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Criteria for use in the evaluation of health impact assessments

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Summary This paper reports the conclusions of a recent workshop that was established to discuss how health impact assessments (HIAs) might be evaluated.

The main purposes of HIA are: (a) to predict the consequences of different decisions; (b) to make the decision-making process more open by involving stakeholders; and (c) to inform the decision makers. 'Prediction', 'participation' and 'informing decision makers' are thus the three domains in which HIA should be evaluated.

In the 'prediction' domain, process criteria scrutinize the methods used to see if it is likely that they would produce reliable predictions. Outcome criteria involve verifying the predictions, but this is frequently impractical and predictions for the counter factual (the option not chosen) can never be verified. In the 'participation' domain, process criteria examine the ways in which stakeholders were involved, while outcome criteria explore the degree to which the stakeholders felt included. In the 'informing decision makers' domain, process criteria are concerned with the communication between decision makers and those doing the HIA, and should reflect upon the relevance of the HIA content to the decision makers' agenda. Outcome criteria explore the degree to which the decision makers considered that they had been informed by the HIA.

This paper concludes with suggestions for the types of information that should be included in HIA reports in order to permit the readers to make an assessment of the 'quality' of the HIA using the three domain criteria outlined above.

Background and purpose of paper

Health impact assessment (HIA) has been enthusiastically promoted as an aid to better policy making,[1] but others[2,3] have questioned its

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usefulness. Good assessments of the benefits of HIA are required to resolve this question. Evaluation of HIA must be clearly distinguished from the separate but related issue of evaluation of the decision, which the HIA was intended to inform. It is specifically concerned with assessing the quality of analysis for policy not with the quality of policy.[4]

Evaluation of HIA is concerned with the questions: 'Did the HIA add value to the process?' and 'Was the HIA fit for purpose?' These questions prompt the further questions: 'What is the process to which HIA is meant to add value?' and 'What is the purpose for which HIA is meant to be fit?' This paper is based on the assumption that HIA is meant to add value to the decision-making process in public policy.

There are a growing number of reports of HIAs in both the peer-reviewed and 'grey' published literature. While these usually imply that the HIA was useful to decision makers, it is extremely rare for them to give any evidence to justify this implication. A notable exception is the work of Mindell et al. reflecting on their experiences with HIA in London.[5,6] Other published reports usually seem to be written for HIA practitioners rather than for those whose decisions they seek to inform. Due to the demands of journal editors for brevity, HIA reports in the peer-reviewed literature rarely contain the information required to evaluate the HIA, but the full reports published in the grey literature should not be so constrained. However, work suggests that such reports rarely provide sufficient information to permit the reader to assess the validity of the methods used and conclusions drawn.[7] In this paper, we report discussions and conclusions emerging from a 2-day workshop held in Birmingham in July 2003, attended by 15 participants (academics, policy makers and HIA practitioners working in the UK and Europe) with regard to the information that should be included in reports of HIA.

The objectives of HIA

HIAs vary widely in setting, scale and methods adopted. For example, they may be carried out at the policy, programme or project level. They may be undertaken on a variety of time scales (rapid or comprehensive), make use of existing data (desktop) or collect new data; and vary in the extent of community involvement (from one or two experts to numerous community members).

Nonetheless, it is possible to identify a common purpose for all HIAs and a common framework for their evaluation. In 1999, the Gothenberg Consensus Paper[1] described HIA as 'a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.' It further stated: 'The general objective of such assessments is to improve knowledge about the potential impact of a policy or programme, inform decision makers and affected people, and facilitate adjustment of the proposed policy in order to mitigate the negative and maximize the positive impacts.'

From this, one can conclude that HIA has three inter-related objectives and three domains for evaluation:

- to predict impacts in a robust manner and to judge both their magnitude and importance[8] ('prediction');
- to involve the people affected (stakeholders) in the assessment process ('participation'); and
- to inform the decision-making process ('informing').

Evaluation of the three domains

'Prediction' process criteria

Assessment of health impacts requires prediction of the net consequences of implementing the decision. Evaluation will cover the robustness of methods used in the prediction of health state with and without the intervention. This will involve scrutiny of the causal/logic pathways linking the interventions to changes in the distribution and frequency of determinants and so to population health status. It will also look at how the assessors gathered and interpreted evidence gathered from different informants such as 'technical experts', residents, vulnerable individuals and so on.

The methods by which the assessors defined the scope of the impacts to be included will also be examined. For example, whether a checklist was used to identify possible impact pathways, and if so, the basis for this checklist. This will show if there was a theoretical basis for selection of the determinants and impacts to be included in the HIA, or whether some were simply not thought of.

An assessment of process with regard to 'prediction' should also consider how thoroughly routine statistics and policy documents were identified and examined; how well the baseline situation was researched and used to inform predictions of

subsequent health and health inequalities; which aspects of the literature were searched and how thoroughly it was done; which key informants were identified and the quality of the interview process; the rigour with which the different sets of evidence were assessed; and the rigour of the process by which consequences of the different options were identified. Consideration of how well the evidence was applied to the local population and context is also required; this is critical and partly what distinguishes an HIA, say, of a specific transport proposal from a general review of transport and health. It is recognized that not all potential impacts can be formally quantified, and that a qualitative assessment of magnitude and direction are required for some.

HIA not only seeks to predict net changes in health, but also the distribution of impacts among population subgroups, defined by characteristics such as age, gender, socio-economic status and geographic (proximity to intervention) location. Evaluation will explore the process by which population subgroups were identified and defined, and how differential effects were considered.

'Prediction' outcome criteria

Process evaluation shows that the methods and approaches used were those that would be expected to produce valid predictions on theoretical grounds. Outcome evaluation of the predictive function of HIA would show if the predictions were correct, but presents considerable theoretical and practical problems.

In theory, it would be possible to observe whether the predicted consequences materialize after a decision is implemented. However, it is difficult for such observations to continue for more than a few years, while the consequences of a decision may extend over many decades. Furthermore, the indicators being monitored are likely to be influenced by many factors other than the decision, so it becomes difficult to isolate the specific associated effects. It will be noted that, in this respect, evaluation of predictive outcome amounts to monitoring the consequences of the decision. Additionally, with policy-level HIAs, there is an assumption that the policy will be implemented as proposed at the time of the HIA. However, this rarely happens so the HIA may not have considered the option that is eventually enacted.

A further problem in attributing changes in health status to the policy decision is that the actual process of undertaking an HIA might, in itself, be expected to impact on health. For example, an explicit and public discussion of the health consequences of a project or policy may change the behaviour of the local population or of some groups within it. Alternatively, experience of participating in an initial HIA might act as a catalyst to mobilize the community in the future; for example, canvassing for improved primary care services or changing their behaviour to minimize perceived risks.

There is an even more fundamental problem with the evaluation of predictive outcome. Every HIA must involve prediction of the consequences of two or more options (at least do something vs do nothing). However, only one part of this decision can ever be implemented and so only one part of the HIA prediction can ever be subject to verification and outcome evaluation. This contrasts with evaluation of interventions by controlled trial or quasi-experiment, which necessarily include an assessment of the counter factual.

'Participation' process criteria

Participation has been seen as a core value of HIA, although it has recently been questioned whether it should be a mandatory part of all assessments.[9] Participation may offer a number of benefits. Firstly, it offers a means of achieving social justice, permitting the involvement of those affected by policies a voice in the decision-making process. In turn, this may assist with conflict resolution and offer a mechanism for the development of social learning and community empowerment.

Secondly, the shift within epidemiology from the 'reductive-objective paradigm of science'[10] towards 'postmodern epidemiology'[11] and 'eco-epidemiology'[12] acknowledges the validity of the views, knowledge and values of community members as 'evidence' to be accepted alongside that generated from traditional scientific enquiry.[13] This 'knowledge-gathering' function may be particularly important when considering local context and application of evidence from the literature and elsewhere; that is, what works in one community may not work in another, and qualitative evidence from local people can help to assess transferability.

The knowledge-gathering element of participation can be assessed by examining the methods used to identify and collect that information (see above—prediction). For example, different knowledge-gathering techniques such as focus groups, semi-structured questionnaires, surveys and so forth have different strengths and weaknesses, and the appropriateness of the method chosen

will be assessed. However, the quality appraisal of participation in terms of attaining social justice requires a slightly different perspective focusing on, for example, issues of representation, access to documents, mechanisms for stakeholder feedback and so on. The divide between the knowledge-gathering and social justice elements of participation is, to some extent, artificial, but simply gathering knowledge from a community may do little to empower them.

It is recognized that a vast array of stakeholders could, and perhaps should, be involved in an HIA if time and resources allow. The most challenging to engage are community members; professional stakeholders are easier to access by comparison. Minorities with a strong agenda may be eager to contribute to the HIA but may not be representative of others in their communities. For this reason, assessment of participation must look at how many stakeholders participated, who they were, who they represented, how they were identified, who declined to participate and so forth.

'Participation' outcome criteria

Outcome evaluation of 'participation' can be explored by seeking the opinion of stakeholders and the degree to which they felt included in the decision-making process and feel ownership of the HIA conclusions.

'Informing the decision makers' process criteria

HIA has a single over-riding objective: to inform and influence policy development and implementation in order to maximize health gain and reduce health inequalities. No matter how appropriate the methods to the policy under study, and how competent the risk assessment and prediction of impacts, an HIA will fail if it does not engage with the decision-making sphere. How were the decision makers engaged in the HIA? Did they contribute to the scoping of the HIA and how adequately was their agenda addressed? Was the timing of the HIA appropriate to influence the policy-making process? Were the HIA's findings communicated in an appropriate way to these decision makers?

'Informing the decision makers' outcome criteria

The first step in an outcome evaluation of the informing function could be asking the decision makers whether the HIA helped to shape their decision making. Such attribution falls short of rigorous demonstration of causality but is better than nothing and probably the best that can be achieved.

Additional benefits

An evaluation of an HIA should also include consideration of the additional benefits that might arise. These might include increased partnership working between health and other sectors, e.g. transport, education and housing, and an enhanced intra-organizational understanding of the factors that determine health.

Cost-effectiveness of HIAs

A more testing question of HIA is not whether it adds value but whether the added value justifies the extra resources required. In order to answer this question, it is necessary to estimate the resources used by the HIA. Costing an HIA requires that the total person-hours and all the other resources required to undertake the task are recorded. Some attempts have been made to do this in reported HIAs.[14] The added value from HIA comes in several forms so it would be extremely difficult to develop a common metric for costs and benefits. It is therefore premature to be seeking formal cost-benefit analysis.

Information required to evaluate HIAs

Most HIA reports do not contain the information that would be required for an evaluation based upon the domains set out in this report. Table 1 lists the information that would be required to make possible the evaluation of most HIAs.

It must be acknowledged that, in some situations, the objectives may be mutually exclusive, or at least pull in different directions. In particular, in some contexts, influencing decision making may be difficult to reconcile with participation since the decision makers may be reluctant to engage in very open processes. Not all criteria will be equally important for each HIA. HIAs enacted at different levels, e.g. on supranational policy, national policy, regional programmes or local projects, vary not only in scale and scope, but also in process. For example, supranational policy-level HIA may not seek public participation but content itself with input from 'expert' stakeholders. In contrast, an HIA of a local project, such as a proposal for a new leisure centre, might place substantial weight on

Table 1 Items to be considered for inclusion in an health impact assessment (HIA) report.

Stage of HIA	Prediction	Participation	Decision making	Resources
Screening	Was an explicit checklist used?	Who chose which policies to screen for possible HIA?	Who are the decision makers?	What were the costs of screening policies to identify which one/s went forward for a full HIA?
	Which impacts were considered?	Who undertook the screening?	What role did they have in deciding which policy/s were screened?	
	Which population subgroups were considered?		Were any other criteria (political, organizational, local conflict or concern, interest of an academic department) instrumental in identifying which policy/s were screened and selected for an HIA?	
	Was an a priori trigger set for a full HIA?		Is the HIA being conducted at an appropriate time (i.e. the findings will be presented before any decision is made?)	
	Is the HIA being conducted at an appropriate time (i.e. is sufficient known about the policy action to permit an assessment of impacts?)			
Scoping	What definition of health was adopted—what aspects of health (physical, mental, social) were to be included in the HIA?	Who was on the Steering Group and how were members identified?	Did the Steering Group identify the type of evidence (e.g. quantification of impacts, narrative, descriptive) that was required to inform the decision makers?	What were the time/resource limits for the HIA
	Which health determinants were considered and why?	Has the term 'stakeholder' been defined?	What is the decision makers' agenda—i.e. are some elements of the report in place because of their agenda?	How were resources for the HIA (researchers' time, cost of public meeting) identified and costed?
	Were population subgroups identified, and if so, which were identified?	Which stakeholder groups were involved and how were they identified and represented?	In what format did the decision makers require the findings of the HIA to be presented?	Will conducting the HIA involve an opportunity cost to some other public health issue?
	What constraints on methods were identified before the HIA commenced?	How was knowledge of the proposal and of the HIA communicated to the population/stakeholders affected by the potential policy action?		Who meets the costs of the HIA?

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Table 1 (*continued*)

Stage of HIA	Prediction	Participation	Decision making	Resources
Impact appraisal	What information sources were used to describe the distribution of health and determinants of health within the community at 'baseline'—are the limitations of the data recognized?	Which stakeholders were involved? Of those invited, who declined to be involved? How representative of the affected people were participants?	Did the decision makers or instigators of the proposal have an input into the impact appraisal process?	Were the time/resource limits for the HIA important in shaping what information sources were used?
	Were the cause-effect pathway/s by which the policy might impact on health and health determinants explicitly set out—has the theory of change/logic framework been established and is it supported by evidence?	How were stakeholders engaged in the process?	What biases might this have introduced?	
	Were both positive and negative impacts considered?	Was there any conflict, and if so, how was this managed?		
	Are all possible cause-effect pathway/s taken into account? If not, are the reasons why selected pathways were included and others excluded made clear?	Was the process culturally appropriate (language, settings)?		
	What evidence was not used, and why (e.g. time and resource limited, accessibility, non-availability/involvement of key informants and stakeholders)?	What documents were made available to stakeholders?		
	Has local context been taken into consideration?	How were discussions and information generated from stakeholders captured?		
	Which secondary data sources were used? Were their limitations recognized (e.g. what were the parameters of a literature review)?			
	How was primary data collected? Were the methods and details for both quantitative and qualitative processes set out clearly?			

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Table 1 (*continued*)

Stage of HIA	Prediction	Participation	Decision making	Resources
	What are the uncertainties in the methods and how do these affect predictions (e.g. non-inclusion of specific population members)?			
Dissemination of findings	Did the recommendations made flow from and were they justified by the reported findings of the HIA?	Who was involved in producing the report?	Which decision makers were given copies of the report? Were the HIA's findings formally reported to the decision-making organization?	How was the dissemination process affected by the availability of resources?
	Were criteria (if any) for prioritizing the impacts made explicit?	Who 'owns' the report?	What structures/processes were in place to enable the decision makers to comment on the HIA's findings?	
	Were the limitations of the prediction made clear in the report to the decision makers?	Who was invited to comment on the HIA's findings before the report was passed onto the decision makers?	Was the report presented to the decision makers at an appropriate time in the decision making and in an appropriate format?	
		What methods were used to disseminate the HIA's findings among stakeholders?	Did the report present evidence that was appropriate for, and credible to, the decision makers?	
		What structures/processes were in place to enable stakeholders to comment on the HIA's findings and report?		
Monitoring and evaluation	Have specific impacts that require monitoring after policy implementation been identified? Are the criteria for the selection of these impacts made clear?	Who is responsible for monitoring the impacts of the policy after implementation?	Did the HIA's findings and subsequent report influence the decision-making process? If so, what specific amendments to the policy were made? Why were these amendments undertaken?	What resources are available to undertake monitoring and evaluation?
	Have suggestions been made regarding how impacts may be monitored?	Have stakeholders had the opportunity to learn whether the recommendations of the HIA were implemented, and of any other outcomes associated with the HIA?	Does the revised policy include provision for long-term monitoring of effects?	What were the financial and other costs to undertaking the HIA?

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Table 1 (*continued*)

Stage of HIA	Prediction	Participation	Decision making	Resources
	Have the HIA assessors issued a postreport statement reflecting on the process and the evaluation?	Have stakeholders had the opportunity to feedback their reflections on the HIA, and, in particular, on their involvement in the process?		Have the HIA practitioners indicated the benefits they perceive to have emerged from doing the HIA?

gathering the views of local residents and potential users. Practitioners should not see these criteria as something to be rigidly adhered to in all circumstances. They should use them to prompt reflexivity and critical appraisal of all aspects of any HIA and include those reflections within HIA reports. But, while it is recognized that there may well be some trade-off between providing sufficient information in a report to permit an evaluation of an HIA and producing a report that is useable by decision makers, we would argue that transparency of methods is central to allowing decision makers to understand the strengths and weaknesses of any assessment, and, in particular, how the approaches taken by the assessors might result in an over- or underestimation of predicted impacts.

Conclusion

Most HIA reports have not provided sufficient information to allow the HIA to be evaluated. This paper proposes a framework and set of criteria by which an HIA could be evaluated, and it is hoped that future reports will include the information that would allow them to be used. More explicit consideration of the process and outcomes of HIA can only lead to better and more useful assessments.

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