

# Chapter 7

## The Health Informatics Professional

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### ABSTRACT

*Health informatics (HI) is an increasingly important discipline to healthcare. HI is the scientific field concerned with improving how information in healthcare is captured, used, and managed. Developments in HI have streamlined and improved the efficacy of health service delivery, ranging from administration to bedside care to telehealth. Anecdotally, one observes that the paradigm of health domain experts working with information technology (IT) domain experts still produces health information systems that fail or do not work adequately; thus, there is a need for individuals knowledgeable in both information methods/tools and health. HI is a very broad discipline, but demonstrates features of a profession that set it apart from conventional IT or computer science; one notes different aspects of knowledge and skill and an ethos that is more aligned with that of health. This chapter provides an overview of HI, introducing the concepts of HI, its history, and how it relates to the skills, knowledge and attitudes of the emerging HI professional. HI is changing how healthcare is delivered and HI professionals are a part of that process. There are a range of roles these individuals fill, with some overlap with more established positions, such as health information managers. Despite the emergence of the HI profession, there are hurdles to overcome in terms of consistent education and registration or accreditation/credentialing.*

### INTRODUCTION

Health informatics (HI) is an emerging field that is becoming increasingly important to the effective delivery of modern healthcare. It is difficult to imagine, for instance, how the modern hospital could function efficiently without electronic da-

tabases storing, processing, and communicating patient-related data. With the growing complexity of chronic illness and the number of medications often prescribed in an elderly population, information technologies and decision support tools can be used to help to prevent medication errors; in Sweden, for example, 5 million outpatient prescription errors and 100,000 inpatient adverse drug events could be prevented yearly (Ministry

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of Health and Social Affairs, 2009). As an academic discipline evolves, one naturally asks what makes it different from existing fields and how do the practitioners of the discipline stand out from current workers. In this chapter, the development of HI as a discipline and how this relates to the people who work in it will be investigated.

Why is it important to examine the HI profession? There are several reasons from the perspectives of the professional and the client. Professionals need to understand that their discipline is indeed actually a “profession”. One of the challenges of any evolving field is that workers may feel isolated; sharing a common set of principles and goals furthers a sense of collegiality. United, HI professionals can discuss issues and share solutions to the same problems that others have already solved. Also, professionalism gives HI workers a common code of ethics by which to conduct themselves. HI professionals provide services to end-users or clients, including healthcare institutions, health professionals and patients/consumers. The activities of HI professionals may or may not successfully support the information needs of their clients. Professionalism provides some level of guarantee to clients that the HI professional is likely to provide an acceptable standard of service. This is obviously important to healthcare institutions seeking to employ HI professionals. Just as professional standards for clinicians (e.g. nurses and doctors) indicate a minimum level of proficiency to healthcare institutions, professional standards in HI should do the same. HI professionals support patient care e.g. developing and maintaining information systems that prevent adverse drug events and developing and maintaining the health information systems that provide the right information to the right people at the right time. Clinicians might be more at ease if they know a certain level of professional standard underlies the development and use of such systems. Consumers of health information are also affected by HI activities; an example of this is the use of the Internet for effective public health promotion (Gosselin & Poitras, 2008).

## **What is Health Informatics?**

To understand what the HI professional does, one must look at the discipline. Health informatics (HI) is the scientific discipline concerned with the creation, storage, processing, transmission, and use of health-related data, information and knowledge (Shortliffe & Cimino, 2006, p. 24). Its goal is to improve decision making in healthcare and ultimately patient care by better managing health data, information and knowledge. One can observe that this definition is “all encompassing”; naturally, healthcare processes and decision making cannot exist without data, information and knowledge. Doctors cannot make diagnoses without patient data, such as their blood pressure and a medical history. They cannot make therapeutic decisions without a knowledge-base, such as when to treat high blood pressure with medication and when not to. Medical services become less efficient if patient records are not retrievable in a timely manner. Patient decisions can be helped or hindered by the quality of health information they receive. The breadth of the definition raises several points: HI is an inherent part of health and, despite the formal discipline being relatively new, is as old as time, or at least as old as people have used data, information and knowledge in health. All healthcare workers (e.g. doctors, nurses, dentists, podiatrists, managers, policy makers, and researchers) are users of HI; the focus is not limited to the application of computers in health, but to the use of health information in general.

HI is a broad field and its workers have a wide range of responsibilities and tasks. Part of the reason for the breadth is the natural evolution of HI as a discipline. The origin of the formal discipline was strongly influenced by the development of the electronic computer. Indeed, the term informatics came from European developments in computer science. Informatics was probably first coined by the father of German computer science, Karl Steinbuch, in his 1957 paper, “Informatik: automatische informationsverarbeitung”, which translates

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