

REPUBLIC OF BULGARIA

MINISTRY OF HEALTH

**STRATEGY
FOR IMPLEMENTATION
OF ELECTRONIC HEALTHCARE
IN BULGARIA**

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I. INTRODUCTION

The current document gives a definition for electronic healthcare and represents the priority goals for its development in the Republic of Bulgaria.

For the execution of the strategy will be developed an action plan for a 7 years period (from 2007 to 2012), where will be defined the projects, the needed resources and terms for their execution, as well as the organization of the entire process. This plan will be adjusted to the E-health Action Plan of the European Commission.

The document was developed according to the governmental programs of Republic of Bulgaria for healthcare development and is based on preliminary analysis that comprises:

- Bulgarian and world experience in implementing information and communication technologies (ICT) in healthcare;
- the state of the Bulgarian healthcare system;
- the trends for creating modern and advanced healthcare in the developed countries;
- the social needs for electronic services in the area of healthcare.

The Lisbon summit of the European Council in March 2000 drew the strategic goal for the European countries to become the most competitive and dynamic knowledge-based economies in the world. The European Council reconfirmed this strategic goal and enforced the accelerated development of Information society and ICTs. The implementation of e-health is an important component of the information society and was acknowledged as one of the main priorities in the European development plans. The new initiative of the European Commission i2010, place a significant role on the introduction of electronic health cards and unified information system as an integral part of the modern healthcare.

The healthcare ministers of the EU member countries agreed upon three main goals that need to be achieved for the good of the EU citizens as a whole. They are:

- Implementation of electronic health cards;
- Delivering health services online;
- Building European healthcare information networks.

II. DEFINITION OF ELECTRONIC HEALTHCARE

Electronic healthcare is a rapidly evolving area, where medical informatics, communal healthcare, health service providers and the information through Internet and its related information and communication technologies collaborate strongly. It marks not only the technological development but the approach of global thinking for improving health services on local, regional and global level.

According to modern assumptions **electronic healthcare** represents a complex of measures, based on organizational, technological and legal frame and comprising the whole functional aspect of the healthcare system.

The main principles of electronic healthcare are:

1. **Effectiveness** – one of the goals of e-health is to increase healthcare effectiveness, as this way costs are reduced.
2. **Improving quality of healthcare** – increased effectiveness includes not only cost reduction but also improvement in quality.
3. **Evidence based medicine** – electronic healthcare should contribute to decision making based on serious scientific estimations.
4. **Equal access** – allowing access to medical information through Internet for all citizens. Giving each citizen the right to choose among the available health services.
5. **Encouraging** a new type of relationship between citizens and health institutions, where decisions are taken by both parties.
6. **Online education** of physicians (lifelong medical education) and of people (increasing the health awareness, prevention information and others.).
7. **Possibility** to exchange information in a standard way between health facilities.
8. **Expanding** the span of healthcare above the conventional boundaries. E-health makes it possible for the people to receive online health services by highly qualified medical institutions, independently of their physical location.
9. **Ethics** – electronic healthcare creates new forms of relations between patient and physician, and places new challenges and ethical problems concerning online practices, informed agreement, confidentiality and others.

10. **Equality** – electronic healthcare will facilitate the equal access of the different social strata to health services.

The main **directions** of electronic healthcare are:

- **Systems and services, targeted for the healthcare sector** - enhance the advancement of medical science and research, better management and distribution of medical knowledge.
- **Possibilities for the users of health services – patients and healthy citizens** - better health awareness, prevention, information about the health status, possibility to take active part in the decision making concerning their health
- **Benefits for healthcare specialists** – fast and easy access to information, diagnostics and performing complicated interventions remotely, as well as access to specialized educational resources.
- **Benefits for health authorities and healthcare managers** - access and distribution of the best practices for healthcare management and planning.
- **Accelerated development of ICT after complete analysis about the working processes in healthcare** – this analysis will define the directions of development and mutually connections of all factors in healthcare on the base of ICT.

III. LEGAL FRAME

1. National legal frame

The development of modern health system, based on the usage of ICTs requires a legal basis that guarantees the rights and the interests of the citizens and all other participants in the healthcare system. Needed is a harmonized national legal frame, adapted to the trends in the strategic documents of the government concerning electronic management and the development of information society. Should be identified the legal acts regulating the usage of information technologies in the health system and measures should be planned for overcoming the existing legislation gaps and omissions. Needed is a constant monitoring of the legislation adequacy by the Minister of healthcare, which should ensure that the respective legal measures for its improvement are taken in due time.

2. European legal frame

The national legal frame has to be in accordance with the **European norms in the sphere of electronic healthcare**. The Minister of healthcare has to identify the working groups, centers and forums for development of the legal

basis for the relations within healthcare, concerning the information and communication technologies in order to ensure the participation of Bulgarian experts therein. This way will be provided correct understanding, logistics and application of the European legal basis on a national level.

3. Protection of personal data and health information

The introduction of functionality for electronic storage and exchange of registers, health files, epicrisis and others containing personal data and health information, implies the necessity for adequate legal protection of this information. The Minister of healthcare has to take active measures for defining the forms, contents, order and conditions for processing, usage and storage of medical documentation and exchange of statistical medical information on a sub legal level.

4. Information access

In order adequately to protect the rights and interests of citizens, concerning the protection of their health information, it is needed to establish clear rules for electronic storage and access to such data.

5. Protection of users rights

The development of electronic healthcare requires the introduction of specialized protection concerning the medication trade and the access to electronic health services.

6. Protection of intellectual and industrial property. Competition

The usage of ICTs in the health sector is related to the necessity to guarantee the protection of authorship and similar rights on health researches, articles and information, trademarks and medications, patents and others. The creation of adequate legal regulation in this direction will guarantee clear rules for competition between the participants on the free market and the possibility to prove the eventual actions of unfair competition by the electronic information exchange.

7. Legal provision of the operational compatibility

For the building and development of electronic health care in Bulgaria has to be provided integration and operational compatibility for the information exchange between the systems participating in healthcare, as well as for delivering electronic health services and introduction of national health cards.

8. Other legislator measures

The stable course of politics for electronic healthcare requires the adoption of other legal acts in the area of information security and the delivery of health services electronically to people with disabilities.

IV. ANALYSIS OF THE CURRENT STATE – summarized results

The performed researches on the level of development and usage of information and communication technologies in healthcare brought the following **results**:

- According to data from eEurope+ Health Survey (eEHS), in June 2003 84% from the GPs in Bulgaria use computers. According to expert estimations from NHIF by 31 of January 2006, 75% from the GPs report to the NHIF electronically.
- The share of GPs with Internet access is low. Between 14% and 19% from the GPs have Internet access in their offices. For comparison 78% of the GPs in EU -15 have such access.
- According to NHIF 56.3% from GPs maintain electronic data for their patients in the reporting period by November 2004. In comparison only 8.5% of the medical specialists report electronically, and from the employed in hospitals and performing medical activity on contracts with NHIF only 3.7% report electronically.
- Still a small part of the patient's health information is stored in a health file. Partially is offered integrated health service, so that by the follow-up exam the specialist has access to the data from the previous visits.
- The data from eEBHS show that only 2 % to 4 % from GPs (100-200 physicians) exchange electronic data about their patients.
- The low computer availability for the specialists in the pre-hospital assistance is an obstacle for the electronic exchange of health information.

From the analysis becomes clear that an advancement is needed in the following **directions**:

- Unified national strategy for electronic healthcare - without such, projects are done “in pieces”, which leads to a raise in the investments in healthcare without achieving the desired result.
- Continuous and sufficient education of healthcare specialists on ICT usage
- Based on the required by the MH and NHIF form of the necessary source data, the available solutions by the health service providers have to be enhanced and integrated with each other.

- Connectedness on a national level – it is necessary to be developed an infrastructure - centralized network, connecting health facilities. Currently there are only some isolated local networks.
- Establishing national standards and policies for security and confidentiality for exchange and storage of medical information.
- Building working telemedical applications
- Building of systems should be in accordance with the rules for operational compatibility.
- Building effective health portals for the healthcare system, as well as centers for medical data storage.
- Establishment of common license policy in the healthcare system - for the used software solutions and products.

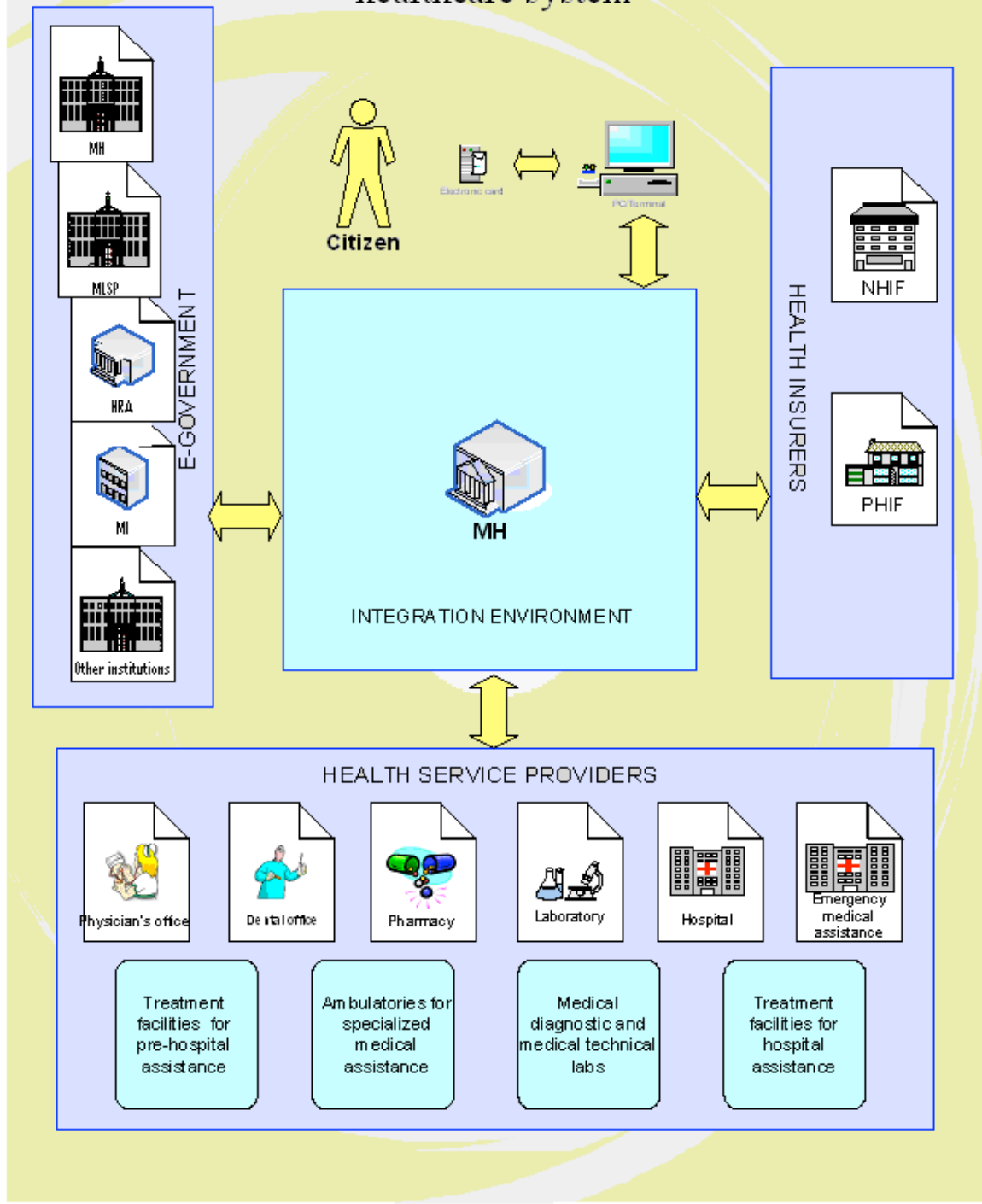
V. STRATEGIC GOAL AND VISION

The strategic goal of the introduction of electronic healthcare is:

Improvement in the health status and quality of life of Bulgarian citizens, by providing equal access to advanced, effective health services of high quality, through the utilization of new and existing technological means, in accordance with the evolving necessities and increased mobility of population.

Common vision for the future functioning of the electronic healthcare system

Common scheme for the future operation of the electronic healthcare system



The implementation of electronic healthcare will be parallel with the existing procedures and methods in healthcare system. The complete implementation of ICT in all aspects of health services will give the opportunity for building the following model:

The citizen who needs medical assistance presents his electronic card, through which the access to the necessary health services is possible, such as – exams, tests, issuing directions, prescribing treatment, hospitalization and treatment, emergency medical assistance and others. The information for the realized services is recorded in the integrated healthcare system.

The delivered health services are recorded in the system by the health specialists, on this base are formed their reports for the different institutions and after the necessary checks the respective activities are paid. Based on reports for the performed activities (full medical and financial information) – MH receives in real time the necessary information (including administrative) – this way the management of the healthcare system becomes more effective. The Integrated healthcare system is expected to have full operational compatibility with the systems of the other institutions, related to the e-government – NAI, MIA, MF, CM, and others.

The same way can be enabled useful communication with other international institutions in the sphere of healthcare.

VI. OPERATIONAL GOALS

For realization of the strategy have to be fulfilled the following operational goals:

- 1. *Improving the quality of health services for the citizens***
- 2. *Orientation of the healthcare model fully towards the end user - the citizen***
- 3. *Providing full and objective information for all medical and financial activities***
- 4. *Providing more complete medical information to the healthcare specialists.*** This will lead to more effective treatment and respectively to shorter treatment terms as well as to higher working capacity of the people in productive age.
- 5. *Creation and usage of telemedical infrastructures.*** This will improve the process of diagnostics and treatment and respectively will lower the consumed costs.
- 6. *Possibility for effective communication between health specialists.*** This will lead to improvement of their qualification and to more effective prevention and treatment activities.

7. ***Facilitating the access to health information.*** This will increase the medical awareness of people and respectively the effectiveness of preventive medicine will raise, this way the risk for different diseases will drop.
8. ***Engaging nongovernmental organizations and the IT sector for realization of the strategy.*** They will develop and implement the information systems in the health sector and will take care for the update and the correct operation of the developed systems (on the principles of "outsourcing" and "publicly-private partnerships"). This way the attention of the participants in the health system will stay focused on the essential medical activities and the performance of the nonessential tasks will be transferred to IT companies.
9. ***Development of integrated information environment*** The availability of integrated information environment ensures operationally compatible automated exchange of information and data between all system levels.

VII. Measures

The measures for realization of the operational goals are in the following areas:

1. Building an integrated information system for information exchange between the healthcare staff (treatment, educational, scientific, financial and administrative units)

- Implementation of electronic health cards;
- Implementation of software applications for complex information processing in real time, including: electronic redirections, e-prescription, lab data and other tests
- Building complex and integrated with each other, as well as with external applications, hospital information systems;
- Creation of complete electronic patient medical record – combination from electronic health information about the health and health care for the citizen, momentary electronically accesses to information about person or population; ensuring of information and support by taking decisions in accordance to improve the quantity, security and effectiveness of patient care.
- Building the necessary infrastructure for normal operation of the healthcare system – networks, connectors and others.
- Establishing an appropriate base for development of telemedical projects.

2. Standardization and information security

Structuring and unification of the processed information through precede the development of information system in any area:

- Implementation of national health-information standards;
- Development of a model of the national health-information network
- Developing requirements for compatibility of the healthcare information systems;
- Implementing security policies of the information systems in healthcare.
- Access to the personal electronic health record through electronic smart-cards, encrypted forms for data exchange

3. Awareness and education

- Delivering web-based services in real time;
- Delivering information to the people electronically by realization of the following portals:
 - providing information on different ways of treatment; rights, obligations between insured persons and the health service providers, ways of reimbursement and degree of reimbursement
 - health education;
 - health prophylaxis;
- Implementation of electronic systems for qualification and continuous learning for the healthcare specialists;
- Development of systems for decision taking support for the health specialists and exchange of clinical information;
- Providing public registers for health facilities and people providing health services, health insurance funds, pharmacies and others.

4. Application of good practices and operational compatibility.

- Introduction of good practices of electronic healthcare and their realization in order to avoid ineffective steps.
- Operational compatibility of the electronic health network in accordance of the principles, norms and best practices of EU.

The specific tasks, needed for realization of the above measures are:

- Providing computers for the healthcare staff and connecting them to the respective health networks and/or the Internet;
- Update of the university curriculums with training on ICTs for medics, dentists, pharmacists, health managers and the other health specialists
- Creation and implementation of specific health-software products, that should be adjusted to the international standards for exchange and protection of medical data
- Establishing a specialized unit by the Ministry of health, that should evaluate and certify the software products for healthcare based on their information protection, keeping the standards for medical information and electronic exchange of medical information.
- Improving the administrative capacity in the healthcare system (researches, analysis, estimations, decision taking, observation and control).

VIII. CRITERIA FOR SELECTION OF PRIORITY PROJECTS

The main criteria, based on which the projects for execution of the current strategy will be prioritized are:

- Proven social and economical benefits (based on preliminary analysis);
- Clear and fast effect of improving the quality of the delivered health services;
- Proven relation and correspondence with European projects and initiatives.

IX. INDICATORS FOR EVALUATION OF THE ACHIEVEMENTS

According to the new European initiative i2010 and the Action plan eEurope 2005, the indicators, by which the development of electronic healthcare is evaluated, are following:

I. Indicators for evaluation of the ICT infrastructure

1. Percentage of treatment and health facilities with developed information infrastructure (computers, network, Internet);

2. Percentage of health specialists with Internet access;
3. Number of health portals;
4. Percentage of health facilities that have completed integrated information systems.

II. Indicators for evaluation of the ICT education of healthcare staff

1. Percentage of the healthcare specialists with at least basic education on ICT;
2. Percentage of ICT specialists employed in the sector.

III. Indicators for ICT usage

1. Percentage of the population above 16 years (distributed in age groups), using the Internet for health information;
2. Percentage of the GPs, using electronic patient files;
3. Percentage of the GPs using PCs connected with Internet in their offices;
4. Usage of different types of Internet resources by the health specialists (in %) for:
 - a. Communication;
 - b. Looking for information;
 - c. Exchange of patients' health files;
 - d. Communication with other healthcare professionals – other physicians, specialists, insurers, pharmacists.
5. Percentage of pharmacies working with e-prescriptions.

X. MANAGEMENT

The management of the process for building an electronic healthcare in Bulgaria is a responsibility of the Minister of healthcare.

A Coordination Counsel for execution of the strategy for electronic healthcare is assigned to the ministry. The Minister of Healthcare defines its staff, structure, and the regulation for its operation. In the Coordination Counsel there are representatives of NHIF and healthcare professional organizations. In the

counsel can be included also representatives of nongovernmental organizations, whose activity is related to the sphere of electronic healthcare.

The Coordination Counsel develops the Action plan and observes its realization. The Coordination Counsel for fulfilling the Strategy for electronic healthcare can create work groups for performing specific activities, related to the realization of the Strategy.

XI. Financing

For the fulfillment of the National Strategy for implementation of electronic healthcare the financing will be program and project oriented. The sources of funding will be:

1. States budget – for fulfillment of the strategy yearly will be allocated a minimum of 3-5% from the whole budget for healthcare (in the EU countries the relative share is 5-7%)
2. From European funds - according to plans and frameworks
3. Public – private partnerships
4. Other sources – other national and international sources, sponsors, donation programs and others.

Useful abbreviations:

MH – Ministry of Healthcare
NRA - National Revenue Agency
NHIF – National Health Insurance Fund
RHIF – Regional Health Insurance Fund
MLSP – Ministry of Labour and Social Policy
MI – Ministry of Interior