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Health Impact Assessment: practice issues

Edited by Nick Taylor & Richard Morgan

Introduction to health impact assessment: practice issues

Nick Taylor & Richard Morgan

Impact Connector is the platform that NZAIA uses to prompt practitioners to share ideas and write about the practice of impact assessment. In this issue of *Impact Connector* we focus on the practice of health impact assessment (HIA), both in Aotearoa New Zealand and internationally. The issue brings together short papers that report on examples of current practice and provide commentary on how HIA continues to develop in the face of new challenges.

HIA is generally considered as an ex ante assessment of the impacts of policies, programmes and projects on human health but, as Fischer and Cave (2018) point out, HIA is not alone in making assessments of health impacts. We can and should expect to see effects on health discussed across a wide range of IA documents including Environmental Impact Assessments (EIAs), Strategic Environmental Assessments (SEAs), Social Impact Assessments (SIAs) and Cultural Impact Assessments (CIAs), and also in project and programme evaluations.

HIA as practiced internationally has a broad perspective that incorporates multiple, interlinked determinants of health, as described by Fischer and Cave (2018) in their introduction to a special issue on HIA in the journal *Impact Assessment and Project Appraisal,* and by Richard Morgan in his article in this issue of *Impact Connector*. Reviews of the field by international practitioners, and advocates for HIA, consistently pick up this theme about the complex chains of effects that have consequences for the health of people and communities. While there is a background of practice in environmental health, including in Aotearoa NZ, HIA also incorporates social and economic determinants and considers health implications across projects, plans, policies and regulations (Harris-Roxas, et al. 2012).

This breadth of practice includes the environmental safeguards policies and procedures practised by organisations such as the World Bank and Asian Development Bank, which include health and safety as integral components of the required assessments or projects, policies and plans (Fischer and Cave, 2018). We note that impact assessment practitioners in Aotearoa NZ are active in applying IA in these safeguards frameworks. However, as noted by Martin Birley in his reflections in this issue on HIA from an international and UK perspective, the required IA practice is patchy and often the necessary skills and experience in HIA are missing.

The breadth of HIA practice is illustrated further in the paper by Helen Brown, where she

discusses how HIA can be integrated into consideration of climate change adaptation plans, with reference to examples in Australia and the Pacific Islands, through assessments of vulnerability and adaptation plans. She usefully outlines a step by step guideline for this increasingly urgent work, consistent with well recognised approaches to impact assessment. Impact assessment and climate change remain a key concern for NZAIA in partnership with our colleagues at SPREP (see *Impact Connector* Issue 11).

As Martin Birley notes, the challenge for impact assessment is to integrate HIA with other assessments, including environmental and social ones. Chantal Lauzon expands on this theme with her discussion of a health in all policies approach that led to development of an Integrated Planning Guide (IPG) by the Christchurch District Health Board (CDHB) in the aftermath of the Christchurch earthquake sequence. The guide was recently supplemented with extra content for application to the pandemic response. The IPG takes an "holistic, integrated approach to heath as part of impact assessments" early in planning. It outlines a model of 14 themes, with users encouraged to explore these themes and how they are linked. The guide explicitly acknowledges responsibilities under te Tiriti o Waitangi and the need to integrate matauranga Māori in assessments.

The paper by Angela Curl looks at the application of HIA to transport planning. She notes that in particular the mode of transport used has important implications for health and wellbeing, with active modes recognised as a means to encourage healthy lifestyles. Angela also points out that transport planning has implications for the full set of wellbeing outcomes: health, environmental, social and economic. There are direct impacts on health from transport, especially through safety and the possibility of injuries and death from using transport systems. There are also indirect health impacts, including those arising from environmental impacts such as air quality, noise, vibration and water quality, as well as social ones, such as the ability to use transport for accessing livelihoods and a range of social services and activities, and to build social cohesion.

From her wellbeing focus, Angela draws our attention to the overlap between HIA and SIA. She notes that social impacts can result from changes to transport modes, the level of social connectedness, and in some instances community severance. HIA and SIA can work together to consider urban design elements such as the relationship between local movement patterns and the location of businesses and services, and considerations of health and safety in urban design.

We observe that this overlap between HIA and SIA is also evident in other areas of policy making such as in SEAs of policy and planning for water management and land-uses. Indeed, the CDHB has led thinking about this topic in the Canterbury region by pursuing their health in all policies approach. For instance, they produced a literature review that provided valuable information about the impacts of agricultural intensification on health (Green, 2014). In a recent review of several SIAs relating to land and water planning, Mackay and Taylor (2020) noted the importance of impacts from nitrates in waterways on drinking water quality and human health, and also on the potential costs faced by communities and individual households (with reduced

disposable incomes) from upgrading their water infrastructure. They also drew out the links between outdoor recreation and health, directly as a result of contact recreation in poor quality water, and also indirectly, due to the attractiveness of the water environment for healthy outdoor activities.

Given the papers all accept the positive and negative factors affecting health and wellbeing should be considered early in the development of a plan, policy or project, Martin Birley and [Richard Morgan](#) both find that practice of HIA is limited and inconsistent. Richard traces the rather chequered history of HIA practice in Aotearoa New Zealand to date. He reflects, "Does HIA still exist in New Zealand, perhaps under other labels or guises, or has it just withered?"

His question reflects the enthusiasm for developing and promoting HIA that resulted in the early HIA guidelines developed by the Public Health Commission in 1995 to the Public Health Advisory HOA guidelines in 2004, and the Whānau Ora HIA guidelines in 2007, when practice of HIA was supported for a short period at national level by an HIA Support Unit in the Ministry of Health. At the end of this peak of activity, in 2010, members of NZAIA helped to organise the 3rd Asia-Pacific Regional HIA Conference "Health, wellbeing, and HIA: Working better, working smarter" at the University of Otago, which provided a valuable opportunity to connect New Zealand practitioners, and an emerging group in the Pacific, with the very active community of practice in the South and East Asian area. However, since then, HIA practice in this country has been patchy, much as Martin Birley observes for jurisdictions such as the UK.

In his paper, Richard links the periods of strength in HIA in this country to the existence of institutional support. Without a clear institutional base (national and regional) the practice of HIA appears to falter. Therefore we call for some re-examination of the basis for HIA in this country, especially given the current reforms of health administration, resource management legislation and local government.

This issue of Impact Connector was prepared during lockdowns and as public health people led the fight against the covid19 pandemic. We greatly appreciate contributors found time to write in such a thwart period personally and professionally. We also regret others were not able to contribute because of the priorities in their crucial work. We hope this Impact Connector helps to stimulate HIA practice, as we reflect on how useful HIA could be if it were used fully in designing managed quarantine systems or economic support packages, rolling out vaccination programmes, and designing crucial policy developments and decisions in a period of fast-moving change.
There is a role for NZAIA to help develop a strategy to advance HIA practice again, with reference to the issues raised by these papers in Impact Connector.

Nick Taylor and Richard Morgan, Issue Editors

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International Health Impact Assessment – a personal view

Martin Birley, PhD, HonMFPH, Director of BirleyHIA consultancy services, York, England

martin@birleyhia.co.uk https://birleyhia.co.uk/

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For these personal reflections on Health Impact Assessment (HIA) I start with the multilateral development institutions, such as the Asian Development Bank (ADB) and the World Bank in Washington. I'll use the ADB as an example of some mixed experiences.

A few years ago, the ADB commissioned a two-year programme on HIA from a team, of which I was a member. The origin of the programme was, perhaps, a little bit unusual as it came from special funding for malaria control in Southeast Asia. The malaria control programme had most of the usual components such as drug development, bed nets, rapid diagnosis and treatment, mapping resistance, and mosquito control. As the ADB is mainly concerned with large infrastructure development, there was a final small component – HIA.

Large infrastructure development changes the physical and social environment, and this can promote the conditions under which malaria infection rates either rise or fall. But HIA is a holistic discipline, intended to consider all the possible health outcomes of a development, and not just a single disease. Furthermore, malaria in Southeast Asia tends to be restricted to the edges of forests zones while the infrastructure development is often urban or in deforested zones. Therefore, the HIA programme had a wider remit than just malaria.

One of the main outputs of the programme was a free publication entitled "Health Impact Assessment: a good practice sourcebook" (2018), to which I was the main contributor. The report is an update, in some ways, of the HIA Guidelines produced by ADB in 1992. Following the completion of the programme, and the publication of the report, is there evidence of the ADB producing many HIA statements? I would suggest that the answer is no. If not, why not? I cannot provide a direct answer as I do not have access to the thinking within the ADB institution. What I can offer is an analysis of the ADB's Consulting Services Recruitment Notices. These are published weekly by the consultant management system. There is rarely, if ever, a call for a HIA specialist. Instead, there are calls for environmental or social safeguards specialists. These safeguards specialists are assumed to have the capability to consider the health impacts as part

of the other impacts of the project. They usually do not have any education or training in public health, environmental health, or in health impact assessment.

I see something similar in other institutions, for example the oil and gas corporations. These often carry out an Environmental Social and Health Impact Assessment (ESHIA), but again, the health component is subsumed under the social component. There are also Environmental Impact Assessments (EIA) that include a health chapter. I have observed this work being done by bright generalists who do not have any specific education or training in a health-related discipline. They can read the book and cut-and-paste from earlier reports. But in my opinion they do HIA a disservice and do not provide innovative thinking on impact identification, significance, or mitigation.

As this piece is being written for a New Zealand publication, some information about the situation in the United Kingdom is of interest. I won't try to address all the activities in the devolved nations of England, Scotland, Wales, and Northern Ireland. Wales, as many will know, has a very active HIA unit and many associated publications.

England and Scotland do not generally have a statutory requirement for a HIA, either stand-alone or as part of an EIA. Many will know that the updated European Commission Directive on EIA pays more attention to population health than the previous version. There is debate about the implications of this guidance, but I have no clear picture.

I had a recent project in Scotland where a health chapter was required as part of an EIA for a residential development of more than 50 houses in the administrative district called West Lothian. The owner of the land was seeking outline planning permission for the development. This would increase the value of the land and the owner would then sell it on to a developer at a profit. West Lothian Local Authority has issued non-statutory planning guidance on HIA and the pre-application had produced a response from the planning office indicating that an HIA chapter was advisable. The guidance was based on a checklist of 25 simple questions divided into the categories of physical infrastructure, connections, and services and facilities. In my view, the key part of an HIA is to make justifiable recommendations for healthy design. The justifications came from a review of Scottish national policy, public health priorities, standards, and West Lothian policy and guidance. For example, there is a West Lothian Strategic Environmental Assessment that has the objective of improving the quality of life and human health of communities. As the project was at the outline planning stage there was very little detail, so the recommendations were general. I divided my recommendations into environmental, social, and cumulative categories. I identified both local and global cumulative impacts. For example, I referred to the contribution the project would make to global carbon emissions and the consequent health impacts of climate breakdown. The source of the emissions would be fossil fuelled vehicles, poorly insulated homes, and poorly designed domestic heating and lighting systems. The recommendation was to minimise fossil fuel use for transport, cooking, heating, and lighting; and to maximise insulation. One of the other chapters in the EIA was a transport assessment. But this was largely stating that the development would not add significantly to car density on the local roads. It had little to say about active transport. I tried to engage with the

consultants writing the transport assessment, but they weren't interested. This is a common challenge.

An interesting current example is an initiative taking place in the County of Essex, on the edge of London. Essex has long had a Design Guide to encourage high quality development. The latest iteration encourages developers to become accredited to the Livewell scheme. Accredited developers will presumably have an enhanced reputation and be more competitive. Under the scheme developers are encouraged to undertake a stand-alone rapid HIA at an early planning stage. Essex has produced a checklist of questions representing the determinants of health in the built environment. There are approximately 143 questions, which is about twice the number in the well-known HUDU guidance. The questions fall into the following categories: active environments and active design principles; design of homes and neighbourhoods; access to open green and blue space; supporting community participation and lifetime neighbourhoods; access to healthier food environments and locally sourced food; education, skills development and employment; access to health care infrastructure; and environmental sustainability. Essex officers have advertised a contract to produce a very short HIA training course for an audience of developers, urban designers, consultants, investors, public health professionals, and planners.

In conclusion, HIA struggles on as it has over the last 40 years with advances and retreats. In some settings there is evidence of health being buried in environmental and social assessments. This is likely to promote the medical model and reduce the quality of reports and recommendations. On the other hand, planners in the UK are taking a renewed interest in healthy urban design and see HIA as a useful promotional tool.

Acknowledgements

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Use of Health Impact Assessment to develop climate change adaptation plans for health

Helen Brown
Chair HIA Network Asia Pacific
Adjunct Senior Lecturer, WHO Collaborating Centre for HIA, Curtin University

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Twenty to thirty years ago, consideration of the health impacts of climate change tended to focus on future scenarios of what might happen. Fast forward to the 2020s and we now see these scenarios unfolding in communities around the globe, with impacts on health part of the catastrophic impacts of unprecedented heatwaves, bushfires and flooding. Other climate-related health impacts, linked to the quality of our air, water and food, sea-level increase, the spread of diseases and mental health outcomes, are also increasing but rarely make the news.

This article will demonstrate how Health Impact Assessment (HIA) has been integrated with key climate change terminology and concepts to assess the health impacts of climate change and facilitate the development of adaptation plans in locations such as Western Australia, Solomon Islands, Nauru and Vanuatu (Dept Health WA, 2008; Spickett, Katscherian & McIver 2013; Spickett & Katscherian, 2014; WHO, 2015;). The Climate Health WA Inquiry also recommended the application of HIA to guide future action in Western Australia on climate change and health (Weeranmanthri et al, 2020).

The values and characteristics of HIA are highlighted as a useful approach to inform Vulnerability and Adaptation Assessments (VAA) related to health (Patz et al, 2008; WHO, 2009). The consideration of a broad range of environmental, social and economic determinants of health, with a strong focus on equity, sustainable development and stakeholder and community consultation, are characteristics of HIA that are well-suited to work on climate change and health.

Key steps in the Process

Stakeholder and community consultation

The knowledge required to inform the process of HIA extends across multiple disciplines and the community. In terms of disciplines, consultation needs those within the health sector, as well as the non-health sectors, such as emergency services, environment, indigenous affairs, planning, housing, water, energy, transport, community and cultural services, education and

agriculture. Community representation should include those with a strong understanding of traditional and/or local knowledge linked to the affected area, and groups who may be vulnerable to health effects of climate change. The increase in mutual understanding that emerges from this broad involvement is central to the identification of key areas of vulnerability and adaptation strategies and can provide long-lasting benefits.

Preliminary Scoping

A preliminary scoping step is undertaken by the HIA Project Team who establish the key concepts and approaches that will be used throughout the assessment, including the temporal and spatial boundaries of the assessment, the stakeholder engagement strategy and a preliminary consideration of which health impacts will be considered. It is recommended that a single scenario for future climate change be used because multiple climate scenarios can become unwieldy. A rationale for the scenario should be provided and the impact of this selection discussed in the final report.

Previous applications of HIA have selected a time-frame of about 20 years. This provides greater certainty with respect to climate change projections and is a time period that participants can relate to. The spatial boundaries are also critical as location has a major influence on the types of impacts, levels of risk and the selection of effective adaptation strategies. Most locations will already have a good indication of which health impacts are of most concern in their area and this can inform the focus of the HIA.

Profiling

The profiling step is undertaken by the Project Team and provides critical information about the climate scenario being considered, the local environment (natural and built) and the community. The climate scenario, obtained from sources such as the IPCC or national meteorological bodies, includes projections for temperature and rainfall patterns, sea-level rise and extreme weather events relevant to the location.

The basic characteristics of the natural and built environment should be described including the topography, identification of specific features and areas of human settlement. These should include descriptions of populated areas that are potentially more exposed to some aspects of climate changes, such as low-lying coastal areas or islands subject to sea-level increase, or areas that may be at higher risk due to other factors, such as urban areas contending with heatwaves and urban heat island effects.

A profile of the local community includes population demographics, current health status, leading causes of mortality and morbidity (especially for climate-related outcomes) and existing health inequities. Data from this step is critical to inform assessments of risk and to identify groups who may be more vulnerable to certain health impacts. The profile feeds into a comprehensive scoping workshop.

Comprehensive Scoping

Comprehensive scoping is best conducted as a full-day workshop and should include a mix of stakeholders as previously outlined. To ensure that a wide range of factors is considered, a

health determinants checklist is categorised into the biophysical environment, the service and infrastructure environment, and the social environment. Participants are assigned to groups based on their areas of expertise and work to identify the links between each climate variable, determinants of health and health impacts, citing relevant sources of evidence.

Each impact is then considered in terms of the key elements of the IPCC risk model—exposure, sensitivity and adaptive capacity. The process to this point can take up to half a day and all information is recorded in pre-prepared working tables. Ideally, groups will also have the opportunity to report back key findings to all participants.

The final task of the workshop is to identify current management practices for each impact and to list the potential limitations of these in the chosen year and climate scenario. This can be presented as *'if the climate change scenario of 20 years' time was to arrive tomorrow, what are the likely outcomes with the current management strategies in place?'* Participants also identify the stakeholders who are likely to be involved in addressing potential management actions, which informs the selection of participants for the final workshop.

The Project Team compiles the outcomes of the first workshop in an interim report which informs the next steps.

Assessment

This step assesses and ranks the level of risks to public health associated with the health impacts identified in the first workshop. This is best conducted as a smaller workshop with health experts, including those who attended the first workshop. Each impact is considered in terms of the likelihood of occurrence and the extent of health consequences, assuming the climate scenario has occurred and that only current management practices are in place. Likelihood and consequence scales are defined, and outcomes are entered into a basic risk assessment matrix to estimate the level of risk.

Given the range and complexities of the links between health and climate, the volume and type of evidence to inform the assessments will be highly variable. Some may have extensive modelling and quantitative estimates, others will rely on qualitative data and expert opinion. Whatever the case, a clear rationale for the assessment is required, including commentary on the quality of evidence informing the decision. The resulting risk rankings are discussed in a plenary session where potential adjustments can be discussed and justified. A useful outcome of this approach is to highlight gaps in the evidence on impacts that can subsequently be addressed as part of the adaptation step.

Adaptation (Management)

The third and final workshop focuses on development of adaptation strategies for the impacts at the upper end of the risk rankings. The workshop is typically a whole day. Prior to the workshop, the Project Team compiles a list of potential adaptation strategies drawn from the first two workshops, consultation with key stakeholders and the literature. These strategies are divided into eight categories: regulations and legislation; public education and communication;

surveillance and monitoring; ecosystem intervention; infrastructure development; technological and engineering; health intervention; research/further information. Ideally, the list is expanded as different jurisdictions undertake the process, providing a valuable shared resource. Unfortunately, there is currently no coordinated approach or resources to support this integrated approach.

Workshop groups are allocated a limited number of health outcomes based on their area of expertise and discuss the relevance and current capacity of the adaptation strategies, as well as any additional strategies. Suggestions to increase capacity for suitable strategies are outlined, including an indication of stakeholders who would be involved in the process.

Recommendations

A mechanism to present the findings to decision makers is required. It is recommended that the Project Team compile a "Climate Change and Health Adaptation Strategies Report". The report should include: an overview of the process; a clear health impact statement including the final risk rankings and vulnerabilities; and key adaptation actions, especially for priority risks and vulnerable groups. Aspects such as an overall strategic direction, a summary of lead government agencies, ongoing community involvement, and key activities and projects should also be included.

Conclusions

The Sixth IPCC Assessment report rang alarm bells on the intensification of climate change and the urgency required to deal with the climate emergency (IPCC, 2021). While this article has focused on health impacts of adaptation strategies, it must be said that there are limits to adaptation and without strong and urgent action to reduce greenhouse gas emissions, adaptation will be less likely, less effective and far costlier in human and economic terms.

Adaptation planning for health impacts of climate change can be a challenging prospect. A key objective of the HIA-based process outlined in this article is to provide guidance and tools to support that challenge. The resulting outcomes can inform planning and decision making by all levels of government and communities to deliver better and fairer outcomes in the face of the climate emergency. A more detailed description of the process, including a series of working tables is provided in the document "*Climate Change, Vulnerability and Health: A Guide to Assessing and Addressing the Health Impacts*" (Spickett, Katscherian and Brown; 2015).

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An integrated approach to assessing health impacts

Chantal Lauzon, MPH, Community & Public Health,

Canterbury District Health Board, and the Health in All Policies Team, Community & Public Health, Canterbury District Health Board

Standard urban planning and design practice no longer matches the multi-disciplinary theories that intersect at wellbeing. A fresh policy and design approach is required.[i]

This note describes the Integrated Planning Guide (IPG or the guide) for a healthy, sustainable and resilient future, including adaptation for a pandemic setting, and provides a case study of how it was used with a large-scale urban planning project. The guide provides a holistic, integrated approach to heath as part of impact assessments.

The quality of the physical and social environment in which we live has a significant impact on the health and wellbeing of individuals, whānau and communities. As such all decisions that impact on place or community have a health element. Everyone, whether they realise it or not, is part of the health workforce.

To create active and resilient communities we need to build a culture where health is integrated into decisions made in all sectors of society—health here being interpreted as both physical outcomes and wider wellbeing outcomes. The COVID-19 pandemic demonstrated how well sectors can collaborate and what can be achieved when a health-first approach is taken. Health is wealth – both in physical and monetary terms. Despite the evidence and known benefits, gaps are still evident where planning and policy could be improved to impact positively on health. The IPG was developed as a tool to try to bridge these gaps.

The guide takes for granted the fact that all planning processes affect health for good or bad — it aims to provide a tool to assist planners and policy makers to make decisions that do more good than harm. The guide adopts a co-benefits approach, asking what other gains can be leveraged off the particular project they are dealing with. Rather than considering just health, it also brings together the interlinked ideas of resilience and environmental sustainability. The guide is designed to help:

- plan in ways that build stronger, more sustainable social, environmental and economic outcomes,

- use a determinants of health approach,
- promote the health of all using an equity lens, and
- consolidate a shared vision for stronger, healthier and more resilient communities.

This integrated planning involves a holistic approach, considering a range of wellbeing impacts and taking account of them alongside other considerations such as equity, and the wellbeing and pae ora of Māori. Effective integrated planning in this way ideally requires all key stakeholders to be active collaborating partners in the planning process so that resource investment and planning are collectively working together towards common goals by fully assessing impacts on health.

Guide Development

The IPG was initially developed in 2011 as a collaboration between the Canterbury District Health Board (DHB), Christchurch City Council (CCC), Environment Canterbury and Greater Christchurch Partnership with a recovery planning focus following the 2010/2011 earthquake sequence in Canterbury. The guide builds on a CCC/Canterbury DHB publication 'Health Promotion and Sustainability through environmental design (HPSTED)' and retains 14 themes linking place with community health and wellbeing. Although initially developed reflecting the local principles of the Greater Christchurch Urban Development Strategy, the IPG is nested within the national (Living Standards) and international (Sustainable Development Goals) frameworks. The current version of the IPG, 3.0 published in 2019, removes the direct focus on recovery and positions integrated planning as 'business as usual'.

The IPG enables positive and negative factors affecting health and wellbeing for all population groups to be considered early in the development of a plan or policy through lists of questions prompting analysis across a range of dimensions of health to provide a basis for developing and evaluating planning proposals or projects.

The resulting plan or policy should be enhanced by having considered wider impacts and should have positive impacts on population health and wellbeing. The process also provides additional benefits such as helping build cross-sector relationships and strategic environmental assessment, learning each other's language and priorities, and providing an opportunity to share resources and skills across organisations.

Using the Guide

The use of the IPG is flexible depending on the scale and scope of the plan/policy. It can be used as a roadmap, or brainstorming tool and offers a more streamlined approach than other, more intensive, integrated assessment methodologies.

The first section of the guide discusses why assessors should focus on a holistic view of health and wellbeing, and why an integrated approach is needed to improve outcomes. It also touches on integrating Māori perspectives and contains a description of Te Pae Mahutonga, a model for health promotion planning. While many groups suffer inequities, our responsibility to *te Tiriti o Waitangi* means specifically integrating Māori knowledge, values and perspectives into planning

and decision . The Wai 2575 report notes that the achievement of equitable health outcomes for Māori is the responsibility of all sectors, not just the health sector. We interpret this to mean that the impact of any project, plan or policy on issues of equity must be considered and achieving equity should be prioritised. The principles of *te Tiriti o Waitangi* and the practice of engagement and partnership with Māori need to be progressed.

The main section of the guide goes through each of the 14 themes or building blocks of health (Figure 1), and outlines some key points and questions to consider. These questions are not an exhaustive list, but are rather a starting point for innovative planning, identifying co-benefits and reducing the risk of unintended consequences.

Users are encouraged to consider the links between the different dimensions and themes together rather than in isolation. The intention of integrated planning is to promote all of the themes in a holistic manner. Because of the range of themes, the guide encourages seeking out information to answer the questions, engaging with others and the community. For a large scale assessment it could prompt the need for a comprehensive report and community engagement. For smaller assessments it might just be a matter of checking in with stakeholders.

Figure 1. Themes or building blocks of health and wellbeing in the Integrated Planning Guide

To promote sustainable decision making, some questions act as prompts for strengthening engagement processes through recognising and communicating the needs and interests of all participants, including decision makers.

In response to user feedback, the latest edition also features some suggested performance measure examples and targets, and provides links to existing indicator sets like the Canterbury Wellbeing Index and Ngā Tūtohu Aotearoa, as starting points.

Ideally the guide should be used early enough in policy and planning to help shape a proposal. It can be especially useful at the outset of an assessment during brainstorming or storyboarding to scope the proposal and establish criteria for evaluation or monitoring. It can also be used as a tool to inform planning (preparatory and feasibility) and to help identify alternatives. While a workshop or group discussion is preferred to gain stakeholder perspectives, the IPG can also be used as a desktop exercise.

The current and previous versions of the guide have been used to inform different levels of assessment including: integrated assessment for recovery plans; master plans for Sydenham, Lyttelton, Ferry Road; a framework for earthquake recovery planning for Kaikōura; design of the Christchurch Metro-sports facility project; and to inform evaluations under s32 of the RMA 1991.

Adapting to pandemic recovery

The emergence of COVID-19 and the measures to reduce its impact created opportunities to collectively respond and recover in a way that responds to other health concerns and keeps people well in the future.

Working together with Christchurch City Council and Environment Canterbury, Canterbury DHB identified three key priorities to be taken into account while planning in the recovery from the pandemic: health and equity; addressing climate sustainability; and incorporating wider social goals.

Rather than develop a new resource, a four-page supplement was created to sit alongside the IPG as a tool to support health-promoting policy and decision-making in a response or recovery phase and to help prepare for future disruptions. The supplement includes all the same categories/building blocks as the main guide, with 3-5 additional questions. The web version also includes links to good practice examples from cities around the world.

Case study: Our Space 2018-2048

Our Space 2018-2048 Greater Christchurch Settlement Pattern Update Whakahāngai O Te Hōrapa Nohoanga outlines land use and development proposals to ensure there is sufficient capacity for housing and business growth across Greater Christchurch to 2048. It was developed by the Greater Christchurch Partnership primarily to meet the requirements of the National Policy Statement on Urban Development Capacity 2016. The strategy includes what

the population will look like, where they will live, and how they will they get around.

As part of the formal consultation process agreed by the GCP Committee, a cross-sector stakeholder review workshop was held following the release of the strategy document for public consultation. The workshop, facilitated by Community and Public Health, Canterbury DHB, was structured around an assessment of Our Space against the 14 themes of the IPG.

A total of 25 invited participants attended from a broad range of sectors including NGOs, developers, housing, business owners, transport, disability, and environment groups. Planners from the cross-organisation project group were also involved to answer questions and listen to feedback. Participants were divided into small groups to consider two or three IPG themes as a lens to explore ways to strengthen the strategy.

Feedback from the workshop identified[i]:

- Equity or how the plan could reduce current inequities was not explicitly addressed.
- There was concern that driving development to the urban fringes could exacerbate existing inequities.
- Food security was not mentioned despite planning for future development on versatile soils.
- In terms of natural capital, the feedback was that mitigating hazards was driving the planning process rather than the need to protect and promote the natural environment or biodiversity.
- There was support for the need for more variety in housing types as proposed and how this could link with the suggested 10-minute neighbourhood concept – although there was a disconnect as to how this plan enabled these to be achieved.
- The importance of a plan to be relevant to the health of all communities was emphasised, especially as cultural diversity increases in the region.
- Although climate change was identified as a risk to wellbeing, the draft lacked detail. Following the hearings this element was made more explicit.

Conclusion

Agencies in Canterbury have a long history of working together with a health focus to improve outcomes of projects, plans and policies, especially through formal joint Health in All Policies partnerships and work plans. COVID-19 has highlighted what should have always been the key appraisal questions for officials to answer: Does this project make this community stronger, its people and environment healthier, and this place better? The IPG is a tool that can be used to help answer these questions.

Note

The IPG and the pandemic supplement can be downloaded here.

- [Download the Integrated Planning Guide for a healthy, sustainable and resilient future 3.0](#)
- [Download the Pandemic Supplement to the Integrated Planning Guide](#)

Further information on the Health in All Policies approach in Canterbury, including examples of health impact and integrated assessments, is available at https://www.cph.co.nz/your-health/health-in-all-policies/ .

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Assessing the health and social impacts of transport policies and projects

Dr Angela Curl, Department of Population Health,
University of Otago Christchurch
Angela.Curl@otago.ac.nz

Introduction

The New Zealand Government's 'Wellbeing Budget' in 2019 signalled a shift in focus of government policy from economic growth towards a greater consideration of social and wellbeing outcomes across all of government. In line with this approach, the Ministry of Transport has developed a Transport Outcomes Framework (Ministry of Transport, 2018), outlining five broad outcomes of the transport system: healthy and safe people; environmental sustainability; resilience and security economic prosperity; and inclusive access.

These outcomes recognise the breadth of impacts that the transport system has on social (including health), environmental and economic outcomes. Focussing on how transport can positively and negatively impact a range of outcomes marks a notable shift away from transport planning and policy that has focussed primarily on achieving economic growth and productivity, whilst mitigating negative externalities.

To ensure that transport policies, plans and projects are designed in a way to ensure that all the broad outcomes are met, new approaches to appraisal in transport planning are required. Transport planners and policy makers can draw on existing health and social impact assessment frameworks to support decision making aligned with the Transport Outcomes Framework.

This short article starts with a brief overview of the multiple ways in which transport affects health outcomes. It then provides an overview of how health impacts have been considered in transport appraisal and the use of health and social impact assessments for transport policies and projects in New Zealand, before using the example of mode shift policies to demonstrate the importance of wider health and social impacts in transport assessment.

Health impacts of transport

The way in which we get around has profound impacts on health of populations and individuals. In many ways mobility is good for our health and wellbeing. Being mobile facilitates access to places and people that are important for a good quality of life, such as healthcare, employment

and social connections, and movement in and of itself is good for physical and mental wellbeing. However, there are limits – and excess mobility, or needing to travel long distances can be detrimental, in particular for mental wellbeing.

Importantly, the *mode of transport* used has considerable impacts on health and wellbeing of populations and individuals. New Zealand's rate of car ownerships is among the highest in the world, with 93.5% of households owning cars. This high level of car dependence has many negative impacts on health and wellbeing.

Road traffic injuries and deaths, air and noise pollution are estimated to account for around 650 deaths per year in New Zealand (Briggs et al., 2015). Transport related emissions constitute a considerable proportion of total emissions contributing to climate change. Increased car use for short local journeys is associated with sedentary lifestyles and inactivity, which are associated with rising levels of obesity and poor mental and physical wellbeing. Financial stress, associated with the cost of car ownership, constitutes a considerable proportion of household budgets for those on lower incomes.

Historically, high levels of investment in road infrastructure have led to lower density cities, built around car ownership. As a result, car use is further perpetuated as it becomes difficult to travel by other modes of transport. This dependence on car as a means of accessing essential services can lead to forced car ownership, whereby a large proportion of household income is spent on car ownership and use, or social exclusion for those unable to afford a car and unable to access essential services as a result.

Addressing persistent heath inequities is a key challenge for public policy in New Zealand (Baker et al., 2019). Yet relatively little attention has been paid to understanding how transport inequalities, as a key social determinant of health, leads to inequities in health outcomes (Hosking et al., 2019). A large body of literature focusses on transport-related inequalities, mainly in the availability of transport resources, differences in travel patterns, and transport accessibility levels (Pereira et al., 2017). Inequities in the availability and use of transport affects the way in which people travel and the destinations they are able to reach, with clear implications for life outcomes. Consideration of the differential impacts of any proposed policy or plan is key to social impact assessment (Vanclay, 2003) but these impacts have rarely been considered in transport assessment.

Despite clear relationships between transport planning decisions and health outcomes, health has not featured explicitly in transport decision making. The following section outlines how health is incorporated into transport planning and the potential for broader health and social impact assessments.

Health and social impact assessment of transport policies and project

There are several examples of health impact assessments (HIA) of transport strategies and policies. Haigh et al. (2013) reviewed 24 HIAs undertaken in New Zealand between 2005 and 2009. Three of them focussed on transport: the Auckland Regional Land and Transport Strategy

HIA (2009); Wairau Road Widening HIA (2006), and the HIA of the Greater Wellington Regional Land Transport Strategy (2006). However, some of the other HIAs assessed also considered transport as part of their broader focus, for example the HIA of Greater Christchurch Urban Development Strategy options (2006). There are also more recent examples of HIA of transport strategies or projects, for example the Canterbury Regional Land Transport Strategy 2011-2041 and the Nelson Arterial Traffic Study (2010).

None of these HIAs were mandated but rather they were decision -support HIAs undertaken by or in conjunction with the organisation responsible for the proposed project or policy (Haigh et al., 2013), often led by or with considerable input from the area public health unit. In an international context, Christofa et al. (2020) suggest that health impact assessments have often been undertaken by public health agencies, and it is unclear to what extent they influenced transport decision making.

In addition to being undertaken on a voluntary basis, it is notable that all of the HIAs identified by Haigh et al. (2013) were undertaken at a regional or local level. Despite research undertaken in 2009 on how to integrate HIA into land transport planning (Ball et al., 2009) there is no requirement to undertake in-depth health or social impact assessments of transport policies, strategies or projects at the national level. Recently, however, the Ministry of Transport has undertaken a Social Impact Assessment (SIA) of the proposed (now approved) Clean Car discount scheme (Ministry of Transport., 2019).

Consideration of how national level policy might impact the population differentially is an important part of a social impact assessment and it is encouraging to see progress in this direction, especially given the focus on 'inclusive access' as a transport outcome. However, the approach taken in the SIA of the Clean Car discount scheme was a data intensive disaggregation of costs and benefits, without any community engagement or consideration of impact pathways that should also form part of a full SIA. So called "full chain" impact assessments can be challenging because of data and labour intensiveness, the multi-disciplinary expertise required, and inherent uncertainties and inaccuracies when considering complex causal pathways (Nieuwenhuijsen et al., 2020). A disaggregation of costs and benefits can be seen as one part of a health or social impact assessment but is not sufficient for understanding wider impacts. Community engagement and social science expertise are important to ensure that assessments do not become a tick box exercises (Hickman, 2019; Walker & Curl, 2021).

So while there are examples of health and social impact assessments applied to transport policies, plans, and projects in New Zealand, these are not mainstream approaches to the appraisal of transport investment. Assessment of proposed investment in transport often follows a business case approach, using multi-criteria assessment heavily dominated by quantifiable cost-benefit analysis. The monetisation of benefits has historically been dominated by journey time savings, leading to the prioritisation of vehicle mobility over accessibility and the prioritisation of investment in faster modes of travel, often the private car, leading to many of the health problems noted.

More recently a wider range of impacts, including health impacts, has been incorporated into the cost-benefit approach (Waka Kotahi NZ Transport Agency, 2021). Those impacts that explicitly relate to the transport outcome "healthy and safe people" include: crash cost savings; walking and cycling health benefits; vehicle emission reduction benefits; and impact of noise and vibration on health. However, impacts on health and wellbeing cut across all of the transport outcomes, not just those included in "healthy and safe people". Vehicle emission reduction benefits are quantified under "environmental sustainability"; cost savings are monetised under "economic prosperity" and driver frustration reduction benefits, and user benefits from new public transport or cycling facilities, are monetised under "inclusive access".

Beyond the monetisable impacts, Waka Kotahi's social impact guide (Waka Kotahi NZ Transport Agency, 2016) outlines a range of social impacts that are likely to occur as a result of highway interventions. These include: air quality, noise, vibration, water quality, changes to transport modes, social connectedness, community severance, changes to facilities, changes to local movement patterns, safety, economy or public health. However, these impacts are considered largely as negative social impacts that should be mitigated. Instead social and health impact approaches could help to identify transport as having positive health outcomes across the whole of the transport outcomes framework.

Although the inclusion of aspects such as health benefits and valuation of noise and environmental impact demonstrate a broadening of impacts considered in cost-benefit analyses, there is still an emphasis on journey time savings. Furthermore, the impacts noted above are limited: for example, walking and cycling health benefits are often the health impacts associated with physical activity from active modes, but health impacts are much broader and not limited to active modes. There is no consideration of the negative health or physical activity impacts of investment in other modes.

The impacts considered are also usually the direct impacts arising from a particular project or policy, but there is limited consideration of the longer term pathways to impact or system level changes that occur as a result of investment decisions.

The nature of cost benefit analysis means that it focusses on aggregate costs and benefits at the population level and does not consider the gains and losses of different groups (Thomopoulos et al., 2009). Better consideration of health and social impacts can also help draw attention to issues of equity and fairness, which are important both in ensuring a fair and inclusive transport system and addressing persistent health inequities that can arise from an unfair transport system.

The example of mode shift policies

The example of mode shift policy demonstrates the importance of considering health and social impacts at the national policy level. Transport mode shift is a key priority in shifting towards a healthier, fairer and more sustainable transport system. Mode shift policy that leads to reduced car use, better public transport, and walking and cycling for short journeys can be health

promoting and has the potential to help reduce health inequities. However, policy approaches that seek to limit car use and promote shared or active modes of transport can be perceived as unfair, especially where car ownership is seen as necessary (Mattioli & Colleoni, 2016; Smith et al., 2012) as is the case in many parts of New Zealand. In particular concerns are often raised around the fairness of mode shift policies that involve pricing (Levinson, 2010; Rajé, 2003) and increases in fuel tax (Farrington & Farrington, 2005). Public acceptability can be threatened when policies are seen to be unfair (Schuitema et al., 2011).

Concerns around fairness and public acceptability, as well as consideration of the 'inclusive access' transport outcome, have underpinned recent Waka Kotahi research to understand the potential social impacts of mode shift policy levers (Curl et al., 2020). Previous research has considered mode shift as one policy approach to address climate change (AEA Group, 2011; Lucas & Pangbourne, 2014; Markkanen & Anger-Kraavi, 2019) and concluded that at a macro level mode shift has positive social impacts. However, less consideration has been given to the way in which mode shift is achieved, and different mode-shift policy levers may have different health and social impacts. For example, public transport interventions to increase mode share can prioritise patronage over coverage, meaning areas with high need experience reduced services (Mattioli, 2016; Walker, 2008). Large infrastructure projects in particular often have considerable community impacts (Mottee et al., 2020), which also need to be considered as part of mode-shift interventions.

Waka Kotahi NZ Transport Agency (2019)'s mode shift strategy outlines three high-level policy levers for achieving mode shift:

1) shaping urban form;
2) making shared and active modes more attractive; and
3) influencing travel demand and transport choices.

Based on a review of existing evidence, Curl et al. (2020) concluded that reducing the need to travel, by shaping urban form is the most important and fairest way to encourage mode shift. In areas where people currently experience transport disadvantage, infrastructure investments that make shared and active modes should be prioritised next, with lower emphasis on influencing travel demand and transport choices through education or pricing tools. However, in areas where excess travel already occurs and transport choices are good, the focus should be on influencing travel demand and transport choices through pricing, education and awareness.

Although it is clear that mode shift away from private car use is beneficial overall, it is important that this occurs in a way which does not restrict the travel options of those who are already restricted, while widening choices for those who currently travel most. Mode shift policies that align with the Transport Outcomes Framework need to consider a broad range of economic, environmental, health and social impacts, beyond those typically considered in transport appraisal frameworks. Use of a broader range of impact assessment tools such as HIA and SIA can help achieve this.

Conclusions

The focus on a broad range of transport outcomes, in line with the national wellbeing budget, demands a change in the ways in which transport plans and policies are assessed.

There are considerable overlaps between health impact assessment and social impact assessment, both of which are helpful in understanding the broader impacts of transport policies, plans and projects. While there are some examples of health and social impact assessments of transport policies or projects, neither approach is currently mandated.

Equity considerations are also largely missing from transport decision making processes. Given considerable inequities in health outcomes, many of which can be influenced by transport planning, there is a need to ensure equity is more embedded in impact assessments of transport policy and planning at all levels.

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Whither HIA in New Zealand....or just wither?

## Richard Morgan

Health impact assessment (HIA) has had mixed fortunes in New Zealand. Following a fitful start in the 1990s, HIA finally gained a level of recognition and political acceptance as a policy appraisal tool that saw it being practised across the country, until political support, and funds, faded. Does HIA still exist in New Zealand, perhaps under other labels or guises, or has it just withered? Is there room for a comeback given current social and environmental concerns, and the opportunities provided by ongoing reviews of environmental, health and disability legislation?

Health has been a part of impact assessment practice internationally since the passing of the National Environmental Policy Act in the US in 1970. However, for 15-20 years the emphasis was on environmental health, and especially the potential for environmental pollution of air, water and land to affect human health. This emphasis was supported by work at the WHO to develop environmental standards based on human health considerations: for example, recommended maximum levels of PM10 and more recently PM2.5 are levels of particulate matter in air that directly reflect concerns over human health due to air pollution. This approach recognised changing environmental conditions can affect a person's health, especially if they have a genetic condition that makes them vulnerable to certain factors.

However, the environmental perspective was only part of the picture and, during the 1980s, public health practitioners drew attention to the wider scope and complexity of factors that affect human health. In simple terms this added a social determinants component to the existing environmental determinants model of health and is often summarised using the Dahlberg-Whitehead diagram:

Figure 1. The Main Determinants of Health
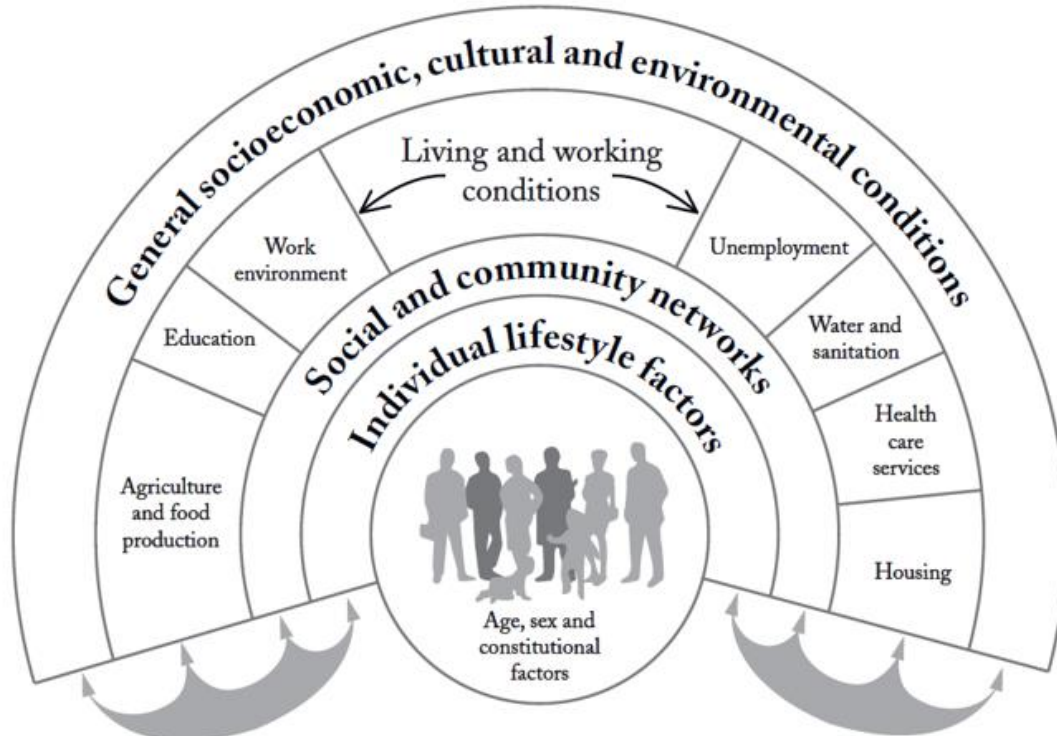
Source: Dahlgren and Whitehead (2007)

The notion that health can be affected by a breadth of factors, many potentially altered directly or indirectly by policies, plans and projects, led to the emergence in the late 1980s and early 1990s of health impact assessment as a vehicle for bringing these considerations into relevant decision-making processes.

In New Zealand, the enactment of the Resource Management Act 1991 at that time integrated impact assessment into the resource consent process and, given the reference in s5 to enabling "…people and communities to provide for their social, economic, and cultural well-being and for their health and safety…", hopes were high that health would be treated as a natural, integral part of that impact assessment process. This intention prompted the Public Health Commission (an independent advisory body set up in 1993) to develop a guide on health impact assessment that could be used in the context of the RMA consent processes (PHC, 1995). The HIA process envisaged in that guide was based on a risk model, so a complementary guide on health risk assessment, covering the technical core of the HIA, was also released (PHC, 1995). For various reasons (one perhaps being that the PHC being abolished in 1996), these initiatives seemed to have little lasting influence on the assessment of environmental effects under the RMA. In the absence of formal government guidance on the process of assessing

environmental effects until 1999, and without further advice on how to address health issues, impact assessors largely fell back on familiar environmental health considerations that were a feature of planning applications under previous planning processes, such as the reliance on environmental standards.

In 1998, New Zealand hosted the annual conference of the International Association for Impact Assessment (IAIA) in Christchurch, organised by Nick Taylor and Martin Ward. To take advantage of the presence at the conference of a number of international experts on HIA (such as Martin Birley, an international HIA consultant, and Roy Kwiatkowski from Health Canada) the author organised a one-day pre-conference workshop on HIA, with the morning given over to international perspectives, and the afternoon to presentations and discussion about the current state of HIA in New Zealand (Morgan, 1998). This event was followed up by presentations and discussions on HIA at the Public Health Association annual conferences that year and the next. Together, these activities renewed interest in a more broadly based HIA that would serve wider public health aims. Staff working for the National Health Committee researched the use of HIA at the strategic (policy) level in other countries, especially in Europe, and undertook a pilot study to allow staff to explore possible approaches to the use of HIA for the assessment of government policies (Lewis, 2000).

This work was ultimately reflected in the New Zealand Health Strategy 2000 which identified "*A healthy social environment*" as its leading goal, and "*Assess public policies for their impact on health and health inequalities*" (NZHS, 2000, p. 10) as the first objective for that goal. To meet that objective, the Public Health Advisory Committee (established in 2001 and working under the National Health Committee) was tasked with developing a new health impact assessment guide. So "*A Guide to Health Impact Assessment: A Policy Tool for New Zealand*" was released in 2004 (PHAC, 2004) and was very much aimed at the assessment of non-health policies. This was followed in 2007 by the release of *Whānau Ora Health Impact Assessment* (MoH, 2007) to help policy makers anticipate the potential health effects of a policy on Māori and their whānau. An HIA support unit was set up within the Ministry of Health to promote the use of HIA for policy assessment in central, regional and local government, to organise short training courses on HIA, and to administer a Learning by Doing fund.

In broad terms, central government departments did not take up HIA to any great extent despite these efforts. In contrast there was much greater take-up by regional and metropolitan councils and the district health boards. The 36 completed HIAs available on the MoH website, mainly from the years 2006-2014, reflect this regionalism: the majority concern urban development strategies or plans, with transport (including three Regional Land Transport Strategies) also prominent. The MoH website also has seven whānau ora HIAs, typically involving DHBs and local iwi, examining the implications for Māori health of a range of proposals.

The period from 2004-8 marked the high point for this form of HIA in New Zealand. A change of government in 2009 saw the dis-establishment of the HIA Support Unit and a wind-down in training activity. District health boards, however, maintained an interest in HIA, including working with policy and planning staff in regional and local authorities on issues such as urban

growth strategies. But over time the interest in HIA seems to have been largely superceded by a Health in all Policies (HiAP) approach, which is oriented very much towards the achievement of desired health outcomes in non-health policies (e.g. reducing health inequalities; encouraging higher levels of physical activity through changes in urban design or transport modes; etc.). This trend has seen less emphasis on the analysis of proposed policies and plans for their unintended consequences for health, a key part of any impact assessment process.

What of HIA at the project level? Despite the early work of the PHC in the 1990s to develop an HIA model, there are few examples of distinct, named, project-level HIAs in New Zealand. Ironically there was one attempt to use the 2004 PHAC HIA model on a major project. It came about through the Learning by Doing fund of the Ministry's HIA support unit, when a team from Community and Public Health at the Canterbury DHB carried out an HIA on the Central Plains Water Scheme in 2008, to make up for the perceived lack of a significant health component in the AEE of that proposal. An evaluation of the HIA for the Ministry of Health (Morgan, 2011, p. 26) concluded that:

in the end, the decisions on the resource consents were rather unsympathetic to some of the key messages of the HIA, such as the inequality arguments, and the commissioners regarded the HIA as less than objective.

The information contained in the HIA, and the way the issues raised were argued at the consent hearing, emphasised the distance between policy HIA and project HIA.

The tools developed for policy-level HIA tend to focus on broader issues, which provide the basis for negotiated change to proposed policies. In contrast, HIA in the RMA context has to focus much more specifically on cause–effect pathways that link particular project actions to direct and indirect environmental changes, which in turn lead to potential impacts on the health of individuals and communities. Consequently, HIA in the RMA context has to be focused more directly on generating specific impact information that can be defended in public hearings if necessary (Morgan, 2011, p. 26).

The other main problem noted in the evaluation was that by undertaking the HIA, the Public Health Unit was unable to perform its role as the health advocate/advisor to proponents and decision-makers. The CPWS HIA was seen as a "one-off" process, due to particular circumstances, and the evaluation recommended that it should not be seen as model for future project HIAs.

Despite the lack of named HIAs at the project level, health impacts have not been ignored in AEEs for resource consents under the RMA. However, as noted earlier, the treatment has generally been dominated by environmental health considerations. A common practice has been to use environmental standards, based on human health considerations, for issues such as water and air quality, noise, and land contamination. These can be applied by environmental scientists without public health training, an important consideration with the low numbers of public health practitioners working in impact assessment. On the other hand the use of standards leads to health being treated implicitly, to the extent that decision-makers and the

public may not always make the connection to health. In addition, as the standards will usually be applied to separate environmental sectors, the treatment of health is disaggregated, making an overall assessment of environmental health consequences difficult and an overall assessment of community health outcomes impossible. In particular, the combined health effects of various forms of environmental pollution are often problematic, especially for vulnerable individuals and communities, when exposed to combined effects even when separate standards are predicted to be met or single effects are determined as less minor . In terms of the broader social determinants of health, the more important ones have tended to be picked up in social impact assessments, if carried out, but usually without the substantive investigation a public health professional would conduct.

As a consequence, there is rarely any overall assessment of the total burden of health impacts on individuals, families, or communities, taking account of both environmental and social determinants. This is where project level HIA has a role to play. Working with environmental scientists, ecologists, social scientists, and building on their investigations, the HIA practitioner would provide an integrated analysis of the health impacts that might be experienced by various sectors of the community.   This is not a role the public health units and DHBs can take up: it needs independent practitioners with public health training, who are familiar with impact assessment methods and processes, from biophysical/ecological to social and cultural. And it needs non-health practitioners who understand the complexity of conducting an HIA alongside the other components of an AEE.   There is room for new HIA guidance along these lines from the Ministry of Health and Ministry for the Environment once the new Natural and Built Environment Act has been passed.

What of policy level HIA? The *Health and Disability System Review – Final Report – Pūrongo Whakamutunga* released in March 2020 contains just one comment on HIA, in a section on HiAP:

International experience has found that without an explicit process, such as health impact assessments (HIA), the availability of technical information on the expected health and wellbeing impacts is unlikely to be sufficient to influence decision-making to any significant degree. (p. 86)

Despite this positive recognition of the value of HIA, there does not seem to be any intent in subsequent government documents to return to the heady days of the early 2000s when HIA was a central policy tool. Yet faced with major decisions such as those associated with climate change mitigation and adaptation in coming decades, decisions that could lead to fundamental changes for New Zealand communities, HIA should be a key part of the analytical toolkit to ensure unintended consequences for health from those decisions are minimised or avoided altogether.

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