commission	Programme has a core team[18] and commissions partner(s) to supply the Hira service (configure and build, support and operate) e.g. Security Operations Centre/Security Incident Event Management (SOC/SIEM).
Outsource Development	Programme engages a partner(s) to develop and support the Hira service completely end to end (i.e. design, bespoke develop, support and operate).
Outsource Commission	Programme engages a partner(s) to supply the Hira service completely end to end (i.e. configure and build, develop, support and operate).

The longlist analysis by project is summarised in Table 9 and a more detailed analysis is included in the summary project briefs attached as Appendices 2 to 8.

Table 9: Service Delivery Options Summary Analysis

Project	Inhouse	Hybrid development	Hybrid commission	Outsource development	Outsource commission	Description of preferred option
Data services			★		✓	Products exist that could be commissioned and configured/white labelled. Opportunity to "partner" with digital health market.
Consumer services		✓	★			Products exist that could be commissioned and configured/white labelled. Opportunity to "partner" with digital health market.
Provider services		✓	★			Data services will be commissioned from multiple providers of "sources of truth" with Ministry retaining strategic IP and capability
Operational services			★		✓	Ministry identity platform will be leveraged; partners utilised to configure/extend
Identity		★	✓			Ministry integration platform will be leveraged; partners utilised to configure/extend
Interoperability		★	✓			Ministry capability leveraged, external partners used to supplement where required
Change & Adoption		✓	★			Ministry will build core capability (co-design, architecture, integration, communications/ engagement, change) and work with sector partners to deliver

Key: ★ preferred delivery option

✓ best alternate option(s)

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[17] Hybrid approach may include a mix of both development and commissioned services.

[18] Core capabilities include as appropriate: user experience design, co-design, architecture, standards, security, integration, technical SMEs, communications/engagement, change management and delivery management (product/project/programme management).

Implementation Timing

Two timing options were considered for each project: 'big bang' or incremental rollout. None of the projects was deemed suitable for a big bang implementation, as the programme's preferred approach is iterative discovery and delivery (as described in Section 8.4). This approach will result in the development/implementation of a minimum viable product to select stakeholder groups, with subsequent enhancement and broader rollout.

Funding

Two funding options were considered for each project: Crown funding, or Crown funding plus other source. The 'Other' funding source will vary by project (e.g. PPP, user pays etc). Whilst alternative funding sources may be identified as part of detailed project design, at this stage there is insufficient information on the projects to determine whether this will be a viable approach. The programme has therefore identified full Crown funding as the initial preferred approach for all projects and may moderate this as the projects are worked up in more detail.

6 Commercial Case

6.1 Commissioning Approach

High Level Process

The Hira programme of work includes a tightly aligned and sequenced programme of procurement[19]. The procurement methods will be specific to each project, and the underlying technical and service architecture elements.

Sourcing approaches include re-use of existing Ministry services, secondary procurement off established panels, direct procurement and open tendering methods.

The overarching philosophy for procurement for Hira encompasses value for money, fairness, and transparency. The procurement approach is described in in the Hira Procurement Strategy[20]. The procurements will follow good practice and will comply with the Government Principles of Procurement, the Government Procurement Rules (including consideration of Broader Procurement Outcomes[21]) and will be supported with external independent real time probity advice and audit.

Probity

Probity throughout Hira will be managed by the Hira procurement and probity lead. Probity advisory and assurance will be provided by the McHale Group, an external independent probity services provider with an established track record in the New Zealand public sector. The McHale Group will provide real time independent probity advice and audit.

The Hira Programme Probity Plan states two fundamental elements of effective probity management: the identification of probity risk, and the development of a robust plan to manage those risks. Section 5 of the Probity Plan details these through identification of key probity risks and key actions required. Confidentiality and Conflict of Interests will be actively managed. The probity register and the key actions plan will be updated in real time and reviewed by McHale monthly and as otherwise required.

The key steps being taken to manage probity include:

- Proactive probity management.
- Peer review and contribution to all key documents (Ministry and McHale).
- Completion of conflict of interest declarations for all relevant programme stakeholders and managing all perceived or real conflict risks or issues.
- Maintaining a probity risks and issues register.
- Maintaining a probity log.
- Maintaining a document/artefacts movement register.
- Maintaining a single point of contact for providers.
- Maintaining a supplier communications log.
- Managing moderated group evaluations, as appropriate, to arrive at a consensus with detailed notes (to support subsequent supplier debriefings and to support the evaluation report).
- Briefing the evaluation team prior to individual evaluations as appropriate.
- Providing evaluators with a customised evaluation pack with worksheets to capture all scores and respective comments against each score.

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[19] Procurement could be limited to negotiating a Service Level Agreement.

[20] Hira Procurement Strategy v2.2, 13 January 2020.

[21] https://www.procurement.govt.nz/procurement/principles-charter-and-rules/government-procurement-rules/planning-your-procurement/broader-outcomes/

- Storing all documents in secure Teams Hira programme folders, with access enabled only for members of the evaluation team.
- Managing procurements in line with government procurement rules and principles, and good procurement practice with independent peer review and probity advice.

Tranche 1 Procurement Approach

The Hira tranche 1 procurement plan describes the approach across the multiple projects and sub projects that comprise the Hira tranche 1 programme. Each tranche 1 project (and the respective sub-projects) has significantly different requirements and deliverables and will therefore be approached with separate and appropriately targeted specific procurement plans. Subject to business case approval, these will be completed and will include detailed requirements, procurement timelines and evaluation plans.

In contrast to a traditional procurement approach, the overarching approach for Hira is to leverage and re-use multiple existing service and technology elements, which are proven and already in place within the Ministry and the sector. This will control costs, leverage investments, mitigate risk and increase confidence in timely delivery of the Hira tranche 1 projects and sub-projects.

In the majority of cases, the individual service elements required are available from only one provider within the sector or from the Ministry and therefore a direct sourcing approach is appropriate. For this reason, the tranche 1 procurement workstream will have numerous closed procurements. The rationale for each of these direct sourcing engagements will be fully detailed and transparent in each specific procurement plan, in alignment with the government procurement rules. Completion of the requirement specifications for each of the service elements, which are under development, is an essential step before cost estimates and accurate costs can be determined.

All contracts will leverage Health Legal agreement templates and Health Legal support and will include all contract obligations required to support contract management, specific delivery performance and relationship management throughout the term of each contract.

The high-level approach for each of the projects is noted below:

- Data services – hybrid commission[22].
- Consumer services – hybrid commission.
- Provider services – hybrid commission.
- Enablers:
    - Identity and access management services – hybrid development.
    - Operational service – hybrid development.
    - Interoperability services – hybrid development.

Specific sourcing options include:

1. Use of existing Ministry platforms and services (internal form of direct sourcing).

2. Secondary procurement leveraging panels (closed competitive process with an existing panel of suppliers).

3. Direct sourcing (closed selective procurement with specific provider/s).

4. Open tendering (open competitive tendering process advertised through the Government Electronic Tender Service (GETS)).

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[22] See Section 5.3 for description of sourcing/delivery options.

The programme has engaged with both the Ministry of Business, Innovation and Employment (MBIE) New Zealand Government Property and Procurement (NZGPP) and the Digital Public Service branch of DIA in developing its procurement approach.

6.2 Market Analysis

Market Engagement to Date

The ecosystem marketplace is depicted in Figure 15. This shows the relationships between the Hira services, and how the projects combine to provide value for New Zealanders.
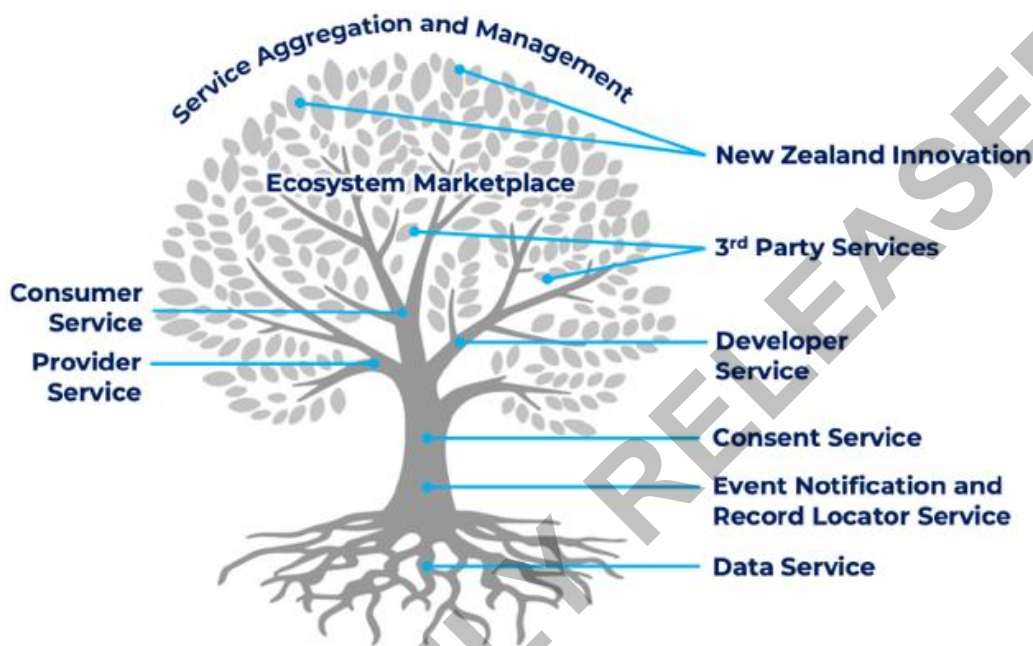
Figure 15: Hira Ecosystem Marketplace
Source: Shared with written permission.

Market engagement at this point has been limited to a request for information (RFI) for market research. In November 2020, the Ministry approached the market, seeking information on what capabilities could be leveraged and/or applied to support delivery of the first tranche of the Hira programme.

The RFI process ran over a four-week period and sought information on:

- Services, capabilities, processes, operational support that could support Hira tranche 1.

- Experience in the delivery of relevant services, including licencing models, pricing models, service delivery and service management of relevant services.

- Case studies of services, including implementations (where they may support some or all the Hira tranche 1 services and objectives).

- Information on broader technology trends and/or innovations that may influence how Hira can be realised.

In total, 74 responses were received across all of the services. The responses were split evenly across the requirements, as shown in Figure 16. The responses were reviewed against the supplier's ability to deliver access to health data, whilst placing the health consumer at the centre of the digital health environment.

Further information was sought from a selection of suppliers through workshops held during March 2021. The programme did not seek to engage with a multitude of vendors that proposed various integration technologies and capabilities, or proposals that differed markedly from the baseline technologies being offered but focused on respondents that showed capability and understanding of the Event Management Domain, to further inform the tranche 1 business case.
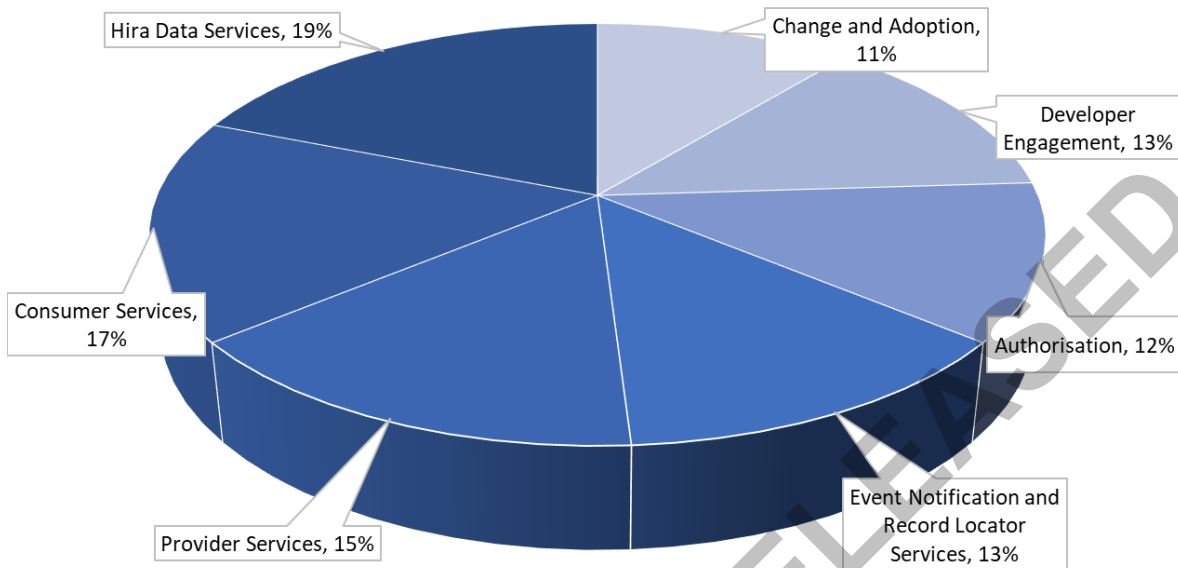
Figure 16: Supplier Response to Hira RFI by Requirement

The RFI was used as a market scan to gain understanding of suppliers' capabilities, track record experience, maturity, and innovations in support the delivery of Hira tranche 1 services and to inform procurement planning. The RFI process, as a market research tool, was not intended to solicit accurate estimates, pricing or quotes for subsequent short listing or evaluation and selection, nor can it be used for this purpose.

It is therefore not possible to provide an estimated value of the different procurements at this stage, nor to short list or select providers (as per government procurement rules). Pricing and commercial details will be sought in subsequent individual procurements and respective responses from respondents for the sub-projects. However, overall tranche 1 costs have been assessed through independent quantitative risk analysis, see Section 7.3.

Attractiveness to Market

The RFI process identified that there is national and international interest in providing services and capabilities for the programme. There are multiple suppliers in the market with a good understanding of the New Zealand public health system, its existing ICT capabilities, and its current and future needs. As well as long-standing providers, new entrants and start-ups have also entered the market. This group is providing niche and speciality solutions that could meet elements of Hira services.

The large response indicates that this procurement is desirable to the market, and is expected to remain highly desirable for several reasons:

- The demographics trajectory of the New Zealand population means there will be steady growth in demand for health care services, with associated long-term investment in smart enabling technology services.

- The potential for increased market share and exposure for vendors.

- Contracting with the Ministry is perceived as high value and creates opportunities for vendors to enter the wider health sector.

- The implementation and operation of Hira is a new way of working for the Ministry and therefore successful suppliers may impact on how health care services are delivered in the future.

- Procurement and implementation of cloud-based Hira solutions is a cross government trend, driven by the Government's 'Cloud First' policy[23]. Successful suppliers may be in a better position to provide services to other government agencies who are going through similar procurement processes and digital transformations.

- Suppliers will see the future potential revenue, profit and market share growth opportunities through participation in Hira as highly attractive and as referenceable and re-usable in other jurisdictions or sectors.

Some further considerations for this procurement about its impact on the market include:

- Hira may put some traditional legacy suppliers' business with the Ministry at risk over the medium and long term. However, this opens opportunities for these vendors to take a more proactive and value add response and leverage their domain knowledge advantage.

- Conversely it will also incentivise and enable other suppliers, including new market entrants, to support Hira delivery and to offer value-add and innovations that leverage Hira services.

- Whilst there appears to be capability across New Zealand for the Ministry's Hira requirements, there is high demand for that capability in both the public and private sector. Careful consideration needs to be given to the selection of resources i.e., experience, skillsets and relevancy must be proven.

- The Ministry must remain aware of the proportion of business Hira will provide for the suppliers overall, i.e. how important Hira is to the supplier's overall profit margin.

- The Ministry has engaged in "Early Vendor Engagement" through the RFI stage and subsequent targeted workshops.

- Both the RFP process and strong commercial due diligence up to contract awards will assist in mitigating resource-based implementation/operation risks.

A significant pipeline demand on New Zealand ICT providers has developed over the past 12 months, from both public and private sectors. Suppliers will be allocating their most experienced resources to the most attractive business opportunities. Accordingly, the Hira communications programme and early engagement with the market must be well timed and orchestrated. The evaluation of proposals through to contract awards will need careful management to ensure the selected providers lock-in their best possible resources for Hira.

The programme is confident that the market has the capability to support tranche 1 delivery and will work proactively with potential suppliers to ensure capacity is available as needed.

6.3 Key Procurement Stakeholders

The key stakeholders for the tranche 1 procurements include vendors and ICT industry partners, NZ Health IT, and health and disability service providers. Hira will communicate with internal and external stakeholders, as described in the Hira Communications and Engagement Plan.

Strong sector engagement will be maintained throughout the sourcing and project delivery of all tranches and workstreams of Hira. Much of this engagement will use existing relationships and lines of communication and co-operation between business owners.

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[23] Government organisations are required to use public cloud services in preference to traditional IT systems. They are required to adopt these services on a case-by-case basis, following risk assessments. New Zealand government requires agencies to accelerate their adoption of public cloud services so they can drive digital transformation. The move to accelerate adoption was endorsed by Cabinet in 2016. https://www.digital.govt.nz/standards-and-guidance/technology-and-architecture/cloud-services

Existing lines of sector representation already in place include:

- Health providers
- Private hospitals
- Private health providers
- Health professional groups

- Ministry of Health sector advisory groups
- Central agencies
- Shared services agencies
- Consumer groups.

6.4 Sourcing Process

Sourcing Approach

There is currently no All-of-Government, syndicated or other collaborative contract which could meet all of the Hira requirements for tranche 1.

Each of the tranche 1 projects includes varying numbers of different services. These will require separate procurement treatments, to be detailed in separate specific procurement plans. The detailed requirement specifications will inform the specific procurement plans and specific timelines. Specific procurement plans for the tranche 1 projects will be approved in a staged manner. The final and approved versions of these procurement plans will include detailed requirements, evaluation criteria (including weightings) and timing from market engagement to contract award.
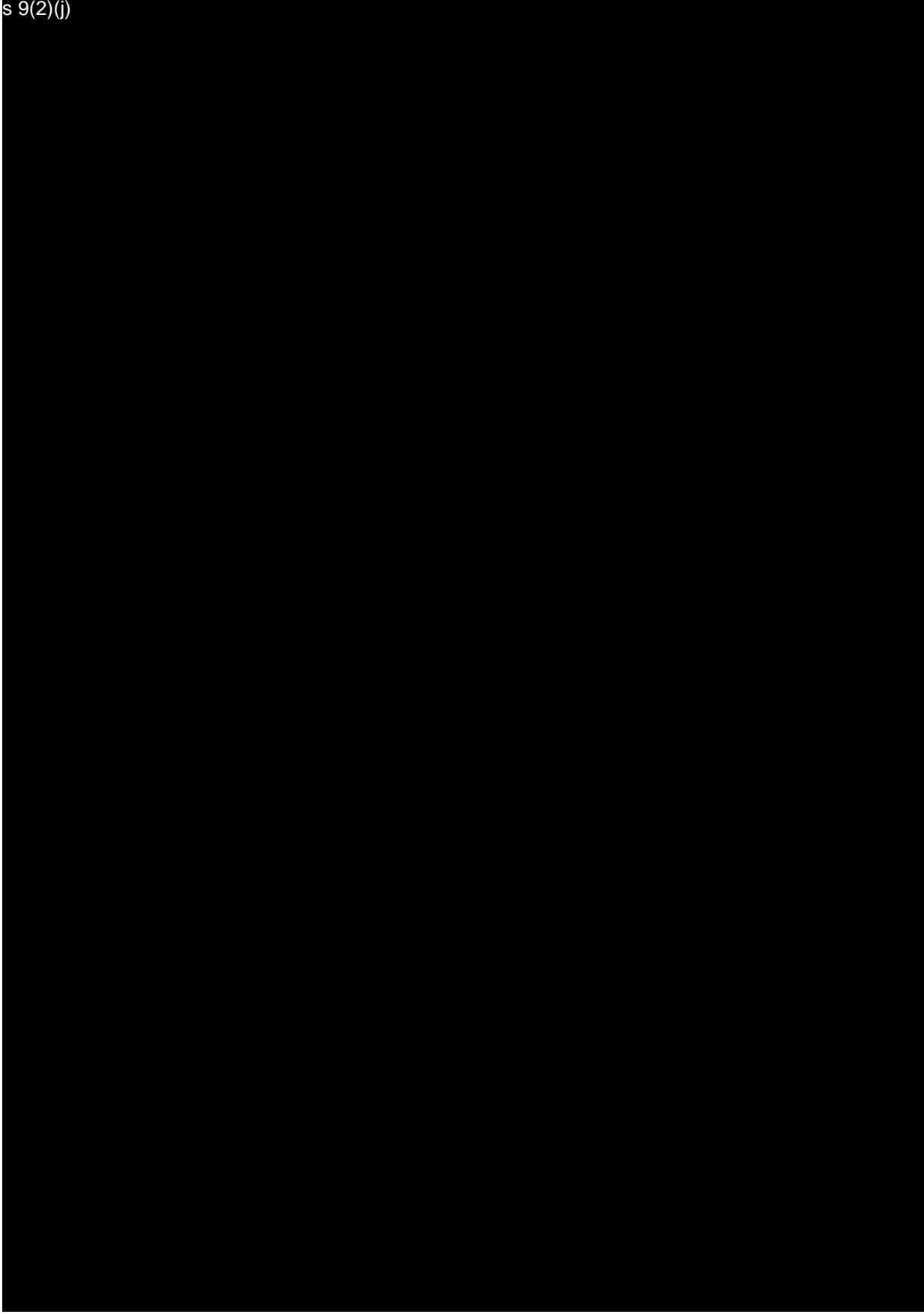
Hira will utilise a variety of procurement approaches for the tranche 1 projects, to enhance opportunities and minimise risks. The recommended procurement approach for the tranche 1 projects, with timelines, is summarised in Table 10. Of all the tranche 1 projects, the only significant open tender procurement will be for the Event Notification Service within the Interoperability project. The planned approach is an open two stage process, with completion of the first stage providing accurate estimates to inform stage two.

Table 10: Tranche 1 Procurement Summary

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Evaluation Team and Process

- **Evaluation teams:** cross-functional evaluation teams will be established for each procurement where a full market procurement exercise is undertaken. Each evaluation team will include a Chair, business owner(s), user representative(s) and subject matter experts, supported by a financial analyst, legal analyst and probity advisor. The individuals performing these roles will be identified for each procurement as part of the preparation planning for the procurement.

- **Evaluation method:** the evaluation method will be determined as part of planning for each individual procurement, where a full market or secondary procurement exercise is undertaken.

- **Proposed timeline:** Procurements will commence as summarised in Table 10. The detailed timeline for each procurement (e.g. the dates for development of tender documentation, GETS advertisement, supplier briefings, closing etc) will be specified in the procurement plan for each separate procurement.

6.5 Contract Provisions and Management

Contract Lengths and Clauses, Risk Management and Allocation, Payment Mechanisms

Agreement details (including contract length, contractual obligations, risk allocation[24] etc.) will be confirmed in detailed planning. The Governance Board will review the planned procurement approach for each project and will monitor the procurement approach and progress. Programme Managers and the Programme Director will provide oversight to ensure consistency between agreements where relevant, and the appropriateness of each proposed agreement.

The management of internal and sector providers will be based on SLAs. The management of external providers will be based on contract and commercial management discipline to support the delivery of agreed outcomes.

The Ministry will leverage the expertise of Health Legal support and advice and Ministry management accountants to ensure robust contracts are in place to support timely delivery of downstream obligations.

The Hira programme funding will be managed by the Ministry of Health through Vote Health. All relevant Ministry accounting standards and policies will apply to the accounting of programme funding and expenses.

Contract Management

Agreements will be developed in collaboration with Health Legal. The agreement management arrangements will be determined on a case-by-case basis. Contract management will include obligations and change management, commercial management, service delivery and performance management and relationship/governance management.

The responsibility for managing delivery under the agreements, as well as supplier relationship management, will pass to the Hira programme contract manager when the agreement is signed. An appropriately sized agreement and relationship-management plan will be developed for each procurement, in consultation with the successful provider, as part of negotiations.

Variations will be based on detailed analysis, including of impact on benefits and timeframes, and approved by the Senior Responsible Owner, in writing and signed by both parties. Variations involving an increase in price will only be made within the limit of delegated financial authority.

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[24] A risk allocation table is included in the Tranche 1 Procurement Plan. This will be revised for each individual procurement, to reflect the specific requirements.

Procurement Timeline

The timeline of key tranche 1 procurement activities is summarised in Figure 17.
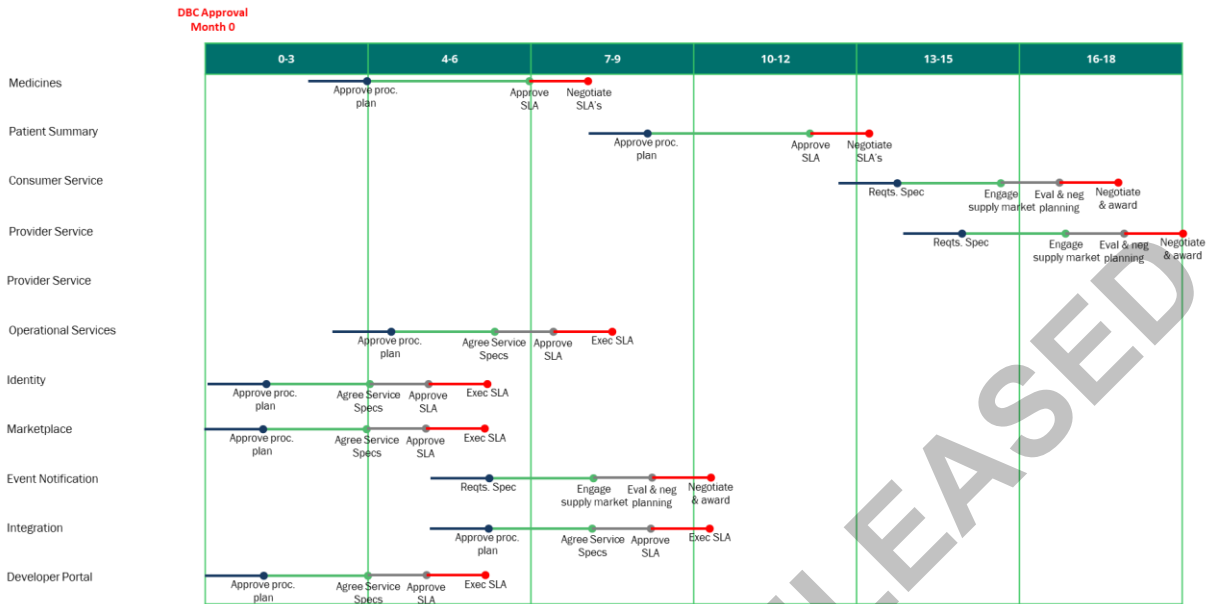
Figure 17: Tranche 1 Key Procurement Activities

7 Financial Case

7.1 Overview

For the purposes of this business case, the cost modelling covers a ten-year period from 2021/22 to 2030/31. This comprises three years of programme costs to implement the tranche 1 projects, and ongoing operational costs over the modelled period.

Tranche 1 is expected to be delivered over three years, commencing in 2021. However, as the services delivered in tranche 1 become operational and are transferred to business as usual, ongoing operating costs will be incurred. Because there is no natural end to this investment and these services are expected to continue into the foreseeable future, any modelled period is necessarily arbitrary. The programme has therefore selected a modelling period of ten years, to provide a reasonable balance of upfront and ongoing costs and benefits. Note that costs are indicative at this stage as procurement has not been undertaken and therefore final costs are not yet known.

- **Implementation cost:** the three-year implementation cost of tranche 1, excluding contingency and capital charge, is $115.7 million (comprised of $50.4 million capital cost and $65.3 million operating cost). Including contingency and capital charge, the implementation cost is $143.0 million (comprised of $60.4 million capital cost and $82.6 million operating cost).

- **Ten-year modelled cost:** The funding sought for Tranche 1 over the ten-year modelled period, including initial implementation and ongoing run costs but excluding contingency, capital charge and depreciation, is $208.7 million (comprised of $50.4 million capital cost and $158.3 million operating cost). Including contingency, capital charge and depreciation the ten-year modelled cost is estimated at $337.7 million (comprised of $60.4 million capital cost and $277.3 million operating cost).

The ten-year funding requirements for tranche 1, including contingency, capital charge and depreciation, are summarised in Table 11.

Table 11: 10-year Tranche 1 Costs by Financial Year (including Contingency, Capital Charge and Depreciation)

Tranche 1 Profile	Tranche Cost Profile ($m)										
	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2026/ 2027	2027/ 2028	2028/ 2029	2029/ 2030	2030/ 2031	Total
Capital	22.1	25.5	12.9	-	-	-	-	-	-	-	60.4
Operating	27.3	35.0	26.2	21.8	24.1	25.5	27.2	29.0	30.8	30.4	277.3
Total	49.4	60.5	39.1	21.8	24.1	25.5	27.2	29.0	30.8	30.4	337.7

7.2 Financial Costing Approach

Approach and Assumptions

The Financial Modeler responsible for the overall programme financial model developed the tranche financial model, utilising a mix of internal and external specialised resource. Internal and external subject matter experts provided technical input and resourcing information. The financial model has been reviewed by the programme team, the Ministry Finance directorate, Gateway, and IQA.

The financial model includes capital and operating expenditure, based on the recommended approach for each of the tranche 1 projects. The tranche 1 financial analysis is shown across two timeframes: the three-year programme implementation timeframe, and a ten-year modelled period (2021/22 to 2030/31) which reflects the ongoing costs arising from the programme once implementation has concluded.

The key assumptions for the cost model are provided in Appendix 14.

There will be some variation between the cost estimates and the final costs once detailed design and procurement is completed. In order to manage this, contingency has been included. Contingency will be managed across the whole tranche, to accommodate variations between the estimated and actual costs of the constituent projects. Contingency has been informed by the Quantitative Risk Analysis (QRA) process undertaken in May 2021. The following contingencies have been applied to the estimates:

- 20 per cent to the ICT costs to allow for uncertainty in the costs of deliverables, which will not be resolved until a tender process has been completed and a fixed price is agreed for the ICT solutions.
- 20 per cent to the implementation programme costs (non-ICT) to allow for uncertainty in cost rates and time required to complete deliverables.

Financial Management

Standard programme and project management procedures will be in place to minimise scope creep and to ensure that costs are contained within the budget approval. The overall actual and anticipated spend will be monitored actively through the Hira programme governance structure.

7.3 Financial Projections

Total Capital and Operating Costs

The tranche 1 operating cost for the implementation period is shown in Table 12. The spend by financial year across the ten-year modelled period is summarised in Table 13 and Table 14. A more detailed analysis is attached as Appendix 14.

Note that the operating cost in 2023/24 is lower for the implementation phase (Table 12) than for the ten-year modelled period (Table 13), as the former includes 6 month run cost and the latter shows the full year run cost.

s 9(2)(j)
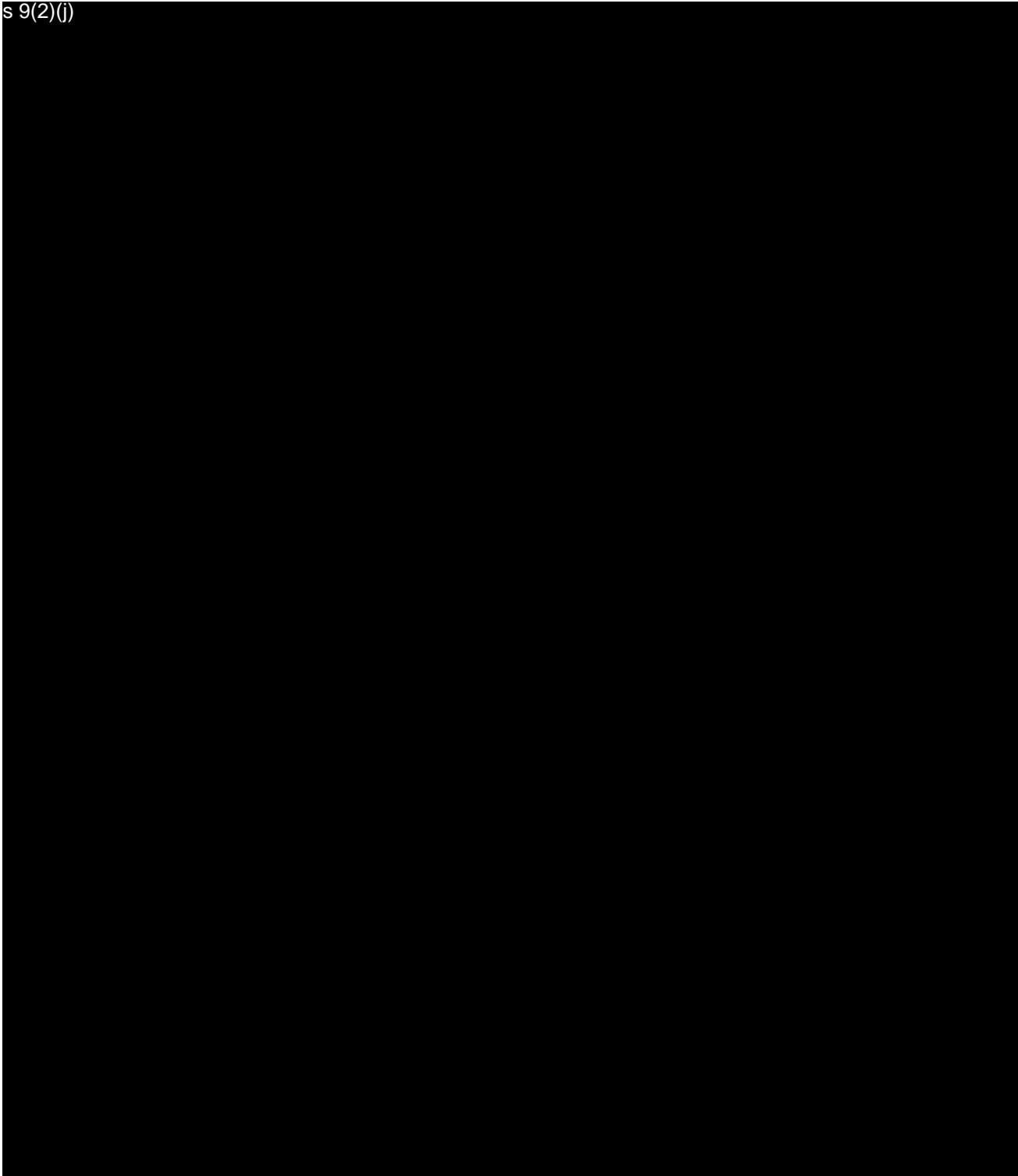
Variance from Programme Business Case Estimated Cost for Tranche 1

The expected implementation cost for tranche 1 has increased by $10.8 million overall compared to the estimated cost indicated in the programme business case. This variation has arisen from a mix of increases and savings, including:

- **Technology (-$4.5 million):** Reduction in cost for consumer uptake (-$2.1 million) and integration platform (-$2.6 million) due to a reduction in event notification services. Increase in costs ($0.2 million) for event management.
- **Infrastructure ($1.0 million):** minor variations in costs for computing, database, storage, security and innovation netting off at an overall increase for this element of $1.0 million.
- **People ($6.8 million):** Reduction in costs for data and channels (-$0.8 million) and vendors (-$12.8 million). Increase in costs for programme management ($3.1 million), PMO ($7.2

million), enablers ($3.0 million), change and adoption ($4.3 million), service management ($0.2 million) and overheads ($2.7 million).

- **Other ($7.5 million):** Inclusion of assurance ($1.3 million) and operational management costs ($2.3 million), increase in change management ($2.5 million). Consequent increase in contingency ($1.9 million) less capital charge ($0.4 million).

Affordability

Ministry affordability: The proposed cost of tranche 1 is approximately $337.7 million over the ten-year modelled period. Crown funding is required to meet the costs forecast.

- **Capital affordability:** the total capital cost of $60.4 million for tranche 1 over the ten-year modelled period requires Crown funding.

- **Operational affordability:** The operating cost of tranche 1 over the ten-year modelled period is estimated at $277.3 million. This is not affordable within the current Ministry funding allocation. This investment is only affordable with Crown funding.

Sector affordability: Tranche 1 of Hira will have a service and financial impact on the sector. Whilst the programme will proactively engage with the sector to leverage and align current and future investment, it recognises that the sector will not, in all cases, be able to fully fund the changes required to adopt all Hira services. In planning the tranche, the programme has undertaken initial analysis of what investment is needed and where, to enable adoption and maximisation of benefits. This will be refined as part of detailed planning for each project within the tranche. The Hira tranche 1 cost includes s 9(2)(j) for change and adoption, specifically to support the sector to uptake Hira services.

The Deputy Director-General, Data & Digital has signified his agreement to the required level of funding required. The Deputy Director-General of Health's letter is attached as Appendix 15. The level of funding proposed in this paper will be signed-out by the Director General of Health, as per the required process for Cabinet Papers. The Deputy Director-General of Health's letter is attached as Appendix 16.

Sensitivity Analysis

In May 2021, Quantitative Risk Assessment (QRA) was undertaken of the uncertainty in the tranche 1 business case cost estimate for the Hira programme. This was based on the Ministry's financial model as at May 2021[25]. The assessment was carried out to determine the range of cost outcomes for the tranche, taking uncertainty into account, and to analyse the sensitivity of the cost to the uncertainties modelled.

Adding 20% contingency to the base capital and operating values means that the programme has an 85% chance of delivering within the allocated funding.

The independent QRA shows that the programme proposed 20 per cent contingency is 2.2 per cent ($4.5 million) higher than the QRA modelled value at the 85th percentile[26] across both capital and operating costs. The programme intends to retain the proposed level of contingency to provide decision makers with a high degree of certainty that the tranche 1 projects will be delivered within the funding allocated.

A more detailed summary of the QRA analysis is attached as Appendix 17.

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[25] There were some subsequent updates to the financial model that did not fundamentally change the QRA analysis.

[26] This means that there is only a 15 per cent change that this figure will be exceeded.

8 Management Case

8.1 COVID-19 Experience

Technology has played an essential role in New Zealand's COVID-19 response. The focus has been on rapid identification of people who might have been exposed to COVID-19, rapid testing and managing the areas of greatest risk for the country, such as the entry points to New Zealand via our ports and air travel.

The COVID-19 response was enabled with technology and capacity that already existed, but in some cases, new systems had to be developed very quickly to support different ways of doing things. For example:

"Whilst causing a pause in the development of Hira PBC, the COVID-19 pandemic has provided many learning opportunities which have fed back into programme thinking. Successful COVID IT delivery has built confidence across the stakeholder community in the proposed Hira approach. The experience has also brought into sharp focus the challenges of delivering iteratively and at pace within the non-crisis healthcare and governance environment."
Gateway Review of Hira

- The National Contact Tracing System (NCTS) provides a cloud based national system. An iterative delivery approach has delivered more than 21 releases of this system since the initial version developed in March 2020.

- The NZ COVID Tracer app uses an innovative use of QR codes, manual diary-keeping and Bluetooth technology with a strong privacy-first approach. An iterative delivery approach with a commercial partner has delivered six major releases, and several minor improvements, since the minimum viable product was released in May 2020.

The COVID-19 experience underlined the need to have enablers in place, such as interoperability, identity, standards, and security. If Hira had been in place, the Ministry would have been able to respond more quickly to the COVID-19 situation. In the future, Hira will enable a quicker response to public health emergencies and health challenges, by re-using and adapting existing solutions rather than developing new ones. Hira will connect consumers and the health workforce through ICT systems such as patient portals, so information can be shared in real time during a major public health event.

The Ministry's experience in responding to the COVID-19 pandemic has informed both the tranche scope and delivery approach. Scope has been adjusted to reflect the work already underway and completed due to COVID-19 that will be leveraged to support delivery of Hira. The iterative delivery approach (delivering a minimum viable product, then expanding and enhancing this over time and as needed) which was so successful in delivering the COVID-19 ICT response has been embedded in the Hira approach.

As so many of the Hira team participated in the Ministry COVID response, this has resulted in a uniquely experienced team with a skillset perfectly aligned to the demands of delivering the Hira programme in a fast-paced and agile manner.

8.2 Tranche 1 Governance and Management

Governance

As described in the programme business case, the programme and tranche governance will be through the Hira Governance Board and the Senior Responsible Owner (SRO) to the Executive Leadership Team and the Director General of Health.

Since the completion of the programme business case, Hira has established a Te Tiriti Partnership Group to work in partnership with the programme. This group sits alongside the Governance Board to provide advice and guidance to the programme, be active partners in decision making and planning, provide critical insights and cross-sector linkages, design equity solutions in partnership with Hira, and hold the programme to account for addressing equity issues for Māori. The revised Hira governance structure is shown in Appendix 18.

A RASCIP[27] matrix has been developed, clarifying the relationships between tasks and people for tranche 1. This builds on the RASCI developed for the overall programme but has been refined to provide greater clarity for this tranche. A project-level RASCIP has also been developed, to define relationships consistently within each project.

Governance of tranche 1 will be through the Hira Steering Committee, Governance Board and the SRO to the Executive Leadership Team and the Director General of Health. The key responsibilities include:

- **Cabinet/Joint Ministers (of Health and Finance)** will decide to proceed within a funding envelope and with expectations of timeline and benefit realisation.

- **Director General of Health:** Will hold the contingency for tranche 1, Any request to draw down on this sum will be via a programme change request endorsed by the Hira Governance Board.

- **Senior Responsible Owner:** (SRO) has overall accountability for the Programme and for ensuring that it remains within the approved scope, timescales and budgets and would enable the realisation of the desired benefits. The DDG Data and Digital is the SRO for the programme, in recognition of the overarching information technology solution to meet the identified business needs[28].

- **Hira Governance Board:** Provides strategic direction and alignment for the programme. The Governance Board is chaired by the SRO and provides strategic direction and alignment for the programme. It has a guidance and advisory function that is responsible for supporting the SRO to achieve the programme objectives with the relevant strategic alignment. The Governance Board provides active direction, periodically reviewing interim results and identifying adjustments to ensure achievement of the planned outcomes.

- **Te Tiriti Partnership Board:** Holds the programme to account for addressing equity issues for Māori. The mechanisms for working with Hira are under development as this is a very new structure. Hira's approach to engagement with Māori would utilise this model, Te Arawhiti Engagement Framework, which focuses on Te Tiriti and equity for Māori.

- **Steering Committee:** provides operational direction to ensure coordinated, successful delivery and is focussed on managing prioritisation and the backlog of initiatives. Reviews and approves key deliverables not delegated to the Programme Director.

- **HISO:** supports and promotes the development and adoption of fit-for-purpose health information standards for the New Zealand health and disability system.

- The **Architecture & Design Authority** (ADA): Responsible for ensuring Hira purchased or created technology solutions comply with architectural standards.

- The Hira **Clinical Governance** Group: Responsible for input to relevant clinical processes and governance requirements. This group will support the Clinical Director. Membership will include a variety of clinicians from across the sector.

- The Hira **Data Governance** Group: Responsible for ensuring Hira standards and technical policies are in alignment with sector expectations.

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[27] Responsible, Accountable, Support, Consult, Inform, Partner. The programme-level RASCI did not include 'Partner'.

[28] The day to day management and oversight of the programme is undertaken by the Programme Director (currently the GM DS&I but proposed to be a dedicated role once the programme is approved).

Delegated Levels of Authority

The Hira delegation approach is depicted in Figure 20.

Figure 20: Hira Financial Delegations

Māori Engagement

In progressing Hira and developing the tranche 1 projects, the programme has significantly increased its emphasis on engaging with Māori and improving equity. Effective engagement is critical to producing better quality outcomes for Māori and government and ensuring Te Tiriti obligations are honoured.

Hira will ensure that tranche 1 (and subsequent) projects engage with Māori as Te Tiriti partners in an effective and meaningful way. This engagement process will reflect Māori perspectives and cultural values and focus on developing effective and ongoing relationships with key Māori stakeholders. The approach has been informed by the Engagement Framework and Engagement Guidelines developed by Te Arawhiti, the Office for Māori Crown Relations, guided by the Whakamaua Māori Health action Plan 2020-2025 and Tā Tātou Rautaki Our Strategy, and is influenced by strategies guiding the access and use of health and disability information[29].

The proposed function and structure of a Te Tiriti partnership model is shown in Figure 21, and the relationship of the Partnership Group to the programme governance in Figure 45 in Appendix 18. Hira's approach to engagement with Māori will utilise this model, which focuses on Te Tiriti and equity for Māori. The Hira discovery research, co-design, and concept testing approach for tranche 1 builds on the learning, personas, and concepts developed through successful co-design engagement in late 2020, where over half of the participants were Māori.
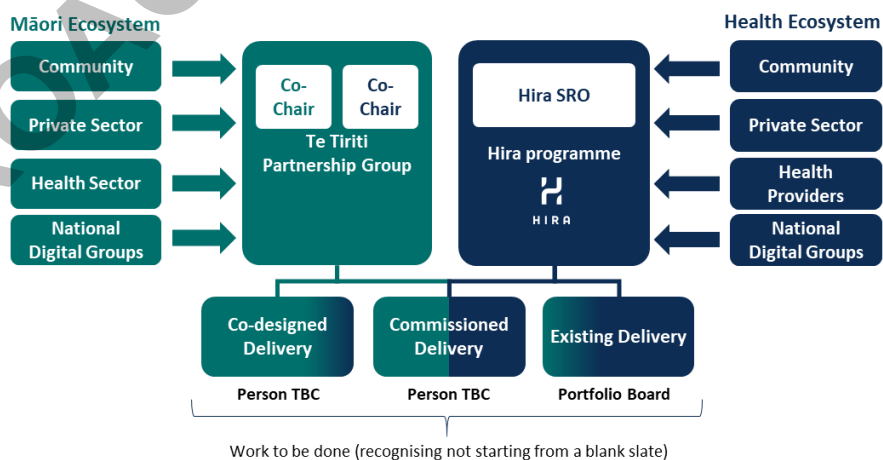
Figure 21: Proposed Te Tiriti Partnership Model

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[29] The Digital Inclusion Blueprint – Te Mahere mō te Whakaurunga Matihiko, Data Protection and Use Policy, Te Mana Raraunga - Māori Data Sovereignty Network Charter

Management

The seven tranche 1 projects will be managed through three workstreams: Data and Channels; Enablers; and Change and Adoption, as shown in Figure 22.
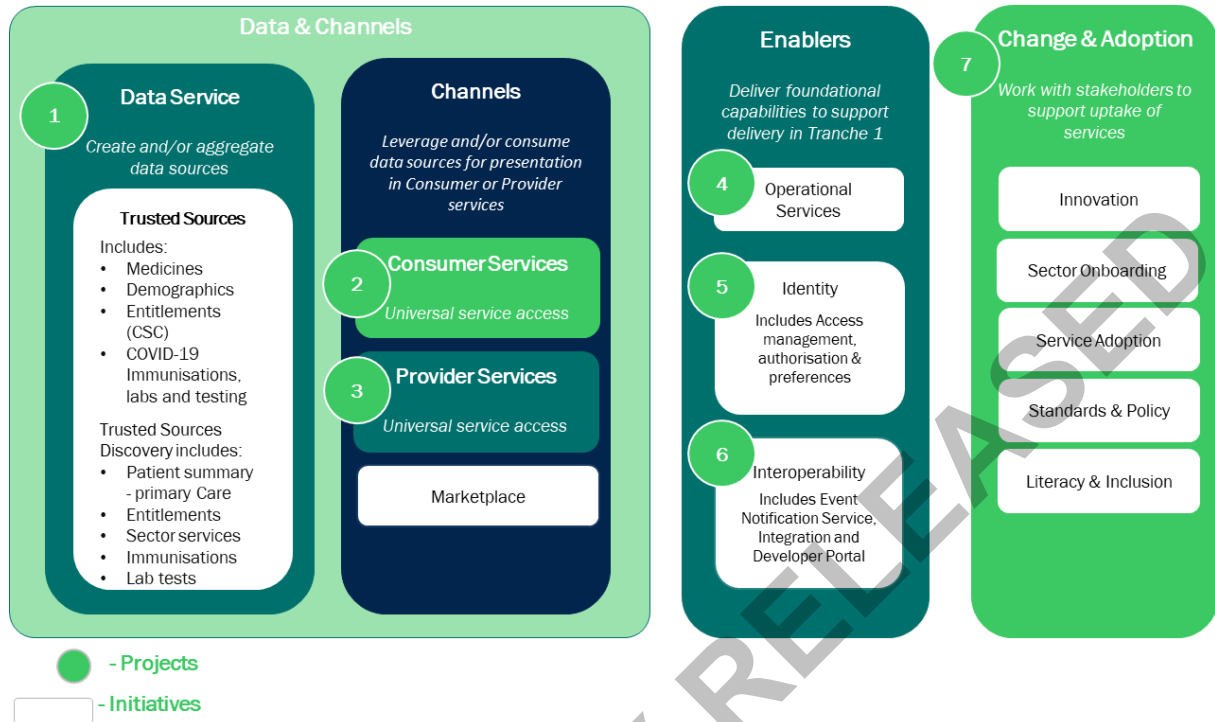
Figure 22: Tranche 1 Delivery Structure

The tranche will be supported by a fourth workstream, the Programme Management Office (PMO). The PMO is responsible for the successful management of the tranche (i.e. cost, quality, scope and time). The PMO has a dotted line to the Ministry Enterprise Programme Management Office (EPMO), which sets the overall strategic direction for work across the Ministry. This ensures that reporting and metrics are aligned and follow Ministry standards and practice.

The revised programme management structure is depicted in Figure 23 and the workstream organisation structures are attached as Appendix 19.
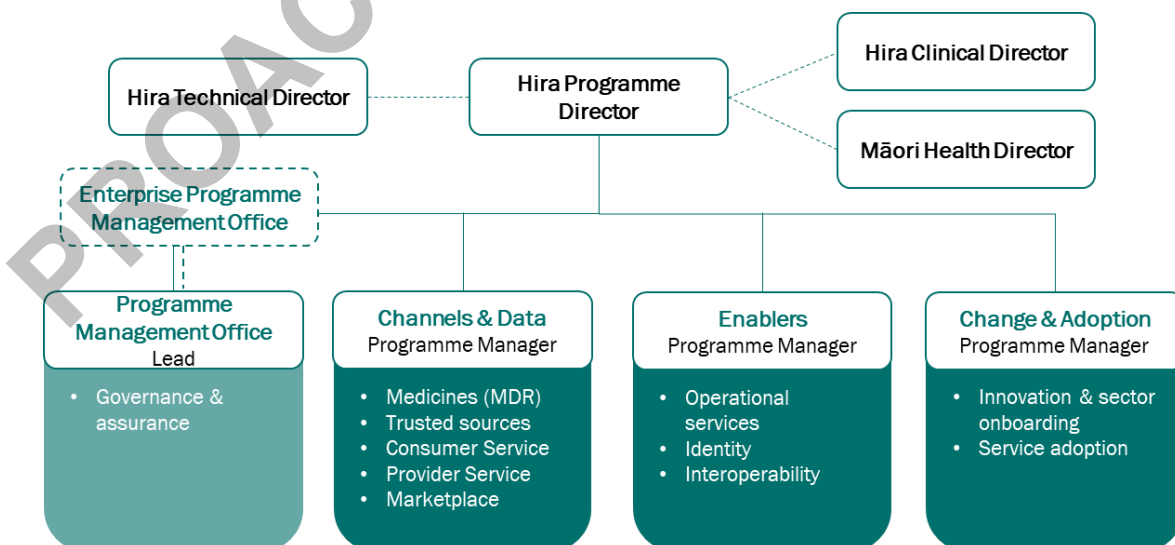
Figure 23: Hira Programme Management Structure

The **Programme Director** is responsible for ongoing programme management on behalf of the SRO to ensure that desired Hira outcomes and objectives are delivered. The role has overall responsibility for programme delivery.

The **Clinical Director** is responsible for ensuring that the services are targeted at achieving clinical process improvements for the wider health and disability sector. The Clinical Director contributes to Hira strategy and design from a clinical perspective and acts as the conduit between the sector clinical leads and the programme.

The **Technical Director** assures the robust technical architecture, design and delivery of data and digital services for Hira. The Technical Director is responsible for the end-to-end technical components of the Hira deliverables, tying these back to the business objectives and sector digital strategy.

The **Māori Health Director** is responsible for ensuring that there is effective engagement to produce better quality outcomes that reflect Māori perspectives and cultural values, with a focus on developing effective and ongoing relationships with key Māori stakeholders.

The **PMO Lead** reports to the Programme Director and is responsible for coordinating the programme activities to support the workstreams. This includes benefits realisation, commercial management, privacy and legal advice, financial management, assurance and investment planning.

The **Programme Managers** report to the Programme Director. They are responsible for managing the delivery of the elements of their workstream but also have shared responsibility for the tranche 1 deliverables overall.

8.3 Resourcing

Approach

The tranche will be resourced through a combination of Ministry employees (some full time, some part time or seconded), fixed-term contractors, consultants, secondment roles from other agencies, and sector partners. This approach ensures the best combination of subject matter expertise and institutional knowledge and provides the most cost-effective structure, as resources will only be engaged for the period required.

Some resources are expected to be needed for the full duration of the tranche, whilst others (for example, special advisors such as procurement expertise) will be required for shorter periods at specific points. Some resources will be dedicated to a specific project and others (such as procurement) will support multiple projects over the tranche 1 period, as required.

This approach allows flexibility to scale as required to meet the varying demands of the individual projects and maintains programme/tranche knowledge by moving resources around where needed.

Resourcing Requirements and Personnel Implications

A Programme Director (the Group Manager Digital Strategy and Investment), Clinical Director (Ministry of Health Clinical Principal Advisor) and Technical Director (Manager Architecture and Standards) have been appointed in an interim capacity to support the programme. It is expected that these roles will be on a fixed term basis for the duration of tranche 1.

The programme recognises the challenges posed by the number of other large-scale programmes and projects likely to commence in a similar timeframe, many of which will be competing for similar resources.

The resourcing requirement for tranche 1 is summarised in Table 15 and the special advisors are summarised in Table 16. Not all functions will be applicable to all projects, and the degree of resource required from each function will vary over the duration of the project. Special advisors will work across all projects.

Table 15: Tranche 1 Resourcing Requirements

Function	Purpose
Analyst	Business, Data, Digital, Technical analysis.
Architect	Data, Digital, Enterprise, Information and Solution architecture design.
Benefits Manager	Benefits identification, monitoring/evaluation support.
Business Partner	Working with the sector to ensure that systems are upgraded to support Hira services.
Change Manager	Planning and overseeing change for each project or specific change requirements within a project.
Clinical Informatics	Providing clinical input into the development of Hira services.
Co-Design	Service, User Experience, Journey Mapping to support design for each project.
Commercial/ Procurement	Advice and guidance on procurement to ensure all Government standards are met.
Finance Analyst	Financial modelling for each project and the overall tranche finances.
Health Advisors	Clinical, Community, Māori Health ensure that all facets of health are considered in designing and delivering Hira services.
Māori data governance and liaison	Ensure that data governance reflects te ao Māori[30] needs and interests in the data made visible through Hira.
Problem, incident, change, release Manager	Ensure operational support of the Hira Services.
Programme Communications	Engagement Lead, programme communications, marketing. Varying times depending on the status of individual projects.
Project Manager	Management of each project, liaison between projects and reporting to workstream leads.
Service Delivery	Service Desk, Management Lead, Service Manager
Security and Privacy	Manager, Engineer, Privacy SME to ensure all requirements are met.
Standards Advisor	Ensure all relevant standards are factored into planning and design.
Special Advisors	See Table 16.
Technical Writer	Create instructional and technical manuals, assessments, and training guides.
Test Management	Test Manager and Testers.

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[30] Te ao Māori is the Māori world view which acknowledges the interconnectedness and interrelationship of all living and non-living things.

Function	Purpose and Timing	T1 Cost
Assurance	Independent Quality Assurance (IQA) including real-time IQA as well as focused IQA at scheduled points through the tranche. Technical Quality Assurance (TQA). Security. Privacy.	s 9(2)(j)
Innovation SMEs	When required, consultation with experts in the relevant field.	s 9(2)(j)
Policy Advisor/Legal	When required, consultation with experts in the relevant field.	s 9(2)(j)

For some of the internal Ministry resource identified, individuals will transfer from their current role to the Hira projects with no backfill required. This will be achieved by flexing the overall resource available (primarily within the Data and Digital Directorate) to meet the Directorate and programme priorities. If backfill (within the Ministry or from an external partner) is required for any role, arrangements will be made on a case-by-case basis.

Recruitment

Given the scale of resource required, Hira will appoint a recruitment manager immediately following business case approval. This role will be responsible for proactive planning to ensure resource is available when needed over the duration of tranche 1 (see timing of roles in structure charts in Appendix 19).

Recruitment will be through a mixture of direct recruitment and via recruitment agencies. Roles will be fixed term where possible, with contractors and consultants utilised where necessary. The programme will retain the existing Hira workforce as far as possible, to maintain momentum and retain the corporate knowledge that has been built by the team during the development of the programme and tranche 1 business cases.

8.4 Delivery Approach

Project Management Approach

Tranche 1 will be managed in line with the key principles from Managing Successful Programmes (MSP). A tailored approach to project and product delivery will blend elements of waterfall and agile methodologies as appropriate and aligned to programme requirements. The programme will use whichever approach is most appropriate on a case-by-case basis. The Ministry has extensive experience of delivering waterfall projects and has recently delivered several projects using the agile methodology, including the NZ Covid Tracer App, and elements of the National Screening Solution.

Change Control

The change control process will manage and document any changes to project or tranche scope. A multi-tiered approach will apply to both projects and tranche. The programme manager will make decisions to analyse and decisions to proceed with changes within agreed tolerances. Changes outside of agreed tolerances (i.e. which impact on scope, budget or schedule or result in an increase in risk) will be reviewed by the SRO and escalated to the Governance Board for further consideration.

Any material change to tranche or project scope which impacts on the proposal (as described in this business case) will be referred back to Cabinet, or Joint Ministers of Health and Finance if delegated.

Iterative Discovery and Design

The Hira approach is to use iterative discovery and design activities, such as pilots and prototypes, to refine deliverables. Within tranche 1, these approaches will be used on a project-by-project basis as appropriate, to ensure that each project delivers the greatest value.

The programme partnered with DIA to undertake a human centred design (HCD) process to inform the tranche 1 business case (see Section 5.2 and Appendix 13.) This approach has proved invaluable in providing the programme with input from consumers to direct the focus of the individual projects and the overall tranche.

8.5 Stakeholder Engagement and Change and Adoption

Change and adoption are central to the success of Hira. The programme will set a new standard in delivering digital transformation whilst deliberately and actively enabling the change for those that do not have equitable access to health information. It will focus on equity, on engagement with Māori and on co-design.

Communications/Stakeholder Engagement and Change Management will work closely together in supporting and promoting the tranche 1 projects.

- **Communications and stakeholder engagement** will ensure that stakeholders are aware of the Hira programme/projects and progress. Communications and engagement will focus on higher-level messaging, such as progress updates, and the benefits the Hira tranche 1 projects will have for different groups. The communications workstream will manage media enquiries and lead any Hira public promotional campaign(s).

- **Change and adoption** communications will be more detailed and focused on assisting the sector to understand the specifics of the anticipated changes and the expected impact, clarifying what the sector needs to do to prepare/respond, and encouraging commitment to the changes.

Communications and Stakeholder Engagement

The tranche 1 stakeholders reflect the stakeholders for the programme overall, as summarised in Figure 24.

Consumers: The New Zealand public. Hira expects consumers, whānau and support networks to required direct support and education about Hira services.

Providers: Includes health professionals and other health workers in the New Zealand health and disability system. Of priority to Hira are those who do not have ready access to health information.

Policy makers and Planners: Includes health and non-health service organisations and those who use data in the health and disability system to plan and deliver services. Methods, breadth and quality of services would change for

Innovators and Researchers: Includes people who want to use data and services in unconventional ways or to identify and prove how services might be delivered differently or more effectively.

Figure 24: Hira Stakeholder Groups

On a project-by-project basis, stakeholders were analysed for their level of influence and impact, to determine the most appropriate engagement approach. The more highly impacted and influential stakeholders will be targeted for more extensive engagement, with more limited communication with the low impact/influence stakeholders. The tranche 1 stakeholder analysis is summarised in Appendix 20.

In planning communications, the programme has identified three key phases, each of which has a different communications goal and plan. The three phases are summarised in Table 17 and detailed in the Communication and Engagement Plan.

Table 17: Tranche 1 Communications Approach

Phase	Approach
Prior to funding confirmation	**Provide high-level information:** Basic webpages, high-level articles in ICT media and D&D newsletter, high-level presentations to the sector, flyer. Responses to media enquiries.
Approval of business case	**Release of more detailed information, for sector and consumers:** Detailed information on website, including information about the development of Hira to date, launch of Hira brand. Media releases with further details pointing to website for further info. Emails to stakeholders, including sector/market, Māori, Pacific and consumer groups.
Tranche 1 implementation	**Continue to provide updates to sector and consumers:** Continue to update website as tranche progresses, using the full range of communications channels to sector/market and consumer audiences. Start to plan for multimedia campaign to promote Hira to consumers (launch timing to be confirmed, may coincide with launch of consumer channel).

Change and Adoption

Change and adoption is central to the success of Hira. Change management will be a joint effort between the Ministry and change agents within stakeholder organisations and across communities, including consumers, providers, and innovators. The programme will set a new standard in delivering digital transformation, whilst deliberately and actively enabling the change for those that do not have equitable access to health information.

The Hira Change Approach[31] describes the change elements to be applied for each of the products and services that will be delivered under Hira. The Change Approach includes a structured change management framework to facilitate and support the sector, industry partners and other stakeholders to assess the impact of the programme on operations and identify and implement any changes that may be required to their structures and functions. The approach has been developed based on the requirements as they are known to date and the current understanding of stakeholder needs.

Change impact analysis has been undertaken for the seven tranche 1 projects, based on the requirements as they are known to date and the current understanding of stakeholder needs. More detailed change planning will be required once services come to life, timelines are agreed, and benefits can be described in a way to "sell the vision" to the broad range of stakeholders (which vary between services). This will include a detailed change communication plan for each project, to ensure that all impacted parties have adequate time to prepare to manage the change required.

8.6 Benefits and Risks/Issues Management

There is no change to the planned approach as described in the programme business case, for managing benefits, risks and issues.

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[31] Hira Change and Adoption v0.16 15 May 2021

Benefits Management

The **Benefits Realisation Management Strategy and Plan**[32] provides the overall guidance for all Hira benefits plans and has been updated to reflect the further analysis undertaken since the completion of the programme business case. The Strategy describes the overall benefits realisation schedule, monitoring and reporting plan and benefits profiles for the Hira expected benefits.

A **Tranche 1 Benefits Plan**[33] captures the detail of the tranche 1 benefits. This summarises the benefits measures and literature, information and evidence to support the Tranche 1 Benefits Plan.

A **Tranche 1 Benefits Register** has been developed to support the measurement and reporting of the benefits arising from the tranche 1 projects. The register will be maintained by the programme and, as other tranches go live, the register will be expanded to accommodate the additional benefits and measures.

The benefits from the tranche 1 investment will be realised incrementally following the completion of each project. As the projects are delivered, benefits monitoring and reporting will commence.

- **Benefits monitoring** will commence as projects go-live and benefits start to be realised; the timing will vary by project as some projects will be delivered earlier within the overall tranche timeline, and some projects will only start to realise benefits once fully implemented. The Workstream Leads will be responsible for managing the delivery of the projects to realise the benefits within their workstream, with overall responsibility sitting with the PMO Lead. The SRO has ultimate accountability for realisation of benefits.

- **Benefits reporting** will be to the Hira Programme Governance Board in the first instance, with consolidated benefits reporting becoming a component of wider programme reporting to Ministers and Cabinet.

Clinical stewardship for tranche 1 benefits will be through the Clinical Governance Group led by the Hira Clinical Director. The purpose of the group includes providing regular clinical oversight and review of the Hira benefits.

Risks and Issues Management

Projects undertaken as part of the Hira programme will be required to establish a **Risks and Opportunities Management Plan** (ROMP) and **Risks and Opportunities Register** at inception. The way in which the ROMP is developed will depend largely on the project size, scope and complexity. Smaller projects may include the ROMP as part of the overall project plan with a separate register. Larger and more complex projects will require a separate stand-alone ROMP.

Each project has developed a preliminary Risk and Opportunities Register to support the planning for this business case; these Registers will be further developed once the tranche has been approved and detailed work on the projects commences. The initial focus has been on identifying risks from a Ministry perspective. Subject to approval of this tranche business case, the focus will be extended to include consumer and supplier risks, to be determined through project-specific risk workshops.

The significant risks for each project are included within the overarching **Hira Programme Risk Register**, which is monitored by the Governance Board. Risk Review is a standing item on the Governance Board agenda; this focuses on the highest risks and those which have a material change in status.

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[32] Benefits Realisation Management Strategy v2.9 14 May 2021

[33] Hira Tranche 1 Benefits Plan v1.3 27 May 2021

8.7 Reporting, Monitoring and Evaluation

Tranche 1 Reporting

Reporting on tranche 1 progress will be provided by the Senior Responsible Owner at periods agreed as part of detailed implementation planning, including key agreed milestone points. Hira will provide reports back to Cabinet at agreed points.

Monitoring and Assurance

Tranche 1 is subject to internal and external monitoring and review, as agreed with the monitoring agencies. An active assurance approach is being adopted where "point in time" assurance activities, such as TQA and Treasury mandated Gateway reviews, are complemented by embedded assurance functions within programme governance and management activities. A detailed assurance timeline is included in the tranche 1 Assurance Plan and key assurance points are included in the detailed tranche 1 timeline (Appendix 22).

- Internal **Quality Assurance (QA)** will be provided by the Governance Board and the Ministry EPMO[34].

- An **Independent Quality Assurance (IQA)** has been appointed by the programme to active assurance that the projects are appropriately planned and controlled, as well as to provide assurance at specific points. The IQA on the tranche 1 business case and supporting documentation was completed by KPMG in June 2021 and the key findings of the review have been addressed.

- An external **Technical Quality Assurance (TQA)** service has been procured by the programme to review architecture and technical scope, provide assurance that capabilities and services are technically suitable, assess the review of artefacts and meeting of technical standards and review management of risks and assumptions. TQA for tranche 1 was completed by Akceli Consulting in April 2021. The highest priority recommendations are summarised in Appendix 21.

- Hira is subject to **Gateway reviews** as it has been assessed as 'High Risk' through the Treasury Risk Profile Assessment. The programme has had three Gateway reviews prior to the development of this tranche 1 business case: a Gate 0 review in October 2016; a Gate 1 review in April 2017 and a combined 0/3 review in January 2020[35].

A Gateway 0/2[35] review was undertaken in April 2021. The review found that good progress had been made despite the COVID-19 challenges and noted that there is strong support for the initiative which is seen as critical to enabling future health reforms. The programme team has addressed the key recommendations of the review. The Gateway team has recommended that the next Gateway review should be a Gate 0: Strategic Assessment, 12 months after commencement of tranche 1. This should allow clarity about the future shape of the programme in relation to health sector reforms.

Evaluation

Evaluation of tranche 1 will be undertaken within six months following the final project implementation. This evaluation will encompass:

- Evaluation of the tranche benefits realised compared with those initially identified.

- Assessment of the project deliverables.

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[34] This would be via reporting. Due to changes in EPMO function, the precise role is not yet determined.

[35] Gateway 0: Strategic Assessment. Gateway 1: Business Justification & Options – Indicative Business Case. Gateway 2: Delivery Strategy – Detailed Business Case. Gateway 3: Investment Decision.

- Evaluation of the implementation process.

8.8 Tranche 1 Key Milestones

The proposed tranche delivery plan has been developed based on the proposed implementation approach summarised in Section 5.3. The tranche will be implemented over two years of delivery plus six months of closeout, concluding with final handover to the relevant Ministry team(s) to be maintained and evolved as 'business as usual'.

The tranche 1 key milestones are summarised in Figure 25 and a more detailed tranche 1 Gantt chart is attached as Appendix 22. The timeframe is designed to minimise delivery costs and realise benefits as quickly as possible. Note that some dates may be revised as tranche 1 is developed and some items are brought forward/delayed.
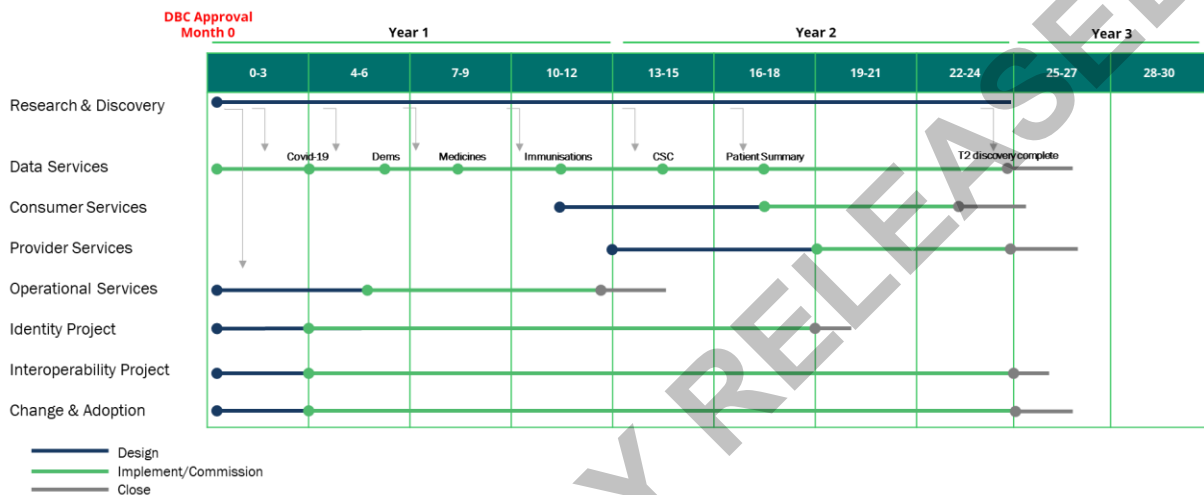
Figure 25: Tranche 1 High Level Delivery Timeline

Appendix 1: Tranche 1 Strategic Alignment

The Hira programme and tranche 1 investments are aligned with multiple health and ICT strategies. The key strategies are summarised in Table 18.

Table 18: Hira Tranche 1 Strategic Alignment

Strategy	Tranche 1 Alignment Summary
Our health and disability system: Building a stronger health and disability system that delivers for all New Zealanders April 2021 https://dpmc.govt.nz/sites/default/files/2021-04/heallth-reform-white-paper-summary-apr21.pdf Health and Disability System Review: Proposals for Reform March 2021 https://dpmc.govt.nz/sites/default/files/2021-04/cabinet-minute-cab-21-sub-0092-health-and-disability-system-review.pdf	Hira will support the system to address the equity gap, promote efficient and effective care, empower people and whānau to better manage their own health and wellbeing, and harness digital technologies to improve services. The programme will enable organisations to work together to share information (so that people do not have to repeat personal details multiple times, and those who need information have access to it) and will enable clinicians to work more efficiently. **Tranche 1 will enable people to update their own demographic details and will start to make data available across organisations.**
June 2020 Health and Disability System Review	The review recommendations are grouped into four themes: 1) Ensuring consumers, whānau and communities are at the heart of the system. 2) Culture change and more focused leadership. 3) Developing more effective Te Tiriti based partnerships with health and disability providers and creating a system that works more effectively for Māori. 4) Ensuring the system is integrated and deliberately plans ahead with a longer-term focus. **Through the consumer and provider channel implementations, Tranche 1 will start to address the necessary changes as per the first, third and fourth recommendations.**
2021 Data Protection and Use Policy	'Doing the right thing' when collecting or using people's data and information. It helps people understand how their information might be used, what rights and choices they have, and how to use those rights. **Tranche 1 includes a privacy impact assessment, and data protection and use analysis.**
2021 Data and Information Strategy for Health (draft)	A new strategy being developed to guide the way health and disability data and information is acquired, used and managed. **Tranche 1 aligns with the priorities identified of: equity and data sovereignty, people and leadership, data accessibility, data foundations and consumer participation.**
2020 HIMSS Healthcare Information and Management Systems Society Digital Health Indicator evaluation	The 2020 HIMSS evaluation found that Hira provides the ideal foundation upon which to invest in digital health capacity at a system level, while targeting areas of potential under-investment. **Tranche 1 includes standards development, data governance, digital health literacy will set the necessary foundations for the data, certified, endorsed Hira streams provide the necessary building blocks of a digital health eco-system improving digital capacity across the country.**

Strategy	Tranche 1 Alignment Summary
2020 Strategy for a Digital Public Service	Sets the direction to modernise and transform the public service, putting citizens and businesses at the centre of government services. **Tranche 1 will deliver a national consumer portal providing consumers with their primary care, NZePS and COVID-19 vaccination status information.**
2020 Digital identity trust framework	The principles of the digital identity trust framework will inform the development of the trust framework bill. **Tranche 1 addresses each of the principles: 1. People-centred 2. Inclusive 3. Secure 4. Privacy-enabling 5. Enabling Te Ao Māori approaches to identity, 6. Sustainable, 7. Interoperable and 8. Open and transparent.**
Whakamaua: Māori Action Plan 2020-2025	The implementation plan for He Korowai Oranga, New Zealand's Māori Health Strategy aims to achieve better health outcomes for Māori. **All tranche 1 benefits will include equity measures.**
2019 Digital Inclusion Blueprint	The government's vision for digital inclusion in New Zealand defines being included as having convenient access to, and the ability to confidently use, the internet in the immediate term. **Tranche 1 incorporates the four pillars of digital inclusion; access, skills, motivation and trust through the change and adoption workstream.**
Mahi Aroha Carers' Strategy Action Plan[36] 2019-2023	One of the Plan actions is to strengthen the ability to navigate across all parts of the care and support system (including health, welfare, and ACC) to ensure carers are aware of, and supported to access, available assistance for themselves and those they care for. **Tranche 1 will support improved information sharing and access to information for carers, those being cared for, health and disability providers, and other supporting agencies.**
2018 Digital Health Strategic Framework	The framework describes five core enablers: 1) People are in control of their own information. 2) Access to digital health services and health information improves health outcomes and equity. 3) Digital health services enable health providers to deliver better services. 4) Digital health services increase the performance of the public health system. 5) Data insights provide evidence to make and support information decisions. **Tranche 1 will deliver the foundations of the five core enablers.**
2018 Data Strategy and Roadmap	The roadmap will enable organisations within and outside of government to connect data initiatives and work together, and align their efforts, to generate the maximum impact and value through data. **Tranche 1 establishes the foundations for each of the four focus areas: 1) Investing in making the right data available at the right time, 2) Growing data capability and support for good practice, 3) Building partnerships within and outside government, and 4) Implementing open and transparent practices.**

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[36] A partnership between the government and the Carers Alliance (c. 50 NGOs) to recognise and support carers.

Appendix 2: Data Service Summary Brief

Need for Investment

The inability of consumers to engage effectively in managing their own care is contributing to unmanageable demand on health services: There is currently no way to easily access a complete and accurate health record for a consumer in New Zealand with information stored in disparate systems across the health sector. Whilst some health providers offer an online health portal/consumer service, these are limited to the information entered by the health provider and are not available to everyone, creating equity imbalances. Patients, consumers and their whānau have limited access to their own medical information to share with their wider care team and to engage in a more informed way in their own health care.

Information does not adequately support decision making, adversely impacting individuals, organisations and system level planning: Existing portals do not support the consumer to provide information to health professionals easily. This leads to inefficiencies, gaps in information and incorrect information being relayed, which can be dangerous.

The lack of integrated information across the health system is driving unnecessary rework and supplication for service users and health care staff: This investment will enable the presentation of a consumer's data stored across multiple systems using APIs, whilst allowing the data to remain in operational systems and not be unnecessarily replicated or centralised. The initiatives in tranche 1 are focussed on enabling data held by the Ministry to be presented using APIs. Discovery work will be undertaken in parallel to identify additional data sources that could be presented either later in tranche 1 or in tranche 2.

Table 19: Data Services Investment Objectives

Investment Objective	Current and Future State
To enable consumers to update their own information	**Current state:** Frequently, consumers are unable to make changes (e.g. change of address) to their own data, resulting in reliance on others to manage their data for them. Obtaining and managing their own information can be difficult or impossible, preventing consumers from engaging effectively in managing their own health. This is currently not possible and learnings through COVID-19 have proven that much of the demographic information that is held about consumers is out of date. The information does not adequately support decision making and adversely impacts individuals, organisations, and planning. Consumers do not have a choice of channels that can be used to update their information due to inaccessibility of data. **Future state:** Consumers will be able to monitor their own health, update, contribute to, and correct their own health information. They will be able to view the health information held about them and correct if required. Consumers will be able to update their own information as and when they require, via a choice of digital and non-digital channels.
Innovation and transformation across the health ecosystem is accelerated	**Current state:** Data is held in multiple locations, some of which may be known (but inaccessible) and others may be unknown. **Future state:** Hira will assist researchers, policy makers and planners to improve equity and system performance by informing policy, population health planning, healthcare investment strategy and health research, and stimulating innovation. Innovation is a catalyst for transformation, coming from the outside in via consumer engagement initiatives and from the inside out via insight derived from data. The sector, and digital innovators in the market, will be empowered to design and contribute data and digital services.

Investment Objective	Current and Future State
To have mechanisms in place to ensure that data used by Hira services meets specified data quality standards	**Current state:** There is currently mixed adherence to standards throughout the sector which makes it difficult to compare information across regions. **Future state:** Hira will deliver both technology and other artefacts (such as standards and protocols, security controls and commercial frameworks). Hira will also contribute to broader government data and digital health priorities, such as the work on privacy, human rights and ethics; data protection and use; digital inclusion; Māori data governance[37]; digital rights; and growing the digital economy. Built on an open architecture of shared data and services, standards. Delivered using modern, flexible and lower risk digital methods.

Key Dependencies

The key external dependencies include the **Integration Programme** and **data set exposure** (initially demographics and COVID-19 laboratory and immunisation data).

The key project interdependencies include **standards** work (initial standards that need to be used by third parties for displaying clinical data on the apps), **APIs to support the demographic requirements**, **change and adoption** to support uptake and rollout, and **authorisation** process (Interoperability).

Scope

The project scope includes six initiatives:

- **Medicines Data Repository (MDR):** This will enable a single, national MDR populated with standards based, structured medicines information from multiple sources. The MDR will be accessible to patients/consumers across the continuum of care, through interfaces that are easy to consume from the users' own systems of engagement and insights. The data will be accessible by consumers and care providers through certified digital services.

- **Demographics:** This will enable access to APIs that allow National Health Index (NHI) and National Enrolment Service (NES) details to be viewed and updated easily by individuals and a wider range of medical professionals. It will also ensure that services to update demographic information meet the published requirements to ensure data quality. The introduction of APIs will remove barriers (technology, cost, complexity etc) to use and integrate. The data will be accessible by consumers and providers through certified digital services.

- **Entitlements:** Consumers and their care providers cannot easily access entitlements information or understand what an individual's entitlements are. This initiative will provide access to clear and concise information on entitlements and an integrated view of entitlements for an individual, accessible to everyone who has a legitimate need for access. This initiative will deliver CSC card entitlements as part of the consumer channel as well as providing access to rules that describe how CSC entitlements are determined. The data will be accessible by consumers and providers through certified digital services.

- **Primary Care:** Currently consumers cannot access core information in their own health record reliably, leading to a sense of disempowerment, reduced ability to make informed decisions and relay accurate information. Clinicians have limited access to primary care data, leading to uninformed decision making, patient risk and process duplication. Primary care data is maintained in multiple health agencies and systems and there is no consolidated view. Lack of access to primary care data has the greatest impact on high health service users who are

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[37] Hira will continue to work with StatsNZ and DIA and will engage with stakeholders to ensure the Hira approach meets Māori needs. This is a priority activity and is expected to be completed shortly.

often the most vulnerable; this is an equity issue. This initiative will oversee the creation of a trusted source(s) of core primary care data. Access to APIs will allow core primary care data for an individual to be easily viewed and updated. The data will be accessible by consumers and providers through certified digital services.

- **COVID-19 Immunisations, labs and testing:** This will provide access to APIs that allow COVID-19 immunisations, laboratory order and result details for an individual to be easily viewed and updated, as well as access to supporting information related to laboratory testing. Data will be accessible by consumers and providers through certified digital services. Requirements gathering to extend to wider labs and testing data for tranche 2 will commence.

- **Trusted Sources Discovery:** Trusted Sources discovery is the preliminary activity to identify and define what is needed to prepare datasets to be prepared for use later in tranche 1 or to inform tranche 2 deliverables. This includes additional entitlements, immunisations, laboratory testing, and trusted sector sources of data (for example, regional clinical data and radiology).

Options Analysis and Recommended Approach

Table 20: Data Service Implementation Options Analysis

		Analysis	Decision
1: Big Bang	Pros	• Scope and delivery timeframes known up front through detailed design process. • Costs are known upfront. • Strong focus on documentation.	Rejected
	Cons	• Unable to realise value until end of tranche. • Infrequent releases of new features.	
2: Incremental Rollout Development	Pros	• Leverages Agile techniques that align well to a software development rollout. • Aligns with Hira programme philosophy of Continuous Integration and Continued Deployment philosophy. • Regular releases of prioritised features. • Able to evolve to display additional data as datasets are ready for presentation.	Recomm-ended
	Con	• Detailed costs not known upfront. • Exact timelines are not known up front	

Table 21: Data Service Funding Options Analysis

		Analysis	Decision
1: Crown Funding	Pros	• Datasets surfaced according to Ministry prioritisation. • No barriers to uptake and will not increase inequity in the health system.	Recomm-ended
	Cons	• Likely to cost Crown more to implement. • Need to go to market to secure some resources that are not currently employed by the Ministry.	
2: Crown $ + Other	Pros	• Ability to easily leverage key capability at a reduced rate. • Potential to cost Crown less over life of product.	Rejected
	Cons	• Will not address equity concerns. • May limit Ministry's ability to roadmap for the future.	

Table 22: Data Service Delivery Options Assessment

Description	In-house	Hybrid Development	Hybrid Commission	Outsource Development	Outsource Commission
Investment Objectives					
To enable consumers to update their own information by Q2 2022	7	7	7	6	6
Innovation and transformation across the health ecosystem is accelerated by Q2 2022	2	6	6	2	5
To have mechanisms in place to ensure that data used by Hira products and services meets specified data quality standards by Q2 2022	5	6	6	4	5
Critical Success Factors					
Strategic Fit & business needs	5	5	6	5	7
Value for Money	5	5	6	6	7
Supplier capacity and capability		6	7	6	7
Achievability	4	4	5	3	4
Affordability	3	3	5	3	4

Table 23: Data Service Delivery Options Shortlist Analysis Summary

		Analysis	Decision
Outsource Commission	Pros	• Leverages external skillsets and capabilities in the "source of truth" owners.	Possible
	Cons	• Achievability less likely than Hybrid Commission. • Ministry will have less control of Hira product roadmap.	
Hybrid Commission	Pros	• Key IP and Hira product direction is owned by Ministry. • Leverages external skillsets and capabilities in the "source of truth" owners. • Cost *expected* to be cheaper than other options.	Recommended
	Cons	• Slightly increased risk to achievability as leveraging internal staff for delivery where there may be competing priorities.	

Appendix 3: Consumer Services Summary Brief

Need for Investment

The inability of consumers to engage effectively in managing their own care is contributing to unmanageable demand on health services: New Zealanders do not currently have access to a holistic view of their own health information, or an easy way to share their story with health professionals. Information in existing online portals is limited to the data held by a single health provider, with data from other health and social care providers lacking. Consumer expectations that all health professionals can appropriately access the information they need to make the best care decisions are not being met. Consumers are not empowered to make informed decisions or contribute effectively to their own wellbeing journey. Existing services do not enable consumers to update or share their information with care providers or their whānau (with authorised access).

Table 24: Consumer Services Investment Objectives

Investment Objective	Current and Future State
New Zealanders are more empowered to manage their health, wellbeing and independence, and there is measurable improvement in equity of access and outcomes	**Current state:** Currently interactions are limited, and users do not have a choice of providers leading to inconsistent experiences. **Future state:** Hira will deliver a universal basic service that allows all New Zealanders to access their health information. Hira will empower consumers to monitor their own health; update, contribute to, and correct their own health information; better manage their chronic conditions; and consent to their information being shared with their support network.
To provide the consumer with a voice in decision making	**Current state:** There has been no engagement with consumers around what their needs and preferences are. **Future state:** Improved care planning as decisions will be made informed by a coherent and complete picture of an individual. Better access to information will positively impact efficiency and costs, as well as reducing risks/inconvenience to consumers (e.g. reducing duplication of tests because results are not known, and ensuring medications provided by another provider can be seen by a prescriber).
To improve ease and timeliness of access for consumers to their own data	**Current state:** Consumers have limited access to view/update their data. **Future state:** Consumers will be empowered to monitor their own health; update, contribute to, and correct their own health information; better manage their chronic conditions; and consent to information being shared with their support network.
To improve ease and timeliness of access for consumers to entitlements information	**Current state:** Information does not adequately support decision making and adversely impacts individuals, organisations and planning. Consumers do not have a choice of channels to view or update their entitlement information due to inaccessibility of data. **Future state:** Consumers are empowered to monitor their own entitlements information.

Key Dependencies

The key external dependencies include the **Digital Identity Programme**, the **Integration Programme** and **data set exposure.** The key interdependencies include the **Digital Identity service** and **Authorisation** (Interoperability), **standards** work (for displaying clinical data on the apps), and **APIs to support the demographic requirements** (Data Service).

Scope

The project scope includes:

- **Universal access to consumer services** (web, mobile): Using digital identity data service components to present health information associated to the authenticated user. Minimum datasets for tranche 1 align to the minimum scope of the Data Service project and will include demographics, medicines, entitlements, COVID-19 immunisations, and laboratory and GP primary care.

- **Demographics:** Consumers will be able to update address and contact details, gender, ethnicity, preferred name and prefix, and will be able to view other demographics information (citizenship status, date of birth), their current GP and update Māori descent/Iwi Affiliation.

- **Medicines:** Consumers will be able to view their own medicines and view consumer-friendly information related to the medicine.

- **Entitlements:** Consumers will be able to view NES entitlements (CSC, High User Health Card). A stretch target for this activity will be to enable consumers to submit entitlement requests.

- **Immunisations:** Consumers will be able to see their immunisations held on the NIR and view consumer-friendly information related to the immunisation.

- **Digital signposting** of other trusted health information will be available for consumers to get more information that relates to their heath.

The project scope excludes managing appointments, health data from other sources, correction of health information, carers & dependents, and Active Care Team providers.

Options Analysis and Recommended Approach

Table 25: Consumer Services Implementation Options Analysis

		Analysis	Decision
1: Big Bang	Pros	• Scope, costs and delivery timeframes known up front through detailed design process. • Strong focus on documentation.	Rejected
	Cons	• Risk of the Consumer Services deployment being delayed due to defects in the base build and enablers. • Infrequent releases of new features.	
2: Incremental Rollout Development	Pros	• Leverages Agile techniques that align well to a software development rollout. • Aligns with Hira programme philosophy of Continuous Integration and Continued Deployment. • Regular releases of prioritised features. • Able to evolve to display additional data as datasets are ready for presentation.	Recomm-ended
	C	• Detailed costs and exact timelines not known upfront.	

Table 26: Consumer Services Funding Options Analysis

			Analysis	Decision
1: Crown Fundin	Pro	•	Consumer Services needs to be universal and basic.	Recommended
		•	No barriers to uptake and will not increase inequity in the health system.	
	C	•	Likely to cost Crown more to implement.	
2: Crown $ + Other	Pr	•	Ability to easily leverage key capability at a reduced rate.	Rejected
		•	Potential to cost Crown less over life of product.	
	Con	•	Will not address equity concerns.	
		•	May limit Ministry's ability to roadmap for the future.	

Table 27: Consumer Services Delivery Options Assessment

Description	In-house	Hybrid Development	Hybrid Commission	Outsource Development	Outsource Commission
Investment Objectives					
By Q2 2022, New Zealanders are more empowered to manage their health, wellbeing and independence, and there is measurable improvement in equity of access and outcomes	3	7	8	4	4
To provide the consumer with a voice in decision making by Q2 2022	4	7	8	6	6
To improve ease and timeliness of access for consumers to their own data, by Q2 2022	3	7	8	4	4
To improve ease and timeliness of access for consumers to entitlements information, by Q2 2022	2	6	6	2	2
Critical Success Factors					
Strategic Fit & business needs	2	7	7	6	6
Value for Money	4	7	7	5	6
Supplier capacity and capability		8	8	6	7
Achievability	2	7	7	3	4
Affordability	8	6	6	6	6

Table 28: Consumer Services Delivery Options Shortlist Analysis Summary

			Analysis	Decision
4: Hybrid Development	Pros	•	Some key IP and product direction will be owned by the Ministry.	Possible
		•	Leverages external skillsets and capabilities.	
	Cons	•	Does not leverage digital health market partners.	
		•	Cost *expected* to be higher than Hybrid Commission.	
5: Hybrid Commission	Pros	•	Some key IP and product direction is owned by the Ministry.	Recommended
		•	Leverages external skillsets and capabilities.	
		•	Good strategic fit.	
	C	•	Expected to be less affordable than In-house.	

Appendix 4: Provider Services Summary Brief

Need for Investment

Information does not adequately support decision making, adversely impacting individuals, organisations and system level planning: Currently not all health providers can appropriately access the information they need to make the best care decisions. This leads to inefficiencies, gaps in information and incorrect information being used, which can be dangerous.

The lack of integrated information across the health system is driving unnecessary rework and supplication for service users and health care staff: Many health and disability information sources in New Zealand are not joined up, there is variation in how data is collected and stored, and in its quality. This leads to data being inaccessible (resulting in process inefficiencies) or being replicated unnecessarily across multiple systems.

Table 29: Provider Services Investment Objectives

Investment Objective	Current and Future State
Primary care and community-based services are better able to respond to consumer need, and the growth in the use of hospital services is reducing	**Current state:** Data sharing with some NGOs is very limited, and sharing between providers, can be inconsistent and incomplete. The inability to share information (e.g. test results to prevent unnecessary repeat investigation) is contributing to growing demand. Advances in technology and clinical practice are not being maximised, as traditional boundaries continue to constrain innovation and opportunities for change. **Future state**: Shared real-time access to comprehensive information and ability to communicate securely to support integrated care across multiple settings. Enhanced reporting, analytics and insights capability to identify existing or emerging trends at population level, across regions or specific consumer groups.
To enable access to consumer data systems of record and sources of truth for all authorised users	**Current state:** Data is held in multiple locations, some of which may be known (but inaccessible) and others may be unknown. **Future state:** An increase in the transparency on what data is held and where (even when this data is not made accessible by Hira). Enhancement of access to information by including information from other sources (including GPs and other primary care, hospital/ED care and other providers).
To expand the range of consumer data (including consumer-generated data) available to authorised users	**Current state:** Frequently, consumers are unable to make changes (e.g. change of address) to their own data, resulting in reliance on others to manage their data for them. **Future state:** Ability for consumers to annotate and/or upload demographics information and communicate with providers, including in the development of care plans.

Key Dependencies

The key external dependencies include the **Digital Identity Programme**, the **Integration Programme** and **data set exposure.** The key interdependencies include the **Digital Identity service** and **Authorisation** (Interoperability), **standards** work (for displaying clinical data on the apps), and **APIs to support the demographic requirements** (Data Service).

Scope

The project scope includes:

- **Universal access to provider services** (web, mobile): Using digital identity data service components to allow health providers to access relevant health information for their patients. Minimum datasets for tranche 1 align to the minimum scop of the Data Service project and will include demographics, medicines, entitlements, COVID-19 immunisations, and laboratory and GP primary care.

- **Medicines:** Providers will be able to view medicines that have been prescribed to their patients.

- **Entitlements:** Providers will be able to view NES entitlements (CSC, High User Health Card) for their patients, advising if there are entitlements available that have not been claimed.

- **Immunisations:** Providers will be able to view immunisations held on the NIR.

This information will be accessed using either a web browser or a mobile app.

Options Analysis and Recommended Approach

Table 30: Provider Services Implementation Options Analysis

		Analysis	Decision
1: Big Bang	Pros	• Scope, cost and delivery timeframes known up front through detailed design process. • Strong focus on documentation.	Rejected
	Cons	• Risk of the Provider Services deployment being delayed due to defects in the base build and enablers. • Infrequent releases of new features.	
2: Incremental Rollout Development	Pros	• Leverages Agile techniques that align well to a software development rollout. • Aligns with Hira programme philosophy of Continuous Integration and Continued Deployment. • Regular releases of prioritised features. • Able to evolve to display additional data as datasets are ready for presentation.	Recommended
	C	• Can be hard to forecast costs accurately.	

Table 31: Provider Services Funding Options Analysis

		Analysis	Decision
1: Crown Funding	Pro	• Provider Services needs to be universal and basic. • No barriers to uptake and will not increase inequity in the Health system.	Recommended
	Con	• Likely to cost Crown more to implement. • Potential to cost Crown less over life of product.	
2: Crown + ...	P	• Ability to easily leverage key capability at a reduced rate.	Rejected
	Con	• Will not address equity concerns. • May limit Ministry's ability to roadmap for the future.	

Table 32: Provider Services Delivery Options Assessment

Description	In-house	Hybrid Development	Hybrid Commission	Outsource Development	Outsource Commission
Investment Objectives					
Primary care and community-based services are better able to respond to consumer need, and the growth in the use of hospital services is reducing, by Q2 2022	2	7	7	4	5
To enable access to consumer data systems of record and sources of truth for all authorised users by Q2 2022	1	7	8	5	6
To expand the range of consumer data (including consumer-generated data) available to authorised users by Q2 2022	2	7	8	3	3
Critical Success Factors					
Strategic Fit & business needs	2	7	7	6	6
Value for Money	4	7	7	5	6
Supplier capacity and capability		8	8	8	8
Achievability	2	7	7	3	4
Affordability	8	6	6	6	6

Table 33: Provider Services Delivery Options Analysis Summary

		Analysis	Decision
Hybrid Development	Pros	• Some key IP and product direction is owned by the Ministry. • Leverages external skillsets and capabilities.	Possible
	Cons	• Does not leverage digital health market partners. • Cost *expected* to be higher than Hybrid Commission.	
Hybrid Commission	Pros	• Some key IP and product direction is owned by the Ministry. • Leverages external skillsets and capabilities.	Recommended
	Cons	• Cost expected to be higher than than completing in house.	

Appendix 5: Operational Services Summary Brief

Need for Investment

Poor collaboration across the health, wider government and private sectors is hindering innovation in the delivery and management of health care: The lack of quality collaboration is partly attributable to the absence of a cohesive operational support model, which enables New Zealanders access to quality health and disability information. Due to processes and controls currently being misaligned and existing capability being organisation-centric, it hinders innovative thought leadership and architecture at an enterprise level.

Information does not adequately support decision making, adversely impacting individual and system level planning: The lack of a cohesive operational model means health professionals are not adequately supported to make informed decisions about a person's health care. Processes to provide access to data vary across organisations and are designed around outdated or aging technology. There is a lack of integrated patient information, which leads to rework and duplication, including patients having to repeat their stories to multiple providers/multiple times.

Lack of integrated patient information across the system is driving unnecessary rework and duplication for patients and health care staff: Consumers and providers are not empowered to make informed decisions or contribute effectively to their own wellbeing journey. Due to the misaligned and poorly integrated underlying business and technology processes, both consumers and providers undertake unnecessary rework and duplicate effort.

Table 34: Operational Services Investment Objectives

Investment Objective	Current and Future State
To ensure security and stability of consumer, provider and data services from Q2 2022	**Current state:** There is no cohesive operational support model to support New Zealanders accessing their health information. Processes and controls are misaligned, with existing capability being organisation-centric and designed around legacy technology environments, leading to inconsistency and fragmentation among consumer, provider and data service systems. **Future state**: A hybrid process model and models of delivery requiring standardised, stable and secure process application and controls across organisations to support value realisation and knowledge transfer.
To create self-service option for consumers and providers to notify Hira of data/system issues and provide feedback on consumer, provider and data services, by Q2 2022	**Current state:** as current state above. **Future state:** A scalable hybrid process model that will be iterative and adaptable to ensure the processes and controls within the operating model evolve over time to meet the changing needs of consumers and the sector.

Key Dependencies

The key external dependencies include **NDS and MICT to manage operational readiness across multiple programmes.** The key project interdependencies include **Change and Adoption, New Datasets and Enablers and Channels.**

Scope

The project scope includes:

- Supporting the broader shift to **government as an enabler**, co-designing solutions with consumers, communities, the health and disability sector, as well as industry through the structure and functions to be established.

- **Consumer and Provider Support Management:** Multi-channel digital delivery (including self-service, social networking, telephony, in application support and chatbots) of customer support will aim to communicate with consumers and providers across multiple channels to meet their requirements and preferences. Responding to user feedback is a core element in supporting the iterative, continuous improvement operating model adopted by Hira.
- **Trusted Data Providers:** These are partners from whom Hira is sourcing its trusted data sources. Key services required by these partners will include audit, security and performance metrics. Services will be provided via multi-channel digital delivery and will include self-service, telephony and business relationship management.
- **Developer Support Management:** Developers utilising the Hira services will require immediate support with the nature of queries being more technical (e.g. service availability of APIs). A multi-channel approach – including but not limited to, self-service, social networking and discussion boards –, with a strong community information sharing focus, will be utilised to support developer needs requirements and preferences. Responding to user feedback is a core element in supporting the iterative, continuous improvement operating model adopted by Hira.
- **Technical Service Management:** Information Technology Service Management (ITSM) includes the implementation, management and delivery of IT services to meet the needs of consumers of Hira services, as well as the build and delivery teams. Putting these tools and technologies in place will improve efficiency and reduce operational costs as processes and workflow will be optimised, increase control and governance, as well as improve the overall experience of the service. Please note, all functionality as part of this requirement will likely be available via one integrated Service Management toolset.
- **Security:** Continuous security preparedness and monitoring is essential as Hira will be a trusted source for health information for New Zealanders. Hira products and services will depend on data and technology in order to serve consumers and providers, and continuous security vigilance will minimise risk.
- **Certification and Access Validation:** The process of validating access rights within the Hira environment, which supports compliance and security risk management across the system, with the aim being to formally validate users within systems and ensure their access rights are appropriate.

Options Analysis and Recommended Approach

Table 35: Operational Services Implementation Options Analysis

		Analysis	Decision
1: Big Bang	Pros	• Scope and delivery timeframes are known up front through a detailed design process. • Costs are known upfront.	Rejected
	Co	• Inflexible. • Infrequent releases of new functionality.	
2: Incremental Rollout Development	Pros	• Flexible and scalable approach. • Reduces the project's overall risk profile, due to risks being identified and contained per iteration. • More thorough user testing can be completed due to iterations being smaller. • Continuous development and improvement model aligns with the overarching programme philosophy of continuous integration and continued deployment.	Recommended
	Co	• Detailed costs not known upfront. • Exact timelines are not known upfront.	

Table 36: Operational Services Funding Options Analysis

			Analysis	Decision
1: Crown Funding	Pro	•	A committed funding pipeline is needed to ensure the right skills and partners can be sourced and to enable costs of effective delivery.	Recomm-ended
	C	•	Higher cost to Crown to implement.	
2: Crown $ + Other	P	•	Lower cost to Crown over the operational services lifespan.	Rejected
	Cons	•	Does not align with the operational approach of shifting from an organisation-centric model to an enterprise level hybrid process model and models of delivery that puts the consumer at the centre.	

Table 37: Operational Services Delivery Options Assessment

Description	In-house	Hybrid Development	Hybrid Commission	Outsource Development	Outsource Commission
Investment Objectives					
To ensure security and stability of consumer, provider and data services from Q2 2022	4	5	7	5	5
To create self-service option for consumers and providers to notify Hira of data/system issues and provide feedback on consumer, provider and data services by Q2 2022	3	7	7	7	7
Critical Success Factors					
Strategic Fit & business needs	3	4	7	4	6
Value for Money	5	6	7	6	7
Supplier capacity and capability		6	7	6	7
Achievability	4	6	7	6	7
Affordability	7	3	6	3	4

Table 38: Operational Services Delivery Options Shortlist Analysis Summary

			Analysis	Decision
3: Outsource Commission	Pros	•	Allows the Ministry to fully leverage supplier skills and experience whilst utilising some internal resource experience to develop the Operational Services model.	Possible
	Cons	•	Fails to leverage existing Ministry capability.	
		•	Does not allow the Ministry to retain control of Hira service delivery.	
		•	Cost *expected* to be higher than Hybrid Commission.	
5: Hybrid Commission	Pros	•	Ministry operational service process delivery is already in place.	Recommended
		•	Leverages Ministry capability supplemented by external partners.	
		•	Key IP and product direction is owned by Ministry.	
		•	Will enable Hira to integrate, collaborate and engage with all parts of the Ministry, sector and industry, agnostic of which process or delivery model is in effect.	
	Cons	•	Not core business of the Ministry.	

Appendix 6: Identity Summary Brief

Need for Investment

The inability of consumers to engage effectively in managing their own care is contributing to unmanageable demand on health services: The Ministry is in the process of delivering a Digital Identity and Access Management (IAM) project, which will enable health consumers and health providers to bind a verified digital identity to their NHI or Health Provider Index-Common Person Number (HPI-CPN) record and then manage and update their contact details. Digital Identity is an enabler of the Hira programme and includes access management, authorisation and preferences.

Whilst the IAM project will deliver a verified identity solution which is required by Hira, it will not extend the deliverables to meet the additional functionality which will be created through Hira.

Even with IAM, consumers will not have the ability to give a provider access to view their entire health information or remove this authorisation. They will not be able to see who has viewed their information, when, where and for what purpose. They will not have secure and authenticated access to their own health information. Consumer NHIs and provider HPIs will not be visible in the respective consumer and provider profiles.

The inability to interact with their own health information, and for providers to see a broader range of authorised data, is hindering people from better managing their own wellbeing.

Table 39: Identity Services Investment Objectives

Investment Objective	Current and Future State
Innovation and transformation across the health ecosystem is accelerated	**Current state:** Data is held in multiple locations, some of which may be known (but inaccessible) and others may be unknown with no way to manage authorisations. **Future state:** Innovation is catalyst for transformation, coming from the outside in via consumer engagement initiatives and from the inside out via insight derived from data. Identity is a key pillar for enabling this innovation.
To create a reusable health digital identity	**Current state:** No service exists. **Future state:** New Zealanders will have a reusable health identity and consent service, which can be used across services and providers. This will enable reduced duplication in digital identity and reduce the effort required to establish and maintain these identities.
To implement digital authorisation of access to consumer data (consent and delegation)	

Key Dependencies

The key external dependencies include the **Digital Identity** services, **DIA Digital Identity Trust Framework Rules**, **Integration** Programme and MoH **Identifier Platform Update** project. The key project interdependencies include **Standards** to be used by third parties for displaying clinical data on the apps.

Scope

The project scope includes:

- **Consent/Authorisation**

  - **Authorised Provider:** The solution will provide functionality that will allow consumers to give authorisation for a health provider to view their health information.
  - **Authorised Consumer:** The solution will provide functionality that will allow consumers to give authorisation for another consumer to access and view their health information.
  - **Delegation**

- **Delegated Consumer:** The solution will allow consumers to connect their health profile to the health profiles of their family, whānau, and people they support and care for.
- **Sharing Health Information:** The solution will provide functionality that will allow consumers to give authorisation for another consumer access to view **selected** information.

- **Profile Management:** The solution will provide functionality that will allow consumers to manage their account settings.

Options Analysis and Recommended Approach

Table 40: Identity Implementation Options Analysis

		Analysis	Decision
1: Big Bang	Pros	• Scope and delivery timeframes known up front through detailed design process. • Costs are known upfront. • Strong focus on documentation.	Rejected
	Cons	• Unable to realise value until end of tranche. • Infrequent releases of new features.	
2: Incremental Rollout Development	Pros	• Leverages Agile techniques that align well to a software development rollout. • Aligns with Hira programme philosophy of Continuous Integration and Continued Deployment philosophy • Regular releases of prioritised features. • Able to evolve to display additional data as datasets are ready for presentation.	Recomm-ended
	C	• Scope, delivery timeframes and costs are not known up front.	

Table 41: Identity Funding Options Analysis

		Analysis	Decision
1: Crown Funding	P	• No barriers to uptake and will not increase inequity in the health system.	Recomm-ended
	Cons	• Likely to cost more to implement. • Need to go to market to secure some resources that are not currently employed by the Ministry.	
2: Crown $ + Other	Pr	• Ability to easily leverage key capability at a reduced rate. • Potential to cost less over life of product.	Rejected
	Cons	• Will not address equity concerns. • May limit Ministry's ability to roadmap for the future.	

Table 42: Identity Delivery Options Assessment

Description	In-house	Hybrid Development	Hybrid Commission	Outsource Development	Outsource Commission
Investment Objectives					
Innovation and transformation across the health ecosystem is accelerated by Q2 2022	3	6	7	7	7
To create a reusable health digital identity by Q2 2022	2	7	6	4	4
To implement digital authorisation of access to consumer data (consent and delegation) by Q2 2022	2	7	6	4	4
Critical Success Factors					
Strategic Fit & business needs	5	5	5	5	6
Value for Money	4	4	4	5	7
Supplier capacity and capability		7	7	5	8
Achievability	3	7	7	5	6
Affordability	8	5	5	3	2

Table 43: Identity Delivery Options Shortlist Analysis Summary

		Analysis	Decision
Hybrid Development	Pros	• Ministry identity platform delivery is already in place. • Key IP and Hira product direction is owned by Ministry. • Leverages Ministry capability supplemented by external development partners. • Cost *expected* to be cheaper than other options.	Recommended
	Co	• Will require a number of internal resources to support.	
Hybrid Commission	Pros	• Ministry identity platform delivery is already in place. • Key IP and Hira product direction is owned by Ministry. • Cost *expected* to be similar to Hybrid Development.	Possible
	Cons	• More knowledge is required to understand what items could be commissioned. • Currently achievability less likely than Hybrid Development.	

Appendix 7: Interoperability Summary Brief

Need for Investment

The lack of integrated information across the health system is driving unnecessary rework and supplication for service users and health care staff: Health system applications are unable to find, subscribe to and access information about an individual, data type, service, location, provider etc across a highly distributed health sector. This typically results in organisations pulling data about an individual into a central place, as they have no other way of finding or accessing the data dynamically. In addition, organisations have no way of knowing whether the data has been amended at source and therefore whether a newer version of the record is required.

Table 44: Interoperability Investment Objectives

Investment Objective	Current and Future State
Innovation and transformation across the health ecosystem is accelerated	**Current state:** Data is held in multiple locations, some of which may be known (but inaccessible) and others may be unknown. **Future state:** Hira will assist researchers, policy makers and planners in improving equity and system performance by informing policy, population health planning, healthcare investment strategy and health research, and stimulating innovation. Innovation is catalyst for transformation, coming from the outside in via consumer engagement initiatives and from the inside out via insight derived from data.
To enable authorised users to check quickly and easily who has accessed consumer data	**Current state:** No service exists. **Future state:** Establishment of audit logging that is accessible to all users of the ecosystem.
To enable all Hira subscribers to be notified of any change in consumer data	**Current state:** No service exists. **Future state:** Establishment of an Event Notification Service that is available to all subscribers of the service.

Key Dependencies

The key external dependency is the **Integration** programme. The key project interdependencies include **Standards**, **APIs to support the Demographic** requirements (data services) and **Developer Portal** from the COVID-19 enablers programme.

Scope

The project scope includes:

- **Event Notification Service:** An event notification service enables interested parties to be notified when changes have been made to individual data sources. The service publishes, filters through a set of business rules and delivers information about events to subscribed parties.

- **Publish-Subscribe Services:** Event Notification Services (ENS) can be used as a form of middleware between applications. This will allow trusted sources to notify other trusted sources & applications of changes (where the applications are each interested in certain subsets of events being generated by the Hira trusted sources).

- **Business Rules Engine:** technology system used to capture decision logic as a business rule, which is then automated applied based on an event being triggered.

- **Record Locator Service:** The record locator service (RLS) is an index-based service which is part of the Event Notification Service that enables participant services, systems, or applications, to find patient records distributed across multiple repositories/locations.

Options Analysis and Recommended Approach

Table 45: Interoperability Implementation Options Analysis

		Analysis	Decision
1: Big Bang	Pros	• Scope and delivery timeframes known up front through detailed design process. • Costs are known upfront. • Strong focus on documentation.	Rejected
	Cons	• Unable to realise value until end of tranche. • Infrequent releases of new features.	
2: Incremental Rollout Development	Pros	• Leverages Agile techniques that align well to a software development rollout. • Aligns with Hira programme philosophy of Continuous Integration and Continued Deployment. • Regular releases of prioritised features. • Able to evolve to display additional data as datasets are ready for presentation.	Recomm-ended
	Cons	• Costs are not always known at the start of the process and can be higher than the 'big bang' approach. • Is dependent on good planning and design.	

Table 46: Interoperability Funding Options Analysis

		Analysis	Decision
1: Crown Funding	P	• No barriers to uptake and will not increase inequity in the health system.	Recomm-ended
	Cons	• Likely to cost more to implement. • Need to go to market to secure some resources that are not currently employed by the Ministry.	
2: Crown $ + Other	Pros	• Ability to easily leverage key capability at a reduced rate. • Potential to cost less over life of product.	Rejected
	Cons	• Will not address equity concerns. • May limit Ministry's ability to roadmap for the future.	

Table 47: Interoperability Delivery Options Assessment

Description	In-house	Hybrid Development	Hybrid Commission	Outsource Development	Outsource Commission
Investment Objectives					
Innovation and transformation across the health ecosystem is accelerated by Q2 2022	3	7	8	3	3
By Q2 2022, to enable authorised users to check quickly and easily who has accessed consumer data	2	7	7	4	4
By Q2 2022, to enable all Hira subscribers to be notified of any change in consumer data	2	7	7	4	4
Critical Success Factors					
Strategic Fit & business needs	2	7	7	4	4
Value for Money	3	6	6	4	4
Supplier capacity and capability		7	7	7	7
Achievability	4	7	7	6	6
Affordability	7	6	5	3	3

Table 48: Interoperability Delivery Options Shortlist Analysis Summary

		Analysis	Decision
Hybrid Development	Pros	• Allows Ministry to tailor the final solution for what is needed and provide some IP to ensure the solution meets requirements. • Cost expected to be cheaper than other options.	Possible
	Cons	• Will require a number of internal resources to support.	
Hybrid Commission	Pros	• Ministry integration platform and other core process delivery is already in place. • Key IP and Hira product direction is owned by Ministry. • Leverages Ministry capability supplemented by external development partners. • Cost *expected* to be cheaper than other options.	Recommended
	Cons	• More knowledge is required to understand what items could be commissioned.	

Appendix 8: Change and Adoption Summary Brief

Need for Investment

The Change and Adoption project is a supporting project which has been designed to enable the realisation of benefits from the other six tranche 1 projects. This investment is required to support Service Adoption, Innovation and Sector Onboarding.

Table 49: Change and Adoption Investment Objectives[38]

Investment Objective	Current and Future State
Innovation and transformation across the health ecosystem is accelerated	**Current state:** There is poor collaboration across the health, wider government and private sectors, with limited sharing of data between organisations. It is difficult/impossible to get a complete view of a consumer, as their data is held in numerous locations in differing formats. Accessing this data is time consuming and onerous, requiring communication with multiple providers. Inability to access data is constraining innovation and continuous improvement. **Future state:** Opportunities for innovation and transformational change will emerge as Hira services are adopted in new and exciting ways, rather than being identified and led by the programme.
To incentivise sector participants and the market to adopt Hira services	**Current state:** This capability does not currently exist. **Future state:** Frameworks to support and incentivise use of services delivered by the programme. These can be used to develop an ongoing funding model based on value.
To assist vendors with change management activities to accelerate onboarding of Hira services	**Current state:** There is poor collaboration across the health, wider government and private sectors, with limited sharing of data between organisations. **Future state:** Hira intends to lead the public sector in equity by design. Equity is not considered after a product or service is designed, it is included front and centre, through co-design.
To deliver literacy and inclusion initiatives to support consumers and providers to access and use Hira services	**Current state:** There is basic signposting in place with a lot of siloed information. **Future state:** People will trust online services and have the digital literacy to manage personal information and understand and avoid scams, harmful communication and misleading information. Curation of, and signposting to, trusted health services and information
To collaborate with community groups and Iwi to drive uptake and develop roadmap for Hira services	**Current state:** Current Digital Services are developed with a technology and Ministry focus. **Future state:** The programme will develop an approach for managing change which is consumer-centred, builds capability and capacity, supports active learning and fosters collaboration.

Key Dependencies

This project has no specific dependencies.

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[38] No current state/future state analysis is provided as current state is not applicable, and future state is that the project would be undertaking the change and adoption activities required to support Hira uptake.

Scope

The project scope includes:

- **Service Adoption**: engagement with community and other government agencies, service and user design experience, digital literacy and inclusion, supporting service uptake for consumers and independent providers.

- **Innovation**: utilising funds and business partner engagement with frontier vendors to identify and support Digital Health transformation.

- **Sector onboarding:** commercial and commissioning arrangements, change management with vendors, business partner relationship management, and allocation of sector change fund identified by change managers.

The project scope excludes training health workers in the provider portal and fund the sector for new PAS systems.

Options Analysis and Recommended Approach

Table 50: Change and Adoption Implementation Options Analysis

		Analysis	Decision
1: Big Bang	Pro	• Targeted change delivered in a short period of time, requiring fewer resources overall.	Rejected
	Cons	• Change and adoption activities will be ongoing and targeted as required to support other projects; a 'big bang' will not complement this approach. • Increased capacity required to support all three elements (sector onboarding, Innovation and service adoption) all at the same time.	
2: Incremental Rollout	Pros	• The sector, innovators and those consuming each of the services will be continuously engaged at their appropriate time. • Engagement will be prior to any new product or service being made available, with sufficient lead in time. • Change agents will be able to be developed.	Recomm-ended
	Co	• The feeling of constant change happening over a long period of time needs to be managed.	

Table 51: Change and Adoption Funding Options Analysis

		Analysis	Decision
1: Crown Funding	Pros	• Service is an enabler for all Hira services. This restricts the ability to implement a funding model involving Private funds. • Decreasing the digital divide is a key focus of the programme and is a focus within the Change and Adoption workstream and that is best achieved through Crown funding alone.	Recomm-ended
	C	• Restricts the ability to implement a funding model involving Private funds.	
2: Crown $ + Other	Pros	• Ability to easily leverage key capability at a reduced rate. • Potential to cost Crown less over life of product.	Rejected
	Cons	• Will not address equity concerns. • May limit Ministry's ability to roadmap for the future.	

Description	In-house	Hybrid Development	Hybrid Commission	Outsource Development	Outsource Commission
Investment Objectives					
Innovation and transformation across the health ecosystem is accelerated by Q2 2022	5	6	7	5	6
To incentivise sector participants and the market to adopt Hira products and services, by Q2 2022	7	7	6	3	3
To deliver literacy and inclusion initiatives to support consumers and providers to access and use Hira products and services, by Q2 2022	5	4	6	3	3
To collaborate with community groups and Iwi to drive uptake and develop roadmap for Hira products and services, by Q2 2022	3	5	7	3	4
To assist vendors with change management activities to accelerate onboarding of Hira products and services, by Q2 2022	7	6	7	5	6
Critical Success Factors					
Strategic Fit & business needs	6	6	7	3	4
Value for Money	6	5	6	3	4
Supplier capacity and capability		5	7	4	5
Achievability	5	4	6	4	5
Affordability	7	6	6	3	3

Table 53: Change and Adoption Delivery Options Shortlist Analysis Summary

		Analysis	Decision
Hybrid Develo	Pro	• Leverages Ministry capability supplemented by external partners. • Key IP and product direction is owned by the Ministry.	Possible
	C	• Achievability and affordability are lower than Hybrid Commission.	
Hybrid Commission	Pros	• Leverages Ministry capability supplemented by external partners. • Key IP and product direction is owned by the Ministry. • Strategically the best fit for enabling Hira to work with Iwi and community groups to deliver change.	Recommended
	C	• It will potentially cost less to do this in house.	

Appendix 9: Tranche 1 Consumer and Provider Journeys - Examples

BACKSTORY

The Turei are a Māori family who usually reside in Auckland. The father, Nikau, has recently had a coronary artery bypass graft and is currently taking a range of medications packed in blister packs to deal with high blood pressure and high cholesterol. It has been about a month since his surgery, and with Nikau starting to feel better, the family decides to take a short weekend trip to Rotorua.

Themes explored:
Out-of-area, equity, consent and control of information, medication misadventure, duplicate testing, allergies, hospitalisation, medication reconciliation, medical literacy

TOUCHPOINTS

" Accuracy of information is important. If someone's in hospital, they're overwhelmed because they're in a different environment. We can interview the patient, but they might overlook something important "

Provider, Interviews

Figure 26: Out of Area Hospitalisation

NIKAU

PREPARATION — The Turei leave on a trip to Rotorua but Nikau forgets his medications.

ALLERGIC REACTION — Nikau is unsure what meds he requires and receives meds he is allergic to. Nikau has an adverse reaction so his wife calls for help.

HOSPITALISATION & DISCHARGE — Nikau is treated at ED to resolve his allergic reaction and is then hospitalised, undergoing the same tests as his last visit.

FOLLOW-UP CARE — A new Care Plan is developed including the need for a community nurse to visit regularly to check on Nikau and the family.

Challenges & considerations

Preparation:
- Nikau and his family don't have a clear idea of how to effectively follow his Care Plan following discharge from hospital
- Nikau and his family don't know important information about his medication and the risks of not taking them
- Nikau has been putting off seeing his GP during COVID so his medications and dosages may not be up to date

Allergic Reaction:
- Out of location medical practitioners can't see what medication Nikau is taking
- The pharmacist hasn't yet registered for the ePrescription Service so is reliant on Nikau and his wife's recollection of his medication and medical history, which may not be accurate
- Private specialists and hospitals are on their own separate systems, which can make information sharing hard
- Nikau and his family don't know what he can and cannot take and don't realise that allergies are critical to communicate

Hospitalisation & Discharge:
- The Turei had heard about Healthline during the COVID outbreak but had never contacted them so they lack any prior knowledge of Nikau's Health Story, or recent surgery.
- Nikau's GP doesn't know that Nikau has been taken to ED and therefore cannot provide additional health information
- If unable to access medical history, ED staff must rely on Nikau or his wife's recollection to provide a current and accurate medications and allergies list
- The hospital care team does not have visibility on previous diagnostic tests that Nikau had done and therefore orders a duplicate test
- Nikau may struggle to recall or understand all of the info he is told on being discharged, given the clinical nature of discharge information

Follow-up Care:
- To effectively continue care, Nikau's GP must have access and visibility of the hospital discharge summary
- Nikau lacks clarity on his ongoing treatment and may be left to mostly self-manage

Figure 27: Out of Area Hospitalisation: Current State Experience

NIKAU

After his surgery Nikau has a virtual consultation with his Marae GP to discuss changes to his medications or dosages and to talk through what they are and what role they play in his Care Plan. Nikau is able to view and change who will regularly have access to certain information on his Health Profile, and any changes to this during his trip.

FAMILY / WHĀNAU

Through Nikau's Care Plan, the family have access to Nikau's current medication, dosage, why he is taking them, and what allergies he has, with strategies to help if he has any allergic reactions.

NIKAU

Before speaking with the pharmacist Nikau is able to check his Health Profile and check what medications and dosages he needs and when he should be taking them. The information is in clear, plain language where possible.

FAMILY

When Nikau calls Healthline feeling unwell, they flag on his Health Profile that he will be receiving out of area care and The Turei are notified of the benefits that may be available to them, such as subsidised accommodation and transport for whānau to and from the hospital to see Nikau.

NIKAU

Whilst recovering Nikau adds context to his Care Plan by attaching a photo of the reduced swelling. His GP is able to keep in touch with his progress remotely.

FAMILY / WHĀNAU

The whānau are able to see Nikau's progress and help ensure he is keeping up with his Care Plan.

PREPARATION **ALLERGIC REACTION** **HOSPITALISATION & DISCHARGE** **FOLLOW-UP CARE**

Figure 28: Out of Area Hospitalisation: Potential Future Community Experience

PREPARATION **ALLERGIC REACTION** **HOSPITALISATION & DISCHARGE** **FOLLOW-UP CARE**

MARAE GP

On a virtual consultation Nikau discusses his upcoming trip with his GP who ensures his medical details are up-to-date on his Health Profile and that his Care Plan is current. At the GP's recommendation Nikau's Health Profile is made accessible for out of area providers for the duration of his trip.

PHARMACIST

The pharmacist is able to see relevant information from Nikau's Health Profile including EPS data about his prescriptions and is alerted to any allergies Nikau may have. Based on what is prescribed the pharmacist is able to dispense a 72hr emergency supply of his medicines. Nikau's Health Profile is updated and his GP is notified.

HEALTHLINE

When Nikau feels unwell during his trip he calls Healthline who can access his current meds and allergies, and direct him to primary care if possible. Nikau's Health Story is updated and his GP is notified of the incident.

PATHOLOGIST

The pathologist has been approved for specialist access to Nikau's Health Profile to inform their decisions, adding notes to his account where applicable and updating his Health Profile.

EMERGENCY DEPARTMENT

ED clinicians treat Nikau based on access to his Health Profile. Upon discharge Nikau's Health Profile is updated with a transfer or care summary and his GP is notified. They assist Nikau to book an appointment with his GP for a virtual consultation.

MARAE GP

Upon Nikau's discharge his GP is able to see the notes and transfer of care summary against Nikau's Care Plan. During the virtual consultation the GP updates his Care Plan and prescribes medications for the remainder of the trip and books a face-to-face appointment on his return.

DIETICIAN

Nikau's dietician looks across Nikau's Health Profile and discusses his preferences before developing a personalised diet, and the weekly meal plan gets uploaded to his Health Profile. Nikau is able to sync his meal plan up to his Health Story where he can link this data to a cooking app and to his family's shopping list.

MARAE GP

When he returns from his holiday Nikau works with his GP to review his Care Plan and they decide that a dietician would be helpful in managing his cholesterol. The GP connects Nikau with a dietician in the area, and shares his updated Care Plan with them.

Figure 29: Out of Area Hospitalisation: Potential Future Provider Experience

Kelly

BACKSTORY

Kelly is a 17 year old Pākeha girl in her final year of high school who lives in Tokoroa with her dad following her parents difficult separation. She has always felt different from the rest of the girls and has started to question her gender identity, which is making her feel distressed and anxious. Relentless cyber bullying about her choice in clothes and the pressure of her final year are compounding and become too much for her. Kelly becomes uncharacteristically withdrawn and is anxious about going to school and after a few months she realises that she needs help. She doesn't feel comfortable opening up to her dad whose opinions are quite conservative. So she starts researching online and is quickly overwhelmed by options. After seeing an ad on Instagram she contacts a youth helpline anonymously.

Themes explored:
Youth and young people, mental health, LGBQTI, equity, consent and control of information, role of family, cyber bullying, online resources, virtual care

TOUCHPOINTS

- Rainbow Support Group
- Therapist
- Helpline
- Student Health Services
- School Counsellor
- Family GP
- Father
- Auntie
- Whānau /Family

" If you are experiencing mental distress, you might think it is not an issue for young people and that you are the only one experiencing mental health issues. "

Provider, Interview

Figure 30: Mental Health

KELLY

ADVICE
Kelly speaks anonymously with a youth support helpline and is given some basic information and techniques to manage her feelings. She feels like she now has a better understanding of what's happening but is struggling to keep on top of managing it herself and isn't sure where to turn next.

CRISIS/ INTERVENTION
Teachers notice that Kelly's marks were declining and she's been missing lessons at school, so they suggest she speak with the school counsellor. Kelly talks with the counsellor about how she's been struggling emotionally, the counsellor gives her some information and pamphlets and sends her back to class.

A few weeks later Kelly's father notices that she has taken a lot of sick days from school and is complaining about having trouble sleeping and stomach aches, so he takes her to see the family GP. As her father waits outside Kelly answers some questions about her mental health and wellbeing and it becomes clear that she needs further support. Kelly's GP informs her that she may be eligible for subsidised counselling. He hands her a referral, a form, and a list of options for therapists to contact.

TREATMENT
After a number of weeks Kelly finally finds a therapist she connects with, however there is a 3 week wait and they are located in another town making it hard for her to attend regularly. After completing a few of her counselling sessions Kelly starts to feel like she is back on track. She manages her anxiety during the final NCEA exam period, but is worried about how she will manage moving forward.

RECOVERY
Kelly's NCEA results come in and she accepts a place at Otago University. The pressure of first semester assessments and finding a new job increases her distress. Recognising she is in a downward spiral she reaches out to Student Health Services who inform her that she needs to change her enrolment from her home GP to access their services. Student Health connects her to their counselling service. Again, it takes Kelly a few tries and many weeks to feel comfortable with the person she is seeing, and finds herself having to tell her story all over again. They work together to develop a wellbeing plan for Kelly.

MANAGEMENT
Months later, without a support network around her, Kelly is finding it difficult to stay motivated and on top of her wellbeing plan. The counsellor supports Kelly in reaching out to a rainbow support group on campus, and suggests she reaches out to her Auntie, who lives in Dunedin, to get some support and space. Kelly feels like she still needs help maintaining healthy sleep habits.

Challenges & considerations

There is a lack of integration between the school and other services around Kelly, and data around students wellbeing is fragmented making it difficult to get a rich picture of a young person's wellbeing	Schools and universities are large institutions and individual students, like Kelly, can get lost in the noise - it's often on individual counsellors or teachers to spot students in need	This is the first time that the health system is aware of Kelly's situation and they lack visibility of Kelly's complex story up until this point from previous discussions she's already had	For diagnoses, labels, and other medical language to be valuable to patients they need to be preceded with context and be explained in a way that makes sense to the patient	There are a broad range of entitlements with complex criteria so for Kelly and her father it can be hard to navigate and they may end up missing something that could improve the way they receive care and support	Having someone within the whānau who has experienced a mental health event and is open about their experience can be an important catalyst in seeking help as well as ongoing management
The stigma around mental health events discourages people from seeking help or speaking up, particularly in certain community groups where religion and tradition is closely tied to health and wellness	Unless the counsellor is concerned for Kelly's safety they won't involve her father - Her privacy is protected but it means her father is completely unaware of her situation	Sharing her situation openly with a family GP is concerning for Kelly who's worried about her father or school knowing of her situation and how this may affect the way she is treated	Beyond basic identifiers such as male/female, or cultural background, the data that is currently collected does not capture contextual information that would truly reflect an individual, their story or preferences.	From puberty the incidence of mental health conditions increases, including depression, anxiety, psychosis and suicidal ideation; young people in New Zealand have one of the highest rates of suicide in the developed world.	Kelly, as a female student with sexual orientation concerns, is part of a group that has some of the highest occurrence of mental health symptoms in young people. If Kelly were of Māori, Pasifika, or Asian decent this would be even higher
	Lack of connection between learning support and mental health support meaning that neither has a complete picture of Kelly's overall wellbeing	In order to access student health, Kelly has to transfer/enroll between PHO, a step that creates a barrier to entry for those in need of help	The onus is largely on Kelly to take the next step creating a large and daunting experience for a young, anxious individual	People need help to navigate the complexity of the system - there are plenty of potentially unspoken steps and processes that need to be made explicit	

Figure 31: Mental Health Current State Experience

Figure 32: Mental Health Potential Future Community Experience

Journey stages: ADVICE · CRISIS/INTERVENTION · TREATMENT · RECOVERY · MANAGEMENT

KELLY — Using her Whānau Health Story as a starting point, Kelly creates her own Health Story and enters some basic info about herself and her situation. Anxious about who is seeing what, Kelly sets up some permissions to establish what types of providers and individuals will have access to certain parts of her record. This allows Kelly to receive personalised assistance whilst remaining anonymous.

FATHER — Since the separation, Kelly's father has been working on his Whānau Health Story with the family GP. The GP provides suggestions of strategies for how he can help Kelly to process the separation at home.

FATHER — With Kelly's permission her father is able to see specific elements of her Health Profile including her appointments and what service and assistance options are available to them.

KELLY — Kelly gives permission for the counsellor to contribute to her health information, and to reach out leading up to, or after significant moments. Following her sessions with counsellor, Kelly adds notes into her Health Story.

KELLY — While she waits for her first therapy session Kelly receives a link from the therapist to a range of apps to help her to manage and track her anxiety levels and sleeping patterns in the meantime. Reviews and ratings from "people like me" help Kelly to find the right ones for her.

KELLY — Prior to her first appointment Kelly completes an online self assessment about what she would like to talk about. Kelly logs in to her Health Profile to view or reschedule her regular therapy sessions which she attends virtually or in-person depending on whether her father can drive her there or not. Kelly opts in to receive reminders the day before her appointment. Kelly updates her permissions so her therapist can inform the GP and school counsellor of her progress.

FATHER — Kelly's father is kept up to date with her progress in attending her course of sessions and receives some methods to assist at home.

KELLY — After arriving at University, Kelly updates her address and is prompted to shift her enrolment to Student Health Servic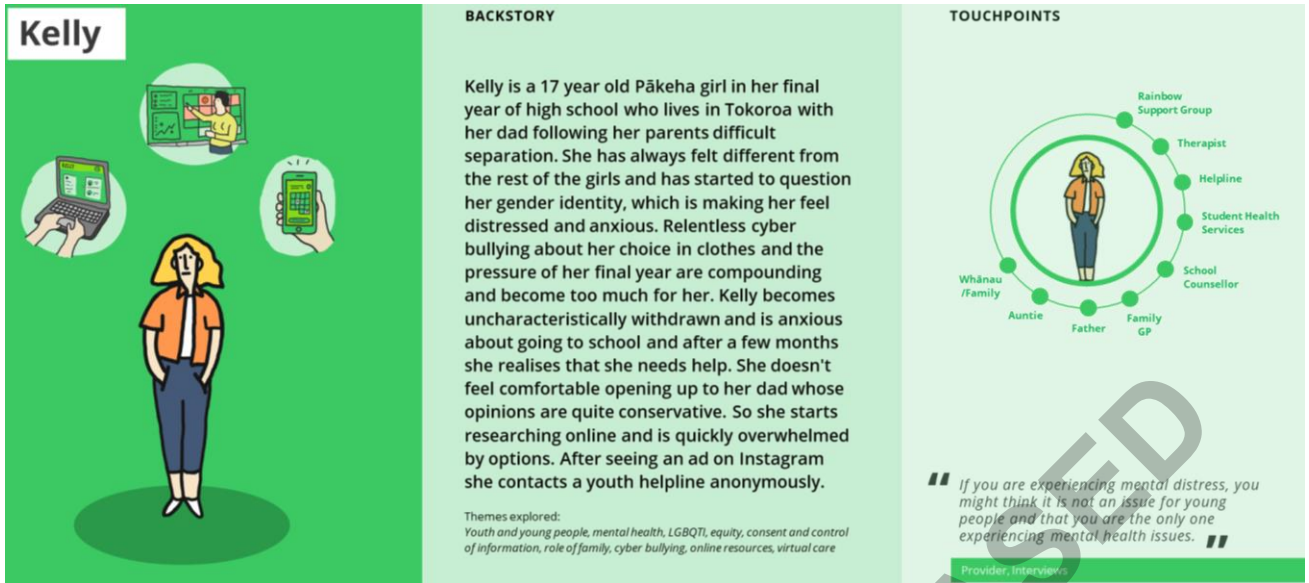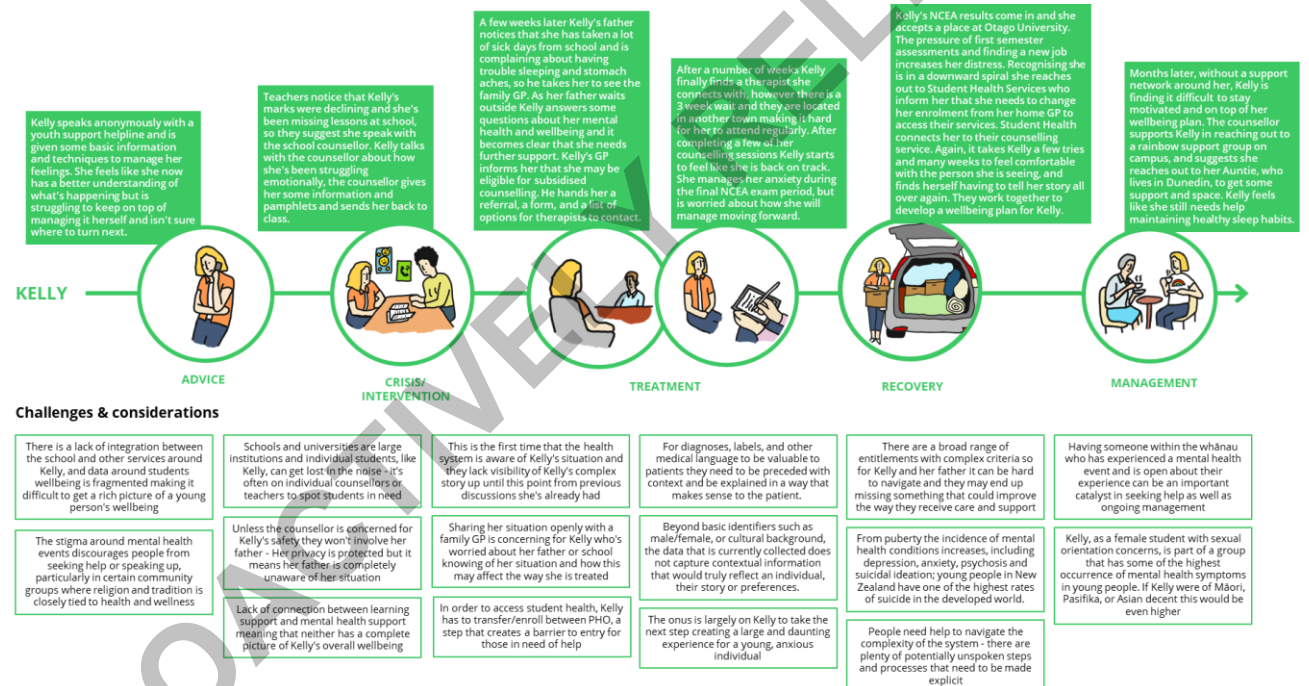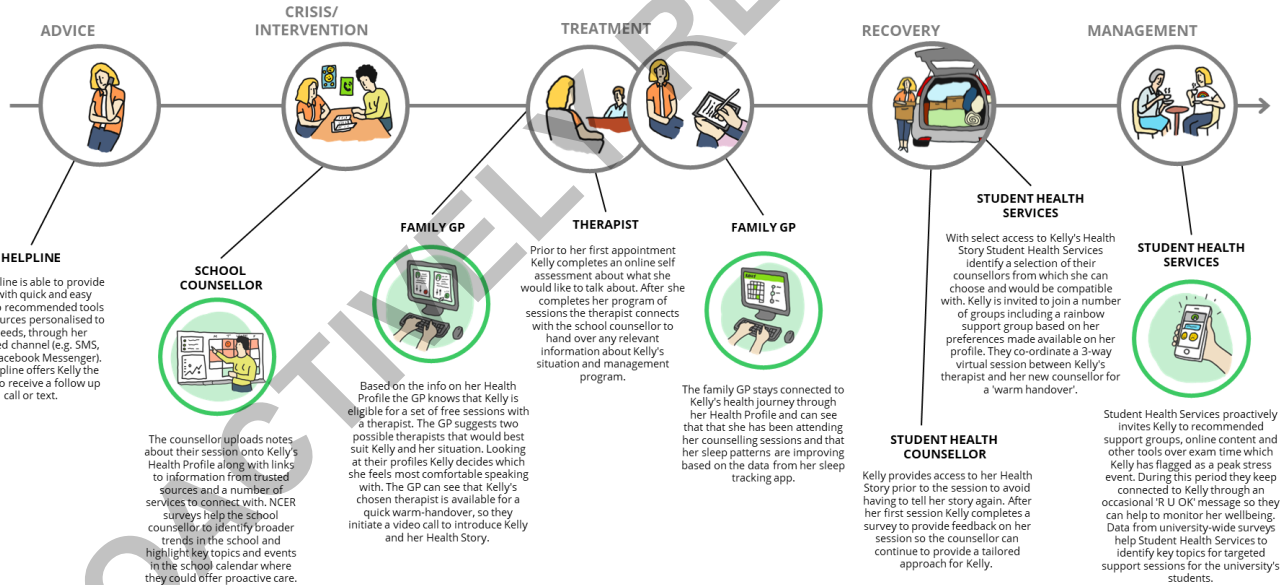es. She is notified of the service and assistance options available to her now that her living situation has changed and receives her community services card. To help her decide which counsellor will be best for her Kelly views the feedback and profiles of the counsellors identified by Student Health Services.

WHĀNAU — Kelly gives her aunt & best friend from the Rainbow Support group specific visibility of her counselling schedule and wellness app data (e.g. sleep and fitness data) so that they can keep her accountable and support her if she needs it. Kelly has an agreed plan with her Aunt to help her get back on track with sleep, which notifies her if Kelly's sleep levels are trending downwards.

KELLY — Kelly is notified of the newly announced services and assistance options that she is eligible for. Kelly connects her wellness apps to her Health Profile, building a more holistic Health Story and helping her to understand how her sleep is impacting her overall wellbeing.

Figure 33: Mental Health Potential Future Provider Experience

Journey stages: ADVICE · CRISIS/INTERVENTION · TREATMENT · RECOVERY · MANAGEMENT

HELPLINE — The helpline is able to provide Kelly with quick and easy access to recommended tools and resources personalised to her needs, through her preferred channel (e.g. SMS, email, Facebook Messenger). The Helpline offers Kelly the option to receive a follow up call or text.

SCHOOL COUNSELLOR — The counsellor uploads notes about their session onto Kelly's Health Profile along with links to information from trusted sources and a number of services to connect with. NCER surveys help the school counsellor to identify broader trends in the school and highlight key topics and events in the school calendar where they could offer proactive care.

FAMILY GP — Based on the info on her Health Profile the GP knows that Kelly is eligible for a set of free sessions with a therapist. The GP suggests two possible therapists that would best suit Kelly and her situation. Looking at their profiles Kelly decides which she feels most comfortable speaking with. The GP can see that Kelly's chosen therapist is available for a quick warm-handover, so they initiate a video call to introduce Kelly and her Health Story.

THERAPIST — Prior to her first appointment Kelly completes an online self assessment about what she would like to talk about. After she completes her program of sessions the therapist connects with the school counsellor to hand over any relevant information about Kelly's situation and management program.

FAMILY GP — The family GP stays connected to Kelly's health journey through her Health Profile and can see that that she has been attending her counselling sessions and that her sleep patterns are improving based on the data from her sleep tracking app.

STUDENT HEALTH SERVICES — With select access to Kelly's Health Story Student Health Services identify a selection of their counsellors from which she can choose and would be compatible with. Kelly is invited to join a number of groups including a rainbow support group based on her preferences made available on her profile. They co-ordinate a 3-way virtual session between Kelly's therapist and her new counsellor for a 'warm handover'.

STUDENT HEALTH COUNSELLOR — Kelly provides access to her Health Story prior to the session to avoid having to tell her story again. After her first session Kelly completes a survey to provide feedback on her session so the counsellor can continue to provide a tailored approach for Kelly.

STUDENT HEALTH SERVICES — Student Health Services proactively invites Kelly to recommended support groups, online content and other tools over exam time which Kelly has flagged as a peak stress event. During this period they keep connected to Kelly through an occasional 'R U OK' message so they can help to monitor her wellbeing. Data from university-wide surveys help Student Health Services to identify key topics for targeted support sessions for the university's students.

Scenarios have been developed for each of following personas.

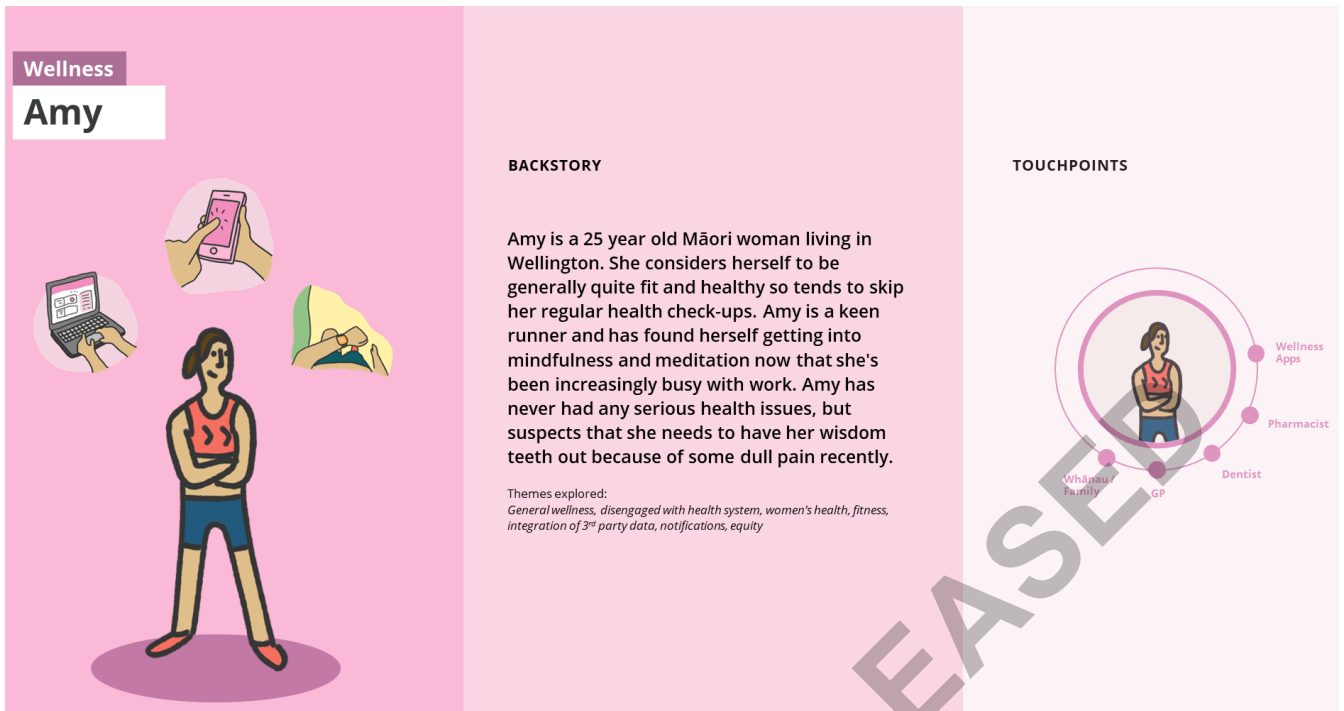Figure 34: Chronic and Complex Condition

Figure 35: Aged Care

Wellness

Amy

BACKSTORY

Amy is a 25 year old Māori woman living in Wellington. She considers herself to be generally quite fit and healthy so tends to skip her regular health check-ups. Amy is a keen runner and has found herself getting into mindfulness and meditation now that she's been increasingly busy with work. Amy has never had any serious health issues, but suspects that she needs to have her wisdom teeth out because of some dull pain recently.

Themes explored:
General wellness, disengaged with health system, women's health, fitness, integration of 3rd party data, notifications, equity

TOUCHPOINTS

Wellness Apps

Pharmacist

Dentist

Whānau / Family

GP

Figure 36: Wellness

Parent & Child

Raewyn

BACKSTORY

Raewyn is a Pākeha person in their early 30's who is currently unemployed. Raewyn lives alone in unstable accommodation after leaving a violent partner. Raewyn has struggled with alcohol and drug addiction issues in the past and has previously had an unplanned pregnancy which resulted in a child who Raewyn's auntie looks after most of the time. Since then, Raewyn has been trying to get back on their feet. After feeling nauseous for a few days Raewyn suspects another pregnancy and is worried about coping alone.

Themes explored:
Parenthood, immunisations, social determinants of health, post-natal depression, linking social data with health data, allied health provision, navigating complex services and providers

TOUCHPOINTS

Community Pharmacist

Local Parents Group

Well Child Provider

Social Worker

Plunket Nurse

GP

Midwife

Care Team

Auntie

Figure 37: Parent and Child

Appendix 10: Tranche 1 Benefits

The following summary of quantified financial benefits information is collated from the Tranche 1 Benefits Plan[39]. Quantified financial benefits are NOT cash releasing. Financial estimates are provided only as an indication of the expected value of the investment.
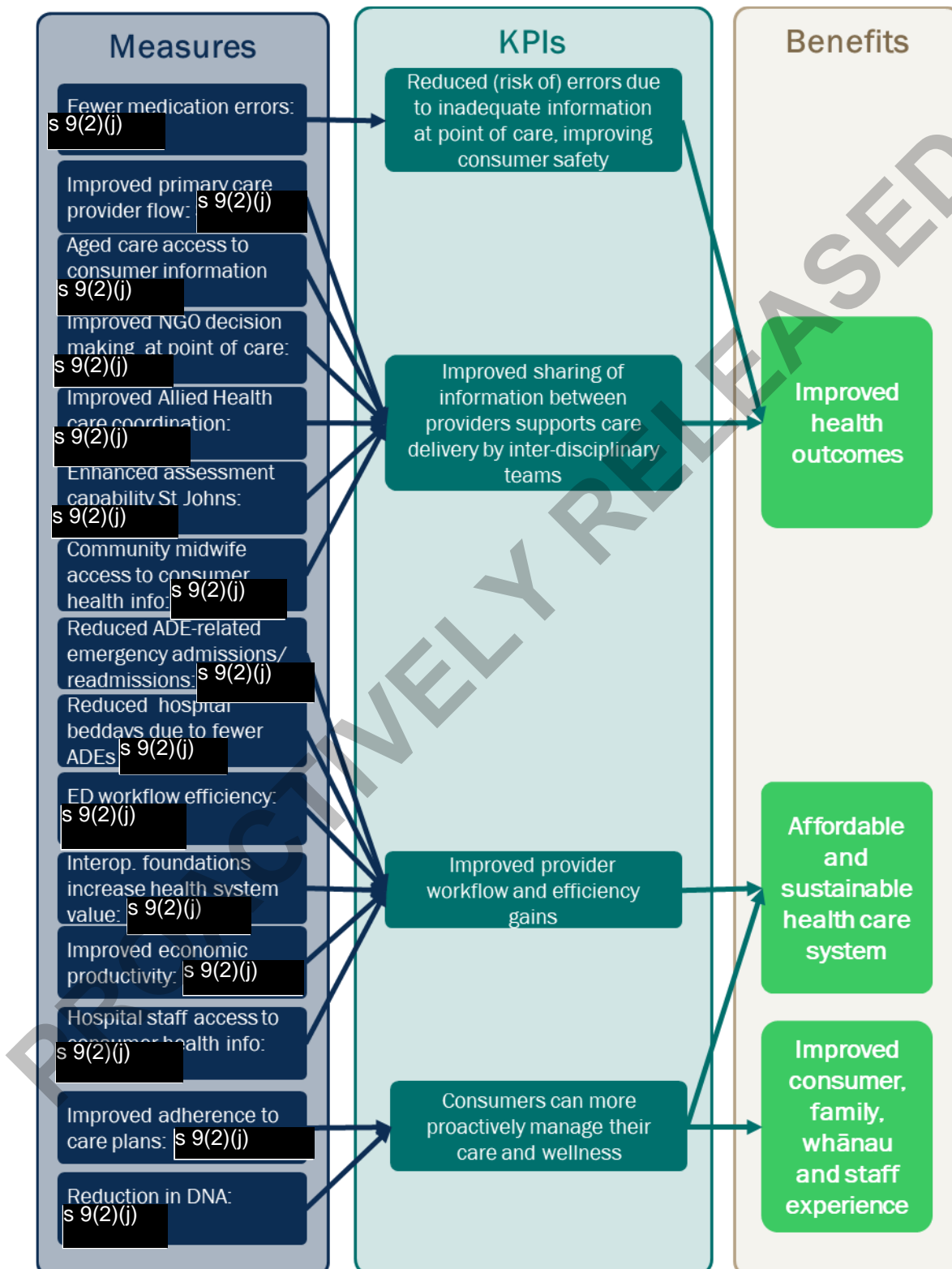
Figure 38: Tranche 1 Quantified Financial (not Cash-Releasing) Benefits

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[39] Hira Tranche 1 Benefits Plan v1.3 27 May 2021

Health Domain: Benefit	KPI	Impact Description (measures)	Who is Affected	Magnitude of Impact	Realised
		Reduced (risk of) errors due to inadequate information at point of care, improving consumer safety	Fewer medication errors	Health and disability system providers and consumers.	**Baseline:** 2019 no. of adverse drug event (ADEs) 2,688 **Target:** 8% reduction in ADEs (215): s 9(2)(j) **How big:** High[40]	Post full implementation of Tranche 1
Improved health outcomes	Improved sharing of information between providers supports care delivery by inter-disciplinary teams	Improved primary care provider flow	Health and disability primary care providers and consumers	**Baseline:** 3,746 GPs saving 5minutes/day **Target:** s 9(2)(i) **How big:** High	Post full implementation of Tranche 1
		Aged care access to consumer information	Health and disability aged care providers and consumers	**Baseline:** 647 Aged care providers saving 1 hour/week **Target:** s 9(2)(i) **How big:** High	Post full implementation of Tranche 1
		Improved NGO decision making at point of care	Health and disability NGO health providers and consumers	**Baseline:** 2,210 health NGOs saving 1 hour/week **Target:** s 9(2)(i) **How big:** High	Post full implementation of Tranche 1
		Improved allied health care co-ordination	Health and disability allied health providers and consumers receiving stroke rehabilitation	**Baseline:** 11,000 stroke victims with 3 hours allied health care **Target:** s 9(2)(i) **How big:** High	Post full implementation of Tranche 1
		Improved assessment capability by St Johns	Health and disability ambulatory / first responder providers and consumers	**Baseline:** 400,000 St Johns ED admission saving 5mins/admission **Target:** s 9(2)(i) **How big:** High	Post full implementation of tranche 1
		Community midwife access to consumer primary, NZePS and COVID-19 health information	Health and disability maternity providers and pregnant consumers and their family-whānau	**Baseline:** 1,353 LMCs saving 30minutes/day **Target:** s 9(2)(i) **How big:** High	Post full implementation of tranche 1

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[40] The evidence and literature underpinning each of the 'magnitude of impact' targets can be found in the Hira Programme BRM Strategy & Plan Appendix 7 Benefits Calculations and Appendix 8 Benefits Literature Review.

Health Domain: Benefit	KPI	Impact Description (measures)	Who is Affected	Magnitude of Impact	Realised
Affordable and sustainable health care system	Improved provider workflow and efficiency gains	Reduced ADE related emergency admissions/ readmissions	Health and disability providers and consumers	**Baseline:** No. + cost of acute ADE admissions/ readmissions **Target:** s 9(2)(i) **How big:** High	33% post full implementation of tranche 1 66% by end of tranche 2 100% by end of tranche 3
		Reduced hospital bed days due to fewer ADEs	Health and disability providers and consumers	**Baseline:** No. + cost of ADE related bed days **Target:** s 9(2)(i) **How big:** High	33% post full implementation of tranche 1 66% by end of tranche 2 100% by end of tranche 3
		Emergency department workflow efficiency	Health and disability providers and consumers	**Baseline:** ED teams' costs of looking for consumer information **Target:** s 9(2)(i) **How big:** High	Post full implementation of tranche 1
		Interoperability foundations increase health system value	Health and disability providers and systems	**Baseline:** cost of duplicated data **Target:** s 9(2)(i) **How big:** High	Post full implementation of tranche 1
		Improved economic productivity	Health and disability providers and systems	**Baseline:** cost of duplicated manual systems and effort **Target:** s 9(2)(i) **How big:** High	Post full implementation of tranche 1
	Consumers can more proactively manage their care and wellness	Improved adherence to care plans	Health and disability providers and consumers	**Baseline:** cost of disparate consumer health record systems **Target:** s 9(2)(i) **How big:** High	50% post full implementation of tranche 1 75% by end of tranche 2 100% by end of tranche 3
		Reduction in DNAs	Health and disability providers and consumers	**Baseline:** 2020 total DNAs 584,602 **Target:** s 9(2)(i) **How big:** High	Post full implementation of tranche 1
Improved consumer, family, whānau and staff experience	Improved provider workflow and efficiency gains	Hospital staff access to consumer information	Health and disability providers and consumers	**Baseline:** 1.2m hospital admissions saving 5mins/admission **Target:** s 9(2)(i) **How big:** High	Post full implementation of tranche 1
	Consumers can more proactively manage their care and wellness	Improved adherence to care plans	As above		
		Reduction in DNAs	As above		

Appendix 11: Privacy Impact Assessment

Hira will potentially enable a very wide range of data about consumers to be collected and shared. The benefits of this increased access to health information must be balanced carefully against privacy risks.

The Ministry completed a Privacy Impact Assessment (PIA) on the Hira programme in May 2021. The PIA considers the privacy risks and how they will be mitigated. It focuses on tranche 1 and covers:

- The personal, health and demographic information that may be involved in Hira at a high level.

- How individuals may access their own information.

- How sharing may occur in future.

- Where and how the information is to be collected and stored.

Tranche 1 will include access for providers and consumers to health information such as demographics, enrolled practice, Community Service Card entitlements, prescribed and dispensed medicines, COVID-19 immunisation status, and summary primary care data (GP only) through multiple consumer and provider channels. As part of tranche 1, consumers will have the ability to update information held in the national health index (NHI), such as their contact details.

The PIA makes the following recommendations:

- **Privacy risks** must be identified and mitigated on an ongoing basis, before data begins to be collected, stored or used. This includes engaging with communities to ensure a consumer perspective. Māori data sovereignty issues must be canvassed and incorporated.

- **Strong governance** is needed to manage privacy and security risks, including the risk of information available through Hira being used for purposes not originally intended. Consumers must be fully informed about the use of their information and agree to this use. The Social Licence for the overall project will be key in assisting with management of the Hira features.

- A **purpose statement** must be developed for the Hira programme, so consumers, providers and the wider health sector have a clear understanding of how Hira will operate, and how information will be used. Health service providers must understand how and when they are able to use information, and the limitations on the use of identifiable information.

- The Ministry will develop **information for consumers about how information will be collected** via Hira. It will include what information collection is voluntary, and what is mandatory. This information will be easily available to consumers. It will be in simple, jargon-free language, and available through a number of mediums and channels. It will be updated as needed.

- The Ministry will ensure there are **appropriate restrictions on access to health information**. It will continue to identify and incorporate features that enhance privacy. This includes audit tracking of access to records (tbc).

- The Ministry will ensure **appropriate security processes** are in place, including certification and authorisation, cloud risk assessment, and independent security testing. Risks identified will be resolved or mitigated, and this will be applied across all Hira services, including to third-party products.

Information Flows

It is anticipated that most information flows will be managed via fast health care interoperability resources application programming interfaces for exchanging electronic health records (FHIR APIs). Potential information privacy risks and mitigations relating to information fields will be identified before Hira is enabled, and before new information or new users are added. It is recommended that a framework is developed for this purpose.

Information Storage

Hira will include portals, FHIR APIs, existing data bases and the new MDR, event notification systems (for subscribed systems) and other relevant features. Data will be sourced from different provider organisations, including from health provider data repositories, Ministry of Health national systems and national NGO repositories. Hira is working closely with consumers and providers about their information sharing needs, and what they are comfortable with. It is important consumers have trust in sharing their health information, give consent, and understand how and why it is being used. Service providers must understand the boundaries and limitations of the availability, sharing and use of information.

Security

End-to-end encryption will be the default position for Hira platforms, along with strong access and authentication controls, data minimisation and regular security assurance activities. The architecture and subsequent designs will comply with the relevant sections of the Health Information Security Framework and New Zealand Information Security Manual. Planned privacy features include:

- Secure-by-design operational model and architecture.
- Information security and cloud risk assessments.
- Security operations centre.
- External audit and compliance.
- Data agency.
- 'Do not disclose' option.
- Non-functional requirements that will incorporate standards that must be met in development of Hira and its associated APIs.

The Ministry has begun work on technical data standards that will apply to personal health information. It will also design Hira to comply with:

- NZ Government API Implementation Guidelines.
- HISO 10064:2017: Health Information Governance Guidelines – August 2017.
- Health Information Privacy Code 2020.

Future Privacy Features

Potential future privacy services or features include:

- Specific features approved for the progress of tranche 1.
- Interactions between digital identity for consumers and Hira services.
- The ability for consumers to administer other users' accounts where they have appropriate authority.
- Potential sector innovations that may be optionally available to consumers participating in Hira activities.

The priority actions for Hira arising from the PIA are summarised in Table 55.

Table 55: Priority PIA Actions

Action	Planned Date for Completion
Continue the Social Licence activities to identify acceptable parameters for the Hira project	Prior to Go Live and throughout Programme
If Hira is required to store any information other than audit information this should be identified and reviewed (particularly if Hira will become a 'clinical' system at any point, allowing and retaining records to be created about individuals within Hira itself). Hira is not intended to be an electronic health record. Any decisions around cached information will be carefully considered in a future PIA.	Review throughout Programme
Set up plan for PIA stages throughout Tranche 1 (and subsequent tranches).	Throughout Programme
Continue the development and consultation on high level requirements to identify and mitigate privacy risks identified, and then monitor the manner of implementing into the software development to test that the intended requirements have been met.	Prior to Go Live and throughout Programme
Develop clear and comprehensive Privacy Statement and associated materials. Consider how this information might best be disseminated (including layered Privacy Statement, incorporating privacy recommendations into the Hira Consumer service, and other methods to enable information to be widely available in an accessible format to interested Consumers).	Prior to Go Live
Ensure appropriate training and Terms of Use are available for all potential Service Provider users of Hira.	Prior to Go Live
Develop a Framework to review all information to be included within Hira. This Framework will apply for the life of the Hira project and will be overseen by the Governance Group established to oversee Hira information.	Prior to Go Live
A developer certification/accreditation process will be developed, including Terms of Use, to ensure that any future products or third-party system connections are thoroughly reviewed (or meet standardised security requirements) before being able to connect to Hira offerings.	Prior to Go Live and throughout Programme
Ensure the Governance Group (appointed to review ongoing Hira privacy related issues) has appropriate Terms of Reference, and either membership of interested stakeholder representatives (or at least a consultation body formed for that purpose) to address Framework determinations and function creep oversight.	Prior to Go Live and throughout Programme
Continue the security focus with early engagement with the Ministry C&A processes, and independent security testing. Features already identified include: • Information security and cloud risk assessments. • Security operations centre. • Enabling Consumers to identify who has accessed their information and when. • 'Do not disclose' options.	Prior to Go Live and throughout Programme
Appointment of a Privacy Officer contact point for the project (with all users aware of who that contact is) will enable oversight to be managed on a national basis for the entire Hira. This could combine with a clear and readily available privacy breach process (to comply with 2020 Privacy Act changes) to assist to minimise the extent of any potential privacy breach.	Prior to Go Live and throughout Programme

Action	Planned Date for Completion
Map and identify all information flows and ensure that full end to end Hira processes will be able to operate as anticipated with the many systems that Hira will need to be able to connect to. All data elements should be identified for data provenance purposes.	Prior to Go Live and throughout Programme
Commence preparation of audit log reporting and management. This will include identifying what reporting will be available, who is to be responsible for reviewing audit records (whether within Hira or Service Provider environment), whether Consumer access is to be audited.	Prior to Go Live and throughout Programme

Appendix 12: Tranche 1 Risks Summary

The most significant risks for the tranche 1 projects are summarised in Table 56. The full analysis is captured in the individual project risk registers.

Table 56: Hira Key Risks – Tranche 1

	Risk Description	Mitigating Actions	Post-Mitigation Likelihood	Post-Mitigation Consequence
Tranche 1 Risks	If key projects and programmes external to Hira (such as the Ministry's Integration Programme and the Identity Project) do not deliver as planned, this may impact Hira delivery timeline, resourcing, adoption, privacy/security etc.	• The Hira Enterprise Architect has oversight of key enabler programmes. • Regular catch ups between programme managers to ensure alignment of expectations around deliverables and timing of delivery. • Hira representation on dependent Steering committees and or Governance where possible.	Possible	Moderate
	If competition for resource in the New Zealand labour market continues, this may mean that the programme is unable to meet its delivery timeframes.	• Additional effort will be placed on identifying key resource within New Zealand early and securing them for the duration required. • Modern ways of working will be used for any resources that can't be based in New Zealand, including the use of online collaborative tools and video conferencing facilities.	Possible	Moderate
	If capacity and critical resources are reprioritised onto other tasks (e.g. COVID-related), this may impact Hira's ability to deliver tranche 1 projects and value within the planned timeframe.	• Resourcing activities and planning are underway to make up the current capacity shortfall.	Unlikely	Moderate
	If there is a security or privacy breach in any project delivered by tranche 1 or an existing health system, the public may lose confidence (loss of social licence) in Hira and no longer use or adopt the services that it creates.	• Hira has a strong focus on all aspects of social licence. • Hira standards and designs will help ensure that tranche 1 services are secure and private by design. • Third party involvement in accessing Hira data will be permitted only after an accreditation process and will be reassessed frequently. • Onboarding on to the Hira ecosystem will require stringent certification and adherence to standards. • Projects will follow the certification and accreditation process. • Digital Enablement programme will look to provide additional uplift and sector security capability.	Possible	Moderate

	If the uptake of Hira tranche 1 services is poor or not as expected, then the expected benefits will not be realised.	• Co-design services with Māori and consumers to help shape the opportunities and problems to deliver consumer-driven and value-based prioritisation.
		• Utilise dedicated tranche 1 funds to:
		   o Incentivise sector onboarding to drive adoption of tranche 1 services.
		   o Leverage existing investments and infrastructure.
		   o Provide innovation funds for ongoing enhancements and improvements to the ecosystem, aligned with tranche 1 services.
			Unlikely	Minor

	If the uptake of Hira tranche 1 services is higher than forecast, then the ongoing cost for running the services will be higher than budgeted.	• Constant monitoring of benefit lead indicators to consumers and providers, and accordingly prioritising investment.	Unlikely	Minor
Data Service	If the data quality is poor, the information will be of minimal value to consumers, reducing uptake and impacting consumer confidence.	• Primarily using Ministry datasets. • Working with owners of Ministry datasets to ensure quality is acceptable. • Validation before data is exposed. • Clearly defined process for support and data quality issues.	Possible	Minor
	If data is not sufficiently secured, this may deter uptake and/or result in a breach.	• Work with dataset owners to ensure users can only access data for which they are authorised. • Stringent certification processes to be implemented for external developers. • Systems will be penetration tested and required to go through Certification and Accreditation.	Possible	Moderate
	If datasets that are presented are not sufficiently complete, this may reduce the usefulness of the service and reduce uptake.	• Data will be sourced from multiple systems to maximise the completeness of the data presented. • Data service will commence with high-quality Ministry datasets and expand over time to incorporate additional datasets, as data is quality assured.	Unlikely	Minor
	If trusted data sources that are not controlled by the Ministry are not available, then there will be gaps in what is presented and the service will be of limited use.	• Focus on making existing sector sources of data available as Hira data services in tranche 1. • Stringent onboarding and certification process for trusted data providers covering system availability, security and service operations.	Possible	Moderate
Consumer Services / Provider Services	If the user onboarding experience is not optimal, users may elect not to use the Consumer/Provider Services.	• Service Design and User Experience testing to address this by determining a near frictionless onboarding experience. • Continuous Improvement principles of Hira will enable changes to be made quickly if this risk eventuated. • Ensure that Hira services are available via other channels.	Possible	Moderate
	If the user experience is poor or functionality is too limited this may limit uptake and value will not be generated.	• Consumer/Provider Services will evolve as additional datasets become available. These will be roadmapped and communicated to consumers. • User experience testing to focus on ensuring the flow is easy for consumers/providers to follow whilst adhering to web design principles. • Service Design activity to inform development backlog ensuing that prioritisation is focused on delivering value. • Ensure that Hira services are available via other channels.	Possible	Moderate
	If users are familiar with using another Consumer/Provider Service, they may not transition to the new service even if more value is unlocked.	• Clear roadmapping of future enhancements to consumers. • Work with market delivered services to ensure that they are fully leveraging additional services as they are delivered. • Ensure that Hira services are available via other channels.	Possible	Minor
	If a better alternative becomes available while the universal Consumer/Provider services is being developed, this may make the investment redundant.	• Development of the Consumer/Provider Services will cease whilst an assessment is undertaken to determine if development should continue. • Ensure that Hira services are available via other channels.	Possible	Minor
	If Hira does not proactively address the digital equity gap, this may get wider with a negative impact on people's health.	• There is potential for an increased equity gap in digital health literacy, as a consumer portal requires access to a digital device and the internet, which some people do not have (the	Possible	Moderate

			Possible	
		• 2020 Census found that 15 percent of households with school-age children did not have access to the internet). • The Ministry is working with iwi, consumers and other groups to minimise any equity gap related to Hira. For example, there has been engagement with consumers, whānau, iwi and communities with a strong focus on equity to identify the services that will be effective for those communities. • Broader government work such as the Digital Inclusion Blueprint and health literacy programmes undertaken by the Ministry of Health will contribute to this.		
Operational Services	If the Ministry does not have the capability, capacity or adherence to the preferred methodology to support the ongoing service, this could lead to a compromised user experience and reputational damage.	• A Resource Manager may be onboarded during programme establishment to define the capability and resource management plan. • Staff will be retrained into new roles and supported through the transition of operating models if capability gaps are identified. • An external partner may be sought to assist if the Ministry does not have the level of capacity or capability required to support the ongoing service.	Possible	Moderate
	If existing operational processes are not suitable for Hira then additional costs may be incurred to update processes, toolsets and uplift capability.	• Regular engagement with Ministry Information and Communication Technology and teams across the Ministry to achieve an understanding of existing operational processes. • An external partner may be sought to assist if the Ministry does not have suitable operational processes for Hira.	Possible	Moderate
	If there are business disruptions and/or system failure resulting from ongoing operations, this may lead to reputational damage and may compromise consumer confidence in Hira.	• Ensure that the programme incorporates appropriate and robust provisions for High Availability and Disaster Recovery processes.	Possible	Moderate
	If Hira is not able to consistently achieve its set performance targets, this could lead to an erosion in consumer and provider confidence as well as reputational damage.	• Establish concise performance management standards. • Continuous monitoring and alerting of all KPIs. • Ensure accurate data is being captured.	Possible	Moderate
	If Hira does not meet and uphold security and privacy requirements, the public may lose confidence in Hira and no longer use or adopt the services it creates.	• Hira security and privacy standards and designs will be built to ensure that Hira services are compliant. • Third party involvement in accessing Hira data will be permitted only after an accreditation process and will be frequently reassessed.	Possible	Moderate
	If quality standards are not upheld by the Hira programme, there is a risk of compromised consumer confidence leading to reputational damage and poor user experience.	• Regular engagement with teams across the sector to achieve an understanding of the quality standards required for useful, usable and desirable user experience. • Continuous engagement with consumers to improve user experience.	Possible	Moderate
Identity	If an identity is acquired by fraudulent use of another's identity, this may result in reduced uptake due to loss of social licence.	• Validate physical security features of presented evidence. • Validate personal details in the evidence with the issuer or other authoritative source. • Systems and processes secure and private by design.	Possible	Minor

Interoperability	If older systems and services are not improved to enable the support of event driven services, then this will mean value in the Hira programme will not be unlocked.	• Hira Change and Adoption project to work closely with data suppliers to ensure that improvements are made. • Stringent Certification process will be in place to ensure participants in the ecosystem are aligned to standards.	Likely	Minor
	If the Record Locator Service and the Event Notification Service are not configured correctly, then it could result in incorrect data being displayed to the Consumer or the Provider.	• Develop robust standards and certification processes. • Processes to be implemented to advise Providers when data stored in their systems is incorrect	Possible	Moderate
Change and Adoption	If sufficiently skilled resources are not available to lead the change that is required, this may impact time cost and quality.	• Secure a strong client-side team to support the development of the work that will be required as Hira takes shape. • Build a strong team, based on a combination of both external and Ministry people. • Undertake a full review of resource requirements (both capacity and capability) per stage (Project Plan link to resource review tasks).	Possible	Moderate
	If the vendor/supplier community does not have the capacity to assist with the change required, time cost and quality may be affected.	• Early and regular engagement with the vendor community to ensure they are kept abreast with timeframes and key decision points. • Regular release of information on a proactive basis. • Regular reports to the Minister with schedule of announcements that will continue to keep Hira profile in the public eye. • Where possible, industrial briefings for the vendor community and press releases to confirm key milestones.	Unlikely	Minor
	If change management approach is not fit for purpose for delivering change into health providers there will be an inconsistent experience for users of the ecosystem.	• Engage early and enable their own change agents to drive change (proposed hub and spoke approach).	Unlikely	Minor
	If the Hira programme and stakeholders cannot achieve the required culture and people change to support the digital operating model proposed by Hira, the programme delivery and benefits may not be realised	• Internal Change and adoption is a focus of the Hira programme. Internal communications and change is recognised as a critical mechanism in obtaining the shift required in internal culture. • Where possible Ministry and partner staff will be placed in the Hira programme so that they are a part of the changes. • Staff will be retrained into new roles and supported through the transition of operating models if capability gaps are identified.	Unlikely	Moderate

Appendix 13: Hira Research and Discovery – Human Centred Design Findings and Recommendations

Approach and Process

In September 2020, the Data and Digital group within the Ministry partnered with DIA to undertake a human centred design (HCD) process to establish problem statements within the Hira programme. This research approach builds on what is known whilst being intentionally naïve, to allow research participants the opportunity to share their experiences.

The Hira HCD process is summarised in Figure 39.

Background research
Incorporated existing research and insights to ensure the team didn't repeat effort.

Empathy interviews
Interviews with **25** consumers and practitioners from across the health system in New Zealand were completed.

Co-design workshops
Four workshops to share findings and co-design prototypes were carried out with a variety of consumers and health practitioners in **two** locations.

Design prototypes
Refining and aligning co-designed prototypes with problem statements for further testing.

Testing concepts
Testing sessions were undertaken with **17** individuals, including consumers, practitioners, and subject matter experts.

Figure 39: Research and Discovery Approach

The Hira HCD process included:

- **Background research**: incorporating existing research to minimise repeat effort.
- **Empathy interviews**: with consumers and practitioners from across the health system.
- **Co-design workshops**: to share findings and co-design prototypes.
- **Design prototypes**: refining prototypes for further testing.
- **Testing concepts**: with consumers, practitioners and subject matter experts.

The research and concept testing initiative started with the hypotheses that people want access to a single view of their data, to be empowered by self-determination through being able to update personal details and preferences and personalised health entitlement information.

Hira held 25 consumer korero and one group korero (Pasifika group). 28 participants engaged in ideation sessions and 17 participants in concept testing. Participants were from seven regions and included a range of ethnicities, with more than half of participants identifying as Māori. Among these participants were people with disabilities, carers of disabled people, parents, people with mental health lived experience, people aged 65+ years, people from the rainbow community, people with long-term conditions, people in rural and urban locations, people who rarely engage with the health sector, and allied health medical professionals.

The research explored how people access their health information, what information is important to them, and how that information is used. The research focused on three problem statements, as described in Figure 40.

Area one PoC 1 - Every person that uses NZ's health and disability support systems has an NHI record. The record contains an NHI number, demographics, and contact information. Today this information record is not visible or updatable by the person. Any updates can only be made via certain health professionals (e.g. GPs, hospitals).

Area two PoC 5 - Not everyone in NZ has access to a patient portal and those that do are limited in what they can see and do. This is an equity issue. There are complexities in the integration and aggregation of data and presenting meaningful information in a consumer channel.

Area three PoC 6 - Not all eligible people are aware that they are entitled to free or subsidised health services, prescriptions, and travel for treatment. This can lead to people putting off appointments and treatments or increased financial strain. This is an equity issue.

Figure 40: HCD Problem Statements

Findings

The initial research identified three core themes and considerations:

- **Relationships and networks:** Relationships with health practitioners and support staff are critical to the users of health services feeling well. The ability to build rapport, to express themselves and feel heard is being lost in today's health care system. People want and need the time to tell their story and connect with the practitioner in the room.

- **Transparency and trust:** Consumers expressed a need to have trust in the health system. Trust came from transparency, meaning they could see what practitioners were saying about them and their situation. Consumers want to be being given the best options and all the information they need in non-judgemental language, that is free of jargon.

- **Design with people:** Hira needs to identify and co-design with the 'power houses' in the community (e.g. iwi leaders, church elders) to ensure uptake of Hira services, as these are the people who will promote them and assist success.

The initial research also identified a surprising finding; that many people would not use a technological solution, no matter how easy it was to use, or how well it was designed. Some of this was as result of perceived barriers such as access to the internet, cost of data, low technical confidence or having English as their second language. Sometimes it was because people do not want to change and for others, they prefer in-person interactions in health care. This highlights the need to provide alternative channels and the autonomy of choice for New Zealand's diverse user groups.

Using ideas from the co-design workshops, the programme tested several low-fidelity prototypes with consumers and practitioners to see if the concepts resonated with people, which elements were considered important, and what would encourage uptake of these services. Part of this testing considered where in the health journey consumers want digital services, and where they prefer person-to-person services. The process validated what had been identified through the empathy interviews and co-design workshops.

Four concepts were developed to test the programme's thinking with consumers and practitioners, as depicted in Figure 41.
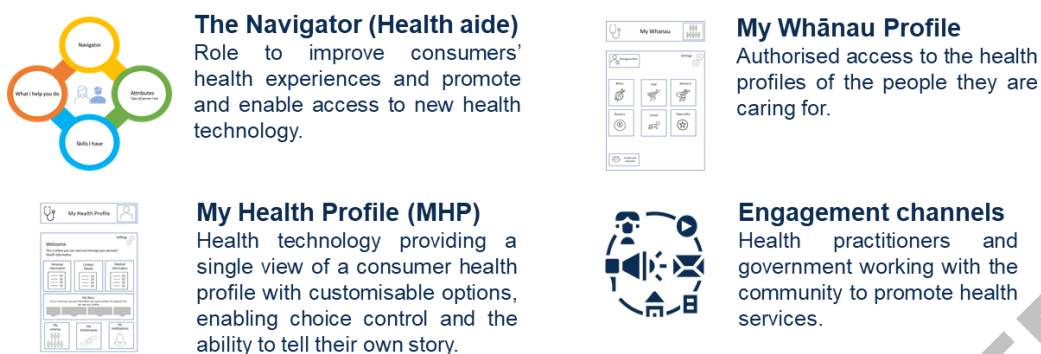
The Navigator (Health aide)
Role to improve consumers' health experiences and promote and enable access to new health technology.

My Whānau Profile
Authorised access to the health profiles of the people they are caring for.

My Health Profile (MHP)
Health technology providing a single view of a consumer health profile with customisable options, enabling choice control and the ability to tell their own story.

Engagement channels
Health practitioners and government working with the community to promote health services.

Figure 41: Concepts Tested through HCD Research

Recommendations for Tranche 1

Each of these concepts was explored to establish what was important to consumers and practitioners, to guide the Hira planning and prioritisation of investment. This resulted in the recommendation to prioritise four key features as early in the programme as possible, as shown in Figure 42.

One: Delegation and authorising access - the ability to view, update, and share information with permitted whānau and family (My Whānau Profile).

Two: Customisable content to increase choice and control, allowing people to share the parts of their story they believe is most important (My Health Profile).

Three: Wrap around services to support the introduction and buy-in of new technology for consumers and health practitioners and improve the end-to-end health care experience (Navigator and Engagement channels).

Four: Establishing meaningful relationships within communities that will foster trust in the health care system for consumers (Navigator and Engagement channels).

Figure 42: Recommendations from HCD Research

Appendix 14: Tranche 1 Financial Analysis

Key Financial Assumptions

Whilst the financial summary is robust based on the information available and the key assumptions noted, it is signalled that the cost is indicative only and is subject to a range of factors. The key financial assumptions for tranche 1 are summarised in Table 57.

Table 57: Key Financial Assumptions

Assumption	Comment
Capex/Opex	60% of costs are capital in first year (FY21/22).
Depreciation	Depreciation starts at the end of each tranche. Depreciation is calculated over 7 years straight line.
Sector Change	Costs estimated at 50% of people and services costs.
Capital Charge	5% per annum. Financing costs are based on the Capital Charge Rate for Crown Equity.
Contingency Rate	20%. This is based on the expectation that the iterative delivery and programme tranche approach will mitigate against a higher contingency allowance.
USD/NZD Rate	0.65
Financials	Outflows and expenditure (Capital or Operational) are presented as negative values. Inflows, benefits or funding are presented as positive values.
Programme modelled life	10 years
Change management	Includes funding for people and services to support the business and technology change management required to deliver services to target stakeholder groups (in Ministry, outsourced suppliers and sector organisations) and realise quantified benefits. Sector change required will be dependent on service design and based on a change impact assessment.
People (FTE and services)	Includes increases in FTE and use of service partners to deliver the programme. Costs based on estimated tranche 1 delivery effort, costed at market rates for categories of service design, integration, identity management, analysis and development and operational service delivery.
Technology platforms and services	Costed based on indicative platform costs for tranche 1 using market rates. All services costed on a strategy of reusable platforms, cloud delivery and "buy not build".
Infrastructure	Costed based on tranche 1 requirements and market rates for cloud platform services.
DE/NDE	Costs are predominantly Departmental Expenditure (DE), including Ministry FTE component, with the exception of the change management component which is expected to be almost entirely sector-focused (NDE).

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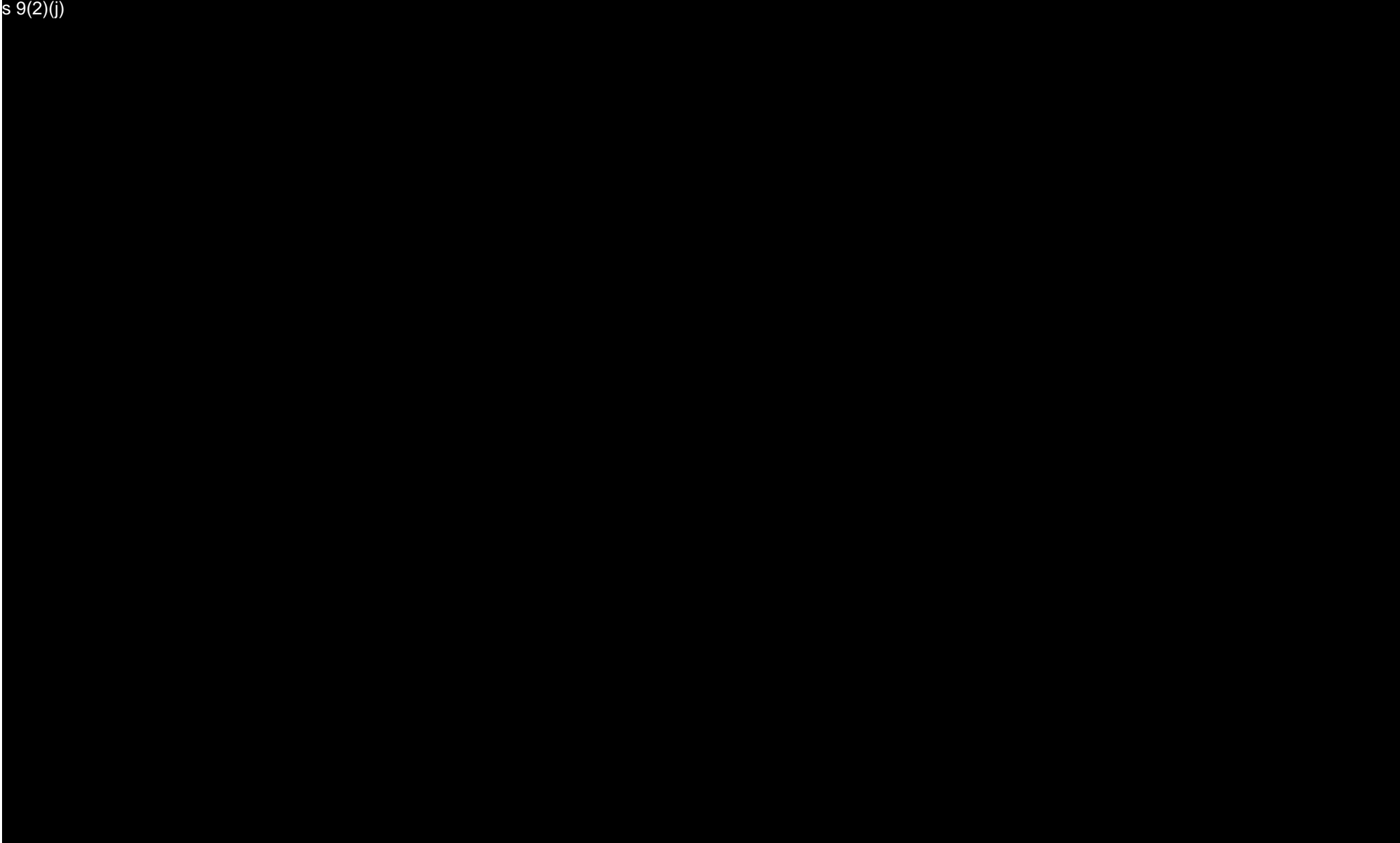
Appendix 15: Senior Responsible Owner's Letter

23 August 2021

To whom it may concern

Hira Tranche 1 Business Case

This detailed business case is a significant deliverable of the Ministry of Health. As the initial phase of the Hira investment, tranche 1 will deliver immediate benefits to consumers whilst creating a solid foundation for subsequent projects and tranches.

Tranche 1 of Hira will run for 30 months from the date of approval. It will provide access for providers and consumers to important health information such as demographics, enrolled practice, Community Service Card entitlements, prescribed and dispensed medicines, COVID-19 immunisation status and laboratory test results, and summary primary care data. As part of tranche 1, consumers will have the ability to update information held in the national health index (NHI), such as their contact and iwi details.

Access to health information in tranche 1 will be enabled through multiple consumer and provider channels (websites and apps), focusing on those that improve equity of access to health information and empower consumers and whānau to better manage their health and wellbeing.

Tranche 1 will also deliver technology enablers such as digital identity and interoperability services.

I confirm that:

- I have been actively involved in the development of the attached investment proposal through its various stages.

- I accept the strategic aims and investment objectives of this investment proposal, its functional content, size and services.

- The cost and benefit estimates of the proposal are sound and based on best available information.

Should the proposal be successful, I confirm that:

- The financial costs of the proposal can be contained within the agreed and available budget, subject to budget confirmation by Government.

- The Ministry will have the ability to pay for the services at the specified price level, subject to budget confirmation by Government.

- Suitable contingency arrangements are in place to address any current or unforeseen affordability pressures.

Should either these requirements or the key assumptions on which this case is based change significantly, revalidation of this letter of support should be sought.

Yours sincerely

Shayne Hunter
Deputy Director-General, Data & Digital

Appendix 16: Chief Financial Officer's Letter

23 August 2021

To whom it may concern

Hira Tranche 1 Business Case

This detailed business case is a significant deliverable of the Ministry of Health. As the initial phase of the Hira investment, tranche 1 will deliver immediate benefits to consumers whilst creating a solid foundation for subsequent projects and tranches.

I confirm that:

- I have been actively involved in the development of the attached investment proposal.

- I support the balance sheet conclusion detailed in the financial case of this proposal.

Yours sincerely

Fergus Welsh
Chief Financial Officer

Appendix 17: Quantitative Risk Assessment

Summary

The independent Quantitative Risk Assessment (QRA) shows that the programme proposed 20 per cent contingency is 2.2 per cent ($4.5 million) higher than the QRA modelled value at the 85th percentile across both capital and operating costs. The programme intends to retain the proposed level of contingency to provide an increased level of delivery confidence.

This means that there is only a 15 per cent chance that this figure will exceeded, providing decision makers with a high degree of certainty that the tranche 1 projects will be delivered within the funding allocated.

Adding 20% contingency to the base capital and operating values means that the programme has an 85% chance of delivering within the allocated funding.

Process

In May 2021, QRA was undertaken of the uncertainty in the tranche 1 business case cost estimate for the Hira programme. This was based on the Ministry's financial model as at May 2021. **There were some subsequent updates to the financial model that did not fundamentally change the QRA analysis. All values in this appendix are as per the May 2021 financial model.**

The assessment was carried out to determine the range of cost outcomes for the tranche, taking uncertainty into account, and to analyse the sensitivity of the cost to the uncertainties modelled. The assessment was facilitated by Mike Wood of Broadleaf Capital International.

The risk assessment process consisted of a quantitative analysis to evaluate the uncertainty in the major cost elements in the estimate and in cost drivers such as the project's duration, based on the risks that had been identified by the project team preparing the business case. The analysis utilised three-point estimates of the possible variation in each element under consideration, by considering optimistic, pessimistic and most likely scenarios for each one.

The outcome of the quantitative analysis was used in a Monte Carlo simulation model to evaluate the overall uncertainty in the capital operating, and total funding required. Monte Carlo simulation performs risk analysis by building models of possible results by substituting a range of values (a probability distribution) for any factor that has inherent uncertainty. It then calculates results over and over, each time using a different set of random values from the probability functions.

Risk Areas

Risks arise from sources of variation in the deterministic base cost and/or the associated assumptions and cost drivers. They may be positive or negative. For tranche 1 they arise from sources including uncertainty in:

- Programme resource costs.
- Cost of vendor resources.
- Change management.
- Programme duration.
- Costs of technology platforms and services.
- Infrastructure.

The programme duration uncertainty was negatively correlated in the QRA model with the uncertainties in the Technology Platforms & Services and Infrastructure costs and the Vendor resources costs for the Digital Services Experience. The latter two cost uncertainties were positively correlated to enable the simulation to run, by avoiding an inconsistency in the correlation matrix.

Results

Capital Costs

The 10-year capital base funding required as at May 2021 was $55.9 million (excluding contingency).

The most significant uncertainties affecting the capex simulation are the Enablers programme resources cost, the change management percentage of the programme resources costs, and the programme duration. The results are also moderately sensitive to the uncertainty in the vendor Digital Services Experience resources costs, and the uncertainties in the vendor Information Management & Analytics resources costs, the Data & Channels programme resources costs, and the vendor Integration & Access Services resources costs.

The QRA simulation distribution shows a mean value of $63.8 million, which is $7.90 million (14.1 per cent) above the base estimate of $55.9 million. The capex contingency sum initially allocated to the project would usually be this mean value of $7.90 million.

The 85th percentile value is $66.7 million. This percentile incorporates a significant proportion of the uncertainty modelled. This figure is $10.8 million (19.3 per cent) above the base estimate of $55.9 million, and the total capex contingency sought would therefore be $10.8 million if the 85th percentile is used. The difference between the 85th percentile and the mean is $2.91 million. This may be held at a governance or Joint Minister level (to be confirmed) to be used if required.

The contingency at the 85th percentile is just below the 20 per cent capex contingency ($11.2 million) used on the base estimate. The capital funding sought for tranche 1, including 20 per cent contingency, is shown as the green dotted line in Figure 43.
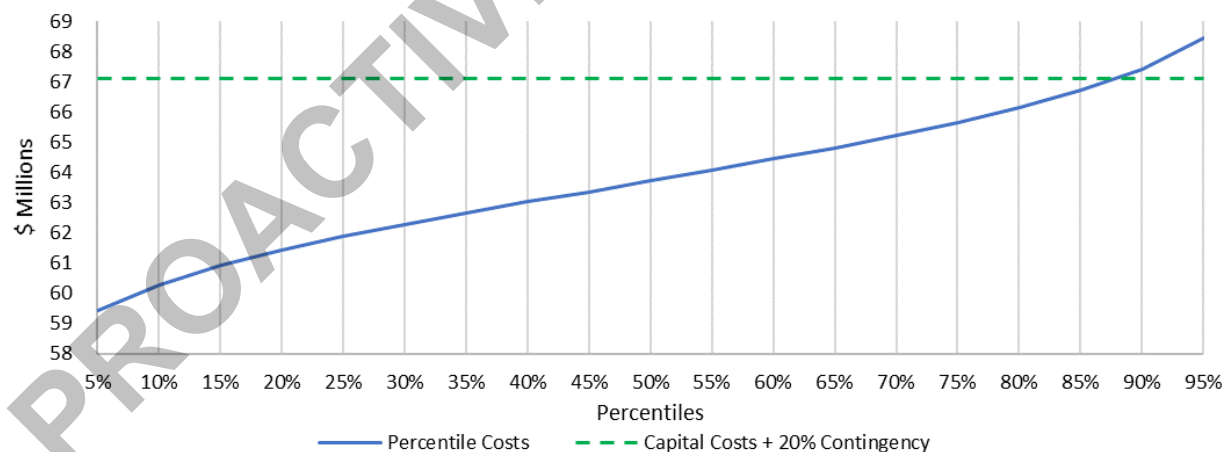

Figure 43: Capital Costs – Funding Required at Modelled Percentiles

Operating Costs

The 10-year operating funding required as at May 2021 was calculated at $155.6 million (excluding contingency, capital charge and depreciation).

The dominant uncertainty affecting the opex simulation is the cost of the Technology Platforms & Services and Infrastructure. At the extremities of the distribution where the correlations in the model have an effect, the most significant uncertainties are the programme duration and vendor Digital Services Experience resources costs.

The simulation of the 10-year operating funding required (excluding the capital charge and depreciation) shows a mean value of $175.7 million, which is $20.1 million (12.9 cent) above the $155.6 million base estimate value. The contingency sum initially allocated to the project would usually be this mean value of $20.1 million.

The 85th percentile of the operating cost (excluding the capital charge and depreciation), which incorporates a significant proportion of the uncertainty modelled, is $184.5 million. This is $28.8 million (18.5 per cent) above the base estimate of $155.6 million. and the total opex contingency sought would therefore be $28.8 million if the 85th percentile is used. The difference between the 85th percentile and the mean is $8.76 million. This may be held at a governance or Joint Minister level (to be confirmed) to be used if required.

The contingency at the 85th percentile is slightly below the 20 per cent opex contingency ($115 million) used on the base estimate. The operating funding sought for tranche 1, including 20 per cent contingency, is shown as the green dotted line in Figure 44.
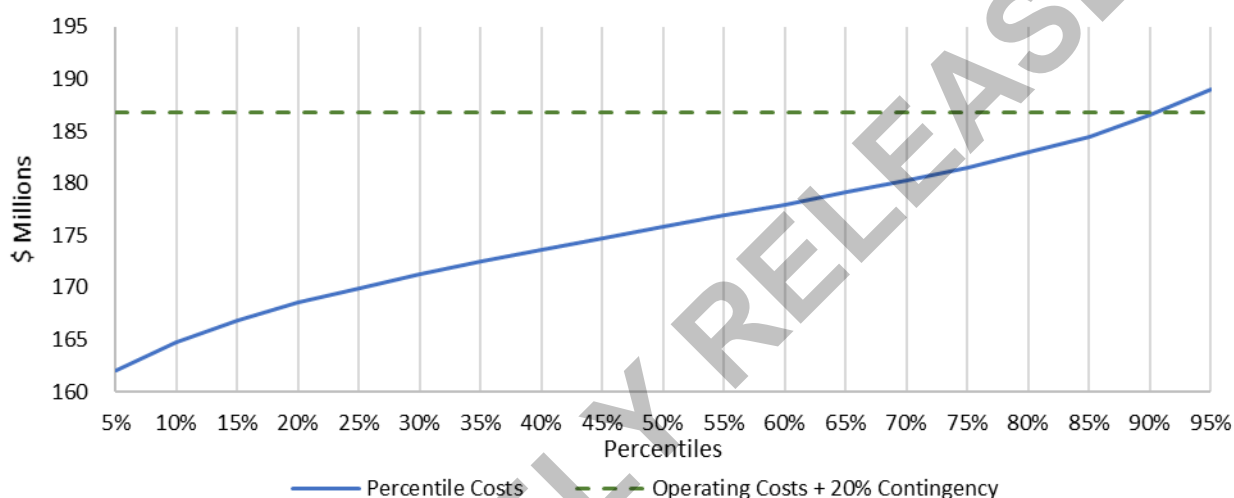

Figure 44: Operating Costs – Funding Required at Modelled Percentiles

Total Costs

Note that only the means of separate distributions may be summed arithmetically, so other percentiles in the total cost simulation will show different values to a simple summing of the capex and opex at those percentiles.
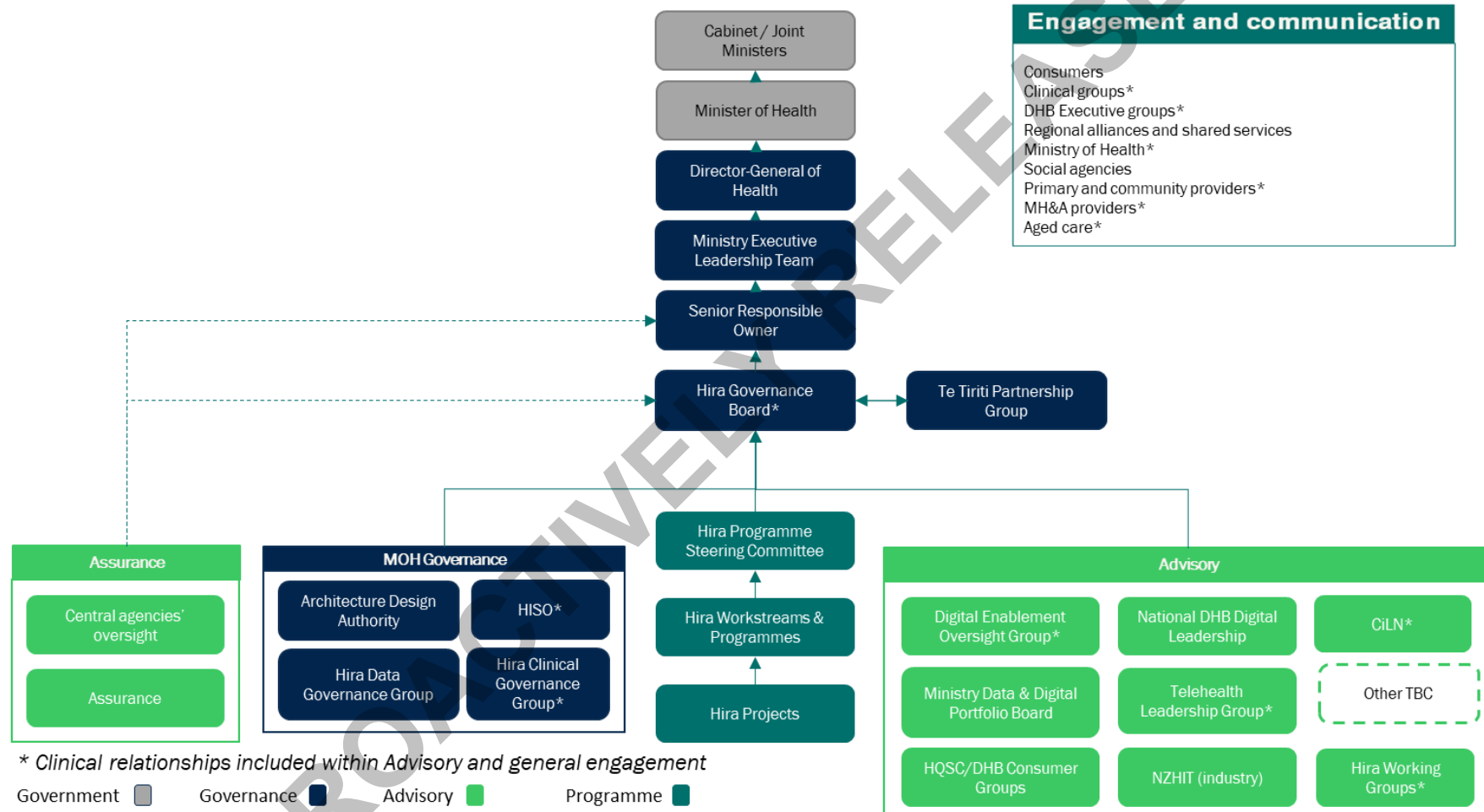
The most significant uncertainties affecting the total cost simulation are very similar to the operating cost uncertainties, because of its much larger proportion of the total cost compared to the capex.

The simulation of the 10-year total funding required (excluding the capital charge and depreciation), shows a mean value of $239.5 million. This is $28.0 million (13.2 cent) above the $211.6 million base estimate value (excluding the contingency allowance). The total funding required contingency sum initially allocated to the programme would usually be this mean value of $28.0 million.

The 85th percentile of the total cost distribution (excluding the capital charge and depreciation), which incorporates a significant proportion of the uncertainty modelled, is $249.4 million. This is $37.8 million (17.9 per cent) above the base estimate of $211.6 million. The total contingency sought would therefore be $37.8 million if the 85th percentile is used. The difference between the 85th percentile and the mean is $9.9 million. This may be held at a governance or Joint Minister level (to be confirmed) to be used if required. This total contingency at the 85th percentile is very slightly below the 20 per cent contingency used the base estimate.

Appendix 18: Hira Governance Structure and Relationships

The revised Hira governance and relationships structure is shown in Figure 45.

Figure 45: Hira Governance and Relationships Structure

Appendix 19: Tranche 1 Workstream Structures

Automated testing resources to join later in the programme once capability has been stood up.

As Demographics, Immunisations and Covid-19 Labs & vaccine are existing services, resources to deliver are already within the Ministry.

Key:
Navy = needed now (pre DBC approval)
Dark Green = post DBC approval
Light Green = 3-6 months post approval
Grey = future resource (6+ months post DBC approval)
Blue = function/area within a workstream

⌐ ⌐ ⌐ ⌐ ⌐ = shared resource

*Where 'Vendor' is indicated, delivery capability will be reliant on external partners supplemented by a small internal team.

Figure 46: Data and Channels

Key:
Navy = needed now (pre DBC approval)
Dark Green = post DBC approval
Light Green = 3-6 months post approval
Grey = future resource (6+ months post DBC approval)
Blue = function/area within a workstream

⌐ ⌐ ⌐ ⌐ ⌐ = shared resource

*Where 'Vendor' is indicated, delivery capability will be reliant on external partners supplemented by a small internal team.
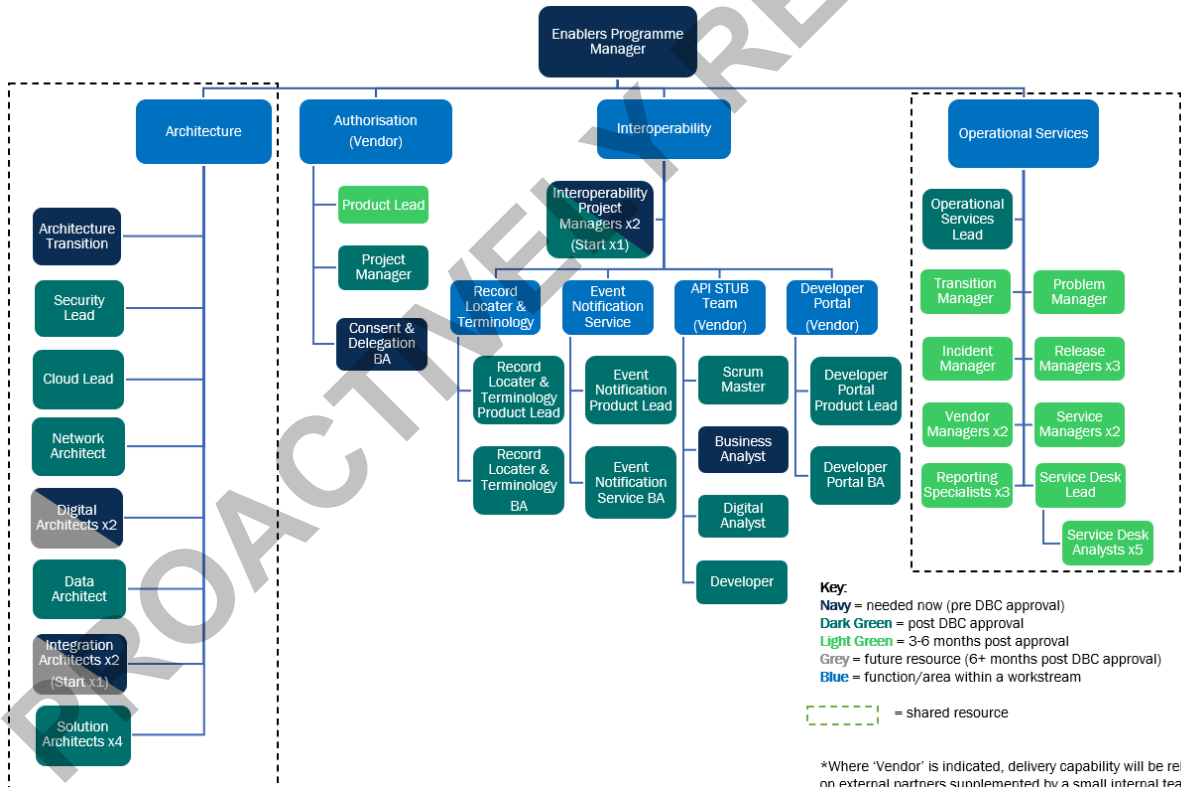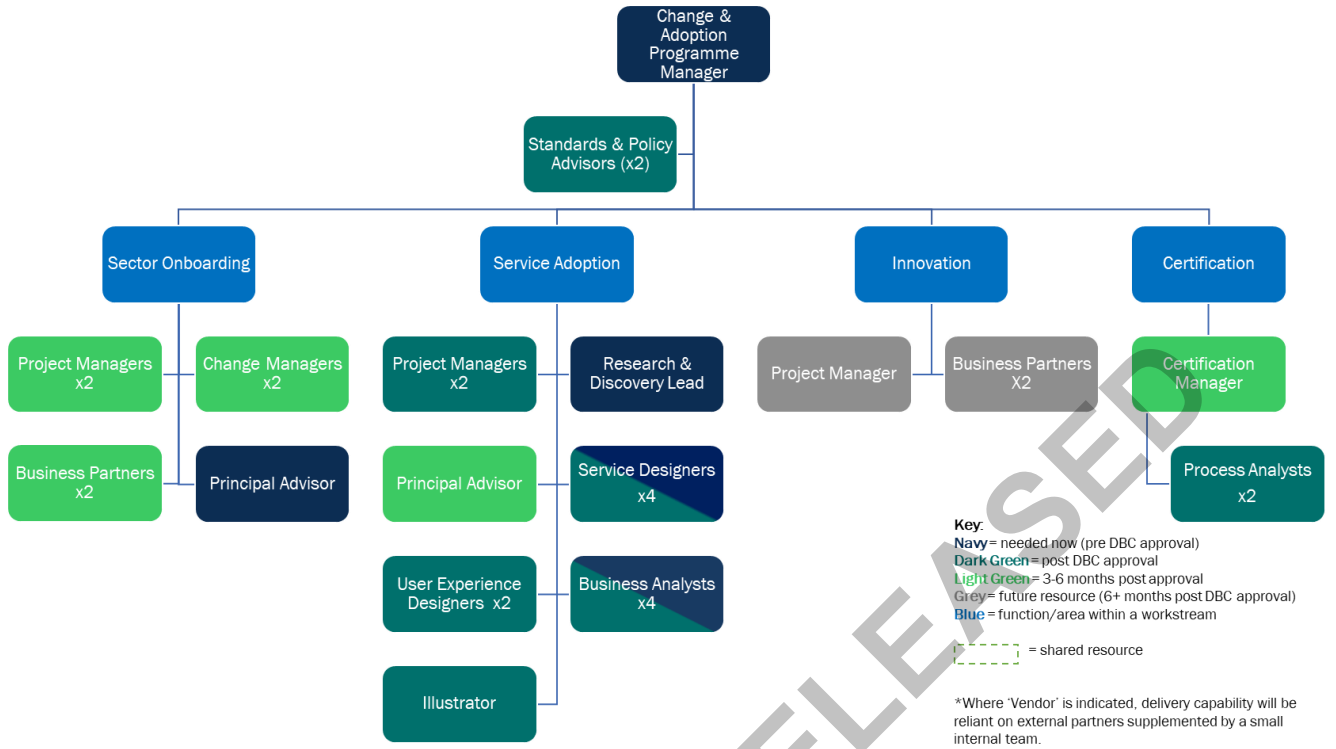
Figure 47: Enablers
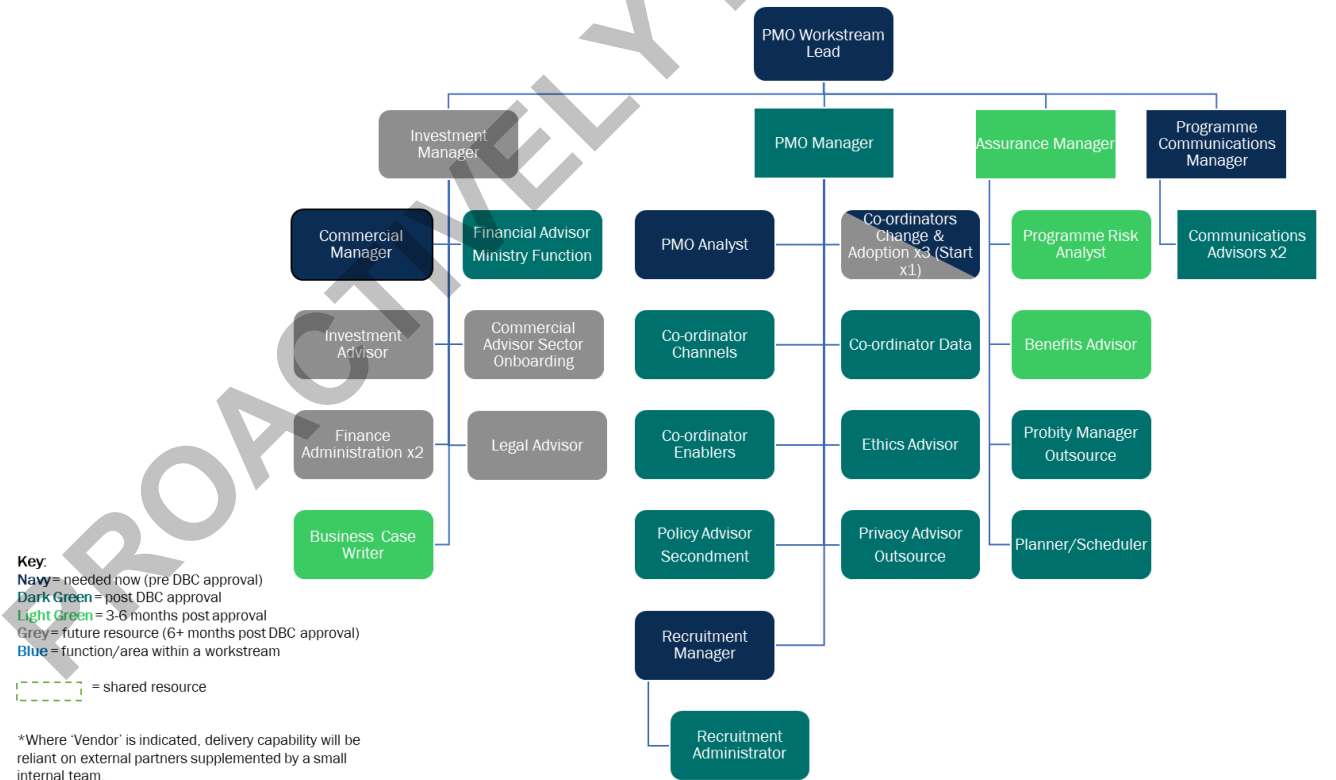
Figure 48: Change and Adoption

Figure 49: PMO

Appendix 20: Tranche 1 Stakeholders

Tranche 1 key external stakeholders are summarised in Table 59.

Table 59: Tranche 1 Stakeholders

Tranche 1 Stakeholders
- Health sector: - Health providers (CEOs, chairs, GMs Planning and Funding, CIOs, ICT and other specialists)   - Digital Enablement Oversight Group   - Primary care   - Health and Disability Review Transition Unit   - Primary health organisations CEs and chairs   - Professional bodies and colleges   - Health workforce   - Pharmacy   - Allied health   - Private providers   - Shared service agencies   - Other health stakeholders – Health Information NZ (HiNZ), Health Quality & Safety Commission etc   - Government: - Government Chief Digital Officer   - Department of Internal Affairs   - ACC   - Other government agencies   - Māori and Pacific groups and audiences   - Policy makers and planners   - Innovators and researchers   - Industry: - Vendors/ICT industry partners   - NZ Health IT (NZHIT)   - Ministerial/Ministry of Health Internal: - Minister of Health and Associate Health Ministers   - Minister of Finance   - Director-General of Health and Deputy Directors General   - Executive Leadership Team   - Clinical leads   - Data and Digital Directorate management and staff   - Māori Health, Mental Health and Addiction, and Population Health and Prevention Directorates, Pacific team   - Wider Ministry staff   - Ministry advisory groups   - Consumers and public: - Consumer networks, groups and councils   - Media/social media

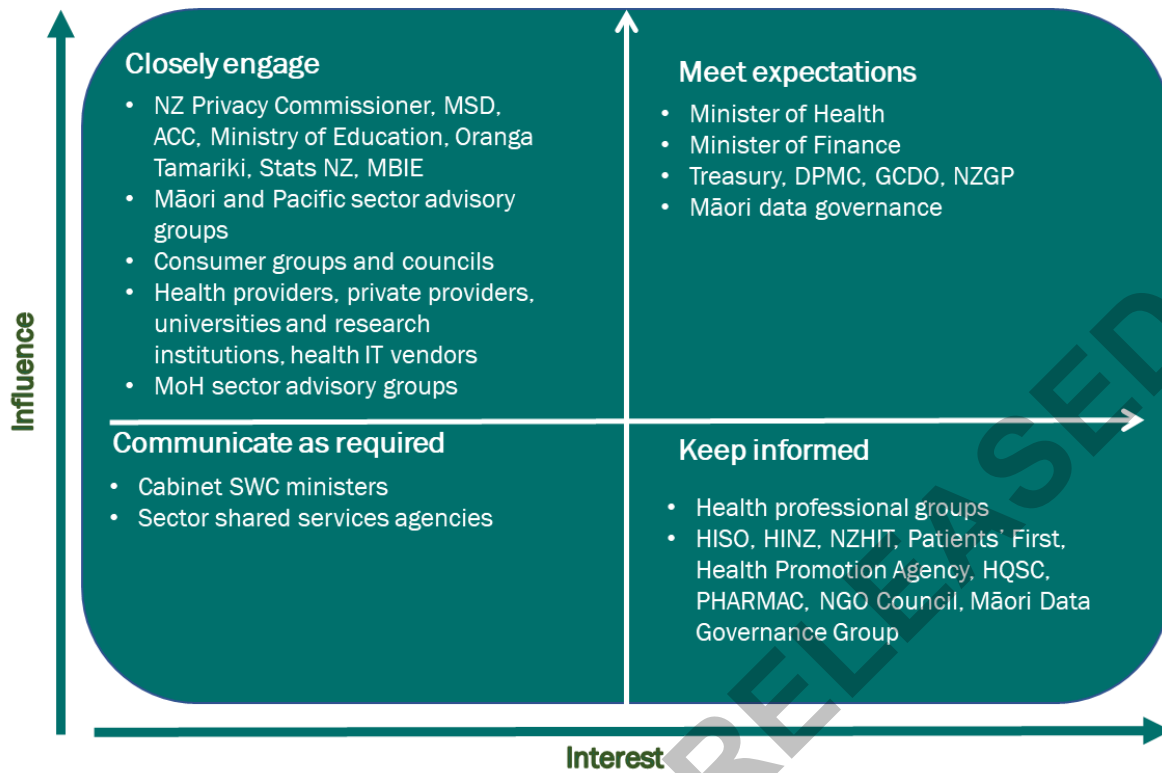The Tranche 1 Stakeholder influence matrix is shown in Figure 50.

Closely engage
- NZ Privacy Commissioner, MSD, ACC, Ministry of Education, Oranga Tamariki, Stats NZ, MBIE
- Māori and Pacific sector advisory groups
- Consumer groups and councils
- Health providers, private providers, universities and research institutions, health IT vendors
- MoH sector advisory groups

Meet expectations
- Minister of Health
- Minister of Finance
- Treasury, DPMC, GCDO, NZGP
- Māori data governance

Communicate as required
- Cabinet SWC ministers
- Sector shared services agencies

Keep informed
- Health professional groups
- HISO, HINZ, NZHIT, Patients' First, Health Promotion Agency, HQSC, PHARMAC, NGO Council, Māori Data Governance Group

Influence

Interest

Figure 50: Tranche 1 Stakeholder Influence Matrix

Appendix 21: TQA High Priority Recommendations

The High priority recommendations and programme response are detailed in Table 60.

Table 60: TQA High Priority Recommendations

| Ref	Recommendation	Description	Response	Owner
R1	Documentation for delivery iterations	Hira's focus on ecosystem, innovation, and iterative delivery makes it challenging to develop and maintain a concise, highly consistent set of documents to confidently assert strict privacy and security controls. Consider separating programme-level documents, with a focus on vision, management, and ideation, from a formalised and highly change controlled document for each delivery iteration. Consider splitting Tranche 1 into further iterations. The delivery-iteration-focussed document should combine strategic drivers, application architecture, controls, motivation/requirements, in a single, high structured document. Consider a formal modelling language such as OpenGroup Archimate and focus solely on the state of Hira at the end of that delivery iteration. This artifact is then scrutinised, from all angles, for consistency, any loose ends, or future references, before progressing to delivery.	Principally agree. During delivery establishment, a formal tranche 1 reference architecture will be developed. This will provide the architecture building block definitions to which all solution architectures conform.	Programme Director / Technical Director
R2	Access for health providers	Hira requires data providers to be onboarded to the platform. Also, the programme is committed to provide access to that data to other health providers and plans to rely on controls at those health providers to ensure HIPC compliance. The programme should map out the obligations on health providers consuming data, and the assertions that Hira can provide to their data provider so they can "reasonably believe" that all their obligations under HIPC will be met. These could be documented in corresponding onboarding packs and should be tested with health providers and their legal counsels. Revise the architecture to include findings, if necessary.	The Hira architecture supports full logging and auditing of access and usage of data via the data services capabilities. Sharing the data services access logs with the appropriate data providers is a functional deliverable of the Hira platform. The data provider onboarding process establishes the obligations of each party, including any specific obligations the Hira platform may need to conform with to assure the data provider(s) that only authorised access to the data is being provided.	Programme Manager Change & Adoption
R3	System control identification	Several recommendations in the report highlight the possibility that additional system-based controls and related solution components may be required to deliver Tranche 1, but have not yet been identified. The programme should allow for additional solution components to be added to the solution, if required, both from a delivery and a governance perspective.	Agreed. The Hira architecture can add additional controls as and when needed. During the development of the tranche 1 reference architecture, developing any additional security and privacy controls capabilities is achievable.	Programme Manager Enablers / Technical Director

Appendix 22: Tranche 1 Timeline
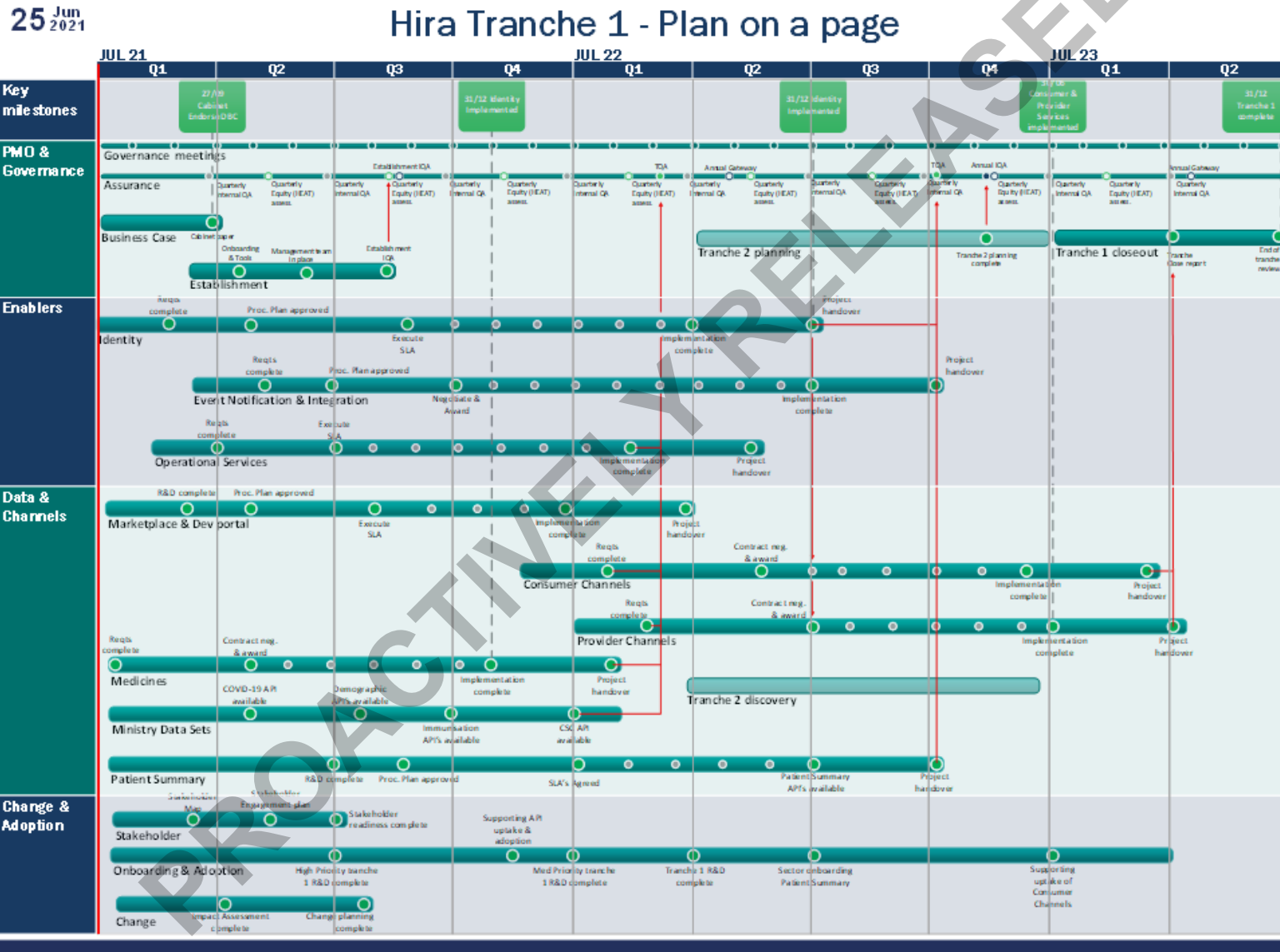
Figure 51: Tranche 1 Timeline

Appendix 23: Supporting Documentation

Table 61: Hira Supporting Documentation

Version	Document	Date
Final	Accenture Persona Refresh	15/12/20
v0.10	Assurance Plan	25/05/21
v2.9	Benefits Realisation Management Strategy	14/05/21
Final	Gateway Review Report 0/3 NHIP	31/01/20
Final	Gateway Review Report 0/2 for the Hira Programme	16/04/21
v1.0	Hira Architecture Review Technical Quality Assurance Report	07/05/21
v0.16	Hira Change & Adoption	17/05/21
v6.0	Hira Communications and Engagement Plan	11/05/21
2.01	Hira DBC Financial Modelling	10/08/21
	Hira Governance Structure and Relationships	
FINAL	Hira Proof of Concepts - DIA Findings and Recommendations	
v2.1	Hira Tranche 1 Architecture	16/02/21
v1.15	Hira Privacy Impact Assessment	26/05/21
V2.9	Hira Programme Business Case	26/2/21
	Hira Supporting Documentation Feedback Independent Quality Assurance	21/5/21
v1.3	Hira Tranche 1 Benefits Plan	27/05/21
v0.3	Hira Tranche 1 Delivery and Support RASCIP	10/05/21
v1.3	Hira Tranche 1 High Level Requirements	30/03/21
v2.9	Hira Tranche 1 Procurement Plan	04/06/21
v0.04	Hira Tranche 1 - 01 Data Service Project Brief	05/04/21
v0.06	Hira Tranche 1 - 02 Consumer Services Project Brief	05/04/21
v0.04	Hira Tranche 1 - 03 Provider Services Project Brief	05/04/21
v0.07	Hira Tranche 1 - 04 Operational Services Project Brief	03/05/21
v0.05	Hira Tranche 1 - 05 Identity Project Brief	05/04/21
v0.04	Hira Tranche 1 - 06 Interoperability Project Brief	05/04/21
v4.0	Hira Tranche 1 - 07 Change and Adoption Project Brief	31/03/21
v1.5	Hira Risk and Opportunity Management Plan	06/04/21
	The Health and Disability System Review: Proposals for Reform [CAB-21-SUB-0092, CAB-21-MIN-0092].	

Appendix 24: Glossary

Acronym	Description
ACC	Accident Compensation Corporation
ADE	Adverse Drug Events
API	Application Programme Interface
ASMS	Association of Salaried Medical Specialists
CIC	Capital Investment Committee
CDO	Chief Digital Officer
CEO	Chief Executive Officer
CIO	Chief Information Officer
CIR	COVID-19 Immunisation Register
CMO	Chief Medical Officer
CNO	Chief Nursing Officer
CRRF	COVID-19 Response and Recovery Fund
CSC	Community Services Card
CSF	Critical Success Factor
DHSF	Digital Health Strategic Framework
DIA	Department of Internal Affairs
DIB	Digital Investment Board
DPMC	Department of Prime Minister and Cabinet
DPUP	Data Protection and Use Policy
EHR	Electronic Health Record
EPMO	Enterprise Programme Management Office
FHIR	Fast Healthcare Interoperability Resources
FPIM	Finance and Procurement Information
GCDO	Government Chief Digital Officer
GETS	Government Electronic Tender Service
GM	General Manager
GP	General Practitioner
HCD	Human Centred Design
HIGEAG	Health Information Governance Expert Advisory Group
HiNZ	Health Informatics New Zealand
HISO	Health Information Standards Organisation
HPI-CPN	Health Provider Index-Common Person Number
IAM	Identity and Access Management
ICT	Information and Communications Technology
ILM	Investment Logic Mapping
IO	Investment Objective

Acronym	Description
IP	Intellectual Property
IQA	Independent Quality Assurance
LSF	Living Standards Framework
MBIE	Ministry of Business, Innovation and Employment
MDR	Medicines Data Repository
MSD	Ministry of Social Development
NCTS	National Contact Tracing System
NES	National Enrolment Service
NGO	Non-Governmental Organisation
NHI	National Health Index
nHIP	National Health Information Platform
NIR	National Immunisation Register
NIS	National Immunisation Solution
NSS	National Screening Solution
NZePS	New Zealand Electronic Prescription Service
NZGPP	New Zealand Government Property and Procurement
PBC	Programme Business Case
PHU	Public Health Unit
PIA	Privacy Impact Assessment
QRA	Quantitative Risk Analysis
RFI	Request for Information
RLS	Record Locator Service
ROMP	Risks and Opportunities Management Plan
SLA	Service Level Agreement
SOC/SIEM	Security Operations Centre/Security Incident Event Management
SRO	Senior Responsible Owner
TQA	Technical Quality Assurance