

Appendix G

Annexe to Overview Report

Health Impact Assessment support, shale gas exploration

Lancashire County Council

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Abbreviations and acronyms

EIA.....	Environmental Impact Assessment
HIA	Health Impact Assessment
IAIA	International Association for Impact Assessment
PHE.....	Public Health England
RAFF	Residents Against Fylde Fracking
SEA.....	Strategic Environmental Assessment
WHO	World Health Organization



1 Briefing on Health Impact Assessment

Audience: *elected members & council officers*
Authors: *Erica Ison (Independent Specialist Practitioner in HIA); & Ben Cave (Ben Cave Associates Ltd).*
Date of issue: *2nd July 2014*

1.1 Introduction

This briefing document covers general principles of Health Impact Assessment (HIA). It describes the process from the point of view of a County or District Council that is considering conducting an assessment.

Throughout this document we generally talk about ‘proposals’. We use this as a catch-all term to encompass policies, plans, programmes and projects. We use this term to emphasise that HIA is carried out while a policy, plan, programme or project is in preparation.

This briefing document is accompanied by two seminars on HIA.

These will be held at the following times

Tuesday, 8 th July 2014	Wednesday, 9 th July 2014
10 – 12pm	2 – 4pm
Cabinet Room C, County Hall Preston	Cabinet Room C, County Hall, Preston

In this document we look at:

- [“Every minister is a health minister”: health in all policies.](#)
- [Health gain and public policy: the purpose of HIA.](#)
- [What is health?](#)
- [What is HIA?](#)
- [What values underpin HIA?](#)
- [It is a pragmatic approach: what are the limitations?](#)

HIA can also be conducted as part of statutory assessment for example Strategic Environmental Assessment/Sustainability Appraisal on a plan or programme. It can also be required of a developer/project proponent as part of a planning application, either within, or alongside an Environmental Impact Assessment.

We consider this use of HIA in [the final section](#).

This document is based upon a briefing provided to the World Health Organization’s Healthy Cities Network (1).



1.2 “Every minister is a health minister”: health in all policies

Politics is important to health and wellbeing. The British Government has long recognised this (see Figure 1).

We can thus say that every elected member has, formally or informally, a health and wellbeing portfolio. We can also say that every council officer works for the public health of the people in Lancashire or in their district.

Health is everybody’s business.

We show [below](#) how health is affected by many factors. At this stage we note the role that local government plays in supporting and protecting health through the fulfilment of statutory duties and the exercise of various powers, roles and responsibilities.

Health in All Policies (HiAP) is a strategic approach, supported by the World Health Organization (WHO), in which the health effects of all proposals are considered during:

- policy development;
- decision-making about policy options; and
- the design of implementation strategies and action plans.

HiAP works a concern for health and well-being into the political agenda at all levels: local, regional, national and international.

Decisions made by elected members and council officers are difficult and sometimes complex due to the demands of competing priorities and the constraints of limited resources. Decisions are made under increasing scrutiny so they are accountable and transparent.

Health Impact Assessment (HIA) is one way by which politicians and other decision-makers can get robust and accessible information about the potential any type of proposal has to affect health and well-being.

HIA gives decision-makers a framework within which the routine business of a County or District Council and the provision of key services can take into account the health and well-being of a community.

The information generated by the use of HIA means that decision-makers are aware of:

- the implications for health and well-being of any decisions they might take about a particular proposal;
- the choices available with respect to optimising the health benefits a proposal might have, and possible ways in which to manage any potential harm.

Figure 1: Benefits of HIA during decision-making processes

Sir George Young – then junior health minister – said in 1979 that ‘the answer to many of today’s medical problems may not be found by incision at the operating table but by decision at the Cabinet table’.

Figure 2: LCC and public health

In April 2013 Lancashire County Council was mandated by government to provide a Public Health Service. The county council will now play a bigger role in helping people to improve and protect their health. It will work towards tackling some of the key issues that affect people’s health and wellbeing.



1.3 Health gain and public policy: the purpose of HIA

HIA aims to ensure that health gain is derived from proposals that are not directly related to health *eg* roads, housing, waste, education.

HIA also aims to maximise health gain from proposals directly related to health *eg* health services.

HIA helps to identifying the potential health effects of a proposal. Then it identifies ways to enhance any benefits and avoid or minimise any harms. Thus, HIA gives decision-makers information not only about potential effects on health but also how to manage these effects.

Decision-makers, therefore, have the opportunity to amend a proposal accordingly, such that the proposal will be more likely to promote health and less likely to cause ill health in the community.

In this way, HIA can contribute to reducing the demand on resources that is made by poor health and well-being and other types of inequality.

Through HIA, decision-makers can be helped to target scarce resources to prevent ill health, rather than unintentionally creating problems for people's health and well-being and thereby needing to spend more to address those problems.

For the direct benefits of HIA during decision-making, see Figure 2.

There are other more general benefits: for organisations and other stakeholders (see Figure 3); for local communities (see Figure 4).

Figure 4: General benefits of HIA for organisations and other stakeholders

- a) Demonstrates a concern for and commitment to the health and well-being of local people.
- b) Potential to enhance the capacity to achieve health from non-health proposals.
- c) Organisational development and learning.
- d) Improved partnership working.
- e) Shifting resource use from solving problems to preventing those problems arising.

Figure 3: Benefits of HIA during decision-making processes

1. Politicians and decision-makers acquire comprehensive information on which to base decisions or set priorities for action.
2. Politicians have a greater capacity to respond to an issue about which local people are deeply concerned – their health.
3. Politicians and decision-makers can take health into account as an important dimension of sustainable development.
4. Local government and other organisations have an increased ability to:
 - improve health and well-being;
 - protect health and well-being;
 - reduce health and other inequalities;
 - target resources on ways prevent ill health and health inequalities ;
 - take a long-term perspective; and
 - make decision-making “healthy”.

Figure 5: Benefits of HIA for the community

- a) Involvement in processes related to municipal decision-making.
- b) The potential to extend the democratic process, particularly to groups in society who may be excluded.
- c) Empowerment.
- d) Skills development.
- e) Highlighting ways to reduce sources of disadvantage or inequality.
- f) Involvement in the development and provision of services that better meet the needs of local people.



1.4 What is health?

The WHO define health as a ‘state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity’ (2). Public health is also concerned with ensuring that differences in health between population groups are minimised. These are known as inequalities in health and are very detrimental.

Many factors in the social, economic and physical environment can influence the health of communities and the health of individuals within communities. These factors can have positive or negative effects.

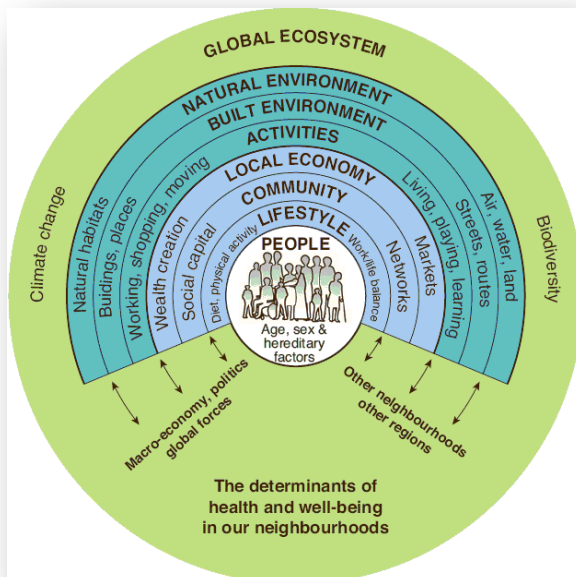
Figure 5 summarises some of the main determinants of health and their spheres of influence, starting with those at an individual level and moving through to those at a societal level. Some factors that influence health are outside an individual’s control, such as age, but individuals have more control over other factors such as lifestyle factors including physical activity and smoking.

County and district councils often shape many of the determinants from community to natural environment.

Figure 5 is good but it does not catch everything. There may be other determinants that are important with regard to any particular proposal.

In addition, Figure 5 does not account for the political context in which people live and work. We have seen earlier the importance of local government for health and wellbeing.

Figure 6: Determinants of health and wellbeing in our neighbourhoods



Source: Based on the Whitehead and Dahlgren (3) diagram as amended by Barton and Grant (4)



1.5 What is Health Impact Assessment?

Health Impact Assessment is ... (5)

... a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, programme or project on both the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects.

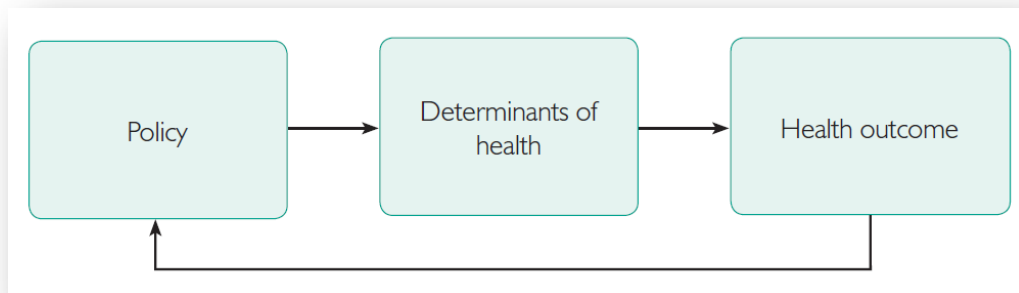
So we can see that HIA uses different methods to examine the proposal in question. It looks into the future. It is concerned with the general health of a population but also inequalities in health. HIA also seeks to identify ways in which potential health effects can be managed.

Any proposal can affect health in two main ways:

- directly, such as imposing a speed limit to reduce fatalities from road traffic accidents;
- indirectly through the many determinants of health (see Figure 6).

In both cases, there are outcomes for health, and HIA seeks to predict what these outcomes might be and what should be done (see Figure 6).

Figure 7: Policy and health change





1.6 What values underpin HIA?

Improving and protecting the health and well-being of the people in communities affected by a proposal is central to HIA.

The core values of HIA are (6):

- sustainability;
- equity;
- ethical use of evidence; and
- democracy.

These values mean that HIA tends to have the following characteristics:

1. It is **multidisciplinary**: it draws knowledge, information and experience from all disciplines relevant to a proposal.
2. It is **intersectoral**: it involves people from all sectors to identify and address potential effects on health.
3. It is **participatory**: wherever feasible, it seeks to involve all the stakeholders in an individual HIA, including the communities affected by proposal implementation.
4. It uses a **range of methods**: this gives flexibility and adaptability to select the most appropriate and effective methods, taking into account local circumstances, timing, and resource constraints.
5. It has a focus on **inequalities**: HIA seeks to identify potential effects on health and well-being being for people who are vulnerable, marginalised or disadvantaged as well as for the whole community – it also helps to identify actions targeted at health protection and health improvement for the vulnerable.
6. It uses **both quantitative and qualitative evidence** to identify potential health effects: this ensures that it gives an indication not only of the size of the potential health effects but also the reasons for the potential health effects and how they might be managed.



1.7 It is a pragmatic approach: what are the limitations?

As for other types of impact assessment HIA attempts to predict the future.

It holds a mirror up to a proposal and shows the potential health effects.

However, the accuracy and detail of the predictions depends on the quantity and the quality of information, data and evidence that is available in relation to the specific proposal.

This in turn can depend on the human and financial resources it is possible to invest in a particular HIA.

The resources invested in conducting the HIA always need to be balanced against the nature of the output required by those who have commissioned the study. It is a pragmatic approach.

Many organisations commissioning HIA are constrained by time pressures and resources. HIA need not be an onerous process.

An HIA may be conducted in a relatively short time using the best available information, data and evidence.

A comprehensive appraisal is likely to generate more precise predictions but requires much greater resource investment. A comprehensive appraisal typically involves primary research and generates new information, data or evidence.



1.8 Health and assessment in spatial planning

In conclusion we look briefly at ways in which the assessment of health and wellbeing is used in spatial planning. These include

- Strategic Environmental Assessment;
- Environmental Impact Assessment; and
- Standalone HIA.

Strategic Environmental Assessment

The SEA Directive explicitly requires the consideration of “*the likely significant effects on the environment, including on issues such as ... human health ...*” (7).

The SEA Directive (7) refers to public plans and programmes. SEAs are most commonly carried out for land-use planning at various levels of government, but are also applied to other sectoral plans, such as for energy, water, waste, transport, agriculture and industry (8).

In 2010 the SEA Protocol (9) was ratified. This goes further than the SEA Directive: it uses the term ‘environment and health’ throughout and it indicates that health authorities should be consulted at the different stages of the process.

The Department of Health has issued guidance on health in SEA (10). Although it was issued in 2007 it remains a draft document.

Environmental Impact Assessment

Recent EIA Directive changes (to be transposed into national legislation by spring 2017) require that ‘human health’ is included in the scoping of all EIAs (11).

The changes require that EIA shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on population and human health.

Standalone HIA

HIAs may be submitted, alongside an SEA or EIA, respectively, as part of a plan development or as part of a planning application.

The County or District Council will then be interested in establishing a policy to require an HIA and standards by which the HIA should be judged. Ben Cave Associates Ltd, working with the Great Britain and Northern Ireland and the Ireland HIA community, produced a review package specifically aimed at reviewing the quality of HIAs (12). By clearly stating the standard of work expected from the outset, the HIA process should run more smoothly for all parties.



2 Risk framework used by AEA

2.1.1 From AEA (13).

2.1.2 The risk prioritisation was carried out by classifying environmental hazards and hazards for people on the following basis:

- Slight: Slight environmental effect– e.g. a planned or unplanned discharge which does not result in exceedances of an environmental quality standard
- Minor: Minor environmental effect – e.g. a planned or unplanned discharge which could result in exceedances of an environmental quality guideline in the immediate vicinity of the release point, but which would not be expected to have significant environmental or health effects
- Moderate: Localised environmental effect – e.g. a discharge or incident resulting in potential effects on natural ecosystems in the vicinity of the release point or incident; ongoing effects on people in the vicinity of a site due to impacts such as noise, odour or traffic
- Major: Major environmental effect – e.g. an ongoing discharge resulting in persistent exceedances of European environmental quality standard; permanent degradation of a protected habitat
- Catastrophic: Massive environmental effect – e.g. a pollution incident resulting in harm to the health of members of the public over a wide area due to contamination of drinking water supplies; accident resulting in death or serious injury to workers and/or members of the public.
- No data: Insufficient data to allow a preliminary judgment to be reached.

2.1.3 The frequencies or probabilities of hazards occurring were classified on the following basis.

- Rare: Encountered rarely or never in the history of the industry; not forecast to be encountered under foreseeable future circumstances in view of current knowledge and existing controls on oil and gas extraction.
- Occasional: Encountered several times in this industry; could potentially occur under foreseeable future circumstances if management or regulatory controls fall below best practice standards
- Periodic: Occurs several times a year in this industry; a short-term impact would be expected to occur with the use of hydraulic fracturing for hydrocarbon operations
- Frequent/definite: Occurs several times a year at a specific site; a long-term impact would be expected to occur with the use of hydraulic fracturing for hydrocarbon operations
- No data: Insufficient data to allow a preliminary judgment to be reached



Table 14-1: Risk ranking

Probability classification	Hazard classification					
	<i>Slight</i>	<i>Minor</i>	<i>Moderate</i>	<i>Major</i>	<i>Catastrophic</i>	<i>No data</i>
<i>Rare</i>	Low	Low	Moderate	Moderate	High	Not classifiable
<i>Occasional</i>	Low	Moderate	High	High	Very high	Not classifiable
<i>Periodic</i>	Low	Moderate	High	Very high	Very high	Not classifiable
<i>Frequent/definite</i>	Moderate	High	Very high	Very high	Very high	Not classifiable
<i>No data</i>	Not classifiable	Not classifiable	Not classifiable	Not classifiable	Not classifiable	Not classifiable

From AEA (13)



3 Guided tour of proposed sites for exploration of shale gas I

Date: 15th July

Time: 1500-1700

Present:

Bob Dennett [BD], RAFF

Gillian Gibson [GG], BCA

Ben Cave [BC], BCA

Notes

- 3.1.1 The guided tour went from the Preston New Road site to the Roseacre Wood site via Kirkham. BD noted that in many instances there is an elderly population that has pre-existing chronic conditions.
- 3.1.2 BD raised issue of Preese Hall I where well which is being prepared for abandonment has been found to be leaking. The well is pressurised, with no clear idea as to where the pressure is coming from. There is debate between Cuadrilla and HSE as to whether this is due to the casing or to the annulus. Pressure is 300psi at surface. BD suggests that pressure is due to methane.
- 3.1.3 Drove past Foxwood Chase. 230m from Preston New Road site.
- 3.1.4 Drove past Carr Bridge Park homes
- 230 people
 - 168 properties
 - 1.2km from site
 - Information site planned for this site.
 - Low levels of internet use.
 - This site has overhead high voltage power cables.
- 3.1.5 Noted Maple Farm nursery which is adjacent to the proposed site. The business owner is concerned that the exploration will have an adverse effect on his business.
- 3.1.6 Farmer leased land to Cuadrilla. Once the well is abandoned and the lease is expired it is the landowner that is responsible for maintenance of land and for restricting mobility of contaminants.
- 3.1.7 Concern about waste water run-off. BD noted absence of separator. GG commented that a separator would probably deal with suspended solids and would be unlikely to deal with chemical contamination.
- 3.1.8 Passed the Carr Hill Secondary School, Kirkham. This appears to be a busy route.
- 3.1.9 Discussed the proposed transport routes. BD expressed concern about the HGVs on the narrow roads surrounding the Roseacre Wood site – 48 tonne, 18 wheelers.
- 3.1.10 Cuadrilla has proposed using RNAS Inskip as an access route. This is a Defence Communication Services Agency (DCSA) tri-service communication centre. BD states that the site is too dangerous for this use. BD used to work at this site. While working there he saw a contractor go within approximately 300 ft of one of the masts when it was in



operation. The contractor received a static shock which meant he needed to be hospitalised.

- 3.1.11 BD stated that Cuadrilla appear to have a different company for each site. This means they are able to close the company. This does not inspire confidence in the local population.
- 3.1.12 Discussed the business rates that Fylde Borough Council (FBC) receives from Elswick site: estimated to be £22,500 to exchequer of which FBC receives £1,700.
- 3.1.13 Drove past Stanley Mews which is closest property to Roseacre Wood.
- 3.1.14 Discussed the effect of the proposed development on property values – BD gave examples of people who have lost sales and of how the estate agents have attributed these losses and falls in value to the proposed exploration for shale gas.
- 3.1.15 Discussed the potential employment figures associated with unconventional gas extraction in England. BD stated that a national figure of 28,000 had been quoted but that this was acknowledged to be unrealistic.

Notes agreed with Bob Dennett 22nd July, 2014



4 Guided tour of proposed sites for exploration of shale gas II

Date: 29th July

Time: 1500-1800

Present:

Francis Egan [FE], Chief Executive, Cuadrilla

Eric Vaughan [EV], Well Services Director, Cuadrilla

Leon Jennings, [LJ], HSSE Director, Cuadrilla

Gillian Gibson [GG], BCA

Ben Cave [BC], BCA

Notes

- 4.1.1 We met at the offices of Cuadrilla at the Elswick site. Introductions were made.
- 4.1.2 BC explained the role of HIA, and the support Ben Cave Associates Ltd (BCA) is providing to Lancashire County Council. BC & GG outlined the objectives of an HIA and the approach with regard to the current application. BC explained that two workshops had been held with communities which are closest to the current applications.
- 4.1.3 Cuadrilla described the current applications. There was discussion about the fracking process in general, as well as some questions specific to the identified sites.
- Fracking fluid: FE stated that Cuadrilla do not use toxic chemicals and propose to use one chemical additive (a friction reducer) which will be non-hazardous to groundwater. Any chemicals used need to be reviewed and approved by the Environment Agency. The EA publish full details of fracturing fluid composition on its website.
 - Noise: FE stated that they recognised noise as being of concern. Arup have assessed baseline noise data, and during the operational phase Cuadrilla will install noise monitors (including in homes closest to the sites) which will provide real time data. If the acceptable limits were to be breached, they will stop operation. It is in Cuadrilla's interest not to breach regulatory limits and to complete the drilling phase as rapidly as possible.
 - Air quality and surface water quality: these are currently being monitored at both new sites. Ground water baseline data cannot be monitored until such time as planning permission has been granted. A baseline sample will be collected prior to site construction commencing.
 - Property prices: discussed the view that the current applications are having a downward effect on property prices.
 - Waste: discussed the way in which flowback water will be disposed of. EV stated that there will be relatively short (2 – 3 weeks) peaks in the volumes of flowback water requiring disposal. It is these peaks that have been assessed in the Environmental Statement. Treatment involves transporting the flowback water to a permitted disposal site. The solids in the flowback water are then separated from the water itself. This reduces the volume of material requiring disposal. Once treated, the water is able to be reused. The residue eventually becomes safe to use as fertiliser. EV and FE stated that Cuadrilla's objective is eventually to reuse the water but that treatment onsite is not economically viable with one or two wells.



- Well failure: GG quoted a failure rate of 6%. Cuadrilla queried this figure. EV stated that the reported failure statistics of wells includes occasions when there is a leak into the annulus of the pipe but no leak of gas or fluid from the well itself. This is detected and managed. “Failure” of a single well barrier in a multi-barrier system does not mean that the integrity of the well has been compromised.
 - Community consultation: Cuadrilla has conducted consultation. The results are publicly available (see SCI: <http://bit.ly/1m4hX94>). Links with the community are important. FE stated that there is not full support for their activities. FE stated that, on occasions, opposition to their activities has been unpleasant, and sometimes threatening, for Cuadrilla staff and contractors.
 - Safety: LJ described Cuadrilla’s approach to safety.
- 4.1.4 FE indicated the full geographical extent of the exploration licence(c 1200 km²), and the locations for which they would be submitting permit applications and planning applications. FE re-stated the importance to Cuadrilla of good long-term relations with the community.
- 4.1.5 Cuadrilla provided BCA with copies of:
- *Information on our planning application and our response to consultation* (see <http://bit.ly/1oegnKV>); and
 - *Hydraulic Fracturing 101* (see <http://bit.ly/1o03VJF>).
- 4.1.6 BC & GG were shown around the Elswick site. This currently comprises a well head, and waste water storage tank, as well as an electricity generator (not operational at the time of the visit). When arriving by car the location of the site is not immediately apparent.
- 4.1.7 EV and LJ took GG and BC to see the two proposed sites for shale gas exploration: Preston New Road (PNR), and Roseacre Wood. Cuadrilla’s Business Resilience Manager attended the tour. The site at PNR is adjacent to an A-road. Roads servicing the Roseacre Wood site are narrow. There is a proposal to route HGV traffic through the MoD land at Inskip.
- 4.1.8 EV took GG and BC to see the decommissioned exploration well site at Anna’s Road. It is difficult to distinguish the decommissioned well-site from the surrounding land other than the fact that the vegetation is younger than on the adjacent fields.

Notes agreed with Cuadrilla 4th August, 2014



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