

Characteristics of health impact assessments reported in Australia and New Zealand 2005-2009

Abstract

Objective: To describe the use and reporting of Health Impact Assessment (HIA) in Australia and New Zealand between 2005 and 2009.

Methods: We identified 115 HIAs undertaken in Australia and New Zealand between 2005 and 2009. We reviewed 55 HIAs meeting the study's inclusion criteria to identify characteristics and appraise the quality of the reports.

Results: Of the 55 HIAs, 31 were undertaken in Australia and 24 in New Zealand. The HIAs were undertaken on plans (31), projects (12), programs (6) and policies (6). Compared to Australia, a higher proportion of New Zealand HIAs were on policies and plans and were rapid assessments done voluntarily to support decision-making. In both countries, most HIAs were on land use planning proposals. Overall, 65% of HIA reports were judged to be adequate.

Conclusion: This study is the first attempt to empirically investigate the nature of the broad range of HIAs done in Australia and New Zealand and has highlighted the emergence of HIA as a growing area of public health practice. It identifies areas where current practice could be improved and provides a baseline against which future HIA developments can be assessed.

Implications: There is evidence that HIA is becoming a part of public health practice in Australia and New Zealand across a wide range of policies, plans and projects. The assessment of quality of reports allows the development of practical suggestions on ways current practice may be improved. The growth of HIA will depend on ongoing organisation and workforce development in both countries.

Key words: Health Impact Assessment, Australia, New Zealand, audit

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The World Health Organization (WHO) has called for the implications for health and the distribution of health impacts to be routinely considered in policy making and practice, through collaborative action by the health sector and non-health sector actors.¹⁻⁵ While the need to address this has been understood for a long time, efforts by the health sector to work effectively with other sectors to influence their planning and policy development have been constrained,

in part, by the lack of assessment tools and mechanisms to assess and negotiate recommended actions.⁵⁻⁸ Health Impact Assessment (HIA) has been identified as one of a limited number of methods that are available to address the social and environmental determinants of health prior to implementation of proposed policies, plans or projects designed to maximise future health benefits and minimise risks to health.^{1,9,10}

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The use of HIA in conjunction with Environmental Impact Assessment (EIA) processes has been adopted by a wide range of international agencies and groups, including the International Finance Corporation^{11,12} and the private sector as part of the Equator Principles – a financial industry agreement that sets out benchmarks for major project lending – and the International Council on Mining and Metals.¹³ It has also been adopted by a number of banks in Australia and New Zealand (NZ).¹⁴ Despite these efforts, health considerations are infrequently included in EIA.^{15,16}

HIA is also being promoted as a cornerstone of healthy public policy;^{17,18} for example, its use has been adapted as a health lens assessment as part of South Australia's Health in All Policies initiative.^{19,20} Australia and NZ have been early adopters in developing guidelines and advocating for incorporating health within statutory EIA processes with a strong focus on major projects.^{16,21–26}

There are now a number of papers and reports that describe the development of HIA in Australia. Three major strands have been identified. The first of these were attempts to incorporate HIA into EIA commencing with an NHMRC report in 1994 that argued HIA should not be a separate assessment but incorporated into EIA. This was followed by the development of HIA guidelines in 2001; however, incorporating HIA in EIA continues to be an aspirational goal. The second strand sought to expand the use of HIA beyond projects to include HIA of government policies and plans. This approach took a broader social view of health and used a wider base of evidence to assess impacts. The third and most recent strand included a focus on the distribution of impacts (equity).

Despite Australia's earlier role as an international leader in the development of HIA, the level and intensity of HIA in Australia has fluctuated over time.^{27,28} HIA remains poorly integrated into policy development and decision-making in Australia and NZ and there is limited legislative support for its use. The reasons for this are complex and still poorly understood but are thought to include:^{29,30}

- the predictive nature of HIA and the fact that few HIAs are followed up to see if predictions eventuated, as well as the difficulty in determining if an impact was avoided due to the HIA;
- frequent difficulties in identifying 'evidence' of size and certainty of impacts;
- the lack of structures and procedures to allow the recommendations of HIAs to influence the policies, programs or projects of other sectors;
- the reluctance to introduce another impact assessment process into an already crowded and contested space;
- a lack of clarity about who should fund and conduct HIAs when government is the proponent;
- the reality that each state and territory develops their own approach to HIA in response to contextual and historical conditions;
- the lack of a robust research base that describes current practice, the effectiveness of HIA and factors affecting effectiveness; and
- difficulty in siting or locating responsibility for undertaking HIA inside government.

In New South Wales (NSW) and Victoria, state health departments funded capacity building projects to strengthen local capacity to undertake HIA. In South Australia, a health lens is being used in a similar way to HIA. In Victoria, the focus of their capacity building program was on Local Government and in NSW the focus was on health system capacity.^{31,32}

The NZ Public Health Advisory Committee built capacity by developing a toolkit supported by an extensive training program, a program to fund evaluations and various other activities, as well as the 'Learning by Doing' program, to promote HIA activity. These measures did not result in the NZ Government broadly adopting HIA nationally, and has had relatively limited penetration into local authority planning activities, especially the resource consent process. Australian and NZ capacity programs have now been defunded (NSW in 2008, NZ in 2010).

There continues to be an interest by public health policy makers and other stakeholders in the use of HIA. However, the lack of detailed knowledge of the potential use of HIA is often opinion-based and not informed by research or practice. For example, the recent Australian Community Affairs Reference Committee response to the WHO Commission on Social Determinants of Health report noted that:

Although the Department [Commonwealth Department of Health and Ageing] conceded that HIA might be a useful tool we believe that they have the potential to be expensive and time consuming, and we believe that this needs to be taken into account in any further considerations of these.(4.55).

There is an important gap in our current knowledge of how HIA is being used, by whom and for what in Australia and NZ. It is also unclear if the HIA reports are adequate to confidently influence policy and decision-making.

The purpose of this paper is to provide an empirical basis for discussion of the use of HIA in Australia and NZ by describing the characteristics of HIAs undertaken. The paper also trials the use of a review package to assess the quality of the HIA reports (not the HIAs themselves).

Methods

Identification and selection of HIAs

Several methods were used to identify all Australian and NZ HIAs conducted during the period 2005–2009. HIAs conducted or supported by the authors were included (n=16). Next, HIAs were identified by searching established websites in the region (primarily HIA Connect in Australia and the NZ Ministry of Health website) and Google (including Google Scholar) searches for published reports (n=6) and grey literature. We searched APAIS but there were no relevant returns. Assistance was also sought from existing HIA and health equity networks and contacts in other states and territories in Australia and NZ to recruit and identify HIAs for the study. Finally, email lists, Twitter and blog posts (such as the IAIA HIA Blog and Croakey) were also used to request HIAs and publicise the study.³⁵

HIAs were included in this study if they were prospective, had an available HIA report, contained a discrete health component in the

assessment, contained clear recommendations and the investigators could identify a defined contact point or person. HIAs were assessed by two of the investigators to resolve questions about inclusion.

Description of the characteristics of HIAs

The characteristics of the HIAs were obtained from the HIA reports, including: year and country in which the HIA was conducted; whether it was conducted on a policy, plan or project; the focus; health impacts assessed; level; organisations involved; and whether it was undertaken as part of a capacity building project.

Box 1: Definitions.

Health Impact Assessment

HIA is intended to produce a set of evidence-based recommendations to inform decision-making. HIA seeks to maximise the positive health impacts and minimise the negative health impacts of proposed policies, programs or projects.

The procedures of HIA are similar to those used in other forms of impact assessment, such as environmental impact assessment or social impact assessment. HIA is usually described as following the steps listed, although many practitioners break these into sub-steps or label them differently.³³

- Screening – determining if an HIA is warranted/required.
- Scoping – determining which impacts will be considered and the plan for the HIA.
- Identification and assessment of impacts – determining the magnitude, nature, extent and likelihood of potential health impacts, using a variety of different methods and types of information.
- Decision-making and recommendations – making explicit the trade-offs to be made in decision-making and formulating evidence-informed recommendations.
- Evaluation, monitoring and follow-up – process and impact evaluation of the HIA and the monitoring and management of health impacts.

Health Risk Assessment

Health risk assessments are a key component of the overall assessment and management of health impacts from development within a Health Impact Assessment (HIA) framework. The health sector in Western Australia applies health risk assessments to evaluate the potential impacts on public health from activities through a structured evaluation of the scientific, technical and social components of risks. The health risk assessment process is usually based on ensuring that the risks to health can be mitigated by the activity meeting appropriate health criteria or standards.³⁴

Levels of HIA

There are three levels at which HIAs are generally undertaken, depending on available time and resources:³³

- Desk-based HIA, which takes 2–6 weeks for one assessor to complete and provides a broad overview of potential health impacts;
- Rapid HIA, which takes approximately 12 weeks for one assessor to complete and provides more detailed information on potential health impacts; and
- Comprehensive HIA, which takes approximately 6 months for one assessor and provides an in-depth assessment of potential health impacts.

Quality assessment of HIA reports

The HIA Reports were then appraised using the Review Package for Health Impact Assessments Reports of Development Projects to determine the quality of the HIA reports.³⁶ This was done as the HIA report is often the only formal documentation of the process and findings, and it frequently forms the main basis by which policy and other decision-makers decide on whether the recommendations should be acted upon. Review packages are an emerging approach in HIA and tools to undertake this task are still under development, though review packages have been used in other forms of impact assessment for some time.³⁷ To our knowledge, this is the first time such an assessment has been reported in the peer-reviewed literature. The review package was initially based on an existing review tool for Environmental Impact Assessment (EIA) and the modified form for use with HIA reports. The draft review package was presented and discussed at national and international conferences, and reviewed by an expert panel.³⁶

The review package covers four domains: context, assessment, management and reporting (see Box 2). Each of these domains includes nine review questions (or criteria) that require the reviewer to provide a grading between A and D (highest to lowest quality grading) in response to the review questions. The domain results are used to decide on an overall grade based on a subjective overall assessment by the reviewer. An initial assessment of six HIA reports was undertaken by all investigators to gain agreement about the grading approach and the use of the Review Checklist.

Box 2: Review package summary of key features.

Outline of review package

1. Context

- 1.1 Site description
- 1.2 Description of project
- 1.3 Public health profile

2. Management

- 2.1 Identification and prediction of potential health impacts
- 2.2 Governance
- 2.3 Engagement

3. Assessment

- 3.1 Description of health effects
- 3.2 Risk Assessment
- 3.3 Analysis of distribution of effects

4. Reporting

- 4.1 Discussion of results
- 4.2 Recommendations
- 4.3 Communication and layout

Summary of grading

- A: Relevant tasks well performed, no important tasks left incomplete, only minor omissions or inadequacies.
- B: Can be considered satisfactory despite omissions and/or inadequacies.
- C: Parts well attempted but must, as a whole, be considered unsatisfactory because of omissions or inadequacies.
- D: Not satisfactory, significant omissions or inadequacies, some important task(s) poorly done or not attempted.

The remaining reports were reviewed by two reviewers, with a 20% sample being reviewed by a third. Grading was based on consensus between the reviewers. There was broad agreement between reviewers on the overall grading of HIAs domains contained within the review package, even though there was some variation in the scoring of specific checklists items. Differences were resolved by discussion.

In use, the authors felt the review package scoring needed a more graduated or granular approach. We addressed this by including a plus and minus ranking to each grading to make the grading more graduated, and explicitly acknowledging that these assessments were subjective.

Results

Identification of HIAs

A total of 115 potentially eligible HIAs were identified; of these 55 met the inclusion criteria (See Figure 1). Reasons for exclusion were:

- 19 were evaluations of a health intervention rather than a prospective HIA
- 3 had no recommendations
- 13 had no reports available
- 25 were not conducted in the study period.

Characteristics of the HIAs

Tables 1 and 2 provide an overview of the HIAs in the study. Thirty-one of the 55 identified HIAs included in the study were undertaken in Australia and 24 in NZ. The majority of HIAs were undertaken on plans (31), with fewer on projects (12), programs (6) and policies (6). There were differences between Australia and NZ, with more focus on policy and plans in NZ and a stronger focus in Australia on project level HIAs. In Australia, more HIAs were undertaken outside capacity building projects (that is, without direct government HIA Capacity Building Support) than in NZ. All HIAs in NZ could be classified as decision-support HIAs. In Australia, although the majority were decision-support HIAs, there were also mandated HIAs (4), Advocacy HIAs (2) and one community-led HIA (see Box 3). The majority of HIAs in both countries were

Box 3: Typology of HIA.³⁸

Mandated

Carried out to fulfill a mandatory or regulatory requirement.

Decision Support

Usually undertaken voluntarily by, or in partnership with, the organisation responsible for developing the policy, program or project that is being assessed.

Advocacy

Undertaken by organisations and groups who are neither proponents nor decision-makers with the goal of influencing decision-making and implementation.

Community led

Conducted by communities to help define or understand issues and contribute to decision-making that has a direct impact on their health.

undertaken on land use planning. More Australian HIAs were undertaken on health service policies (26%) and plans (8%). More than half of HIAs conducted in NZ were rapid compared to a third in Australia. There were no comprehensive HIAs reported from NZ in the study period. The number of HIAs completed over the study period varied per year (2005 n=2; 2006 n=14; 2007 n=10; 2008 n=18; 2009 n=11).

Assessment of the quality of the HIAs

Reports were graded A (n=1); B+, B, or B- (n=25); C+ (n=10); and C or C- (n=19). Overall, 47% of HIAs were graded as A or B and 65% of HIAs received C+ or higher. There were no HIA reports judged to be unsatisfactory (D).

Findings from each domain are included as they provide useful guidance on how HIA reporting and process could be improved.

Figure 1: Inclusion Diagram.

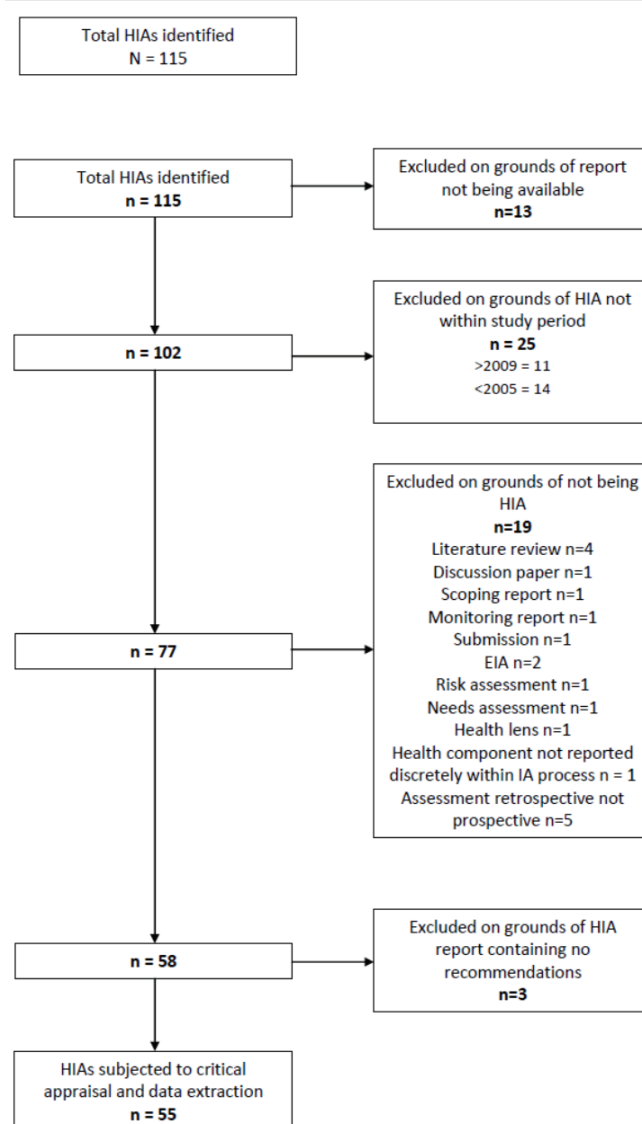


Table 1: Australian Health Impact Assessments 2005-2009 (refer to HIA Blog for copies of reports⁴⁵).

Year	State	Name of HIA	Description	Capacity building project	Policy, Plan, Programme, Project	Depth	Topic	Impacts Assessed	Stakeholders involved
2009	QLD	EFHIA of alternative patterns of development of the Whitsunday Hinterland and Mackay Regional Report	Area plan to influence land-use planning	No	Plan-options	Rapid	Land use	Safety, injury, crime, physical activity, physical access, social cohesion	Local government, health service, state planning agency
2009	NSW	EFHIA of the review of Goodooga Health Service	Health service implementation plan to reduce services in a small rural community	No	Plan-options	Intermediate	Health service	Access to health services – emergency medical services, visiting health services, staffing and facilities, service models	Local community, health service, university
2008	SA	EFHIA South Australian Australian Better Health Initiative School and community Initiatives	Implementation of a State-wide school and community initiative	No	Program	Intermediate	Health service	Service delivery and access, healthy weight and obesity, early child development	Health service, university, other agencies in an advisory role
2008	QLD	HIA Flinders Street Redevelopment Project	Program to look at redevelopment of a CBD main street	No	Project	Rapid	Land use	Safety, security, community identity, social participation, walkability and urban form, environmental sustainability	Local government, health service
2008	NSW	Good for Kids good for life EFHIA	Implementation of a State-wide school and community initiative	Yes	Program	Rapid	Health service	Service delivery and access, childhood obesity, nutrition, physical activity	Health service, Aboriginal community controlled organisations, education department
2008	NSW	HIA Lithgow City Council Strategic Plan	Plan to implement land-use strategic plan from local government	No	Plan-options	Intermediate	Land use	Urban form, walkability, food access, social participation, waste and contamination	Local government, health service
2008	VIC	Leopold Strategic Footpath Network HIA	Plan to implement a strategic footpath network in CBD	No	Project	Intermediate	Land use	Accessibility, active transport, urban form and the built environment, obesity, physical activity, walkability	Local government, university, health service
2008	NSW	Oran Park and Turner Road HIA	Land-use plan aimed for an area	No	Plan-options	Intermediate	Land use	Active transport, social connectivity, physical activity, injury, food access.	Local government, health service, state planning authority
2008	VIC	A matter of equity – Case Study Frankston City Council	Land-use plan aimed for an area	No	Program	Rapid	Food	Food access and quality	Local government, university
2008	VIC	SHIA of Dandenong High School Doveton Campus Closure	Plan to close a school and amalgamation of students into other area schools	No	Project	Intermediate	Education	Service delivery, social participation,	Education department, an interagency neighbourhood renewal group, local government, university, health service
2008	NSW	SIA Potts Hill	Plan to redevelop an area	Yes	Plan-options	Rapid	Land use	Employment, community infrastructure, open space and recreation, housing, transport, safety, communication	Land use statutory authority, local government, private sector, other agencies in advisory capacity
2008	WA	Health Impacts of Climate Change Adaptation Strategies for WA	Plan of scenarios and state-wide strategies to adapt to climate change	No	Plan-options	Intermediate	Climate change	Extreme events, temperature, water quality, water-borne disease, vector-borne disease, air quality, food-borne disease, nutrition, lifestyle	State health department, planning department, university, other agencies in advisory roles

Table 1: Australian Health Impact Assessments 2005-2009 (refer to HIA Blog for copies of reports⁴⁵) continued.

Year	State	Name of HIA	Description	Capacity building project	Policy, Plan, Programme, Project	Depth	Topic	Impacts Assessed	Stakeholders involved
2007	VIC	HIA Hobson Bay Urban Greywater Diversion Project	Land-use plan for an area	No	Plan-options	Rapid	Water	Water quality, water-borne disease, vector-borne disease, contamination, stigma, green space, chemical exposure	Local government
2007	NSW	HIA Coffs Harbour Our Living City Settlement Strategy	Land-use plan for an area	No	Plan-options	Intermediate	Land use	Walkability, urban form, safety, crime, physical activity and cycling, public transport, community involvement	Local government, health service
2007	NSW	Greater Western Sydney Urban Development HIA	Land-use plan for a regional area	Yes	Policy	Intermediate	Land use	Transport, urban form, green space, economic activity, social services and infrastructure, air quality, regional climate, physical activity, food access, employment, accident and injury, access to services, social connectedness	Regional organisation of local government councils, local government, health service, university, planning department, other agencies in advisory capacity
2007	NSW	HIA of Redevelopment of Liverpool Hospital	Project to redevelop a hospital	Yes	Project	Intermediate	Health service	Service delivery, asbestos exposure, accessibility, injury, safety, building design, urban form	Health service
2007	WA	HIA of Landfill Site and Housing Development in Mundijong WA	Plan to introduce a landfill site and housing development	No	Plan-options	Intermediate	Land use	Exposure to toxins, air quality, noise, fire risk, odour, dust, vector borne disease	Local government, state planning agencies, university
2007	NSW	HIA of Carpark Waste Encapsulation remediation	Plan to implement waste remediation for a car park	Yes	Plan-options	Rapid	Waste Management	Exposure to health hazards and toxins, site contamination	Local government, private sector, state planning authorities
2007	QLD	SIA of Gatton Correctional facility	Plan to implement a correctional facility	Yes	Plan-options	Comprehensive	Institution	Workforce and employment, safety/security, visitors, release/parole arrangements, prisoner health services, community interaction	Department of communities, local government, state planning department,
2007	NSW	HIA on Rural Health Service Redesign Proposal	Plan to redesign a rural health service	Yes	Plan-options	Comprehensive	Health service	Service delivery, service quality, access and availability, workforce, costs	Health service, local government, local community
2007	NSW	Bonnyrigg Living Communities SIA	Land-use and regeneration for an area	No	Project	Comprehensive	Housing	Safety, social integration, community capacity and wellbeing, amenity and access, housing	State housing department, local government, health service, Premier's Council for Active Living
2006	NSW	HIA of Greater Granville Regeneration Strategy	Land-use and regeneration for an area	Yes	Plan-options	Rapid	Land use	Transport, traffic, safety and injury, business and economic activity, community services, urban form, green space, housing	Local government, state housing department, health service, other agencies in advisory capacity
2006	NSW	HIA of Indigenous Environmental Health Workers	Plan to introduce an Indigenous Environmental Health Worker	Yes	Plan-options	Intermediate	Environmental health service	Service delivery, workforce, employment, training, community ownership and self-determination	Health service, local government, Aboriginal community controlled organisations

Table 1: Australian Health Impact Assessments 2005-2009 (refer to HIA Blog for copies of reports⁴⁵) continued.

Year	State	Name of HIA	Description	Capacity building project	Policy, Plan, Programme, Project	Depth	Topic	Impacts Assessed	Stakeholders involved
2006	NSW	Rapid Equity Focused HIA of the Australian Better Health Initiative: Assessing the NSW components of priorities 1 and 3	Health program to be implemented across a state	No	Program	Intermediate	Health service	Urban form, service delivery, early child development, physical activity, nutrition, information services	State health department, university, other agencies in advisory capacity
2006	NSW	Wollongong Foreshore Precinct Plan	Land-use plan for an area	Yes	Plan-options	Desktop	Land use	Urban form, injury, sun protection, safety and crime, physical activity, nutrition and access to food, social participation	Local government, health service, university
2006	NSW	Bungendore HIA: urban development in a rural setting	Land-use plan for an area	Yes	Plan-options	Rapid	Land use	Physical activity, water for domestic, recreational and industrial uses, social cohesion ("neighbourliness")	Local government, health service, other agencies in advisory capacity
2006	NSW	SIA of Lower Hunter Regional Strategy	Land-use plan for a regional area	Yes	Plan-options	Intermediate	Land use	Social infrastructure, service delivery, urban renewal, mixed land use, employment, transport	Health service, state planning department, a regional coordinating group of state agencies
2006	VIC	HIA in the East Gippsland Shire Council 5 year arts and culture strategic plan	Art and cultural program implemented for local government	Yes	Program	Desktop	Community Service	Service delivery, community participation, social inclusion, mental health	Local government, university
2006	VIC	HIA in the East Gippsland Shire Council Kerbside waste collection strategy	Plan to implement a waste management plan	Yes	Program	Rapid	Waste Management	Waste management, mental health, contamination, cost and savings, environmental sustainability	Local government, university
2006	NSW	HIA on an integrated disease prevention campaign	Plan to implement an integrated disease prevention campaign	Yes	Plan-options	Rapid	Health service	Service delivery, behaviour change, social marketing	State health department, other agencies in advisory capacity
2005	QLD	HSIA of South East Queensland Regional Plan	Prospective population state-wide strategies	No	Plan-options	Comprehensive	Land use	Urban form, transport, social infrastructure, lifestyle and behaviour, green space	State health department, state planning department, other agencies in advisory capacity

Table 2: New Zealand Health Impact Assessments 2005-2009 (refer to HIA Blog for copies of reports⁴⁵).

Year	Name of HIA	Description	Capacity building project	Policy, Plan, Programme, Project	Depth	Topic	Impacts Assessed	Stakeholders involved
2009	Whakareatea Hawke's Bay District Health Board: HIA on the proposed Air Quality Plan Change	Plan to change air quality standards	Yes	Plan-options	Rapid	Air	Air quality, particulates, temperature, indoor air quality, costs,	Health service, regional government
2009	Wairarapa Non-fluoridation of water-WOHIA	Plan to implement a water fluoridation plant to supply two local governments	Yes	Plan-options	Desktop	Water	Oral health, water supply, water quality, community conflict	Health service, local government
2009	HIA of Makoura Responsibility Model	Project aimed to encourage self-responsibility and self-management in students to deal with challenging behaviour	Yes	Project	Rapid	Education	Service delivery, relationships and whānau (extended family and community)	Education ministry, health service, students and families
2009	HIA on the draft Wairoa District Council Waste Management Activity Management Plan	Plan to implement a waste management plan	Yes	Plan-options	Desktop	Waste Management	Waste management, cost, social connectedness, vector-borne disease, employment	Local government, health service
2009	HIA on Flaxmere Town Centre Urban Design Framework Proposal	Area plan to influence land-use planning	Yes	Plan-options	Desktop	Land use	Urban form, physical activity, social participation, crime, active transport	Local government, health service, other agencies in advisory capacity
2009	HIA Implementation of Oral Health Strategy Location of a Community Clinic in Flaxmere	Project aimed to implement oral health strategy	Yes	Project	Intermediate	Health service	Service delivery – access and availability, oral health,	Health service
2009	Age-Friendly Community shaping the Future for Waahi beach	Plan to inform the future land-use of a beachside community	Yes	Plan-options	Intermediate	Community Service	Housing, transport, social participation, outdoor spaces/urban form, employment, community health and support services	Local government, health service
2009	Auckland Regional Land and Transport Strategy HIA	Project to implement a regional land transport strategy	No	Policy	Comprehensive	Transportation	active transport, liveability, safety, housing, social participation, healthy lifestyles	Regional government, local government, health service, other agencies in advisory capacity
2009	Manukau Built Form and Spatial Structure Plan HIA Report	Land-use plan for an area	Yes	Plan-options	Intermediate	Land use	Active transport, liveability and vitality, safety, housing, kaitiakitanga (guardianship of the environment)	Local government, health service, other agencies in advisory capacity
2008	HIA Central Plains Water Scheme	Proposed irrigation scheme for 60,000 Ha of land	Yes	Plan-options	Rapid	Water	Water quality and contamination, water borne disease, flooding, cultural and spiritual impacts for Māori	Health service (informed regulatory process without direct involvement of other stakeholders)
2008	HIA of Regional Policy Statement Regional Form and Energy Draft Provisions	Policy implemented on regional land use and energy provision	No	Policy	Rapid	Land use	Heating, housing, cost	Energy ministry, health service
2008	Ranui Urban Concept Plan HIA	Land-use plan for an area	No	Plan-options	Intermediate	Land use	Housing and housing density, green space, urban form, social connectedness, transport, cost and affordability	Local government, health service
2008	HIA McLennan Housing Development	Plan to implement housing development types	No	Plan-options	Rapid	Housing	Social infrastructure, walkability, community cohesion	Local government, health service, private sector

Table 2: New Zealand Health Impact Assessments 2005-2009 (refer to HIA Blog for copies of reports⁴⁵) continued.

Year	Name of HIA	Description	Capacity building project	Policy, Plan, Programme, Project	Depth	Topic	Impacts Assessed	Stakeholders involved
2008	Proposed Liquor Restriction Extensions in North Dunedin HIA	Plan to implement liquor restrictions in student neighbourhood	Yes	Policy	Intermediate	Harm minimisation	Alcohol access and supply, crime, perception of safety, injury, waste management, mental health	Local government, health service, university
2008	Tokoroa Warm Homes Clean Air Project Health and Well-being Impact Assessment	Plan to change air quality standards	No	Plan-options	Rapid	Air	Air quality, economic activity, social participation, particulate exposure, housing, heating	Health service, regional government
2008	HIA on Draft Hastings district Council Graffiti Vandalism Strategy	Program to implement graffiti strategies	Yes	Plan-options	Rapid	Community Service	Social participation, perception of safety, public space, visual amenity	Local government, health service
2007	Kerikeri-Waipapa Draft Structure Plan	Land-use plan for an area	No	Plan-options	Intermediate	Land use	Housing and housing density, transport, urban form	Local government, health service
2006	Wairau Road Widening HIA	Project to expand a suburban road works	No	Project	Rapid	Transportation	Transport, safety, injury, air quality, housing	Ministry for the Environment, project consultants, health service, small business
2006	HIA of Greater Wellington Regional Land Transport Strategy	Policy implemented on regional land use	No	Policy	Rapid	Transportation	Transport, transport affordability, active transport	Regional government, health service
2006	HIA Healthy Wealthy and Wise Future Currents Electricity Scenarios 2005-2050	Plan to implement new energy saving provisions	No	Plan-options	Intermediate	Energy	Economic impacts and employment, cost, housing, urban form and design, heating, sense of place, service delivery and access	Parliamentary commissioner for the environment's office, health service
2006	HIA Greater Christchurch Urban Development Strategy options	Land-use plan aimed for an area	No	Plan-options	Intermediate	Land use	Water quality, air quality, waste management, social connectedness, housing, transport	Local government, regional government, health service, other agencies in advisory capacity
2006	SIA of the Draft Nelson City Council Gambling Policy	Implementation of a gambling policy	No	Policy	Rapid	Harm minimisation	Gambling, siting options	Local government, health service, other agencies in advisory capacity
2006	HIA of Mangere Growth Centre Plan	Plan to manage growth	No	Plan-options	Rapid	Land use	Urban form, economic activity, social cohesion, housing, safety, transport, physical activity	Local government, health service
2005	Avondale's Future Framework Rapid HIA	Land-use plan for an area	Yes	Plan-options	Rapid	Land use	Transport, social cohesion, open space/urban form, housing, waste, education, waterways/environment, employment	Local government, health service, housing ministry, education agencies, other agencies in advisory capacity

Context

Most HIAs described the relationship between the funding source and those who commissioned the HIA (47/55; 85%). The relationship between the proposal and other proposals, plans or policies occurring at the same time that could influence the HIA were reported as well. In addition, the links between the proposal and relevant policies underlying the HIA proposal and the significant partnerships needed between different sectors for the implementation of HIA findings were reported.

The HIA reports described the aims and objectives of the proposal well. All HIAs included either local census data or public health profiles to assess potential impacts on local communities (67%; 37/55 included public health profiles). These data were generally included in appendices and included mapping of local community characteristics.

Management

Most HIAs (76%; 42/55) were guided and scrutinised by a steering committee with members identified and terms of reference included (see Box 5). Thirty-eight (69%) described a process for developing a common understanding of the scope of the HIA among stakeholders. Most HIAs noted constraints of time and resources and often included a limitations section or detailed them in the discussion section as issues to be considered in undertaking future HIAs (75%; 41/55). Most HIAs listed the core groups involved but did not explicitly specify an engagement strategy for how stakeholder groups were identified and included. The nature of stakeholder involvement and proactive engagement of vulnerable disadvantaged groups was also poorly covered in many HIAs (see Box 4 for an example of stakeholder engagement).

Assessment

At the point of screening and scoping, all 55 HIA reports relied to some extent on qualitative data to identify impacts. This was often based on the perceptions of people who live and work in the area, expert opinion and extrapolations from other empirical research.

Only five HIA reports (9%) attempted to quantify health impacts. For example, the Regional Land Transport Strategy HIA (2009) conducted in NZ used health impact modelling to assess the impacts of the different strategic options for the year 2041 focusing on travel choices, emissions and safety options. There were some good examples of the use of civic intelligence. For example, in the Flaxmere Oral Health Strategy HIA, information from community stakeholders provided new evidence about the

Box 4: Example: Stakeholder Engagement in Central Plains Water Scheme HIA (2008).

This HIA reported that stakeholders in the workshops comprised topic experts and people who were knowledgeable about the local community and/or the population groups of interest. Participants included both supporters and antagonists of the Central Plains Water Scheme. The HIA report also listed the Māori groups involved and Māori participants at the HIA workshops in the appendix section.

un-anticipated impacts of locating a community clinic within a school environment compared to a village centre.³⁹

Most HIAs described and assessed potential health effects and presented these in a systematic way (52/55; 95%). Little attention was paid to the temporal impacts of the proposal and how impacts may change during different phases of development, implementation and wind-down phases of the proposal. Causal pathways for impacts were rarely presented. Most HIAs did not include assessments of the severity, intensity, reversibility, magnitude or importance of the impacts. For example, Table 3 provides an excerpt from the Greater Granville Regeneration strategy HIA (2006) which shows the general nature of many assessments.

A total of 41 HIA reports (74%) mentioned issues of equity, and 46 (84%) contained recommendations targeting differential impacts on population groups. However, differential impacts on vulnerable and disadvantaged groups were poorly dealt with in the assessment phase. In part, this was because groups with the potential to experience differential impacts were often identified in the report but these differential impacts were rarely discussed in the assessment of health impacts, which tended to remain generalised. Further to this, most HIA reports did not make a clear link between the community profile and the final assessment of potential impacts.

Reporting

A list of recommendations was included in all of the reports and summarised in an Executive Summary. However, the differing perspectives of various stakeholders in arriving at recommendations were infrequently reported. Reporting of differing options and alternatives to the proposal varied. The extent to which impacts were potentially modifiable was rarely addressed in the reports.

Communication and layout

Most HIAs presented a well-structured report (87%; 48/55), usually in a high quality format. Little information was available on whether additional communications had been created for specific audiences, such as press releases or a short summary designed for high level decision-makers.

Box 5: Example of HIA placed in the Policy Context: Greater Western Sydney Strategy HIA (2007).

This HIA explores the potential impacts on population health and wellbeing of planned population growth and urban development in Greater Western Sydney over the coming 25 years. The HIA assesses major health determinants covered in the Sydney Metropolitan Strategy (2005), such as: physical activity; social connectedness; access to healthy food; air quality and local climate; accidents and injury; employment; and access to services and mobility. The HIA made explicit the relationship between it and relevant policies and also supported recommendations made in the NSW State Plan and Growth Centres planning instruments. The sectors involved in the management of this HIA were from local government, the health sector and universities. The wider reference group included land developers, other government agencies (such as agriculture), non-government organisations and community groups.

Table 3: Excerpt from Table in Greater Granville Regeneration Strategy HIA.

Main HIA Themes	Likelihood of Health Impact	Relative Size and Type of Health Impact
Transport, traffic, parking, pedestrian and cycle	Definite positive impact and probable negative impact	Large positive impacts if transport services and pedestrian connectivity are improved. Large negative impacts if there is decreased access to transport services and reduced pedestrian connectivity.

Discussion

Strengths and limitations of the study

This is the first empirical audit of HIA activity in Australia and NZ and it fills a knowledge gap about the characteristics and scope of HIAs in Australia and NZ. It adds to a small number of international studies that attempt to systematically describe the use of HIAs in a country or region.^{40,41} This study provides a solid baseline of HIA activity and also illustrates the growth of the field. We provide some new information about the quality of HIAs, the adequacy of methods for reviewing HIAs and how HIAs have been used in Australia and NZ.

There are a number of limitations to this study. Firstly, despite comprehensive efforts, there may be a number of HIAs that have not been identified. Some of these may be treated as internal confidential information and not made publically available, some may have been conducted rapidly in-house on a policy or program proposal and not formally written up, and some may have been small scale and not circulated beyond those directly involved. Also, HIAs that were not satisfactorily completed would not have been written up or made publically available.

As the field develops, it will be important to ensure that the quality of the HIAs and HIA reports produced is of an acceptable standard. We relied on a review package developed specifically for assessing project developments, although we then applied it to policies and programs. This meant that some of the grading criteria were not always relevant. This study was unable to assess the extent to which review packages for policies and programs would be substantially different, and in what ways.

In addition, the assessment of quality was very subjective and the level of detail required to make an assessment was often not included in the report. Differences emerged in the ranking of questions within the domains, often due to lack of detail on the characteristics at the various levels within the reports and the subjective nature of the assessment. EH and HNC also felt that the final score given to the HIA did not always reflect their own assessment of the overall quality of the HIA. For example, the point at which HIA were ranked as unsatisfactory (*parts are well attempted but must, as a whole, be considered unsatisfactory because of omissions or inadequacies*) was seen as needing a more graded approach. We addressed this by including a plus and minus ranking to each grading – again in

recognition that these assessments were subjective and required a more subtle assessment.

We feel that the overall findings of the review assessments need to be cautiously interpreted. They are based on subjective assessments and, as the majority of assessments were undertaken by only one reviewer (HNC), there is the possibility of bias. Some issues are not subjective, for example, the use of quantitative data. Since we were unable to follow up, it was not clear if lack of inclusion was a deficit in the report rather than a deficit in the work undertaken. Despite this, some issues were raised that are consistent with recognised gaps in HIA, for example, reporting of equity impacts.

The study shows that HIA has been used across Australia and NZ on a wide range of policies, programs and projects, suggesting that HIA methods have been found to be useful within the health sector and with many partner agencies, including community groups. We found some differences in practice between NZ and Australia. All HIAs aim to influence or change decision-making; however, in contrast to mandatory, advocacy and community-led HIAs, decision-support HIAs are commissioned by the decision-makers to inform their own decision-making process. All the NZ HIAs were categorised as decision-support HIAs with a strong emphasis on policy or strategic assessment. In Australia, there has been a stronger focus on project HIAs and some limited examples of mandated (within Social Impact Assessment frameworks), advocacy and community-led HIAs. There were different patterns in the types and levels of HIA between Australia and NZ. It is not clear at this stage if this reflects the ongoing development of an emerging field of public health practice which involves testing different approaches and levels, or contextual differences between the countries.

In terms of wider international relevance our findings are comparable to those of a similar study on the use of HIA undertaken in the US between 1999–2007, which identified 27 completed HIAs.⁴⁰ Those 27 HIAs were similar to our 55 in terms of the types of policies and programs, and range of partner organisations. The lack of a robust, predictive evidence base for HIA has been reported as a major constraint to the use of HIA as compared to risk assessment processes by public health practitioners,⁴² although this is contested.⁴³ As with the US study, our HIAs were predominantly based on expert judgement and extrapolation from empirical research, rather than predictive modelling. We did identify good examples of the use of local knowledge in HIA reports.

While there is still limited published literature on the effectiveness and experience of HIA, this is changing with growth in the number of clearing houses (e.g. HIA GATEWAY, HIA Blog)^{44,45} and investment in research programs.

This is the first study to systematically review the quality of HIA reporting. We found that a majority of HIA reports are adequate, to the extent that our assessment methods enabled us to judge. We found assessing the quality of HIA reports challenging, with the assessment of quality being very subjective and the level of detail required to make an assessment often not being included in the report. We also found that assessing the quality of HIA reports (as assessed by the review package) does not necessarily correspond

with the quality or effectiveness of the HIA itself and a more robust review package needs to be developed.

It is also not clear to what extent an international assessment package that allowed cross-country comparisons is feasible or acceptable. Many HIA Guides have been developed and there seems to be little international interest in a single guide. There is now general agreement on the steps of HIA⁴⁶ and the fact that it is a prospective assessment, and so the development of standards may be an evolving process. Despite several limitations to the use of the review package, especially its ranking system, we are able to draw useful findings that have been presented under each of the four domains. As described below, we were also able to identify ways in which HIA could be improved.

Implications for policy, practice and research

Despite the limitations of the review package, it highlighted a number of areas where existing reporting practice could be improved. These include:

- The distributional and/or equity impacts have to be routinely reported if HIA is to be promoted as a mechanism for addressing equity implications of policies and programs, as has been suggested by the WHO Commission on the Social Determinants of Health.
- More attention needs to be given to how stakeholders and communities are engaged in the assessment process and how this is reported.
- The limited use of quantitative data needs to be addressed by development of an evidence base and workforce competence in using data that have strong predictive power to quantify potential impacts, and by training people in the use of best available evidence. It would be helpful to explore ways in which traditional health risk assessment processes can be integrated into HIA and to build modelling capacity into HIA practitioner training and networks.
- Practitioners need to face the challenges of gathering existing evidence and evidence synthesis of impacts, making these evidence summaries widely available through existing web-based resources such as the HIA Gateway and HIA Connect.
- The development of greater understanding and presentation of causal pathways between the exposure and health outcomes would be helpful in strengthening HIAs.
- Greater clarity in the reporting of the assessment stage is required. This includes the reporting of how the assessment was carried out (e.g. how the evidence was valued and assessed, and what limitations were associated with this) and also the clearer description of identified impacts.
- Linkages between recommendations and impact assessment should be made more explicit. For example, Ross et al. documented the links between findings, recommendations and subsequent impacts in the Atlanta Beltline HIA.⁴⁷
- There is a need for a clear stakeholder involvement and communication strategies before HIA is commenced.

Our research has shown that using HIA reports as a basis for assessing quality or effectiveness of HIAs is limited by a lack of agreement about minimum standards and content for HIA reports, the audience-specific nature of reports and the fact that they can only report on HIA at one point in time. They generally cannot report what happened following the HIA. This suggests there should be more emphasis on longitudinal studies of the process and impacts of HIAs, which are supplemented by interviews with stakeholders and other documentary sources concerning the effectiveness of HIAs following the formal report period.

Conclusion

This study has highlighted the emergence of HIA as a growing area of public health practice in Australia and NZ. It has identified some areas where current practice could be improved. It has also provided a review of HIA practice in Australia and NZ that will provide a valuable baseline future developments can be assessed against. HIA capacity-building projects were implemented in both countries during our study period as a mechanism for supporting and establishing the use of HIA; however, this investment has not been sustained. The future development of HIA will depend on building on this knowledge and experience, in order to create sustainability in HIA practice.

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