Healthier Lives – He Oranga Hauora National Science Challenge

Consultation on research priorities for 2019-2024

Purpose

The Healthier Lives National Science Challenge is seeking your views about the next phase of our work, from 2019-2024, with an anticipated investment of $17.6 million. We need your input to inform the future direction of the Challenge, recognising that our research activities only commenced in 2016. This document provides a brief background and asks a set of questions; your answers to these questions will guide us.

Healthier Lives Goals

Healthier Lives is one of 11 government-established National Science Challenges which aim to support the best research to achieve societal impact within a 10-year timeframe. The intent is to coordinate, leverage and influence nationally, so that the whole is greater than the sum of the parts.

Healthier Lives has a vision of achieving healthier lives for all New Zealanders, as a result of undertaking research on the prevention, management and treatment of four of New Zealand’s main non-communicable diseases: obesity, cardiovascular disease (CVD), diabetes, and cancer. We are leveraging New Zealand’s existing knowledge through involving leading New Zealand health researchers (from five universities, several Māori and Pacific health care providers and several District Health Boards) in cross-institutional and multi-disciplinary teams, and through capitalising on existing big data sources and expertise. To ensure that research findings are translated into real world improvements, our research is co-designed with communities, health professionals and policy makers.

Our mission is to deliver the right prevention to the right population and the right treatment to the right patient. Reducing inequities in health outcomes for different groups within the New Zealand population is key to achieving our vision and mission. The principles of Vision Mātauranga are embedded across all our research to address Māori aspirations, embrace mātauranga Māori and reduce inequities in health outcomes.

To deliver the right prevention to the right population and the right treatment to the right patient we are investigating how to:

- translate existing knowledge to improve health outcomes for New Zealanders. Researchers already know a great deal about the lifestyle factors associated with our target diseases so we are seeking more effective ways of translating our existing knowledge into better health outcomes for individuals, whānau and communities.

- develop precision medicine to improve health outcomes for New Zealanders, based on understanding of the human genome. New Zealand has a unique population, therefore in some cases we can achieve better outcomes if we undertake local research on our unique population.
Healthier Lives Current Research Projects

Healthier Lives has funded 10 major research projects in the first funding period, 2015-2019. Five of these are funded jointly with the Ministry of Health and the Health Research Council of New Zealand under the Long Term Conditions Partnership.

1. **He Pikinga Waiora: Making health interventions work for Māori communities:**
   Working with 2 Māori communities, we are applying systems thinking and developing communication strategies to improve uptake of prevention and treatment programmes.
   - **April 2016 – June 2019**

2. **OL@-OR@, a Māori and Pasifika mHealth approach to supporting healthy lifestyles:**
   We are co-designing a culturally tailored, personalised mobile-phone delivered (mHealth) healthy lifestyle support programme for Māori and Pasifika, and evaluating whether it is effective in improving health outcomes.
   - **April 2016 – April 2019**

3. **CtDNA for better cancer management: the application of precision oncology to the New Zealand healthcare system:**
   We are developing minimally invasive biomarkers utilising circulating tumour DNA to investigate whether they can be implemented as simple, accurate and reliable blood tests to detect melanoma and colorectal cancer.
   - **January 2016 – October 2018**

4. **Equitable cardiovascular and diabetes risk prediction: Better cardiovascular and diabetes outcomes in Māori, Pacific, and Indian subcontinent ethnic groups:**
   We are developing improved risk prediction equations for Māori, Pacific and Indian subcontinent populations, and more accurate methods for early diagnosis of cardiovascular disease and prediabetes to enable more effective treatments.
   - **January 2016 – June 2019**

5. ***Mana Tū: A whānau ora approach to long term conditions:**
   We are investigating whether deploying skilled and supported Kaimanaaki-whānau in general practices, operationally supported by a central hub, will result in improved health outcomes.
   - **March 2017 – February 2020**

6. ***Innovative management of diabetes with a comprehensive digital health programme (BetaMe):**
   We are studying the clinical and cost effectiveness of the BetaMe digital health programme to support prevention and self-management of prediabetes and diabetes, with particular focus on whether it assists Māori and Pacific people, and how can it be translated into clinical practice.
   - **March 2017 – February 2020**

7. ***Preventing type 2 diabetes with Probiotics and Prebiotics (Food 4 Health – prevent diabetes He Oranga Kai):**
   We are testing whether probiotic or prebiotic supplements can assist adults with prediabetes to improve their blood glucose and fat levels, how this intervention can be implemented and whether it is cost effective.
   - **March 2017 – February 2020**

8. **The Pasifika Prediabetes Youth Empowerment Programme:**
   We are researching the impact of two lifestyle programmes, designed to empower Pasifika youth and young adults to lead healthier lifestyles and to live independently, in terms of empowering behavioural changes to reduce the prevalence of obesity and prediabetes.
   - **October 2017 – September 2020**

9. **WellConnectedNZ – Improving individuals’ health by strengthening community connectedness:**
   We are investigating whether new technologies, or new ways of using technology, can help people with multiple chronic conditions to access community support, increase their sense of connectedness and improve physical activity.
   - **September 2017 – August 2019**

10. **Capitalising on New Zealand’s health data:**
    We are testing a model that brings together academic ‘champions’ and big data experts to answer research questions related to the Healthier Lives’ mission, including questions about the long-term impact of the Canterbury earthquakes on cardiovascular disease (CVD), the productivity costs of CVD, the incidence of diabetes in Māori communities, and the prevalence of cancer in NZ.
    - **February 2016 – January 2018**

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* funded jointly by Healthier Lives, the Ministry of Health and the Health Research Council of NZ via the Long Term Conditions Partnership
Healthier Lives Potential Future Directions

Relevant research landscape

Healthier Lives is situated within a research landscape which includes other research teams and funding agencies working to combat non-communicable diseases. Our analysis of Health Research Council (HRC)\(^1\) research investment shows that 30% is for research relevant to the mission of Healthier Lives, of which:

- the majority is for discovery and development research; less than 20% supports evaluation, management or health services research;
- cancer receives 39%; cardiovascular disease 22%; diabetes 9% and obesity 8%.

Healthier Lives’ investment, together with the Long Term Conditions Partnership between Healthier Lives, the Ministry of Health and the HRC, has provided some balance by increasing funding for diabetes and translational research.

Because of the relative lack of obesity research, we commissioned an analysis of recent obesity-related publications by NZ authors. This reveals that there is very little recent research relating to obesity prevention and the effectiveness of different care models.

Principles for prioritising future Healthier Lives research

The following three principles will guide decisions about future research priorities\(^2\). They recognise both the available resources and 10-year timeframe for achieving a major impact:

1. prioritise research on the implementation of preventive interventions where the potential health gain and cost effectiveness of the interventions are already known;
2. prioritise research on the different impacts of accepted interventions across differing population groups;
3. support laboratory-based research only if projected outcomes within the 10-year timeframe justify the likely research, development and future intervention costs.

Potential Healthier Lives research directions

The following suggestions for future research build on our research to date (A to E and G) and grow our research scope (F):

A Equitable CVD and diabetes risk reduction: Future work could use the improved risk prediction tools developed in Project 4 and identify barriers to implementing risk reduction measures and achieving behaviour change for at-risk individuals. In particular this could investigate why current screening programmes are not followed up by appropriate interventions.

B Circulating tumour DNA for better cancer management in New Zealand: If Project 3 shows that circulating tumour DNA can provide a sensitive and specific early diagnostic option for colorectal cancer and melanoma, the next phase could determine how testing can be incorporated into clinical pathways, and model cost-effectiveness, including for NZ’s colorectal cancer screening programme.

C Diabetes risk reduction and management: Projects 5-9 have only just got underway so it is still too early to identify the most promising directions for future enquiry. Since 25% of the adult population has prediabetes, our scientists are keen to understand the factors that determine the progression from prediabetes to diabetes so preventions can be targeted towards those most at risk of developing type 2 diabetes.

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\(^1\) The analysis looked at all active HRC research contracts at June 2016, and encompassed 457 contracts, valued at almost $340 million.

\(^2\) The ideas, put forward by Professor Tony Blakely, have emerged from work undertaken in the MBIE-funded project, *Modelling to prioritise intervention studies in the Healthier Lives NSC* within the BODE\(^3\) research programme.
D **Delivering culturally tailored, whanau-centred health initiatives:** Projects 1 & 2 display encouraging early signs of progress. If the initial trials conclude that these programmes deliver benefits beyond existing interventions, future research could focus on how to transform them into sustainable national programmes to address equity and collective well-being.

E **Big data:** New Zealand has some of the best national-level health and administrative data in the world, which is available through the Statistics New Zealand Integrated Data Infrastructure. Using big data can be an extremely cost-effective way of answering important questions about the health of our population which can inform research directions and assist decisions regarding the costs/benefits of interventions. Healthier Lives is keen to continue taking advantage of this capacity (continuing on from Project 10) to answer important questions relevant to our mission e.g. what benefits accrue from bariatric surgery and which individuals benefit the most?

F **Obesity:** Obesity is an important underlying cause of many non-communicable diseases. The lack of current obesity research funding and research activity (as outlined above) means this is an area where Healthier Lives could usefully extend its focus in the second funding period.

G **Implementation:** To achieve impact in its lifetime, the Challenge needs to focus on implementation of research findings in its second term. One idea that has been mooted is implementing and evaluating a large-scale, community-based multi-dimensional programme, designed specifically to improve the health of priority groups and achieve health equity. The programme could incorporate the Challenge’s earlier work in Projects 1-4, involve the other health and wellbeing science challenges and take account of potential changes in government public health policy.

**Questions**

Please answer whichever questions are appropriate to your interests; it is not necessary to answer all questions.

Do you regard any of the directions outlined as particularly important priorities for Healthier Lives to follow during 2019-2024 to achieve impact? Why?

Are there any additional research directions you think particularly important for Healthier Lives to consider during 2019-2024 in order to achieve impact? Why?

If your organisation funds or supports research, do you see opportunities for partnering with Healthier Lives? If so, what research questions would you be interested in?

Have you any other comments about the next phase of work for Healthier Lives?
Please let us know your views

To provide written feedback, either:

- complete the online survey at: https://healthierlives.co.nz/consult/ or
- email healthier.lives@otago.ac.nz.

The deadline for submissions is: 15 December 2017.

If you have any questions about the consultation please contact the Healthier Lives Directorate team on 03 470 9859 or at healthier.lives@otago.ac.nz.

For more information about Healthier Lives please visit our website: https://healthierlives.co.nz/.

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