Chapter 27
Technology and Human Resources Management in Health Care

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ABSTRACT

Health care has lagged behind most industries and businesses in its adoption of information and communication technologies (ICT). Many of the current information technologies and those to be deployed and developed over the next few years (e.g. electronic health records, telehealth applications, elearning technologies, social networking via Web 2.0) could be of benefit in health care delivery and improvement of the quality, efficiency and effectiveness of health care services. The uses of technology in human resources management (HRM) can help improve the medical care that health professionals provide to their patients. For instance, technology can be used to maximize communication, collaboration and support between health professionals separated by distance, as well as provide immediate and up-to-date patient care information. ICT can also be used for distance training and education for those facing geographic isolation and provide a medium through which continued education can be maintained for both rural and urban health professionals. However, due to the differences in barriers to ICT use found for each group, such as computer illiteracy, geographic isolation or poor infrastructure, different steps need to be taken in order to ensure the successful implementation and use of information technologies in both urban and rural communities in developed and developing regions across the world.

INTRODUCTION

Human resources management (HRM) includes the selection and recruitment of personnel, their retention (which is affected by compensation, benefits, quality of work life, and support), their training and development, career progression and promotion. Human resources planning and effective human resources management are essential within a single institution or institutions, a local region or even at the national level to meet organizational objectives, requirements and needs. Within the health care field HRM is focused on making sure that the right mix of health care providers is in place to meet the health care needs of citizens, on adequate recruitment and retention (i.e. encouraging more people to enter the health care field and improving working conditions to retain them), and increasingly on new paradigms that adjust the way in which health professionals are educated and practice in interprofessional health care teams (Kabene et al, 2006).

New information and communication technology(ies) (ICT), and the growing use of computers and the Internet, can address many of the information, communication, and training issues faced by health professionals and human resources managers. HRM itself relies on information systems and information needs. All of the activities in health HR management rely on the existence of information systems that can provide high-quality data that are timely, accurate, comparable, accessible and relevant. Priority information areas for HRM are information on the demographics of the workforce, their education/training, geographical distribution, migration or non migration-related attrition, and employment or practice characteristics (Dussault & Franceschini, 2006; Henderson & Tulloch, 2008; Hongoro & McPake, 2004; Wibulpolprasert & Pengpaibon, 2003). The focus of this discussion though relates to the use of ICT to assist in the training, recruitment and retention of health professionals.

Additionally an unbalanced distribution of health professionals both within countries (urban versus rural) and between countries (developed versus developing) has been recognized as a widespread global problem. In this discussion 'urban developed' refers to city centers in Westernized regions; 'rural developed' regions are those found in Westernized remote locations; 'urban developing' refers to city centers in non-industrialized or low resource/income countries; and rural areas of the developing world would be considered to have an increased level of poverty, poor transportation and fewer specialized services and organizations to provide health care (Goldsmith et al, 1995). These disparities have been attributed to individual, organizational, and economic issues – the lack of coordinated national health human resources policies being one (Dussault & Franceschini, 2006). Although not a panacea, ICT presents a tool to both manage and improve aspects of human resources including satisfaction and retention of personnel, recruitment, training, improved working conditions and access to needed information. Telemedicine or telehealth, the utilization of telecommunication technology for delivery of health services at a distance (that is, for diagnosis, treatment, and patient care, as well as training and continuing education), can "provide expert-based health care to understaffed remote sites and to provide advanced emergency care through modern telecommunication and information technologies" (Lin, 1999, p. 28).

Information technologies encompass any technology which processes and communicates data. It includes: computers, voice, data and image sensing and communications devices, graphics devices, multi-media storage, et cetera. ICT hardware devices include those used for sensing (e.g. bar code scanners, keyboards, mice), communication (fax, cellular phones, local or wide area networks (LANs and WANs)), analysis (computers - micros, minis, mainframes), and display (monitors, printers, voice output, televi-

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