Public health: ethical issues

CONSULTATION PAPER

NUFFIELD COUNCIL ON BIOETHICS

Deadline for responses: 15 September 2006

Nuffield Council on Bioethics

The terms of reference of the Council are:

1   to identify and define ethical questions raised by recent advances in biological and medical research in order to respond to, and to anticipate, public concern;

2   to make arrangements for examining and reporting on such questions with a view to promoting public understanding and discussion; this may lead, where needed, to the formulation of new guidelines by the appropriate regulatory or other body;

3   in the light of the outcome of its work, to publish reports; and to make representations, as the Council may judge appropriate.

Public health: ethical issues

Consultation paper

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Terms of reference of the Working Party on:

Public health: ethical issues

1   To identify and consider ethical, legal and social issues arising when designing measures to improve public health.

2   To consider, by means of case studies:

     a)   the variety of aims for such measures, such as informing individual choices and protecting the wider community, and their relative priorities;

     b)   the role of autonomy, consent and solidarity;

     c)   issues raised by decisions about, and perceptions of, risk;

     d)   criteria for the allocation of resources in specific areas of public health;

     e)   the special situation of children and those who are poor or socially excluded.

3   To examine the implications of the above for the development of frameworks for policy making in public health.

Part A

1 Introduction

Health matters to everyone, to ourselves, our families, our communities, and the state. There are many definitions of the term 'public health'. One of these describes the promotion of public health as "what we, as a society, collectively do to assure the conditions for people to be healthy".[1] In common with other definitions, it raises a number of questions. These include:

What are the responsibilities of governments?

- Should they aim to achieve certain states of health in the population, or merely to provide circumstances that allow people to make informed decisions?

- If the role of the state is to achieve certain states of health, is the primary responsibility to prevent harm, or should states also promote positive conceptions of health?

- Do governments bear responsibility for inequalities in the health of particular groups of citizens? Or are poorer states of health in some ethnic or socio-economic groups merely a matter of personal responsibility?

What are the responsibilities of individuals?

- Should people be completely free from interference by the state in choosing how they live their life regardless of the implications for their health?

- If people deliberately or negligently behave in ways that harm their health, should they be entitled to treatment provided through publicly funded healthcare systems such as the NHS?

- Should health risks arising from different conditions and lifestyle choices, for example obesity, smoking, sunbathing, rock-climbing or cycling in big cities all be evaluated in the same way?

What are the responsibilities of other parties, such as communities and industries?

- Increasing emphasis on individual choice and responsibility focuses attention on the circumstances in which people make choices, and the responsibility of those who influence how people make choices. For example, if nearly half of all ready-made meals contain high levels of salt[2] are people who choose to eat them responsible for the high blood pressure that may result? Or do producers of ready meals also bear some

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[1]   Institute of Medicine (1988) *The Future of the Public Health* (Washington, USA: The National Academies Press). According to the Faculty of Public Health of the Royal Colleges of Physicians of the United Kingdom the term 'public health' refers to: "The science and art of preventing disease, prolonging life and promoting health through organised efforts of society", see Royal Colleges of Physicians of the United Kingdom *What is public health?*, available at: www.fphm.org.uk/about_faculty/what_public_health/default.asp, accessed on: 19 Apr 2006.

[2]   Food Standards Agency (2003) *Ready meals salt levels revealed*, available at: www.food.gov.uk/news/pressreleases/2003/jun/readysaltpress, accessed on: 5 Apr 2006.

responsibility? Additionally, what are the obligations of the tobacco and alcohol industries in warning consumers of the risks of consumption?

- Value systems and practices shared by family members and the wider community determine to a considerable degree what counts as eating or drinking too much, or exercising too little. Can or should the communities in which these values are established play a role in promoting public health?

In January 2006, the Nuffield Council on Bioethics established a Working Party to consider the complex issues that arise when designing and introducing measures to improve public health. The Working Party will publish a Report in 2007, formulating advice that is primarily relevant to UK policy and practice. The Report will summarise the discussions of the Working Party, which will also be informed by facts, arguments and opinions from a wider consultation with external experts.[3] This document forms an important part of the consultation process, and the Council and the Working Party would welcome your comments on ethical issues that are raised by measures to improve public health.

We begin in Part A by providing a list of questions that relate the more general issues introduced above to five specific areas of public health: infectious diseases, obesity, smoking, alcohol, and the supplementation of food and water. We also ask some questions on relevant ethical principles. Background information on the case studies, factors that influence public health, options for policy, and on ethical issues is provided in Part B of this consultation paper. We should like to invite you to tell us about your views and to encourage you to give the reasons behind them.

You do not need to answer all of the questions. Please tell us if there are any additional important issues that you would like us to consider. Your response will be circulated to the members of the Working Party to inform their deliberations. Provided you give us your permission, your response will also be published (anonymised if you wish) in full on the Council's website when the Report is published. In addition, a summary of the main points raised during the consultation will be included in the Report of the Working Party. Information about how to submit your response, including the facility to respond online, is given at the end of this document.

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[3] See www.nuffieldbioethics.org/go/ourwork/publichealth/pressrelease_348.html for an outline of the Working Party's method of working.

2 List of questions

1. The definition of public health

- Do you agree with the definition of public health introduced above ("[W]hat we, as a society, collectively do to assure the conditions for people to be healthy"[4])? If not, please explain why. What alternative definition would you propose?

2. Factors that influence public health

- Do you agree that interactions between the following five factors are the main influences affecting public health: the environment, social and economic factors, lifestyle, genetic background, preventative and curative health services? If so, do you think some are more important than others? Are there other factors we should include? If so, what are they?

3. Prevention of infectious diseases through vaccination

- Some countries[5] have a compulsory rather than voluntary system of vaccination. On what basis can such policies be justified to achieve herd immunity? Should they be introduced in the UK?

- For childhood vaccinations, parents make decisions on behalf of their children. Are there cases where the vaccination of children against the wishes of their parents could be justified? If so, what are they?

4. Control of infectious disease

- Control measures for specific diseases depend on how infectious a disease is and how it is transmitted. For infections that are directly transmitted from person to person, what justification would be required to render interventions such as forced quarantine, which helped to control the outbreak of Severe Acute Respiratory Syndrome (SARS) in Asia, acceptable in countries such as the UK where such measures may be considered to infringe civil liberties? If you think such measures cannot be justified, what are the principal reasons?

- In general, the earlier that an outbreak of disease is detected, the easier it will be to control. What would be suitable criteria to determine in what circumstances, and to what extent, the state should provide more resources to develop methods of preventing outbreaks of serious epidemics in other countries?

- Travel and trade are key factors in the spread of infectious diseases. Global travel and exchange of goods are increasing rapidly. Each day, two

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[4]   (Institute of Medicine (1988) *The Future of the Public Health* (Washington, USA: The National Academies Press).

[5]   Countries with mandatory vaccination policies include the USA and France. In these countries children must have received certain vaccines before they can start school.

million people travel across borders, including around one million per week between developing and developed countries. Disease-causing organisms and vectors can therefore spread quickly around the world.[6] Are new measures needed to monitor and control the spread of infectious diseases? If so, what would be promising strategies?

- Under which circumstances, if any, would mandatory testing for highly infectious and life-threatening diseases such as tuberculosis or HIV/AIDS be justified?

5. Obesity

- Food is closely linked with individual satisfaction and lifestyle. This means that any strategy that seeks to change people's behaviour is likely to be perceived as particularly intrusive. How should this sensitivity be considered in devising policies that seek to achieve a reduction in obesity?

- While there is clear evidence about the extent and scale of obesity, there is far less clarity about what measures should be adopted by the government and other stakeholders to prevent it. In view of this uncertainty, what would be suitable criteria for developing appropriate policy?

- What are the appropriate roles and obligations of parents, the food industry, schools, school-food providers and the government in tackling the problem of childhood obesity?

- Is it acceptable to make the provision of NHS services dependent on whether a person is obese or not (see example in Section 4.2 of Part B)? If so, what criteria should govern whether or not interventions are provided, and should similar criteria be developed for other lifestyle-related health problems that are significantly under the control of individuals?

6. Smoking

- The effects of smoking on health have been known for a very long time. Comprehensive measures by governments to prevent harm to the population are relatively recent. In your view, what are the reasons for this delayed response? Are there any lessons that can be learned from other countries, or from strategies pursued in other areas of public health?

- What are the responsibilities of companies that make or sell products containing hazardous substances, such as nicotine, that can be addictive? Should they be prosecuted for damaging public health or required to contribute to costs for treatments?

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[6] USA National Intelligence Council (2000) *The Global Infectious Disease Threat and Its Implications for the United States – Factors affecting growth and spread: International trade and commerce*, available at: www.cia.gov/cia/reports/nie/report/nie99-17d.html, accessed on: 19 Apr 2006.

- Should smokers be entitled to higher than average resources from the public healthcare system, or should they be asked for increased contributions? Would similar charges be justified for other groups of people who deliberately or negligently increase their chances of requiring public health resources, such as people engaging in adventure sports?

- Smokers argue that they choose to smoke. What rights does the state have to impose sanctions to prevent them from smoking? Does the state have the right to prevent the sale of tobacco, which is known to be addictive and highly dangerous? How vigorously is it reasonable for the state to act to prevent children and teenagers from smoking?

7. Alcohol

- The effects of excessive consumption of alcohol on the health of individuals and society have been known for a very long time. It can be argued that in view of the significant harm to individuals and society, comprehensive measures by governments to prevent harm are lagging behind those for tobacco. In your view, what are the reasons for this?

- In view of the impact of excessive consumption of alcohol on individuals and society, what are the roles and responsibilities of agents other than the government to limit consumption? Are there different responsibilities for producers and, for example, retailers? If so, which?

8. Supplementation of food and water

- Fortification of some foodstuffs such as flour, margarine and breakfast cereals has been accepted for some time. Why has the fluoridation of water met with more resistance? What are the reasons behind international differences in the acceptance of fluoridation of water? What criteria are there that determine acceptance?

- Which democratic instruments (for example, decision by Parliament or local authority, consultations or referenda) should be required to justify the carrying out of measures such as fluoridation?

- Achieving population benefits of fluoridation means restricting choice of individuals. Children benefit the most from fluoridation. However, as with vaccinations, adults, rather than children, are making decisions about whether or not to receive the intervention. Under what circumstances is it acceptable to restrict the choice of individuals in order to protect the health of children?

9. Ethical issues

- In your view, is there one of the following principles that is generally more important than the others: autonomy, solidarity, fair reciprocity, harm principle, consent, trust (see Section 5 in Part B)? If so, which one and why? Are there any other important principles that need to be considered?

- Can these principles be ordered in a hierarchy of importance? If so, how would such an order relate to the five case studies (infectious diseases, obesity, smoking, alcohol, and the supplementation of food and water)? Would the order have to be redefined for each new case study? Are there particular principles that are of special importance to some case studies?

- In cases such as vaccinations or fluoridation parents decide on behalf of their children. Which ideas or principles should guide parents in their decisions?

The case studies have been chosen because we think that they highlight a number of important ethical tensions and conflicts between different agents, ranging from individuals to families, to NGOs, companies, healthcare professionals and the state. Other case studies could have been chosen to illustrate the same types of tensions and conflicts. We would be interested to hear if you think that there are other types of ethically relevant issues concerning public health that we should address.

Some of the questions asked with reference to a specific case study also apply to other case studies, for example whether people who accept some kind of damage to their health as part of their lifestyle, such as smokers, should be entitled to fewer resources from the public healthcare system, or be asked for increased contributions. Respondents are welcome to comment on these specific questions in a general manner.

The Background section provides some facts and figures about public health in the UK. Space constraints in this document have not allowed us to provide comprehensive information for England, Scotland, Wales and Northern Ireland or to make comparisons with other countries. The Working Party would therefore be grateful for statistical and other information that relates to specific countries and would be relevant to the Working Party's Report.

Part B

3 Background and policy context

Factors that influence public health

The health of individuals and populations is influenced by a number of factors. These can improve or damage health and may also interact in complex and sometimes unpredictable ways. Although separation of these factors is therefore somewhat arbitrary, we have distinguished between the following five categories for the purposes of an overview:

The environment

Some environmental factors such as sunlight in appropriate doses, and clean air and water are usually likely to support or improve good health. However, environmental factors can also be harmful. Excessive exposure to sunlight may cause skin cancer. Contaminated soil and water, as well as infected people and animals, can spread infectious diseases. Exposure to man-made chemicals, such as emissions from industry or cars, can also adversely affect people's health.

Social and economic factors

Health is influenced by a number of socio-economic and cultural factors. They include income, employment, housing, education, family composition, religion, traditional roles, beliefs and values, and psychosocial factors such as social support, life events, and the extent and quality of social networks. Hence, health risks, health-related behaviours, physical and mental health, and life expectancy vary between social groups. Variation is determined along several different parameters, including socio-economic status (e.g. social class and income), gender, race/ethnicity, migration history/aboriginal status, place of residence, and religion or caste. Even well above levels of absolute deprivation, people's life chances and health are influenced by their position in social hierarchies. For example there is a graded relationship between education, social class or income levels, and health and life expectancy. This means that, on average, people at successively higher levels have fewer health problems and longer life expectancy. There are however some important exceptions; for example, in the UK, some migrant and ethnic minority groups whose members belong to lower-income groups have more healthy diets, and are less likely to drink alcohol, than the host population. Among men the relationship between obesity or overweight and socio-economic status does not always follow the expected pattern of increasing with lower socio-economic status.

Lifestyle

The availability of recreational and sports facilities, public transport, and the design of urban and work spaces all have an impact on people's lifestyles. How people use them is often determined by values shared by members of families, friends, or other groups. The social prestige attached to some activities also matters, and the media can play a role in influencing whether healthy or harmful

activities are adopted. While many people think that alcohol in appropriate quantities may enhance the quality of life, larger quantities clearly have harmful effects. Stressful jobs, adventure sports, and unprotected sex also carry health risks.

Genetic background

Some people can be affected by genetic variants that influence their susceptibility to diseases. In most diseases with a genetic component, several genes interact, and whether they lead to the expression of a disease may also depend on environmental factors and lifestyle. However, there are some genetic diseases in which an alteration in behaviour cannot compensate for, or prevent the disease.

Preventative and curative health services

In the UK, the National Health Service (NHS)[7] was established to "provide healthcare for all citizens, based on need, not the ability to pay".[8] People disagree about whether the system is just, fair and effective. For example, there are concerns about regional differences in the provision of healthcare ('postcode-prescribing'), about preparedness of authorities in the event of an epidemic (for example, of avian flu) and about whether systems of public healthcare are affordable. There has also been debate about whether guidance issued to doctors by the General Medical Council, which states that "[you, the doctor] must not refuse or delay treatment because you believe that patients' actions have contributed to their condition",[9] is reasonable.

Question on factors that influence public health

- Do you agree that interactions between the following five factors are the main influences affecting public health: the environment, social and economic factors, lifestyle, genetic background, preventative and curative health services? If so, do you think some are more important than others? Are there other factors we should include? If so, what are they?

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[7] The NHS was established by the UK government in 1948, as part of the welfare state which sought to promote the principles of equality of opportunity, equitable distribution of wealth, and public responsibility. The NHS was conceived as an important tool in providing a basic level of security and social justice to all citizens.

[8] See www.nhs.uk/England/AboutTheNhs/History/Default.cmsx, accessed on: 6 Mar 2006.

[9] General Medical Council (2001) *Good Medical Practice*, available at: www.gmc-uk.org/guidance/good_medical_practice/index.asp#Relationships%20with%20patients, accessed on: 6 Mar 2006. The General Medical Council is currently reviewing *Good Medical Practice* and recently held a consultation on a new draft version, which retained the statement quoted above. The revised version is expected to be published soon.

Ways of influencing public health

Historically, major improvements in public health have been achieved by a wide range of measures. These included non-medical developments, such as reducing air pollution and improving housing and sanitation in the 19th and 20th centuries. Science-based strategies have also played a role. For example vaccination programmes have been used to eradicate smallpox and virtually eradicate polio worldwide. Fifty years ago, these two diseases alone claimed up to 16 million lives each year. In the UK, a combination of initiatives, including campaigns by the government and non-governmental organisations (NGOs), and media reporting, have helped to reduce the proportion of smokers from peaks of about 80% of the male population and around 45% of the female population a few decades ago, to 23% in both males and females in 2004.[10]

The effectiveness and acceptability of interventions to promote public health depend on several, often inter-related, factors. These include:

- *The element of personal control*: People seem to be willing to take higher risks if they have the impression they are in control of what makes an activity 'risky' (for example, cycling in big cities). By contrast, if risks result from situations where individuals cannot influence the outcome (for example, vaccinations), a lower threshold of risk tends to be acceptable.

- *The evidence base provided*: Factual, clear and appropriately detailed information about the benefits and risks of adopting (and not adopting) new policies is not always available. The media can have an important role in influencing public acceptance.

- *Trust*: Even when evidence is provided in intelligible form, and technically feasible and efficacious means are available, many interventions are highly complex and require a degree of trust in scientists and others providing information or proposing policies.[11]

- *The degree of intrusiveness*: The more that measures introduced by the government try to influence decisions that are intimately linked with personal conceptions of how to live one's life, the more unpopular they are likely to be.

- *The perceived aim:* Measures that seek to improve conditions for vulnerable subgroups are more likely to be accepted than those where the aim is perceived to be making savings for the NHS, or promoting a particular commercial product.

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[10] Tobacco Advisory Group of the Royal College of Physicians (2000) *Nicotine Addiction in Britain* (London: Royal College of Physicians), available at: www.rcplondon.ac.uk/pubs/books/nicotine/, accessed on: 27 Apr 2006; Lader D and Goddard E (2005) *Smoking-related Behaviour and Attitudes, 2004* (London: Office for National Statistics), available at: www.statistics.gov.uk/downloads/theme_health/Smoking2004_V2.pdf, accessed on: 27 Apr 2006.

[11] O'Neill O (2000) *Autonomy and Trust in Bioethics* (Cambridge: Cambridge University Press).

- **_Technical feasibility and efficacy_**: For example, it is difficult to influence people's diet, but technically easy to fluoridate tap water.

A variety of agents with different interests seek to influence public health. These include the government, NGOs, the media, industry, healthcare practitioners, grass roots organisations, communities and families. A range of different types of measures and examples of recent applications, are described below:

Information/education

For people to make informed decisions, they require appropriate information. However, information is always provided with certain purposes in mind and it may not always be obvious whether it is provided in an altruistic manner for educational purposes, or whether there is an element of persuasion that is driven by other motives.

Incentives and disincentives

Incentives and disincentives are measures that aim to influence people's behaviour and corporate policy by offering rewards or penalties such as high taxes on cigarettes or industrial emissions (a disincentive), or the provision of free condoms (an incentive).

Regulation and legal penalties

Public-health-related actions of industries and individuals can be modified by mandatory regulations and by imposing legal penalties in case of contraventions:

- Laws can be introduced that make certain standards obligatory for industries such as food producers, or for companies that produce particularly harmful emissions into the environment.

- There are also several different ways in which the behaviour of individuals can be influenced by the law, with different degrees of coerciveness:

  - While individuals may choose not to wear seatbelts in cars or helmets when motorcycling, such actions will be penalised if detected.

  - Under English law several individuals who have knowingly transmitted HIV to someone who was unaware of their HIV-positive status have been successfully prosecuted under the Offences Against the Person Act (1861), for unlawfully and maliciously inflicting grievous bodily harm.[12] In Scotland, where a different criminal law system operates, individuals who have knowingly transmitted HIV have been convicted of 'recklessly causing injury to another'. From these rulings it has been suggested that there may be a duty to disclose HIV-positive status

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[12] Carter M (2006) Criminalisation of HIV transmission in the UK: how did we get here and where to now? *AIDS Map*; available at: www.aidsmap.com/en/news/1361B904-0D80-420F-B659-71F506446183.asp, accessed on: 12 Apr 2006.

before engaging in high-risk activities.[13] It is believed that similar prosecutions could be brought for transmission of other sexually-transmitted diseases.

- In the UK, under the Civil Contingencies Act (2004),[14] standard civil liberties may be restricted in an emergency, including one that "threatens serious damage to human welfare". Under this Act "any provision which… is appropriate for the purpose of preventing, controlling or mitigating an aspect or effect of the emergency" and which is "in due proportion to that aspect or effect of the emergency" is permitted. Any provision is, however, required to be compatible with the Human Rights Act (1998).

4 Case studies

There is a wide range of examples that can be used to illustrate ethical issues that arise in the context of designing measures to improve the health of individuals and populations. We hope that the examples we have chosen help to show important differences in the kinds of tensions that can arise. For most case studies, there is some evidence about the determinants of what contributes to (ill) health. At the same time, the examples vary in their relative success of promoting health, the degree of controversy that they generate, and the way in which they may be said to infringe upon civil liberties.

4.1 Case Study - Prevention and control of infectious diseases

Prevention of infectious diseases through vaccination

Vaccinations involve treating a healthy person with an intervention derived from (or similar to) a particular infectious disease agent. The purpose is to induce an immune response in order to gain immunity to the disease in the future. There are two main types of vaccination strategy:

- *Protecting vulnerable subgroups*: Vaccines are given to members of selected population groups, such as those who have a high risk of infection or who are particularly vulnerable to serious consequences arising from the infection. Health professionals, the elderly and disabled people receive annual flu vaccines, and people travelling to areas where specific infectious diseases are common often receive appropriate vaccinations.

- *Population-wide vaccination to achieve 'herd immunity'*: Vaccines are given to a large proportion of the population, usually during childhood. The 'herd

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13 Chalmers J (2006) HIV transmission and the criminal law *AIDS Map*, available at: www.aidsmap.com/en/docs/0507DD86-195A-4C28-9914-CF89AE147AA0.asp, accessed on: 12 Apr 2006.
14 Text available at: www.opsi.gov.uk/acts/acts2004/20040036.htm, accessed on: 12 Apr 2006.

effect' occurs when a sufficiently large proportion of a population is vaccinated, such that the chance of the disease being passed between unvaccinated people is reduced to a minimum. In this way, even unvaccinated individuals are protected from the disease. The level of vaccination cover required for herd immunity varies between 85% and 95%, depending on how infectious the disease is, the effectiveness of the vaccine, and various other factors. Very high vaccination levels may bring about the eradication of the disease.

Facts and figures

- In the UK, vaccination is voluntary, whereas in some countries, certain vaccinations are compulsory. In France and the USA, children are required to be vaccinated against certain infections before they enrol for school. Each State in the USA allows exemptions for medical reasons, and in some States, for reasons of religion or conscience.[15] In France the coverage rates for mandatory vaccinations (83% to 98%) are generally higher than for those that are recommended but not required (26% to 84%).[16]

- In the UK children are routinely vaccinated for diphtheria, tetanus, whopping cough, polio, tuberculosis, some types of meningitis [*Haemophilus influenzae* type b (HiB) and meningitis C], measles, mumps and rubella.

- *Since the introduction of the HiB vaccine in 1992, the number of confirmed cases of Hib meningitis in children under five years of age has decreased by 98%.[17] The number of confirmed cases of meningitis C has fallen by 97% in the under-20s since the MenC vaccine was introduced in 1999.[18]

- Several diseases such as whooping cough and diphtheria that were previously a serious threat to health in the UK have been effectively eradicated by vaccination.

- Global vaccination programmes have eradicated smallpox and should soon achieve the same for polio. According to the World Health Organization

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[15] Wellborn AA (2005) *Mandatory Vaccinations: Precedent and current laws*, available at: www.fas.org/sgp/crs/RS21414.pdf, accessed on: 5 May 2006.

[16] Antona D, Bussière E, Guignon N, Badeyan G and Lévy-Bruhl D (2003) Vaccine coverage of pre-school age children in France in 2000 *Euro Surveill* **8**:139-144; available at: www.eurosurveillance.org/em/v08n06/0806-224.asp, accessed on: 5 May 2006.

* This bullet points differ from that originally published; the text was revised on 9 August 2006 to correct inaccuracies in the previous version.

[17] NHS *Immunisation Information*, available at: www.immunisation.nhs.uk/; and NHS Direct *Epiglottitis*, available at: www.nhsdirect.nhs.uk/en.aspx?articleId=154&sectionId=895, accessed on: 5 Mar 2006.

[18] NHS *Immunisation Information*, available at: www.immunisation.nhs.uk/, accessed on: 5 Mar 2006.

(WHO), vaccination programmes averted over two million deaths worldwide in 2002.[19]

Benefits and risks

When a population-wide vaccination programme begins, the number of people affected by the disease is usually high and the protective benefit of vaccination to the individual is at its greatest. However, once herd immunity is achieved, the benefit of the vaccine to the individual may appear to be limited: the risk of the disease is lower; and the risk of possible side effects associated with the vaccination seems relatively greater.[20] If the community is to continue to benefit from herd immunity, a high proportion of people must still receive the vaccine, but fewer individuals may feel inclined to participate. Refusing to participate in vaccination programmes while still receiving benefits from them through herd immunity is an example of the so-called free-rider problem (see Box 1). Matters are complicated further by the fact that most vaccinations are carried out during childhood: therefore parents decide on behalf of their children whether to receive vaccinations. Parents may not always agree with each other about this decision,[21] and children may disagree with their parents at a later stage for vaccinating them, or failing to do so.

Box 1: The free-rider problem

Free riders are individuals who take more than their fair share of the benefits or do not bear their fair share of the costs of using or benefiting from a resource or institution.[22] Free riding on the provision of collective goods is often considered morally wrong.

In the UK the measles, mumps and rubella (MMR) vaccine has brought these problems into sharp focus. A claim in 1998 that the MMR vaccine was associated with autism and bowel disease[23] led to the coverage falling below the minimum herd immunity level of 90%.[24] The fall in MMR uptake has led to rises

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[19] World Health Organization (2005) *Fact sheet No. 288: Immunization against diseases of public health importance*, available at: www.who.int/mediacentre/factsheets/fs288/en/index.html, accessed on: 5 Apr 2006.

[20] Minor side effects, such as local reactions at a site of injection, are not uncommon. Serious complications occur rarely. For example, severe allergic reactions result at a rate of around one per 100,000 after the first MMR dose and encephalitis occurs in fewer than one in a million doses of the MMR vaccine. See www.healthscotland.com/immunisation/mmr/pubsection.cfm?TxtTCode=1172&TxtSNo=6&NC=2, accessed 16 Jan 2006.

[21] BBC News Online (4 July 2002) *Parents' court battle over MMR jab*; available at: http://news.bbc.co.uk/1/hi/health/2093003.stm, accessed on 5 May 2006.

[22] Cornes R and Sandler T (1996) *The Theory of Externalities, Public Goods and Club Goods*, 2nd Edition (Cambridge: Cambridge University Press).

[23] A widely publicised paper suggesting a link between the MMR vaccine and autism and bowel disease was published in 1998 in *The Lancet* (*Lancet* **351**: 637–41). The journal has since stated that the study was flawed and that it should never have published the paper. In 2004, ten of the 13 authors of the paper issued a retraction. Further studies, in particular a Cochrane systematic review published in 2005, have found insufficient evidence for the claimed link between the MMR vaccine and either autism or inflammatory bowel disease.

[24] In 2004–5 MMR uptake was 81%, with lower rates in some areas. Health and Social Care Information Centre (2005) *NHS Immunisation Statistics, England: 2004-05*, available at: www.dh.gov.uk/assetRoot/04/11/96/50/04119650.pdf, accessed on: 19 Apr 2006.

in the numbers of cases of mumps and measles. In 2004 there were more than 8,000 laboratory-confirmed cases of mumps in England and Wales, compared to less than 200 each year between 1996 and 1998.[25] In Scotland in 2005, there were 2,577 laboratory-confirmed cases of mumps, compared with nine and six cases in 2000 and 2001, respectively.[26]

Questions on the prevention of infectious diseases through vaccination

- Some countries have a compulsory rather than voluntary system of vaccination. On what basis can such policies be justified to achieve herd immunity? Should they be considered in the UK?

- For childhood vaccinations, parents make decisions on behalf of their children. Are there cases where the vaccination of children against the wishes of their parents could be justified? If so, which ones?

Control of infectious diseases

Vaccines are mainly used for preventing infectious diseases. But public health measures are also needed when outbreaks and epidemics of new and existing diseases occur. Such measures may involve controlling non-human sources of infection, such as birds, mosquitoes, or flooding, and reducing the risk of disease transmission by infected humans. In order for measures to be implemented effectively, strategies for infection control often incorporate disease surveillance, testing and monitoring.

Facts and figures

- Globally, infectious diseases currently cause one-third of all deaths, the majority of which are in the developing world. In the event of a new global epidemic, this figure would be expected to rise. In a recent media interview the Chief Medical Officer of the Department of Health, Sir Liam Donaldson, suggested that in the UK alone between 50,000 and 750,000 people could die in an avian flu epidemic.[27]

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[25] Health Protection Agency (2005) *Confirmed Cases of Measles, Mumps & Rubella 1996–2004*, available at: www.hpa.org.uk/infections/topics_az/measles/data_mmr_confirmed.htm, accessed on: 5 Apr 2006. The increase resulted from a decreased vaccine uptake and predominantly affected individuals born in years when the vaccine was not in use (who might have been protected by herd immunity had the uptake rate been sufficiently high).

[26] Health Protection Scotland (2006) Vaccine preventable and childhood disease (Measles, mumps and rubella; Haemophilus influenzaetype b; Whooping cough; Vaccine uptake), available at: www.ewr.hps.scot.nhs.uk/redirect.aspx?id=29348, accessed on: 5 Apr 2006.

[27] BBC News Online (16 Oct 2005) *Bird flu pandemic 'will hit UK'*, available at: http://news.bbc.co.uk/1/hi/uk/4346624.stm. Infectious diseases also have an associated economic cost. The recent outbreak of SARS was estimated by the World Health Organization to have cost $12.3 billion in the Asian countries affected (World Health Organization (2003) *Severe Acute Respiratory Syndrome (SARS)*, available at: www.wpro.who.int/sars/docs/RC54-08.pdf; accessed 5 Apr 2006.

- Historically, global epidemics of infectious diseases have led to very high rates of mortality. For example, one-third of the population of Europe died from the plague in the 14th century. In 1918–19, an influenza epidemic killed around 40 million people worldwide and caused acute illness in 25–30% of the world's population.[28]

- The rise of global travel and trade means that the risk of global epidemics will remain high.

Methods of control

Methods for dealing with non-human sources of infection include, in the case of avian flu, banning live bird imports and culling potentially infected birds. Use of insecticides and insect repellents helps to control malaria, while the effects of water-borne diseases such as cholera can be mitigated by chlorinating water and raising awareness of risks related to infected flood water.

Although methods for preventing infected people from transmitting an infectious disease vary, there will usually be implications for individuals in the community and health professionals serving them. Some public health measures could have an impact on livelihood and civil liberties. For example:

- People throughout the population group may be required to comply with travel restrictions, increased hygiene measures and mandatory disease testing.

- Those who have been in high risk areas may be required to go into quarantine, or to receive mandatory vaccinations and/or prophylactic treatment.[29]

- Friends and relatives of those who are infected may be prevented from visiting them. This may cause difficulties particularly if the person infected is a child.

- Health professionals dealing with infected people may be required to notify the authorities of each individual case.

Questions on the control of infectious disease

- Control measures for specific diseases depend on how infectious a disease is and how it is transmitted. For infections that are directly transmitted from person to person, what justification would be required to render interventions such as forced quarantine, which helped to

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[28] Taubenberger JK, Reid AH, Janczewski TA and Fanning TG (2001) Integrating historical, clinical and molecular genetic data in order to explain the origin and virulence of the 1918 Spanish influenza virus *Philos Trans R Soc Lond B Biol Sci* **356**: 1829–1839.

[29] In April 2005, pandemic influenza was added via a presidential order to the US Government's list of communicable diseases for which quarantine is authorised, meaning, for example, that infected passengers arriving in the country could be isolated and detained.

control the outbreak of Severe Acute Respiratory Syndrome (SARS) in Asia, acceptable in countries such as the UK where such measures may be considered to infringe civil liberties? If you think such measures cannot be justified, what are the principal reasons?

- In general, the earlier that an outbreak of disease is detected, the easier it will be to control. What would be suitable criteria to determine in what circumstances, and to what extent, the state should provide more resources to develop methods of preventing outbreaks of serious epidemics in other countries?

- Travel and trade are key factors in the spread of infectious diseases. Global travel and exchange of goods are increasing rapidly. Each day, two million people travel across borders, including around one million per week between developing and developed countries. Disease-causing organisms and vectors can therefore spread quickly around the world.[30] Are new measures needed to monitor and control the spread of infectious diseases? If so, what would be promising strategies?

- Under which circumstances, if any, would mandatory testing for highly infectious and life-threatening diseases such as tuberculosis or HIV/AIDS be justified?

4.2 Case Study - Obesity

Food is a necessity of life. However, the intake of more calories than are expended in energy over a sustained period of time leads to overweight and obesity (see Box 2).[31] The number of obese people in England has trebled in the last 20 years,[32] and Scotland and England have two of the highest obesity rates in Europe.[33]

Attention has focused on the need to change eating habits in order to reduce energy intake. However, recent increases in the prevalence of obesity cannot be explained by excessive food intake alone. Average daily calorific intake from foods has been falling steadily in recent decades. Data from 1986/7 show an average daily intake for men of 10.30MJ, and 7.05MJ for women, while similar data from 2000/1 report a decrease to 9.72MJ and 6.87MJ, respectively.[34] The overall increase in overweight and obesity despite declining energy intake,

[30] USA National Intelligence Council (2000) *The Global Infectious Disease Threat and Its Implications for the United States – Factors affecting growth and spread: International trade and commerce*, available at: www.cia.gov/cia/reports/nie/report/nie99-17d.html, accessed on: 19 Apr 2006.

[31] A small number of people have a genetic susceptibility to obesity.

[32] National Audit Office (2001) *Tackling Obesity in England* (London: The Stationery Office).

[33] International Obesity Taskforce *European Obesity Rates*, available at: www.iotf.org/media/europrev.htm, accessed on: 4 Apr 2006.

[34] *National Diet & Nutrition Survey: Adults aged 19 to 64, Volume 5 2004* (London: The Stationery Office), available at: www.food.gov.uk/multimedia/pdfs/ndns5full.pdf, accessed on: 13 Apr 2006.

suggests that this can, to some extent, be correlated to an increase in sedentary occupations, and living environments, especially in urban cities. It is therefore relevant to consider ways of achieving higher levels of energy expenditure.

In the UK, three Suffolk Primary Care Trusts issued guidance in 2005 that restricted the provision of hip and knee replacement surgery for obese people. Although the issuing of the guidance was "stimulated by pressing financial problems," it was also motivated by the intention to "reduce the risks and improve outcomes for surgery". The guidance dictated that such surgery should not be performed unless "the patient has a body mass index below 30 and conservative means have failed to alleviate the patient's pain and disability" and that "pain and disability should be sufficiently significant to interfere with the patient's daily life and/or ability to sleep".[35]

Box 2: Obesity and body mass index

Obesity is associated with an increased risk of diabetes, osteoarthritis and heart disease. Most obese people will develop physical health problems by the age of 40. They may also suffer psychologically and socially.

Obesity is most commonly defined in terms of the body mass index (BMI), which is calculated as follows:

BMI = weight in kilogrammes / (height in metres)^2

A BMI of 18.5 to 25 is considered to be healthy. According to WHO definitions, someone with a BMI higher than 25 is defined as 'overweight', higher than 30 is defined as 'obese' and above 40 is defined as 'morbidly obese'.

BMI is not always a helpful indicator of obesity. For example ethnic groups may differ in their build. In addition people with a lot of muscle tend to have a high BMI even though they may not be at increased risk of disease, because muscle tissue is relatively dense.

Alternative measures, including body fat percentages and waist-to-hip ratios, also have limitations.

Facts and figures

▪ In 2004, 23.6% of men and 23.8% of women in England were classified as obese.[36] In Scotland in 2003, the equivalent figures were 24.0% and 29.4%, respectively.[37]

▪ Of children aged ten and under, the proportion classified as obese in 2003 was 13.7%, up from 9.6% in 1995, and the proportion classified as either

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[35] Guidance available at:
www.suffolkeast.nhs.uk/17513/swb__documents.asp?site_id=147&id=17513&doc=/175 13/211105%20CLINICIANS%20AGREE%20OPERATION%20THRESHOLDS.htm, accessed 5 Apr 2006.

[36] Health and Social Care Information Centre (2005) *Health survey for England 2004 press release*, available at: www.ic.nhs.uk/news/press/pr161205a, accessed on: 6 Mar 2006.

[37] Scottish Health Survey 2003, available at:
www.scotland.gov.uk/Publications/2005/12/02160336/03417, accessed on: 4 Apr 2006.

overweight or obese was 27.7%, up from 22.7% in 1995.[38] If these trends continue, estimates suggest that at least one fifth of boys and one third of girls will be obese by 2020.

- In July 2004, the Department of Health, the Department for Education and Skills and the Department for Culture, Media and Sport agreed a target of halting rising rates of obesity in children under the age of 11 by 2010. However, a report published in February 2006 by several watchdogs questioned whether the target could be achieved, noting that there was a lack of guidance for those involved (the NHS, the voluntary sector and schools).[39]

- The prevalence of obesity increases with age, and is higher in men and in those from lower socio-economic groups and from Black Caribbean and Pakistani ethnic groups.[40]

- In the UK, it is estimated that over 30,000 deaths each year can be attributed to obesity. Lifespan is thought to be shortened by an average of nine years in people with obesity.[41]

- Total costs of obesity to the NHS in 2003, in terms of admissions, appointments and prescriptions, were estimated to be around £1,000 million; this includes the costs of treating obesity and its consequences.[42] The additional annual cost to the economy as a whole, has been estimated at £2,300–2,600 million, considering loss of output resulting from sickness, absence from work and death of workers.

- On average children in the UK are consuming more than the recommended daily amounts of saturated fat, processed sugars and salt, and are not consuming enough fruit and vegetables.[43]

- Over the last 15 years there has been an increase in the use of cars and a decrease in walking or cycling to school or work. The proportion of children aged 5–10 taken to school by car increased from 30% in 1992/1994 to 40% in 2002/2003. For those aged 11–16, the proportion increased from 16% to 23% over the same period.[44]

- In 2002 41% of adults surveyed in Great Britain had not participated in a sport, game or physical activity in the four weeks prior to the interview and

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[38] National Audit Office, Healthcare Commission & Audit Commission (2006) *Tackling Childhood Obesity – First Steps* (Norwich: The Stationery Office), available at: www.healthcarecommission.org.uk/assetRoot/04/02/44/68/04024468.pdf, accessed on: 4 Apr 2006.

[39] *Ibid.*

[40] National Audit Office (2001) *Tackling Obesity in England* (London: The Stationery Office).

[41] *Ibid.*

[42] National Audit Office, Healthcare Commission & Audit Commission (2006) *Tackling Childhood Obesity – First Steps* (Norwich: The Stationery Office), available at: www.healthcarecommission.org.uk/assetRoot/04/02/44/68/04024468.pdf, accessed on: 4 Apr 2006.

[43] Food Ethics Council *Children's Diets*, available at: http://foodethicscouncil.org/ourwork/childrensdiets, accessed on: 4 Apr 2006.

[44] Office for National Statistics (2006) *Focus on Health* (London: HMSO), available at: www.statistics.gov.uk/downloads/theme_compendia/foh2005/health_summary.pdf, accessed on: 4 Apr 2006.

around a quarter had not participated in such activities in the previous twelve months.[45] The levels of activity in leisure time decline with increasing age and lower socio-economic status. However, as people in lower socio-economic groups often have higher rates of physical activity from paid and domestic work, the total amount of physical activity among those of working age does not show a sharp social gradient.

Public health measures

Public health measures targeting obesity can involve either treatment or prevention of obesity, or both. Measures may be aimed at the population level or at particular individuals, or at other stakeholders concerned with diet or physical activity. Examples include the following[46]:

- education and advertising campaigns aimed at improving diet;

- promoting active transport and more active recreational activities;

- promoting 'healthy schools', including healthy travel (such as persuading parents not to drive their children to school), healthy eating, sport and physical recreation;

- training nurses and other relevant professionals to provide advice on weight control, diet, and physical activity;

- weight monitoring for obese and/or at-risk individuals;

- 'exercise on prescription' initiatives that allow general practitioners to refer patients for free or subsidised exercise programmes supervised by a qualified trainer;

- provision of slimming groups and exercise programmes;

- provision of specialist obesity clinics for assessment and appropriate treatment;

- regulation of the food industry and the setting of standards for food and labelling.

Some have questioned the effectiveness of programmes targeting obesity; indeed, one recent review found "insufficient evidence of effective programmes that have reduced obesity".[47]

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[45] Office for National Statistics (2006) *Social Trends No. 36* (2006 Edition) (London: HMSO), available at: www.statistics.gov.uk/downloads/theme_social/Social_Trends36/Social_Trends_36.pdf, accessed on: 4 Apr 2006.

[46] National Audit Office (2001) *Tackling Obesity in England* (London: The Stationery Office).

[47] Foresight (2006) *Trends and Drivers of Obesity: A literature review for the Foresight project on obesity*, available at: www.foresight.gov.uk/Obesity/Reports/Literature_Review/Literature_review.htm, accessed on: 12 Apr 2006.

Questions on obesity

- Food is closely linked with individual satisfaction and lifestyle. This means that any strategy that seeks to change people's behaviour is likely to be perceived as particularly intrusive. How should this sensitivity be considered in options for policy that seek to achieve a reduction in obesity?

- While there is clear evidence about the extent and scale of obesity, there is far less clarity about what measures should be adopted by the government and other stakeholders to prevent it. In view of this uncertainty, what would be suitable criteria for developing appropriate policy?

- What are the appropriate roles and obligations of parents, the food industry, schools, school-food providers and the government in tackling the problem of childhood obesity?

- Is it acceptable to make the provision of NHS services dependent on whether a person is obese or not, as in the Suffolk example? If so, what criteria should govern whether or not interventions are provided, and should similar criteria be developed for other lifestyle-related health problems that are significantly under the control of individuals?

4.3 Case Study - Smoking

Smoking as a public health risk

Issues for public health are also raised by products that, in dietary terms, are completely unnecessary. These include alcohol, tobacco and a range of recreational drugs that have been classified as illegal. The health risks of smoking have been known for several decades and are well documented. Smoking is associated with increased morbidity and mortality and is linked to more than 20 different causes of death, including certain cancers, respiratory diseases and circulatory diseases. Some of the health effects are experienced not only by smokers themselves, but also, to a lesser extent, by those around them who breathe in their smoke (passive smoking).

Facts and figures

- In 2004, around 23% of both men and women aged 16 and over in the UK were regular smokers.[48] These levels have declined from the highest

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[48] Lader D and Goddard E (2005) *Smoking-related Behaviour and Attitudes, 2004* (London: Office for National Statistics), available at: www.statistics.gov.uk/downloads/theme_health/Smoking2004_V2.pdf, accessed on: 27 Apr 2006.

recorded prevalences of around 80% for men, during the late 1940s and 1950s, and around 45% for women, during the 1960s.[49]

- Since the early 1990s, the highest prevalence of smoking has been seen in the 20–24 age group.

- Data for 12–15 year olds from 2000 show that 10% of boys and 14% of girls in England, and 9% of boys and 15% of girls in Scotland, were regular smokers.[50]

- An estimate of dependence on cigarettes can be obtained from statistics on when a smoker has their first cigarette each day. In 2004, 17% of smokers had their first cigarette within five minutes of waking, indicating high dependence.[51]

- Smoking is most common in the manual occupations sector, in which 29% of people smoke regularly, and least common in the managerial and professional sector, in which 17% of people smoke regularly.

- Each year, over 120,000 deaths in the UK and more than 225,000 hospital admissions can be attributed to smoking.

- Smoking is estimated to cost the NHS up to £1,700 million each year in terms of GP visits, prescriptions, treatment and operations.[52]

- There are also costs arising from those incapacitated by smoking-related diseases, and costs of fires caused by careless smokers.[53]

- In the case of passive smoking, the effects are more difficult to quantify[54]:

  - It is thought that several hundred people each year die from lung cancer as a result of passive smoking, and slightly more from heart disease.

  - The most vulnerable group exposed to other people's smoke is children. It has been estimated that 17,000 hospital admissions each year in children under five years of age are caused by their parents' smoking. Lung illnesses, glue ear, cot death and asthma are all more likely to occur in children whose parents smoke than in those whose parents do not.

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[49] Tobacco Advisory Group of the Royal College of Physicians (2000) *Nicotine Addiction in Britain* (London: Royal College of Physicians), available at: www.rcplondon.ac.uk/pubs/books/nicotine/, accessed on: 27 Apr 2006.

[50] Boreham R and Shaw A (Editors) (2001) Comparison of smoking, drinking and drug use in Scotland and England, In *Smoking, Drinking & Drug Use Among Young People in Scotland in 2000* (Edinburgh: The Stationery Office).

[51] Goddard E and Green H (2005) *General Household Survey: Smoking and drinking in adults, 2004* (London: Office for National Statistics), available at: www.statistics.gov.uk/downloads/theme_compendia/GHS2004_Smoking%20_and_Drinking_ Report.pdf, accessed on: 6 Mar 2006.

[52] Department of Health (1998) *Smoking Kills: A white paper on tobacco* (London: The Stationery Office), available at: www.archive.official-documents.co.uk/document/cm41/4177/4177.htm, accessed on: 9 May 2006.

[53] *Ibid.*

[54] *Ibid*.

- Women who smoke during pregnancy may harm their unborn child. The risks include reduced birth weight and certain health problems. Carcinogens (cancer-causing substances) have also been found to pass to the unborn child. In 2000 19% of women smoked throughout pregnancy.[55]

- In the 2004–2005 financial year, the UK Treasury earned £8,103 million in revenue from tobacco, excluding VAT.[56] This constitutes around 2% of the total income from taxes, duties and other revenue in that year.

Public health measures

There are two main strategies for addressing public health issues relating to smoking, based on somewhat different ethical principles:

- Strategies that target smokers or potential smokers include educational campaigns and financial disincentives. Regulations can also be put into place that prohibit smoking in general, or in particular places. The aim is to discourage individuals from pursuing activities that may harm their health and/or impose costs on healthcare systems.

- Strategies that target passive smoking aim to reduce exposure of non-smokers to other people's smoke. The rationale here is that although smokers might be free to harm their own health, this freedom does not extend to harming others. Some measures pursue both strategies.

Measures that have been implemented in the UK include: increased taxes on cigarettes; education and advertising programmes warning of the dangers of smoking; restrictions on advertising and sponsorship by the tobacco industry; health warnings on cigarette packets; and greater provision and promotion of programmes to help people to stop smoking. While it is attractive to assume causal correlations between decreasing numbers of smokers and the individual or cumulative effect of these measures, such attributions are far from straightforward.

Measures to curb smoking have often been controversial. Increased taxes have been criticised because the majority of the people who smoke are in lower income groups and/or receiving benefits. Concern has also arisen over whether the large financial benefit gained by governments on taxes from cigarettes may lead to a half-hearted stance by the state against smoking.

There are several consumer groups on both sides of the debate who actively campaign on issues relating to smoking, in particular Action on Smoking and Health (ASH) and the Freedom Organisation for the Right to Enjoy Smoking Tobacco (FOREST). The tobacco industry is also a powerful contributor to the debate and actively lobbies against anti-smoking legislation.

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[55] Department of Health (2004) *Choosing Health: Making healthy choices easier* (UK: HMSO).

[56] HM Revenue & Customs (2005) *Annual Report 2004-05 and Autumn Performance Report 2005* (Norwich: The Stationery Office). Available at: www.official-documents.co.uk/document/cm66/6691/6691.pdf, accessed on: 13 Apr 2006.

In 2004, Ireland introduced a smoking ban in enclosed workplaces, including restaurants and pubs. Similar bans have been implemented in Italy and Norway. In the UK, MPs debated the provisions on smoking in the Health Bill in February 2006 and voted by a margin of 200 in favour of imposing a ban on smoking in enclosed public spaces, including all pubs and private members' clubs in England.[57] A total ban on smoking in enclosed public places was introduced in Scotland in March 2006, and Northern Ireland is expected to follow suit in April 2007. The Health Bill gives the Welsh Assembly the right to decide whether to implement a ban it has already approved in principle.

Questions on smoking

- The effects of smoking on health have been known for a very long time. Comprehensive measures by governments to prevent harm to the population are relatively recent. In your view, what are the reasons for this delayed response? Are there any lessons that can be learned from other countries, or from strategies pursued in other areas of public health?

- What are the responsibilities of companies that make or sell products containing hazardous substances, such as nicotine, that can be addictive? Should they be prosecuted for damaging public health or required to contribute to costs for treatments?

- Should smokers be entitled to higher than average resources from the public healthcare system, or should they be asked for increased contributions? Would similar charges be justified for other groups of people who deliberately or negligently increase their chances of requiring public health resources, such as people engaging in adventure sports?

- Smokers argue that they choose to smoke. What rights does the state have to impose sanctions to prevent them from smoking? Does the state have the right to prevent the sale of tobacco, which is known to be addictive and highly dangerous? How vigorously is it reasonable for the state to act to prevent children and teenagers from smoking?

4.4 Case Study - Alcohol

The consumption of alcohol is, in dietary terms, unnecessary. Evidence about the harmful effects of excessive use is well documented. While the number of smokers has reduced substantially in recent decades, alcohol consumption has

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[57] Health Bill available at:
www.publications.parliament.uk/pa/cm200506/cmbills/069/2006069.pdf; accessed on: 6 Mar 2006. The Health Bill also addresses the use of controlled drugs in the NHS (such as diamorphine, a 'medical heroin'), prevention and control of infectious diseases in healthcare settings and the role of pharmacists in the provision of healthcare.

more than doubled since the 1930s, and the burden of disease is of a similar magnitude to smoking.[58]

While drinking is generally widespread, data for England in 2002 and Scotland in 2003 show that individuals in the highest socio-economic classification were the most likely to have exceeded the national guidelines for the safe consumption of alcohol.[59] Although almost every system in the human body can be damaged by excessive consumption, particular harm is often caused to the liver and pancreas. Drinking can also have health effects on others, including children and other family members, and road users. The extent of death and harm caused by drink-related violence and road traffic offences is far greater than the negative effects of passive smoking.[60] In addition, there can be social, psychological and economic harms. However, the evidence that 'moderate' drinking is harmful is equivocal. Both tobacco and alcohol are produced and marketed by powerful industries.

While few people believe that cigarettes have beneficial health effects, there are more mixed messages for alcohol. These range from observations that it makes socialising easier or more enjoyable, to the health benefits claimed for regular consumption of alcohol in moderate quantities.[61] Despite clear evidence that alcohol is addictive, people frequently underestimate the aggregate negative effects of alcohol.[62]

A somewhat haphazard strategy by the government to prevent harm caused by excessive consumption may have indirectly contributed to a perception that substances which are not prohibited by law are not 'really' harmful to people. In addition, while the UK government has recently agreed to put in place legislation to curb the effects of tobacco, some would argue that disproportionately less effort is put into tackling the consequences of excessive alcohol consumption.

Facts and figures

- It is likely that the available statistics for alcohol consumption underestimate the true scale of the situation.[63] The General Household Survey in 2004 found that 65% of people aged over 16 in England had drunk alcohol in the preceding week, of whom nearly half had drunk more

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58 Rodgers A, Ezzati M, Vander Hoorn S *et al.* (2004) Distribution of major health risks: findings from the Global Burden of Disease study *PLoS Med* **1**: e27.

59 Office for National Statistics and Department of Health (2004) *Statistics on Alcohol: England, 2004*, available at: www.dh.gov.uk/assetRoot/04/09/53/20/04095320.pdf, accessed on: 12 Apr 2006; Bromley C, Sproston K & Shelton N (Editors) (2005) *The 2003 Scottish Health Survey* (Edinburgh: The Stationery Office), available at: www.scotland.gov.uk/Publications/2005/12/02160336/03417, accessed on: 12 Apr 2006.

60 Royal College of Physicians (2001) *Alcohol – can the NHS afford it? Recommendations for a coherent alcohol strategy for hospitals* (London: Royal College of Physicans). Available at: www.rcplondon.ac.uk/pubs/books/ActNHSai/alcoholNHS.pdf, accessed on: 6 Mar 2006.

61 Health benefits of moderate alcohol consumption were first reported in the 1970s. Reported benefits include protecting against heart disease and some cancers.

62 Rodgers A, Ezzati M, Vander Hoorn S *et al.* (2004) Distribution of major health risks: findings from the Global Burden of Disease study *PLoS Med* **1**: e27.

63 Royal College of Physicians (2001) *Alcohol – can the NHS afford it? Recommendations for a coherent alcohol strategy for hospitals* (London: Royal College of Physicans). Available at: www.rcplondon.ac.uk/pubs/books/ActNHSai/alcoholNHS.pdf, accessed on: 6 Mar 2006.

than the recommended daily limit[64] on one or more days that week.[65] This survey showed that men drank more often than women, and that men were more likely to exceed the daily benchmark quantities of alcohol. Young people were found to drink less frequently but those aged 16–24 were more likely than any other age group to have exceeded the daily recommended limits in the previous week.

- In England each year, alcohol misuse is thought to be responsible for over 10% of all attendances at Accident and Emergency Departments and somewhere between 5,000 and 40,000 deaths.[66]

- Estimates for Scotland suggest that the cost of alcohol misuse on Scottish society in 2002/3 was £1,130 million.[67] This includes costs of £110.5 million to the NHS, £96.7 million to social services, £276.7 million to criminal justice and emergency services, £417.8 million in wider economic costs (such as absenteeism, health problems and deaths among the working-age population) and £223.8 million as the human cost of premature deaths among the non-working population.

- Household expenditure on alcoholic drinks in the UK in 2004/05 was £40,975 million, which accounted for 5.6% of total household expenditure. In the same year, the UK Government received nearly £14,000 million in taxes (excise duty and VAT) from the sale of alcoholic drinks.[68]

Public health measures

Various measures have been implemented in the UK to discourage excessive drinking, including taxation, educational campaigns and restrictions on availability (to certain hours of the day, certain retailers/premises, and individuals over a certain age). There are also measures aimed at dealing with alcohol-related behaviour, for example drink-drive limits and punishments for drunk and disorderly behaviour.

Changes in the law allowing extended opening hours for premises selling alcohol in England and Wales that came into effect in November 2005 were particularly controversial. The Government introduced these rules in the hope that crime and anti-social behaviour would be reduced. However, some medical bodies,

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[64] Daily benchmark limits are four units for men and three units for women, where a 25ml measure of spirits is considered to be one unit, a standard glass of wine is two units and a pint of strong lager is three units.

[65] Goddard E and Green H (2005) *General Household Survey: Smoking and drinking in adults, 2004* (London: Office for National Statistics). Available at: www.statistics.gov.uk/downloads/theme_compendia/GHS2004_Smoking%20_and_Drinking_ Report.pdf, accessed on: 6 Mar 2006. The Scottish Health Survey 2003 found that 27% of men and 14% of women typically drank more per week than the recommended limits. cottish Health Survey 2003, available at: www.scotland.gov.uk/Publications/2005/12/02160336/03417, accessed on: 4 Apr 2006

[66] Royal College of Physicians (2001) *Alcohol – can the NHS afford it? Recommendations for a coherent alcohol strategy for hospitals* (London: Royal College of Physicans). Available at: www.rcplondon.ac.uk/pubs/books/ActNHSai/alcoholNHS.pdf; accessed on: 6 Mar 2006.

[67] Scottish Health Survey 2003, available at: www.scotland.gov.uk/Publications/2005/12/02160336/03417, accessed on: 4 Apr 2006.

[68] Institute of Alcohol Studies, *Alcohol: Tax, price and public health*, www.ias.org.uk/factsheets/alcohol-tax.pdf; accessed on: 8 Mar 2006.

including the Royal College of Physicians and the Academy of Medical Sciences, expressed concern that the overall consumption of alcohol would increase and that this would have adverse health and other implications.[69] Early data indicating that the change led to a reduction in violent crime has been criticised, and it has been suggested that longer-term data would be more reliable for determining the effects of the change.[70]

Questions on alcohol

- The effects of excessive consumption of alcohol on the health of individuals and society have been known for a very long time. It can be argued that in view of the significant harm to individuals and society, comprehensive measures by governments to prevent harm are lagging behind those for tobacco. In your view, what are the reasons for this?

- In view of the impact of alcohol on individuals and society, what are the roles and responsibilities of agents other than the government to limit consumption? Are there different responsibilities for producers and, for example, retailers? If so, which?

4.5 Case Study - Supplementation of food and water

The quality of food crops and water is highly variable and often reflects differences in the environment, such as soil composition or bedrock. These differences can have advantages and disadvantages. Seeking to minimise disadvantages, water companies routinely treat water to reduce the levels of lead, pesticides and nitrates, where appropriate, and add chlorine to kill bacteria. All water is therefore broadly standardised. Similar treatments are used for some foods and drinks.

While few people object to the treatment of food and drink to ensure they are not harmful, there is less agreement about adding substances with the aim of making them more nutritious or otherwise beneficial. In the UK a number of supplementation programmes are in place for various foodstuffs as means of improving the nutritional status and/or health of a population or sub-population. These programmes fall into three main categories:

- **_Restoration of nutrients lost during food processing_**; iron, thiamine and niacin are added back into white and brown flour because they are removed with the bran during milling.

[69] Academy of Medical Sciences (2004) *Calling Time: The nation's drinking as a major health problem* (London: Academy of Medical Sciences); Royal College of Physicians *College Statement: Changes to licensing laws*, available at: www.rcplondon.ac.uk/college/statements/alcohol_keyissues.asp, accessed on: 5 Apr 2006.
[70] BBC News article (8 Feb 2006) Drink law success claim attacked. Available at: http://news.bbc.co.uk/1/hi/uk/4695224.stm, accessed on: 5 Apr 2006.

- ***Addition of nutrients that are found in products for which the food is a substitute***; vitamins A and D are added to margarine at similar levels to those found in butter, and calcium is added to some substitutes for cow's milk.

- ***Addition of nutrients that are not necessarily present in the food before processing or in other substitute foods***; examples include the addition of vitamins to breakfast cereals and addition of calcium to some types of flour. The UK's Scientific Advisory Committee on Nutrition has recently recommended adding folic acid to flour, with the aim of preventing certain serious birth defects. [71]

Producers are required by law to fortify some foods, such as flour, while in others they do so voluntarily, as in the case of breakfast cereals.[72]

The feature that all of these methods have in common is that they imply a constraint of individual choice in order to promote public health. Many people are worried about this restriction and view supplementation as a form of paternalistic 'mass-medication', where external agencies decide what is best for individual people. But others equate failure to provide enrichments with the failure to remove harmful substances. They may also argue that the option not to enrich is just as paternalistic as the option to do so, as it is also based on a conception of what is best for people, in this case, to care for themselves. Proponents of fortification also point to the fact that those who stand to benefit most are likely to be children, whose interests should be promoted even if parents fail to do so.

Facts and figures

- Recent data suggest that in Britain fortified breakfast cereals contribute 20%, 29% and 23% of the average iron intake of adults, boys and girls, respectively, and 13%, 24% and 20%, respectively, of the average vitamin D intake.[73]

- Cereals typically provide around 30% of calcium intake in adults, part of which results from fortification.[74]

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[71] Insufficient levels of folic acid uptake during pregnancy can lead to a number of neural tube defects in newborns. Folic acid supplements are recommended during pregnancy, but not all women take them, and as more than 50% of pregnancies are unplanned, many women may not start taking folic acid sufficiently early. However, there are also concerns that enrichments of folic acid may mask vitamin B12 deficiencies in the elderly. Folic acid fortification of flour is already carried out in the US, Canada and Chile. Scientific Advisory Committee on Nutrition (2006) *Folate and Disease Prevention – Draft*; available at: www.sacn.gov.uk/#, accessed on: 4 Apr 2006.

[72] British Nutrition Foundation (2004) *Fortification*; available at: www.nutrition.org.uk/home.asp?siteId=43&sectionId=434&subSectionId=323&parentSection=299&which=1, accessed on 4 May 2006.

[73] *Ibid.*

[74] British Nutrition Foundation (2004) *Dietary Calcium and Health*, available at: www.nutrition.org.uk/home.asp?siteId=43&sectionId=1252&subSectionId=341&parentSection=303&which=5; accessed on 4 May 2006.

- At present 10% of the UK population receive a water supply supplemented with fluoride to a level considered to be optimal for improving dental health safely and effectively (1ppm).[75]

- The decision to fluoridate water in a given area will be made, depending on the location, by the Welsh National Assembly, the Scottish Parliament, the Northern Ireland Department of the Environment or the relevant local health authority in England, usually following a consultation exercise.

- At present fluoridation of water supplies does not occur in any parts of Wales, Scotland or Northern Ireland. In England, there are ten Strategic Health Authorities (out of 28) whose populations wholly or partly receive water that has been fluoridated. The West Midlands and the North East of England are the areas with the largest numbers of people receiving a fluoridated water supply.[76]

- Water fluoridation is carried out worldwide, with a total of around 400 million people receiving enriched water.[77] Countries with fluoridation schemes include Ireland, Australia, the USA, Brazil, Singapore and South Korea. In some other countries, including France, Austria and Germany, table salt is supplemented with fluoride.

- Numerous national and international health institutions, including the WHO, have endorsed the practice of water fluoridation.

Benefits and risks of water fluoridation

The supplementation of water has been particularly controversial. Fluoride is naturally present in water supplies at varying concentrations in different regions. In the 1940s, researchers found that the rates of dental problems were much lower in children living in areas with a natural water fluoride concentration of about one part per million (ppm) than those living in areas with lower concentrations (0.1ppm or less).[78] Since then, schemes to artificially increase fluoride levels in water supplies have been introduced in some areas where the natural fluoride level is low, with the aim of improving dental health at the community level.

*The benefits of fluoridation are believed to be significant. However, in 2000, the Centre for Reviews and Dissemination at the University of York published a systematic review of relevant studies,[79] commissioned by the Department of

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[75] Jones S and Lennon K (2004) *One in a Million: The facts about water fluoridation, 2nd Edition* (London: The British Fluoridation Society, The UK Public Health Association, The British Dental Association and The Faculty of Public Health).

[76] *Ibid.*

[77] *Ibid.*

[78] Dean HT, Arnold FA and Elvove E (1942) Domestic water and dental caries, V, additional studies of the relation of fluoride domestic waters to dental caries experience in 4425 white children aged 12 to 14 years of 13 cities in 4 states *Publ Health Rep* **57**: 1155–79.

* This paragraph and the subsequent bullet points differ from those originally published; the text was revised on 9 August 2006 to correct inaccuracies in the previous version and has been reviewed by the Centre for Reviews and Dissemination.

[79] McDonagh M, Whiting P, Bradley M *et al.* (2000) *A Systematic Review of Public Water Fluoridation* (York: NHS Centre for Reviews and Dissemination).

Health, which found that 'little high quality research has been undertaken'. The review concluded that:

- 'The best available evidence suggests that fluoridation of drinking water does reduce caries prevalence'. However, the degree to which it is reduced 'is not clear from the data' (results of individual studies ranged from a substantial reduction to a slight increase in prevalence).

- 'The research evidence is of insufficient quality to allow confident statements about... whether there is an impact on social inequalities'. Although 'the available evidence... appears to suggest a benefit in reducing the differences in the severity of tooth decay, ...the quality of evidence is low and based on a small number of studies'.

Possible risks associated with fluoridation of the water supply have also been investigated in this and other reports.

- *Fluorosis is one side-effect known to be associated with fluoride ingestion. The above review found that fluoridation of drinking water supplies appears to lead to an increase in the prevalence of fluorosis.[80] Fluorosis is characterised by a mottled effect on the teeth that results from defective calcification of the dental enamel during tooth formation. Although fluorosis is not generally a serious problem, parents are advised to reduce the risk in young children, whose enamel is still forming, by avoiding excessive fluoride intake, for example by using toothpaste with a low level of fluoride or only small quantities of fluoridated toothpaste.

- A number of other adverse health effects of fluoridation have been suggested, including bone fractures and cancer. However, for each of these the report found either no clear association or insufficient evidence to establish whether there could be an association.[81]

Questions on the supplementation of food and water

- Fortification of some foodstuffs such as flour, margarine and breakfast cereals has been accepted for some time. Why has the fluoridation of water met with more resistance? What are the reasons behind international differences in the acceptance of fluoridation of water? What criteria are there that determine acceptance?

- Which democratic instruments (for example, decision by Parliament or local authority, consultations or referenda) should be required to justify the carrying out of measures such as fluoridation?

- Achieving population benefits of fluoridation means restricting choice of individuals. Children benefit the most from fluoridation. However, as

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* This bullet point differs from that originally published; the text was revised on 9 August 2006 to correct inaccuracies in the previous version and has been reviewed by the Centre for Reviews and Dissemination.

80 McDonagh M, Whiting P, Bradley M *et al.* (2000) *A Systematic Review of Public Water Fluoridation* (York: NHS Centre for Reviews and Dissemination).

81 *Ibid.*

> with vaccinations, adults, rather than children, are making decisions about whether or not to receive the intervention. Under what circumstances is it acceptable to restrict the choice of individuals in order to protect the health of children?

5 Ethical issues

Many ethical questions about public health relate to a more general challenge at the heart of political philosophy. This concerns the justification of a political framework that establishes conditions, freedoms and responsibilities which allow individuals to adopt lifestyles as they please, while recognising that in doing so they should not infringe unreasonably upon the freedoms of others to do the same. In public health, such frameworks usually also seek to address the role of third parties, such as providers of healthcare and insurance, the media, or industries.

Views differ about what might be the appropriate role of the state. At one end of the spectrum, commentators argue for what has been called the 'minimal state'.[82] On this view, the state's primary function is to enforce basic rights such as protecting its citizens against violence or theft. However, its role is not to find solutions for existing inequalities, or to introduce taxes that may be used to support the least well off, or fund a healthcare system. According to this concept, each individual should be left to decide whether or not they want to live a healthy or unhealthy life, and make their own arrangements for doing so, without relying on the support of others.

At the other end of the spectrum is the concept of the comprehensive welfare state. This is often based on the belief that each person should have an equal right to the most extensive system of equal basic liberties that can be provided in a sustainable manner to all. In particular, the state should protect the interests of those who are not in a position to protect themselves, which may include the provision of a public healthcare system that treats people simply on the basis of their needs.[83]

A number of different ethical principles such as 'solidarity' and 'autonomy' have been identified as playing a role in frameworks that establish the role of the state, both in relation to approaches that were outlined above and to those that occupy other positions along the spectrum. Depending on which view is taken, different weight is given to each principle. Such principles are not only relevant to the state, but also in relation to thinking about obligations and entitlements of others who may be involved in conflicts about public health: individuals, families and family members, industries, or NGOs.

For the purpose of this consultation paper, we outline below six important principles (autonomy, solidarity, fair reciprocity, the harm principle, consent and trust) that can help us identify:

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[82] Nozick R (1974) *Anarchy, State and Utopia* (Oxford: Blackwell).
[83] Goodin RE (1988) *Reasons for Welfare:The political theory of the welfare state* (Princeton: Princeton University Press); Rawls J (1973) *A Theory of Justice* (London: Oxford University Press).

(a) what should be the **guiding principles concerning the way we behave towards others whose health is affected by our decisions** (regardless of whether we are for example, policy makers, food producers, or parents); and

(b) what are **ethically important factors in negotiating public health policies or measures** (regardless of whether these are laws or, for example, informal decisions taken within families).

Guiding principles concerning the way we behave towards to others

Whatever our role in society, we need to consider the principles that guide our actions towards others whose health may be affected by our decisions. Four important concepts outlined below are: respect for autonomy, solidarity, fair reciprocity and the so-called 'harm principle'.

Autonomy

Autonomy literally means self-governance. The concept focuses attention on a number of properties that humans have as moral agents. These include the capacity to make independent decisions about one's lifestyle, and having the means required to pursue it. It also includes the ability to accept the consequences of making some decisions rather than others. In the context of public health, these properties may be used to argue that it is wrong for other parties to interfere with autonomous decisions, for example by using advertising campaigns to make people desire things that, in the long term, are bad for them. Respecting autonomy could also mean that it is wrong for states to force citizens to contribute to social welfare systems if they do not wish to do so, or to impose bans on the consumption of substances, such as alcohol, that people may wish to consume, in full awareness of the consequences.

However, while the concept has considerable currency in many debates, it has also attracted criticism, some of which we explore below (see 'Trust').[84] In many senses, people are not fully autonomous and rely on others to help them make decisions. The capacity for making independent decisions is also something that develops only gradually with age. In the context of public health, this raises questions about how to consider the autonomy and needs of children in cases such as vaccination or fluoridation.

Solidarity

Solidarity expresses itself in loyalty and mutual support with those we acknowledge as being 'one of us'. In a relationship characterised by solidarity we may be willing to give without expectation of immediate return, recognising that others are in need and deserving of help. Those focusing on this concept often emphasise the interdependence of people within and across different age

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[84] O'Neill O (2000) *Autonomy and Trust in Bioethics* (Cambridge: Cambridge University Press).

and social groups, and stress the necessity of measures that help others who belong to a specific community, whether this community is humanity as a whole, citizens of a nation, or subgroups of specific populations.[85]

Solidarity, whether provided on an individual basis or though support of a public healthcare system such as the NHS, could mean, for example, that we should provide support for people with genetic disorders. These people may suffer from conditions that are not a result of their action and are therefore fundamentally disadvantaged as a result of 'natural unfairness'. Solidarity could also mean that specific ethnic groups that are disadvantaged should receive special support. Or that those who are addicted to alcohol and tobacco should receive assistance, as their individual capacity of decision-making has been affected to such an extent that it is difficult for them to regain control of their lives.

While solidarity is usually understood to refer to the relationship between citizens *as* citizens, it could also be asked whether there are other forms of community: for example, should producers of addictive substances have some solidarity with those consumers who suffer as a consequence of using their products?

Fair reciprocity

A different approach might be to focus on 'fair reciprocity'. Like solidarity, this concept focuses on a sense of community but is less inclusive in that people are viewed only as entitled to what they have contributed already, or will contribute in future. Fair reciprocity also entails that individuals should reflect on the consequences of their risk-taking behaviour, and acknowledge the unfairness of being a 'free rider' (see Box 1). It could be used to argue that people who take higher health risks and also those who pursue adventure sports or have chosen to work in pressured environments should make additional contributions to a public healthcare system.

Harm principle

There can then be different conceptions about the degree to which people should be obliged to help improve living conditions for others on the basis of concepts such as 'solidarity' or 'fair reciprocity'. However, we also need to ask the question of whether there are special obligations not to harm people. Some would argue that this is the only morally relevant obligation we have towards others, as expressed famously in John Stuart Mill's *On Liberty.*[86]

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[85] Walzer M (1983) Security and Welfare, in *Spheres of Justice: A defense of pluralism and equality* (Oxford: Robertson).

[86] "[I wish to] assert one very simple principle, as entitled to govern absolutely the dealings of society with the individual in the way of compulsion and control, whether the means used be physical force in the form of legal penalties, or the moral coercion of public opinion. That principle is, that the sole end for which mankind are warranted, individually or collectively in interfering with the liberty of action of any of their number, is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinions of others, to do so would be wise, or even right."

Obligations to prevent harm to others would seem to be particularly relevant with regard to the negative social consequences of excessive alcohol consumption, the spread of infectious diseases, or the effects of passive smoking.

Negotiating public health policies or measures

Whatever our stance is on what should be the guiding principle(s) in relating to others, and independently of how we justify our approach, we will always face additional challenges in seeking to establish frameworks that allow those involved in decisions to make these in an ethical manner. Below we consider the importance of consent and trust.

Consent

The concept of consent is closely linked to that of autonomy. One of its central features is that in order for activities involving risks to be morally acceptable, those involved in them have to agree to take part. A number of criteria have to be met if obtained consent is to be *genuine*. These include the need for relevant information to be communicated in ways that are appropriate to the people involved, considering their level of understanding, and making the best efforts that people have understood all aspects of possible risks.

However, obtaining consent for public health measures may pose challenges. First, as the examples of vaccination and fluoridation show, there are cases where parents need to consent on behalf of their children. Secondly, the example of fluoridation has also shown that people who do not wish to consent to receiving supplemented water will not have a choice if the relevant authorities decide to add fluoride. Thirdly, some measures to control the spread of infectious diseases may have to be put in place at very short notice, and it may not always be possible to obtain people's consent. Fourthly, in some cases of disease control, comprehensive measures such as restrictions on movement may be imposed, regardless of whether people consent to them or not. These examples raise questions about the conditions under which it is acceptable to implement policies or proceed with interventions, even if consent has not been obtained or is incomplete.

Trust

Trust is closely linked to the concepts of autonomy and consent, and plays an important role in public health. While the notion of ourselves as fully independent self-sufficient moral agents who make competent decisions about our lives is very appealing, it has also been shown to be somewhat misconceived.[87] In complex modern societies, people have to make numerous decisions where it is very difficult to understand all the details involved. For example, although the scientific facts underlying the MMR vaccination are far from straightforward, parents have to make decisions about whether or not to vaccinate their children. In situations like these, trust plays an important role:

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[87]   O'Neill O (2000) *Autonomy and Trust in Bioethics* (Cambridge: Cambridge University Press).

first as an acknowledgement of the limitations of our autonomy, and secondly as a demand for reliable systems of support that can offer guidance to people when making choices.

The example of MMR also shows that the role of agents such as the media and scientists is crucial in ensuring a climate of trust. Unbalanced and exaggerated reporting by the media can be highly damaging. Statements by some scientists and politicians who are overly confident in the interpretation of data can also have a negative effect on how the public views scientists, and scientific evidence. One situation that particularly affected public trust in the UK was that of transmission of BSE to humans through the consumption of infected meat. A Government Working Party reported in 1987 that the risk of transmission was "remote and theoretical".[88] Despite the recognition of there being considerable uncertainty about BSE, this view remained the official position until it was announced in March 1996 that transmission was indeed possible. Therefore, to ensure trust, it is crucial to acknowledge scientific uncertainties. Such an acknowledgement would also be relevant to policy makers who may be tempted to over-interpret the reliability of scientific evidence when developing policy.

Questions on ethical issues

- In your view, is there one of the principles above (autonomy, solidarity, fair reciprocity, harm principle, consent, trust) that is more important than all others? If so, which one and why? Are there any other important principles that need to be considered?

- Can these principles be ordered in a hierarchy of importance? If so, how would such an order relate to the five case studies (infectious diseases, obesity, smoking, alcohol, and the supplementation of food and water)? Would the order have to be redefined for each new case study? Are there particular principles that are of special importance to some case studies?

- In cases such as vaccinations or fluoridation parents decide on behalf of their children. Which ideas or principles should guide parents in their decisions?

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[88] The Phillips Report (2000) *Report of the Inquiry into BSE and variant CJD in the United Kingdom*; available at: http://www.bseinquiry.gov.uk/report/index.htm, accessed on: 10 May 2006.

Further sources of information[89]

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[89] This is not a comprehensive list. Please note that the Nuffield Council on Bioethics does not endorse the content of these sites or publications.

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Responses can be submitted on-line via our dedicated consultation website: https://consultation.nuffieldbioethics.org

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If we receive your response electronically, there is no need for you also to send a paper copy. If you should prefer to respond by post or by fax, you may send your completed response and respondent's form (overleaf) to:

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Thank you

Closing date for responses: 15 September 2006

Public health: ethical issues

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Details of respondent(s)

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