

Health information services and the changing paradigm of information science

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Abstract: In the present work, developed within the disciplinary field of information science, we introduce what some contemporaneous authors define as the new paradigm called post-custodial, informational and scientific paradigm, which conveys a holistic view of information and has a direct effect on the organization of services. Then, we present a brief overview of studies on health information services and we show the major conclusions of a study of the information services in the hospitals of the Portuguese National Health Service, conducted in the past five years in order to know their organization and operation. Taking the mentioned paradigm as the theoretical-epistemological reference of our work, and based on the findings obtained in this study, we propose a model for the (re)organization of information services in the hospital context, considering the integrated, systemic and dynamic vision of the information.

Keywords: Information Services; Health Information; Archives; Libraries; Information Science

1. Introduction

The Portuguese health system, as many other European health systems, is at the moment performing the reorganization of their structure and redefining the work processes, with a view to improving all aspects of the health sector. We find that the area of information services, traditionally divided into archives and libraries, has been away from issues on which attention has been concentrated.

Until the mid-nineteenth century, the universe of publications in the medical field was limited, and doctors could be updated, through reading and personal contact with their peers. From the late nineteenth century, mainly due to the changing of political and economic scenario of the Industrial Revolution, there was an increase in research. The communication of the results led to the

inevitable expansion of the volume of publications. Moreover, the growth of medical specialties has opened the field of more specialized issues. The increased production of specialized information, the changes arising from the development of technology in the twentieth century and, on the other hand, the evolution of new management models, caused an irreversible transformation of the information area in the health sector.

Hospital libraries are specialized information services. Their resources are focused on patient care, addressing the needs of current information. They are directed to individual and collective needs of physicians, nurses, technicians, administrators, and others. Several studies claim that health libraries have direct impact on clinical decision making, saving time to the professionals by retrieving relevant information more efficiently and reducing costs related to patient care.

The archives of the hospitals have been always distant from these discussions. These services, especially the clinical archives, have an important role in the daily activity of institutions, due to access and delivery of paper patient files. There are few studies about the purpose of the use of hospitals' archives as a result of daily activity, but we can infer that it constitutes a fundamental unit, considering the processing and storage of information that requires special attention due to its sensitive data. And regarding the regular functioning of any institution, the organizing of administrative and management information is crucial to the success of any hospital performance.

We consider that information is distributed by what we can describe as the two major groups of information used in this type of organizations: information produced in the institution and information produced in external institutions. In the first case, the information produced in the institution, the product results particularly from the activities of all departments involved in the hospital work. The output is divided into the following types: information on the provision of healthcare to the patient and support to this activity, administrative and management information, and consumer health information. The second group of information, produced in external institutions, is composed basically by three types: management support information, scientific and technical information, and institutional information available in the media.

2. Health information and the information science disciplinary field

Despite the division between information services and of the fact that literature conveys this organizational model, some discussion about the boundaries between these services and their resources has been made. Indeed, already in 1912, Grace Whiting Myers, hospital librarian in Boston, raised the question of the type of information that libraries could and should work looking ahead to a more aggregative view than what came to be implemented (Myers, 1912). On the other hand, studies that highlight the importance of clinical librarians show the impact of these professionals through contact with health professionals,

reaching a necessary presence in the disease management. The involvement of information professionals in clinical activities (for example daily meetings of clinical services, where the clinical evaluations of patients are reviewed and discussed) is, considering the existing literature on the subject, a growing trend, especially in certain countries, and it is often attributed to these professionals the designation of "informationist" or "clinical librarian". For Ana and Donald Cleveland (2009) "the informationist is an information professional who links clinicians and patients, understands information management, and serves as an information enhancer within the clinical event that is occurring".

The approach developed in our work falls within the disciplinary field of information science. Therefore, we have to clarify what are the main issues that illustrate this disciplinary field, as well as the emerging paradigm called by some authors as post-custodial, informational and scientific.

The period following World War II, as a result of scientific, industrial and technological evolution, triggered what for many is called "information explosion." Its effect promoted the development of new information services in academic and industrial sectors to meet the information needs that arose. It is in this context that rises the interest on the information as an object of study in information science. The exact appearance of the phrase "information science" takes place around the end of the 50s and early 60s of the twentieth century, when the definition of the term is consolidated as a result of conferences promoted by the Georgia Institute of Technology, in the U.S. But it is Harold Borko, who in 1968 presents the improved definition of information science:

“Information science is that discipline that investigates the properties and behavior of information, the forces governing the flow of information, and the means of processing information for optimum accessibility and usability. It is concerned with that body of knowledge relating to the origination, collection, organization, storage, retrieval, interpretation, transmission, transformation, and utilization of information” (Borko, 1968).

Advances in technology and the evolution of scientific and technical information boosted the discussion around this disciplinary field. The main features that characterize most of the works produced can be summarized as follows:

- “overvaluation of the custody or guardianship, preservation and restoration of the object, as the basic purpose of the professional activity of archivists and librarians;
- prevalence of the division and professional assumption deriving from the establishment and development of the archive and library services/institutions, inducing an entrenched and instinctive corporative spirit that fosters confusion between science and profession (there is a persistent misconception that the professions of archivist, librarian and documentalist naturally generate independent scientific disciplines such

as Archives, Librarianship or Documentation)” (Silva and Ribeiro, 2012).

But the development of new technologies of information and communication, especially in recent decades, combined with the effects of the information society, made evidence that the phenomenon is wider. Beyond that, the possibility of remote access to information, without the need to face consultation in archives and in libraries, has emphasized this evidence. As an effect of these changes, a new paradigm arises, called by the authors Silva and Ribeiro (2012) as the post-custodial, informational and scientific paradigm, highlighting its features:

- “ the value of information as a human and social phenomenon, materialised in any type of support as an epiphenomenon;
- the observation of the incessant and natural information dynamism, as opposed to documental “immobility”, the former being a trinomial natural creation-selection versus access-use, and the latter the antinomy ephemeral versus permanence;
- maximum priority is given to access to information for all, in well-defined and transparent terms, because public access justifies and legitimises custody and preservation; (...)
- replacement of the instrumental rationale, as reflected in the expressions “document management” and “information management”, by the scientific-comprehensive rationale of information in management, i.e., social information is implied in the management process of all entities and organisations, and, therefore, informational practices derive from and are articulated with the conceptions and practices of managers and actors, and with organizational structure and culture, and the information scientist, instead of or before establishing operative rules, must understand the meaning of such practices and present, within certain theoretical models, the more adequate (retro or) prospective solutions“ (Silva and Ribeiro, 2012).

Sharing this view, we consider that any organization must be seen as a whole, and the dynamic of information in hospitals can't be fractionated and scattered across various services.

3. Health information services in recent literature

In recent decades, mainly as a result of the computerization of processes and work routines, and the emergence of new information resources resulting from the expansion of the Internet, health information services have focused mainly on the following topics:

- organization and standardization of electronic clinical information;
- access to health information, particularly to sensitive data;
- information seeking behavior of health professionals;
- organizing and retrieving information in electronic environments;

- new challenges for information professionals,
- impact of financial restrictions, and
- Reorganization of information services.

There are many works on new professional skills, mostly as a result of technological development of recent decades, which withdrew the priority of providing information, previously associated to the libraries.

A considerable amount of work on services and health information resources, particularly in hospital settings, are performed or communicated through activity of professional associations. But within these, we find that there is still a division in the organization of information between archives and libraries.

The development of education and training activities targeted to health professionals is a skill that has increased in importance. The contribution of information professionals to the expansion of information literacy is remarkable in teaching and organizing professional development courses and workshops (Dollfuss et al., 2012; Haglund et al., 2012).

Recent trends on European health information services, both in hospitals and in academic institutions of the northern and of the southern countries, show that there is a rising use e-journal and e-books. The easier access is most of all a result of the cooperation between libraries in subjects as the coordinated acquisitions process or the interlibrary loans. The establishment of open access policies have also an important contribution to the wider access to information produced, mainly, in academic or research institutions (Lappa et al., 2012; Dollfuss et al., 2012; Haglund et al., 2012).

We developed a study of information services in the hospital context focusing on traditional structures: the archives and libraries of the Portuguese national health service. The major conclusions are as follows:

- existence of information services in many hospitals, but many of them under the direction of departments without a functional link as, for example, the patients admission (archives) or human resources management (libraries),
- proper facilities and in good condition, and library collections organized and in good repair,
- standardized technical procedures in some libraries,
- qualified staff in the libraries, but not in the archives,
- technological infrastructure inadequate or insufficient,
- few management tools and lack of quality assessment,
- Insufficient concern for the safety of facilities and of information (Pestana, 2013).

4. A new Information Department

Based on the findings obtained in this study, we propose a model for the (re)organization of information services in the hospital context, taking as theoretical-epistemological reference the post-custodial and informational paradigm of the information science, mentioned above. We also followed the guidelines presented in the Portuguese legal diplomas that concern the organic structure of hospitals, in order to create a new structure of information services that could be perfectly integrated in existing hospitals.

The model of the department contemplates the existence of two services, as well as various functional units, some of them aggregated to services:

- Technical Service of Information,
- Service of Access and Dissemination of Information,
- Functional Unit of Studies Development.

These services and functional units develop their work closely with each other, and should integrate the management of information produced and used in the hospital.

The Technical Service of Information is divided into the Functional Unit of Reception, Organization and Representation of Information, and into the Functional Unit of Preservation, Conservation and Safety. The rules of availability and utilization of information should be established by these functional units, in conjunction with the Responsible for the Access to Information – RAI (this function is mandatory by law), especially when sensitive information is concerned. The Functional Unit of Reception, Organization and Representation of Information is the central point of the information treatment and works in accordance with the national and international standards applied to general and clinical information. The activity of the Functional Unit of Preservation, Conservation and Safety focuses on the establishment and implementation of preventive conservation measures and safety standards applied to all kinds of information, to ensure the authenticity, reliability and a long-term access to information.

The Service of Access and Dissemination of Information is divided into the Functional Unit of Access and Dissemination of Clinical Information, the Functional Unit of Reference and User Training, and into the RAI.

The Functional Unit of Reference and User Training will support all users in the optimization of available information resources to meet their information needs, as well as identifying, localizing and evaluating information resources. This unit will also perform an important role in the professional continuing education related to information issues.

The Functional Unit of Studies Development is not included in any service, and will conduct studies in order to support the assessment regarding scientific

activity, and regarding the evaluation and promotion of quality. This unit can operate in collaboration with a quality department in order to potentiate the quality principles applied to scientific and technical performance of the institution.

5. Conclusion

Implementing a model of integrated information services have a direct contribution in organizing information in medical institutions, with a visible effect in the optimization of information retrieval. The integration of information resources will support clinical decision making and management, will enable the improvement of quality management through systematic monitoring of processes and activities and contribute to the consolidation of the processes of continuing education and scientific research in hospitals.

Future scenarios around health information services are dependent on the countries' economic growth and on the evolution of information society. But we believe that some decisions can be taken in accordance with conclusions and suggestions of the studies developed in this area. Thus, we hope that this work can open a new discussion about existing structures of information services and their roles in the organizational strategies.

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