

# Design and implementation of health information systems in cardiology

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The practice of collecting and maintaining information on health is as old as the history of medicine itself. Since the earliest times, those who were engaged in the art of healing found it necessary to record various outcomes in relation to the number of patients attended. At the beginning, health information systems were oriented to collect information on diseases and on health service outputs. In the meantime, there has been a tremendous progress in medicine as well as in informatics. In contemporary times, health information systems were transcended to the domain of modern health practices, and they hold great significance in the planning and decision-making of health delivery services<sup>1-3</sup>.

Health information systems are there to bridge the gap between disease occurrence and the response of health professionals to fight diseases. The drive for the reform of health information systems coincided with a revolution in information and communication technology, as a result the computer has made its entry, but many of the resulting computerised systems are suffering from the lack of appropriate-

ly trained staff, thereby also facing hardware and software maintenance problems.

However, it is important to make sure that, computerisation of health information systems does not dominate the health information system reform improvement process<sup>4</sup>. The problems of implementation of information systems are well known and invariably they concern the interplay of human, organisational, and technical factors, which cannot be easily separated. It is important especially in field of cardiology. The heart is a specific organ, besides morphologic characteristics, the functional status is very important and the relationship between heart and blood vessels, well known as arterioventricular coupling.

We can describe this complex interlinking by conceptualising computer-based information systems as social systems in which technology is only one of the elements<sup>5</sup>. Information systems are much more than computers and telecommunications equipment, as they also involve people and their actions in the organizational settings in which they work. One of the good and in developing health information systems is provided in University Clinical Center Tuzla at Tuzla county in Bosnia and Herzegovina<sup>6,7</sup>.

Received: 14<sup>th</sup> Jan 2014

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**KEYWORDS:** health information system, computer, cardiology.

**CITATION:** *Cardiol Croat.* 2014;9(3-4):104.

## Literature

1. Wilson R, Rohde J, Puchert R, Hedberg C. South Africa's district health information systems: case study from Eastern Cape province. In: The RHINO workshop on issues and innovation in routine health information in developing countries, The Bolger Center, Protomac, MD, USA 14-16 March 2001. Arlington, VA 22209, USA: MEASURE Evaluation, JSI Research and Training Institute, 2001, 81-93.
2. Sauerborn R, and Lippeveld T. Introduction. In: T. Lippeveld, R. Sauerborn, C. Bodart, eds. Design and implementation of health information system, Geneva: World Health Organisation 2000, 1-14.
3. Reinhold H. Health information systems - past, present, future. *Int J Med Inform.* 2006;75(3-4):268-81.
4. Buntin Beeuwkes M, Burke MF, Hoaglin MC, Blumenthal D. The benefits of health information technology: a review of the recent literature shows predominantly positive results. *Health Aff (Millwood).* 2011;30(3):464-71.
5. Maryati MY, Kuljis J, Papazafeiropoulou A, Stergioulas LK. An evaluation framework for Health Information Systems: human, organization and technology-fit factors (HOT-fit). *Int J Med Inform.* 2008;77(6):386-98.
6. Smajić E. Primjena informacionih sistema u svakodnevnoj kliničkoj praksi. Zajednički sastanak radničkih grupa e-Kardiologija HR-BiH: Vizija budućnosti i/ili potreba sadašnjosti: IT u kardiologiji. VI kongres kardiologa i angiologa BiH, Tuzla, 2013. [www.ukbih.com](http://www.ukbih.com)
7. Mešanović N, Smajić E. Overview of open source software for computer aided detection in cardiology. *Cardiol Croat.* 2012;7(3-4):120.