The main idea of this paper is to prove the significance of medical informatician as an expert in the field of medicine and healthcare. We present four types of qualifications with their specific competencies. The core objective is to define the necessity of such experts as medical informaticians on the one hand, and on the other - to establish the required minimum of skills, that such interdisciplinary expert should possess. The method of approach is detailed presentation of each participant in the team through specific knowledge and professional culture, skills, competencies, and types of information they should have and use.

**Key words:** Medical informatics, eHealth, telemedicine.

**UDC:** 614.252.5: 614.253

**Introduction**

The interdisciplinary team, where the medical informatician realizes himself, combines four very disparate, significantly different in educational and training aspect attitudes and cultural professions.

On this basis the analysis of medical informatics profession appears to be most natural if it is supported by comparative analysis between the partners: medical doctor + software developer + medical manager + medical informatician.

In the proposed tables below each of the targeted participants is grouped as follows:

1. knowledge and skills that form professional competence;
2. medical and health information - the main resource that transforms the subjective medical profession into a relatively objective and collective one;
3. medical culture is referred to as comparable according to its importance as the medical competencies;
4. erudition and unique qualifications that are necessary for all partners in the team to practicing effectively eHealth.

**I. Medical doctor**

**Knowledge**

Understanding characteristics of metabolism, energy and information in health and disease. Ability to make interpretation of transitions between them.

Medical knowledge is verified by the practice results and it performs fixed ideas, concepts, judgments and theories. It is an objectively (not subjectively!) proved. It covers meaningful and significant data resulting from functional analysis and evaluation and practically confirmed.

It depends on information flows, processing techniques and management. It is productive - born of human law + training. Exists...
in a cultural environment. Our cognitive power is highly dependent on it.

**Skills**
Capacity to change a diagnosis of morbid disorder, illness and disease and propose a working scheme for the return to the state “health”.

**Competencies**
Defining effectiveness of personal expertise work. Producing new knowledge and personal skills, subjective moral and ethical standards and consistent laws, regulations and “best practices” in a social environment and health.

**Types of information**
Medical information appears as work (creation) - when the author is an expert - at the interface between source and receiver through research work.

It performs as product - when its generation is assisted by computer technology.

It includes any kind of information - it is the movement of data, analysis of their significance, etc. When generated, it should be kept in mind with its previous significance + public knowledge and opinions. The medical information assumes reproduction, upgrading, development and knowledge growth.

**Medical culture**
Through training and education it becomes a fashion and environment - cognitive activity, where knowledge and information are used and applied. It is a type of specialized medical, professional culture - subjective process and product. The act of occurrence depends on how information and knowledge are encoded in the social environment.

It is a reproduction that depends on the “release” of opportunities in the professional society. It provides conditions for creative experts - outside their “personal cognitive map.”

**Erudition and unique qualifications**
Traditional language (foreign languages) and terminology, analytical competencies, context-specific, information, health, science, normative-legal and reference (regulations and standards) media - a different view, teamwork. Medical and health care channeled remotely - telemedicine, cybermedicine, mobile health.

The new qualification modes are: computer technology competencies, IT management skills.

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**II. Software developer**

**Knowledge**
Translating language medical and health information and data into a computer programming, through specialized algorithms, generated according to desire of clinicians, health expert, etc.

**Skills**
Providing medical or computer assisted management.

**Competencies**
Determining the effectiveness of the revised expert work through computer processing of outputs; it is a powerful management tool.

**Types of information**
The information is a major substrate for his work; it subject to encryption, various algorithmic processes, cryptographics, transfer, storage and presentation for multiple use by different numbers of
users in different locations and in different time regimes. The aim is to ensure that it is produced in one way through technological assistance, and allows unlimited use.

<table>
<thead>
<tr>
<th>Medical culture</th>
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<tbody>
<tr>
<td>Education through dialogue with partners from the interdisciplinary team. Professional culture environment is the environment where knowledge and information ensure the quality of collective expertise.</td>
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<table>
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<tr>
<th>Erudition and unique qualifications</th>
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<tbody>
<tr>
<td>Traditional, analytical, information, computer, normative-directory and law, computer and technological information.</td>
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<tr>
<td>The new information mode is: health (medical) information.</td>
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### III. Medical manager (and in the role of politician)

<table>
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<th>Knowledge</th>
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<tr>
<td>Understanding the options of effective healthcare management strategies and controlling health expert work, assisted by computer methods and technologies.</td>
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<tr>
<th>Skills</th>
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<tr>
<td>Initiating and conducting a profitable management = control + regulation + effective changes for many users, regulated by law and standard financial and social environment in order to keep the interests of the owner.</td>
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<th>Competencies</th>
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<td>Determined by the effectiveness of the revised expert working conditions - by reducing the cost of medical and health services and activities to accomplish maintained or improved quality.</td>
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<th>Types of information</th>
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<tr>
<td>Information management and management of information, allowing management practice based on evidences.</td>
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<table>
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<tr>
<th>Medical culture</th>
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<td>Partnership based on training. Extending the domain of influence of the administration, policy development and strategic planning.</td>
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<table>
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<th>Erudition and unique qualifications</th>
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<tbody>
<tr>
<td>Traditional linguistic, analytical, informational, regulatory, and legal information.</td>
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<tr>
<td>The new modes are: health (medical) and computer information. Formulation and use of management information, which comes from health and medical data and facts, which produce competitiveness. Business IT applications, based on reliable expert information.</td>
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### IV. Medical informatician - our choice

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<th>Knowledge</th>
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<td>Understanding genesis of the whole chain of acquiring medical and health information. Performing health informatics and mainly - its unique method - modeling. Recording and analyzing role and dynamics of information systems. Actually, the terminology is the link in the team, the best communicator! Knowledge is created by development of specialized and general information related to evidence, experience and traditions. It is a post-information product.</td>
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</table>
### Skills

Ability to examine complex medical and health information in different ways; capacity to generate, organize and implement the information in interactive mode with all participants.

Possessing skills to interpret data + information + post-informational derivatives in the context of their occurrence and beyond. Organizing the registration of data from medical equipment in cooperation with medical specialists.

### Competencies

Determining modified efficiency of expertise work - through technologically assisted information processing and learning by making doctors work an objective one, a collective process. This is also called medicine and healthcare evidence-based management, information on good practices. Ensuring interactivity and systemic organization in dynamic working team.

### Types of information

The information is specific form of reflection in the mind of the real entity. Information embraces existing or potential theoretical properties and relations of objects and processes in nature and society.

The medical informatician should be familiar with its semantic, structural, applied, technological, cultural and semiotic characteristics. It is important to ensure information maintenance as a product of a unique nature and regulate the market for its consumption - expert and amateur. Medical information and products arising from it are private and public resource commodities.

The medical informatician should be able to change areas of specialization for his developments and applications with financial and management focus: health, medical, epidemiological, administrative, political, educational and cultural security.

He should be able to select optimal methods for information delivery to consumers - individually and in the network. The main goal is generating multiple use of individual medical and health information.

### Medical culture

Company culture and core team. The language and terminology are essential in the cultural practices. Imposing new standards and traditions in which medical information is a key component - medicine and evidence-based management, informed consent, informed decisions. Choice of management strategy and policy development.

### Erudition and unique qualifications

Traditional language and rich terminological, analytical, context-specific, unique information, computer, and normative-legal references (regulations and standards).

The new modes are: health (medical), media, unique team and mediation tasks, interface training, development and maintenance of new channels of communication with writers and authors - both physical and virtual, creator of the information windows.

High-tech medicine. Mobile medicine. Internet medicine. IT investments and solutions in health care.

Providing consumer information (structured and processed by experts).
Conclusion

From the comparative analysis it is clear how complex the profession of medical informatician is. The acquisition of relevant tasks, expertise and professional culture is an academic task, and then a matter of personal qualification management.

Medical informatics is one of the professions of the future, because it is an example of an IT specialist, practicing in a team in a unique interaction with medical and health activities and services of high moral character and social significance. Technological medicine is an interdisciplinary field in which medical informatics is a key professional position.

References