

MINISTRY OF HEALTH

**E-HEALTH
STRATEGY
2010-2014**

**ULAANBAATAR
2009**

ONE. JUSTIFICATION FOR E-HEALTH STRATEGY DEVELOPMENT

- Nowadays by introducing the latest achievements in IT to the health sector we are able to make quality and timely health care services accessible to the population regardless of distance and time. The introduction of IT in the health sector for the delivery of health care services is an optimal solution as our country has sparsely distributed population, over a large land mass, and under-developed infrastructure.
But in order to introduce IT in the health sector comprehensively requires financial resources as well as human resources. There is arising need to define priority action areas to develop e-Health, related to the mission and objectives of the health sector; rational and efficient resource allocation; and to make the right directions.
- In recent years, with the aim to improve hospital management of specialized hospitals and local health organizations, introducing electronic recording system is under process. We have started to understand the role of IT and its benefit in the improvement of hospital management, as well as the use of ICT to bring positive change, keep pace with current development, while being sensitive to real needs. Unfortunately, because of the lack of proper coordination, and standardization, instead of making things easier and simpler, this leads to additional workload and makes matters more complicated.
- Technical and financial support of international donor organizations is highly required in development of e-Health, and a number of projects are under implementation in the health sector. Therefore, there is an urgent need to have an e-Health strategy document to coordinate projects and programs which are working on Telemedicine and e-Health, and to unite all activities under one mission and coordination.
- On the basis of the above mentioned needs and requirements, we have developed this strategy document which will play a central role in renewing and developing e-Health structure and content; in defining direction for use of ICT achievements; and providing coordination for implementation.

TWO. CHALLENGES

- Although the Health Management Information System Development Strategy has been implemented since its approval by the Health Minister's order #178 in 2005, e-Health development related objectives were not included as priority action area.
- There is no national level policy document for e-Health.
- A legal and regulatory environment for ensuring privacy and confidentiality of patient information, for telemedicine and exchanging health information of individuals is not in place.
- There is a growing need for joint coordination, and better organization given the increasing needs, benefits as well as wide introduction of IT in the health sector.
- IT knowledge and application of health professionals is unsatisfactory and information technology specialists is still lacking in numbers.
- Although some measures were taken in building legal environment for introducing IT in the health sector, there is a need to identify the financial resources required as financial resources for this are not included in the budget.
- Infrastructure for IT, internet service, and costs are dependent on other sectors.
- Medical equipments are not fully equipped with digital technology.
- Supply, maintenance, and service of computers and equipments are not satisfactory.
- Standard requirements of software used in the health sector are not fully developed.
- There is lack of experts, to do assessment, evaluation on health sector IT services.

THREE. GUIDING PRINCIPLES, VISION, MISSION, AND OBJECTIVES

Guiding principles

This strategy is guided by the priorities of the Ministry of Health and the following core principles:

1. Support the purpose of health system goals and functions;
2. e-Health is based on the needs and aspirations of the population, the environment, the medicine and information technology achievements, and the other available resources;
3. Harmonize the health systems actions with MDG goals, international, regional and country's priorities and policies;
4. Develop cooperation and mutual learning;
5. Protect the security, privacy and confidentiality of organizations' and personal information

Vision

To protect people's health through the sustainable use of information and communication technology

Mission

To use advanced information and communication technology to provide equitable, accessible, quality, timely and safe health care services for the population, regardless of time and distance.

Objectives

1. To support the development of the health workforce
2. To improve the quality¹ and availability of health services¹
3. To develop electronic record keeping for clinical, administrative, research and public health purposes
4. To support health education of the population
5. To create an enabling environment for e-Health development in Mongolia

FOUR. STRATEGIES AND PRIORITY ACTION AREAS

Mongolia will employ the following strategies to fulfill its e-Health mission and achieve the vision.

Strategy 1. Develop the health workforce

This will include: eLearning, access to electronic course materials, access to the indexed health literature through databases with remote mentoring.

E-Learning will consist of two main components:

- Pre-service (initial) education and training programs
- In-service training or continuing professional development, for health workers.

Actions to be implemented:

- To develop a content repository of eLearning and training modules
- To access and deliver e-learning materials through software development
- To use telemedicine for improving knowledge and skills of medical staff through access to specialists in Mongolia and abroad by telemedicine.

¹ Safe, effective, useful, custom centered, prompt, equal

Expected results:

- Health literatures will be accessible from databases, for use.
- Remote health mentoring from abroad will be available through telemedicine network.
- Opportunities for distance learning for health will be increased.

Strategy 2. Improve quality of health care service through the use of telemedicine and other e-Health applications

This strategy will cover two main aspects: access to specialized medical care and support for clinical decision making.

Actions to be implemented:

- To develop various modalities of telemedicine to increase availability of specialized medical care to rural population and to improve knowledge and skills of medical staff
- To build a telemedicine network by establishing specialized telemedicine centers at specialized centers and hospitals
- To use decision support systems for diagnosis and case management including consultancy, e-prescription and treatment procedures for upgrading the clinical decision making skills of health professionals. (The systems will be based on approved guidelines for diagnosis and treatment).

Expected results:

- Specialized telemedicine centers for diagnosis and treatment consultancies will be established in Ulaanbaatar
- Professional skills of staff in charge of telemedicine will be improved.
- Support systems for consultancy and decision making will be introduced.
- Telemedicine **will be introduced** in emergency care.

Strategy 3. Develop e- information systems

With the use of computerization and its peripherals, within the HMIS the system, for data collection, health facilities' functions will go electronic.

Actions to be implemented:

- To develop e-hospital systems:
 - Electronic hospital information system
 - Electronic health records (EHR)

- Electronic medical records (EMR)
- Picture archiving and retrieving systems (PACS)
- Laboratory information systems
- Drug information systems

Expected results:

- Personal e-health recording book and electronic medical records will be introduced.
- Archiving and communication systems for medical imaging equipment will be introduced
- Laboratory and drug information systems will be electronic.
- Data dictionary for health information system will be developed.

Strategy 4. Develop the infrastructure for e-Health.

This strategy will focus on the increased use of internet and other forms of electronic communications as well as appropriate systems, and the supply of computers. It will be developed in accordance with the E-Mongolia program.

Actions to be implemented:

- To apply and explore to waive or reduce tariffs for internet connection for local health organizations
- To supply health organizations with LAN and WAN and its peripherals
- To use mobile communication technology for providing connectivity to people in remote and underserved regions with low use of communication devices.

Expected results:

- Local health organizations will have access to internet with reduced tariffs
- A minimum requirements for diagnostic and treatment digital equipment for health organizations will be developed.
- Supply of computers and its peripherals, to health organizations, will be improved.
- Aimag and district health organizations will be able to provide health services using vehicles equipped with mobile diagnostic and treatment equipment.

Strategy 5. Build capacity for eHealth.

This strategy focus on capacity building of human resource for the development of e-health, and on training in the use of ICT.

Actions to be implemented:

- Identification of projected needs, selection of training institutions and development of training program

- Capacity building of human resource of training institutions

Expected results:

- E-Health training program and content will be developed
- Human resource capability of training institutions will be improved

Strategy 6. Create management and organizational structures for eHealth

Following management and organizational structures for eHealth can be in place:

- *eHealth Steering Committee* – It administers setting policy and determining strategic direction, coordinating implementation, overseeing and making decision for eHealth in Mongolia. The eHealth Steering Committee can have subcommittees.
- *eHealth Professional Council* –It is **an impermanent** professional council to define direction of eHealth development and to provide professional advice on policy, decision making and programs/projects.
- *eHealth Corps* –eHealth experts in health organizations with full job descriptions and scheme of service to support the eHealth strategy implementation.
- *National Society for eHealth* –A non-governmental organization providing links to other professional institutions for sharing experiences and mutual cooperation. It can be affiliated with international societies.

Expected results

- eHealth management and organizational structures will be improved

Strategy 7. Create enabling environment for eHealth

This strategy will cover the following areas.

With the aim to build legal and regulatory environment for eHealth development, related laws are amended, and rules and regulations are renewed and developed.

Standardization is important for the coordination of eHealth subsystems. Standardization of eHealth development should meet International Standards.

Actions to be implemented:

- To develop proposals for amendments to particular laws and regulations and to get it approved
- To standardize data structure /to make databases exchangeable and possible for analysis/

Expected results:

- Legal and regulatory environment for eHealth development will be built
- International standards of eHealth will be introduced

Strategy 8. Promote health education of the population

This strategy will focus on the use of ICT in development and dissemination of information for the general public.

Actions to be implemented:

- To promote and establish health information web page /portal/ for the general public
- To establish legal and regulatory environment for free use of TV, radio, newspapers, mobile communication network for promotion of health education

Expected results:

- Methods and tools of information dissemination electronically to the public will be increased

Strategy 9. Mobilize resources for eHealth

The eHealth strategy will be funded from regular funding sources such as budgets of the Government, MOH and hospitals, Health Insurance fund and other related sources.

Actions to be implemented:

- To waive or reduce tariffs for connectivity and telecommunications services for the health sector
- To strengthen and expand existing partnerships with donor countries and foreign agencies
- To develop public and private organizations' partnership, internal (inter-agency) partnerships

Expected results:

- Regular funding source for the implementation of eHealth strategy will be available
- Support of donor countries, partner organizations will be expanded

Priority action areas

Priorities areas are:

- Developing ICT infrastructure and human resource in the health sector
- Delivering health care services to people with low income, living in remote areas

- Developing electronic record keeping for all aspects of the health care delivery and the health management information systems
- Developing of telemedicine to decrease common diseases morbidity and mortality among the population

FIVE. Monitoring and evaluation

Mid-term and final assessment of the implementation of the eHealth strategy will be done by Ministry of Health in cooperation with related organizations.

SIX. Updating of the strategy

This strategy can to be updated based on the assessment results and recommendations.

Indicators

Indicators	Baseline for 2009	Target for 2014	Data source
<i>Strategy 1. Develop human resource</i>			
1. Number of search engines using for internationally conducted research materials and studies	1	3	MOH
2. Number of countries being connected through telemedicine network	0	2	DOH
<i>Strategy 2. Improve quality of health care service through the use of telemedicine and other eHealth applications</i>			
3. Number of specialized telemedicine centers	2	7	MOH
4. Number of facilities with decision support systems for consultancies and case management	0	10 subordinate organizations under the MOH + 21 General hospitals	DOH
5. Number of emergency cars able to provide telemedicine service	0	30	DOH
<i>Strategy 3. Develop e-information systems</i>			
6. Number of health facilities introduced EHR	0	10 subordinate organizations under MOH + 21 General hospitals	DOH
7. Number of health facilities introduced EMR	0	10 subordinate organizations under MOH + 21 General hospitals	DOH
8. Number of health facilities introduced PACS system	0	10 subordinate organizations under MOH + 21 General hospitals	DOH

9. Number of health facilities introduced e-laboratory information system	0	10 subordinate organizations under MOH + 21 General hospitals	DOH
Strategy 4. Develop the infrastructure for eHealth.			
10. Number of health facilities with backup power generators	Baseline should be defined	1	DOH
11. Number of soum hospitals with regular use of internet	Baseline should be defined	200	DOH
12. Number of health facilities with LAN	Baseline should be defined	60	DOH
13. Number of aimag and district health facilities provided with vehicles with mobile diagnostic and treatment equipment	0	30	DOH
Strategy 5. Build capacity for eHealth.			
14. Percentage of workers attended eHealth training	0%	50%	DOH
Strategy 8. Promote health education of the population			
15. Number of health information web pages /portal/ for the general public	Baseline should be defined	5	Research
16. Amount of expenditure from the state budget, for eHealth development	Baseline should be defined	To increase by 25%	MOH

Glossary of terms

eHealth – health service with electronic communication and function

eTraining – mode of training which used ICT in its function

Telemedicine – modern technology to provide distance consultancy, diagnosis and clinical care with the use of information and communication technology

Modalities of Telemedicine – it will include telecardiology, telepathology, telenursing etc

Type of Telemedicine – it will include online, offline and mobile connection

Medical professional – it includes personnel with high, medium level medical education including physicians, nurses, pharmacists, public health workers, dentists and other medical professionals

Health worker – it includes medical professionals and other health workers working in health organizations

Hospital information system – electronic information system to support development of information for organization's management, planning and financial function

Electronic Health Record (EHR) – a longitudinal electronic record of patient health information

Electronic Medical Record (EMR) – electronic record of patient's disease history

Picture archiving and communication systems (PACS)– a system connected with X-ray, computer tomography, ultrasound and radiology equipments, for archiving and transferring images

Laboratory information system – system to archive and transmit laboratory results

Drug information system – information system related with prescription and distribution of drugs/medicines