

Development of an Urban Health Impact Assessment methodology: indicating the health equity impacts of urban policies

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Background: An overarching recommendation of the global Commission on Social Determinants of Health was to measure and understand health inequalities and assess the impact of action. In a rapidly urbanising world, now is the time for Urban HIA. This article describes the development of robust and easy-to-use HIA tools to identify and address health inequalities from new urban policies. **Methods:** Rapid reviews and consultation with experts identified existing HIA screening tools and methodologies which were then analyzed against predefined selection criteria. A draft Urban HIA Screening Tool (UrHIST) and Urban HIA methodology (UrHIA) were synthesised. The draft tools were tested and refined using a modified Delphi approach that included input from urban and public health experts, practitioners and policy makers. **Results:** The outputs were two easy-to-use stand-alone urban HIA tools. The reviews and consultations identified an underpinning conceptual framework. The screening tool is used to determine whether a full HIA is required, or for a brief assessment. Urban health indicators are a readily available and efficient means of identifying variations in the health of populations potentially affected by policies. Indicators are, however, currently underutilised in HIA practice. This may limit the identification of health inequalities by HIA and production of recommendations. The new tools utilise health indicator data more fully. UrHIA also incorporates a hierarchy of evidence for use during impact analysis. **Conclusion:** The new urban HIA tools have the potential to enhance the rigour of HIAs and improve the identification and amelioration of health inequalities generated by urban policies.

Introduction

One of the three overarching recommendations of the global Commission on Social Determinants of Health (CSDH) was to measure and understand the problem of health inequalities and to assess the impact of action to tackle them.¹ Specifically it called for ‘Competent, regular Health Equity Impact Assessment of all policy-making and market regulation should be institutionalized nationally and internationally.’ (CSDH 2008, p. 14²). Health Impact Assessment (HIA) is a systematic, evidenced-based decision support tool that considers how a proposal may alter the determinants of health prior to implementation and recommends changes to enhance positive and mitigate negative impacts. Its primary output is evidence-based recommendations. HIA is promoted by the World Health Organization and by the Commission on Social Determinants of Health. It has been used globally at local, regional, national and international levels to evaluate the potential health consequences of a wide array of proposals that span different sectors and levels of government.^{3–7}

In a rapidly urbanising world, HIA is vital for policy-makers in cities. It brings health evidence to policy options that need to be developed in the face of rapid urbanisation. This is especially relevant to lower and middle-income countries where new policies are shaping urban environments that will impact upon newly urbanised populations for generations to come. There are

currently no specific tools for HIA in urban areas. Now is the time for Urban HIA.

The aim of the research was to create robust and easy-to-use HIA screening and assessment tools to identify and address potential health inequalities from new urban policies.

This work formed part of the EURO-URHIS 2 project, which set out to collect standardised health indicator data from 44 cities in 14 countries from the European Union and beyond and establish methods to disseminate data to policy makers in order to inform policy and maximise health gains/reduce inequalities in urban areas. The HIA element of the project synthesised, tested and refined two stand-alone HIA tools: an Urban HIA Screening Tool (UrHIST) and an Urban HIA methodological tool (UrHIA), with a particular focus on the use of indicator data to identify and address health inequalities.

Methods

Two rapid reviews identified existing HIA screening tools and methodologies. Based on good practice for systematic review searches,^{8,9} the rapid reviews involved searches of electronic databases (Medline, Web of Science, ProQuest, Google Scholar and OpenSIGLE) using predefined search terms, inclusion and exclusion criteria and a definition of HIA (table 1); supplemental searches of dedicated HIA websites (e.g. HIA Gateway, HIA Connect

Table 1 Rapid review search terms, inclusion criteria and definition of HIA

Search terms

- Health Impact Assessment methodology
- Health Impact Assessment procedure
- Health Impact Assessment process
- Health Impact Assessment method
- Health Impact Assessment toolkit
- Health Impact Assessment tool
- Health Impact assessment guide
- Health Impact Assessment guidance
- Health Impact Assessment approach
- Health Impact Assessment technique
- HIA methodology
- HIA procedure
- HIA process
- HIA method
- HIA toolkit
- HIA tool
- HIA guide
- HIA guidance
- HIA approach
- HIA technique

All the above search terms (e.g. methodology, approach, toolkit) were repeated for Health Equity Impact Assessment and HEIA.

Inclusion/exclusion criteria

Include:

- English language documents
- Dates - any year
- Published articles containing detailed information on HIA screening tools and HIA methodologies.
- Grey literature reports, guides and case studies containing detailed information on HIA screening tools and HIA methodologies.
- HIA screening tools and HIA methodologies that meet a broad definition of HIA.

Exclude:

- Non-English language documents
- Documents in other formats such as factsheets and briefings.
- Documents with incomplete information on HIA screening processes.
- Other forms of impact assessment
- HIA screening tools and HIA methodologies that do not meet a broad definition of HIA.

Definition of HIA

'The systematic application of defined methods and procedures to assess the impacts of policies, plans, programmes and projects on the health of defined populations'.

Adapted from Abrahams et al.¹⁰

and WHO HIA); citation 'snowballing' and expert contact. Fifty-one HIA screening tools and 82 HIA methodologies were identified that satisfied the inclusion criteria.

Additional searches and consultation with HIA experts examined best practice principles of HIA practice and the current use and potential use of health indicators within HIA.

The synthesis and refinement of the tools followed a two stage process that built on former methodological development and Delphi¹¹ consensus building approaches (figure 1).

In stage 1, in separate exercises HIA screening tools and HIA methodologies ('HIA tools') were chosen from the initial inclusions from the search using adapted selection criteria (Box 1) developed by HIA experts in a previous research project that developed EU policy HIA methodology.^{12,13}

Box 1 HIA screening tool selection criteria

- (1) Is it based on an identifiable broad model of health, e.g. socioenvironmental model of health¹⁴?
- (2) Are health inequalities identified/addressed?
- (3) Is it accompanied by clear and concise guidance that does not assume prior knowledge of public health and/or HIA?
- (4) Are urban specific health impacts identified/addressed?

Selection criteria for HIA methodologies

- (1) Is it based on an identifiable broad model of health, e.g. the socioenvironmental model of health¹⁴?
- (2) Does it use mixed (quantitative and qualitative) methods?
- (3) Does it consider health inequalities?
- (4) Can it be applied prospectively?
- (5) Can it be applied at different depths of investigation (e.g. desktop, rapid and comprehensive assessment)?

None of the HIA screening tools reviewed met all of the screening criteria. One tool,¹⁵ however, satisfied the first four criteria and was selected for piloting and refinement.

Procedures, methods, tools and supporting information from 47 HIA methodologies that satisfied the selection criteria were synthesised into first draft UrHIA methodology by three of the authors

(AP, HD, AS-S) with expertise in the fields of public health, health inequalities and HIA.

In stage 2, the HIA tools (UrHIST and UrHIA) were refined using the modified Delphi approach (stage 2 of figure 1). The approach included input (feedback, amendment and validation) at three points for each of the tools:

1. Initial feedback on the first draft HIA tools from experts and key informants on the project steering and advisory groups. Based on this input the HIA tools were amended into second draft versions of UrHIST and UrHIA. Amendments were made to the structure and content of the tools, including further explanation of UrHIA's broad socioenvironmental approach to health and its' use in evidenced-based decision making.

2a. During an international workshop held in Brussels in September 2011, 15 public and urban health experts and health related policy makers from the Netherlands, Italy, Spain, France, Belgium, Slovenia and the UK piloted the second draft HIA Screening Tool (UrHIST) on draft urban policies (e.g. a walking and cycling policy). Using structured evaluation forms, they provided detailed feedback on the language, terminology, content, ease of use and suitability of the tool for use within an urban policy setting. Based on this feedback the tool was amended into a final draft version of UrHIST. Amendments were made to the language, terminology and presentation of the tools content and instructions in order to enhance clarity, suitability and ease of use by different audiences (e.g. public health practitioners and urban policy makers) in different settings across Europe.

2b. At a project meeting during an international Urban Health Conference in Amsterdam in September 2012, 29 health professionals, researchers and policy makers from countries including the Netherlands, Germany, Macedonia, Romania, Slovakia, UK, Australia and the US reviewed the second draft UrHIA methodology and identified and explored potential barriers and enablers to its use in urban policy settings. Comments and suggestions for amendments were incorporated into a final draft version of the UrHIA methodology. These included detailed recommendations on the appropriateness and transferability of the procedures, methods and tools (the methodology) and associated guidance, for application within

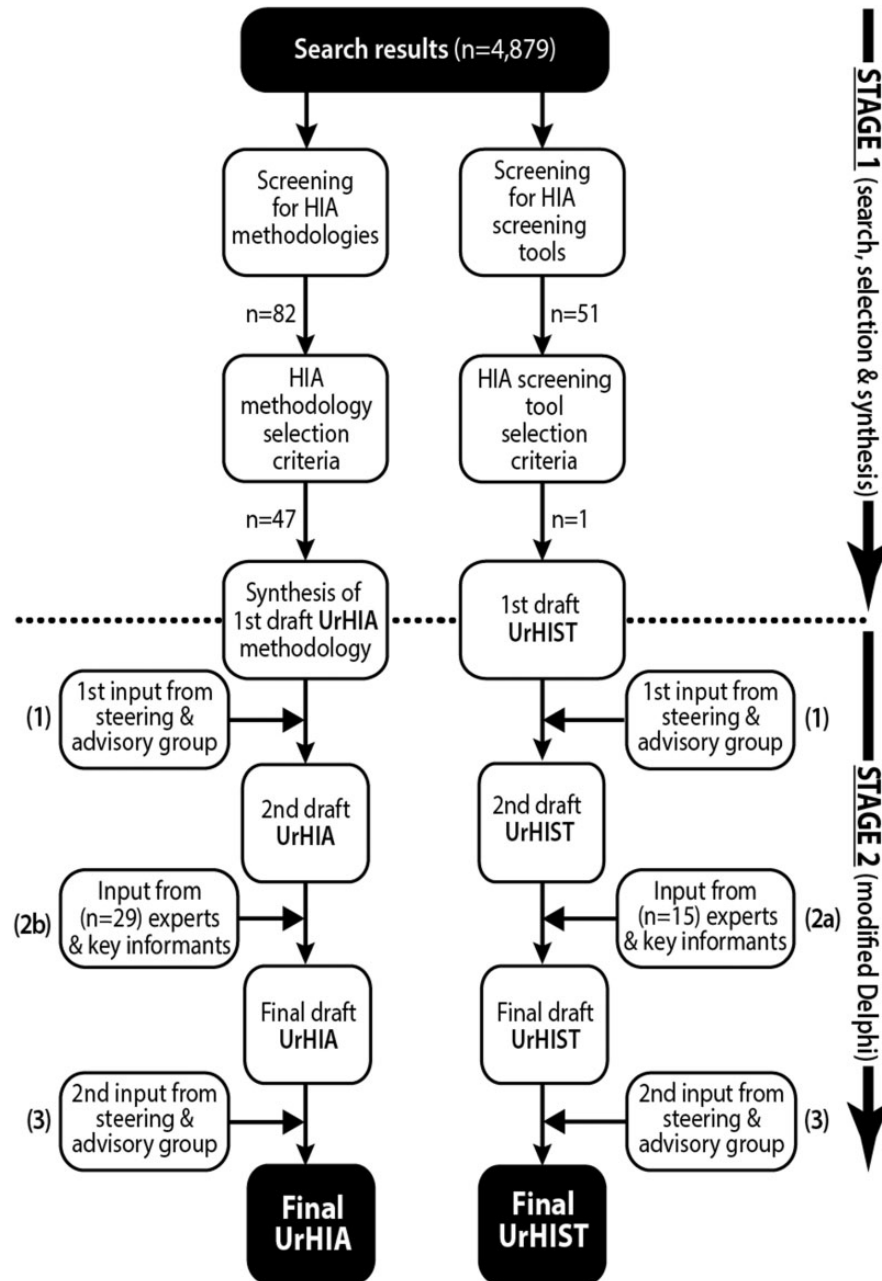


Figure 1 HIA methodological development process

European municipal authority and primary care settings. Amendments included the addition of further information on HIA monitoring and evaluation, and redesign/simplification of the UrHIA methodological framework diagram (figure 2) to enhance ease of use.

3. The final draft versions of the tools were reviewed again by experts and key informants from the project steering and advisory groups. Based on this feedback, the tools were amended into final validated versions of UrHIST and UrHIA. Changes included minor editing ('trimming') of the text in the UrHIA guide to enhance clarity and reduce the overall size of the document, and the addition of further information on the use of indicator data within specific methodological stages.

Results

The main outputs of the methodological development research are the new urban HIA tools (UrHIST and UrHIA) which can be found

at www.healthimpactassessment.co.uk. Key findings on methodological development to inform HIA practice are reported here.

The reviews and consultations with experts in the field contributed to the identification of a simple conceptual framework that underpins the urban HIA tools (UrHIST and UrHIA). This framework, the lens through which urban HIA practitioners may view the world, uses the respected World Health Organization definition of health¹⁶ and the Dahlgren and Whitehead socio environmental model of health.¹⁴

The HIA screening tool (UrHIST) is designed to be used to determine whether or not a full HIA of a policy is required—depending on the size, scale, nature and location of a proposed policy intervention, its relationship to affected populations and their characteristics and vulnerability. Although not ideal, when resources are limited, the screening tool may be used as an alternative to a full HIA.

The UrHIA methodology (figure 2) is based on an easy-to-follow linear process that is designed to maximise the use of existing

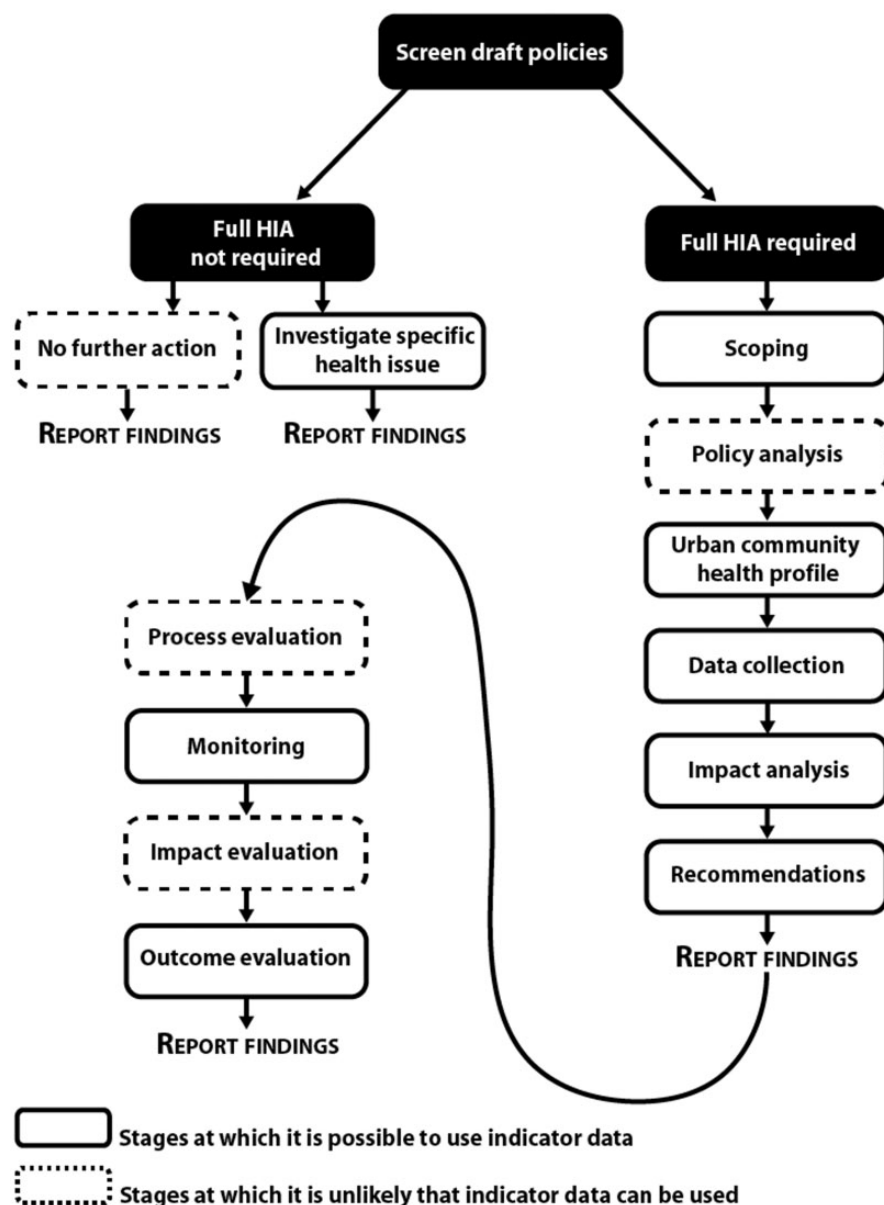


Figure 2 UrHIA methodology, showing stages at which it is possible to utilise indicator data

(secondary) evidence from indicator data and published/grey literature complemented, where possible, by new (primary) qualitative information from affected communities/stakeholders. The greater use of existing health indicator data prescribed by the UrHIA tool may enhance the rigour of HIAs in identifying and addressing health inequalities.

Urban health indicators are measurable variables, which reflect the state of an urban community and of persons or groups in the community,¹⁷ generated through surveys of health and sociodemographic conditions (including data on health determinants and health outcomes). Health indicator data are often readily available to HIA practitioners, decision makers and the public in urban areas. Their use can be an efficient means of identifying existing variations in the health of populations and those who may be affected by policy proposals. Despite this, the reviews and consultations with experts identified that health indicator data remain underutilised in HIA practice. The majority of HIAs only use indicators within the community health profiling stage of the process (figure 2). Under-use of indicators limits the identification of health inequalities and the potential of HIAs to produce recommendations that address

them. The data could potentially be utilised during HIA screening, scoping, urban community health profiling, data collection, impact analysis/prioritisation, recommendation development/prioritisation, monitoring and outcome evaluation. Based on the findings of the reviews and consultations, figure 2 illustrates the stages at which indicator data may be used to strengthen the consideration of health impacts/inequalities within urban HIA.

UrHIA does not prescribe a particular set of indicators for use in urban HIA. The selection of indicators should be based on the size, scale and nature of the policy proposal being assessed and its relationship to, and the characteristics of, potentially affected populations. The UrHIA guide does, however, identify examples of indicators that are of particular relevance to urban settings such as those relating to pollution, crime and the risk of accidents.

Another aspect of the UrHIA methodology which may help to enhance the rigour of HIAs is the inclusion of an adapted hierarchy of HIA evidence that was developed and tested in real world HIA practice by the International Health IMPACT Assessment Consortium (figure 3). The hierarchy includes six levels of evidence used in HIA, all of which may be valid and reliable. It is

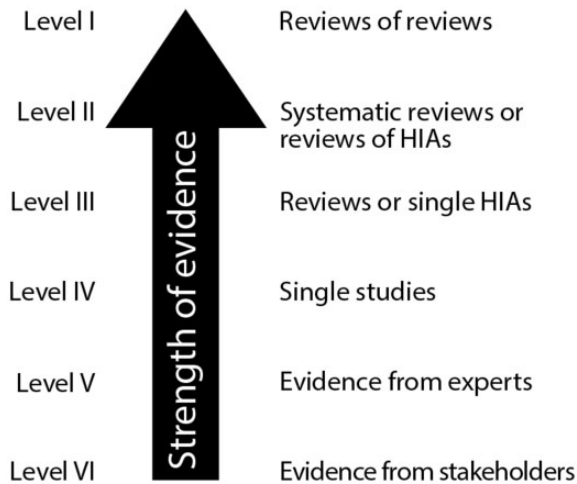


Figure 3 HIA hierarchy of evidence
Source: Adapted from Pennington et al.¹⁸

designed for use in the impact analysis stage of HIA. Strength within the hierarchy is relative to other levels of evidence for the purpose of comparison during the prediction of likelihood of impact.

Discussion

For the first time in human history, the majority of the world's population is living in urban areas, and this proportion continues to grow. By 2050, almost 7 out of 10 people will live in urban areas.¹⁹ Urbanisation is not inherently positive or negative from a health perspective.²⁰ Many of the impacts of public policies and their distribution are amenable to modification. HIA is ideally placed to promote the positive and reduce the negative health-relevant impacts of policies in urban settings.

Although policy makers are currently under no legal obligation to conduct HIAs, the approach has steadily grown in popularity since its emergence in the late 1990s.²¹ It is well established throughout Europe, in Canada, Australia, New Zealand and Thailand and is rapidly emerging in the USA. Yet despite continuing development, HIA methodologies have been criticised for lack of rigour in their use of evidence²² and for their limited success in tackling health inequalities.²³

We have systematically developed and tested the first HIA tools specific to the urban environment. They facilitate the use of data that is readily available in urban settings. They provide instruction on the use of indicators that are of particular relevance to the urban context. They were developed, tested and refined using input from urban health experts and urban policy makers.

While numerous guides provide instruction on systematic approaches to search, selection, appraisal and synthesis of qualitative and quantitative evidence, no guidance on the synthesis of methodologies exists. The absence of such guidance may have limited the rigour of the methodological synthesis process. The approach adopted, however, was based on established methods including systematic review search methods and consensus building approaches that have been tried and tested, albeit for other purposes. Although the tools are well suited to lower and middle-income countries, we were only able to test them in high income countries, predominantly in the EU, due to the nature of the project; this may be a further limitation. We did, however, include a diverse range of countries within the EU.

A crucial element in addressing existing health inequalities is their identification and description. This work has shown that HIA can make better use of indicator data both to identify existing health inequalities and to show the potential effects of proposed policies on vulnerable populations. It has also shown that indicators can be used to identify vulnerable groups for inclusion as stakeholders in HIA

participation processes and for the prioritisation and targeting of recommendations to protect and improve health. The easy-to-use, stand-alone HIA tools (UrHIST and UrHIA) go some way to enhancing the potential rigour of future HIA practice. They are both based on an established, broad conceptual framework of health/health inequalities that underpins the assessment of health impacts. The use of indicator data described within UrHIA and the inclusion of a hierarchy of HIA evidence in HIA guidance and subsequent practice have the potential to increase HIA rigour and success in identifying and addressing unfair, unjust and avoidable health impacts of urban policies.

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Key points

- Robust and easy-to-use Urban HIA Screening (UrHIST) and Urban HIA (UrHIA) tools may enhance the rigour of HIA and improve how it engages with health inequalities.
- Urban HIA should be underpinned by an explicit conceptual framework based on a broad definition and model of health.
- A hierarchy of evidence designed specifically for use within HIA may help to strengthen the rigour of the key impact analysis stage of assessment.
- Readily available health indicator data are currently underutilised in HIA practice, limiting the ability of HIAs to tackle health inequalities.
- Greater use of health indicator data may enhance HIAs ability to identify and address urban health inequalities.

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