Chapter 4.8

Towards Computer Supported Clinical Activity: A Roadmap Based on Empirical Knowledge and Some Theoretical Reflections

Christian Nøhr Aalborg University, Denmark

Niels Boye Aalborg University, Denmark

ABSTRACT

The introduction of electronic health records (EHRs) to the clinical setting has led healthcare professionals, policy makers, and administrators to believe that health information systems will improve the functioning of the healthcare system. In general, such expectations of health information system functionality, impact, and ability to disseminate have not been met. In this

DOI: 10.4018/978-1-60960-561-2.ch408

chapter the authors present the findings of three empirical studies: (1) the structured monitoring of EHR implementation processes in Denmark from 1999–2006 by the Danish EHR observatory, (2) a usability study based on human factors engineering concepts with clinicians in artificial but realistic circumstances—a "state of the art (2005)" for Danish CPOE (computerized physician order entry system), and (3) user reactions to a conceptual "high level model" of healthcare activities—the Danish G-EPJ model in order to better understand the reasons for health information system failures

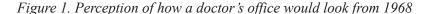
and to suggest methods of improving adoption. The authors suggest that knowledge handling as a science seems immature and is not in line with the nature of clinical work. The prerequisites for mature knowledge handling are discussed in the second part of this chapter. More specifically, the authors describe one way of improving knowledge handling: the development of a more true digital representation of the object of interest (OOI) or the virtual patient/citizen that interacts with computer based healthcare services on behalf of and for the benefit of the citizen's health.

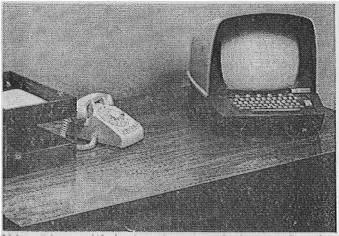
INTRODUCTION

In 1968, the Danish journal of engineering science "Ingeniøren" published an article about a hospital-based computer system. The article described a computer system that was being used to support administrative and clinical tasks at the largest hospital in Denmark "Rigshospitalet." The article provided the reader with a picture of a desk with a computer terminal and a telephone. The text under the picture read: "This is how the doctor's desk will look in a few years: No paper, the patient's record will be retrieved on the computer screen within

fractions of a second" (see Figure 1) (Jda, 1968). Almost 40 years later we are able to retrieve patient data, but not the entire record, and the predicted response time suggested in the article remains wishful thinking. The Danish example is not an exception. International studies report that up to 75 percent of all large IT projects in healthcare fail (Littlejohns, Wyatt, & Garvican, 2003), and according to Michael Rigby, evaluation is still a "Cinderella science" where information and communication technology (ICT) is concerned (Rigby, 2001).

A commonly held notion among the international electronic health record (EHR) community is that the failure of numerous IT projects is due to instances of bad programming and poor implementation that can be easily avoided the next time around (Wears & Berg, 2005). Results from a number of studies in Denmark, which the authors have been involved in, indicate that the difficulties associated with implementing ICTs in healthcare or health information systems (HIS) can be traced back to the perspectives and theories that computer scientists and systems developers hold about medical work and how these theories influence HIS development and implementation processes.





Sådan vil lægens skrivebord se ud om et par år: Ingen papir, patientens journal hentes frem på dataskærm i løbet af brøkdele af et sekund.

14 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/towards-computer-supported-clinical-activity/53641

Related Content

Automated Telephone Services in Dentist Appointment Management

Reima Suomi, Ari Serkkolaand Markku Mikkonen (2010). *Informatics in Oral Medicine: Advanced Techniques in Clinical and Diagnostic Technologies* (pp. 269-276).

www.irma-international.org/chapter/automated-telephone-services-dentist-appointment/40450

Clinical Decision Support Systems: Basic Principles and Applications in Diagnosis and Therapy

Spyretta Golemati, Stavroula Mougiakakou, John Stoitsis, Ioannis Valavanisand Konstantina S. Nikita (2005). Clinical Knowledge Management: Opportunities and Challenges (pp. 251-270).

www.irma-international.org/chapter/clinical-decision-support-systems/6587

PACS Quality Dimensions

Carrison K.S. Tongand Eric T.T. Wong (2009). *Governance of Picture Archiving and Communications Systems: Data Security and Quality Management of Filmless Radiology (pp. 140-153).*www.irma-international.org/chapter/pacs-quality-dimensions/19327

Decision Making by Emergency Room Physicians and Residents: Implications for the Design of Clinical Decision Support Systems

Michael J. Hine, Ken J. Farion, Wojtek Michalowskiand Szymon Wilk (2011). *New Technologies for Advancing Healthcare and Clinical Practices (pp. 131-148)*.

www.irma-international.org/chapter/decision-making-emergency-room-physicians/55141

Clinical Decision Support Systems in Nursing

Dawn Dowding, Rebecca Randell, Natasha Mitchell, Rebecca Foster, Valerie Lattimerand Carl Thompson (2009). *Nursing and Clinical Informatics: Socio-Technical Approaches (pp. 26-40).*

www.irma-international.org/chapter/clinical-decision-support-systems-nursing/27321