

THE ROLE OF HEALTH ECONOMICS IN PUBLIC HEALTH PLANNING

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Summary

Public health policy is crucial for the maintenance and the improvement of the population's health. According to the needs of each historic period the priorities of public health policy vary. The importance of public health interventions, however, is undoubted and has been proven during the centuries. The scarcity of resources is a constraint in the implementation of all public health interventions in order all health needs to be satisfied. Furthermore, the present economic crisis imposes another obstacle to this purpose. At this situation informed purchasing and the selection of the most clinically and cost effective measure is deemed necessary. The role of health economics at this is of great importance. The aim of the present paper is to investigate whether the health economics theory and tools can explain the need for public health policy measures, contribute to the design and implementation and be applied to the assessment of the alternative interventions.

Key words: public health, health economics, prevention

Introduction

The concept of public health has been subject to many changes during the years based on the health needs and the morbidity burden in each historic period. Thus, public health in the previous centuries focused on the sanitary measures organized by society and immunization programs in order to contain the infectious diseases. Nowadays, as chronic diseases are identified as the major health problem, public health is defined as the policy implemented by the state in order to prevent and control major risk factors, safeguard population from any disease and improve mental and physical abilities [1]. Despite the content of public health in each period, its common characteristic is that it is a political and administrative enterprise for the management and control of the major risk factors, based on scientific evidence. The Alma – Ata Declaration and the Ottawa Charter attempted to expand the concept of public health including actions on health promotion and environmental health and emphasizing on the primary health care and cross-sectoral, interdisciplinary approach [2].

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Nowadays, the modern lifestyle has contributed significantly to the increase of chronic diseases. Smoking, alcohol abuse, physical inactivity, overweight and obesity are major risk factors linked to chronic diseases. It is estimated that one third of the deaths in high income countries can be attributed to these factors [3].

Thus, the role of public health interventions and policies is greater than ever. Health promotion, health education and prevention (primary and secondary) are necessary in order to motivate individuals adopt a healthy lifestyle and to teach the meaning (clinical and economical) of the early diagnosis of the diseases.

However, the scarcity of the resources available renders the satisfaction of all healthcare needs unfeasible. In this concept, informed purchasing is deemed necessary and the selection of the most effective and efficient public health policies and interventions becomes an issue of great importance. Health economics is a scientific topic dedicated to the study of the decision making process –with or without the involvement of money- for consuming scarce resources. Especially nowadays with the financial crisis and economic recession the use of health economic tools is crucial, in order to set priorities in health policy.

The aim of the present paper is to explore whether the theory of health economics can explain the need for public health services and, further, whether the tools of health economics can contribute to the selection of the most cost - effective public health services.

For this purpose, we will present the relationship between health economics and major public health interventions and policies such as health promotion and health education, as well as secondary prevention and insurance coverage.

Economics of primary and secondary prevention

Prevention is the most important intervention in public health programs. Preventive policies aim at stopping (preventing) a disease from either occurring (this is primary prevention) or worsening (this is secondary prevention) [4].

Primary prevention includes policies aiming mostly at major risk factors such as smoking, alcohol consumption, physical inactivity and

obesity which are considered responsible for the majority of the chronic diseases. So, if individuals learn how to adopt a healthy lifestyle, consequently the risk for developing a chronic disease will be decreased. Health promotion and health education policies as well as immunization programs are included in this category.

Secondary prevention on the other hand, concerns the prevention of worsening of diseases. The aim here is to diagnose the disease as soon as possible at an early stage so as to increase the possibilities of therapy. Screening programs are the most representative policies in this category [1].

According to the human capital model developed by Grossman, each person is born with a certain health stock which decreases as the person is getting older. Individuals try to maintain or restore this health stock through health care demand, [5] and preventive programs seem to be the most appropriate for this purpose. Additionally, recent studies have showed that schooling has an important impact on the level of health since people who are better educated seem to have a better understanding in health issues [6].

Both types of prevention through information have a significant impact on behavior change of population towards healthier choices. However, the information provided by the physicians and the information received by the consumers – patients may not be always adequate. Only part of the data regarding the potential costs and benefits of the intervention can be communicated to the patients. Furthermore, medical consultations are often susceptible to subjective judgments while part of the problem is that even health care professionals are inadequately informed.

Health economics can answer why this is happening based on the special characteristics of the health services market. Information asymmetry between the physician and the patient as well as the agency relationship and supplier induced demand that originate from this characteristic can partly explain the aforementioned problems regarding information. Furthermore, the term “pseudo truth” – used by Russell (1994) – explains the common consultation where complexities and tradeoffs as well as the information and educated guesses that lead to their development, have left out [7]. Therefore, health economics have a comparative advantage in understanding and assessing the role of the health professionals in the provision of information and thus improving the consultations and the information provided [8].

Lifestyle choices such as smoking and alcohol can create externalities to other individuals. For example, smoking affects negatively not only the smoker but the people around him/her because of secondhand smoking [9]. This phenomenon imposes an external cost to the health care system. So, preventive services and health promotion and health education campaigns should take into account this additional cost during designing and implementation.

Furthermore, health promotion and health education activities are not the only way that unhealthy lifestyle choices can be tackled. Health economics provide a wide range of tools that can be used in order to decrease smoking rates and minimize the relevant risk for the population. The price regulation and taxation of tobacco are two important tools addressed by the international literature [10]. The demand for tobacco products responds to direct (monetary) and indirect measures (such as smoking restrictions). An increase in the price of cigarettes can lead to a decrease of the consumption of tobacco products [11]. Other monetary factors such as income, seem to have a considerable influence on the demand. However, many studies have shown that tobacco products act as inferior goods, because as the income rises the consumption of these products decreases [12]. The economic approach of prevention offers a number of arguments in favor of the taxation of "non-healthy" products, such as tobacco and alcohol, and the financing of prevention policies [13, 14]. On the other hand, non monetary measures such as smoking restrictions in public places may also have an economic impact and thus influence indirectly the demand of tobacco products. The financial impact imposed by these measures can vary from fines because of smoking in restricted places to the time and discomfort cost related to the smoking restrictions [10].

Economic evaluation of preventive programs

From the analysis so far, it is obvious that decision makers have many tools available in order to design and implement the desired public health policies. But the question that remains is which one of the alternative policies and interventions is at the same time clinically effective and cost-effective.

An answer to this question can be given based on the results of economic evaluation.

The aim of economic evaluation studies is to identify, assess, measure and compare the cost and benefits of alternative interventions in order to find the one that can offer the largest possible results with the least possible costs [15].

In the international literature one can find numerous studies that investigate the cost – effectiveness ratio of different policies and health programs. These studies may compare two or more alternative interventions for a specific disease or health problem or may compare preventive measures versus treatment [16]. One of the most extensive studies in this kind is a study that conducted recently in Australia in an attempt to provide a comprehensive analysis of the comparative cost-effectiveness of preventive intervention options addressing the non-communicable disease burden in Australia. This study provides information on 123 preventive services and 27 treatments as comparison. The results of this study constitute an important guide to the government and policy makers when it comes to decide which investments in prevention are both good and affordable and which policies have the largest health impact [17]. According to the researchers, many preventive services are very cost-effective in the Australian context: are either the dominant option or have a cost-effectiveness ratio of less than \$10,000 per DALY prevented (Australian dollars). Examples include alcohol, tobacco and "unhealthy food" taxes; limiting salt in processed food; more efficient treatment of blood pressure and cholesterol; smoking cessation drugs and screening programmes to identify those with high levels of lifestyle-related diseases, cervical cancer or symptoms of mental disorders.

The study also identified preventive measures that were not deemed as cost-effective such as PSA testing for prostate cancer and drugs for losing weight and the majority of the fruit and vegetable interventions currently available in Australia.

In the case of secondary prevention and specifically in the case of screening programs economic evaluation can give answers not only for the efficiency of the program but also for the effectiveness and the characteristics of the program by identifying the eligible group screening should be provided for, and by indicating the optimal re-screening intervals.

Furthermore, since the benefits of screening occur with a time lag and any health gains as well as costs or savings are being realized over a time of period, there should be a valid answer of which

intervention should be funded when benefits and costs are being compared and evaluated between the present and the future. Economic evaluation can provide answers on this issue by modeling and incorporating in the analysis the factor “time” supplying decision makers with the present value of both benefits and costs. Despite the fact that discounting is an issue of big debate, especially when it comes to discount health benefits, there is evidence that some discounting of future health benefits occurs in practice [18] and such data should be available to the purchasers and to the decision makers.

Effects of insurance coverage

Insurance is an important aspect of all health systems regardless their public or private features or their mandatory or non mandatory nature. The level of insurance coverage influences the access to the health services and consequently the utilization [19]. This knowledge is very important when designing public health policies in order to estimate the level of acceptance in the population and the impact on health care demand. Obviously, health economics provide valuable inputs in evaluating these factors. The effect of insurance coverage in health care utilization has been well documented. The most important of these studies is the RAND Health Insurance Experiment [20]. Other studies have shown that eliminating cost-sharing for preventive services and especially screening programs may be important to increasing their utilization to recommended levels [21]. Insurance coverage increases by 5% the probability of annual use of preventive services in the case of PAP test and mammography [22]. In the case of colorectal cancer disproportionate cost-sharing seems to have a negative effect on the use of screening tests as Fecal occult blood testing (FOBT), sigmoidoscopy, colonoscopy, and/or double-contrast barium enema (DCBE) [23]. Finally, other studies show that insurance coverage increases by 3% the probability of influenza vaccination in adults aging between 25 and 64 years old [24]. Another recent study proved that the likelihood of utilizing preventive services was higher for those with insurance coverage and a usual source of care. This was especially true in the case of PAP tests and breast examination [25].

Conclusions

Health economics offer a complete methodology for the assessment of public health programs and decision making among alternative choices. Health economic theories such as human capital model produced by Grossman (1972) can explain the need of public health services. Special characteristics of health services market such as information asymmetry and supplier induced demand can shed light into the behavior of health professionals during provision of health services and contribute to the understanding of the effect of information on health. The knowledge of health professionals' behavior is very important when designing public health policies in order to accomplish their greatest engagement to the public health interventions which consequently will guarantee the success of the policy.

Additionally, the economic evaluation is an important instrument of health economics and is necessary in order to prioritize health care needs and to accomplish and improve the efficiency of the resources invested in public health. Through economic evaluation health economics can provide an answer to the cost – effectiveness ratio of an intervention and thus facilitate the decision makers to design and implement the national public health policy.

Furthermore, health economics do not contribute only in understanding the need of public health policies and assessing the available interventions. The health economics theory provides also ideas for alternative policies such as taxation of non-healthy products which are not only very cheap interventions but these have a great impact both in public health and the financing of prevention policies.

In conclusion, health economics provide a chance for saving scarce healthcare resources, through reductions in morbidity and hospitalizations and improvement of the “human capital”. An evidence based public health policy should also be an economics based public health policy.

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