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Original Article

Future of Health Care Delivery in Iran, Opportunities and Threats

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Abstract

Background: The aim of this study was to determine the impact of important social and technological trends on health care delivery, in the context of developing "Iran's Health System Reform Plan by 2025".

Methods: A detailed review of the national and international literature was done to identify the main trends affecting health system. To collect the experts' opinions about important trends and their impact on health care delivery, Focus Group Discussions (FGDs) and semi-structured in-depth interviews techniques were used. The study was based on the STEEP model. Final results were approved in an expert's panel session.

Results: The important social and technological trends, affecting health system in Iran in the next 15 years are demographic transition, epidemiologic transition, increasing bio-environmental pollution, increasing slums, increasing private sector partnership in health care delivery, moving toward knowledge-based society, development of information and communication technology, increasing use of high technologies in health system, and development of traditional and alternative medicine. The opportunities and threats resulting from the above mentioned trends were also assessed in this study.

Conclusion: Increasing healthcare cost due tosome trends like demographic and epidemiologic transition and uncontrolled increase in using new technologies in health care is one of the most important threats that the health system will be facing. The opportunities that advancement in technology and moving toward knowledge-based society create are important and should not be ignored.

Keywords: Trends, STEEP analysis, Health care reform, Iran

Introduction

Today, world and especially Asia region is subject to rapid and extensive social, political, economic, environmental and technological changes. One of the main consequences of these changes is its effects on health of people. The health system functions should be strengthened in order to make the health system responsive to these changes (1).

Health is the center of human, social and economic development, and is a pre-requisite for social development. Governments hold the main responsibility of protecting and promoting health in all the countries, therefore in order to provide the highest level of attainable health in the societies, health system should constantly improve its functions (2-4).

The Islamic Republic of Iran, in response to the increasing need of coping with many changes and along with the vision of the Islamic Republic of

Iran in 2025, has developed short and medium term plans in different fields of education, research and health services delivery with the aim of promoting health of societies (5-6). Of these, we can refer to the development of Iran's Health Innovation and Science Development plan by 2025 (7).

In the course of developing national level reformatory plans, planners and decision makers should consider forthcoming opportunities and threats resulting from the leading trends that affect the health system. Trend is a chain of data about progress in the past, present and future, which can be measured or estimated. Analyzing the trends was used in several experiences of planning for the health system (8-11). Assessment of evidences also, showed that analyzing the trends with Social, Technological, Economic, Environmental, and Political trends (STEEP) model is one of the acceptable methods and one of the ways to monitor environment, which is used to identify the change drivers at the different levels (12).

Based on this, a study was conducted along with the process of development of Iran's health system reform plan by 2025, in order to identify the important trends which affect the health system based on STEEP model, and to determine the opportunities and threats resulting from these trends in different fields of health system including stewardship, financing, resource generation and health service delivery. In this paper we describe the social and technological trends and their impact on health care delivery in Iran.

Methods

A detailed review of the national and international literature was performed to provide a list of the important trends which will affect the health system in future. Then the experts' opinions about the list of trends were assessed in different field by the STEEP model. For collecting the experts' opinions, Focus Group Discussions (FGDs) and in some cases, semi-structured in-depth interviews were used (13-14).

The selection of experts was based on including experts from all the fields of study, in the trend analyzing. Participants, firstly, were informed about the study by phone calls, then an invitation for participation in FGDs was sent to them, and the result of literature review also, was sent to them before FGDs session. In each of the FGDs a facilitators had the role of directing the discussions. All the discussions were recorded and also with the consent of participants, notes were taken. The main notes were presented to the participants to ensure maximum accuracy of the note taken by using a video-projector. Two four-hour FGDs about the trends were hold. The discussion summary note was E-mailed to the participants and they were asked to mention whether there is any missing points or trends, the trends that were shared in this stage also were again added to the list of trends. As some of the fields were not covered by FGDs, a few in-depth interviews were performed with the experts in those fields.

In order to identify the opportunities and threats resulting from the trends, which affect the health system, like previous stage, FGDs with experts and professionals from the health fields and representatives of different deputies of Ministry of Health and Medical Education was formed to collect their opinions about the impact of each trends on the health system, or in the other word, the threats or opportunities resulting from these trends for different functions of the health system.

In the next stage, all the proposed impacts of different trends on the health system function were put together and were discussed in another FGD.

Finally the list of opportunities and threats was finalized in another experts' panel meeting which was held to evaluate the stages of development of Iran's health system reform plan by 2025.

Results

Providing a detailed list of trend analysis in different fields and the resulted opportunities and threats is not in the scope of this article. The social and technological fields were the two fields

that their key trends, had important effects on health services delivery, and therefore are the focus of this study.

Experts believed that in 2025, the mean age of the population will increase due to aging of those who were born in the years that Iran had its maximum population growth and increase in life expectancy contributes to this phenomenon. Sedentary life style will increase in future, which is one of the important life style risk factors for health. On the other hand, unhealthy food habits like using low quality fast foods will increase and access to the natural and organic food will be less. More urbanization, not only will have an impact on villages, but also will cause uncontrolled growth of cities, overcrowding and slums. The bio-environmental pollution and its consequences on health also, will increase.

The experts believed that in addition to population transition, epidemiological transition has also begun in Islamic Republic of Iran and will continue in future. The experts believe that similar to the present situation; the private sector will provide maximum health services, especially out-patient services in future.

We are in a transitional stage from industrial age to science and technology age. It is expected that the Islamic Republic of Iran become a knowledge-based society in the next 15 to 20 years. The results of emergence of such a society include increase in research centers which are mainly engaged in generating knowledge and of its characteristics, we can refer to being human-centered and brain-based, which instead of focusing on productions, will focus on development of technology and research for survival. Development of communication and information technology will have a key role in this transition. In this society, research and generating knowledge will grow in all fields, including the field of health. The growth of new technologies like nanotechnology, biotechnology, molecular medicine, stem cell and …in the field of health will be very rapid.

Experts believed that in future using new technologies in different layers of the health system will increase. Also traditional and alternative medicine will grow and will become more evidence based.

The above mentioned trends will influence health care delivery in different ways. Our specialists did not limit the service delivery to curative services but will expand it to include preventive and community-based services. The determined effects of these trends on creating opportunities and imposing threats to the health system from different views and opinions are shown in Table 1.

Table 1: Opportunities and threats in health care delivery due to social and technological trends

Trends	Opportunities and threats
Demographic transition	Threat Increasing old age population and chronic diseases prevalence in them(1) Increasing need to chronic care and rehabilitative care due to over mentioned burden of disease(1) Increasing health care cost(5)
Epidemiologic transition	Threat Increasing rate of non-communicable disease like cardiovascular, different types of cancers, diabetes mellitus and etc.(1) Increasing mental diseases burden(1) Ill-prepared primary health care services to take care of non-communicable diseases(3) Increase in health care cost due to costly non-communicable diseases(5) Health care providers are not ready to deal with non-communicable diseases properly somewhat because of present medical education(4)

Table 1: Cond…

	Opportunity High preventable burden of non-communicable disease(1,2)
Increasing bio-environmental pollution	Threat Increasing physical, mental, and social burden of bio-environmental pollution(1)
Increasing slums	Threat Poor access to required health care services in slums(3) Increasing exposure to different health risk factors in slums(1) increasing inequity in health due to mentioned events in slums(3)
Increasing private sector partnership in health care delivery	Threat Increasing health care cost with potential to increase in unwarranted medical procedures and prescription medicines(induced demand)(5) Weak public system capacity to regulate private sector including for disease surveillance(3,5) Potential to increase Out of Pocket payment(5) Private sector participate mostly in the fields with most expected return of capital like expensive and sub specialized diagnostic and treatment procedures and primary and preventive care will be ignored more than before (3) Opportunity Increasing health care delivery capacity due to new partners in provision and financing of health services(3,5) Increasing in the quality of health care delivery in public sector due to benchmark setting and competition with private sector(2)
Moving toward Knowledge based society	Threat Community dissatisfaction with health care services not according to their increased expectations(1) Opportunity Increasing scientific literacy in the community(1) Increasing health literacy in the community(1) Increasing peoples willingness to participate in diagnosis and treatment decision making(1) Using the capacities provided in the knowledge based society in order to control behavioral risk factors of health(1) Self care education and decreasing the demand for health care services(1,3,5) Increasing knowledge production by research in health system which can lead to community health promotion(2) Increased tendency for higher education helps health system for human resource generation in priority fields and areas(4) Improved Continuous Medical Education cause better health care delivery and increased health system performance (4,5)
Development of information and communication technology	Threat Uncontrolled public distribution of health information and advertisement can lead to induced demand and increasing health care cost(1,5) Uncontrolled public distribution of health information can cause negative effects on population health(1) Opportunity

Table 1: Cond…

	Facilitated access to correct health system data when needed for decision making(2) Facilitated evidence informed decision making in all levels which leads to more effective health care with less cost and side effects(2,3,4,5) Access to health care indexes and standards provides opportunity for national and international comparisons and so finding challenges and weaknesses(3,4,5) Establishment of E-health and E-medicine can result increased access to health care services and so increasing the equity in health(1,2,3,4,5) Facilitate establishment of referral system in different levels all over the country(3)
Increased use of high technologies in health system	Threat Increased demand for unnecessary health care services provided using new high technologies(1,3,5) Decision making about new technologies without considering local evidences and technology assessment results causes Reducing allocative efficiency in health system(5) Reduced attention to public health and primary health care(5) Increasing incidence of unknown side effects of new technologies because of frequent use of them (1) Opportunity Increased quality of health care services and patients quality of life by using new technologies in prevention, diagnosis and treatment of diseases(2,5) Development in medical device and drug production in Iran leads to increased income and decreased cost of health system(2,5) Using new technologies in medical education result in better medical education(4)
Development of traditional and alternative medicine	Opportunity Scientific development of traditional medicine in Iran can cause utilization of this knowledge as beneficial services for community(2) Traditional and alternative medicine in Iran can help health tourism(2 ,5)

1-health care receivers, 2-technical and scientific capabilities, 3-health system structure, 4-health care providers, 5-health system financing

Discussion

In this research, the experts of health system attempted to compile the key opportunities and threats that health system in Iran is facing as the results of different trends in the next 15 years. This article, explain the results related to the social and technological trends; and the opportunities and threats due to these trends for health care delivery. As the Ministry of Health and Medical Education (MOHME) is in the process of developing Iran's health system reform plan by 2025, this kind of studies are necessary for taking appropriate strategies for health system reform. If we pay enough attention to the existing trends, we can be benefitted maximum from the forthcoming opportunities and control the negative consequences of threats.

The scientific evidences show the importance of considering trends in planning for the health system. Some countries including Asian countries had maximum emphasize on the impact of demographic and epidemiological trends (4, 15). Some others dealt with more trends in different fields

and their impact on health system (1, 9). In Iran, assessment of the trends affecting medical education and their consequences has been done, already (16).

The existing literature supports the trends, which was enlisted by the experts. The demographic transition has been shown by several studies in Iran, which used the demographic indicators and changes in these indicators to show the demographic transition (17-18). Different countries, based on their demographic transition pattern, have adopted different policies in their health services (1, 19). In Iran the threats due to these trends must be considered in policy making for future (Table 1).

Today, the epidemiologic transition is a matter of concern in the world. Studies in Iran also confirmed this trend (19). Assessment of chronic diseases burden and their economic effects in 23 countries, including Iran, showed that without any intervention for preventing chronic diseases; cardiovascular diseases, stroke and diabetes will reduce by 84 million dollars from the economic development of these 23 countries in a period between 2006 and 2015 (20). This is a matter of concern in different countries while considering that most of these diseases and risk factors are preventable (21-23). If in the next ten years, the annual mortality rate of non-communicable diseases reduces due to application of preventive strategies, only by two percent annually, 24 million deaths will be prevented and 8 milliard dollars will be saved in these 23 developing countries studied, including Iran (22).

Considering the social determinants of health, it is known that different factors like social, economic, employment and environmental factors are affecting the development and progress of non-communicable diseases (24). Evidence shows that the magnitude of risk factors for non-communicable diseases, injuries and accidents will be higher in low socio-economic groups, resulting in widening the existing health disparities (25). Therefore preventing chronic and non-communicable diseases with improving social determinants of health approach is one of the most cost effective interventions, which will lead to decrease in costs and increase in equity (22, 26). This approach requires strong inter-sectoral collaboration with the stewardship of MOHME and promoting community participation in the appropriate interventions (26).

As it is shown in table 1, increase in health delivery costs is one of the important threats for the health system, which will happen as a result of different trends. On the other hand, the economic trends did not show that the public investment on health sector will increase enough to address increase in the health delivery costs. Therefore health system should find opportunities for reducing the costs and increasing the financial resources. Improving health system performance by applying standards can lead to reduction in costs and increase in productivity, and therefore can increase the opportunities for investment in public health sector and medical education and research. Defining standards and setting regulation for health care delivery should be considered in both public and private health sectors (and especially in the private sector with its increasing trend services providing). We should find new and innovative strategies to facilitate and enhance public-private partnerships.

Our findings show that health system should take maximum advantage from the limited opportunities to overcome its important and key threats. Strategies which result in generating income for health system are few compared to those resulting in reducing the health system costs. Increase in the share of health system from governmental subsidies and targeted development of health tourism are among these few strategies.

The opportunities that development of technology creates are important and should not be ignored. Development in technology can lead to increase in the health service quality and decrease in the cost of preventive, diagnostic, curative and rehabilitative services. Health system should try to direct the trend of development in science and technology towards its real priorities for community health promotion. However possible harmful consequences of any new technology and innovation for health and environment should be considered carefully.

Increase in political and financial support for new technologies and innovations, in the country create an opportunity for the health system to improve its services, equipment and medicines with the first hand innovation, which can lead to community health promotion. One of the ways for achieving this purpose is purchasing science and technology and transferring it to the country, which gives this opportunity to the health system to use international standard in its services delivery, which promote the quality of services in a short duration. On the other hand, this approach can lead to dependency on foreign countries in this field and increases the impact of political and regional problem like sanctions on health system (27). Experts considered different aspects related to motivation of human resources for providing better and with a higher quality services and also the ethical and professional principles, according to the values and principles of the country and the health system. They believed that at the present time, there is less motivation in service providers compared to the past, which is partly due to the lack of job satisfaction; and if the demands and expectations of workers in this field are not addressed, the motivation of the service providers will become less, which is a real threat for the health system. On the other hand, if health providing staffs participate in planning and decision making process, not only the process of decision making will improve, but also the demands of health staff will be considered and their motivation will increase.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors.

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