

Chapter 13

Demystifying E-Health Human Resources

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ABSTRACT

The introduction and use of information and communication technologies (ICT) in health care, particularly the electronic health record (EHR), may be seriously hampered or delayed by the lack of available human resources with the necessary skills and competencies in e-health. A number of different types of professionals are needed, and an appropriate mix of skills and workers who can complement one another in the final deployment of the EHR and in the appropriate and best use and management of the health information it contains. These include health informatics (HI) professionals or health informaticians, health information management (HIM) professionals, and others, with not only knowledge of ICT, but also knowledge of the health system, data standards, and interoperability across platforms; privacy and security of health records; human factors and process engineering; project management and technology adoption; and user-supporting mechanisms. A human resources strategy is needed to address the current shortage of skilled workers and to develop a long term strategy for education and training of e-health personnel necessary to ensure the continued quality of health data collected, its security and confidentiality, and to manage and maintain the systems and data in the future.

INTRODUCTION

Healthcare systems across the world have undergone massive transformations in the past decade, including the restructuring of hospital, physician, and home care services; the consoli-

dation of health services; and the introduction of digital technologies and electronic information systems. Increasingly, health information is being recognized as the key to more efficient healthcare delivery. Information and communications technologies (ICT)-based information systems and longitudinal electronic health records (EHRs) are being implemented to assist in maintaining

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continuity of care across institutions and regions. These systems are intended to provide access by geographically-dispersed authorized users, make available decision support tools, support access to knowledge bases of evidence-based clinical practice, and increase the productivity and quality of health care. They are also seen as providing greater margins of safety by preventing, detecting, and assisting in the management of adverse events that occur due to the lack of the right information at the right time and place.

Most of the effort to date has been spent on putting the necessary enabling (e-health) infrastructure in place – the technological apparatus and services serving institutions, a region or a nation, integrated into a shared network of health information systems. Little effort has been invested in developing the necessary human resources – informatics professionals to design and develop or define and deploy the needed technological capabilities, to ensure the quality of health data collected, to manage and maintain the systems and data, and to ensure their productive use and evaluation.

Although the e-health infrastructure has been touted as a means of connecting health care professionals across the globe and providing needed training, the infrastructure itself may not exist if health informatics professionals are not available to implement it (Hersh & Wright, 2008; Ozbolt, 2008). Unless professionals with the requisite competencies are available, we will fail in our efforts to manage, understand, and appropriately interpret and apply the growing flood of health data and information. Unfortunately, in many countries calls for a national strategy to address the significant health informatics (HI) and health information management (HIM) capacity gaps have gone unheeded. Several healthcare industry surveys have indicated that competent people are in short supply and that thousands of HI/HIM jobs go unfilled or are filled by less-than-qualified personnel. In some jurisdictions, e.g., the U.K. and Australia, national strategies to address HI

needs have been suggested (Australia Dept of Health and Aging, 2003a; 2003b; UK-NHS Connecting for Health, 2002; 2009). No such strategy has been undertaken at any level in Canada or the United States¹.

The implementation of a national e-health infrastructure requires professionals with many core competencies, including, but going well-beyond, knowledge of ICT. These professionals must also deeply understand the health system; methods of re-engineering and project management; data standards and interoperability across platforms; privacy and security of records; human factors and process engineering; and technology adoption and user-supporting mechanisms, as examples (Covvey, Zitner & Bernstein, 2001). Defining a human resources (HR) development strategy to address this need is a significant challenge.

THE E-HEALTH HUMAN RESOURCES CHALLENGE

As integrated, electronic health information systems become commonplace in the health system, the traditional roles of health records technicians, information managers, data analysts, and information services staff will also change. New roles for these already highly trained health system workers are emerging, as well as the need for a new type of professional with new competencies. These e-health (electronic health) workers comprise professionals like health informaticians, health information management professionals, technical specialists, project managers and others. These workers will take on new roles that enable unprecedented improvements in the health system through ICT and complementary factors that support its delivering desired benefits.

Developing a human resources strategy for the e-health worker of the future is difficult because it does not fall easily into the traditional model of supply and demand used for determining the complement and distribution of physicians, nurses,

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