

THE IMPACT OF NEW TECHNOLOGIES ON THE MILITARY HEALTH SYSTEM

Col. Gabriel COJOCARU*

***Abstract:** The health information system provides the basis for decision making and has four key functions: data generation, compilation, analysis and synthesis, and communication and effective use. A good health information system brings together all relevant partners to ensure that health information users have access to reliable, authoritative, usable, understandable and comparable data.*

***Key words:** military health system, e-health, financial resources.*

Foreword

The intensity of the development of a society requires the administration of a state to continuously modify the defense systems, of organization and leadership, of defense policies, and of material support, especially financial. Any activity in the field of health, especially the health of military personnel, requires, besides the human resource, a significant financial resource.

The ability to manage financial resources is for many people the basis of managerial power, as this activity involves the ability of political-military leaders to spend money, time, equipment, workforce and space, based on a defense strategy. The need to modernize and develop defense systems and, implicitly, to provide financial resources are determined by the pace and dynamics of societal changes.

* Col. Gabriel COJOCARU is an officer in the Ministry of National Defense and a PhD student at "Carol I" National Defense University.

Administrative informatics systems, e-Health components in the military health system

The primary objective of the military health system, which includes clinics and medical staff, is to maintain the health of military personnel so that they can carry out military missions and be prepared to provide medical assistance during the war.

The military health system also provides medical assistance to civilian personnel, military pensioners and their dependents, including members of the reserve components.¹

The reorganization of the Romanian military health system was made by the Decision no. 114 of July 19, 2007, by which the Supreme Council of National Defense approved the “Concept on the Reorganization and Modernization of the Military Medical System”.² Thus, the Medical Directorate is the central specialized body of the Ministry of National Defense, which elaborates the unitary concept for the organization, equipment and functioning of the medical and veterinary care system in the army, in peacetime, in crisis or war situations, as well as in the improvement and the ongoing modernization of healthcare activities to prevent illness, preserve and improve the health status necessary to maintain a high combat capacity of the army. It also ensures the fulfillment of the partnership objectives and develops the operational and administrative military standards based on standardization agreements and allied publications in the medical-military field, for the purpose of interoperability of the Romanian Armed Forces with the NATO military structures.³

At present, military medicine benefits from a diversified material base and training system. It has 11 hospitals and 8 clinics, research or recovery centers.

¹ Don J. Jansen, Military Medical Care: Questions and Answers in <https://www.fas.org/sgp/crs/misc/RL33537.pdf> accessed on 10.08.2016

² Decisions adopted by the Supreme Council of National Defense in 2007, in http://csat.presidency.ro/documente/Hotararile_CSAT__2007_8ro.pdf, accessed on 10.08.2016

³ Military medicine day, in <http://www.agerpres.ro/flux-documentare/2016/08/21/ziua-medicinei-militare-10-43-16>, accessed on 10.08.2016

E-Health projects eligible to military health units in Romania

As the main institution involved, the Ministry of Health generally aims to improve the management of the health information system (according to the Government Decision no. 1718 of 2008 on the organization and functioning of the Ministry of Health). According to the Law on Health Reform no.95 / 2006, the Ministry of Health, through the National Centre for the Organization and Provision of Information System in Health, has the role to ensure the creation of an integrated information system for public health management. The same law requires the existence of information systems on transmissible diseases, emergencies, community assistance, hospitalized patient's electronic file, health insurance cards, etc. The Ministry of Health is the first recipient of data reports to support the decision-making process from health care units in order to assess the health status of the population, for the periodic analyses and evaluation of health status indicators and performance criteria of medical establishments and for the achievement of periodic reports on the state of health of the population towards the Government.

The Ministry of Health is the lead actor for some health informatics processes:

- management of licenses for healthcare providers;
- administration and management of hospitals and other types of establishments or institutions;
- administration of specialized health programs;
- classification of medicines.

In addition, Government Decision no. 1455/2006 stipulates that the Ministry of Health through National Centre for the Organization and Provision of Information System in Health will participate in the elaboration of the strategy of informatization of the healthcare system in Romania, together with the Ministry of Communications and Information Society.⁴

The project on cost coverage for patients with burns is in the debate.

List of sanitary units that would be included in AP-Burns: Clinical Emergency Hospital for Plastic Surgery and Burned, Bucharest; Floreasca Emergency Clinical Hospital; Emergency Clinical Hospital Bagdasar

⁴ EHealth Strategy of the Ministry of Health, in www.ms.ro/documente/256_588_-Anexa%20strategie%20e-sanatate.doc, accessed on 10.10.2016

Arseni; “Grigore Alexandrescu” Emergency Clinical Hospital for Children; “Dr. Carol Davila” Central University Emergency Military Hospital; “Sf. Spiridon” County Emergency Clinical Hospital Iași; “Sf. Maria” Clinical Emergency Hospital for Children, Iași; County Emergency Clinical Hospital, Târgu Mureș; “Dr. Pius Brinzeu” County Emergency Clinical Hospital Timișoara; “Louis Turcanu” Emergency Clinical Hospital for Children Timișoara; County Emergency Clinical Hospital Cluj and Clinical Emergency Hospital for Children, Cluj.⁵

The National School of Public Health and Sanitary Management is a public institution involved in several areas, relevant being the technical assistance to service providers and DRG system. The National School of Public Health and Sanitary Management manages a register of information reported by hospital service providers in accordance with Order of the Ministry of Health no. 1782/2006, comprising all the hospitals in Romania, including the military, from the transport network and the private hospitals. The registry includes almost all hospital cases, procedure codes, diagnosis and other information related to the patient’s care episode. Since 2007, day hospitalization is also included.⁶

Priorities of the military health system

Continuity of healthcare is a key priority for providing modern medical services. This allows a high quality of care, especially for citizens with chronic conditions. Continuity of healthcare is, in turn, based on continuous communication between all actors involved in the healthcare process.

It is well documented that widespread dissemination and adoption of eHealth applications, including the patient / electronic health Register, will lead to major savings in terms of costs, quality and safety and increased efficiency. For the patient, this ultimately means improving safety and more attention in shorter time.

A key component of eHealth is the ability to exchange meaningful information both within and between healthcare providers. This concept is

⁵ The project on cost coverage for patients with burns, in debate, in <http://www.gorjeanul.ro/societate/proiectul-privind-asigurarea-acoperirii-costurilor-pentru-pacientii-cu-arsuri-in-dezbatere#.V9UTkJh97IU>, accessed on 15.10.2016

⁶ EHealth Strategy of the Ministry of Health

known as “semantic interoperability” and allows more information to be made available electronically, including, for example, patient identification, medicine prescriptions, recommendations and descriptions.

We believe that it is a priority to monitor the amounts allocated to the military health system so that they can be used effectively. To this end, it is necessary to identify and monitor the risks that may negatively impact the efficiency of the funding mechanism of medical services and which may lead to situations in which the major medical institutions’ objectives remain unfulfilled and have a negative impact on the quality of life of the army personnel.

Streamlining the funding mechanism of military medical institutions contributes to optimizing the overall health system and the appropriate use of financial resources will reduce mortality, disability and increase the quality of life for military personnel.

Progress in computing and genomics is expected to provide unprecedented innovations in personalized medicine. The National Cancer Institute of the United States National Institute of Health defines the personalization of medicine as: “a form of medicine that uses genetic, nutritional and environmental information about a person to prevent, diagnose and treat diseases”.⁷

A critical component of public health policy involves public communications, in case of disasters, as well as efficiency in delivery of medical services during a public emergency.⁸

Effective communication enables professionals to exchange information and use best practices to maximize the benefit of patients and end-users. In order to improve and develop services, healthcare providers and decision-makers need to extend effective cooperation strategies.

The eHealth Action Plan 2012-2020⁹, published by the European Commission, aims at using communication technologies, informing and

⁷ National Institute of Health definition of “personalized health”, in www.cancer.gov/dictionary?cdrid=561717. accessed on 30.10.2016

⁸ E-health Standards and Interoperability ITU-T Technology Watch Report, April 2012, in http://www.itu.int/dms_pub/itu-t/oth/23/01/T23010000170001PDFE.pdf, accessed on 2.11.2016

improving healthcare in Europe. The Action Plan focuses on the development of common standards to strengthen interoperable health systems between Member States.¹⁰ The most interested will play an active role in the implementation of e-health solutions.

The European Commission has promoted more activities to improve EU interoperability and standardization in healthcare.¹¹ During the 2014-2020 period, the Commission will use the Connecting Europe Facility and the European Regional Development Fund, funding programs to promote a widespread diffusion of innovative tools, support for best practices and services for health, increased life expectancy and well-being, paying particular attention to improving equal access to services.

Conclusions

Technical solutions in the field of information technology are not static; organizations such as medical institutions are experiencing a continual change in hardware, software and network standards. When new software becomes available, the hardware needs to be replaced to meet the minimum requirements of the new software.¹² The future of technology development may be unknown; still, it is enough to say that technology will continue to evolve at a rapid pace. Therefore, the healthcare industry should anticipate future demands that will result from technological change. In this respect, the architecture to be invoked by the healthcare industry should be able to meet current requirements while maintaining the ability to meet future demands. In addition, health care industries need to realize the

⁹ Report on the eHealth Action Plan 2012-2020: Innovative Healthcare for the 21st Century, in <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+-REPORT+A7-2013-0443+0+DOC+XML+V0//RO>, accessed at 12.11.2016

¹⁰ Interoperability and standardization: linking e-health services, in <https://ec.europa.eu/digital-single-market/en/interoperability-standardisation-connecting-ehealth-services>, accessed at 12.11.2016

¹¹ EU Health Programme 2014-2020, in http://ec.europa.eu/health/programme/policy/2014-2020_en, accessed on 12.11.2016

¹² Olugbenga A Adenuga, Ray M Kekwaletswe and Alfred Coleman, eHealth integration and interoperability issues: towards a solution through enterprise architecture, in <https://hissjournal.biomedcentral.com/articles/10.1186/s13755-015-0009-7>, accessed on 12.11.2016

importance of architecture before examining an IT solution to serve their needs.



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