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24 August 2022

s 9(2)(a)

By email: s 9(2)(a)  
Ref: H202207829

Tēnā koe s 9(2)(a)

### Response to your request for official information

Thank you for your request under the Official Information Act 1982 (the Act) to Manatū Hauora (the Ministry of Health) on 13 June 2022 for information relating to Budget 2022 funding for organ donation and transplantation. You specifically requested:

*“...a copy of all reports, memoranda, aide memoirs, budget bids/completed budget bid templates, and any other documents produced by or for the Ministry of Health since July 2021 regarding the funding announced in the 2022 Budget*

*For the avoidance of doubt, this request covers:*

- All internal documents produced by the Ministry of Health*
- All documents commissioned by or provided to the Ministry of Health by others*
- All reports, memoranda, aide memoirs, and any other documents provided to the Minister or Associate Ministers of Health, and/or to Cabinet*
- All reports, memoranda, aide memoirs, draft and final (completed) Budget 2022 initiative templates submitted to the Treasury.”*

Documents within scope of your request are itemised below in Appendix 1, which also outlines the grounds under which I have decided to withhold information. Where information is withheld under section 9, I have considered the countervailing public interest in this release in making this decision and consider that it does not outweigh the need to withhold at this time.

Additionally, the letter the Minister of Finance wrote to the Minister of Health inviting him to submit a Budget 2022 bid for this Manifesto commitment is being published by the Treasury as part of its proactive release of Budget 2022 related information. As such, this is refused under 18(d) as the information requested will soon be publicly available.

I trust this information fulfils your request. Under section 28(3) of the Act, you have the right to ask the Ombudsman to review any decisions made under this request. The Ombudsman may be contacted by email at: [info@ombudsman.parliament.nz](mailto:info@ombudsman.parliament.nz) or by calling 0800 802 602.

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Please note that this response, with your personal details removed, may be published on the Ministry website at: [www.health.govt.nz/about-ministry/information-releases/responses-official-information-act-requests](http://www.health.govt.nz/about-ministry/information-releases/responses-official-information-act-requests).

Nāku noa, nā

A handwritten signature in blue ink, appearing to read 'Celia Wellington'.

Celia Wellington  
**Deputy Director-General**  
**Corporate Services**

## Appendix 1: List of documents for release

#	Date	Title	Decision on release
1	N/A	Meeting the Demand for Organ Donation and Transplantation	Some information withheld under the section 9(2)(a) of the Act to protect the privacy of natural persons; and
2	N/A	Budget 2022 Initiative Summary: Meeting the demand for organ donation and transplantation	Some information withheld under the following sections of the Act: <ul style="list-style-type: none"><li>• section 9(2)(a)</li><li>• section 9(2)(f)(iv) to maintain the constitutional conventions that protect the confidentiality of advice tendered by Ministers and officials.</li></ul>
3	N/A	Budget 2022 Invitation Letter - Little - Health	Refused under section 18(d) of the Act as the information will soon be publicly available on the Budget 2022 website: <a href="https://budget.govt.nz/index.htm">https://budget.govt.nz/index.htm</a> .

# Meeting the Demand for Organ Donation and Transplantation

Category	Health Reform Package					
<b>Description:</b> This initiative provides funding for an increase in the rate of organ donation in New Zealand through the implementation of the Increasing Deceased Organ Donation and Transplantation: A National Strategy published in 2017.						
Funding (\$m)	2021/22	2022/23	2023/24	2024/25	2025/26 & outyears	TOTAL
Operating	-	0.750	2.750	3.750	3.750	11.000

## What the initiative is buying

Funding for this initiative will implement priority actions within the 2017 National Strategy, including:

- funding existing 'Link' roles, who are staff that support deceased organ donation in ICUs
- creating a plan to raise public awareness and understanding of organ donation and transplantation
- improving New Zealand's system of registering and sharing donation intent for individuals, whānau and clinicians
- improving training of staff involved in the donation process, including cultural awareness
- designing a framework to measure progress in organ donation and transplantation.

## Expected impacts

- This initiative will provide a foundation to increase the number of eligible recipients receiving donated organs. There is well researched and accepted evidence that organ donation increases life expectancy and quality-adjusted life-years for donor recipients. Research suggests significant increases in life expectancy for patients who receive heart transplants (14 additional years), liver transplants (18 years), lung transplants (5 years) and renal transplant (15 years).

## Expected outcomes

- This initiative is expected to improve health outcomes. For example, estimates of the value of increased length and quality of life due to organ transplantation range up to nearly \$500,000 per person. The initiative is also expected to reduce health system costs. For example, research has found that kidney transplantation is two to three times less expensive than dialysis on a patient per year basis.
- Over time, the initiative is also expected to improve economic outcomes. Organ transplantation allows many recipients to return to work, increasing incomes, economic activity and tax revenues. Research suggests for each transplant patient who is able to return to work post-transplant, there is a benefit of up to \$53,831 in improved productivity and \$47,026 in fiscal savings, over and above health system savings.

## Distribution impact/Equity analysis

- This initiative will ultimately help reduce health disparities faced by Māori and Pacific peoples. Māori and Pacific peoples are disproportionately affected by organ failure, with heart and lung disease being major causes of death. There are also marked and persistent ethnic disparities in end-stage kidney disease and renal replacement therapy in New Zealand. Higher and appropriately targeted organ donations can help address these disparities.

## Alignment with draft interim Government Policy Statement (iGPS) priorities on Health

This initiative is aligned with several draft iGPS priorities on Health:

- **Achieving equity in health outcomes.** Māori and Pacific people disproportionately carry the burden of organ failure yet are less likely to receive organ transplantations than other groups. By increasing the number of organ donations, this initiative would contribute towards equity in health outcomes.

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- **Ensuring a financially sustainable health system.** Organ transplantation can result in lower need for other health services, and therefore lower overall health system costs. For example, research has found that kidney transplantation is two to three times less expensive than dialysis on a patient per year basis. Lower demand for health services allows the health system to meet health needs at a lower cost.
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### Key messages

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- This initiative provides a foundation for increasing the number of eligible recipients receiving donated organs by ensuring the sustainability of funding for specialist staff and progressing activities such as raising public awareness and understanding of organ donation, further training of staff involved in the donation process, and progressing improvements to New Zealand's donor registration system.
  - This builds on the important step of transferring the organ donation unit to the NZ Blood and Organ Service on 30 November 2020, which will lead to a better, more coordinated, national approach to both organ and blood donations.
  - Increasing the rate of deceased organ donation will increase the number of organ transplants carried out, enabling more people living with organ failure to lead active, independent and productive lives while reducing long-term costs for the health system.
  - The initiative is of particular importance for Māori and Pacific peoples because they have a proportionately higher need for transplants, and more unmet need, which this initiative will help support.
  - The initiative is a key milestone on the path toward delivering the priorities of the 2017 National Strategy for Increasing Deceased Organ Donation and Transplantation.
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### Q&A

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- **What are the priorities in the 2017 strategy?**

Priorities in the 2017 strategy are:

- Improving public awareness and media engagement about organ donation and transplantation
- Improving New Zealand's system of registering and sharing donation intent for individuals, families and clinicians
- Enhancing capability and consistency through improved training
- Increasing hospital-based capacity for deceased organ donation
- A national agency to lead the deceased organ donation and transplantation (achieved December 2020)
- Measuring progress.

- **Why has it taken so long to invest in the 2017 organ donation and transplantation strategy?**

Earlier investment in the strategy was constrained by the need to respond to the pandemic. The transfer of the organ donation unit was successfully achieved in late 2020 after considerable work. In the past two years planning for the new service has occurred. We hope that this investment will build a foundation for future investments and progress.

- **This investment is for deceased organ donation – what about live donations?**

Live donor transplants occur for some kidney and liver transplants. There are existing initiatives in place to increase live donations, monitored by the National Renal Transplant Service and the Paired Kidney Exchange Scheme. There are no alternative options for heart, lung and many liver transplants.

- **How does NZ's rate of organ donation compare internationally?**

New Zealand's rate of deceased organ donation is lower than other countries ([www.IRODAT.org](http://www.IRODAT.org)). It has increased from 8.6 per million people in 2013 to 14 per million people in 2019.

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International peers increased donation rates following implementation of reform programmes similar to the 2017 National Strategy. For example, Australia's rate increased from 9.4 donors per million population in 2007 to 21.6 per million population in 2019 following a programme implemented in 2009.

#### Existing baseline

	Operating Funding profile (\$m)					
	2021/22	2022/23	2023/24	2024/25	2025/26 & outyears	Total
Existing operating funding for this/similar initiatives	2.688	1.988	1.988	1.988	1.988	10.640
Operating funding provided for this initiative	-	0.750	2.750	3.750	3.750	11.000

#### Key costing assumptions

- Continuing funding for the clinical capacity in ICUs to support deceased organ donation (\$0.750m per annum starting from 2022/23).
- Estimated cost of implementing the National Strategy of \$2 million in the first year starting from 2023/24 and \$3 million (scaled) for subsequent years.

<b>Responsible Minister:</b>	Hon Andrew Little, Minister of Health
<b>Ministry/Transition Unit contact:</b>	Peter Jane, Principal Advisor Crown Entity Monitoring and Appointments Office of the Director-General Ministry of Health Email: peter.jane@health.govt.nz Mobile: S9(2)(a)

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# Budget 2022 Initiative Summary – Main Budget Process

**Note to agencies:** delete any sections that are not applicable before submitting this template. Where a CFISnet character limit is specified, this applies to entry in the CFISnet field only. There are no character or word limits for the Word version of this template.

## Meeting the demand for organ donation and transplantation

### Section 1: Overview

This section must be completed for all initiatives.

#### Section 1A: Basic Initiative Information

<b>Lead Minister</b>	Hon Andrew Little, Minister of Health			
<b>Department</b>	Ministry of Health			
<b>What type of initiative is this?</b>	<i>Critical cost pressure initiative</i>		<i>Manifesto commitment initiative</i>	<i>Health and Disability System Reform initiative</i>
	<i>Climate Emergency Response Fund initiative</i>		<i>Savings initiative</i>	X <i>Non-Spending initiative</i>
<b>Initiative description [max 800 Characters]</b>	Refer to <b>section 4.1.1</b> of the Budget 2022 guidance for more information on titles and descriptions. This initiative will provide funding for an increase in the rate of organ donation in New Zealand through the implementation of the Increasing Deceased Organ Donation and Transplantation: A National Strategy (2017 National Strategy) published in 2017. The initiative also seeks funding for delivery of more heart, lung, and liver transplant surgeries by providers.			
<b>Is this a Cross-Vote initiative?</b>	N			
<b>Department contact</b>	Jessica Smaling <a href="mailto:jessica.smaling@health.govt.nz">jessica.smaling@health.govt.nz</a> S9(2)(a) Peter Jane <a href="mailto:peter.jane@health.govt.nz">peter.jane@health.govt.nz</a> S9(2)(a)			
<b>Treasury contact</b>	Provide the name of your Vote Analyst.			

#### Section 1B: Total Funding Sought

Operating funding sought (\$m)	2021/22	2022/23	2023/24	2024/25	2025/26 & outyears	Total					
	-	S9(2)(f)(iv)									
Capital funding sought (\$m)	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	Total
	-	-	-	-	-	-	-	-	-	-	-

Section 1C: Initiative Classifications

Is this initiative seeking funding from the Climate Emergency Response Fund (CERF)? [max 300 characters in CFISnet].	N					
Is this initiative climate-related, but not seeking funding from the CERF? [max 300 characters in CFISnet].	N					
Does this initiative align with the Crown's obligations under the Treaty of Waitangi?	Strong	Māori people are disproportionately affected by organ failure, with heart and lung disease major causes of death. Recent research suggests that while Māori patients are more likely to require renal dialysis, they are 3.5 less likely to have received a kidney transplant compared to their non-Māori counterparts (excluding Pacific people) (NZIER Report 2021, KHNZ 2021). This bid addresses the opportunity to improve equity.				
Specify if this initiative will help reduce child poverty and describe the impact [max 300 characters in CFISnet].	Low impact	Organ transplantations offer recipients an opportunity to participate in society and support their whanau by providing a better quality of life and a longer life expectancy (NZ Heart and Lung Transplant Service 2018), (McCaughan G, 2016) (NZIER Report 2021).				
Does this initiative align with the Child and Youth Wellbeing Strategy?	N					
Does the initiative include funding to procure from NGOs?	N					
Does the initiative include funding to support digital and data related investments?	Y	The 2017 National Strategy includes exploring the option of recording individuals' donor information through the Electronic Health Record. The system will create an online record of people's health information, which individuals will be able to access and update. This aims to: <ul style="list-style-type: none"> <li>• Provide families/whānau and clinicians in ICUs with improved access to accurate donor intent records</li> <li>• Enable New Zealanders to record, change and access their donor status more easily.</li> </ul>				
Is this a regulatory or legislative initiative (according to the guidance provided)?	N	<i>Please indicate the type of regulatory component according to those listed in section 4.10 of the main Budget 2022 Guidance.</i>				
		<i>Please indicate if this initiative has cross-regulatory system or cross-sector benefits/impacts [max 300 characters in CFISnet].</i>				
		<i>If this initiative requires a regulatory or legislative change, please indicate the regulatory system this relates to and provide an overview of the required changes [max 300 characters in CFISnet].</i>				
		<i>If Cabinet policy approval for the regulatory change has already been obtained or your agency has completed a strategy to monitor or evaluate your initiative, please attach the relevant Regulatory Impact Statement or a copy of that strategy/plan [max 300 characters in CFISnet].</i>				
Is this a significant investment initiative per the definition at section 4.8 of the Budget 2022 guidance?	N					
		<table border="1"> <tr> <td>Data / Digital / ICT</td> <td>Physical Infrastructure</td> <td>Organisational Transformation</td> <td>Specialised Equipment</td> </tr> </table>	Data / Digital / ICT	Physical Infrastructure	Organisational Transformation	Specialised Equipment
Data / Digital / ICT	Physical Infrastructure	Organisational Transformation	Specialised Equipment			
		<b>See Annex A for further questions – mandatory to complete for all significant initiatives</b>				

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### Section 3: Value

Section 3 must be completed for all initiatives, unless exempted by the Minister of Finance in the invitation letter. Further information on the questions in this section can be found at **Annex Two** of the Budget 2022 guidance.

This section explains the initiative's value, drawing on elements of He Ara Waiora (section 3A) and the Living Standards Framework (Section 3D). For explanations of these two frameworks, please see the accompanying guidance.

#### Explanation

Intervention logic terms such as outputs, impacts, and goals can have different definitions. Please see table below for how the Treasury defines these concepts.

Explanation Table		
<i>This explanation table is for your reference only. Do not fill out the sections.</i>		
	Definition	Example
Outputs		<p>The purchased goods are localised curriculum resources in te reo Māori, as well as the services of publishers, designers and story tellers.</p> <p>Costs cover the design, development, distribution and maintenance of online tools, interactive electronic and hard copy resources to promote and provide teachers, students and whānau, and external providers with quality tools and resources to enable effective teaching and learning from offsite or the workplace using a range of online, distance and place-based delivery modes.</p>
Impact		<ul style="list-style-type: none"> <li>Increased whānau involvement in education which is a key driver to lifting student engagement and achievement.</li> <li>Improved student engagement and achievement in education that better reflects their identity, language and culture.</li> <li>Increased visibility of te reo Māori at schools and in the community.</li> <li>Learning programmes supported by quality te reo Māori resources.</li> </ul>
Goals		<ul style="list-style-type: none"> <li>Normalisation of te reo Māori used by teachers in the classroom, wider school and home.</li> <li>Increased student and whānau participation in and retention of te reo Māori learning.</li> <li>Increase in the quality of te reo Māori used by teachers and students.</li> <li>Attitudinal shift in the wider education community that te reo Māori is recognised as being for everyone.</li> </ul>

## Section 3A: Opportunity/Problem

## Opportunity/Problem

What is the overarching opportunity or problem this initiative is responding to?

**1. Increasing supply of organ donations.**

Demand for transplantation exceeds organs available. At any given time, there are about 400 to 500 New Zealanders waiting for the right organs to become available (Kidney Health NZ). Many wait two years or more and some deteriorate becoming no longer suitable for transplant. Transplant surgery is an effective treatment with the following benefits:

- extended life 4–18 years with heart, lung, liver transplant and 15 to 20 years for kidney transplants.
- improved quality of life
- improved independence
- increased economic contribution returning to work, reducing benefits and increasing tax paying
- reduction in other health treatments (especially dialysis to the extent that renal transplants more than pay for themselves)

**Appendix 1** summarises international evidence on clinical and financial benefits.

New Zealand's rate of deceased organ donation is lower than other countries ([www.IRODAT.org](http://www.IRODAT.org)). It has increased from 8.6 per million people in 2013 to 14 per million people in 2019.

International peers increased donation rates following implementation of reform programmes similar to the 2017 National Strategy:

- Australia's rate increased from 9.4 donors per million population in 2007 to 21.6 per million population in 2019 following a programme implemented in 2009
- The United Kingdom's rate increased from 13.2 per million population in 2007 to 24.9 per million population in 2019 following implementation of recommendations from the 2008 Organ Donation Taskforce Report.

To become a potential deceased donor, death needs to be from brain death or from circulatory death in an intensive care unit or emergency department. The number who die in these circumstances is low at around 150 per annum, representing less than 1% of all deaths (<https://www.donor.co.nz>). Implementation of the 2017 National Strategy aims to maximise the proportion of this group who become organ donors.

**2. Enabling equitable access**

Māori and Pacific are disproportionately affected by organ failure, with heart and lung disease major causes of death. Despite this, Māori and Pacific patients are less likely to receive organ donations and transplantations (NZIER Report). This bid addresses the opportunity to improve equity by supporting responsible agencies to implement targeted actions that address equity.

Geographical variation also poses inequitable access to organ donation and transplantation (NRTS Report, 2021, NZIER Report 2021). Funding for implementation of the 2017 National Strategy provides opportunity to address regional variation.

## Section 3B: He Ara Waiora

<p><b>Tikanga</b>- decisions are made by the right decision-makers, following a tikanga process, according to tikanga values</p>	<p><i>Outline how the policy and implementation plan for this initiative have been or will be designed, developed and/or delivered in partnership with iwi and Māori, relevant agencies, and with affected communities and groups. If not, please indicate the reasons why.</i></p> <p>The 2017 National Strategy focuses on achieving equitable access to donor transplantations and to do so New Zealand Blood and Organ Service (NZBOS) is committed to working in partnership with Māori stakeholders to ensure programme delivery is guided by a focus on equity of opportunity for donation and transplantation.</p>
<p><b>Manaakitanga</b>- focus on improved wellbeing and enhanced mana for iwi and Māori, and for other affected communities and groups, demonstrating an ethic of care and mutual respect</p>	<p><i>Demonstrate the department's understanding of the distinctive priorities, values and aspirations of iwi and Māori, and affected communities and groups, in relation to this initiative, and how these are being accommodated. If not, please indicate the reasons why.</i></p> <p>Māori and Pacific people are disproportionately affected by organ failure, with heart and lung disease major causes of death (Ministry of Health 2018). Statistics show Māori mortality associated with heart failure is more than double non-Māori, rheumatic heart disease mortality more than five times, and rheumatic heart disease hospitalisation more than nine. Māori also have more than twice non-Māori rates of chronic obstructive pulmonary disease mortality and hospitalisation (Ministry of Health 2018).</p> <p>There are marked and persistent disparities in the incidence and prevalence of end-stage kidney disease and treatment practices in renal replacement therapy based on ethnicity in New Zealand. The incidence of renal replacement therapy is markedly higher among Pacific (494 pmp) and Māori (244 pmp) patients, compared with Asian (65 pmp) and European/Other ethnicities (72 pmp) (ANZDATA Annual Report 2019).</p> <p>The Hepatitis Foundation of New Zealand has reported Hepatitis B is endemic in New Zealand with around 150,000 individuals with chronic infection. Māori have the third highest rate after Chinese and Pacific New Zealanders at 5.8% from screening. Chronic hepatitis B is one of the leading causes of liver-related mortality and liver transplantation (Robinson T et al. 2005).</p> <p>Despite disproportionately carrying the burden of organ failure, Māori and Pacific are less likely to receive organ transplantations (NRTS 2021, KHNZ Report 2021, NZIER Report 2021). Recent research shows that while accounting for over 60% of patients on dialysis, Māori and Pacific patients were respectively 3.5 and 4 times less likely to receive a kidney transplants compared to their non-Māori, non-Pacific counterparts (NZIER Report 2021).</p> <p>The majority of these conditions are treatable by transplant if more organs are available for donation, and this initiative would contribute towards addressing health disparities.</p>

**Section 3C: Outputs – The good or service the initiative purchases - please see intervention logic at end of proposal.**

Output	Description
Implementation of actions within 2017 National Strategy	<p>Additional funding to implement actions within the 2017 National Strategy would increase the number of organ donations and therefore transplantations.</p> <p>NZBOS has indicated that implementation funding in the short term will be to build capacity and capability to establish a sustainable service. Short term identified outputs are the development and implementation of clinical governance arrangements, establishment of core capacity and capability for key support roles such as research, policy, monitoring and communications, and planning for priority activities from the 2017 National Strategy.</p>

<p>Sustainable funding for ICU Link staff</p>	<p>The process of deceased organ donation requires considerable time and resources, including available intensive care unit (ICU) beds and clinicians to manage the care of the potential donor, and address the needs of the patient’s grieving family/whānau.</p> <p>The Link roles were originally piloted by Organ Donation New Zealand (ODNZ)<sup>1</sup> with protected nursing time of between 0.2 and 0.4 FTE in six DHBs’ ICUs. Sector feedback during consultation was that the Link roles, when supported by DHB leadership, contributed to increased deceased organ donation rates. Between the four DHBs involved in the trial, the number of deceased organ donors increased from 19 donors in 2013 to 31 donors in 2015. Since 2018, the Ministry of Health has used time limited NDE to fund contracts with 19 DHBs to for ICU link staff. The current contracts are due to expire on 30 June 2022, with no source of sustainable funding to renew these. At time of implementation the Ministry advised DHBs that the long-term intent was to sustainably fund the ICU Link staff roles.</p>
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**Section 3D: Impacts – The direct effect of the initiative**

*Please repeat these questions for each impact*

Impact 1	Description of the impact	<p><i>Please provide more detail on the impacts of the initiative, including any possible negative associated impacts. Will the initiative impact people and/or have other impacts e.g. improved environmental outcomes?</i></p> <p><i>If the impacts are on people, are different groups impacted differently, and why? Examples may include different age-groups, location/regions, different service-requirements. For more-specific questions on distributional effects, please see section 3F below.</i></p>
	<p><b>More eligible recipients receiving organ donations.</b> Increased organ donation will enable more people living with organ failure to lead active, independent, and productive lives. An increase in organ donations will result in an increase in transplantation. Without transplantation there is eventually progression of disease and death. The increase in life expectancy and quality-adjusted life-year (QALY) for organ donor recipients is well researched and accepted. For example, patients with end stage renal disease can significantly extend their life expectancy from 6 years when treated on dialysis to 15 to 20 years when receiving a deceased and live kidney transplantation, respectively. The value of additional quality and length of life from transplantation could be up to \$495,808 per person (NZIER Report 2021).</p> <p>New Zealand specific research suggests that an average increase in life expectancy of 14 years for a heart transplant patient (NZ Heart and Lung Transplant Service 2018), 18 for liver transplant (McCaughan G, 2016), five for lung and 15 years for renal transplant patients (NZIER 2021).</p>	
	<p><b>Quantification</b></p>	<p><i>Please quantify the impacts in a way that puts the number in context (e.g. percentage of land affected, proportion of people affected in relation to the population size). Please also monetise the present value gain or loss of the impacts if possible (CBAx model can help).</i></p> <p><i>If quantification is not possible, please define and provide a qualitative assessment of the impacts (e.g. low, moderate, high).</i></p>

<sup>1</sup> The predecessor to the National Agency now hosted by New Zealand Blood and Organ

		<p>An increase in the number of organ donations will enable more transplantations which will result in a higher national rate in donor transplantations and address the current disparity in rates in NZ compared to peer countries such as Australia and UK. Targeted approaches would also increase the number of transplantations received by Māori and Pacific patients.</p>
	<b>Supporting Evidence</b>	<p><i>Provide relevant evidence (data/other information) for the impacts and outcomes you have identified.</i></p> <p>NZ Heart and Lung Transplant Service. <i>Heart Transplantation in New Zealand</i>. Auckland DHB. 2018</p> <p>NZIER. <i>Transforming lives and saving money</i>. November 2021.</p> <p>McCaughan G, Munn S. <i>Liver transplantation in Australia and New Zealand</i>. AASLD. 2016</p>
	<b>Gaps in Evidence</b>	<p>There is longstanding and comprehensive research and literature supporting the benefits of additional transplants.</p>
	<b>Assumptions</b>	<p>The increase in organ transplantations will be equitably distributed.</p> <p>The true downstream effects of the strategy implementation (i.e. an increase in transplantations are not anticipated to be fully realised in year one and year two.</p>
	<b>Implications</b>	<p><i>Do the assumptions or gaps in evidence imply risks to the initiative achieving its impacts and outcomes?</i></p> <p><i>If the initiative is in an innovative policy or an early-stage initiative, what is your approach to understanding whether the initiative will achieve desired impacts?</i></p> <p>Work is currently being undertaken by DHBs to ensure there is equitable access for Māori patients to available organ donations and transplantations. Waikato DHB has seen an increase of Māori patients being put on the wait list for a kidney transplant and receiving kidney transplants through a number of initiatives, including measuring equity through the patient pathways and journey. The success in the Waikato has been shared with other DHBs, to help improve the outcomes and experience for Māori around Aotearoa.</p> <p>It is an expectation that an equitable approach to using any additional funding to increase organ transplantations will be undertaken, for example by prioritising Māori and Pacific patients.</p> <p>To increase the number of transplantations as result of an increase in organ donations will require additional funding. In the immediate term, a considered funding source is from Planned Care NDE underspend. S9(2)(f)(iv)</p>
<b>Impact 2</b>	<b>Description of the Impact</b>	<p><b>Improving equity and reducing health disparities.</b></p> <p>Māori and Pacific are disproportionately affected by organ failure, with heart and lung disease major causes of death (Ministry of Health 2018). Statistics show Māori mortality associated with heart failure is more than double non-Māori, rheumatic heart disease mortality more than five times, and rheumatic heart disease hospitalisation more than nine. Māori also have more than twice non-Māori rates of chronic obstructive pulmonary disease mortality and hospitalisation</p>

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		<p>(Ministry of Health 2018).</p> <p>There are marked and persistent disparities in the incidence and prevalence of end-stage kidney disease and treatment practices in renal replacement therapy based on ethnicity in New Zealand. The incidence of renal replacement therapy is markedly higher among Pacific (494 per million population) and Māori (244 pmp) patients, compared with Asian (65 pmp) and European/Other ethnicities (72 pmp) (ANZDATA Annual Report 2019).</p> <p>The Hepatitis Foundation of New Zealand has reported Hepatitis B is endemic in New Zealand with around 150,000 individuals with chronic infection. Māori have the third highest rate after Chinese and Pacific New Zealanders at 5.8% from screening. Chronic hepatitis B is one of the leading causes of liver-related mortality and liver transplantation (Robinson T et al. 2005).</p> <p>Despite disproportionately carrying the burden of organ failure, Māori and Pacific are less likely to receive organ transplantations (NRTS 2021, KHNZ Report 2021, NZIER Report 2021). Recent research shows that while accounting for over 60% of patients on dialysis, Māori and Pacific patients were respectively 3.5 and 4 times less likely to receive a kidney transplant compared to their non-Māori, non-Pacific counterparts (NZIER Report 2021).</p> <p>The majority of these conditions are treatable by transplant if organs are available, and this initiative would contribute towards addressing inequalities in health disparities, if additional transplants are appropriately targeted.</p>
	<p><b>Quantification</b></p>	<p>An increase in the number of Māori and Pacific patients accessing available organ donor transplantations will reduce the current disparity in access between Māori and Pacific patients and their non-Māori and Pacific counterparts.</p> <p>Waikato DHB has seen an increase of Māori patients being put on the wait list for a kidney transplant and receiving kidney transplants through a number of initiatives, including measuring equity through the patient pathways and journey. The success in the Waikato has been shared with other DHBs, to help improve the outcomes and experience for Māori around Aotearoa.</p>
	<p><b>Supporting Evidence</b></p>	<p>Ministry of Health. <i>Ngā mana hauora tūtohu: Health status indicators</i>. August 2018.</p> <p>Australia and New Zealand Dialysis and Transplant Registry. <i>ANZDATA Annual Report - Chapter 9: End Stage Kidney Disease in Aotearoa New Zealand</i>. 2019.</p> <p>National Renal Transplant Service. <i>Kidney Transplant Activity New Zealand 2020</i>. May 2021.</p> <p>Robinson T, Bullen C, Humphries W, et al. <i>The New Zealand Hepatitis B Screening Programme: screening coverage and prevalence of chronic hepatitis B infection</i>. <i>New Zealand Medical Journal</i> 118(1211): U1345. 2005.</p>

		<p>Kidney Health New Zealand. <i>Report: Transforming lives and saving money: an integrated strategy to address kidney transplant equity and increase transplantation</i>. November 2021.</p> <p>New Zealand Institute for Economic Research. <i>NZIER Report: Transforming lives and saving money</i>. November 2021.</p>
	<b>Gaps in Evidence</b>	The presence of unwarranted ethnic disparities in access to organ transplantation is well accepted in New Zealand and globally.
	<b>Assumptions</b>	It is assumed that, subject to clinical considerations, an increase in the number of transplants should be targeted at Māori and Pacific patients on the wait list.
	<b>Implications</b>	
<b>Impact 3</b>	<b>Description of the Impact</b>	<b>Economic Benefits.</b> This bid will fund an increase in donation of all organs. Many recipients are able to return to work and become tax paying citizens.
	<b>Quantification</b>	<p>Increase in the number of transplant recipients increases the proportion of patients able to return to work and to become tax paying citizens.</p> <p>Kidney transplant recipients have the highest employment rate post-surgery (58.6%), followed by heart (43.6%), liver (37.5%), and lung transplants (28.1%) (DeBaere C et al. 2010).</p> <p>Kidney transplantation is two to three times less expensive than dialysis on a patient per year basis (Ashton et al 2007, NZIER Report 2021). Many dialysis patients cannot maintain employment while being dialysed. It is estimated that for every patient who is able to return to full-time work post-transplant, additional benefits are up to \$53,831 in productivity and \$47,026 in additional fiscal savings (above health system savings)(NZIER Report 2021).</p>
	<b>Supporting Evidence</b>	<p>De Baere C et al. <i>Return to Work and Social Participation: Does Type of Organ Transplantation Matter? Transplantation</i>. 89;8:10009-1015. April 2010.</p> <p>Ashton et al. <i>The organisation and financing of dialysis and kidney transplantation services in New Zealand</i>. Int. J Health Care Finance Econ. 7:233-252.2007</p> <p>New Zealand Institute for Economic Research. <i>NZIER Report: Transforming lives and saving money</i>. November 2021.</p>
	<b>Gaps in Evidence</b>	
	<b>Assumptions</b>	Organ transplantations are successful and enable patients to return to full or part time employment post a successful organ transplantation. The success rates for transplantation in New Zealand are comparable to the international rates ( <a href="http://www.donor.co.nz">www.donor.co.nz</a> )
	<b>Implications</b>	

**Section 3E: Goals – What this initiative aims to achieve**

*Please repeat these questions for each goal*

<p><b>Goal 1</b></p>	<p><b>Description</b></p>	<p>The initiative seeks funding for implementation of the National Strategy's priority actions, as follows:</p> <ul style="list-style-type: none"> <li>• continue specialist capacity to support deceased organ donation in Intensive Care Units (ICUs). This is currently funded using time limited funding. Funding of \$3 million over four years is required to maintain these part time 'Link' medical and nursing organ donation roles in 19 DHBs at existing levels.</li> <li>• creating a plan to raise public awareness and understanding of organ donation and transplantation, including proactively engaging a wide range of media (communications expenses)</li> <li>• improve New Zealand's system of registering and sharing donation intent for individuals, whānau and clinicians (IT system changes, communication expenses)</li> <li>• implement programme changes to improve training of staff (including cultural awareness) for ICU physicians, Link staff, emergency department physicians, anaesthetists and other clinical staff involved in the donation process (training material and courses)</li> <li>• design measurement frameworks to measure progress in organ donation and transplantation (data collection, reporting and publication costs).</li> </ul> <p>The five points above are new initiatives that are estimated to require funding of \$14 million over four years. It is expected that an evaluation will be undertaken after two years to assess the effectiveness of these initiatives to inform any future funding.</p>
	<p><b>Quantification</b></p>	<p><i>Please quantify the goals of the initiative, if possible.</i></p>
	<p><b>Timeframes</b></p>	<p>Short term: Sustainable funding for ICU Link Staff Short to medium term: Partial implementation of 2017 National Strategy.</p>
	<p><b>Evidence and Assumptions</b></p>	<p><i>If there is any additional information on evidence and assumptions beyond what has been identified through the impacts table above, please provide any additional evidence (data/other information) and assumption for the identified goals, including any gaps or uncertainties.</i></p>
	<p><b>Implications</b></p>	<p><i>Do the assumptions or gaps in evidence imply risks to the initiative achieving its goals?</i></p> <p><i>If the initiative is in an innovative policy or an early-stage initiative, what is your approach to understanding whether the initiative will achieve desired goals?</i></p>

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Section 3F: Distributional Analysis						
Question 1: Does the initiative have the following types of distributional impacts for Māori?	A	Direct	X	Indirect	No Impact	
	<i>If direct, please complete Question 1B. If indirect or no impact, please progress to Question 2.</i>					
	B	Targeted and tailored for Māori		Disproportionate positive impact	X	Other (explain)
<p><i>Please explain why the initiative falls under the category identified in B above [max. 300 characters in CFISnet].</i></p> <p>Despite disproportionately carrying the burden of organ failure, Māori are less likely to receive organ transplantations (NRTS 2021, KHNZ Report 2021, NZIER Report 2021).</p> <p>The majority of these conditions are treatable by transplant if organs are available, and this initiative would contribute towards addressing inequalities in health disparities.</p>						
Question 2: Does the initiative have the following types of distributional impacts for Pacific Peoples?	A	Direct	X	Indirect	No Impact	
	<i>If direct, please complete Question 2B. If indirect or no impact, please progress to Question 3.</i>					
	B	Targeted and tailored for Pacific Peoples		Disproportionate positive impact	X	Other (explain)
<p><i>Please explain why the initiative falls under the category identified in B above [max. 300 characters in CFISnet].</i></p> <p>Despite disproportionately carrying the burden of organ failure, Pacific are less likely to receive organ transplantations (NRTS 2021, KHNZ Report 2021, NZIER Report 2021).</p> <p>The majority of these conditions are treatable by transplant if organs are available, and this initiative would contribute towards addressing inequalities in health disparities.</p>						
Question 3: Does the initiative have the following types of distributional impacts for children?	A	Direct		Indirect	No Impact	X – possible impact through parent receiving transplant
	<i>If direct, please complete Question 3B. If indirect or no impact, please progress to Question 4.</i>					
	B	Targeted and tailored for children		Disproportionate positive impact		Other (explain)
<p><i>Please explain why the initiative falls under the category identified in B above [max. 300 characters in CFISnet].</i></p>						
Question 4: Does the initiative have direct impacts on any other population groups?	N	<i>If yes, please list population groups impacted, e.g. "People with disabilities" [max 300 characters in CFISet].</i>				
Question 5: What region is this initiative expected to impact?	X	All of New Zealand	Gisborne	Northland	Tasman	
		Areas outside regions	Hawke's Bay	Offshore	Waikato	
		Auckland	Manawatu-Whanganui	Otago	Wellington	
		Bay of Plenty	Marlborough	Southland	West Coast	
		Canterbury	Nelson	Taranaki		

## Section 4: Alignment

Section 4 must be completed for all initiatives, unless exempted by the Minister of Finance in the invitation letter. Further information on the questions in this section can be found at **Annex Two** of the Budget 2022 guidance.

Section 4A: Strategic Alignment	
How does this initiative link with your strategic intentions/statement of intent?	<p><i>Outline how the initiative aligns with agency strategy.</i></p> <p>This initiative focuses on delivering sustainable and equitable organ donation services that support New Zealanders to live longer and healthier lives, which strongly aligns with the Minister of Health priority for better population health outcomes.</p> <p>This initiative also aligns to the five key shifts that the health reforms are aiming to deliver. In particular, the funding to address the current inequities in access to organ transplants supports the aim for the health system will reinforce Te Tiriti principles and obligations to address current inequities.</p>
Does this initiative link with other sectoral or whole-of-government strategies (e.g. the Pacific Wellbeing Outcomes Frameworks)?	<p><i>If yes, state the name of the strategy and briefly describe how the initiative aligns to or contributes to the strategy.</i></p> <p>This bid is intended to provide funding for the implementation of the 2017 National Strategy: Increasing Deceased Organ Donation and Transplantation - a Ministry of Health endorsed strategy. The strategy specifically includes actions to align with the five strategic themes of the overall NZ Health Strategy; 1. People-powered, 2. Closer to home, 3. Value and high performance, 4. One team and 5. Smart system.</p> <p>The bid also addresses key shifts within the new Health Reforms. The intended outcomes of reducing variation in access to organ transplantation, by ethnicity and geographic location address key shifts in the new Health Reforms where a key focus is on reducing inequities for Māori and reducing variation of care on the basis of where you live. The 2017 National Strategy and key stakeholders involved in organ donation and transplantation have signalled the need to take explicit actions that will increase organ transplantation for Māori and Pacific patients and that foster a collaborative national approach.</p>
Does this initiative impact other agencies directly or indirectly? If so, how?	<p><i>Outline impacts and interdependencies of your initiative on other organisations and individuals in the policy areas, sectors, or systems your agency operates in.</i></p> <p>While the impact is minimal, an increase in organ donations will inevitably have an effect on Health NZ/the health sector.</p>

## Section 4B: Alignment to Government's goals

The Government's goals for this term are:

- 1) Continuing to keep New Zealand safe from COVID-19
- 2) Accelerating the recovery and rebuild from the impacts of COVID-19
- 3) Laying the foundations for the future, including addressing key issues such as our climate change response, housing affordability and child poverty

**Alignment to Government goals**

*What Government goal(s) does this initiative align with? Answers must not exceed 1-2 paragraphs.*

The bid aligns with key shifts within the new Health Reforms. The intended outcomes of reducing variation in access to organ donations, by ethnicity and geographic location address key shifts in the new Health Reforms where the focus is imperatively on reducing inequities for Māori and reducing variation of care on the basis of where you live. The 2017 National Strategy and key stakeholders involved in organ donation and transplantation have signalled the need to take explicit actions that will increase organ transplantation for Māori and Pacific patients and that foster a collaborative national approach.

## Section 4C: Contribution to the Government's Wellbeing Objectives

The Government's five wellbeing Objectives are:

- **Just Transition:** supporting the transition to a climate-resilient, sustainable, and low-emissions economy.
- **Future of Work:** enabling all New Zealanders and New Zealand businesses to benefit from new technologies and lift productivity and wages through innovation
- **Physical and Mental Wellbeing:** supporting improved health outcomes for all New Zealanders, including protecting New Zealanders from the impacts of COVID-19.
- **Māori and Pacific:** lifting Māori and Pacific incomes, skills, and opportunities, including through access to affordable, safe, and stable housing
- **Child Wellbeing:** reducing child poverty and improving child wellbeing, including through access to affordable, safe, and stable housing.

*\*Please note: these objectives have been agreed by Cabinet subject to wider consultation. The final versions of the objectives will be published in the Budget Policy Statement in December 2021.*

<p><b>Contribution to Wellbeing Objective(s)</b></p>	<p><i>Which wellbeing objective(s) does this initiative contribute to and how? Is it a direct or indirect contribution? Answers must not exceed 1-2 paragraphs.</i></p> <p>This bid will fund an increase in donation of all organs. Many recipients are able to return to work and become tax-paying residents post-transplant. Kidney transplant recipients have the highest employment rate post-surgery (58.6%), followed by heart (43.6%), liver (37.5%), and lung transplants (28.1%) (DeBaere C et al. 2010).</p> <p>Kidney transplantation is two to three times less expensive than dialysis on a patient per year basis (Ashton et al. 2007, NZIER Report 2021). It is estimated that there is an additional fiscal cost of \$47,026 per year on average in New Zealand due to difficulty maintaining employment while on dialysis (NZIER Report 2021).</p> <p>Furthermore, an increase in organ transplants provides an opportunity for reducing current inequities in the rate of transplantation for Māori and Pacific compared to their non-Māori, non-Pacific counterparts.</p>
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## Section 5: Delivery

Section 5 must be completed for all initiatives. Further information on the questions in this section can be found at **Annex Two** of the Budget 2022 guidance.

## Section 5A: Fit with existing activity

*The answer must not exceed 1-2 paragraphs.*

<p><b>How does the initiative link with existing initiatives with similar objectives?</b></p>	<p><i>Describe how the initiative links with existing services or initiatives, including non-spending arrangements, with similar objectives.</i></p> <ul style="list-style-type: none"> <li>- A total of \$1.988 million was transferred to NZBOS from Auckland DHB to fund the existing organ donation function.</li> <li>- Since 2018, the Ministry of Health has used time-limited NDE to fund the contracts with 19 DHBs to link organ donation clinical specialists for ICU link staff. The current contracts will be due to expire on 30 June 2022, with no source of sustainable funding to renew these. At time of implementation the Ministry advised DHBs that the long-term intent was to sustainably fund the ICU Link staff roles.</li> </ul>
<p><b>Is the initiative an expansion or a cost pressure for an existing initiative?</b></p>	<p><b>Y</b></p> <p><i>If yes, provide a concise overview of how this initiative will expand on or maintain existing services.</i></p> <p>This initiative is an expansion on the National Strategy 2017 implementation.</p>

Provide an overview of existing funding levels for this initiative, and/or initiatives with similar objectives, in the two tables below.

	Operating Funding profile (\$m)						Total				
	2021/22	2022/23	2023/24	2024/25	2025/26 & outyears						
Existing funding for this/similar initiatives	2.688	1.988	1.988	1.988	1.988	10.64					
Total funding sought for this initiative	-	S9(2)(f)(iv)									
% change between existing funding and funding sought		S9(2)(f)(iv)									
Comments (optional)	Provide explanatory comments to help interpretation of the above baseline figures.										
	Capital Funding profile (\$m)										Total
	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	
Existing funding for this/similar initiatives											
Total funding sought for this initiative											
% change between existing funding and funding sought											
Comments (optional)	Provide explanatory comments to help interpretation of the above baseline figures.										

**Section 5B: Funding sought by input**

Provide a breakdown of what the requested funding will purchase. Briefly explain the formula used, or key assumptions made, to calculate the cost of each output. Add additional rows to the table as needed to capture each output separately. Please include which Vote(s) will be impacted by each component.

Formula and assumptions underlying costings	E.g. if the initiative is seeking funding for wage increases, outline any assumptions around average salaries, number of FTE and the roles/seniority they will be, numbers of contractors.					
Input – Operating [Enter one number value per field only into CFISnet]	Funding profile (\$m)					Total
	2021/22	2022/23	2023/24	2024/25	2025/26 & outyears	Number values only, i.e. 15 or 100000. Do not enter any text, \$ signs or % signs.
Input Information						

Continue funding dedicated ICU Link staff to support deceased donation (FTEs in ICUs)	-	S9(2)(f)(iv)										
Strategy implementation including donor registration, training for clinical staff, measuring strategy progress, and public awareness.	-	S9(2)(f)(iv)										
<b>FTE-specific Input Information (if applicable)</b>												
New FTE funding												
New contractor funding												
Additional FTE overhead funding												
<b>Total</b>	-	S9(2)(f)(iv)										
<b># of FTE's (employees and/or contractors)</b>												
<b>What's the % increase in FTE compared to baseline FTE numbers</b>												
		<b>Funding profile (\$m)</b>										<b>Total</b>
<b>Input – Capital</b>		21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	
<b>Total</b>												
<b>Appropriations</b>	<i>Indicate whether this funding would increase existing appropriations (if so, please list the existing appropriation or category that will be used), establish any new appropriations, or alter the scope of an existing appropriation with effect from 1 July 2022.</i>											

**Section 5C: Options analysis**

*The answer must not exceed 1-2 paragraphs.*

<b>Options analysis</b>	The intent is to increase organ donation rates and no suitable alternative options have been identified to this initiative. Significant work and consultation have been undertaken to identify priority actions to achieve an increase in donation and transplantation rates in the National strategy, and this initiative would provide resources to deliver on the priorities. If the bid is unsuccessful, actions to achieve those priorities are unlikely to progress.
<b>Counter-factual question</b>	Live donors occur for some kidney and liver transplants. There are existing initiatives in place to increase live donations monitored by the National Renal Transplant Service and the Paired Kidney Exchange Scheme. There are no alternative options for heart, lung and many liver transplants.

**Section 5D: Scaled option**

*The answer must not exceed 1-2 paragraphs.*

<b>Option overview</b>	To achieve the desired outcomes, we do not believe this bid can be further scaled for the following reasons: 1. Continuing funding for the clinical capacity in ICUs to support deceased organ donation (\$3.0 million over four years). Any reduction in the proposed funding would likely result in fewer donations and transplants than current rates. So, we consider that the minimum viable option is to retain at the current level.
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2. NZBOS estimated the cost of implementing the National Strategy to be <sup>S9(2)(f)(iv)</sup> in the first year and <sup>S9(2)(f)(iv)</sup> for subsequent years. The proposed bid already provides a scaled amount to the anticipated cost which will require prioritisation of specific actions, scaling back further than this is likely to dilute the impact that can be achieved.

*Provide a breakdown of what the minimum viable option would purchase. If the formula used or key assumptions made differ from those used for the primary option, briefly explain these. Add additional rows to the table as needed to capture each output separately.*

Formula and Assumptions	Explain if different from primary option.										
	Operating Funding profile (\$m)										
Input - Operating	2021/22	2022/23	2023/24	2024/25	2025/26 & outyears					Total	
Link staff	-	<sup>S9(2)(f)(iv)</sup>									
Scaled funding of National Strategy implementation	-										
<b>Total</b>											
	Capital Funding profile (\$m)										
Input - Capital	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	Total
<b>Total</b>											
<b>Appropriations</b>	<p>Indicate whether this funding would increase existing appropriations, establish any new appropriations, or alter the scope of an existing appropriation with effect from 1 July 2022.</p> <p>This funding would establish appropriations for Link Staff and funding towards initiatives within the National Strategy.</p>										

### Section 5E: Monitoring and Evaluation

*The answer must not exceed 1-2 paragraphs.*

*Outline the overall evaluation and monitoring methodology for the initiative; how often and to whom monitoring and performance reports will be provided; and when the first report back is expected. If not indicated in the cost breakdown in section 5B, please indicate here what funding is proposed to be allocated to monitoring and evaluation.*

*Describe the performance measures that will be in place for this initiative. Performance measures should be specific, measurable, achievable, relevant and timely (SMART). You can use these measures as the basis for your estimate performance information.*

Quarterly reporting to the Ministry, via NZBOS's reporting as a crown entity, would be expected on the agreed measurement framework. There are a number of quality indicators that can reasonably be expected to be included in the measurement framework (refer to examples below). Existing data sources and reporting are available to support reporting of measures (e.g. ODNZ's organ donation audit, referral dataset and the Ministry's National Data Collections).

The Ministry of Health anticipates a three -year review of performance of the national agency. An action of the 2017 National Strategy is to develop an evaluation framework. It is likely that the performance of the national agency will be monitored using the following metrics which will be part of the measurement framework which will be reported quarterly as well as the performance evaluation after three years:

- formal family discussions as a percentage of possibly brain or circulatory death patients
- donors as a percentage of referrals
- organ donation training sessions and visits to champion organ donation
- donor activity, including numbers of deceased circulatory death donors
- transplant activity
- waiting list growth or reduction.
- number of New Zealand organs transplanted in Australia
- Australian organs transplanted in New Zealand to inform measurement of available transplant capacity
- ethnicity of donors and recipients
- family and friends experience

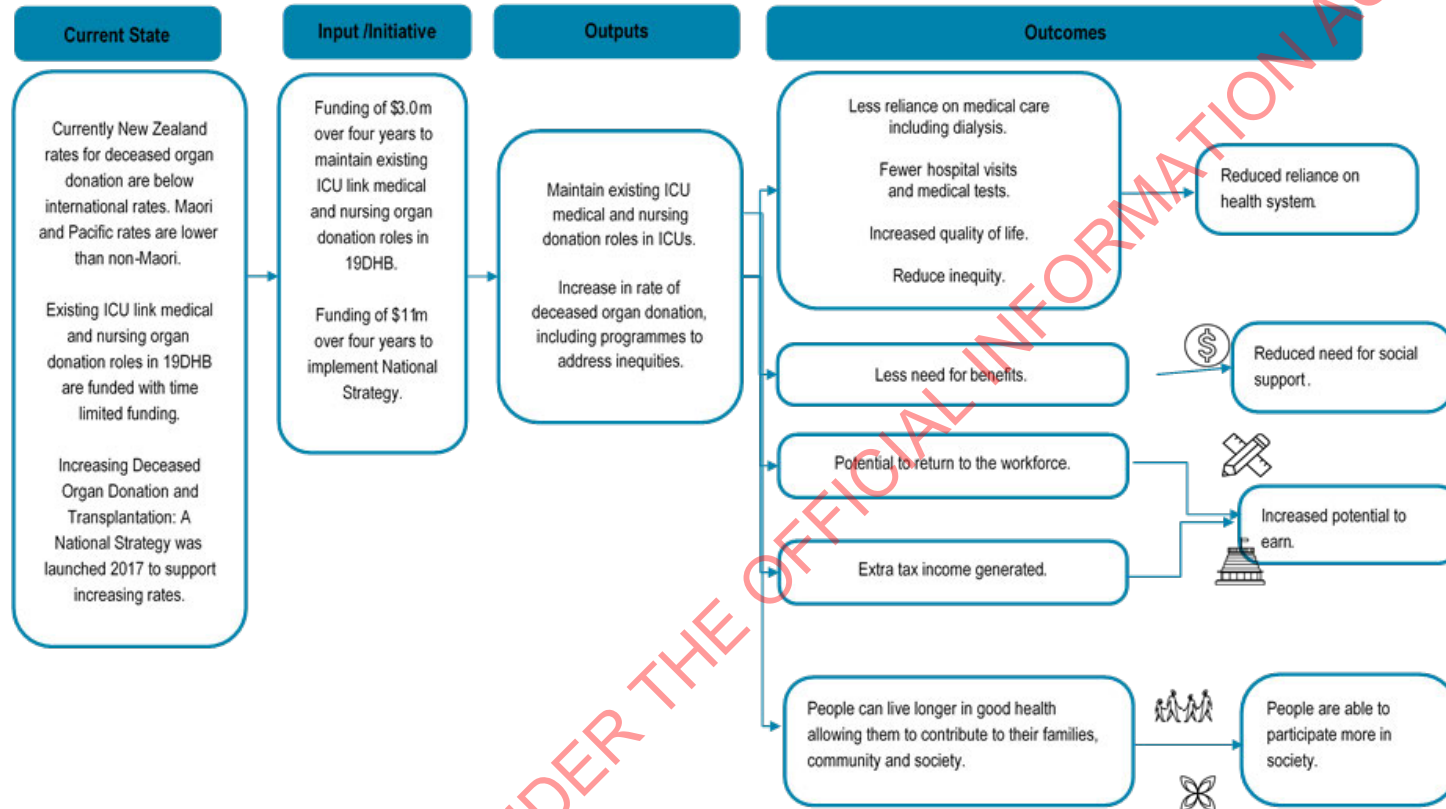
- staff experience survey
- measurement of clinical outcomes and ICU audits
- international benchmarking

## Section 5F: Implementation readiness

The answer to each question must not exceed 1-2 paragraphs.

<b>Workforce: Are additional FTEs or contractors required?</b>	Y	<p>Additional staff is likely to be required to implement the National Strategy. Cost of additional staff is anticipated to be covered by the funding sought in this bid.</p> <p><i>What is the ability to secure the required FTE, considering relevant departmental vacancy information, turnover rates and average salaries of similar roles? [max. 300 characters in CFISnet].</i></p> <p>It is anticipated that staff required for co-ordination, promotion and education activities will be readily available. Clinical staffing to increase transplant surgery may be more constrained by workforce shortages arising due to COVID-19.</p>
<b>Workforce: Resourcing considerations</b>		<p><i>If the Public Service Commissioner's Public Service Pay Guidance is relevant to the initiative, how has this been considered in the development of this initiative? Any planned mitigations to reduce any resourcing issues (for example, work programme reprioritisation, in-house training, retention strategies)?</i></p> <p>This is not relevant.</p>
<b>Timeframes</b>		<p><i>What are the timeframes for delivery? Are there any dependencies to delivering this initiative?</i></p> <p>There are no other dependencies to delivering on this initiative. NZBOS is proposing a phased approach to implementing the 2017 National Strategy. Phase 1 (21/22-22/23) Example of activities: stocktakes, clinical and advisory group frameworks established. Phase 2 (23/24 -24/25) Example of activities: public awareness campaigns, measurement frameworks established. Phase 3 (25/26 and beyond) Example of activities: outcome measurements, required sustainable systems (IT, process) established.</p>
<b>Delivery Risks</b>		<p><i>What are the key risks to delivering this initiative and what are your plans to mitigate these to ensure delivery? Please outline the risks and associated mitigating actions.</i></p> <p>This budget bid aims to increase the rate of deceased organ donation through the implementation of the 2017 Strategy. The true downstream effects of the strategy implementation (i.e., an increase in transplantations is not anticipated to be fully realised in year one and year two. However, there is a risk that there is an increase in transplantation rates in the short term, which does not have a sustainable funding source and would need to be funded from underspend in another appropriation,</p>
<b>Market capacity</b>		<p><i>Explain any market capacity constraints in the production of this initiative's outputs, and any planned mitigations to reduce these issues (including procurement plans).</i></p>
<b>Previous delivery experience</b>		<p><i>Describe delivery of any previous similar activities, in particular how delivery aligned or differed from the proposed plan (e.g. if significant delays, price overruns or changes to delivery outputs occurred), and key processes in place to ensure delivery (e.g., risk management, governance structures, project management).</i></p> <p>This initiative is an expansion of existing activity.</p>

Intervention Logic Map (Related to Section 3)





### Appendix 1: Evidence base for benefits of Organ Transplant

Transplant surgery is a highly successful and cost effective treatment for organ failure with financial and social returns in terms of extended life years and improving quality of life (TSANZ<sup>2</sup>, NHS Scotland<sup>3</sup>, Åberg F1, et al<sup>4</sup>, Long et al<sup>5</sup>).

Receiving organ transplants is clearly linked to increased life expectancy and quality of life for transplant recipients, including the ability to resume employment in many cases. Five year success rates for organ donation currently range between 60-92%, depending on the transplanted organ type. For example:

- Liver transplant survival rates have improved with recent techniques. Overall patient survival from a US study of 4000 patients was 59%, with an 18 year survival rate of 48% (Jain et al, 2000)<sup>6</sup>. A study of 81 people with acute liver failure showed that 38 received a transplant, 13 survived without a transplant and 30 people died (37% mortality). The study concluded that acute liver failure has high mortality, with transplant the treatment of choice (Tessier, Villeneuve, Villeneuve, 2002)<sup>7</sup>.and a liver transplant recipient can expect to live more than 20 years following a successful transplant. In the absence of a transplant, a person with end-stage liver failure will likely die within a few months, and require full-time care before that.
- The International Society for Heart and Lung Transplantation (ISHLT)<sup>8</sup> reported conditional survival (for those that survive one year post transplant) of 13.5 years for adults, and 19 years for children. HealthPact undertook a technology brief of a total artificial heart as a bridging device for people with heart failure prior to transplant ([https://www.health.qld.gov.au/\\_data/assets/pdf\\_file/0032/426974/wp043.pdf](https://www.health.qld.gov.au/_data/assets/pdf_file/0032/426974/wp043.pdf)) which confirms the benefits of transplant as treatment of choice for people in heart failure. The brief noted that Keogh and Pettersson (2008)<sup>9</sup> reported that in Australia, heart transplant recipients survive on average 14 years after transplantation, with one-third of patients

<sup>2</sup><http://www.donatelife.gov.au/sites/default/filesf>

<sup>3</sup> <http://www.nsd.scot.nhs.uk/publications/Serviceviews>

<sup>4</sup> Åberg F1, Mäklin S, Räsänen P, Roine RP, Sintonen H, Koivusalo AM, Höckerstedt K, Isoniemi H. (2011). *Cost of a quality-adjusted life year in liver transplantation: the influence of the indication and the model for end-stage liver disease score*. Liver Transpl. 2011 Nov;17(11):1333-43. doi: 10.1002/lt.22388.

<sup>5</sup> Long, EF, Swain, GW, Mangi, AA. (2014). *Comparative Survival and Cost Effectiveness of Advanced Therapies for End-stage Heart Failure*. Heart failure: Congestive, Cardiovascular (CV) surgery

<sup>6</sup> Jain, A, R Reyes J, Kashyap R, Dodson SF, Demetris AJ, Ruppert K, Abu-Elmagd K, Marsh W, Madariaga J, Mazariegos G, Geller D, Bonham CA, Gayowski T, Cacciarelli T, Fontes P, Starzl TE, Fung JJ. (2000). *Long-term survival after liver transplantation in 4000 consecutive patients at a single centre*. Ann Surgery, October 232(4): 490-500.

<sup>7</sup> Tessier, G, Villeneuve, E, Villeneuve, JP. (2002). *Etiology and outcome of acute liver failure: experience from a liver transplant centre in Montreal*. Canadian Journal of Gastroenterology. Oct; 16(10): 672-6.

<sup>8</sup> The International Society for Heart and Lung Transplantation: Registries 2017

<sup>9</sup> Keogh, A and Pettersson, R. 2008. *Australia and New Zealand Cardiothoracic Organ Transplant Registry: 2008 Report*.

surviving for more than 20 years. Lietz and Miller (2007)<sup>10</sup> reported that the average survival of eligible patients with heart failure who are unable to undergo transplantation is less than 2 years. A range of high technology and expensive 'bridging' devices are used to support an individual in heart failure until such time as an organ may become available.

- Multiple studies have shown that patient survival is better with kidney transplantation than with dialysis. One large study reported that the annual death rate was significantly lower, especially among diabetics (Wolfe, Ashby, Milford et al)<sup>11</sup>. Recipients of kidney transplants typically see a major extension in their life expectancies, with their quality of life also improving dramatically — with a return to a near-normal quality of life in many cases.
- ISHLT reported median survival of 5.9 years for adults and 5.4 years for children following lung transplant. Long term survival post lung transplant is reported at 80% after one year, and up to 70% survival after three years, with age at the time of transplant being the most important factor. Even with the relatively short survival post-transplant, more than 80% of recipients reported no limitations on physical activity, and up to 40% of people surviving five years or more were able to work<sup>12</sup>.

International programmes to increase availability of donor organs with national strategies similar to New Zealand's have been implemented in UK and Australia, with considerable success. These strategies have included public awareness activity, clinical governance, training, and an organisation with an oversight and monitoring role.

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<sup>10</sup> Lietz, K and Miller, LW. 2007. *Improved survival of patients with end-stage heart failure listed for heart transplantation: analysis of organ procurement and transplantation network/United Network of Organ Sharing Data, 1990 to 2015*. Journal of American College of Cardiology; 50: 1282-90.

<sup>11</sup> Wolfe RA, Ashby VB, Milford EL, Ojo AO, Ettenger RE, Agodoa LY, Held PJ, Port FK. (1999). *Comparison of mortality in all patients on dialysis, patients on dialysis awaiting transplantation, and recipients of a first cadaveric transplant*. N Engl J Med.;341(23):1725.

<sup>12</sup> The International Society for Heart & Lung Transplantation web site: "Registries -- Heart/Lung Registries Quarterly Data Report."