



Scanning for Emerging Science and Technology Issues

Newsletter 7 – January 2011

Weak Signals and Emerging Issues in HEALTH

An ageing society, longer life expectancy, innovative medical techniques, technological advances and new medicines are leading to spiralling costs and putting unprecedented pressures on the provision of healthcare services throughout Europe.

Using the techniques developed earlier in the project, the SESTI team identified a number of emerging issues of which the five listed below were selected for discussion during a workshop held in Brussels in November 2010. The workshop was attended by thematic experts as well as national and EC policy-makers.

1. Diversification in medicine.
2. Mental health in an ageing society.
3. Obesity: the global epidemic marches on.
4. Is prevention better than cure? Re-prioritising health research.
5. Personalised treatment.

About SESTI

The SESTI project (Scanning for Emerging Science and Technology Issues) is one of six foresight projects funded through a 2006 FP7 call under the Socio-economic Sciences and Humanities theme. During the project a number of techniques were developed to identify weak signals and emerging issues in a systematic, efficient and effective way. The project also included the organisation of a number of workshops designed to link the developed techniques in a meaningful way to existing policy processes.

The project was launched in October 2008 and has a duration of 30 months.

Emerging Issue 1

Diversification in Medicine



A wide range of new offerings beyond conventional medicine and outside the public health system have sprung up in recent years. There are three distinct areas of transformation: emerging technologies may lead to new approaches, alternative methods are gaining more attention and new health related service markets are emerging.

Diminishing trust in conventional medicine, the debate on cultural diversity in medicine and the rising use of complementary and alternative medicine may lead to new requirements with regard to regulation. A growing number of people in Europe (more than 100 million) are turning to complementary and alternative medicine for disorders they feel cannot be treated with conventional therapy. Complementary and alternative medicine encompasses a number of therapies including herbalism, meditation, acupuncture, yoga, hypnosis, biofeedback, and Traditional Chinese Medicine.

Growing demand for alternative therapies may have an impact on the public healthcare system in various ways. People may not seek conventional treatments until their condition is severe, if at all, resulting in poor outcomes for individuals and additional cost to the taxpayer. On the other hand, the growing demand could support a healthy lifestyle that could lead to lower public health costs.

Cosmetic and transgender surgery, laser eyesight treatment, abortion and IVF have become common in healthcare provision and have broadened the concept of health and healthcare. This growth of health-related markets creates an increasing ambiguity and raises many questions on health ethics and health care finance. Development of new technologies (like inexpensive DNA testing, home diagnostics, etc.) will challenge these concepts even further.



Emerging Issue 2

Mental Health in an Ageing Society



There are a number of innovative social approaches towards addressing the problem such as communities of care, where elderly people live together in communities where they can be cared for as well as providing companionship to each other. Creative engagement, positive social interactions and the strengthening of social networks give persons a sense of control and seem to be associated with mental health.

Advances in medicine mean that humans are living longer than ever before. However, the quality of life of the elderly is often compromised due to frailty, reduced mobility, dependence on medication, financial limitations and loneliness in the twilight years. One in four older adults lives with depression, anxiety, or other significant mental health disorders. In many EU Member States the suicide rate among the elderly is higher than that for any other age group.

There are those who argue that the link between happiness and success is a two-way relationship, in the sense that success contributes towards happiness, but conversely contentedness engenders greater success in economic and social activities. Improving the mental health and wellbeing of the elderly is therefore an important fulcrum in achieving a sustainable aging society.

This aspect of the ageing population has been overshadowed by the economic perspective related to the pension problem and rising healthcare bill. The psychosocial consequences of an aging society and the related problems for other members of society are not widely known.



Emerging Issue 3

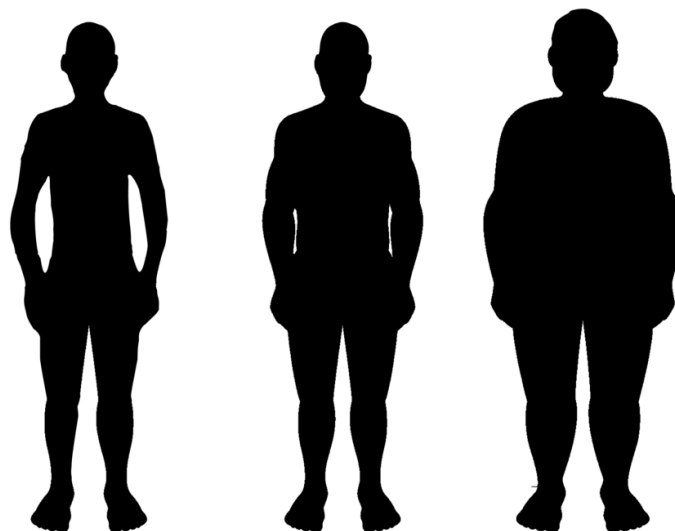
Obesity: the Global Epidemic Marches on

It is estimated that in excess of one billion adults are overweight, and that at least 300 million of them are clinically obese. Obesity has reached epidemic proportions and is a major contributor to the global burden of chronic disease and disability. Within Europe, obesity affects 20-30% of adults, and a cause of particular concern is the increase in obesity rates among the young.

Rising obesity is the result of a combination of factors – increasing affluence leading to abundance of food, poor consumption habits due to a hectic routine, and a sedentary lifestyle. To combat obesity we need to recognize and address these realities. A number of endeavours aimed at raising public awareness and encouraging a healthier lifestyle appear to have had a limited effect. The problem calls for a new impetus and for transdisciplinary approaches to tackle obesity.

Some countries such as the US have developed a number of financial incentives to promote healthy lifestyles. There is a strong case for additional regulation of the food industry or for financial incentives to reduce unhealthy ingredients. Governments could introduce a system of differential taxation on foodstuffs in favour of healthy foods. Taking a point from what was done in the case of the tobacco industry, another line of action could be to impose constraints on marketing by the fast food industry.

Indirect methods of addressing the problem could also be envisaged – for example there exist health insurance companies which provide financial incentives for those following a healthier lifestyle.



Emerging Issue 4

Is Prevention Better than Cure? Re-prioritising Health Research

It is a fact that a number of simple preventive measures such as consumption of nutritious foods, better personal hygiene, and sanitation both when handling food and during medical treatment have contributed significantly to improved levels of health. Nevertheless, most medical research funding is channelled into ways of treating disorders rather than to methods of preventing disease.

Whilst nobody would contest the remarkable progress and medical discoveries that have been made in recent years, new pharmaceuticals and treatments have contributed to a spiralling healthcare bill. Rising citizen expectations and an aging society have placed further demands on the healthcare



service, and most countries are facing major challenges in terms of its sustainability. The time may be right for a radical rethink in health research strategy.

Social interventions at policy level have a high impact on health and may become of great interest to public health policy. Nevertheless, it is not possible to measure the outcome in the same way that clinical trials or health-behaviour interventions on individuals can be measured.

The difficulty of identifying cost savings resulting from health research into disease often makes it hard to justify expenditure on such research. There exist a number of exceptions such as in the development of vaccines and the use of screening tests, where it is possible to quantify beneficial results. Additional difficulties may be encountered at the political level in diverting money to research on prevention when there are already so many suffering from medical ailments who might find relief from new discoveries.



Emerging Issue 5

Personalised Treatment

The response of an individual to a medicinal drug may depend on a number of factors such as gender, age and the genetic makeup of that individual. Personalized medicine is a health care approach which tailors interventions to individual genetic variation in risk and treatment response. Recent advances and falling costs in genomics are beginning to make this concept a reality. Today genomic information may be used to predict an individual's responsiveness to a pharmacologic

treatment as well as his susceptibility and predisposition to certain diseases. The challenges and opportunities posed in translating advances in molecular medicine into clinical practice are only just beginning to

emerge. Recent developments raise questions in regard to regulatory policy, technology assessment, and especially the financing and organization of medical innovation.

Modern advances in pharmacogenomics have identified instances where it is possible to predict which medicines are suitable for individuals based on the individual's genetic makeup. This has significant implications in the licensing and administration of pharmaceuticals. A number of drugs fail to obtain regulatory approval because they have negative side-

effects on a small part of the population. This reduces the range of available medicines and pushes up costs of research. If the genetic element could be incorporated into the testing and licensing procedure it would be possible to develop more or better drugs provided that these would be prescribed on the basis of previous genetic tests. This approach will have significant implications in the licensing and administration of pharmaceuticals.



Another aspect may be that preventive cures may be given to people who have a predisposition for certain diseases, thus preventing or postponing the illnesses.

As the cost of genetic testing continues to fall, it

may be available to the masses as early as 2014 and key genetic data could be recorded in electronic health cards. This will make it much more feasible to match drugs to individuals. The technology already exists but cost together with ethical and privacy issues have held it back.

Today as many as 10% of hospital admissions are due to adverse reaction to drugs. There have been cases where patients have sued healthcare professionals for not having conducted available tests.