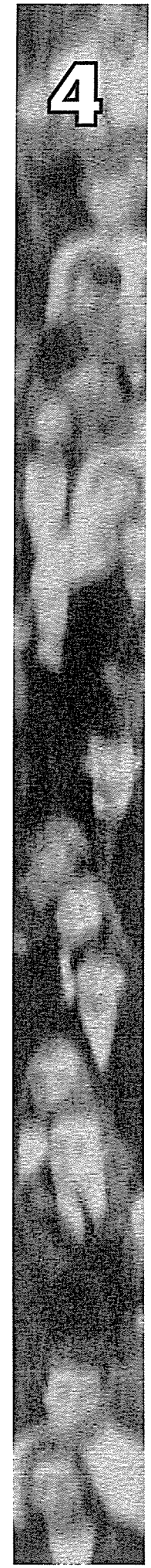


Matrices are visual tools for organising and structuring the evidence of potential health impacts. The health impact matrix summarises the key health impacts. An example from a transport project is given in table 4.3.

Table 4.3 An example of a Health Impact Matrix

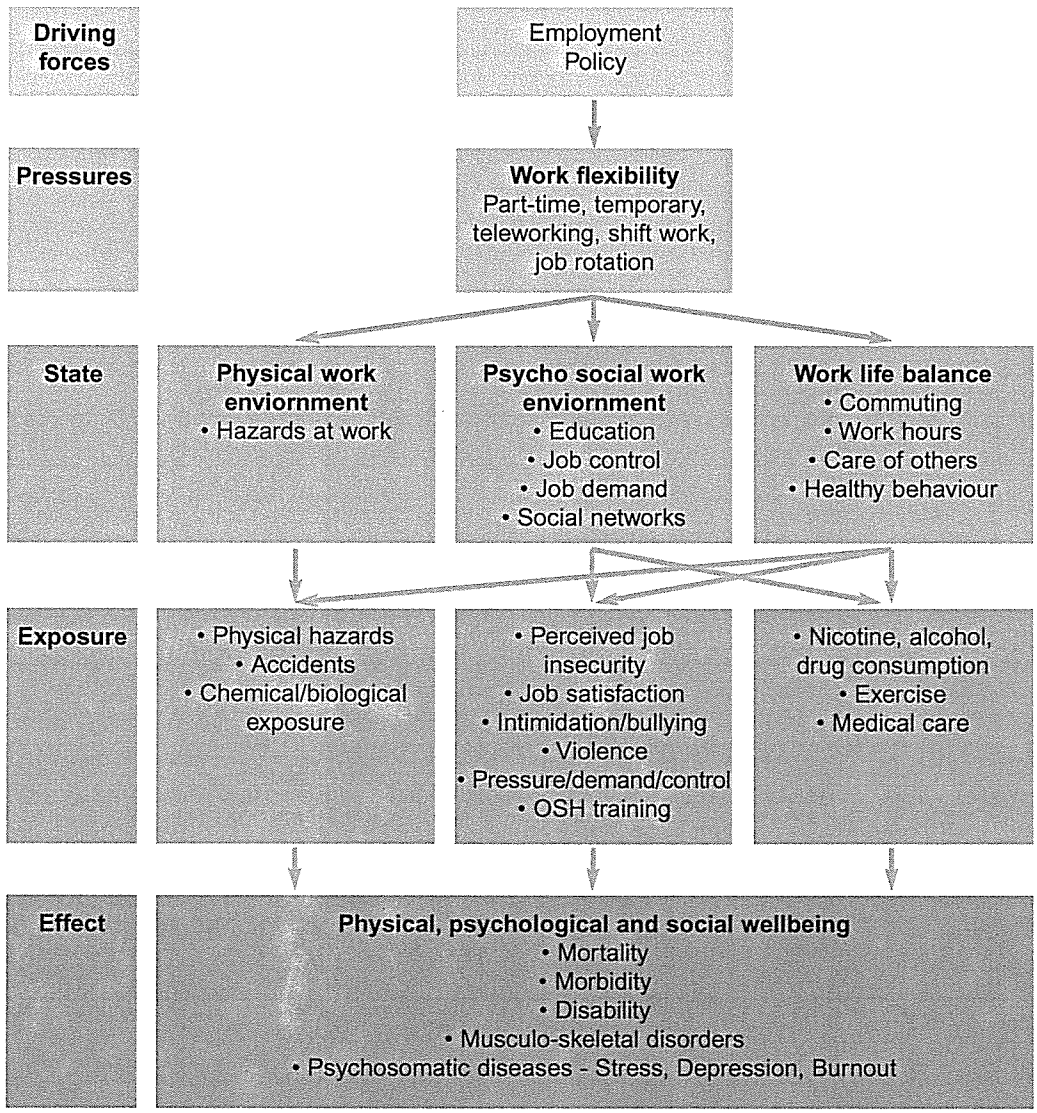
Potential Health Impacts	Direction/ Scale	Likelihood
Population		
• Reductions in rate of road traffic growth and congestion (Tasks 2, 3, 4) Reduction in rate of growth (predicted 1.052 in 2005) and congestion of road traffic by promotion of healthier transport modes, change in travel behaviour, restricted vehicle access, change in traffic flows	++	Probable
• Improvements in Air Quality (Tasks 1-4) Reductions in general road traffic-generated and bus-generated air pollutants (Task 1): NO_x, PMs, CO, VOCs	+++	Probable
Reductions in NO_x to bring within NAQS –> Prevent 'sensitising' asthmatics, people with Chronic Obstructive Pulmonary Disease reducing risks of reduced lung function and morbidity (WHO, 2003)	+++	Probable
Reductions in generation of ground level O_3 (resulting from NO_x photochemical oxidation in the presence of VOCs) –> reductions in risk of deaths brought forward eg asthmatics (+ 0.6% per 10 ug m^3 8-hour mean O_3 concentration (above 100 ug threshold) m^3) (COMEAP, 1998).	+++	Probable
Reductions in PMs –> reductions in risk of deaths brought forward (+ 0.75% for a 10 ug m^3 increase in PM concentrations (no threshold) (COMEAP, 1998).	+++	Probable
Reductions in outdoor air pollutants –> prevent long term lung damage.	++	Probable
Health Inequalities CATCH will contribute to reducing the health inequalities experienced in the area due to road-traffic generated air pollution. Groups most vulnerable to poor air quality: Children, pregnant women, people with existing heart or respiratory disease, older people, 'responders' (people who are susceptible to allergic responses from pollutants)	++	Probable

An analysis at population and sub-population levels should be included to consider the implications for health inequalities. To do this, the health experience of the population sub-groups under investigation relative to the population average needs to have been established. The local factors (health determinants) affecting the different health states

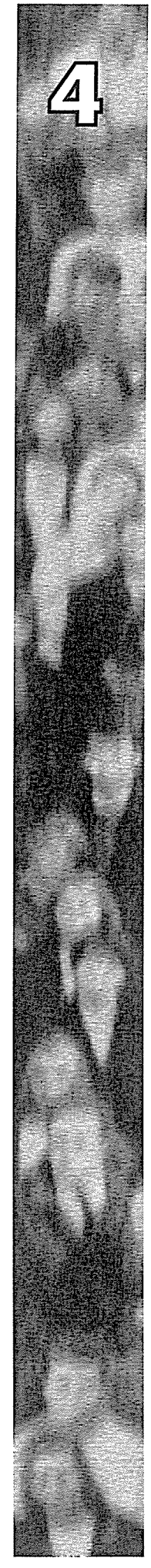
of each population sub-group also need to be understood. Finally the effects of the policy on these health determinants needs to be considered.

Causal webs are also a visual way of depicting the multi-causal relationships of health effects. They are more complex than traditional one-cause, one-outcome analysis. Each link between two causes or between causes and a health outcome can be characterised by a function. The combination of these functions may result in a mathematical model. However it may not always be possible to quantify the entire model.

Figure 4.2 Example of a causal web for flexible forms of employment



Impact analysis usually involves a number of stages. For example the qualitative data collected from stakeholders and key informants has to be analysed to identify evidence before it can be incorporated with evidence from other data sources. The UK EPHIA pilot used content analysis - the systematic identification and analysis of key words, phrases and themes in documents, transcripts, fieldnotes and recordings - for this.



Scenarios can be used to forecast possible future changes in health due to the policy proposal. Normally several scenarios will be constructed which can be used to compare the potential health impacts due to different policy implementation options. A minimum of two scenarios will be considered; a basic scenario describing the health situation without policy implementation at a defined future point in time and a second scenario with assumed full implementation of the policy proposal. Alternative scenarios containing alternative policy options can also be developed.

The scenarios could be applied to quantitative models identified in the data collection stage. The modelling will provide an estimation of the magnitude and direction of the potential health impacts. By using alternative scenarios the effect of different policy options can be estimated.

Box 4.7 Quantifying health impacts: an example from the HIA of the European Employment Strategy in Germany

Scenarios were developed and mathematical modelling was used to predict the magnitude of potential health impacts of fixed term employment on health. An odds ratio reported in literature was applied to the present situation in Germany and 3 future scenarios. The scenarios consisted of a shift in employment of 5, 10 and 15% from permanent to fixed term contracts. The modelling illustrated that a shift towards more people working in fixed term employment could lead to an additional one to four hundred thousand people with poor health status per year

Table 4.4 Changes in reported health status due to shift from permanent full-time contracts to fixed term full-time contracts in Germany

shift from permanent to fixed term contracts	# permanent workers reporting poor health (millions)	# fixed term contract workers reporting poor health (millions)	Attributable cases due to shift towards fixed term contracts (millions)
Baseline	5,6	1,1	0
5%	5,3	1,5	0,1 (99% CI 0.04 –0.22)
10%	5,0	1,9	0,2 (99% CI 0.07-0.44)
15%	4,7	2,3	0,4 (99% CI 0.11-0.66)

Prioritising impacts

Prioritisation involves determining the most important potential health impacts. This can be achieved by using a ranking process. The following criteria may be used for ranking the impacts:

- Strength of evidence - considers data sources/types - for example, if there is a convergence of evidence from different sources, higher priority.
- Likelihood of impact - for example, if it is highly probable, higher priority
- Scale of health impacts - for example, the larger the population affected or more severe the effect, higher priority (shaded area in table)

Severity/population proportion affected	High	Medium	Low
Death	---- or ++++	--- or +++	-- or ++
Illness/injury	--- or +++	-- or ++	- or +
Well being	-- or ++	- or +	negligible

- Contribution to reducing/increasing health inequalities - for example if it widens inequalities, higher priority
- Relevance to existing health priorities and targets

It needs to be stressed that 'strong' qualitative evidence is as important as 'strong' quantitative evidence. Key informant and stakeholders could be involved in the prioritisation process, eg using the consensus building approaches in box 4.6.

In the absence of a conclusive evidence base, that is where a causal link between health determinants and health outcomes has not been fully proved, but where there is considerable consensus, action to address potential harmful effects should not be delayed.

Recommendations developed

The prioritisation process allows recommendations to be developed for the highest priority impacts. The recommendations are proposals for alternative and/or additional action for the policy in order to maximise health gain and to mitigate against adverse health effects. These recommendations should be practicable, achievable and where possible there should be an evidence-base of effectiveness. It may not be necessary to develop recommendations for all the impacts identified.

The development of recommendations is as important as the identification of the impacts and should be allocated appropriate resources. It should be noted that impacts are not necessarily reversible, that is removing a negative impact will not necessarily produce a positive health effect; examples of this have been found from systematic reviews on the effects of housing improvements on health gain (Thomson et al, 2002).

It may be appropriate to offer different options, an example is given in box 4.8:

Box 4.8 Example of alternative options for a recommendation

Reduce the adverse health effects of road traffic generated air pollution:
- Reduce road traffic - introduce traffic-restricted zones
- Reduce emissions from road vehicles - promote hybrid and electric vehicles
- Increase healthier travel modes - walking and cycling
- Develop local air pollutant 'alert' systems

Process evaluation

The process evaluation aims to identify lessons learnt from the HIA process to help with future HIAs. Ideally an evaluation plan is agreed at the outset of the HIA. An example of an evaluation tool that was applied to the EPHIA methodology based on its use in five pilots is provided in box 4.9.

Box 4.9 HIA process evaluation tool

Evaluation criteria - definitions and questions

Effective criterion: planned outputs (as described in the HIA terms of reference) compared with actual outputs

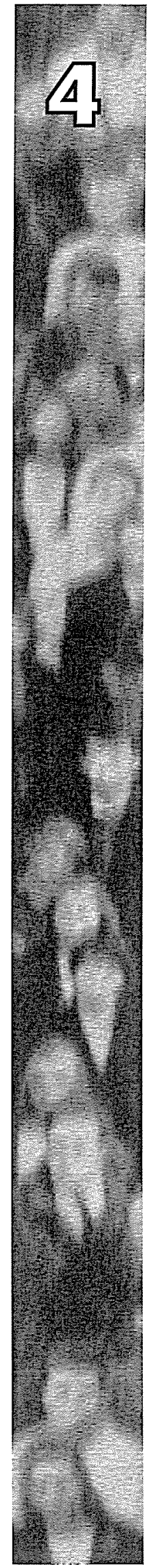
To what extent was the delivery of inputs consistent with what was originally planned? Why?
To what extent were the planned HIA outputs achieved? Why?

Efficient criterion: costs (financial, time, human) associated with actual inputs and outputs

How much time was spent on HIA and by whom (not just assessors)? What were the associated financial costs (salaries, travel, expenses etc)?

Equity criterion: emphasis on reducing health inequalities

Were vulnerable groups or their representatives involved in the HIA? Was routine data on vulnerable groups readily available and accessible? Did the impacts identify the differential distribution across different population groups, not just impact on vulnerable groups? Did the recommendations include action to address any differential distribution of impacts?



4.4 Report on health impacts and policy options

Once the assessment is complete, impacts have been identified and recommendations for policy revision developed, a first draft report describing the process, findings and policy revision options would be presented to the HIA steering group or HIA commissioner, and to stakeholders and key informants involved in the HIA. At this stage, a second draft report should be independently appraised for, eg rigour of the methods used, agreement of the impacts identified and recommendations defined. A final draft would then be submitted to the policy decision-makers in order to negotiate amendments to the policy.

This is a very important stage of the HIA as it is the mechanism by which recommendations are presented and negotiated. The presentation and tone of the report is very important, as is the engagement of policy proponents. The political and policy context as well as the group dynamics and values need to be considered. The iterative nature of the negotiations needs to be built into the overall HIA process.

4.5 Monitoring

Monitoring refers to the monitoring of the policy and the actions agreed from the HIA.

4.6 Impact and Outcome evaluation

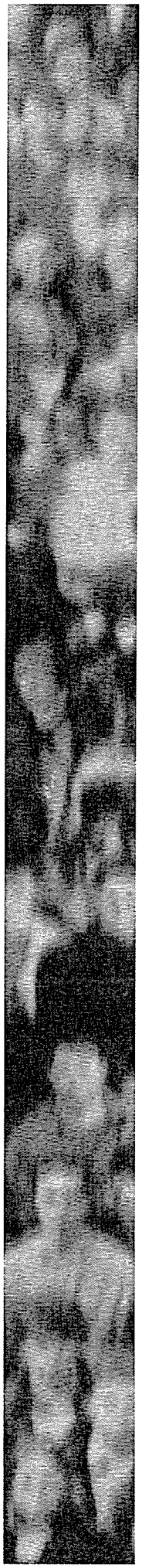
Finally in addition to the process evaluation of EPHIA, the potential outcomes of a completed assessment should also be evaluated and monitored. This includes:

- Impact evaluation - the influence that the assessment had on decision-making (box 4.10),
- Outcome evaluation - evaluating the predicted impacts.

The latter is difficult to do because of the complex, multi-causal pathways; however monitoring programmes can be designed to include an evaluation of public health outcomes and the assumptions and predictions from the HIA.

Box 4.10 Impact evaluation tool: an example

How was the HIA used in the policy development process?
How was the policy proposal changed as a result of the HIA?
Were the recommendations accepted and implemented? If so how and when, if not why?
What, if any, were the unintended impacts of the HIA? For example, partnership working, raising the profile of health in non-health settings?



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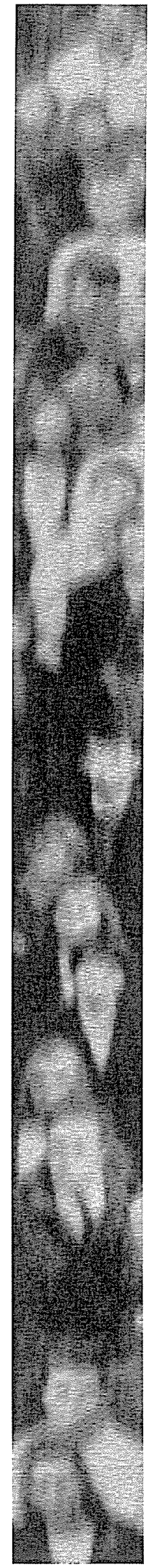


Rapid EPHIA

An EPHIA can be performed in a 'rapid' way, enabling the assessor to quickly report on expected health impacts of a proposed policy. The EPHIA methodology provides the basis for these steps. During a rapid HIA some steps in the EPHIA methodology may be carried out in less detail than in an in-depth HIA or may be even omitted.

One person can perform all tasks. However, a co-operation between a health expert and the policy proponent is a preferred starting point for intersectoral co-operation. A rapid EPHIA requires an input of approximately 120 hours by the assessor/s and of 2 hours by the key informants. Since it takes time to contact key informants, waiting for ordered literature etc. the whole exercise may take up to a maximum of 12 weeks.

After **screening** has been used to select a policy for HIA, **scoping** is carried out. Alongside planning the HIA, scoping may include setting up a steering group making use of already existing groups and/or easily accessible stakeholders and key informants.

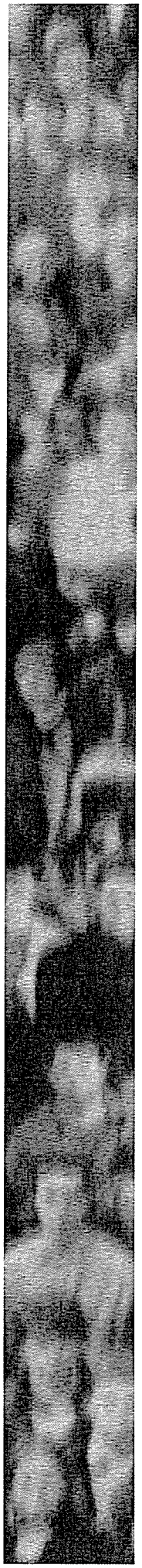
When **conducting the assessment** the first three steps will be a carried out in less detail than in an in-depth HIA.

Policy analysis: Read the proposed policy and supporting documents.
The following questions can be used to analyse the policy:
- What is the aim of the policy?
- What are the most important policy measures (targets, interventions) proposed?
- Who are the most important stakeholders?
- What are the key challenges or opportunities to the policy's implementation?
- What health effects of the proposed policy may be expected?
- Have the health effects of the proposed policy been considered in the planning process?

Profiling: This is limited to easily available data resources such as web-based sources. For example:
EU Statistics - Eurostat:
http://europa.eu.int/comm/eurostat/Public/datashop/printcatalogue/EN?catalogue=Eurostat
Organisation of Economic Co-operation and Development statistics- OECD Statistics Portal:
http://www.oecd.org/statsportal/0,2639,en_2825_293564_1_1_1_1_1,00.html
WHO Statistical Information System (WHOSIS):
http://www3.who.int/whosis/menu.cfm
National level statistics – United Nations Statistics Division
http://unstats.un.org/unsd/methods/inter-natlinks/sd_natstat.htm

Qualitative and quantitative data collection: The main part of data collection in a rapid EPHIA will be a literature search and analysis focussing particularly on review articles. Web-based sources include:
PubMed http://www.ncbi.nlm.nih.gov/PubMed/
WHO library database WHOLIS http://www.who.int/library/database/index.en.shtml
WHO Regional Office for Europe, Health Evidence Network
http://www.euro.who.int/HEN

Key informants can provide a good way of gaining information about possible health



impacts and they may be able to direct you to good sources of information. Key informants are people who represent, or have expert knowledge about, stakeholders and affected groups. Key informant consultation may be done in different ways. An e-mail questionnaire (no more than 5 questions) is the most rapid way.

Examples of questions might include:
- What are the likely effects of the policy measures on health and well being?
- What is the likely scale (severity of health impact and size of population affected) of these effects?
- Which population groups are most likely to be affected?
- What are the most important health impacts to address?
- How would you change the policy to address these impacts?

A meeting or (phone) interviews may provide more in-depth information, but are time-consuming.

Existing mathematical models may be used in order to generate quantitative impact data but no new models will be created. Input data should be located from readily available sources such as data sources already accessed during profiling and the literature search.

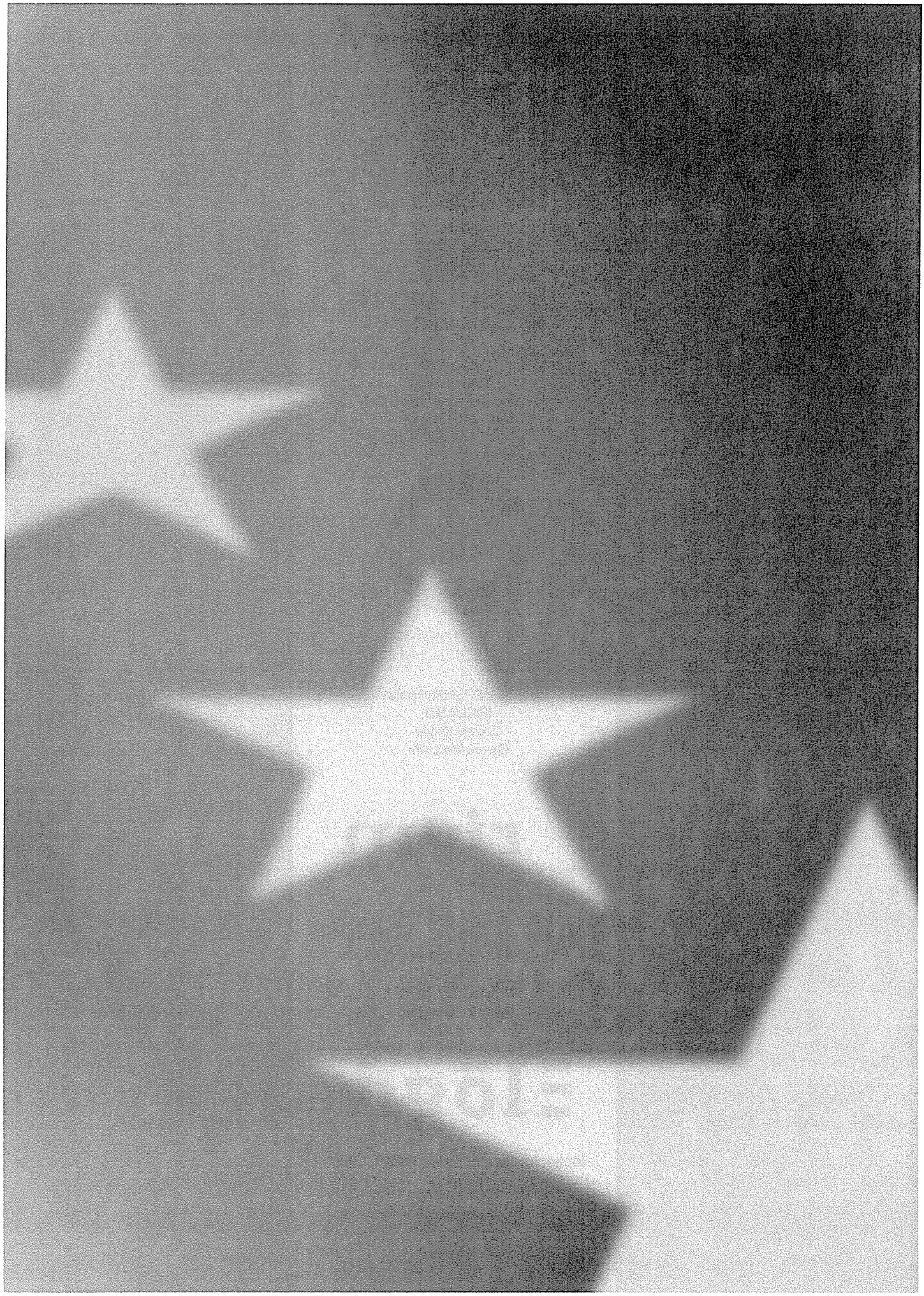
Impact analysis: Using all the information gathered, analyse the expected health impacts. One way of documenting the results is by using a matrix. Note that this includes prioritisation.

Table 1 Example of a health impact matrix

Policy measure Describe policy or priority, as put down in the policy paper
Determinant Identify the health determinant affected
Affected group/s Identify target groups of the policy and other affected groups
Health effect Briefly describe health effect and determine whether it is a positive or negative effect
Importance of the effect • Strength of evidence • Likelihood of impact • Severity and scale of health impacts • Contribution to reducing/increasing health inequalities • Relevance to existing health priorities and targets
Knowledge base On what knowledge source is the expectation of the health effect based?

Following **impact analysis** prepare a draft HIA report, presenting the results of each step taken, followed by conclusions/**recommendations**. Prepare policy recommendations or policy options. Important questions are:
- *What* needs to be done?
- *Who* should do it?
- *How* should it be done?
- *When* should it be done by?

Circulate this to key informants and stakeholders, asking for comments (optional). Then prepare a **final report**.



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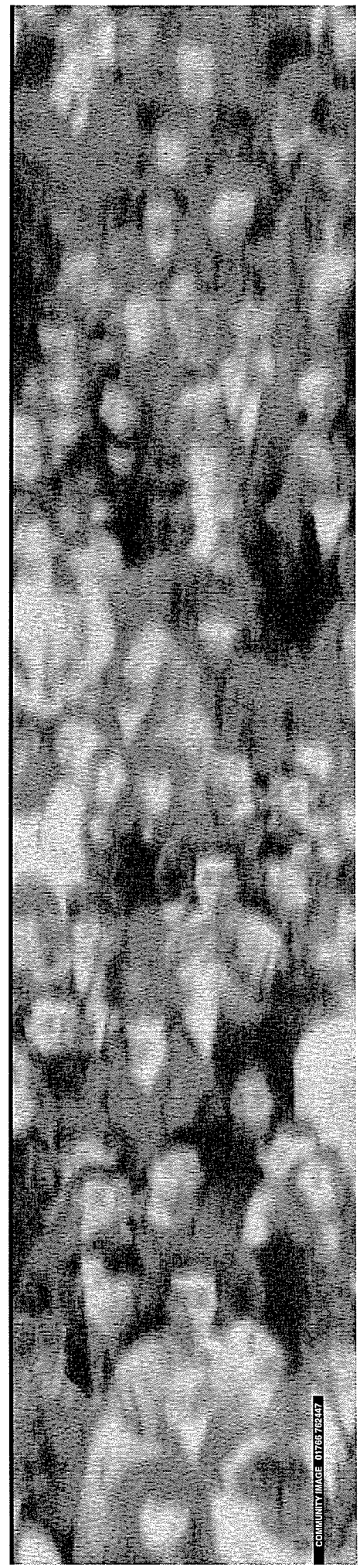

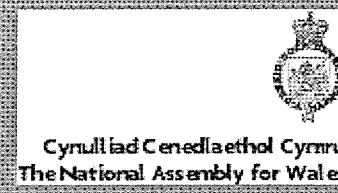

Developing Health impact assessment in Wales

Better Health

Better **Wales**

Contents

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Foreword

The drive towards improving the health of people in Wales is gaining considerable momentum. The importance of tackling inequalities in health is also recognised with the aim of bringing the health of people with the worst levels of health in Wales up to that of those with the best health. It is a major challenge but one to which the Assembly is fully committed. Success will require a combined, and sustained, effort from us all - in organisations in the public, private and voluntary sectors, and as individuals and members of local communities. We can all contribute to achieving better health and we can all benefit as a result.

Our strategy for health improvement recognises the need to tackle the underlying factors which lead to poor health; for example, poor housing, poor education, and unemployment. It also recognises the potential contribution of these sectors to efforts to improve health, well-being and prosperity among the population and to reduce inequalities in health. Better health is one of the priorities of our Better Wales consultation document, along with better job opportunities, better education, better quality of life and best value. Better Wales sets out our proposals to develop a confident, outward-looking Wales, where everyone can realise their potential. To achieve our aims, policies and programmes must add value to each other and in this context, the concept of health impact assessment is important.

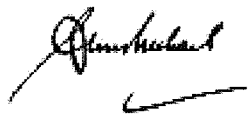
There is no doubt that we need to develop better tools to help us to assess the effect(s) on health of policies, programmes and other developments in sectors outside the health service. Health impact assessment will, as a minimum, help to ensure that the health consequences and effects of future decisions are not overlooked. Using it will increase further our awareness of health and help to ensure that decisions on policies and developments are informed by an understanding of their impact on health. However, the development and use of health impact assessment in Wales will, given that health is an issue which cuts across policy areas, also help to identify further opportunities to make a positive difference to health of people in Wales.

This document is another step forward in the development. It brings together from around the world a wealth of information on the use of health impact assessment. In that sense, it is a rich source of information. It will help to raise awareness and understanding of health impact assessment as an approach which can be adopted by organisations at all levels as an aid to decision making and as part of joint efforts to promote better health.

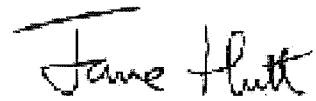
The purpose of this document is to provide a base of information and a platform for further action to explore and develop the use of health impact assessment in Wales. However, a

single document cannot achieve all we want to achieve and therefore it will not stand alone. We are committed to following up this publication with action. Our broad plans for action, which will include testing out the health impact assessment approach within the National Assembly itself, are described in Chapter 6.

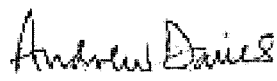
Join us in exploring and developing the use of health impact assessment in Wales as one more step towards improving health and well-being of people in Wales.



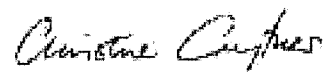
First Secretary



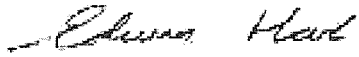
Health & Social Services Secretary



Business Secretary

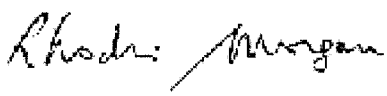


Agriculture & Rural Development Secretary

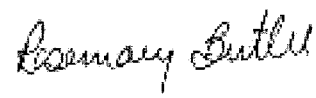


Finance Secretary

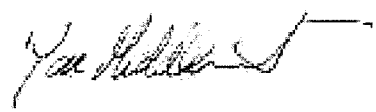
Local Government & Environment Secretary



Economic Development Secretary



Pre 16 Education, Schools & Early Learning Secretary



Post 16 Education & Training Secretary

Executive summary

The purpose of this document is twofold. First, to raise awareness of health impact assessment. Second, to provide a base resource of information on the subject as a platform and aid to further action, including the development of tools and techniques. It aims to increase awareness and understanding of health impact assessment so that national and local organisations adopt it as part of their decision making processes.

The Government is committed to improving the health of the population by tackling the underlying causes of ill health.

Better health is recognised by the Assembly as an issue which cuts across policy areas. It features as one of the five priorities of Better Wales, a consultation paper produced as part of the process of developing a strategic plan for the Assembly and for Wales.

The Better Health Better Wales Strategic Framework sets out the Assembly's plans and priorities for action to improve the health of people in Wales. It makes a clear commitment to develop the use of health impact assessment in Wales.

The target audience for this document is policy and decision makers, professionals and practitioners at national and local levels - in health services, local government, and in other organisations in the public, private, community and voluntary sectors. Publication will be followed by further action to increase understanding of health impact assessment, to explore and test its use, and to share experience and learning.

The aim must be to develop the health impact assessment approach in a way that is neither academic nor bureaucratic but 'fit for purpose'. The outcomes of health impact assessment are particularly important for people and communities and therefore, their participation in the process is vital. Developing and testing health impact assessment will help to identify ways in which they can be involved.

A key reason for developing the use of health impact assessment is to add value to the policy and decision making processes thus resulting in better decisions in terms of their potential contribution to improving health. It will also help to identify further opportunities to address cross-cutting issues such as health and to contribute to reducing inequalities in health.

While health is by no means the only consideration for decisions on policies and developments, it is essential that health is taken into account within the wider agenda of improving the health and well-being of people in Wales.

There is no doubt that better tools are needed to enable the health consequences of decisions and developments to be assessed. Health impact assessment has largely been developed from environmental impact assessment. The immediate need is to explore and develop health impact assessment in Wales. This will enable its usefulness to be assessed. It may also help to identify whether the concept of impact assessment, its processes and/or tools will be of relevance to other cross-cutting issues.

Health impact assessment can be defined as a combination of procedures or methods which enable a judgement to be made on the effect(s) - positive or negative - of policies, programmes or other developments on the health of a population or on parts of the population where inequalities in health are concerned.

Health impact assessment can be used for large and complex issues such as major policies or for relatively small issues such as local planning or licensing applications. It can be applied by organisations at local, regional, national and international levels - across public, private and voluntary sectors, and in communities by self-help groups and as part of wider initiatives.

This document is one of a series of Better Health Better Wales documents designed to take forward action to achieve improvements in the health of the people in Wales.

There is a need to develop appropriate health impact assessment methods for use in Wales. Methods are likely to vary with the setting in which the health impact assessment is being undertaken and the issue(s) to which it is applied. As a general point, it can be helpful to try and quantify the size of predicted outcomes wherever possible but policy and decision makers should not be deterred from undertaking health impact assessment by the difficulty of making fully quantified predictions. They should make the best assessment they can using the information and skills available to them and by accepting that some degree of uncertainty may be unavoidable.

The five main stages of health impact assessment are: screening; scoping; risk assessment; decision making and implementation/monitoring.

A series of tools and checklists for the screening and scoping stages of health impact assessment are described in this document. Issues relevant to the application of health impact assessment methods are also discussed.

The involvement of stakeholders - policy and decision makers, people and communities - in health impact assessment is important. The involvement of the public is particularly important as many judgments within health impact assessment are value judgments rather than scientific judgments. The best ways of involving the public requires careful consideration but this will be important as part of the participatory approach to policy making which has been adopted by the National Assembly for Wales.

The Assembly is committed to exploring and developing further the use of health impact assessment in Wales. This publication provides a solid foundation for additional action including pilot projects, dissemination and feedback activity, support and guidance, and training and development events.

1. Introduction

1.1 It is widely recognised that the health of people and communities is determined far more by matters such as housing, employment, income and social cohesion than by health services[12]. Better Health Better Wales[3] demonstrated the Government's commitment to improving the health of the population. In setting out its intention to tackle the underlying causes of ill health through a new approach which addresses the factors which impact on health, it recognised the importance for health of policy areas such as housing, transport, education, economic development, and law and order. Better Health Better Wales suggested that health impact assessment should be considered as a means of assessing how different policies would affect health and to help ensure that the health effects of policies were not overlooked.

1.2 The importance of better health is further reinforced by Better Wales[4], a consultation paper published as part of the process of developing a widely owned strategic plan for the Assembly. Better health is one of the document's five priority themes along with better job opportunities, better education, better quality of life and best value. In stating the intention to ensure policies and programmes add value to each other, it recognises the importance of identifying opportunities to address cross-cutting issues such as health.

1.3 There is no doubt that better tools are needed to enable us to predict the health consequences of policies in numerous areas. Health impact assessment has been described as 'an idea whose time has come' [5] and its use as a tool to aid policy and decision making must be tested.

1.4 There is evidence of widespread inequalities in health in Wales[6]. They largely reflect the distribution of factors which determine health. The Assembly is committed to reducing health inequalities by 'bringing the level of those with the poorest health up to the level of those with best health'[7]. In order to achieve this, policies, programmes and projects should be assessed not only for their overall effect on health but also to show that they will contribute to reducing inequalities or at very least not increasing them.

1.5 The need for health and well-being to be sustainable was emphasised in Better Health Better Wales. This can only be achieved in the context of sustainable development and care for the environment. Local Agenda 21 strategies have been adopted by local authorities in Wales to focus on sustainable development[8]. The degree to which policies, programmes and projects that impact on health produce sustainable health also needs to be assessed.

1.6 Health is of course not the only consideration for decisions on policies and other developments. Decisions will be influenced by other imperatives. However, the aim must be to ensure that opportunities for health gain are not lost because they were not considered. When health has to be balanced against other policy objectives, it should be done in full knowledge of the consequences, whether positive or negative. Health impact assessment does not mean that health considerations will always take primacy over all others. However, it does mean that the potential impact on health will always be considered. It also offers the possibility that additional opportunities to address cross-cutting issues will be identified.

1.7 The Better Health Better Wales Strategic Framework [9] sets out the Assembly's plans and priorities for action to improve the health of people in Wales. It makes a clear commitment to develop the use of health impact assessment in Wales. There is already considerable experience of the approach in Wales albeit limited to a relatively small number of sectors. However, there is a solid foundation on which to develop further the use of health impact assessment in Wales in order to harness the potential contributions to improving the health of the population.

1.8 The target audience for this document, one of the series of Better Health Better Wales documents, is policy and decision makers, professionals and practitioners at national and local levels in health services, local government, and in other organisations in the public, private, community and voluntary sectors. The aims of the document are:

- to raise awareness of health impact assessment;
- to increase understanding of the approach so that with further guidance and support, organisations at national and local levels may adopt it as part of their decision making processes;
- to outline the approaches and tools available to assist the process of health impact assessment.

1.9 This document is based on an extensive review of published literature on health impact assessment. It describes health impact assessment and how it has been developed in Wales, the UK and in other countries. It also outlines action which will be needed to explore and develop further its use in Wales.

1.10 Comments on any part of this document and suggestions for the further development and use of health impact assessment in Wales would be welcome. Comments should be forwarded to: Mr Ceri Breeze, Health Promotion Division, The National Assembly for Wales, Cathays Park, Cardiff, CF1 3NQ, Tel: 029 20 752222, Fax: 029 20 756000, Email: Ceri.Breeze@wales.gsi.gov.uk

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2. What is health impact assessment?

2.1 Health impact assessment has been defined in a number of ways. One such definition is:

'Any combination of procedures or methods by which a proposed policy or program may be judged as to the effects it may have on the health of a population' [10].

2.2 A more detailed definition is:

'A methodology which enables the identification, prediction and evaluation of the likely changes in health risk, both positive and negative, (single or collective), of a policy programme, plan or development action on a defined population. These changes may be direct and immediate or indirect and delayed.' [11]

2.3 The overall aim of health impact assessment is to provide a means of ensuring that the potential impact on health is taken into account as part of the decision making process for policies, programmes and other developments. Health impact assessment may be applied to a policy, a programme or a single project. It may be applied to an issue as large and complex as welfare policy or transport policy, or an issue as small as a local planning or licensing application.

2.4 Health impact assessment may be applied at a variety of levels; for example, at international level by bodies such as the European Commission or the World Health Organization; at national level by national governments or national organisations and at local level by local authorities, health authorities and by non-government organisations.

2.5 There are three types of health impact assessment; each depends on when the assessment is undertaken:

- prospective
- retrospective
- concurrent

2.6 **Prospective** health impact assessment looks at some policy, programme or project not yet implemented and attempts to predict the consequences. These predictions are based on theory and on experience of similar decisions in the past. If sufficient knowledge has been gained of the size of health effects associated with different levels of health determinants, it may be possible to make quantified predictions. Prospective health impact assessment can be partially validated by seeing if predictions of consequences in the near future turn out to be correct.

2.7 **Retrospective** health impact assessment looks at the consequences of some policy, programme or project already implemented or of some unplanned event that has occurred. It asks what have been the consequences. Understanding of the nature and magnitude of effects on health for use in prospective health impact assessment may be derived from such studies.

2.8 In **concurrent** health impact assessment, the consequences of the policy, programme or project are monitored as they are implemented. It may allow activity to mitigate any negative effects to be undertaken promptly. Its main use is where consequences are expected but where their nature is uncertain.

2.9 Frequently, single proposals may be too small to generate significant effects on their own but the total effect of many such small proposals may create a major impact. In

response to this within the field of environmental impact assessment, there has been a call for assessments to be applied to whole sectors - a process termed 'strategic environmental assessment'. The same issue may arise for health impacts and therefore, there may be a need for a corresponding strategic approach.

2.10 Prior to the development of health impact assessment, policy making did not take place in an intellectual vacuum. Therefore, if health impact assessment is to be worthwhile, it must add value to the existing policy making process and result in better decisions than would otherwise have been made. For example, health impact assessment must do more than point out that the construction of a new road may create noise and air pollution or that closure of a factory may cause unemployment and distress. Decision makers do not need a new discipline of impact assessors to tell them such obvious facts.

2.11 Health impact assessment needs to be developed as an approach which can be adopted and used by individuals who are involved in decision making processes at a variety of levels. All those involved will need to develop their knowledge and skills. One of the early contributions it can make is to change the culture among policy and decision makers so that they become more aware of health as an issue which is relevant across policy areas. Other ways in which it could assist decision making include:

- Identifying factors - harmful or beneficial - that would not otherwise have been identified;
- Quantifying the magnitude of harmful and beneficial impacts more precisely than could otherwise have been done;
- Clarifying the elements of trade-offs in policy making by better identification and description of the elements involved, and their interrelationships;
- Allowing better mitigation of harmful impacts or enhancement of beneficial impacts;
- Making the decision making process more transparent and helping to inform it - particularly in policy areas where the relevance of health is not immediately apparent - leading to increased participation by stakeholders.

2.12 It is important that the health impact assessment procedures should be commensurate to the issue to which they relate. Thus, where appropriate, the health impact assessment process should be reasonably quick and simple so it does not add greatly to the time and cost of making the decision.[12] It is sometimes suggested that health impact assessment would only be routinely applied by decision-makers and public authorities if it were to be mandatory. However, a premature attempt to do this could lead to an unthinking, 'tick-box', approach, rather than encourage in-depth consideration of the possible health consequences of decisions. The immediate need is to develop further our understanding of health impact assessment and to explore and test its use. As discussed later in this document, the aim is to integrate health impact assessment as part of decision making processes. Therefore, the contribution of decision makers and other stakeholders to its development is essential.

Outcomes

2.13 The World Health Organization defines health as 'a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity'[13]. This definition may be considered utopian but it does indicate the multi-faceted nature of health and the need to take a broad view of outcomes within health impact assessment. Better Health Better Wales suggested a more practical goal when it defined sustainable health as being achieved 'when people and communities can take control of their lives and are able to live their lives to the full'.[14]

2.14 The outcomes considered in health impact assessments will depend on how the term health is understood. There is a danger that the outcomes considered will be limited to number of deaths, perhaps years of life lost, or possibly hospital admissions because the