

## Chapter 2.2

# Informational Priorities in Health Information System

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### ABSTRACT

This chapter presents the model of a wide health information system, designed in accordance with information science theories and requirements. The model, based on modern ICT solutions, reflects the idea of information processes (collection, indexing, transfer) as seen in an information science perspective. It concentrates on optimal answering information needs of different categories of patrons, including adaptation of information-retrieval tools to their competencies. The author discusses different types of information indispensable in healthcare practice, analyzes methods of knowledge representation in health information system, proposes methodology of surveying information needs of health professionals, and describes challenges of linguistic tools used in information systems. The author hopes that such a model will emphasize the need of cooperation among ICT, health, and information professionals in designing information structures and processes.

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### INTRODUCTION

Managing specialist information within one of human spheres of activity requires today very efficient procedures, structures, and qualifications. However, functionality of information management may not clearly refer to complicated networks of tools, resources, and relations. As it would be proposed below, its efficiency may depend on such factors of vital importance like simplicity and precision in searching and finding pertinent information. These can be assured not only by using modern ICT tools, but also a set of knowledge management tasks and procedures, like: architecture of information, optimizing information transfer, indexing, studying users' needs and behaviours.

Information-related research is indispensable in terms of a broad and diversified range of healthcare management issues. Information architecture and knowledge management tools and rules shall influence the architecture of health-related software. The model proposed below, if applied into ICT solutions, works for their compatibility, effectiveness,

and user-friendly organisation, for the benefit of both authors and users of applications. It's specific value relies on including a user as a vital part of the health information system, especially in the light of current management surveys, indicating human factor as the most sensitive, changeable, and unpredictable element. User's participation in such a structure reflects it's role, enables system's sensitivity and learning new behaviours, information needs, and actually better management of information and knowledge.

Modelling a wide health information system (WHIS) shall refer to a few assumptions. Specifics of designing information systems in information science consists of categorizing and prioritizing information, as a main element of such a structure, holistic approach to the users, emphasizing permanent surveying of their information needs, and adapting services to the results of such a survey.

Conceptual framework includes:

- Aims and goals of a wide health information system.
- Participants of a system: units realizing information processes and the users.
- Range of their activity, categories of information they are interested in.
- Architecture – relationships among elements and participants, communication channels either among them or with the users.
- Linguistic tools for information processing.

The WHIS aims in creation of an information environment for a health domain, answering information needs of different (individual and legal) entities. Types of answers, methods of WHIS usage depend on their authorization referred to profiles of activity (medicine doctors, nurses, patients, managers, etc.). Differentiation and amount of data result in the necessity of shared responsibility and resources, for examples in distributed knowledge repositories.

Information in WHIS is indispensable for realization of specialized tasks on different levels – micro (individual both professional and private users), mezzo (primary health care units), and macro (entities responsible for resort policy, supervising national and international cooperation, like the World Health Organization's projects).

Optimal functioning of a system requires common decisions concerning shared responsibility and tasks, unified metadata, access rules, control of resources and quality-assurance tools.

## **WHIS USERS**

Health information users can be grouped into three main categories: individual professionals, institutions, and patients. The first category consists usually of: medical doctors, dentists, pharmacists, physiotherapists, nursing, midwives, diagnosticians, and specialists in different tests, like ECG, x-ray, etc. Their representatives can work in direct care, administration, education and/or research, nevertheless their tasks stay always linked to healthcare. The users can be also seen as: potential, probable (having access to information), real/ factual (using information), and beneficiaries, getting benefits from having knowledge (Flakiewicz, 2002).

Institutions employing individual professionals can also belong to the users, as very often they either are original source of information, or answer information needs of health professionals and patients. The type and precision of required data depend on their place in a domain hierarchy, as well as a profile of activity (administrative, supervisory, research, education or practice). Differentiation of institutions' tasks and goals results also in diversified perception and usage of information for "institutional" goals. Such an information can have either narrow (medical and/or financial documentation and statistics) or broad (research, policy, national and international strategies) range. Institutional users of health in-

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