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ICT for Health System Sustainability: Needs and Challenges

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Abstract

This study highlights the role of Information and Communication Technologies (ICTs) in developing novel health systems in Saudi Arabia. A model for sustainability of the Saudi health system is proposed that provides a framework for developing generic e-health services. Existing and future challenges of procuring and implementing the e-service framework are discussed.

Keywords:

informatics, sustainability model, Saudi Arabia

Introduction

The health infrastructure of Saudi Arabia and its diagnostic, therapeutic and health prevention services have made important and increasing progress during the past decade [1,2]. The Kingdom's medical colleges and hospitals provide specialist diagnostic and therapeutic services and medical education and training programmes, while they also conduct health research in collaboration with other research centres [1-3]. However, Saudi health care is facing new challenges. Financial constraints are now forcing the Saudi Government to re-evaluate their health care policy in order to ensure the continuous upgrading of health services for its people [4]. Accordingly, the Saudi Ministry of Health has privatised some government hospitals, while encouraging and creating more opportunities for private sector participation in the health sector to lessen the burden on its budget [2]. A factor that affects the sustainability of Saudi healthcare is that hospitals are established individually and independently with no consideration for co-operation and co-ordination [5]. In practice, Saudi health is the least fortunate sector in utilising ICTs and most hospitals have a poor information infrastructure [6]. The majority still rely on traditional practices of 'pen and paper' [7]. There is no strategic plan for health information in the country [8,9] and many health professionals have insufficient ICT knowledge, experience and skills [7-10].

Methods

The research methods used to uncover the needs and challenges include: a review of the relevant literature, observation of activities and interactions, a web-based questionnaire survey of individual perceptions of needs and document analysis. A model-based sustainability component was developed from the findings of the application of these methods.

Results

Health professionals in Saudi hospitals view 'lack of training' as the major factor in introducing ICT into hospitals, followed by 'lack of co-ordination', 'poor management', 'lack of IT staff' and 'lack of IT policy'. Qualified management will play a major role in overcoming problems and obstacles which might cause failure in ICT implementation [8,10]. This highlights the need for a health information policy which is currently lacking [9]. The anticipated problems also raise again the issues of training and co-ordination.

Discussion

Saudi hospitals have been under tremendous pressure to reform to seek sustainability of their healthcare system. This has been driven by escalating costs and increased demands for healthcare development. The most difficult barrier to the full implementation of ICT in hospitals is their traditionally bureaucratic, complex and highly departmentalised structure within their leadership style. Potential conflicts exist: hospital relationship with health professionals and the need to avoid various dissatisfaction; and, hospital management philosophies and the need for organisational changes and development.

In discovering the challenges facing the health system in Saudi Arabia, a planning committee, involving professionals and experts, reviewed issues related to health system and ICT. The committee reached some vital conclusions and required urgent solutions to the problems. Part of which is: 1) the need to unite and define clinical computing and health information systems, 2) the importance of developing information infrastructure and a health information network among the Saudi Hospitals and research centres, and 3) the need for automation in the health sector and its administration. Crucially though, there have been no actions to impose these views [6].

In relation to the implementation of National Health Information Network, one of the challenges to be faced is designing a system network that meets users' needs, while reflecting a continuously changing organisational environment and to develop ICT that supports various organisational demands [10]. The ICT development process should avoid any possible confusion, poor quality, inefficiency, and unnecessary costs. The main tasks appear to be to coordinate the different visions and, in particular, clarify them, as well as to establish the impact that these visions would have on the forthcoming ICT application. In the process of development, hospital management and authorities should understand thoroughly what it is they are committing to, and what barriers they will encounter [10,11].

The proposed model comprises four components: knowledge management and diffusion; ICT implementation; health professional oriented approach; and, patient oriented approach.

Knowledge Management and Diffusion: in relation to information access and dissemination, there are two cultures - access or network-friendly culture; and a holdings or network-averse culture [11]. Information-sharing is essential between health professionals and hospitals. However, this vision would not be possible in the absence of a health information network [10]. Sharing of information, however, is a huge task that cannot be accomplished without a well designed information policy and formal co-operation [9,10]. The communication and sharing of health information has an important role in the delivery of quality healthcare in Saudi Arabia [6].

ICT implementation: ICTs promote various channels of communication and co-operation in the healthcare environment. Importantly, they will help the healthcare environment to move towards the establishment of a flourishing health information society by popularising the use of electronic resources, and describing the benefits and advantages of the electronic learning programmes.

Health Professional-Oriented Approach: this model component represents the delivery of knowledge on a convenience basis according to the various needs of health professionals. The health professionals-oriented approach may promote web patient/practitioner relationships. The combination of both health knowledge and ICT skills allows individuals to participate in e-health programmes.

Patient Oriented-Approach: the health system in Saudia has produced inevitable programmes of care for the public. However, there is a lack of patient-oriented educational programmes designed according to patients' local cultures and educational level.

Conclusion

There are numerous challenges to be overcome before ICT can achieve its full potential and successful implementation in the healthcare environment in Saudi Arabia. The country's decision makers, planner and professionals should work in establishing a clear strategy of implementation based on field projects and research considering the human factor as it described in the proposed sustainability model. Therefore, they should take a holistic view of the situation, as an integrated part of their plans for the development of the health system utilising the potentiality of information and communication technologies (ICTs).

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