Chapter 41

The Changing World of ICT and Health:
Crossing the Digital Divide

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ABSTRACT

Information and Communication Technology (ICT) has undergone rapid change in the last decade and it is now readily accessible within many communities. This change has resulted in a revolution in the healthcare sector as technology has steadily empowered the health consumer. However, the problem of the digital divide remains and may be widening with the growth of technology. This chapter will examine how developing countries have overcome this problem by using varying communication techniques to share health information. The chapter also suggests how mobile phones can provide a more accessible conduit for sharing health information in developing countries as opposed to the Internet alone. These changes need to be embraced in order to provide a framework that will allow ICT to narrow, rather than widen the gap between the information poor and the information rich.

INTRODUCTION

The Digital Divide is a common term that has been utilised as frequently as exponential growth of technology has taken place. This term has numerous definitions, depending on the area it is focused in as well as the role that technology plays in that area. In this chapter, the definition given by Chircu and Mahajan (2009) will be used as it provides a holistic definition. They have defined the Digital Divide as "*the gap among individuals, households, businesses, and geographic areas in accessing and using information and communication technologies (ICTs) such as telephones,*

personal computers (PCs), mainframes, and the Internet". The concept of the Digital Divide refers to any gap created by technology irrespective of socio economic status; however it is more commonly associated when addressing the difference between the developing and the developed world, where the Divide is more apparent and tangible. As the fields of technology and medicine converge, the impact of the Digital Divide has further implications in areas and communities that are under developed. The purpose of this chapter is to highlight this impact.

This chapter has three main foci:

1. *The empowerment of the health consumer.* As technologies have developed, the role of the patient has changed. Patients have become more informed and thus have access or the ability to access health information that was previously not available. The effects of communication technologies on public health, the patient-professional relationship, and society is an area of research which will be addressed in the chapter.

2. *The use of converging communication.* We examine how communication mediums have converged through the need to share health information. We also focus on how the lack of technology in some areas has resulted in the convergence of traditional methods of communication. Convergent communications through technology will also be addressed with a focus on the importance of the quality of information that can be transmitted by the various technologies and the level of understanding that patients/consumers will get from them.

3. *Access and the use of health information in the developing world.* There are a number of issues associated with developing countries that are not experienced in the developed world. Due to their lack of finance, civil strife and various other socio-economic problems developing countries have a host of different

situations that further enlarge the Digital Divide, especially in healthcare. In this chapter a developing country is defined as any country that that has a gross national income (GNI) per capita of US$10 000 or less (Mahajan & Banga, 2006).

By addressing these three areas, this chapter will focus on topical issues that are surrounding healthcare, the emphasis being that there is a technological change that is taking place which will affect healthcare. This, in turn, will introduce concerns surrounding security and ethical implications. The chapter will show that the mere existence of the technology does not mean that it is getting to the people that may require its full benefits, to utilise it in a manner that befits a community as opposed to oneself, especially in developing countries. Gibbons (2005) reports that the primary reasons why some groups have less access to information technology and resources are related to geography, literacy, disability, local infrastructure requirements, and cultural differences, some of which are not easily overcome simply by increasing personal computer ownership. Even if equity in personal computer and Internet access were achieved, this may still not achieve the goal that is require by the health sector. Providing health information is like marketing, it is all about ensuring that the correct communication channels are used to reach out to the right people on a large scale (Gibbons, 2005).

According to Kreps (2005) many of the people who are at most risk from serious health conditions come from underserved populations: populations that are generally made up of individuals who are of low socioeconomic status, possess a low level of health literacy and are members of marginalised ethnic and minority groups. These underserved and vulnerable populations often have limited access to relevant health information, especially information that is otherwise easily available over the Internet (Tang & Lansky, 2005). This is one of the symptoms of the Digital Divide. Many of

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