

<b>Edexcel GCE Geography from 2008</b> <b>Unit 4 Geographical Research: exemplar responses</b>
---

- This is an exemplar response from the **June 2013** examination series.
- It is an example of candidate work which has been word processed and adapted to make it more suitable as a teaching and learning aid.
- Errors, including QWC errors, have in most cases been kept. The aim of these exemplar reports is to highlight good practice and areas of potential improvement. The marking levels and examiners comments given are indicative and should be used as a basis for discussion in the classroom, rather than indicating a specific grade.
- Comments and indicative marks are provided at the end of the exemplar.

**Pre-release research focus:**

**OPTION 5: Pollution and Human Health at Risk**

- Explore how a range of factors has led to differing management strategies aimed at reducing the severity of health risks.
- Research different management strategies designed to cope with contrasting health risks in a range of locations.

**Report Title:**

**OPTION 5: Pollution and Human Health at Risk**

**5** To what extent does the type and degree of health risk influence the choice of management strategy?

**(Total for Question 5 = 70 marks)**

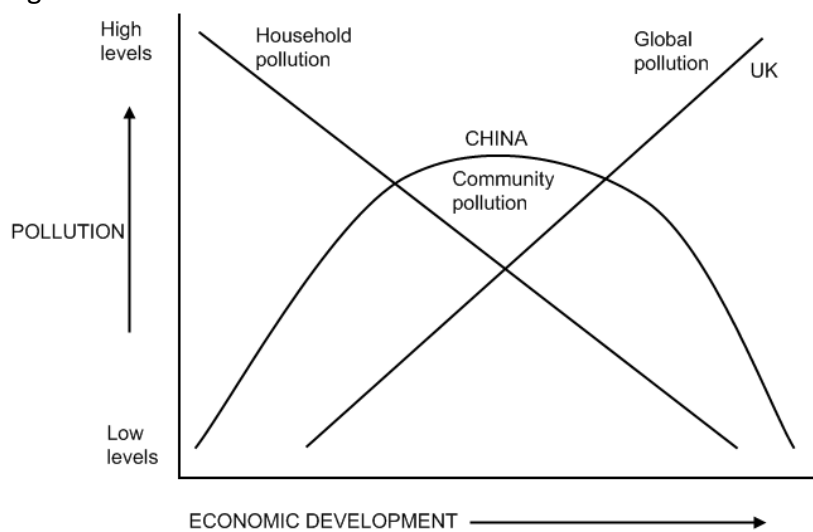
---

## Introduction

Focus: Type and degree of health risk are just two of the many physical and human factors which influence the management strategies that different players, such as governments and NGOs, adopt to control disease. These factors influence whether the management is preventative, palliative or curative. The Epidemiological transition model shows that the type and scale of health risks varies around the globe and this is due, at least in part, to level of economic development.

This report will analyse the factors which have influenced the management of asthma – chronic disease – in the UK and China. Additionally, dementia – a degenerative disease – will be considered in the context of France and Bangladesh as well as the infectious disease AIDS/HIV in the USA and Uganda. This choice of different health risks in countries across the development spectrum will allow an evaluation of the extent to which the type of health risk influences the choice of management strategy. A useful model, which provides a framework for this analysis of some health risks such as asthma is the Environmental Pollution Risk Model (EPRM). This model suggest the type and scale of health risk is influenced by economic development level (see Figure 1.1)

Figure 1.1 the EPRM

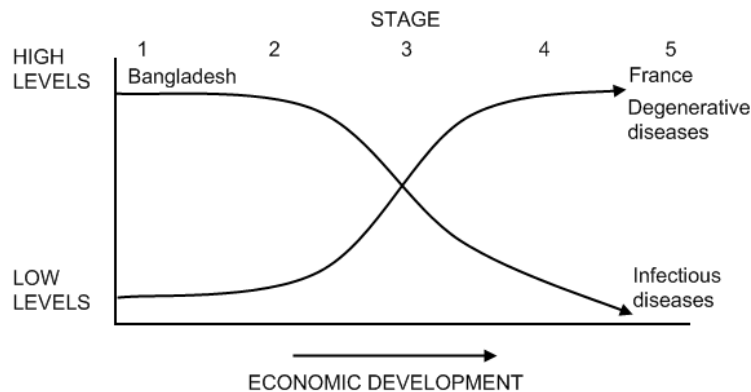


Related to this is the Epidemiological Transition Model (ETM) which also relates the type of health risk to economic development as it shows that health risks transition from infectious to degenerative as economic and social development progresses (see Figure 1.2).

There are a wide range of strategies that could be adopted to deal with health risks. These range from palliative (alleviating symptoms but not tackling causes), to preventative (attempting to prevent the risk in the first place) and curative (curing a specific disease). Choice depends on the nature of the health risk as well as other factors such as cost and access to technology. Health risks are generally divided into chronic long-lasting, persistent risk which have long-term effects e.g. malnutrition, degenerative which causes deterioration in the

functioning of organs and infectious which are transmitted by bacterial pathogens which multiply in the body and can spread to other people either directly or via a vector.

Figure 1.2 The ETM



## 2 Methodology

In order to analyse the extent to which the type and degree of health risk influence the choice of management, the sources used in this report need to be reliable, factual and unbiased. During the research process Wikipedia and blogs were not generally used due to their possible unreliability and lack of evidence for the views stated. Material such as this risks being inaccurate and subjective. The sources used were subject to cross-referencing and their authors credentials were checked when possible. Further details of the sources used are provided in the table below:

Source	Key points	Why selected
Chinese Pollution Problems The Lancet journal	Causes and management of asthma in China	Peer reviewed journal with respected authority
Asthma Factfile AsthmaUK.org.uk (website)	Facts, figures and management of asthma in the UK	National NGO which helps asthma sufferers and has expertise in this area
Health and Health Risks M Witherwick (book)	Management of dementia in France	Author has 20 years experience and is well respected.
Dementia across the Globe BBC News (TV)	Factors influencing the management of dementia in Bangladesh	Global organisation known for its news gathering accuracy and reporting
HIV /AIDs in Africa WHO.int (website)	Factors influencing the management of HIV in Uganda	WHO is a trusted IGO, part of the UN with a global health remit
US Assess HIV Strategy The Times (newspaper)	Factors in combating HIV / Aids in the USA	Reliable newspaper, with a known right-wing bias

### 3 Analysis

#### 3.1 Managing Asthma

Asthma is a chronic disease with recurring symptoms which affects a person's ability to breathe normally and can be very debilitating. It has no simple cause as such but breathing in pollutants and smoking both increase the risk (Asthma UK NGO). The type of disease affects the management of the risk because there is no cure for asthma so management needs to focus on either or both of prevention or palliative management. Increasing rates of asthma have been linked to changing genetics in some places but this is not certain.

In the UK the approach to managing asthma is related to the general drive towards leading a healthy lifestyle and a less polluted environment. High taxes on cigarettes and education to reduce smoking have been used to try and reduce rates of asthma and other related conditions such as heart disease. There are many indirect prevention schemes related to air pollution such as the Congestion Charge in London, nationwide growth of park and ride schemes and cutting factory pollution through legislation.

Lifestyle management is influenced by the poor lifestyle choices made by those who choose to smoke. This creates the need to include health as a topic in the national curriculum, which is possible because the UK has a good quality and well-managed education system. There has also been an increased political awareness of pollution as a health issue, promoted by activists such as FoE, Greenpeace and specific NGOs like Asthma UK who lobby government to reduce pollution levels. In the UK palliative care is given to asthma sufferers using drugs such as salbutamol, which is available to all through the NHS regardless of socio-economic status – meaning no one with asthma is prevented from receiving treatment.

In China, asthma is a growing problem with some cities having over 10% of people affected and rates rising by 40% since 2005. Due to China's continued industrialisation and rapidly rising car ownership levels, combined with increasing urbanisation, preventative measures like reducing pollution are almost impossible to implement. Due to China's lower incomes and lack of universally accessible free healthcare many people cannot afford palliative drugs. In addition, traditional Chinese medicine is used such as "herbal remedies from witch doctors" (The Lancet) which is a cultural factor not present in the UK. Although China does educate people about the risks of high levels of pollution in schools and by public broadcasts, the political desire to industrialise means that preventative measures run counter to economic policy. As China is at the peak of community pollution on Figure 1.1 this means asthma is a severe risk and a major externality of pollution.

##### 3.1.2 Sub-conclusion

Overall the type of disease has a major influence on the type of management strategy chosen because asthma has no cure so this limits the options. However, scale has less influence as in both China and the UK the scale of the problem is large but the difference in choice of strategy is more down to level of development and the political choices made by government on how to tackle pollution (or not).

#### 3.2 Dementia

Dementia is a degenerative disease which causes the deterioration of the brain and its functions. It mainly affects older people, especially those aged over 75. Figure 1.2 shows the disease is most prevalent in countries at stage 4 of the ETM, such as France the UK and USA. There is no cure, for dementia so management is limited to palliative approaches according to the BBC News.

In France, the original palliative scheme was to increase national insurance to fund the need for dementia care. However, this was scrapped due to the burden it placed on the working population. Instead, the government created a national care service providing care homes and carers to sufferers. The strategy chosen by France, with 1.6 billion Euros over 5 years pledged in 2008, was hugely influenced by the scale of the disease. In 2001 600,000 had the disease but this rose to over 800,000 by 2010 (Witherick) and is set to double by 2020. The major focus on residential care and carers is a response to the rising numbers of patients and the fact that as a developed country with a universal healthcare service people expect the state to play a role in care. France can afford this type of care for dementia patients, which is very costly.

Management of dementia in Bangladesh is limited “There is no government strategy” according to the BBC News. Sufferers are looked after by relatives but NGOs such as Oxfam do provide advice to relatives. Scale of disease greatly influences management choices. Figure 1.2 shows Bangladesh is in stage 1 of the ETM and “life expectancy is 65” (BBC News) so the majority do not live to the age where dementia becomes a high risk. The small scale of the issue, compared to health risks such as cholera and malaria mean less emphasis is put on the disease. Also, the cultural perspective is that elderly people are seen as less important so there is less interest in strategies to deal with this age groups health issues.

### 3.2.1 Sub-conclusion

Overall, both the type and degree of the disease influence choice of management strategy. Because dementia cannot be cured or really prevented the only option is a palliative strategy, but this involves long-term care as drug treatments are limited. The growing scale of the problem in France means that increased resources are being put towards care, but the small scale of the problem in Bangladesh means that the issue is largely ignored and it is left to families alone to take care of elderly people with dementia. The limited money available in Bangladesh, an LDC, means that money is spent on more pressing health issues like infectious disease control.

### 3.3 Managing HIV / AIDS

HIV is an infectious disease caused by the human immune-deficiency virus “the main risk factor for the disease is unprotected sex” (WHO). HIV / Aids has no cure so management is already limited in terms of choice of strategy.

In the USA there are both preventative and palliative strategies. Preventative strategies involve widespread health education in all high schools as well as free contraception in hospitals and schools. The disease is also treated with anti-retroviral drugs (ARVs) which are provided either through health insurance or government run Medicaid. Education affects the strategy choice as the good level of secondary education in the USA means that the message about prevention can be implemented nationwide. The high level of wealth allows a national strategy of free

contraception to be provided (The Times). Development level also allows the USA to provide ARVs (which prolong life), despite the very high cost of these drugs. In Uganda by contrast the strategy is mostly preventative and has used the ABC campaign as a public health message – “Abstinence, being faithful and using a condom”. There has also been a government campaign promoting one sexual partner. This choice of strategy is influenced by education provision as primary education in Uganda is free (WHO) so the health message can be spread in schools. There is also a cultural aspect as it is considered widely acceptable in Uganda to have more than one sexual partner so management needs to try and change this cultural value. Economic development and widespread poverty limits the use of ARVs because the vast majority cannot afford them.

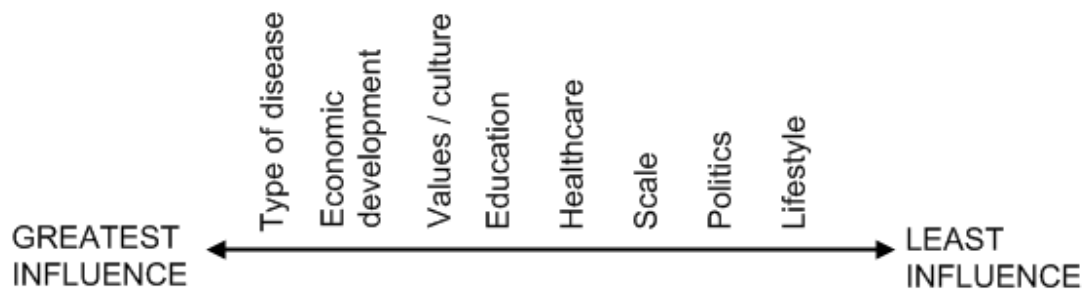
### 3.3.1 Sub-conclusion

Neither Uganda nor the USA can cure HIV / Aids so both countries have attempted to prevent its spread by education and changing peoples behaviours. This is harder in Uganda due to cultural values. The scale of the problem in both countries has meant a national strategy is required, but the big different is the level of economic development which means ARV drugs are widely available in the USA but do not form part of the response for most sufferers in Uganda.

## 4 Conclusion

There is complexity in this question because there are so many factors which affect choice of strategy and so many possible strategies. Figure 4.1 show the relative importance of the factors covered in this report in influencing the strategies chosen:

Figure 4.1



The spectrum shows that all factors have some degree of influence. However, type of disease has the greatest influence because diseases do not have all options (prevent, cure, palliative) available in all cases. Degree of health risk has an influence but not as much as level of economic development. In all of the countries studied type of health risk quickly limited the choices available regardless of their socio-economic status. Asthma has no cure, therefore the choice was limited to palliative and preventative. Dementia has no known cure or cause therefore the only choice is palliative. With HIV / Aids even the worlds richest country the USA cannot opt for cure as it is simply not an option.

With dementia, the scale of the health risk and the rapid rise in the number of sufferers has been a major factor in France’s decision to implement a high cost national strategy of care-homes

and care workers. However, the level of economic development is also important as only a developed high income country could afford this type of approach. The small scale of the problem in Bangladesh means it is largely ignored as a health risk and families have to deal with it as best they can. Economic development is the second most important factor behind type of disease as dementia care and ARV drugs are out of reach for developing countries. In the future, if cures to some diseases are found economic wealth may become the most important factor in determining choice of strategy.

Mark scheme section	Strengths	Areas for improvement	Mark scheme level
<b>Introducing, defining and focusing on the question (10)</b>	<ul style="list-style-type: none"> <li>Provides a clear framework by type of disease and level of development</li> <li>Defines types of strategies – focus on the question</li> <li>Includes models which are used effectively</li> </ul>	<ul style="list-style-type: none"> <li>Could have considered the meaning of ‘health risk’ a little more fully</li> <li>The direction of the argument could have been stated more fully</li> </ul>	9-10 marks (Level 4)
<b>Researching and methodology (15)</b>	<ul style="list-style-type: none"> <li>Range of relevant material researched in terms of location and type</li> <li>Use of concepts / theory; diagrams used effectively</li> <li>Accurate and topical; good detail and understanding</li> </ul>	<ul style="list-style-type: none"> <li>Dates for sources are not given</li> </ul>	12-15 marks (Level 4)
<b>Analysis, application and understanding (20)</b>	<ul style="list-style-type: none"> <li>Ongoing evaluation is effective and comparative</li> <li>Clear conclusion which makes judgments</li> <li>Recall fairly thorough; does recognise complexity i.e. it is not just one factor</li> </ul>	<ul style="list-style-type: none"> <li>Not all of the examples / case studies are fully referred to in detail</li> </ul>	17-20 marks (Level 4)
<b>Conclusions and evaluation (15)</b>	<ul style="list-style-type: none"> <li>Structured and logical; good sequencing and sectioning</li> <li>Some reference to sources</li> <li>Terminology used effectively</li> </ul>	<ul style="list-style-type: none"> <li>Might have returned to the models presented at the start more fully</li> </ul>	12-15 marks (Level 4)
<b>QWC (10)</b>	<ul style="list-style-type: none"> <li>Uses numbers / letters in main text to link to methodology sources</li> <li>Logical structure and report style</li> <li>Accurate use of terminology</li> <li>Diagrams used effectively</li> </ul>		9-10 marks (Level 4)