

Strategic Environmental Assessment and health
Briefing paper for the Scottish HIA Network with input from
Margaret Douglas, Martin Higgins and Sheila Beck, 2005

Why include health in SEA?

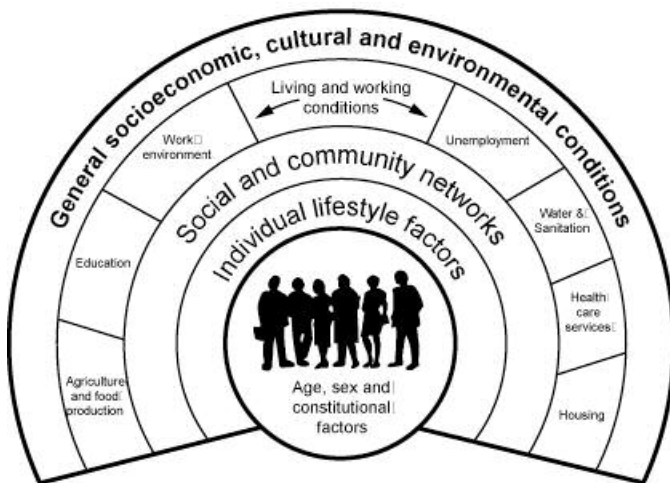
The [EU directive on SEA](#) was introduced in July 2004 and [Scottish legislation passed in November 2005](#). The Directive includes a list of project proposals that must be subject to an SEA. But the Scottish Parliament has decided to extend the scope of SEA legislation to cover all public sector strategies, policies, plans and proposals and is introducing legislation to enable that. SEA requires explicit consideration of significant impacts on 'human health' when a development is proposed. Impacts on human health should be considered during SEA. Most environmental assessments consider health impacts that result from changes in the physical environment, for example, changes in air quality, toxic/allergenic/infectious agents, or road traffic accidents¹. A more comprehensive assessment should recognise social, emotional and physical aspects of health and consider wider social determinants of human health and wellbeing.

The World Health Organisation (WHO) European Office was involved in the development of the SEA Directive. The phrase 'environment including health' was eventually adopted for use throughout the protocol. Discussions about how health ought to be considered also emphasised that a social definition of health was most appropriate. The importance of consulting with health authorities at each stage in an assessment was also highlighted. The WHO endorsed the health impact assessment (HIA) as a practical way of considering health issues within SEA.

There is growing experience of health impact assessment within Scotland, other UK countries and many other countries. This has led to greater appreciation of the potential for public policies to impact on health in unexpected ways. As more policies and strategies are subjected to health impact assessment and also to SEA, it makes sense to integrate these to avoid duplication of effort.

What is health?

Human health and wellbeing is a product of multiple influences as the model below, developed by Dahlgren and Whitehead, model illustrates.



Each of the rings represents a layer of health determinants. Lifestyle, social and community influences, employment, physical environment and cultural factors combine with inherited biological and genetic composition to determine an individual's health. It follows, therefore, that a health impact assessment should consider all these determinants when assessing potential impacts on human health.

Figure 1: Determinants of Health²

Health determinants and health outcomes

Impacts may arise at different places on a causal pathway between health determinants and health outcomes. For example, transport policies may impact on: injuries from road traffic accidents (a health outcome); levels of physical activity (a health determinant); community severance (a health determinant with complex inter-related influences on health and wellbeing).

What is HIA?

Health impact assessment (HIA) is a way to integrate consideration of health issues into policy making in all sectors. The World Health Organisation Gothenburg Consensus Paper on HIA³ defines HIA as: 'a combination of procedures, methods and tools by which a policy, programme 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'. An HIA aims to minimise the likelihood of negative health impacts and maximise positive health impacts and therefore produce better policy and decision-making.

HIA routinely considers impacts on different population sub-groups. This approach recognises that the population comprises multiple, overlapping groups and no policy affects all people equally. If differential health impacts are identified the assessment should recommend alternatives or mitigatory actions.

HIA may include qualitative and quantitative evidence about the relationships between a proposal and the health of a population, including the views of communities who may be affected by it. It aims to identify all potential health impacts: intended and unintended, positive and negative.

When is HIA needed as part of SEA?

Screening

As with environmental assessment, a screening process determines whether further assessment is necessary. The aim of screening is to identify key population groups that will be affected by the proposal and potential health impacts on these populations. After screening, it is possible that all the impacts and recommendations may be clear enough to preclude the need for a more detailed assessment.

Screening for health impacts is undertaken as a group exercise that includes key stakeholders. Participants should include people with knowledge of: the specific proposal; policy and practice in the relevant sector; the local area and population; and health. As health impacts can arise through many different determinants through complex causal pathways, it is important to include people with differing perspectives in order to gain insight into potential impacts.

Usually a checklist is used to facilitate screening. The checklist prompts explicit consideration of:

1. population groups affected by a policy
2. a list of potential health impacts
3. areas of uncertainty where further assessment or research is required
4. actions to mitigate negative or enhance positive impacts

If a screening identifies potentially severe health impacts or areas of uncertainty then a more detailed health impact assessment is necessary.

A written report should be drafted to document the population groups and impacts identified, recommendations that arise from these and areas where further assessment is required.

How to do more Detailed HIA

Health impact assessment follows the same stages as environmental assessment, as summarised below.

Screening	Decide whether HIA is required as part of the SEA
Scoping	Define the scope of the HIA
Profiling	Collate baseline data
Assess impacts	Carry out further assessment to inform recommendations
Make recommendations	Use findings to make recommendations to improve health impacts
Monitor impacts	Monitor actual health impacts that arise after implementation

Source: Adapted from *Health Impact Assessment: a guide for local authorities (CoSLA/PHIS 2001)*.

Although this is presented as linear steps, it is often iterative as findings in later stages may mean that earlier stages must be revisited.

A steering group should be established to define the scope of the assessment and carry out or commission and appraise the work. The steering group should have input from health professionals as well as from those developing the proposal. The steering group is responsible to oversee and appraise the assessment and agree the recommendations that arise from it. Clear lines of communication and accountability should be established, including liaison with those doing other parts of the SEA.

Scoping

The steering group is responsible to scope the work required in the assessment. The group may then carry out the work or commission it externally. The scoping tasks to be undertaken include the following:

Define the geographical, population and time boundaries over which to predict impacts: It is important to define boundaries clearly from the outset, although sometimes later in an assessment it becomes clear that impacts will be spread more widely than originally thought, and the scope has to be reconsidered.

Define population groups to be considered: The groups identified during the screening exercise will be the basis for this. These groups should be more clearly defined – this process will be the basis for the profiling element of the assessment.

Define impacts to be assessed and questions to be addressed in the assessment: Although the steering group should identify the impacts from the screening exercise, it is possible that further relevant impacts will be identified in the early stages of further assessment and there should be sufficient flexibility for these to be included. In any impact assessment, it is essential that the right questions be asked so that appropriate data or information can then be collated. Examples of possible questions include:

- How likely is it that the impacts will occur?
- How many people may be affected by each impact?
- What are the pathways by which impacts occur? This may help identify actions that enhance or mitigate these effects.
- What value do affected people place on each impact?
- What priority should be given to each impact, compared with other impacts or other factors?

Addressing the questions should provide the information that is required to develop recommendations.

Define type of assessment and methods to be employed: The methods will depend on the kinds of impacts identified and the information needed to inform recommendations. Both quantitative and qualitative evidence may be used.

Set terms of reference for the assessment including timescale for the work: This should fit with the timescale for the wider SEA.

Profiling

The profile involves collating baseline data on the local populations and features of the local area(s). This background should help to apply the evidence on health impacts to the specific context, and provide a baseline for future monitoring. Relevant data includes the demographic composition of affected populations and their health status. This should include information about any particularly vulnerable groups.

Assessment of impacts

Although HIA encompasses a spectrum of activity, for practical and illustrative purposes two approaches may be described:

- A Rapid HIA would involve seeking the view of a wider range of stakeholders than those involved in the initial screening exercise in order to define and explore potential impacts further. This could be done using the same screening tool, or an amended tool, with further group(s) of stakeholders. It would usually also include collation of limited background information and limited review of relevant literature evidence.
- A Detailed HIA would be done for major projects where a screening suggests that there may be significant health impacts or considerable uncertainty about the impacts. It will include more comprehensive collation

of background data, more systematic review of relevant literature, and quantification and/or more detailed qualitative assessment of impacts.

These are illustrative examples; in all cases the scope of the work and types of evidence should be appropriate to the scope of the policy and types of impacts.

Q: How does this relate to assessment of different options which is the process envisaged for a detailed SEA?

As with environmental assessments, different methods and types of evidence may be employed depending on the types of impacts identified in screening, the scope of the proposal being assessed and the context. The methods employed in HIA are wide ranging. Most HIAs include reviews of relevant literature evidence combined with structured gathering of stakeholder views using a qualitative method such as interview or focus group. Some may also use survey data, modelling, option appraisal or other methods.

It is important to liaise with those carrying out other parts of the SEA as they may have data that will inform the HIA. For example data on projected changes in air quality would then be used to predict resultant changes in health.

The methods used depend on the assessment questions defined by the steering group. Possible methods to address the questions are suggested below.

How likely are the predicted impacts to arise? Reviewing literature evidence of impacts arising from similar policies in other settings. The assessment would include reviewing the relevance of research studies in other settings to the case under assessment (see below).

How many people may be affected by each impact? Applying rates found in research studies to the whole population being considered. In some cases computerised models are available to facilitate this. Where possible the assessment should include specific consideration of vulnerable groups in the population and indicate numbers of people in these groups who will be affected. If data are not available to allow quantification of differential impacts this should be clearly stated.

What are the pathways by which impacts occur? Reviewing literature evidence (often qualitative). Interviews/focus groups with key stakeholders, including affected populations.

What value do affected people place on each impact? Questionnaire surveys or qualitative research with affected populations.

When literature evidence is used it is important to apply it to the local context. This means appraising whether findings are relevant to the specific policy, populations and other context. A simple grading system may help to clarify this:

1. Stakeholders believe the impact will arise but there is no research evidence to support this.
2. Research evidence indicates the impact has arisen in other cases but there are differences in the context, policy or population that could influence whether the impact arises or its severity.
3. Research evidence indicates the impact has arisen in other cases with similar context, policy and population to the case being assessed.

This grading scheme should not be used to imply that stakeholder opinion is of little value. In many circumstances qualitative evidence of stakeholder views is sufficient. For example, if affected populations state that a proposal will increase their subjective sense of pride in their community, literature evidence is not likely to alter the relevance of this perspective provided a sufficiently large and representative sample of people has presented this view. Furthermore, if sufficient numbers of people report a perceived health impact, then the perceived impact is relevant irrespective of other information that is pertinent. For example, many people express concern about living close to power lines. Research ([BMJ 2005;330:1290 \(4 June\)](#), [doi:10.1136/bmj.330.7503.1290](#)) suggests there are limited negative health outcomes attributable to the effects of power lines. But proximity to electricity pylons may affect people's self-identifying mental health and wellbeing.

'Significance' of health impacts

The definition of significance is key to the whole SEA process. No strict definition has been applied and it seems likely that what constitutes significance will be determined in the next few years as the SEA legislation is tested in court.

This is a tentative suggestion, in the context of SEA, of what 'significant' health impacts may be:

- ◆ potentially severe or irreversible negative impacts
- ◆ impacts affecting a large number of people
- ◆ impacts affecting people who already suffer poor health or are socially excluded
- ◆ positive impacts with potential for greater health gain
- ◆ associated with new demands on the health service or health service resources

Recommendations and mitigation

As with any detailed SEA, the HIA will incorporate a consideration of different policy alternatives and recommendations about the best options. The questions to be addressed in this part of the assessment include:

- What actions would mitigate negative impacts or enhance positive ones?
- Are these actions likely to be feasible and effective in this context?
- What are the financial costs of mitigation?

Evidence from the literature review should be sought to inform possible actions and again its relevance to the context, policy and populations should be appraised. Stakeholders may also suggest possible actions and have insight into whether they are likely to work in the local context.

The HIA report

As a minimum, the HIA report should document:

- A description of the policy proposal and brief policy analysis outlining assumptions underpinning the assessment.
- A profile of the affected population groups identified.
- A description of the methods and evidence used in the assessment with sufficient detail to judge the quality of the evidence used.
- A description of the stakeholders who participated in the assessment.
- A description of predicted health impacts including their likelihood, severity and which population groups will bear them. It may aid clarity to present a summary of the health impacts and affected populations as a matrix. It should be clear whether each of these is a health determinant impact or a health outcome impact, and the proposed relationships between them.
- Recommendations to mitigate negative and enhance positive impacts, referring to the evidence on which the recommendations are based.

The findings and recommendations arising from the health part of the assessment should be incorporated within the rest of the SEA. In the unlikely event that conflict arises between recommendations made as a result of the HIA and those arising from other parts of the assessment, the SEA steering group in consultation with the HIA steering group and other relevant groups should resolve this. The final SEA report should document that this has occurred and how it was resolved.

Consultation on the HIA

Consultation as part of the HIA is important for two reasons. Firstly, affected populations and other stakeholders provide much of the evidence that should underpin the assessment. Secondly, people should have the opportunity to comment or be involved to enable transparency of the process.

Ideally, consultation relating to health impacts should be in parallel/part of wider SEA consultation.

Support from NHS

The NHS has limited capacity to carry out HIA but may offer advice and help appraise work carried out. The relevant Director of Public Health should be the first point of contact to discuss the support required.

For detailed SEAs, where possible there should be public health input on the HIA steering group (and/or SEA steering group) to ensure health issues are considered appropriately from the outset. Public Health Practitioners and local authority Health Improvement Officers are good points of contact.

Monitoring

Health impacts should be monitored in the same way as other impacts in SEA and should feed into future review and implementation of the policy. The purpose of monitoring may be to monitor implementation of recommendations, identify unforeseen impacts or inform the evidence base for future assessments. It is important to define the population(s) to monitor and the aims of monitoring. If there are existing datasets or evaluation criteria that can be used readily, these should be adopted. Otherwise, the responsible authority should work with key stakeholders to identify appropriate indicators and measures.

Resources

Data sources

The Scottish Public Health Observatory is a gateway to a range of health data. Scotland has good health service datasets although these are not comprehensive and they do reflect the so-called medical model of health. The NHS collects routine data for patients' hospital attendances although these records will vary across the country depending on the systems used in different areas. There are also data recorded for patients contacts with primary care (GPs, nurses etc) although these are less comprehensive. Health Protection Scotland collects data for communicable diseases and environmental health hazards. Health Scotland provides health profiles of different Scottish communities and is developing a mental health dataset. Other data sources include the Scottish Health Survey, Scottish Indices of Multiple Deprivation and Scottish Neighbourhood Statistics.

As with all data there are limitations on all these sources. Often these relate to the accuracy of the measures used i.e. hospital records are used as disease proxies, and the size of the samples. There are particular problems trying to make judgments about health impacts if survey samples are too small.

To assess people's wellbeing, it is also important to use non-NHS data. Information about wider social determinants of health are gathered from a range of sources: government, QUANGO, specialist agencies. Similar reservations apply to the data being presented in terms of scale and applicability.

HIA websites/Advice on HIA

World Health Organisation (Europe) HIA and SEA: <http://www.euro.who.int/healthimpact>

UK HIA Gateway <http://www.publichealth.nice.org.uk/page.aspx?o=HIAGateway>

Scottish HIA webpages: <http://www.phis.org.uk/about/enet.asp?p=ee&id=8>

Welsh HIA Support Unit: <http://www.whiasu.cardiff.ac.uk/index.html>

HIA Research Unit, University of Birmingham: <http://www.pcpoh.bham.ac.uk/publichealth/hiaru/>

Impact – International HIA Consortium: <http://www.ihia.org.uk/>

Population and public health

Scottish Public Health Observatory: <http://www.scotpho.org.uk/>

Glasgow Centre for Population Health: <http://www.gcph.co.uk/>

NHS Health Scotland (local area health profiles and health evidence):<http://www.phis.org.uk/>

Health service data sources

Scottish Health Statistics : (ISD -- hospital, primary care, morbidity and mortality data):http://www.isdscotland.org/isd/index2.jsp;jsessionid=3BE60811724EB109F976ED1B22425BF9?p_appli c=CCC&p_service=Content.show&pContentID=1&

Health Protection Scotland: <http://www.hps.scot.nhs.uk/>

General Register Office for Scotland: <http://www.gro-scotland.gov.uk/>

Social determinants of health data sources

Scottish Indices of Multiple Deprivation: <http://www.scotland.gov.uk/stats/simd2004/>

NOMIS: <http://www.nomisweb.co.uk/>

Futureskills Scotland: <http://www.futureskillsscotland.org.uk/web/site/home/home.asp>

Scottish Neighbourhood Statistics: <http://www.sns.gov.uk/>

Scottish Environment Protection Agency (Quality of air
NO2 and SO2 Emissions): www.sepa.org.uk/data/index.htm

www.sepa.org.uk/data/emissions_SO2_NOx/

Scottish Environment Protection Agency --Industrial emissions data: www.sepa.org.uk/data/index.htm

Scottish Pollutant Release Inventory (SPRI): www.sepa.org.uk/spri/index.htm

Scottish Executive - Climate change: www.scotland.gov.uk/Topics/Environment/Climate-Change

Scottish Executive - Pollution and transport statistics: www.scotland.gov.uk/Topics/Environment/Pollution

Scottish Executive - Transport statistics: [www.scotland.gov.uk/about/CSU/DD-EAS-
Trans/00015781/TranTheme.aspx](http://www.scotland.gov.uk/about/CSU/DD-EAS-Trans/00015781/TranTheme.aspx)

Audit Scotland -- Waste, performance indicators: www.audit-scotland.gov.uk

Scotland and Northern Ireland Forum for Environmental Research (SNIFFER)-- Water, land, air and urban
environment: www.sniffer.org.uk/

British Geological Survey -- Information on potentially harmful elements in soils and water: www.bgs.ac.uk

Royal Environmental Health Institute for Scotland -- Annual report on environmental health in Scotland:
www.royal-environmental-health.org.uk/index.htm

Scottish Executive Housing Statistics: www.scotland.gov.uk/about/DD/EAS/00014844/home.aspx

Scottish Executive Planning Statistics: [www.scotland.gov.uk/about/ASD/DD-EAS-
Env/00017731/page1340818912.aspx](http://www.scotland.gov.uk/about/ASD/DD-EAS-Env/00017731/page1340818912.aspx)

Evidence and best practice sources

Bandolier: <http://www.jr2.ox.ac.uk/bandolier/>

Campbell Collaboration: <http://www.campbellcollaboration.org/>

Centre for Reviews and Dissemination: <http://www.york.ac.uk/inst/crd/>

Cochrane Library: <http://www.update-software.com/publications/cochrane/>

National Institute of Health and Clinical Excellence: <http://www.nice.org.uk/>

NHS Scotland e-library (NHS Scotland staff only): <http://www.elib.scot.nhs.uk/portal/elib/pages/index.aspx>

Scottish Health on the Web: <http://www.show.scot.nhs.uk/>

Scottish Intercollegiate Guidance Network: <http://www.sign.ac.uk>

SIGLE (System for Information on Grey Literature in Europe)

TRIP database: <http://www.tripdatabase.com/>

RAPID IMPACT CHECKLIST December 2005

<p>Which groups of the population do you think will be affected by this proposal?</p> <ul style="list-style-type: none"> • minority ethnic people (incl. gypsy/travellers, refugees & asylum seekers) • women and men • people in religious/faith groups • disabled people • older people, children and young people • lesbian, gay, bisexual and transgender people 	<p>Other groups:</p> <ul style="list-style-type: none"> • people of low income • people with mental health problems • homeless people • people involved in criminal justice system • staff 	
<p>(The word proposal is used below as shorthand for any policy, procedure, strategy or proposal that might be assessed.)</p> <p>What impact will the proposal have on lifestyles?</p> <ul style="list-style-type: none"> • Diet and nutrition • Exercise and physical activity • Substance use: tobacco, alcohol or drugs • Risk taking behaviour • Education and learning, or skills 	<p>What positive and negative impacts do you think there may be? Are there any impacts about which you feel uncertain? Which groups will be affected by these impacts?</p>	
<p>What impact will the proposal on the social environment?</p> <ul style="list-style-type: none"> • Social status • Employment (paid or unpaid) • Social/family support • Stress • Income 		
<p>What impact will the proposal have on equality?</p> <ul style="list-style-type: none"> • Discrimination • Equality of opportunity • Relations between groups 		
<p>What impact will the proposal have on the physical environment?</p> <ul style="list-style-type: none"> • Living conditions • Working conditions • Pollution or climate change • Accidental injuries or public safety • Transmission of infectious disease 		
<p>How will the proposal impact on access to and quality of services?</p> <ul style="list-style-type: none"> • Health care • Transport • Social services • Housing services • Education 		

- Leisure

RAPID IMPACT CHECKLIST

This checklist should be used to help identify broader impacts of a policy, plan or practice on health and wellbeing.

It is intended to help you think about broader impacts, then suggest recommendations to improve the impact and identify where further evidence may be required to demonstrate impact and inform the recommendations. It assumes some background knowledge and understanding of the proposal.

Step 1. Population groups

Identify the different population groups who may be affected by the proposal:

- The intended target group(s)
- Other groups who may receive the intervention
- Groups who may be affected unintentionally (positively or negatively)
- People who are excluded from benefiting from the proposal
- Specifically consider groups of people who are socially excluded; low income groups; different age groups; different genders; those living in specific geographical areas (rural/urban/deprived areas; communities of interest (e.g. people from black and minority ethnic communities, disabled people, people with learning disabilities, homeless people, refugees, travellers).

Not all of these groups will be relevant. Define the relevant groups for the specific proposal and write them on the checklist overleaf as a reminder to consider impacts on these groups in particular. (Groups need not be mutually exclusive.)

Step 2. Impacts

Using your knowledge of the proposal, consider possible impacts on health and wellbeing, using the checklist. This is intended to help you think broadly about the indirect and unintended effects of the proposal as well as the direct intended ones. Some illustrations are provided to help stimulate your thinking but impacts do not have to be limited to these categories.

Make a note of what sort of impact you think the proposal will have on specific population groups. (Some proposals will have impacts on the whole population and you should note these when you find them.) Try to specify whether the impact will be positive or negative or whether you are uncertain and want to discuss in more detail.

Step 3. Further evidence

Having identified impacts, are there uncertainties that may affect your recommendations? What else do you need to know to inform these, or to monitor impacts that arise after the proposal is implemented? If you need to know more, note this on the sheet and consider the evidence to be gathered and questions to be answered.

Step 4. Recommendations

Having identified the impacts, should the proposal be amended, or other action taken, to maximise positive and minimise negative impacts? If so, be prepared to make suggestions and recommendations along with the rest of the group.

Finally: is a more detailed health impact assessment needed?

Further assessment may be needed if there are possible significant health impacts *and* uncertainty about which impacts are most significant and how, or if, the proposal should be adjusted. Not all proposals can be subjected to detailed assessment. You may wish to prioritise assessment when:

- Already vulnerable groups of people may be disadvantaged by a proposal
- The proposal has impacts over a large geographical area and large population
- Some results of the proposal may be irreversible
- There is conflict or disagreement about the proposal and a HIA may help to resolve it
- It is possible to change the proposal or implement other actions if necessary
- Time, money and expertise are available for further assessment

Rapid Impact Checklist summary report

Positive Impacts (note the groups affected)

Negative Impacts (note the groups affected)

Additional Information and Evidence Required

Recommendations

¹ Steinemann, A. (2000) Rethinking human health impact assessment, *Environmental Impact Assessment Review*, 20, pp627-645.

² Dahlgren G. and M. Whitehead (1991) *Policies and strategies to promote social equity in health*. Stockholm, Institute for Futures Studies

³ World Health Organisation European Centre for Health Policy. (1999) Health Impact Assessment: main concepts and suggested approach, Gothenburg consensus paper.