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*(formerly Computers in Health Care)*

Kathryn J. Hannah  Marion J. Ball
Series Editors

**Health Informatics Series**
*(formerly Computers in Health Care)*

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Susan M. Houston Lisa Anne Bove

# Project Management for Healthcare Informatics

Springer

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# Foreword

The healthcare environment of this millennium is characterized by an unprecedented amount of escalating complexity, pulsating chaos, new technologies, and discontinuous change. There are demands for increased efficiency and effectiveness, with the accompanying constraints of diminishing resources. This presents daily challenges to those committed to creating responsive organizations and positive health outcomes. The need to impose order is being challenged by the assertion that chaos and order are bonded together inseparably. These are like two sides of a coin that form a whole, and both are needed. Healthcare environments, then, are not static machines subject to our control or reducible to their ordered parts. And the work, tasks, or projects that need to be accomplished and managed require more than a walk through sequential steps.

Project management is seen as an important means to navigate through the turbulent environment of the healthcare delivery system to accomplish work, facilitate change, and create improvements. Skill in the project management process then, needs to be developed within the context of a new worldview of organizations, management, and change. The new worldview recognizes that the quintessential act of organizational change is the act of changing our thinking. The skilled project manager is challenged to find the critical path through a series of planned interconnected tasks that can lead to the creation of a new reality. The systematic application of knowledge, skills, tools, and techniques used in the management of projects provides a powerful means to facilitate this change. It is the thoughtful journey through each phase of the project management process that orchestrates different things happening at different times, in different quantities, and at different rates. What appears as chaos on the surface evolves into a new kind of order when project management is done at its best. This is the power and the value of good project management and a good project manager.

Project management is a means of planning for the future. And yet because one cannot predict the future, the project manager needs to be flexible and prepared to alter plans and change course as organizations evolve and the unexpected unfolds. Managing a project is also about managing the participation of others, engaging the talents of many, and mobilizing people around the construction of change. Opening communication, building coalitions, and focusing on action-oriented strategies are all powerful skills that the project manager needs to master. These leadership skills, coupled with an understanding of the project management process, tools, and techniques shared by the authors of this book,

will empower both the novice and the veteran project manager. Good project management allows us to walk into chaos, create meaning and order out of complexity, and guide our steps into the future. Effective project managers and successful project management can create a future where the health and safety of the nation are advanced.

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*May 2007*

# Series Preface

This series is directed to healthcare professionals who are leading the transformation of health care by using information and knowledge. Launched in 1988 as *Computers in Health Care,* the series offers a broad range of titles: some addressed to specific professions such as nursing, medicine, and health administrations; others to sepcial areas of practice such as trauma and radiology. Still others books in the series focus on interdisciplinary issues, such as the computer-based patient record, electronic health records, and networked healthcare systems

Renamed *Health Informatics* in 1998 to reflect the rapid evolution in the discipline now known as health informatics, the series will continue to add titles that contribute to the evolution of the field. In the series, eminent experts, serving as editors or authors, offer their acounts of innovations in health informatics. Increasingly, these accounts go beyond hardware and software to address the role of information in influencing the transformation of healthcare delivery systems around the world. The series will increasingly focus on "peopleware" and organizational, behavioral, and societal changes that accompany the diffusion of information technology in health services environments.

These changes will shape health services in the new millennium. By making full and creative use of the technology to tame data and to transform information, health informatics will foster the development of the knowledge age in health care. As coeditors, we pledge to support our professional colleagues and the series readers as they share advances in the emerging and exciting field of health informatics.

*Kathryn J. Hannah, PhD, RN*
*Marion J. Ball, EdD*

# Preface

Project management is defined as "the application of knowledge, skills, tools and techniques to activities to meet project requirements" (PMBOK 2000). Healthcare informatics staff are constantly involved with projects, whether as an analyst defining requirements for a system upgrade, a manager determining projected staffing patterns, a physician championing a new computerized physician order entry system, a staff development instructor creating a critical care course, or an informatics nurse implementing software applications. Knowledge and use of the project management process can assist all levels of healthcare informaticists with all of these projects.

This book will provide a detailed explanation of the project management process using real healthcare examples. Details of each phase of the process, as well as the tools used during each phase, will make up the early chapters of the book. The project management process that is defined as initiation, planning, execution, control, and closing will be described in detail in Chapter 1. Each project management process will be described in detail using templates to demonstrate the work tools and concepts. The following chapters will be devoted to discussion on how to apply these principles in the day-to-day work of the nurse, whether the reader is a manager, staff nurse, educator, researcher, or informaticist.

The initiation phase will be discussed in detail in Chapter 2. The initiation phase authorizes the project to be completed. This chapter will outline the tasks and outcomes to be accomplished during this phase of the project life cycle. The project needs, objectives, and high-level resources are defined. This phase is where the project manager's authority and responsibility are defined. Historical documentation from any previous projects that were similar is useful here and throughout the project. The output of the initiation phase is a project charter or scope document, depending on the size of the project.

Chapter 3 will describe the planning phase. The planning phase selects the best course of action to accomplish the objectives and goals of the project. This chapter will outline that tasks and outcomes to be accomplished during the planning phase and beyond. Although planning is an ongoing effort throughout the project, most of these activities occur here. The schedule, work plan, and contingency and risk plans are just a few documents produced in this phase. The length of these documents, or the decision to combine them into one document, is very dependent on the size of the project.

The execution phase will be described in Chapter 4. The execution phase coordinates the human and nonhuman resources required to carry out the plan. This chapter will outline the processes used to coordinate the activities occurring to complete the project. These processes include managing the work plan tasks and resources, team development, information distribution, and quality assurance. This phase usually occurs concurrently with the controlling phase, which will be described in Chapter 5. The controlling phase ensures that the project objectives are being met and that any variance from the plan can be corrected as necessary. This chapter will outline how the project will be monitored or measured. This is an ongoing process and identifies any variances from what was planned. Processes included during this phase include scope change control, cost control, performance reporting, risk monitoring/control, and schedule control.

The closing phase formalizes the project acceptance and ends it, and it is described in Chapter 6. This chapter will outline the formal process for project acceptance and closure. This phase includes any contract closure required and official review and sign off by the customer. One key step that is often forgotten is to complete all documentation, including lessons learned. These items should be filed away and used as historical information the next time you do a similar project.

Once the phases are described, Chapters 7 and 8 will discuss how to apply the project management process. Chapter 7 will focus on applying the process in healthcare informatics. Clinical informatics is a relatively new field for nurses, and professionals in other clinical specialties, and often includes doing something with data or information technology. The project management process defined in the earlier chapters can be used in the day-to-day life of an Informaticist. This chapter will outline how to apply this methodology to various scenarios or potential projects that a Healthcare Informaticists may face in the workplace.

Chapter 8 will discuss applying the project management process in healthcare management. Healthcare management includes a wide variety of roles from Chief Nursing Officer to Chief Information Officer to department and application level directors. Each of these roles includes projects that must be taken on and successfully managed. This chapter will help to identify these projects and how to apply the methodology described earlier in the book.

Chapter 9 summarizes the project management methodology described earlier in the book, as well as how to apply it to the various roles nurses play in the workforce today. In addition, appendixes will be included. The appendixes will include organizational tips, deliverables templates and examples, project management web sites, and references. These appendixes will help healthcare informaticists find the method that is right for them to stay organized, where they can find additional project management information and sample templates for documents discussed in throughout the book.

The purpose of this book is to serve as a text for healthcare professionals to use when they want to become knowledgeable in project management and/or as a reference if they are currently managing projects.

The anticipated audience for this book includes:

- Staff nurses
- Nurse managers
- Nurse educators
- Staff development instructors
- Advanced practice nurses
- Nurse informaticists
- Researchers
- Analysts
- Department managers
- Consultants
- Physicians
- Therapists
- Pharmacists

*Susan M. Houston, MBA, RN-BC, PMP*
*Lisa Anne Bove, MSN, RN-BC*

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Susan would like to send a special thanks to her husband Gary and children Nicole and Matt, who seem to have an unlimited amount of patience.

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*Susan M. Houston, MBA, RN-BC, PMP*
*Lisa Anne Bove, MSN, RN-BC*

# Contents

# About the Authors

Susan M. Houston, MBA, RN-BC, PMP, and Lisa Anne Bove, MSN, RN-BC, first worked together on an implementation project in a major teaching facility in Maryland. Both authors have extensive project management experience as nurse managers and nurse informaticists. Both authors have used project management principles to successfully manage and complete large, complicated projects. In addition, both authors are currently employed as project managers in health care, one in a hospital setting and one as a software consultant. One author has already achieved PMP certification through the Project Management Institute (PMI) and the other author has internal company project manager certification and is completing the necessary prework to sit for the PMI project manger exam. Both authors are also certified by the American Nurses Credentialing Center in Nursing Informatics and hold master's degrees.

Susan M. Houston started working in an emergency room while in nursing school. After graduation, she continued to work in emergency medicine for over 15 years, finishing as a nurse manager of a level 2 trauma center. Susan was asked to implement a clinical information system because she was one of the few nurses who were comfortable with computers. This began her career as a project manager, implementing clinical systems. Susan has worked for a software vendor, implementing a wide range of applications for their clients. Susan has also worked as a consultant, implementing new processes and systems for a variety of healthcare organizations. Susan has a master's degree in business administration.

Susan is currently the Vice President for the Project Management Institute's Healthcare Specific Interest Group (SIG). She was a charter member of this SIG, and has been on the board of directors for this organization since 2005. Susan is also on the faculty at the University of Maryland Baltimore School of Nursing, where she teaches an Information Technology Project Management course for the Master's of Nursing Informatics program. Susan has also presented at several conferences, as well as coauthored several articles. In her current role, Susan has developed and is managing the Project Management Office at a large teaching research hospital, implementing several large and small projects while mentoring other project managers.

Lisa Anne Bove started as a critical care nurse in a major teaching facility in Philadelphia. After completing her master's as a critical care clinical specialist, Lisa Anne worked as a staff development instructor and clinical nurse specialist. As such, she managed projects that included developing critical care courses,

GN to RN programs, and Joint Commission on Accreditation of Healthcare Organizations mandated training programs, orientation programs, and research projects. She got involved in healthcare informatics when the hospital she was working for implemented order entry and results reporting throughout the hospital. She served on the user committees, and then moved into the informatics department to start as an analyst and database administrator. As an analyst, Lisa Anne implemented many applications, including an OR system and an inventory management system, and assisted with other system upgrades and extensions.

Lisa Anne then began to work for a software vendor, first as a trainer and then as a project manger. In these roles, Lisa Anne managed many projects, including developing new training programs, large facility implementation projects, and clinical beta implementation projects.

In her current position as a consultant, Lisa Anne manages a variety of implementation and process redesign projects across the country. She is currently on the Board of Directors of the American Nursing Informatics Association (ANIA) and a member of the Healthcare Information Management Systems Society (HIMSS) Nursing Informatics Taskforce. Lisa Anne has published on both nursing and informatics topics and speaks frequently at nursing conferences both locally and internationally.

# 1
# Project Management Process

## Introduction

The project management process defines how a project should be managed to decrease the risk of failure. Using a consistent methodology to manage all projects is one of the most important steps toward project success. The methodology provides a standard way of managing projects that is used consistently across all projects and ensures that all aspects of the project are considered, evaluated, and documented. This helps to improve the success of all projects. There are defined phases each project goes through: initiation, planning, execution and control, and, finally, closure. Each phase has defined activities for the project manager, the project team, and the project stakeholders. The duration of the phases may also vary between projects, as well as within projects, but each project spends some time in each phase.

The project management process is a defined methodology that can be used to manage projects large or small. Although the phases of the process are generally consistent across industries, the specific method of moving through the phases may differ from one organization to another. This process may even have different names, including project management life cycle, project management methodology, or project management framework. The Project Management Institute (www.pmi.org) identifies five process groups or phases. The five phases are initiating, planning, executing, controlling, and closing. An overview of these phases will be presented in this chapter, followed by a closer examination of each in the subsequent chapters. Before the phases are reviewed, it is important to understand the difference between a project and a process, as well as the concept of the triple constraint (Figure 1.1).

## Project Versus Process

What is a project and how does it differ from a process? A project has a defined beginning and end, such as the implementation of an application or the development of a training program. A process is an ongoing activity, such as