

Teachers' Notes

Introduction

Support for A level Economics

One of the problems in teaching economics at A level is to find ways of integrating abstract economic theory with real life dilemmas and problems. This is a particular problem with microeconomic theory. The intention of this e-source is to try to develop some of the standard micro-theory required by all examination boards in the context of a topical and controversial problem area. The aim has been to provide material which can engage students' interest and encourage them to use abstract economic theory as a positive problem-solving tool.

The e-source relates directly to the Qualifications and Curriculum Authority's subject criteria for Advanced Supplementary and Advanced Level Economics. In particular, its approach reflects the aims set out in section 2.1 that "AS and A level specifications in Economics should encourage students to: develop an understanding of economic concepts and theories through a critical consideration of current economic issues, problems and institutions that affect everyday life; apply economic concepts and theories in a range of contexts and to appreciate their value and limitations in explaining real-world phenomena; analyse, explain and evaluate the strengths and weaknesses of the market economy and the role of government within it".

The theoretical material covered in the e-source relates directly to a number of the areas specified in the subject criteria. These include: the reason for individuals, organisations and societies having to make choices; how competitive markets work; why markets may not work efficiently; and the impact of government intervention on market outcomes and efficiency.

Support for Vocational A level Courses

Vocational A level Business, particularly Unit 1: *Business at Work*, and Unit 3: *Marketing*.

Vocational A level Health and Social Care, particularly Unit 5: *Health, Social Care and Early Years Services*.

Using the Material

The advantage of this subject area is that it can engage students' interest and stimulate some lively discussions. All the units in the e-source have been written with A level students in mind. However, while some of the material is directly related to the mainstream theoretical requirements of the A level syllabuses, other parts are more in the nature of extension material.

There are several ways in which the units could be used. The simplest would be as extension material where the students read the units and answer the questions as a way of reinforcing theoretical concepts introduced in class. Another approach would be to incorporate part or all of different units into class sessions and some possibilities are suggested below. All units are intended for use with average A level students, although some of the material might be regarded as relatively advanced. Some elements will need direction and explanations from the teacher.

Unit One

This unit covers the issue of scarcity and includes the concepts of opportunity cost, production possibility frontiers, Pareto efficiency, normative and positive statements, and equity. Each of these areas is dealt with in sufficient detail to

provide students with the theoretical knowledge required by A level examination syllabuses.

The trial version of this unit has been used as an introductory text for students starting the A level course. The material provoked some powerful class discussions but also provided a way of introducing the use of abstract theoretical analysis. The unit could also be used as extension or revision material for more advanced students.

Note that:

1. The analysis of Pareto efficiency introduces the distinction between allocative efficiency and productive efficiency.
2. The discussion of equity introduces the concepts of vertical and horizontal equity.
3. The discussion of efficiency and equity could be interpreted as suggesting that efficiency is positive while equity is normative. In fact, Pareto efficiency makes particular assumptions about interpersonal utility comparisons and thus is essentially normative. It assumes the "goodness" of the maximand - but what the maximand relates to is a matter of judgement. So it might be appropriate for the NHS to aim to maximise health rather than health care. An efficient allocation of resources would then be that which maximised "health" (how this might be judged is discussed in Unit 5).
4. The demand for health care has not been distinguished from the demand for health. Many economists argue that health is not tradeable and so is not an economic commodity. See Chapter 3 "Health care as an economic commodity" in *The Economics of*

Health Care, McGuire, Henderson and Mooney.

Answers to the Questions

Question 1

Look at the following statements and see if you can decide whether they are positive or normative.

- A Junior doctors ought not to work up to 80 hours a week.
- B The long hours junior doctors work do not interfere with their ability to provide effective medical treatment.
- C The waiting times for routine surgery are shorter for private patients than for NHS patients.
- D NHS doctors should not be allowed to treat patients privately.
- E A hip replacement is not a life-saving operation.
- F Hip replacements should not be provided by the NHS.

Answer

A Normative. B Positive. C Positive. D Normative. E Positive. F Normative.

Question 2

Why do you think that economists believe that it is important to distinguish between positive and normative statements? Do you think it is possible to ever be completely positive?

Answer

The intention of this question is to get students thinking about what is involved in distinguishing a factual statement from a value judgement. It is also intended to

get students thinking about the way in which value judgements affect even the most positive statements.

Question 3

Identify on the PPF shown in Figure 5 (on page 11 of the e-source) the following combinations:

- 60 bypass and 19 other operations;
- 15 bypass and 54 other operations;
- 40 bypass and 40 other operations;
- 40 bypass and 58 other operations.

Which of these are feasible and which are efficient?

Answer

60 bypass and 19 other operations is impossible since it lies outside the PPF. All the other combinations are feasible since they either lie on or inside the PPF. However, 15 bypass/54 other operations and 40 bypass/40 other operations are inefficient since they lie inside the PPF. 40 bypass/58 other operations is efficient since it lies on the PPF.

Question 4

Why is it unlikely that society will choose either combination E or F in Figure 5?

Answer

If society chose combination E then it would be devoting all its resources to the production of non-heart operations and no resources to the production of heart operations. This would imply that society has no interest in helping people with heart problems, however bad those problems. If society chose combination F then it would be devoting no resources to operations other than for heart problems, so people would be dying from diseases which could very easily be treated.

Question 5

Which do you think is more important - that we treat all patients with kidney failure in the same way or that we make sure that we devote more health care resources to kidney failure than to plastic surgery? Justify your answer.

Answer

The purpose of this question is to try to make students think carefully about the problems involved with both horizontal and vertical equity.

Unit Two

This unit covers demand, supply and their interaction in a free market. The intention has been to develop market theory in a detailed and rigorous manner but within a context to which students can relate. It was considered particularly important to provide a persuasive and credible account of how a free market resource allocation system works. The trial version of this unit has been used to introduce supply and demand to lower sixth students.

Note that:

1. The section on demand includes something on substitution and income effects. Elasticity is covered in its own section of this unit.
2. The section on supply introduces some assumptions about producers' behaviour i.e. that they are price takers and profit maximisers. It also identifies the supply curve with the marginal cost curve.
3. The sections on the market analyse equilibrium and response to a shock but do not distinguish between short run and long run effects.

4. Osteopathy was used because it is largely bought and sold outside the NHS even for children and because it corresponds well to the textbook model of a free market. The osteopathy market discussed reflects the situation prior to 1993. In 1993 the Osteopathy Act was passed by Parliament which made it mandatory for osteopaths to be registered - thus the market has become less free.

c) Quantity demanded would fall by 60 consultations a month.

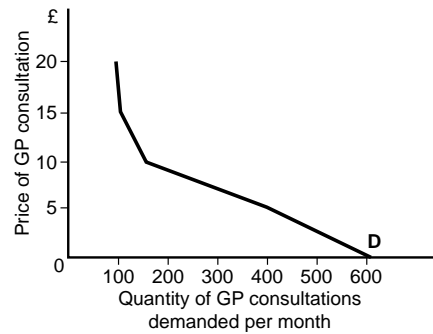


Figure 1

Answers to the Questions

Question 1

Table 1 shows a hypothetical demand schedule for GP services in a town where there is no free health service.

a) Draw a demand curve for GP services using this information.

Price of GP consultations	Quantity of GP consultations demanded per month
0	600
£5	400
£10	150
£15	100
£20	90

Table 1

- b) If the price of a consultation is £5, what is the total amount that people will spend on consultations? Show this on your graph.
- c) If the price of a consultation rose from £10 to £20, what would happen to the quantity demanded?

Answer

- a) See Figure 1.
- b) £2,000

Question 2

Table 2 shows a hypothetical supply schedule for GP services in a town where there is no free health service.

Price of GP consultations	Quantity of GP consultations GPs are prepared to supply per month
0	0
£5	40
£10	80
£15	100
£20	150

Table 2

- a) Draw a supply curve for GP services using this information.
- b) If the price of consultations rose from £5 to £15, what would happen to the quantity of consultations GPs are prepared to supply?
- c) Suppose the costs facing GPs rose by 10%, leading to a 10% reduction in the quantity of consultations the GPs were prepared to supply at every price. Draw up a new schedule to show the effect of this.

- d) Draw a new supply curve to show the effect of the increase in costs (on the same diagram as the original curve).

Answer

- a) See Figure 2, curve S.

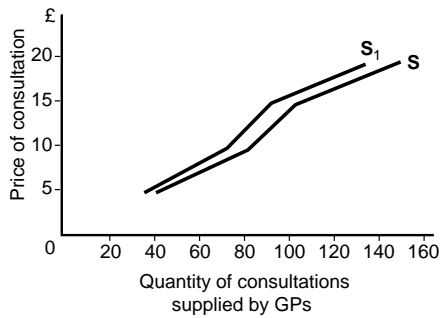


Figure 2

- b) Rise by 60 consultations per month.
 c) The new schedule is:

Price of GP consultations	Quantity of GP consultations demanded per month
0	0
£5	36
£10	72
£15	90
£20	135

- d) See Figure 2, curve S₁.

Question 3

- a) Use the information in Tables 1 and 2 to draw a market diagram for GP services.
 b) What is the equilibrium price and quantity?
 c) How much revenue are doctors then receiving?

Answer

- a) See Figure 3.

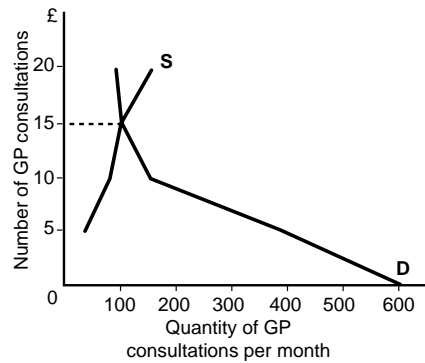


Figure 3

- b) Equilibrium price is £15; quantity is 100 consultations per month.
 c) Doctors are receiving £1,500 per month in revenue.

Question 4

Use the information in Tables 1 and 2 to draw a market diagram for GP services.

- a) A fall in costs causes supply to increase by 70 consultations per month at every price. Illustrate this on the market diagram.
 b) What is the new equilibrium price and quantity?
 c) Describe how the market reaches its new equilibrium position.
 d) An increase in income now causes demand to increase by 70 consultations per month at every price. Illustrate this on the market diagram.
 e) What is the new equilibrium price and quantity?
 f) Describe how the market reaches its new equilibrium position.

Answer

a) See Figure 4.

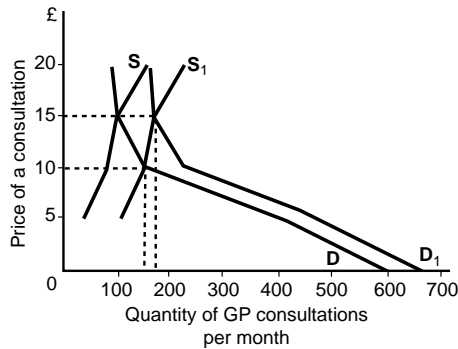


Figure 4

- b) Equilibrium price is £10; quantity is 150 consultations per month.
- c) The fall in costs causes the supply curve to shift outwards. At the original equilibrium price of £15 doctors now want to sell 170 consultations per month but consumers still only want to buy 100 consultations. The fact that doctors cannot sell all the consultations they now want to (excess supply) leads them to cut the price. As the price falls the number of consultations offered by doctors falls (they move down their supply curve) while the number of consultations consumers are willing to buy rises (they move up their demand curve). This process continues until the new equilibrium price of £10 is reached. At this price the quantity of consultations that doctors wish to sell is exactly matched by the quantity of consultations that consumers wish to buy.
- d) See Figure 4, curve D₁.
- e) The equilibrium price is £15 and quantity is 170 consultations per month.
- f) The increase in income causes the demand curve to shift outwards. At the

initial equilibrium price of £10 consumers now want to buy 220 consultations per month but doctors are only prepared to sell 150. The excess demand leads to consumers bidding up the price of consultations. As the price rises consumers demand fewer consultations (they move up their demand curve) while doctors are prepared to sell more consultations (they move up their supply curve). This process continues until the new equilibrium price of £15 is reached.

Question 5

Read the passage below, then answer these questions.

Is this the short cut to perfection?

In the quest for glamour and good looks, more and more youngsters are asking plastic surgeons to give nature a helping hand. Plastic surgery is gaining popularity among the young. At the Poutney Clinic, the average age for a nose job (rhinoplasty) is now just 22, down from 31 in 1985. The average for ear correction is 21. It is not yet as common in Britain as in America, where 640,000 operations were performed last year and where TV programmes like *Beverly Hills 90210* suggest you're not allowed to graduate from a Californian high school unless you've got a liposuctioned bum. A 20 year old waiting for a breast enlargement operation at the West Hampstead Clinic when asked why now replied "We've just got the money. My husband got a big quarterly bonus."

Adapted from an article by Robert Leedham, *The Guardian* 6.9.91

- a) Why are more young people demanding plastic surgery?

- b) What would you expect to happen to the price of plastic surgery as demand grows?
- c) Try to draw a simple supply and demand diagram to analyse this information.
- d) How would you expect suppliers to react to the increase in demand?
- e) Market theory assumes that the consumers are able to make rational buying decisions. Do you think that this applies to cosmetic surgery?

Answer

- a) The demand for plastic surgery has shifted right partly as a result of a change in preferences and partly as a result of an increase in income. The article argues that television is largely responsible for the change in young peoples' preferences towards cosmetic surgery.
- b) If demand rises and all other factors remain constant, then the price of plastic surgery will rise.
- c) See Figure 5.

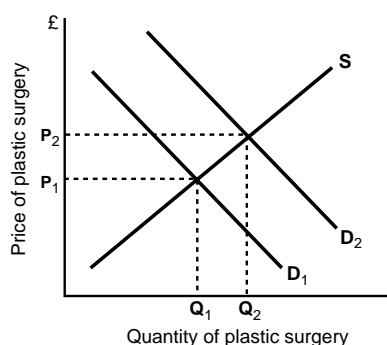


Figure 5

- d) Higher prices mean higher profits for the cosmetic surgery firms. Existing firms will react by expanding and producing more operations. The high profits are also likely to attract new

firms into the market. As new cosmetic surgery firms set up, the price of operations will drop - reflecting the fact that market supply has shifted right.

- e) This question is intended to get students to think about what is meant by rational buying behaviour. Any rational buying decision depends on having sufficient information about the costs and benefits of the decision. In cosmetic surgery as with other areas of health care this information is often both uncertain and incomplete - particularly as many of the costs and benefits occur in the future.

Unit Three

This unit looks at market failure and equity problems, and develops the concept of externalities and imperfect competition within the health care context. This also allows some interesting theoretical perspectives not usually included in an A level course to be introduced.

Note that:

1. The concept of merit/demerit goods is not used. Although most A level textbooks use health care as an example of a merit good, it is a concept which has been abandoned by modern health economists. They prefer to keep efficiency and equity considerations separate. Thus they would analyse smoking (see question 1 below) in terms of imperfect information and externality effects not as a demerit good.
2. Insurance works because of the Law of Large Numbers. Although it is impossible to predict whether one person is going to have a heart attack,

it is possible to predict how many people will suffer heart attacks out of a large sample. So health insurers are able to use this principle to calculate very accurately the probability of a particular illness occurring.

3. The diagram illustrating the cost of an externality is relatively advanced and may need to be supported by further explanation. See the chapter titled "Introduction to Welfare Economics" in Economics, by Begg, Fischer and Dornbusch for a clear explanation of externality diagrams.
4. A more complete and advanced discussion of the themes developed in this unit can be found in Chapter 12 "Health Care" of The Economics of the Welfare State by Nicholas Barr.

Answers to the Questions

Question 1

People over 16 can buy cigarettes legally (i.e. in a free market). They are making a consumption decision based upon their evaluation of the costs and benefits of smoking.

- a) To what extent is their consumption decision based upon imperfect information? Why might this information be imperfect?
- b) What might be the externality effects of smoking?

Answer

This question aims to encourage students to start thinking about the impact of imperfect information and externalities.

- a) There are a number of ways in which smokers' consumption decisions are likely to suffer from imperfect information.

Here are some suggestions.

Smokers are likely to be making a consumption decision based upon imperfect information because of the difficulty of evaluating risk - we have no way of knowing what the effect of smoking one cigarette at a particular moment will be. This problem is particularly difficult because the benefits of smoking are immediate but the costs are in the future - so a time factor complicates the evaluation. Smoking is also complicated because it is addictive - so people's evaluation may not be rational.

- b) The negative externality effects of smoking could include passive smoking leading to health problems for those who inhale the smoke and the cost to society of treating and supporting smokers who suffer from tobacco-related diseases.

Question 2

Look at the information about the US and other health systems and then answer the questions.

- In the US there are around 700 different private health care insurers.
- It was estimated in 1997 that 43 million people in the US (16% of the population) had no medical cover and researchers found that there was a strong connection between low income, poor insurance and poor health.
- The US spends a greater proportion of its GDP on health care than any other developed economy (13.6% in 1998) and yet according to most of the health indicators used by the OECD is no more healthy than other countries.
- Countries like Australia, Canada, France and Germany have set up compulsory public health insurance schemes.

- a) What might explain the connection between low income, poor insurance and poor health in the US?
- b) What might explain the high proportion of GDP spent on health care in the US?
- c) How might the public health insurance schemes avoid the problem of adverse selection?

Answer

- a) Health care in the US is provided by private insurance based schemes supplemented by Federal programmes (Medicare and Medicaid). The problems of adverse selection have led to the private health care insurance schemes adopting experience rating - this means that premiums for the poor will tend to be higher since there is a correlation between low income and ill-health. The poor thus face not only poor health but high health care premiums which tends to lead to them being under-insured.
- b) There are two possibilities. First, the multiplicity of private health care insurers leads to higher administration costs than are necessary i.e. the US system is inefficient. The other possibility is that consumers choose to spend a large amount upon health care and in the US system they are free to do so while in other systems, such as Canada or the UK, they are prevented from spending what they would like. This is what David Green argues in 'Challenge to the NHS'.
- c) Public health insurance schemes avoid adverse selection because they are compulsory. This prevents the good risks from selecting themselves out and means that the insurance can use community rating, i.e. everyone pays the same premium.

Question 3

Some economists believe that the information problems facing health care have been greatly exaggerated. "The first question of health economics has always been simple: why not leave health care alone? Some say that it is too complex for buyers to understand, so that they would be ripped off by sellers in a free market. Perhaps they would - but so are buyers of time-shares, hot dogs and jewellery. In any case, the complexity is hugely exaggerated. And even where it is not, a similar complexity does not stop a market operating in the servicing and repair of car engines" The Economist 1991.

- a) Think about your own experience of health care - do you think that the complexity is hugely exaggerated?
- b) People buying a car or a computer are able to get the information they need to help them make a rational choice from specialist websites and magazines - do you think similar websites and magazines could overcome the information problems associated with health care?

Answer

The intention of these questions is to be provocative and to get students thinking.

- a) Answers will probably vary according to students' personal experiences of health care. Complexity often depends upon the situation. Many students may find the whole idea of the doctor as a seller who might "rip-off" the patient rather disturbing - our view of doctors as our agents acting in our best interest can be very strong.
- b) Information gained from websites and magazines or from second opinions is difficult to evaluate. You need a certain amount of information or knowledge

before you can make an effective choice. A person who knows nothing about cars is unlikely to be able to make much use of a specialist car website or magazine. He or she will be likely to find the information confusing and worrying rather than helpful. These are the consumers who are likely to use a garage as their agent. Also, gaining information involves a cost. Many people who use car and computer websites or magazines are willing to pay the cost of acquiring the necessary information to use them because they gain pleasure from cars or computers. However, it is more difficult to see why people would be willing to pay the cost of gaining sufficient medical information, particularly as that cost is likely to be high given the complexity and technical nature of the information.

Question 4

Explain how a free market in health care might cause problems for the control of infectious disease.

Answer

Infectious diseases are often controlled through vaccination and immunisation programmes. In a free market people would only demand vaccinations up to the point where the price of the vaccination equalled the marginal private benefit they received. This would lead to a level of vaccinations below the socially optimum level - and consequently infectious diseases would be only imperfectly controlled. Another factor is likely to be ability to purchase vaccinations. In a free market people can only buy vaccinations if they have sufficient income.

Question 5

- a) Does society receive externality benefits from all kinds of health care?
- b) Analyse why the government might launch a health campaign to persuade

people to drink less alcohol. Try to draw an externality diagram to illustrate your analysis.

Answer

- a) If we are talking about what is sometimes called a 'selfish externality' then the answer is no. There are many kinds of health care that do not provide any obvious externality benefits to the population at large. An example would be an operation to remove a patient's appendix. Clearly this operation provides benefits to the patient but it is difficult to identify any external benefits received by society (unless one starts looking at the much wider question of a person's contribution to society and how that might be reduced by ill health). However, some economists, notably Cuyler, identify what is called a 'caring externality'. They argue that people can receive benefit from knowing that other people are receiving medical care and thus are not suffering or in pain.
- b) Alcohol has negative externality effects - technically it is a negative consumption externality. These externality effects will occur because the person consuming the alcohol will not take into account the effect of his consumption upon other people. These effects could range from disturbance by rowdy behaviour to long term health care effects. The result of this is to make the marginal social benefit curve less than the marginal private benefit curve. This is illustrated in Figure 6.

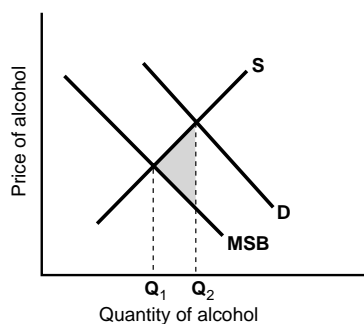


Figure 6

Unit Four

This unit attempts to set the theoretical issues raised in the first three units in the context of the policy debate over the future of the NHS. This debate allows the theoretical arguments to be related to actual policy choices. It has the advantage that most students have both some experience of the health service and views about it. This reinforces the fundamental point that economic theory, although abstract and often apparently 'unrealistic', is intended to analyse and suggest solutions to real problems.

Note that the NHS reforms of the late 1980s and 1990s need to be placed in context. The NHS has always faced crises and problems largely related to the structure which emerged as a result of the compromises made in 1948 when the system was set up. Bevan wanted a centralised, unitary system but the medical profession, determined to preserve their independence, opposed him. The result was a command solution to the health care problem which lacked much of the structure needed to make planning decisions.

One effect of this lack of an effective management structure was that the NHS faced recurrent financial crises from the

early 1950s onwards. This in turn led to continuing attempts to reform the service. The 1974 reorganisation created a fully unified system for the first time and also introduced a strategic or planning tier, while the Griffiths reforms of 1984 introduced general management. So it is possible to see the reforms of the late 1980s and early 1990s as part of a continuing process, although many commentators would argue that in other respects they mark a major break with the past. A detailed account of the history, structure and reforms of the NHS can be found in "NHS reorganisation: learning from history" by Charles Webster, published by the Office of Health Economics.

Answers to the Questions

Question 1

The following sequence outlines how the different parts of the NHS are likely to be involved with Susan's pregnancy.

1. She visits her GP who gives her a check-up and then arranges for her to visit a hospital for a scan and other ante-natal checks.
 2. She then, in consultation with her GP, chooses a hospital for the birth.
 3. As her pregnancy develops her progress is monitored by both her GP and the doctors and midwives in the Maternity Unit of the hospital.
 4. For the birth itself, she spends a couple of days in the hospital Maternity Unit.
 5. After the birth, parents and child would be visited at home by a community nurse and would themselves visit the local Child Welfare Clinic at intervals.
- a) This sequence has involved many of the different elements of the NHS - identify those elements.

- b) Who is making the decisions in this process? Susan strongly wants to have her child at home but the doctors at the Maternity Unit refuse to allow this arguing that the risk of complications is too high.
- c) How could their decision be justified (think of the market failure theory we introduced in Unit Three)?
- d) Do you think that Susan should be allowed to pay to have the birth she wants at home?

Answer

- a) Primary health care - the GP.
Secondary health care - the hospital (doctors and midwives).
Secondary health care - the community nurse and Child Welfare Clinic (Community Health Services).
- b) The decision making is very much a joint process between the patient and the health care professionals - whether doctors, midwives or nurses. However, in practice, the health professionals tend to be the main decision-makers because they have more information.
- c) It could be argued that Susan does not have enough information to make a fully informed rational decision. Susan's decision does not just affect her and her health it also will affect her baby. In that sense her decision has an externality dimension. Doctors' professional ethic, which ensures that they act as effective agents, will tend to prevent them from allowing a course of action which harms a patient who cannot protect their own interest (the unborn baby).
- d) This depends upon the extent to which you believe that consumers are the best

judges of their own interests in a medical context. Also it depends on how you rate the externality effects of the decision - is the utility of the expectant mother and the unborn baby equally valid? To what extent is it justifiable for a doctor or midwife to override the mother's wishes in the 'interests' of the baby?

Question 2

Why does the NHS not suffer from either moral hazard or adverse selection?

Answer

The NHS avoids moral hazard and adverse selection because it is funded from taxation and treatment is generally free at point of use. This means that there is generally no incentive for doctors to overprescribe or over-treat. Equally there is no possibility of opting out of paying for the NHS. One can choose to purchase private health care but this is in addition to the care available on the NHS and there is no reduction in the taxes you pay. Note that it is possible to argue that the NHS overcomes only producer moral hazard, not consumer moral hazard. Since treatment is 'free' people may not take proper care of their health and so end up by demanding 'too much' health care.

Question 3

GPs have sometimes been called the gatekeepers of the NHS. How does their role as gatekeepers act to minimise the information problems consumers face with health care?

Answer

GPs are the first point of contact most people have with the NHS. They are the entry point and as such provide patients with information about other NHS services and the condition that the patient may be suffering from. GPs have also

traditionally had a role as rationers of further treatment. Patients usually need to be referred by a GP before they can be seen by a consultant or receive specialised hospital services such as X-rays.

Question 4

- a) Why do waiting lists occur in the NHS? Are they necessarily a sign that the NHS is failing?
- b) What is likely to happen to waiting lists in the future? Use the data in the appendices to inform your answer.

Answer

- a) Waiting lists occur because demand for health care treatment is greater than the available supply. The waiting lists are a device for allocating scarce resources - so their existence does not mean that the NHS is failing. It just indicates that a particular kind of resource allocation system is operating. We may argue that other allocation devices such as the market are more efficient but this is a matter for debate.

Unit Five

Although this unit relates only indirectly to the theory content of A level syllabuses, it does raise a number of general questions which have considerable relevance for students studying A level Economics or Business Studies. In particular, the section on measuring health improvement involves a practical analysis of consumer choice. It provides an illustration of how economists use standard utility/indifference analysis to try to solve actual problems. The advocates of QALYs believe that they can be used to help resolve many of the allocation problems faced by the health service. It

also focuses students' attention on the difficulties economists face when trying to measure utility. Further information can be found in Chapter 2 "Health and health care" of The Economics of Health Care by McGuire, Henderson and Mooney.

Answers to the Questions

Question 1

Look at the health measurement matrix below. The vertical axis describes states of disability while the horizontal axis describes the level of distress the patient is experiencing. What do we mean by the level of distress? The term distress is an attempt to capture both the physical and mental effects of being ill. This is very subjective but severe distress might mean considerable, continuous physical pain with perhaps a high level of anxiety and fear. Each combination on the matrix needs to be given a numerical score so that a cardinal interval scale is created. The reference points are healthy = 1 and dead = 0.

- a) Complete the matrix using your own values based on your own personal preferences. Each number should be to no more than three decimal places e.g. no disability/ no distress will score 1.000, while confined to bed/mild distress might score 0.564. Try to be as consistent as possible. The scores are likely to reflect your own personal experiences - particularly experiences of illness. Note that it is possible to have a negative score if you feel a particular combination of disability and distress is worse than death.
- b) Compare your scores with others in the group and discuss why different people have come to different conclusions.

Answer

See Table 1.

This matrix was developed by Kind, Rosser and Williams in 1982 and was designed to be used with non-health care experts. The median scores they gained from 70 respondents are shown in Table 1. These figures might be worth comparing with the scores produced by your students. The matrix is quoted in "The Economics of Health Care" by McGuire, Henderson and Mooney.

Question 2

Researchers have estimated the marginal cost per QALY to be gained from a number of health procedures. Hip replacement surgery will produce one QALY for £1,520 while gaining one QALY from screening for breast cancer will cost £7,460. (Mason, Drummond and Torrance, 1993)

- a) How might society re-allocate resources between hip replacement surgery and screening for breast cancer to achieve a more efficient outcome? (Remember that the most efficient allocation of resources is when the marginal cost paid is equal to the marginal benefit or utility received).
- b) Why might many people be unhappy with this?

Answer

- a) If society believed that QALYs were in some way objectively measuring the utility gained from different operations, then it would switch resources into hip replacement surgery and away from screening for breast cancer.

- b) Many people would feel uncomfortable with this conclusion. The assumption made is that QALYs provide a measure of the utility society receives from different treatments or health care. In fact a QALY does not measure utility - we need some measure of willingness to pay to capture that. This means that QALYs can help to distinguish technical or productive efficiency, i.e. which of two treatments for the same disease is more efficient, but they cannot by themselves determine how to allocate resources. That depends upon our normative judgements about the value of life, the relative importance of different age groups etc. Using QALYs to allocate resources (as opposed to measuring technical efficiency) would mean that our normative judgement is that the maximisation of health gain (as measured by QALYs) is the only objective of health care, irrespective of the implications of this rule for who gets treated.

Disability / Distress	None	Mild	Moderate	Severe
No disability	1.000	0.995	0.990	0.967
Slight social disability	0.990	0.986	0.973	0.932
Severe social disability and/or slight impairment of performance at work. Able to do all housework except very heavy tasks	0.980	0.972	0.956	0.912
Choice of work or performance at work very severely limited. Housewives and old people able to do light housework only but able to go out shopping	0.964	0.956	0.942	0.870
Unable to undertake any paid employment. Unable to continue any education. Old people confined to home except for escorted outings and short walks and unable to do shopping. Housewives able only to perform a few simple tasks	0.946	0.935	0.900	0.700
Confined to chair or to wheelchair or able to move around in the house only with support from an assistant	0.875	0.845	0.680	0.000
Confined to bed	0.677	0.564	0.000	-1.486
Unconscious	-1.028			

Table 1