



# Strategic planning, components and evolution in zoonotic diseases frameworks: one health approach and public health ethics

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## Keywords

Zoonotic diseases • Strategic planning • Health policy • Health system • Public health ethics

## Summary

*Zoonotic diseases are seen as a major public health concern. Routes of the rapid transmission of zoonotic diseases and the economic damage they cause to communities are all reasons why health institutions and systems need to pay more attention to these diseases. Strategic planning is one of the important tasks of policymakers in every organization and system. It is a very reliable and useful tool for leading all kinds of organizations, including health organizations. Countries with clear policy plans have succeeded in controlling and reducing zoonotic diseases. Such countries used appropriate strategic planning and pursued annual goals to control and prevent diseases. Three important steps*

*(strategy development, strategy implementation and strategy evaluation) should be considered in developing a strategic planning for controlling and prevention of zoonotic diseases. Health systems need to develop strategic planning in order to upgrade their capabilities in combating zoonotic diseases. These programs must be flexible, in line with the one health approach, based on the current needs, and aligned with the new challenges faced with health systems. The strategic planning is directly related to national and international policies, organizational goals and missions, dynamism, degree of complexity, and organizational structure of each country's health system.*

## Introduction

Zoonotic diseases are seen as a major public health concern [1]. In this regard, it is estimated that about one billion new cases (zoonoses) occur worldwide each year. Of the emerging infectious diseases reported worldwide, 75% are caused by common human-animal diseases. Also, 60% of emerging destructive infectious organisms worldwide such as Ebola, Middle East Respiratory Syndrome, Avian Influenza (very high pathogenicity) are zoonotic, also known as bioterrorist agents [2]. Zoonotic diseases cause significant morbidity and mortality in humans and animals. In a long run, zoonotic diseases will affect public health resources, and ultimately disrupt international trade [3].

The exact burden of zoonotic diseases is not known yet, but in addition to their incidence and mortality, they impose a heavy burden on health systems worldwide [4]. Their significant economic effects include direct and indirect costs on care systems. The World Bank estimates that only six zoonotic pandemics caused more than \$80 billion in economic losses during 1997-1999 [5]. Meanwhile, due to the dual impact of this type of diseases on humans and animals, it causes significant economic resources to be lost in poor societies which

leads to a vicious cycle of poverty-health. In developing countries, the burden of the zoonotic diseases is most often on the poor [6].

Routes of the rapid transmission of zoonotic diseases and the economic damage they cause to communities are all reasons why health institutions and systems need to pay more attention to these diseases [7]. Experiences from the outbreak of zoonotic diseases show that effective diagnosis and response to emerging epidemics require a multi-level approach. In 2010, the World Health Organization (WHO), the Food and Agriculture Organization, and the World Organization for Animal Health recognized and initiated an international cooperation to address health threats of the diseases to humans, animals, and ecosystems. Thus, investment and innovation in the field of zoonotic diseases is urgently needed [8]. WHO hopes to control zoonotic diseases by providing a united health approach worldwide (interaction between environment, animals, and humans) with an effective and efficient management system [9]. Such an approach is based on the integration of human and animal health, encouraging joint local, national, and global multidisciplinary efforts to achieve optimal levels of health and cooperation among different disciplines in order to solve complex health problems [10].

*One Health* is an approach to designing and implementing programs, policies, legislations, and research in which multiple sectors plan, communicate, and work together in order to achieve better public health outcomes for the human beings, animals, and environment [10]. Due to the fact that world is being confronted with a recurrent epidemics and other public health issues, this approach improves our understanding of health and diseases as well as prediction, detection, prevention, and control of infections and other issues affecting health and well-being in the human-animal-ecosystem interface, which will lead to sustainable development goals, and ultimately to equity in the world. It is believed that any plan designed for zoonotic diseases should be based on this approach [8-10].

Providing new solutions and tools for effective research and services to support the development of norms, regulations, and policies for the benefit of humanity, animals, and the environment is crucial for our present and future generations [11]. Also, this can increase the efficiency and cost-effectiveness of health policies, and play an important role in achieving the Sustainable Development Goals (SDGs) worldwide [12]. There is an urgent need to formulate national strategic plans to guide policy-makers, and increase the efficiency of services and control measures for these diseases. Achieving the goals of international commitments also benefits health systems [13]. On the other hand, health care costs are rising rapidly, and organizations involved in health care must continually adapt to survive in order to be able to develop a culture that supports constant change. Also, they should evaluate periodically the existing mission, vision, and values; this constant evaluation further provides the basis for the strategic planning process [14].

### **Why do health systems require strategic planning to prevent and control zoonotic diseases?**

Strategic planning is one of the important tasks of policymakers in every organization and system. It is a very reliable and useful tool for leading all kinds of organizations, including health organizations [15]. Unstable healthcare markets, dynamic and complex structures and cultures, rapidly changing medical technologies, knowledgeable and demanding customers, skilled and professional competitors, and resource constraints have created the condition in which strategic plan is a valuable and useful tool in achieving a competitive advantage [16]. The strategic planning process is planned, orderly, logical, and comprehensive, allowing health care organizations to focus on relevant and sustainable developments for the future [17]. Therefore, strategic planning is essential to provide quality, safe, and cost-effective services for health managers [18]. Strategic planning improves the management's awareness of external opportunities, threats, strengths, and weaknesses. Also, it strengthens internalization, improves managers' understanding of competitors'

situations and strategies [19]. Meanwhile, strategic planning improves communication between managers and employees, increases employee productivity, improves competition, and even strengthens the health market. In addition, strategic planning strengthens and mobilizes the health managers' resources towards a definite and desirable system [20]. It also is the art of formulating specific strategies, implementing them, and evaluating the implementation consequences according to the goals or desires of a system. Therefore, strategic planning is essential to provide quality, safe, and cost-effective services for health managers. Successful implementation of strategic planning leads to a better organizational performance and economic success [21]. Organizations that use strategic plans will be more productive and profitable [16, 18]. However, the health industry lags behind other industries in formulating and implementing strategic plans [17]. Since 1980, health managers have developed and implemented a strategic plan to provide value-added services and meet the diverse needs of the population. Studies have confirmed the positive effect of strategic planning on the performance of health organizations [22].

Countries with clear policy plans have succeeded in controlling and reducing zoonotic diseases. Such countries used appropriate strategic planning and pursued annual goals to control and prevent diseases [23]. Strategic planning is the art of formulating specific strategies, implementing them, and evaluating the consequences of implementing them, according to the goals or desires of a system. It needs the serious support of health managers to achieve the desired results and improve the current situation. Proper planning, mobilization, and implementation of adequate measures to control diseases such as Ebola, SARS, H1N1 influenza, and even Covid-19 are useful not only in reducing the prevalence of the disease, but also in reducing their destructive effects on public health [24].

### **Steps of strategic planning**

Typically, three important steps should be considered in developing a strategic planning for controlling and prevention of zoonotic diseases (Fig. 1).

#### **STRATEGY DEVELOPMENT**

Strategy in its broadest sense is the tool through which individuals or organizations achieve their goals. These strategies must be first developed for zoonotic diseases. At this stage, a health system must initially assess its current status in relation to zoonotic diseases by conducting an internal and external review. The purpose of this step is to help identify the strengths and weaknesses of the health system as well as the opportunities and threats that these diseases might pose. With the unpredictability of the human living environment, and the unknown effects that these diseases have on the health of the general population, this step must be taken carefully and unbiased [25, 26].

Figure 1. Steps of strategic planning.



### STRATEGY IMPLEMENTATION

Once the required and appropriate strategies related to zoonotic diseases have been developed for a health system; in the next step, they should be implemented. In the implementation phase of the strategy, the formulated strategies should be observed in practice by using appropriate communication, cross-sectoral cooperation, and all capacities related to the stages of zoonotic diseases, including prevention, control, and treatment. Strategy implementation involves managing some tangible variables such as staff motivation and commitment, organizational values and culture, and the behavior and power of managers and policy-makers. Proper and effective implementation of strategies requires the allocation of financial resources, adequate manpower, and equipment [26, 27].

### STRATEGY EVALUATION

In health systems, no activity will be successful unless assessment and control programs are implemented consistently. Using the results of assessment and control programs, health managers will thus be aware of how to achieve the goals, and find ways to measure and fix the problems. On the other hand, without effective control and evaluation programs, health systems neither will be able to accomplish their missions, nor will be able to use their resources properly. Due to the nature of zoonotic diseases, many of the predictions and programs designed to deal with these diseases are not fully realized; therefore, the only option to fix the problems is evaluation and control [26-28].

## Important components of the strategic planning in order to prevent and control zoonotic diseases

### DETERMINING THE MISSION

Mission is the philosophy of existence or the role that a health system has taken on to the people of its community,

by fulfilling it and providing the desired services, to meet the needs of the community. In the mission of any health system in relation to zoonotic diseases, the reason for zoonotic diseases and the activities of the health system should be considered. Also, in expressing the mission, the philosophy of existence of a health system must be stated in general terms. Meanwhile, the existence of a mission allows for cross-sectoral cooperation in order to activate and involve a set of other organizations related to these diseases [29].

### VISION

Health systems have a vision plan for their programs and activities. This vision, the ideal future, is a description of the probable future conditions; in other words, a picture of the future state of the system. This favorable future is usually the product of the thinking and creativity of the managers and policy-makers of the system, and is depicted based on various dimensions such as available system technology, knowledge, financial status, and manpower. Vision gives an insight into future, and describes what plans and policies the health system has. In many cases, the existence of a vision is also an inspirational statement to hope and motivate different stakeholders working with the organization. Due to the problems that zoonotic diseases have caused for health systems in recent years, researchers and health specialists recommend that having a vision should be based on the facts and potential of health systems. In this regard, the benefits of a principled vision which is based on the conditions of a health system are as follows: Clarifying the direction and purpose of a system, unifying policy-makers in order to achieve their success, determining a time frame in dealing with zoonotic diseases, planning for dealing with very critical pandemics such as COVID-19, prioritization of resource allocation, and utilization of facilities and opportunities [29].

### ANALYZING THE CURRENT CONDITION OF THE HEALTH SYSTEM

An important component of strategic planning is the analysis of the current condition of the health system in relation to zoonotic diseases. In relation to these diseases, various social, cultural, political, economic, national, and international dimensions must be considered and analyzed. By analyzing these dimensions and various involved stakeholders, policymakers and planners help make changes in the system to fit into a proper strategic planning. Thus, it is claimed that not conducting a proper analysis of the current condition of the health system in relation to zoonotic diseases is a big strategic mistake [29]. In the COVID-19 crisis, many health systems boasted of having a strong and principled system for responding to health-related crises, but the experience of COVID-19 showed that perhaps a correct analysis of the condition of such health systems in the past in order to deal with a serious crisis have not occurred. In this regard, the weaknesses of strategic planning of the health systems was clear, as several countries were not able to respond properly to the crisis caused by zoonotic

diseases. Analyzing all components of the health system requires collaboration within or outside the system; thus, all stakeholders should be actively involved in analyzing the condition associated with zoonotic diseases. Also, a sound knowledge about the epidemiological status of the diseases, and its possible effects on the society is a key factor toward the analysis of the current condition. In addition, having a reliable data in strategic planning is a great help in formulating realistic plans and policies. Meanwhile, the awareness of the health system's response to crises caused by zoonotic diseases is another issue that should be considered in the analysis of the current situation; in this regard, policymakers should prepare programs, guidelines, and activities related to these diseases. Also, we believe that these activities should be organized in three areas of prevention, diagnosis, and treatment. Meanwhile, in the strategic planning, we need to have programs to treat unknown zoonotic diseases [30].

#### **INVESTIGATING THE WEAKNESSES, STRENGTHS, OPPORTUNITIES, AND THREATS OF ZOOONOTIC DISEASES**

A meticulous analysis of weaknesses, strengths, opportunities, and threats has a significant effect on development of the health system's strategic planning. In this regard, SWOT is a significant tool for learning about these four dimensions. SWOT examines the opportunities and threats of the environment outside the health system in contrast to its internal strengths and weaknesses [31] (Fig. 2).

SWOT, the most popular tool in strategic analysis, stands for strengths, weaknesses, opportunities, and threats. Proper use of SWOT leads to realistic policies and programs in dealing with zoonotic. By recognizing the weaknesses and strengths, we can effectively use the resources of the health system. With the emergence of new zoonotic diseases such as COVID-19, the optimal use of potential opportunities is no doubt vital. With

respect to threats, more positive measures and strategies can be adopted by using the capabilities of health systems [32].

#### **SETTING SHORT-TERM AND LONG-TERM GOALS**

A deep understanding of the difference between long-term and short-term goals can also help us achieve the goals of a health system. Also, an accurate understanding of the current situation and the ability to have a vision for the future is not possible without understanding the difference between long-term and short-term goals. Long-term goals are inherently strategic. In organizations, long-term goals usually determine the overall direction of a health system in the future. With respect to short-term goals, they are more accessible and faster to achieve. With this in mind, health systems need to determine what their goals are in dealing with existing and new zoonotic diseases [33]. In setting short- and long-term goals, attention should be paid to the features summarized in the SMART format, which can help health systems to evaluate the goals they are considering [34]. These features include the following:

##### *Specific*

In health systems, goals should not be vague and general; they should focus on a specific issue such as zoonotic diseases. This focus should be such that all components of the health system know what they will achieve in the end [27].

##### *Measurable*

Judging the extent to which goals are achieved depends on their measurability. This provides a standard capability so that the progress of health systems in relation to zoonotic diseases can be measured. In this way, policymakers and managers of a health system can understand how close they are to achieve the goals [16].

##### *Achievable*

With respect to zoonoses in health systems, officials should conduct a proper evaluation of financial resources, manpower, and equipment in order to determine whether the goals are achievable or not. Achievability means checking to see if the goals of a health system are feasible and operationalizable [27].

##### *Relevant*

It should be noted that the goals set by health systems in relation to zoonoses are related to the programs for the diseases. In the meantime, proper planning should be conducted to use all the resources of health systems. Also, health managers are to be involved in inter-sectoral cooperation in order to identify unrelated activities in the field of combating zoonotic diseases so that they would be able to change the mechanisms to control these diseases [22].

##### *Timely*

Resources and facilities are not infinite; also, goals

Figure 2. Components of SWOT.



have a limited time frame. The probability of achieving any goal depends on considering these limitations. On the other hand, identifying the limitations by using the available tools help fix program deviations. The experience of diseases such as SARS, Avian Influenza, and COVID-19 showed that in several countries there was no proper knowledge about their resources and facilities; therefore, the disease process caused many problems for them. Health systems need to be aware of their capabilities, and all the components affecting the control of zoonotic diseases so that the appropriate response can be implemented [29].

#### **DETERMINING THE REQUIRED STAFF, EQUIPMENT, AND FINANCIAL RESOURCES**

Having stable financial resources, efficient equipment, and sufficient human resources to meet the challenges of the health system should be considered in strategic planning. Providing sustainable and financially needed health resources helps strengthen the health system, health security, and universal health coverage [35]. If sustainable financial resources are not provided to health systems, they will face great difficulties in achieving their goals. In connection with zoonotic diseases, the nature of some of them, such as COVID-19, was not clear; therefore, there were not enough financial resources in order to implement various programs to deal with it [27]. Limited financial resources have posed various challenges to several health systems in terms of service delivery, efficiency, effectiveness, and justice. How to finance the health sector, prioritization, and equal allocation of financial resources are important issues in the health sector that should be seriously considered by policymakers when preparing strategic plans. The emergence of new diseases of zoonosis and lack of sufficient knowledge about their nature increase the amount of activities in the health sector. Therefore, in addition to providing their public services, health professionals must undertake new activities in order to control these diseases. Lack of manpower is a serious problem in many health systems; when preparing strategic plans, policymakers should pay attention to the number of available manpower [18]. In developing countries, there are not enough trained health professionals to provide medical care and prevent diseases such as COVID-19 at an early stage; therefore, in strategic planning, appropriate policies should be considered regarding the training of human resources. Providing equipment, medication, and vaccines has a key role in improving the countries' capacity in fighting against zoonotic diseases, an issue that has been well illustrated during the COVID-19 pandemic. In several countries, health systems faced a shortage of essential medical equipment, including special clothing, masks, and disinfectant solutions during the pandemic; it seems that such countries have not paid enough attention to critical situations such as COVID-19 [36].

#### **IMPLEMENTATION OF STRATEGIC PLANNING**

To improve the performance of health systems in

dealing with zoonotic diseases, policymakers and health managers should pay attention to the implementation of programs and policies as well as its challenges [29] and it is important to consider the ethical aspects of public health. It is true that there is a high tendency toward developing the strategic planning among health managers; however, the implementation stage of such plans has always faced several problems [37]. The implementation of strategic planning is a complex phenomenon, and there are several elements associated with it. Strategic plans must be put in place to combat zoonotic diseases, and their implementation requires the design of a set of methods [27-38]. In order to implement strategic plans for zoonotic diseases, we need the cooperation of all relevant organizations and actors. In an international crisis like COVID-19, several countries had great difficulty implementing their programs. It seems that at the time of preparing their strategic planning, they did not have a crisis model on their agenda [18].

#### **Conclusions**

Health systems need to develop strategic planning in order to upgrade their capabilities in combating zoonotic diseases. These programs must be flexible, in line with the one health approach, based on the current needs, and aligned with the new challenges faced with health systems. The strategic planning is directly related to national and international policies, organizational goals and missions, dynamism, degree of complexity, and organizational structure of each country's health system. Therefore, we believe that in developing a strong strategic planning for zoonotic diseases, the above-mentioned components should be identified and considered.

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#### **Ethics approval**

The study received ethical approval from the Iran University of Medical Sciences (IR. IUMS.REC. 1399.11.93).

#### **Conflict of interest statement**

The authors declare no conflict of interest.

#### **Authors' contributions**

MKG, HAG and MB designed and conceived the study; MKG, HAG, MB drafted the manuscript; MKG,MB,

MM and AS revised the manuscript, performed a search of the literature. All authors critically revised the manuscript. All authors have read and approved the latest version of the paper for publication.

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