Chapter 1.22
Key Performance Indicators and Information Flow:
The Cornerstones of Effective Knowledge Management for Managed Care

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ABSTRACT

It is paradoxical that, although several major technological discoveries such as Magnetic Resonance Imaging and Nuclear Medicine and Digital Radiology, which facilitate improvement in patient care, have been satisfactorily embraced by the medical community, this has not been the case with Healthcare Informatics. Thus, it can be argued that issues such as Data Management, Data Modeling, and Knowledge Management have a long way to go before reaching the maturity level that other technologies have achieved in the medical sector. This chapter proposes to explore trends and best practices regarding knowledge management from the viewpoint of performance management, based upon the use of Key Performance Indicators in healthcare systems. By assessing both balanced scorecards and quality assurance techniques in healthcare, it is possible to foresee an electronic healthcare record centered approach which drives information flow at all levels of the day-to-day process of delivering effective and managed care, and which finally moves towards information assessment and knowledge discovery.

INTRODUCTION

The advantages of the introduction of Information and Communication Technologies (ICT) in the complex Healthcare sector have already

been depicted and analyzed in the Healthcare Informatics bibliography (Eder, 2000; Englebardt & Nelson, 2002; Harmoni, 2002; Norris, Fuller, Goldberg, & Tarczy-Hornoch, 2002; Shortliffe, Perreault, Wiederhold, & Fagan, 2001; Stegwee & Spil, 2001). It is nevertheless paradoxical that, although several major technological discoveries such as Magnetic Resonance Imaging, Nuclear Medicine and Digital Radiology, which facilitate improvement in patient care, have been satisfactorily embraced by the medical community, this has not been the case with Healthcare Informatics. Thus, it can be argued that issues such as Data Management, Data Modeling, and Knowledge Management have a long way to go before reaching the maturity level that other technologies have achieved in the medical sector.

A variety of reasons could be proposed for this issue, though with a short analysis it becomes rather clear that modern ICT present integration problems within the healthcare sector because of the way the latter is organized. Healthcare is a strongly people-centered sector in which ICT has been considered more as an intruder, as a "spy" to the healthcare professionals' way of doing things and as a competitor to this people-centered model. Thus, if ICT intend to prove its advantages towards establishing an information society, or even more a knowledge society, it has to focus on providing service-oriented solutions. In other words, it has to focus on people and this has not been the case in most of the circumstances. It is common knowledge that in order to install any type of information system in healthcare, especially if it involves knowledge management, six main groups of issues have to be dealt with (Iakovidis, 1998, 2000):

1. The organizational and cultural matters related to healthcare. This issue is rather important, regardless of any information system, since organizational models and culture do not endorse the continuity of care or any type of structured data collection.

Issues such as mistrust between different specialists, between the different healthcare structures or between doctors and nurses prevent in many cases the effective sharing of information. Health reforms are currently under way in many countries stressing the will to deal with this problem.

2. The technological gap between healthcare professionals and information science experts. Doctors are often reluctant to use information systems that they believe are not designed for them. From another point of view, Healthcare Informatics have been introduced in healthcare institutions mostly on pilot-based projects aiming at addressing specific issues and have proposed solutions addressing a small number of healthcare practitioners, resulting in establishing a complex map of information niches. This approach is the consequence of applying information technology to procedures that where not designed for it, thus creating a panspermia of information models which are neither compatible nor interoperable, even within a single institution's environment. Efforts in creating interoperability standards and protocols such as HL7 are proposing solutions to address this issue, thus enabling data manipulation and knowledge management.

3. The legal requirements on the confidentiality of personal and patient related data and on data privacy. It is clear that if this issue is not addressed at a managerial and procedural level by imposing suitable policies to meet these requirements, there is little chance that medical data will be kept digitally in a structured manner (thus allowing the transition from digital islands of clinical data towards a structured electronic healthcare record). The implementation of an information system, where the electronic healthcare record is considered to be the core of the system (patient-centered model), is the only way

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