Core Competencies in Public Health Informatics

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Learning Objectives

After studying this chapter, you should be able to:

• List the core disciplines of public health informatics and describe the areas of management that they comprise.
• Describe the knowledge domains of public health informatics.
• List the key public health informatics competencies for public health practitioners.
• List the key public health informatics competencies for public health informaticians.
• Explain why management skills are more important than technical skills for a public health informatician.
• Explain how public health organizations can promote the acquisition of public health informatics skills by employees.

Overview

What competencies in public health informatics should a public health practitioner possess? What competencies should a public health informatician possess? How can public health provide the educational and skill-building experiences that both public health informaticians and public health practitioners need? These are some of the questions that need to be asked early in the development of this discipline. Defining the core knowledge is necessary for an understanding of what competencies are needed. There are two methods for identifying core knowledge—watching experts doing their jobs, or asking them about what it takes to do their jobs. Because of time and travel constraints, it is difficult to watch informaticians and public health practitioners do their jobs, but asking them is feasible. From the identified knowledge, four domains of public health informatics knowledge that encompass the...
skills and knowledge public health practitioners and informatics specialists need to possess become apparent. To determine how these skills and this knowledge may be turned into educational interventions for use by public health organizations and academic institutions is a challenge the discipline of public health informatics must face.

Introduction

In Chapter 1, Patrick O’Carroll defined public health informatics as “the systematic application of information and computer science and technology to public health practice, research, and learning.” Still, a definition by itself does not answer several questions:

• What should public health informaticians know in order to assist public health practitioners in applying information and computer science and technology to public health practice, research, and learning?
• What should public health practitioners know in order to apply public health informatics appropriately to public health practice?
• What specific competencies should public health informaticians have in order to apply the necessary knowledge to assist practitioners in such tasks as collecting, organizing, manipulating, and reporting data and information?
• What informatics competencies should public health practitioners possess?
• How can public health provide the educational and skill-building experiences that both public health informaticians and public health practitioners need?

The principal purpose of this chapter is to develop answers to these questions. Developing these answers will require us first to establish a process for defining core knowledge. We can then move to consideration of the knowledge domains of health-related informatics in general. With this framework established, we can focus on the knowledge domains specific to public health informatics. Finally, we will isolate the public health informatics competencies—the skills and knowledge—that are important for public health informaticians, on the one hand, and for public health practitioners, on the other. We will conclude the chapter with a brief discussion of how public health can provide the educational and skill-building experiences that both public health informatics specialists and public health practitioners need.

Defining Core Knowledge

For our purpose, we will use a four-step cyclic process to define the core knowledge of public health informatics and, for that matter, of health-related informatics in general, as illustrated in Figure 6.1.